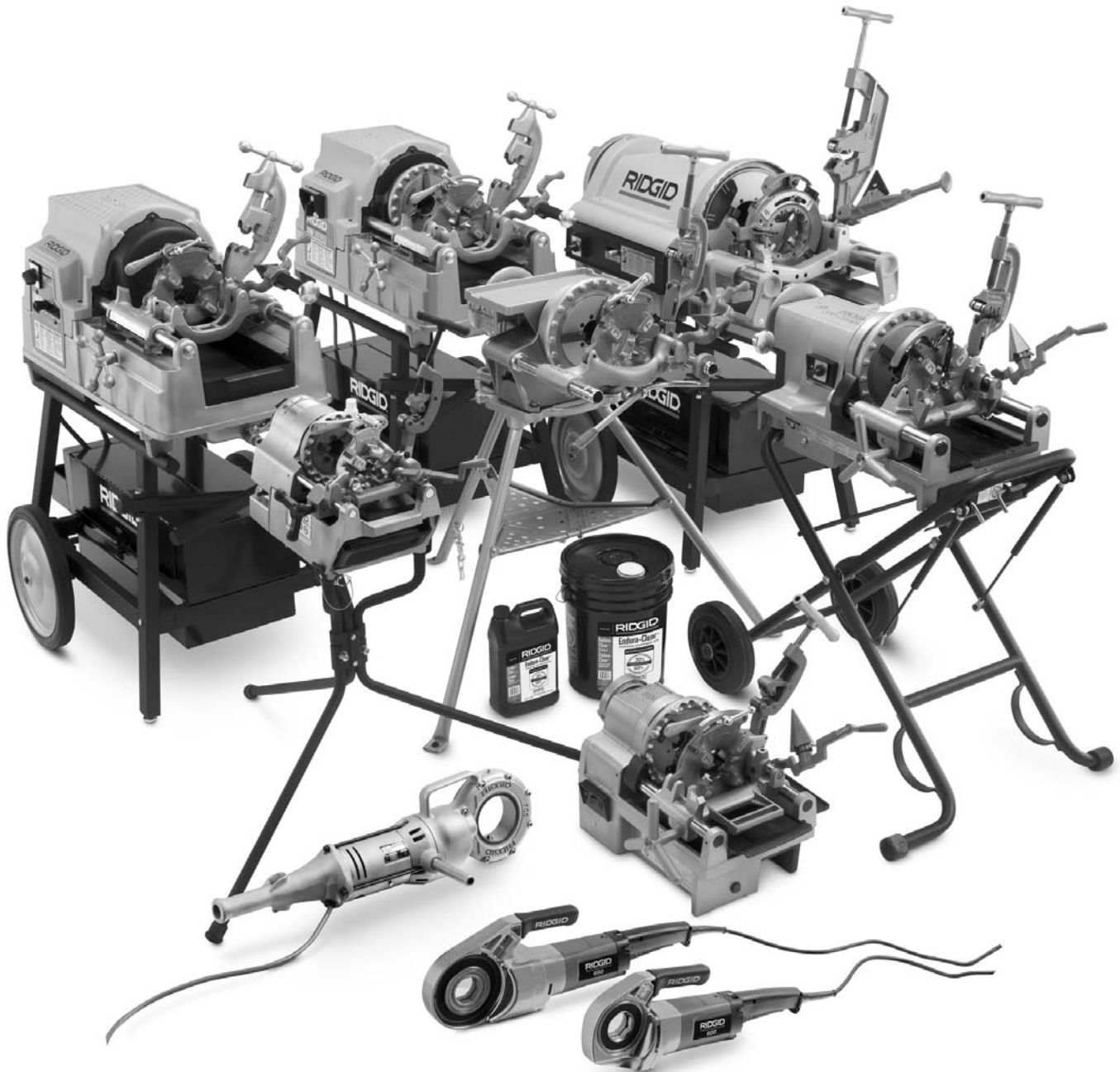


# Parts Catalog

May 2012



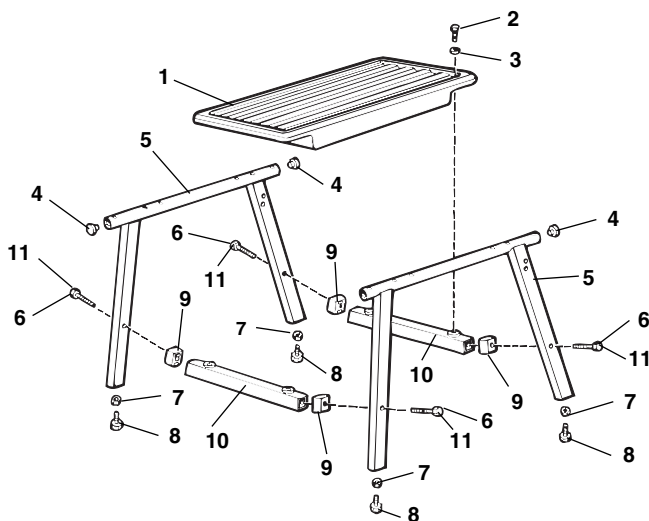
All the Product Parts Lists in the catalog are listed in numerical sequence by Product Model Number.

| Model No. | Description                                     | Page             | Model No.  | Description                            | Page    |
|-----------|-------------------------------------------------|------------------|------------|----------------------------------------|---------|
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| 200 A     | Wheel and Cabinet Stand .....                   | 1                | 924        | Self Opening Receding Die Head.....    | 94      |
| 241       | Carriage Mount Kit.....                         | 153              | 926        | Self Opening Receding Die Head.....    | 94      |
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| 300 A     | Power Drive .....                               | 17-25            | 1224       | Pipe & Bolt Threading Machine .....    | 133-139 |
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| 301       | Foot Switch.....                                | 15               | 1406       | Folding Wheel Stand .....              | 146     |
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| 500 A     | Mono Head RH/LH .....                           | 98               | 3177 CE    | Motor.....                             | 20      |
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| 532 B     | Die Head.....                                   | 98               | 3181 CE    | Motor.....                             | 21      |
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| 535 A     | Pipe & Bolt Threading Machine .....             | 58-64            | 3192 R     | Motor.....                             | 142     |
| 535 E     | Pipe & Bolt Threading Machine .....             | 65-70            | 3277       | Motor.....                             | 20      |
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| 614       | Dry Cut Saw.....                                | 82-84            | RV 2600 B  | Wet/Dry Vac.....                       | 157-158 |
| 690       | Portable Power Drive.....                       | 85-86            | OF 45150   | Air Compressor.....                    | 161-162 |
| 700       | Portable Power Drive.....                       | 87-91            | OL 50135   | Air Compressor.....                    | 163-164 |
| 711       | Self Opening Die Head.....                      | 92               | OL 50135 W | Air Compressor.....                    | 167-168 |
| 713       | Quick Opening Die Head.....                     | 92               | GP 90135   | Air Compressor.....                    | 159-150 |
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| 724       | Self Opening Receding Die Head.....             | 94               |            | Model A Pump .....                     | 50      |
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| 732       | Pipe Cutter.....                                | 132              |            |                                        |         |
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| 766       | Saran Cut-Off Tool.....                         | 97               |            |                                        |         |
| 768       | Drive Link Assembly .....                       | 101              |            |                                        |         |
| 775       | Support Arm.....                                | 88               |            |                                        |         |
| 811 A     | Die Head.....                                   | 98               |            |                                        |         |
| 815 A     | Die Head.....                                   | 99               |            |                                        |         |
| 816       | Die Head.....                                   | 100              |            |                                        |         |
| 817       | Die Head.....                                   | 100              |            |                                        |         |
| 819       | Nipple Chuck & Adapters.....                    | 101              |            |                                        |         |
| 820       | Cutter.....                                     | 64, 79           |            |                                        |         |
| 821       | Cutter-Blade Type.....                          | 102              |            |                                        |         |
| 822       | Blade Cutter Adapter Kit .....                  | 102              |            |                                        |         |
| 839       | Nipple Chuck Kit.....                           | 154              |            |                                        |         |
| 840 A     | Universal Drive Shaft.....                      | 103              |            |                                        |         |

For additional information contact the Ridge Tool Technical Service Department at 1-800-519-3456

See Drain Cleaning and Diagnostic Equipment Parts Catalog for Pipe and Drain Cleaning Equipment Parts

## No. 100A Leg and Tray Stand

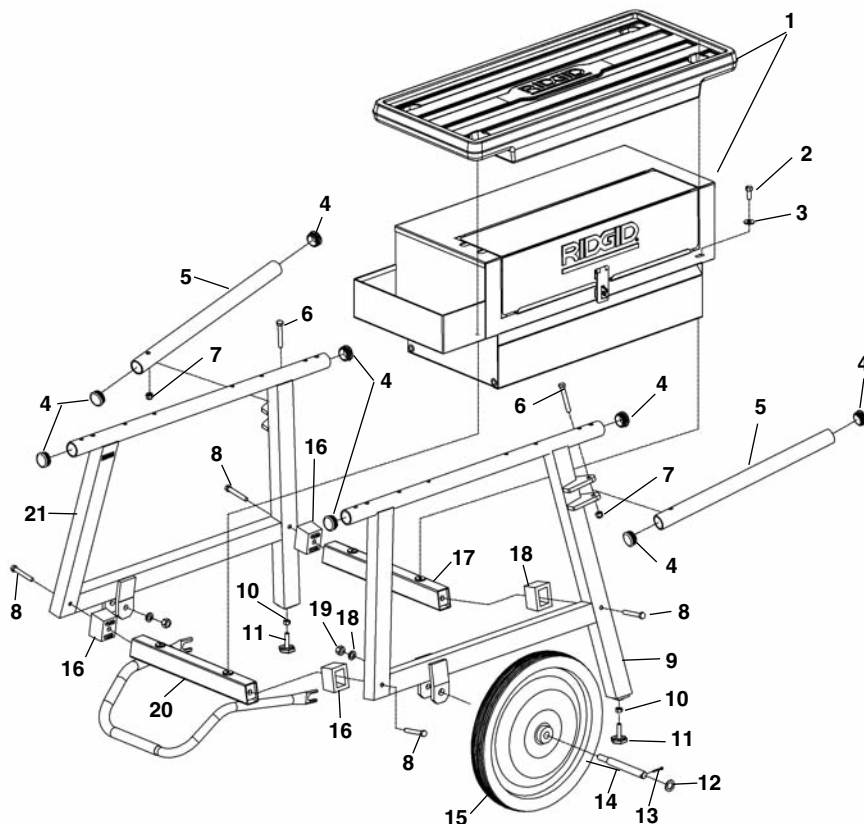


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                                              |
|----------|-------------|--------------------------------------------------------------------------|
| —        | 92457       | Leg Stand Assembly                                                       |
| 1        | 56872       | Tray                                                                     |
| 2        | 80030       | Hex Bolt $\frac{3}{8}$ " - 16 x 1" (4)                                   |
| 3        | 44230       | Flat Washer $\frac{3}{8}$ " (4)                                          |
| 4        | 58037       | End Cap (4)                                                              |
| 5        | 58022       | Leg (2)                                                                  |
| 6        | 58052       | Hex Bolt $\frac{3}{8}$ " - 16 x 2 $\frac{1}{2}$ " (4)                    |
| 7        | 44225       | Hex Nut $\frac{3}{8}$ " - 16 (4)                                         |
| 8        | 58027       | Leveling Pad (4)                                                         |
| 9        | 58042       | Spacer (4) - (1224 Machine Only)                                         |
| 10       | 58032       | Cross Member (2)                                                         |
| 11       | 58047       | Hex Bolt $\frac{3}{8}$ " - 16 x 4" (4)<br>(1224 & 535 Auto Machine Only) |

**NOTE:  $\frac{3}{8}$ " - 16 x 4" Bolts and spacers used when mounting 1224 & 535 Auto machines.**

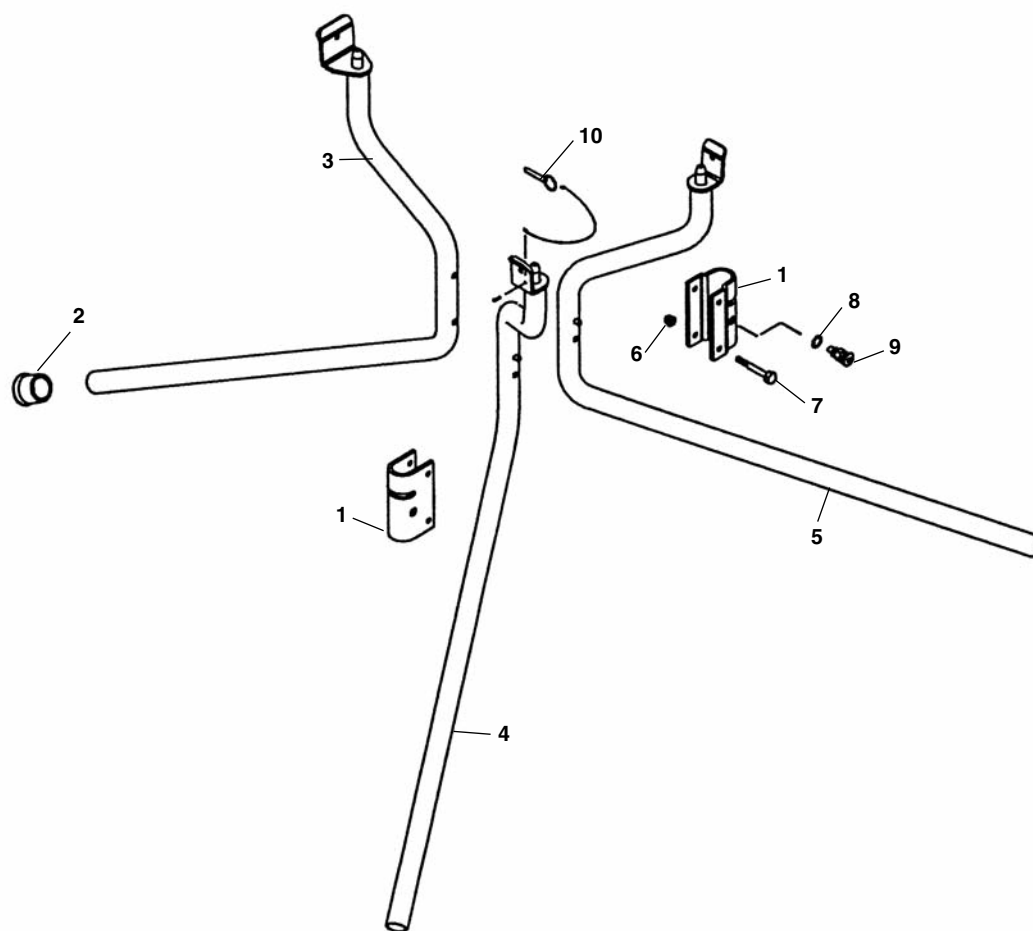
## No. 150A/200A Wheel and Tray Stands



| Ref. No. | Catalog No. | Description                                                                   |
|----------|-------------|-------------------------------------------------------------------------------|
| —        | 92462       | 150A Wheel and Tray Assembly                                                  |
| —        | 92467       | 200A Wheel and Cabinet Assembly                                               |
| 1        | 56872       | Tray                                                                          |
|          | 22563       | Cabinet                                                                       |
| 2        | 80030       | Hex Bolt $\frac{3}{8}$ " - 16 x 1" (4)                                        |
| 3        | 44230       | Flat Washer (4)                                                               |
| 4        | 58037       | End Cap (6)                                                                   |
| 5        | 58067       | Handle (2) includes Ref. No. 6                                                |
|          | 34843       | Handle - Type 2 (2)                                                           |
| 6        | 46675       | Hex Bolt $\frac{3}{8}$ " - 16 x 2 $\frac{3}{4}$ " (2)                         |
| 7        | 79985       | Locknut $\frac{3}{8}$ " - 16 (2)                                              |
| 8        | 58052       | Hex Bolt $\frac{3}{8}$ " - 16 x 2 $\frac{1}{2}$ " (4)                         |
|          | 58047       | Hex Bolt $\frac{3}{8}$ " - 16 x 4" (4)<br>(1224 & 535 Automatic Machine Only) |
| 9        | 26788       | Front Leg                                                                     |
| 10       | 44225       | Hex Nut $\frac{3}{8}$ " - 16 (4)                                              |
| 11       | 58027       | Leveling Pad                                                                  |
| 12       | 47180       | Washer (2)                                                                    |
| 13       | 47030       | Cotter Pin (2)                                                                |
| 14       | 58072       | Axle (2)                                                                      |
| 15       | 27442       | Wheel (2)                                                                     |
| 16       | 58042       | Spacer (4) (1224 & 535 Automatic Machines Only)                               |
| 17       | 58032       | Front Cross Member                                                            |
| 18       | 84150       | Lock Washer $\frac{1}{2}$ " (2)                                               |
| 19       | 44745       | Locknut $\frac{1}{2}$ " (2)                                                   |
| 20       | 26798       | Rear Cross Member w/Stand Stop Assembly                                       |
| 21       | 26793       | Rear Leg                                                                      |

**NOTE:  $\frac{3}{8}$ " - 16 x 4" bolts and spacers used when mounting 1224 & 535 Auto machines.**

## 120 Stand

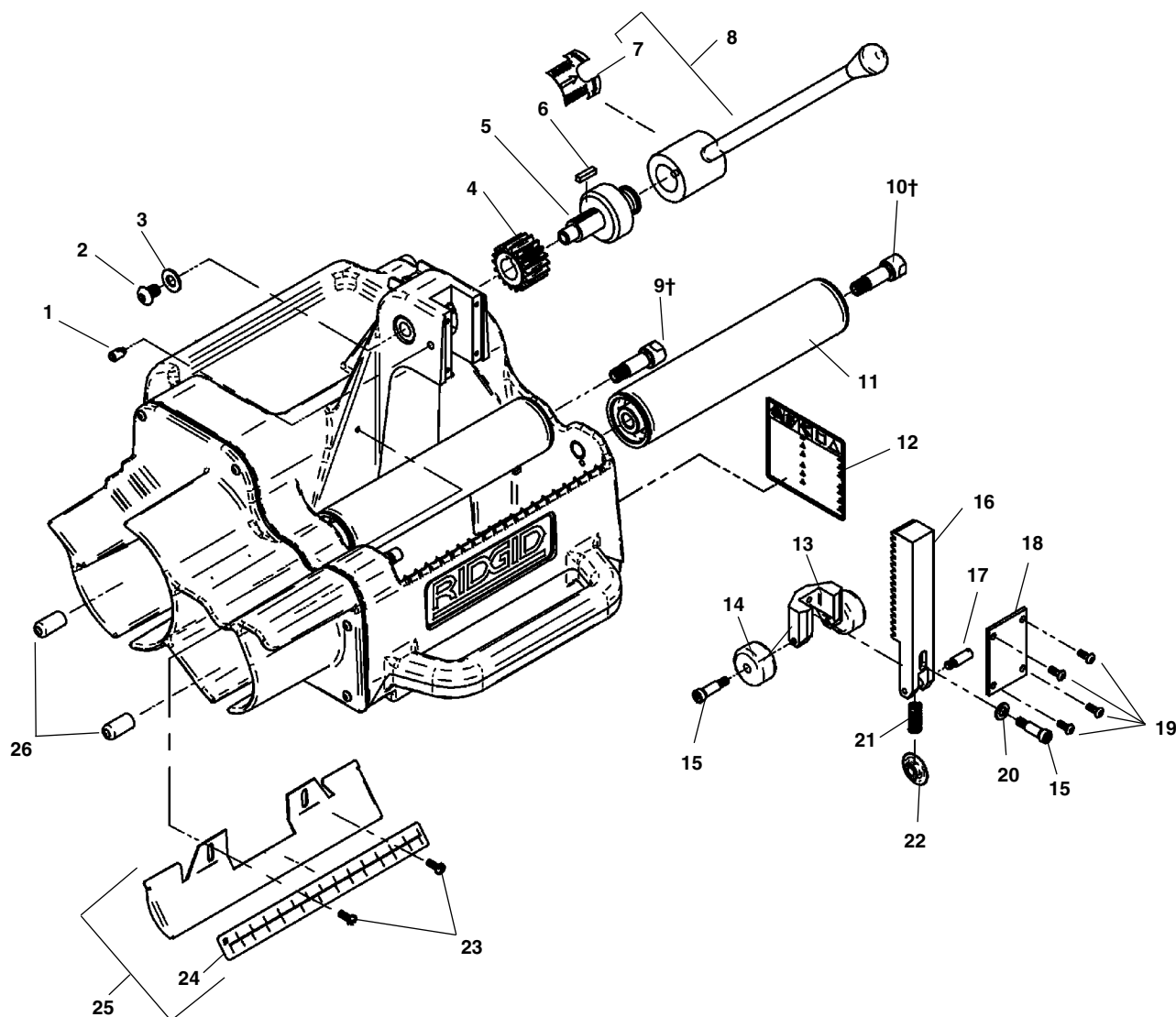


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                      |
|----------|-------------|----------------------------------|
| —        | 67822       | 120 Stand                        |
| 1        | 69422       | Pivot Bracket Set                |
| 2        | 37962       | Rubber Foot (3)                  |
| 3        | 72287       | Rear Leg                         |
| 4        | 72292       | Left Front Leg                   |
| 5        | 72297       | Right Front Leg                  |
| 6        | 83890       | Lock Nut 1/4" - 20               |
| 7        | 44510       | Screw 1/4" - 20 x 2" Socket Head |
| 8        | 75695       | Lock Washer 7/16" Internal       |
| 9        | 59510       | Plunger Assembly (2)             |
| 10       | 51092       | Hitch Pin                        |



## Cutting Components

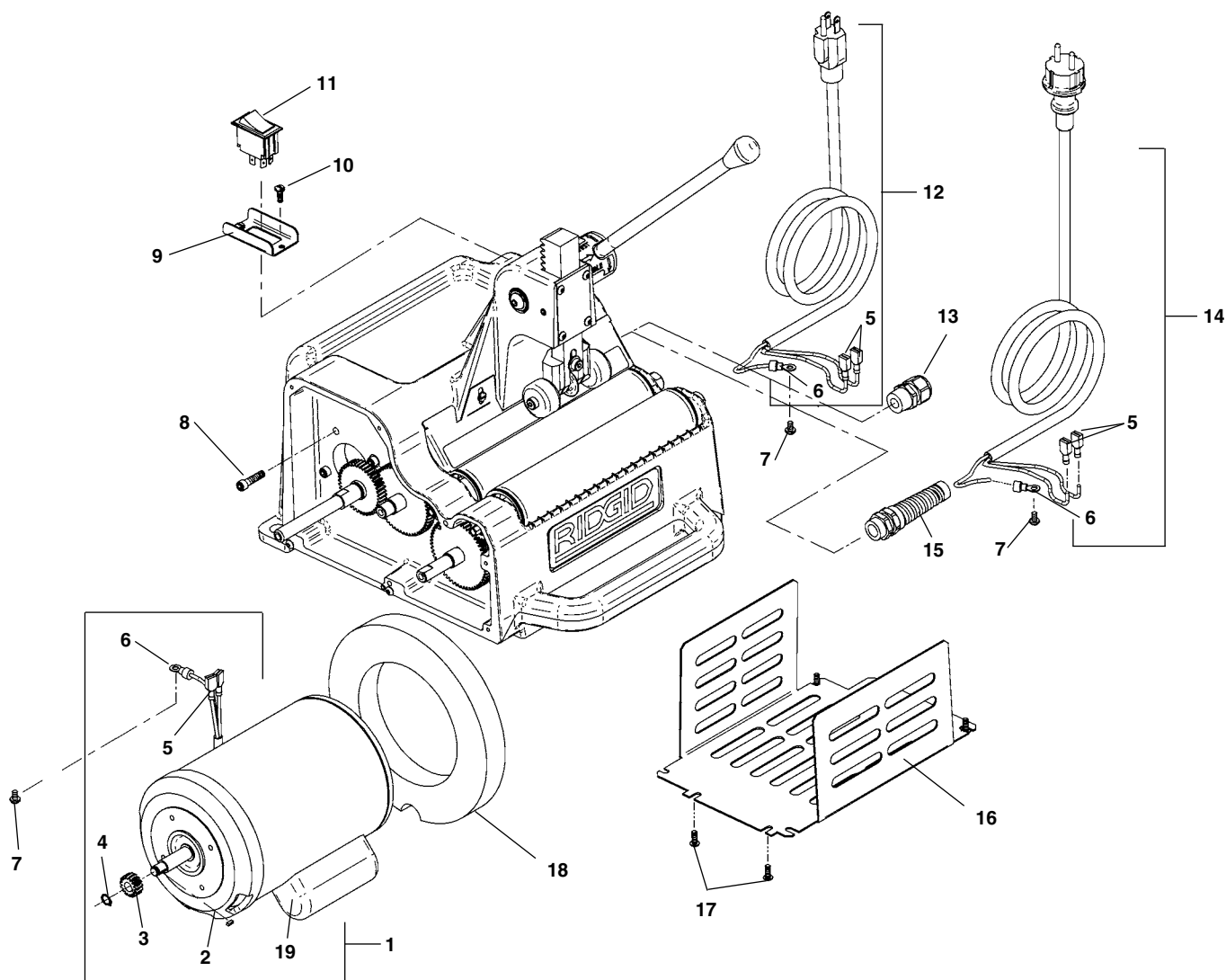


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                               | Ref. No. | Catalog No. | Description                                            |
|----------|-------------|-----------------------------------------------------------|----------|-------------|--------------------------------------------------------|
| 1        | 94877       | Set Screw, Nylon $\frac{5}{16}$ " - 18 x $\frac{1}{2}$ "  | 15       | 94922       | Screw, Shoulder $\frac{5}{16}$ " x $\frac{3}{4}$ " (3) |
| 2        | 96915       | Screw, Button Head $\frac{3}{8}$ " - 16 x $\frac{1}{2}$ " | 16       | 94937       | Arbor                                                  |
| 3        | 26307       | Washer                                                    | 17       | 34360       | Screw f/Cutter Wheel                                   |
| 4        | 94882       | Gear, Arbor                                               | 10343    |             | Screw f/Cutter Wheel (SS)                              |
| 5        | 94887       | Shaft, Arbor                                              | 18       | 94947       | Cover                                                  |
| 6        | 94892       | Key, Square $\frac{3}{16}$ " x $\frac{3}{4}$ "            | 19       | 94752       | Screw, Phillips #10 - 24 x $\frac{3}{4}$ " (4)         |
| 7        | 14393       | Indexing Label                                            | 20       | 94952       | Washer                                                 |
| 8        | 94897       | Handle, Feed                                              | 21       | 94942       | Spring                                                 |
| 9†       | 94907       | Shaft, L.H. Thread                                        | 22       | 33175       | Cutter Wheel, E-2191                                   |
| 10†      | 94912       | Shaft, L.H. Thread                                        | 33551    |             | Cutter Wheel (SS)                                      |
| 11       | 94902       | Roller Assembly (2)                                       | 23       | 45275       | Screw (2)                                              |
| 12       | 10398       | Warning Label                                             | 24       | 10393       | Scale                                                  |
| 13       | 94932       | Slide                                                     | 25       | 10388       | Roller Guard                                           |
| 14       | 94927       | Roller (2)                                                | 26       | 10573       | Plastic Cap (2) (Europe Only)                          |

Service Note: † Left Hand Thread

## Electrical



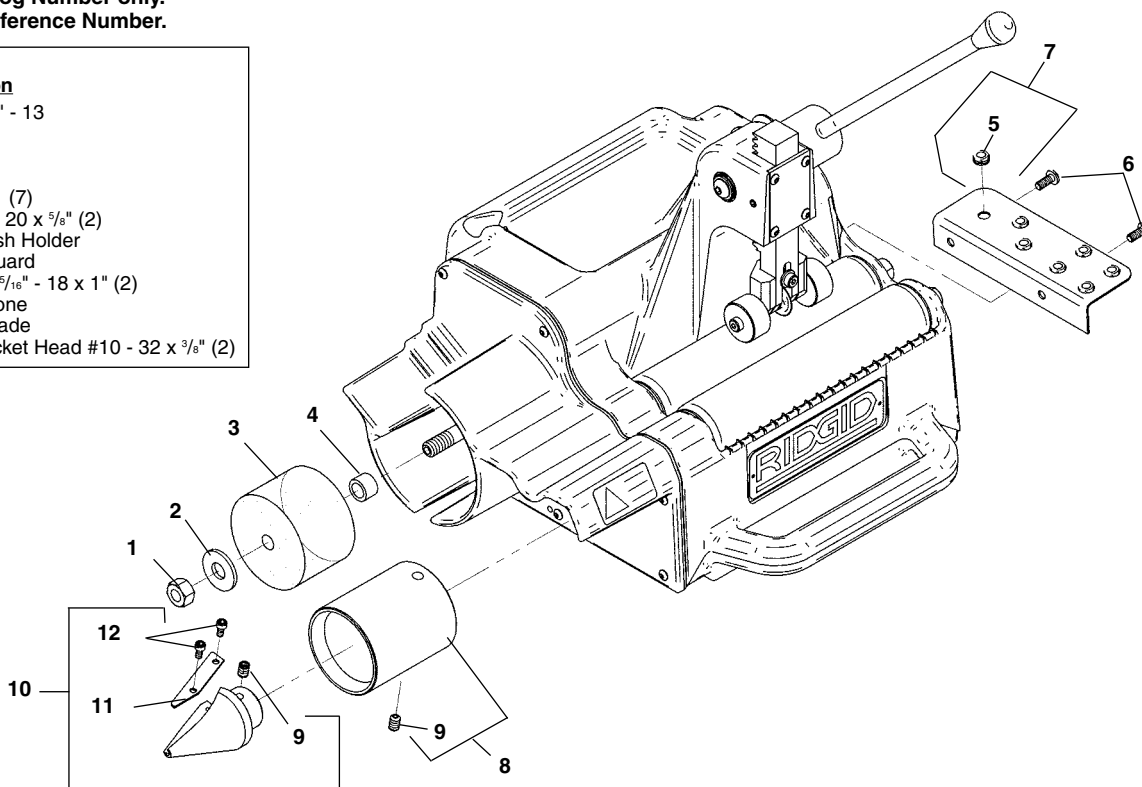
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                    | Ref. No. | Catalog No. | Description                                    |
|----------|-------------|------------------------------------------------|----------|-------------|------------------------------------------------|
| 1        | 94842       | Motor, 1/3 H.P. - 115V                         | 10       | 45275       | Screw (2)                                      |
|          | 10403       | Motor 220V 50Hz (Europe)                       | 11       | 58597       | Switch, DPST                                   |
|          | 31143       | Motor 100V                                     | 12       | 69327       | Line Cord 115V                                 |
| 2        | 94787       | Key, Square $\frac{3}{32}$ " x $\frac{1}{4}$ " | 13       | 69107       | Strain Relief                                  |
| 3        | 94847       | Gear                                           | 14       | 39562       | Line Cord 220V 50Hz (Europe)                   |
| 4        | 94822       | Retaining Ring                                 | 15       | 27187       | Strain Relief (Europe)                         |
| 5        | 89190       | Female Disconnect (4)                          | 16       | 94862       | Motor Cover                                    |
| 6        | 58587       | Terminal Ring (2)                              | 17       | 94752       | Screw, Phillips #10 - 24 x $\frac{3}{8}$ " (4) |
| 7        | 45420       | Ground Screw #10 - 24 x $\frac{3}{8}$ " (2)    | 18       | 94667       | Motor Baffle                                   |
| 8        | 83685       | Screw, Socket Head $\frac{1}{4}$ " - 20 (4)    | 19       | 20348       | Motor Capacitor                                |
| 9        | 10408       | Switch Guard                                   |          |             |                                                |

## Prep Components

**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

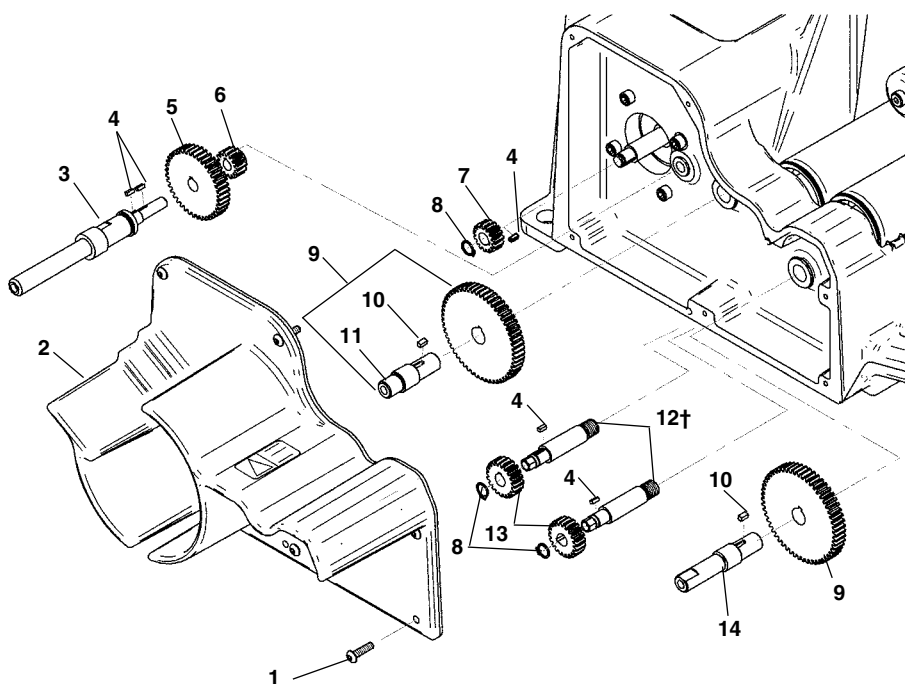
| Ref. No. | Catalog No. | Description                                       |
|----------|-------------|---------------------------------------------------|
| 1        | 94662       | Hex Nut $\frac{1}{2}$ " - 13                      |
| 2        | 83420       | Washer $\frac{1}{2}$ "                            |
| 3        | 94682       | Brush                                             |
| 4        | 94672       | Spacer                                            |
| 5        | 94957       | Grommet (7)                                       |
| 6        | 38940       | Screw $\frac{1}{4}$ " - 20 x $\frac{5}{8}$ " (2)  |
| 7        | 93712       | Fitting Brush Holder                              |
| 8        | 94747       | Reamer Guard                                      |
| 9        | 46080       | Set Screw $\frac{5}{16}$ " - 18 x 1" (2)          |
| 10       | 94687       | Reamer Cone                                       |
| 11       | 94692       | Reamer Blade                                      |
| 12       | 46180       | Screw, Socket Head #10 - 32 x $\frac{3}{8}$ " (2) |



## Gearbox

| Ref. No. | Catalog No. | Description                                        |
|----------|-------------|----------------------------------------------------|
| 1        | 94752       | Screw, Phillips #10-24 x $\frac{3}{4}$ " (10)      |
| 2        | 94647       | Gear Cover                                         |
| 3        | 94782       | Brush, Shaft                                       |
| 4        | 94787       | Key, Square $\frac{3}{32}$ " x $\frac{1}{4}$ " (4) |
| 5        | 94792       | Gear, Brush                                        |
| 6        | 94797       | Gear Reduction                                     |
| 7        | 94847       | Gear, Motor                                        |
| 8        | 94822       | Retaining Ring (3)                                 |
| 9        | 34833       | Gear, Reamer (2)                                   |
| 10       | 94807       | Key, Square $\frac{1}{8}$ " x $\frac{1}{4}$ "      |
| 11       | 94802       | Shaft                                              |
| 12†      | 94832       | Shaft, Stub, Driven L.H. Thread (2)                |
| 13       | 94827       | Gear, Roller (2)                                   |
| 14       | 94817       | Shaft, Reamer                                      |

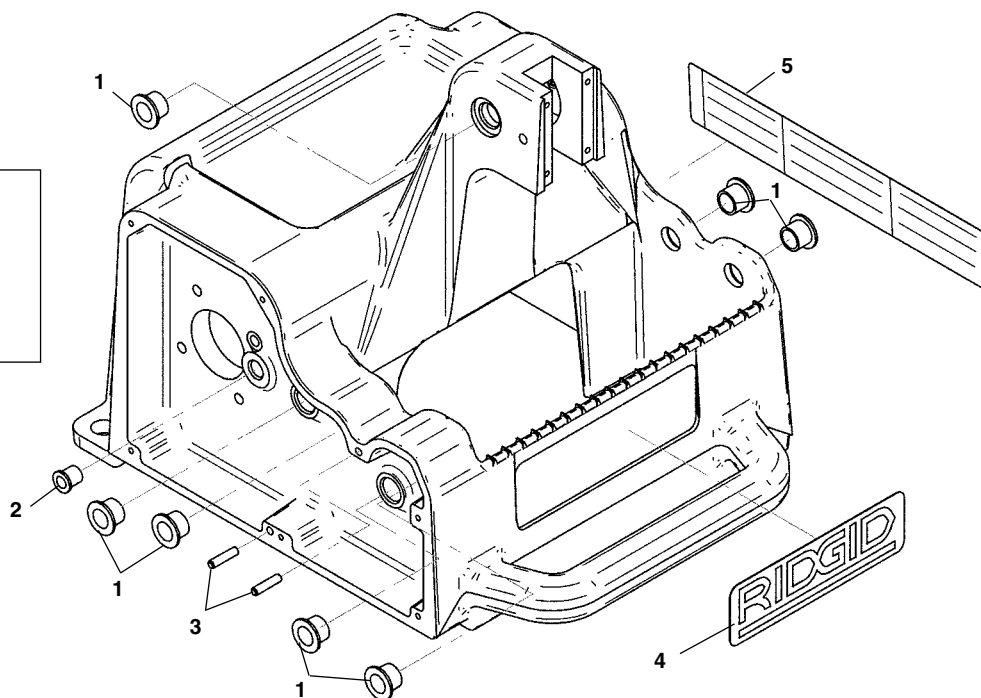
Service Note: † Left Hand Thread



## Body

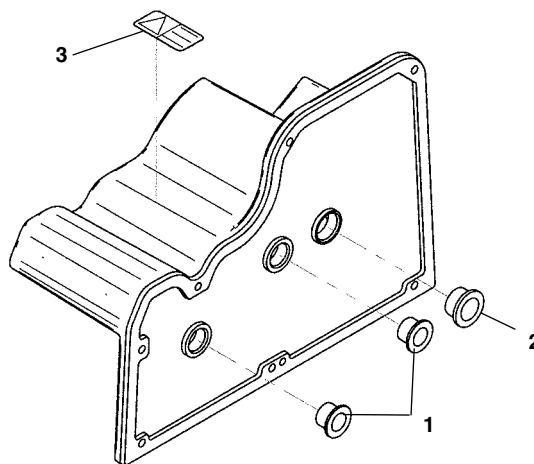
**NOTE:** Order parts by Catalog Number only.  
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| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 94637       | Frame Assembly      |
| 1        | 94642       | Bearing, Flange (7) |
| 2        | 94657       | Bearing, Flange     |
| 3        | 45165       | Dowel Pin (2)       |
| 4        | 94917       | Plate, RIDGID logo  |
| 5        | 95392       | Label, Warning      |



## Gear Cover

| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 94647       | Gear Cover          |
| 1        | 94642       | Bearing, Flange (2) |
| 2        | 54652       | Bearing, Flange     |
| 3        | 94867       | Label, Warning      |

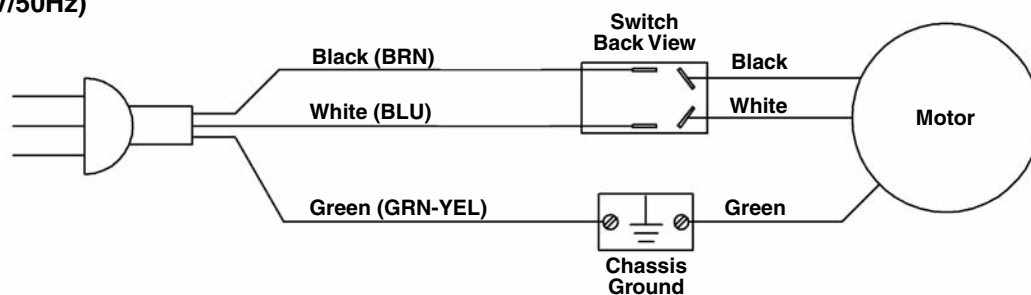


## Wiring Diagram - Variations

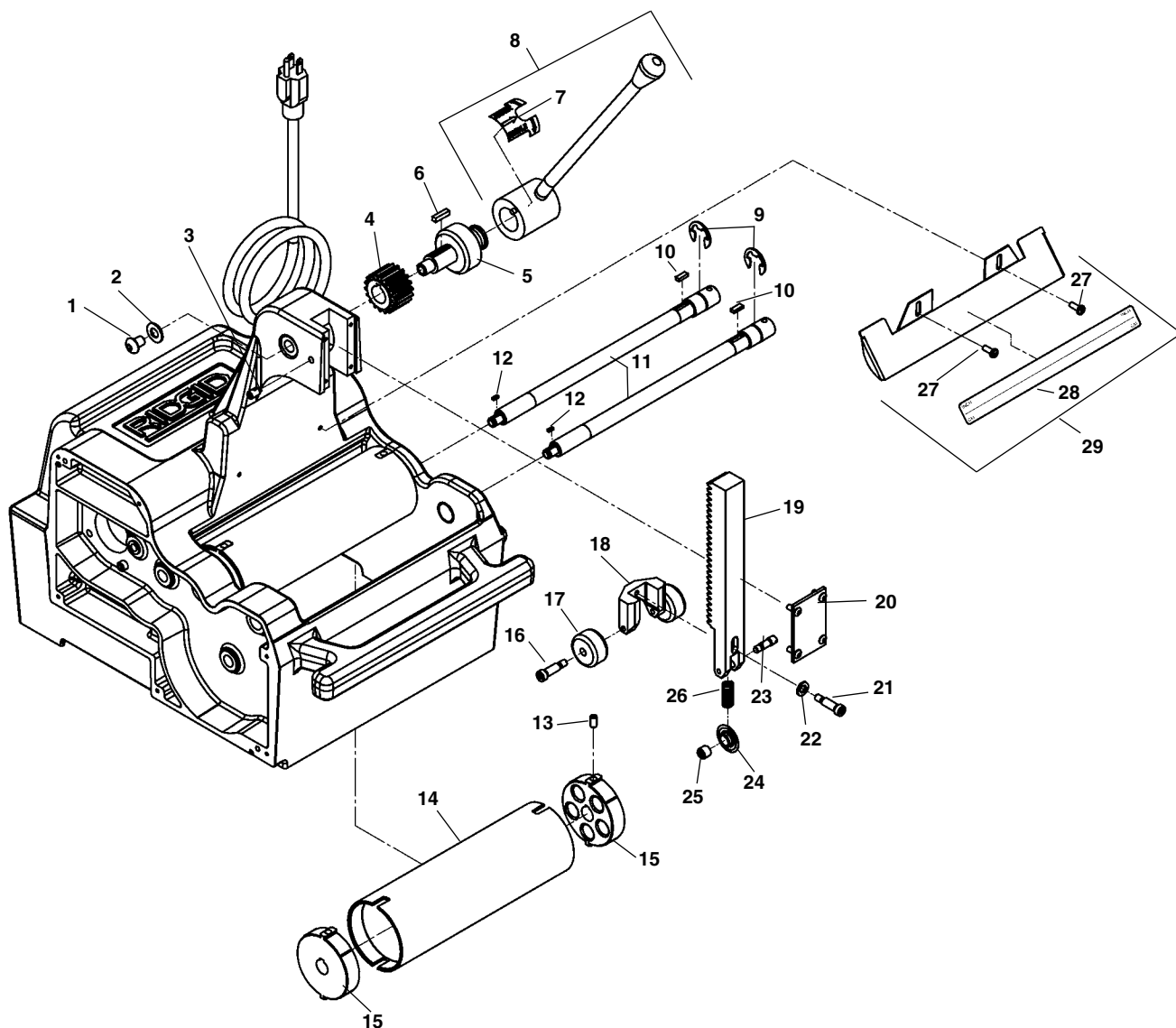
115V – 60Hz

100V – 50/60Hz

(220 – 240V/50Hz)



## Main Components

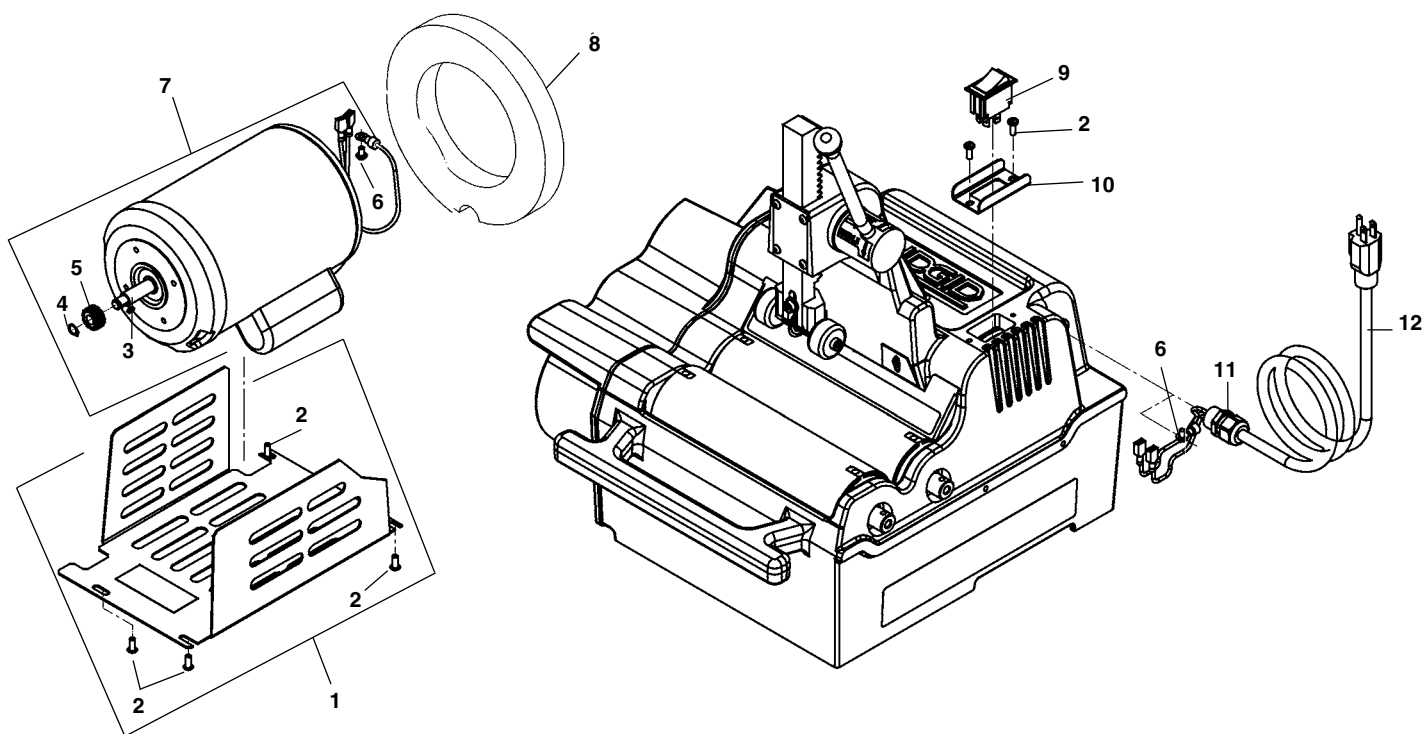


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| Ref. No. | Catalog No. | Description                                                | Ref. No. | Catalog No. | Description                                       |
|----------|-------------|------------------------------------------------------------|----------|-------------|---------------------------------------------------|
| 1        | 94872       | Screw, Button Head $\frac{3}{16}$ " - 16 x $\frac{1}{2}$ " | 16       | 94922       | Shoulder Screw $\frac{5}{16}$ " x $\frac{3}{4}$ " |
| 2        | 26307       | Washer                                                     | 17       | 94927       | Roller, Cutter Wheel                              |
| 3        | 94877       | Screw, Nylon $\frac{5}{16}$ " - 18 x $\frac{1}{2}$ "       | 18       | 94932       | Slide                                             |
| 4        | 94882       | Gear, Arbor                                                | 19       | 13163       | Arbor                                             |
| 5        | 94887       | Shaft, Arbor                                               | 20       | 94947       | Cover                                             |
| 6        | 94892       | Key, Square $\frac{3}{16}$ " x $\frac{3}{4}$ "             | 21       | 94922       | Shoulder Screw $\frac{5}{16}$ " x $\frac{3}{4}$ " |
| 7        | 14393       | Indexing Handle Decal                                      | 22       | 94952       | Washer                                            |
| 8        | 94897       | Handle, Feed                                               | 23       | 10343       | Stainless Steel Wheel Screw                       |
| 9        | 58850       | Retaining Ring                                             | 24       | 33551       | Cutter Wheel                                      |
| 10       | 13153       | Key $\frac{1}{8}$ " x $\frac{3}{16}$ " x $\frac{1}{2}$ "   | 25       | 13193       | Bearing, Cutter Wheel                             |
| 11       | 14208       | Roller Shaft (2)                                           | 26       | 94942       | Spring                                            |
| 12       | 94787       | Key $\frac{3}{32}$ " x $\frac{1}{4}$ "                     | 27       | 45275       | Screw (2)                                         |
| 13       | 34892       | Screw $\frac{1}{4}$ " - 20                                 | 28       | 10393       | Scale                                             |
| 14       | 13143       | Roller Tube 3" (2)                                         | 29       | 10388       | Roller Guard                                      |
| 15       | 13148       | Roller End Cap                                             |          |             |                                                   |



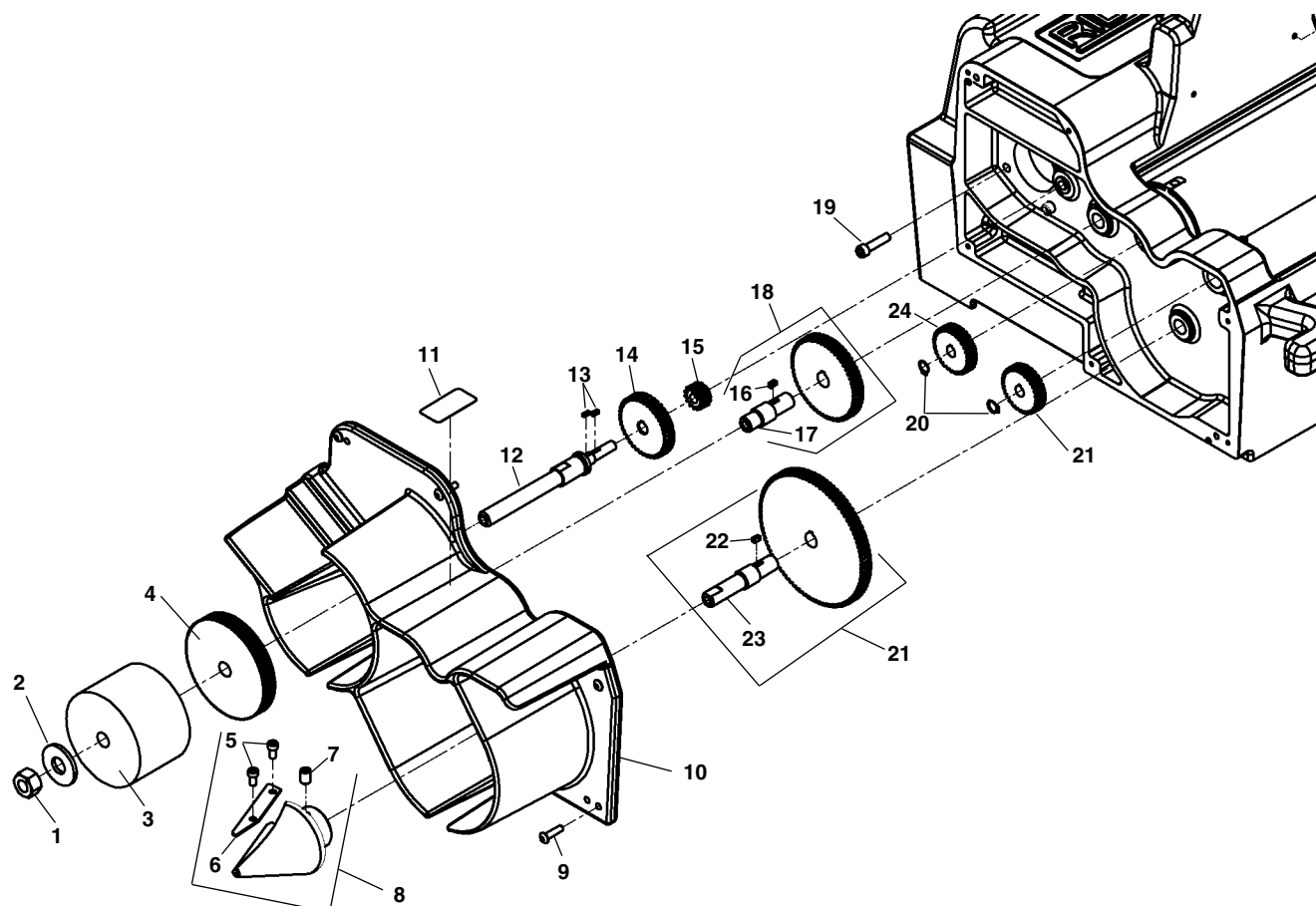
## Electrical



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                            |
|----------|-------------|----------------------------------------|
| 1        | 13168       | Motor Cover (Inc. Ref. 2)              |
| 2        | 94752       | Screw 10 - 24                          |
| 3        | 94787       | Key $\frac{3}{32}$ " x $\frac{1}{4}$ " |
| 4        | 94822       | Retaining Ring                         |
| 5        | 94847       | Pinion Gear                            |
| 6        | 94852       | Screw w/Washer 10 - 24                 |
| 7        | 94842       | Motor 1/3 Hp 115V                      |
| 8        | 94667       | Motor Baffle                           |
| 9        | 58597       | Switch                                 |
| 10       | 10408       | Switch Guard                           |
| 11       | 69107       | Strain Relief                          |
| 12       | 69327       | Power Cord 115V                        |
| —        | 20348       | Motor Capacitor                        |

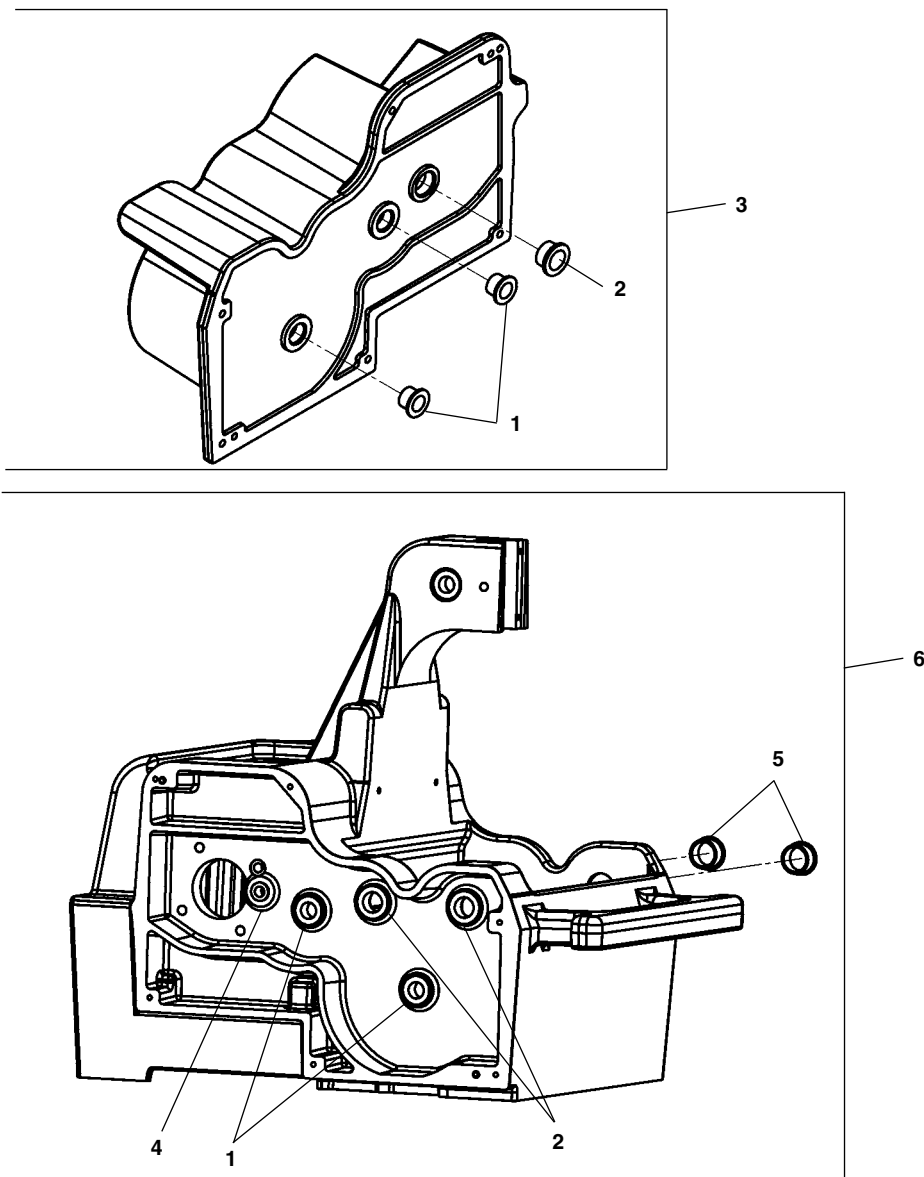
## Gearbox



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                          | Ref. No. | Catalog No. | Description                                |
|----------|-------------|--------------------------------------|----------|-------------|--------------------------------------------|
| 1        | 94662       | Hex Nut                              | 13       | 94787       | Key $\frac{3}{32}$ " x $\frac{1}{4}$ " (4) |
| 2        | 83420       | Washer                               | 14       | 94792       | Gear Brush                                 |
| 3        | 42295       | External Brush                       | 15       | 94797       | Gear Reduction                             |
| 4        | 46105       | Deburring Disc                       | 16       | 94807       | Key $\frac{1}{8}$ " x $\frac{1}{4}$ "      |
| 5        | 94697       | Screw 10" - 32 x $\frac{3}{8}$ "     | 17       | 94802       | Shaft                                      |
| 6        | 94692       | Reamer Blade                         | 18       | 34833       | Gear, Reamer                               |
| 7        | 94702       | Set Screw $\frac{5}{16}$ " - 18 x 1" | 19       | 94837       | Screw $\frac{1}{4}$ " - 20 x 1             |
| 8        | 94687       | Reamer Cone Assembly                 | 20       | 94822       | Retaining Ring (3)                         |
| 9        | 94752       | Screw 10" - 24 x $\frac{3}{4}$ "     | 21       | 34838       | Reamer Gear 4"                             |
| 10       | 13183       | Gear Cover w/Shelf                   | 22       | 94807       | Key $\frac{1}{8}$ " x $\frac{1}{4}$ "      |
| 11       | 94867       | Warning Decal Reamer                 | 23       | 94817       | Shaft Reamer                               |
| 12       | 94782       | Shaft, Brush                         | 24       | 13173       | Roller Gear                                |

## Gear Cover

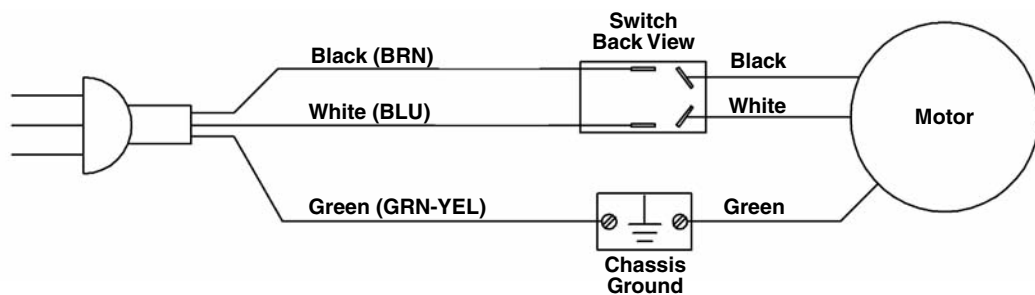


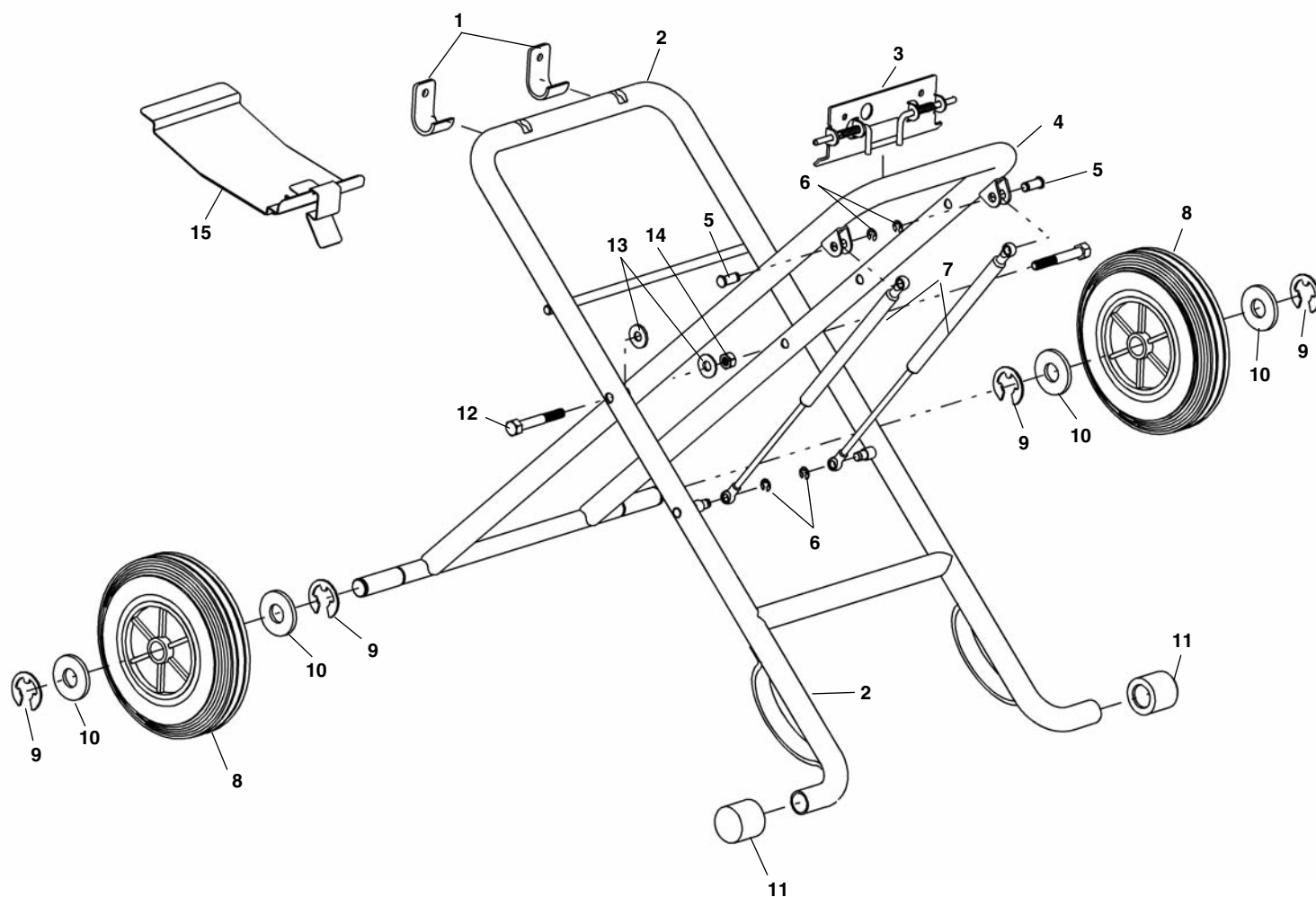
NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                                    |
|----------|-------------|----------------------------------------------------------------|
| 1        | 94642       | Flange $\frac{1}{2}$ " x $\frac{5}{8}$ " x $\frac{1}{2}$ " (7) |
| 2        | 94652       | Flange $\frac{5}{8}$ " x $\frac{3}{4}$ " x $\frac{1}{2}$ " (3) |
| 3        | 13183       | Gear Cover w/Shelf                                             |
| 4        | 94657       | Flange $\frac{5}{16}$ " x $\frac{7}{16}$ " x $\frac{1}{2}$ "   |
| 5        | 14143       | Flange $\frac{3}{4}$ " x $\frac{7}{8}$ " x $\frac{1}{2}$ "     |
| 6        | 13138       | 122XL Frame (Inc. Ref. 1,2,4,5)                                |

## Wiring Diagram

115V – 60Hz  
100V – 50/60Hz  
(220 – 240V/50Hz)

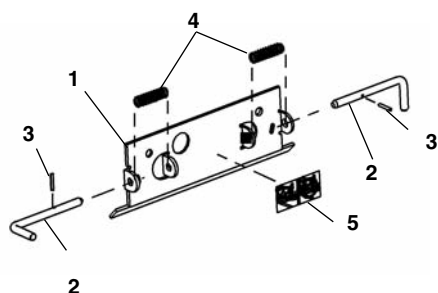




**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                        | Ref. No. | Catalog No. | Description                             |
|----------|-------------|------------------------------------|----------|-------------|-----------------------------------------|
| —        | 58077       | 250 Folding Stand                  | 7        | 48126       | Gas Strut (2)                           |
| —        | 67657       | 250 Folding Stand (North America)  | 8        | 43846       | Wheel (2)                               |
| 1        | 43796       | Rear Bracket (2)                   | 9        | 43856       | Retaining Ring (4)                      |
| 2        | 43866       | Outer Leg Assembly                 | 10       | 43936       | Washer (4)                              |
|          | 70812       | Outer Leg Assembly (North America) | 11       | 23607       | End Cap (2)                             |
| 3        | 70817       | Front Bracket Assembly             | 12       | 43836       | Bolt (2)                                |
| 4        | 43906       | Inner Leg Assembly                 | 13       | 43886       | Washer (4)                              |
| 5        | 43946       | Pin (2)                            | 14       | 43896       | Locking Nut M12 (2)                     |
| 6        | 48146       | Retaining Ring (4)                 | 15       | 67787       | Pressure Plate Assembly (North America) |

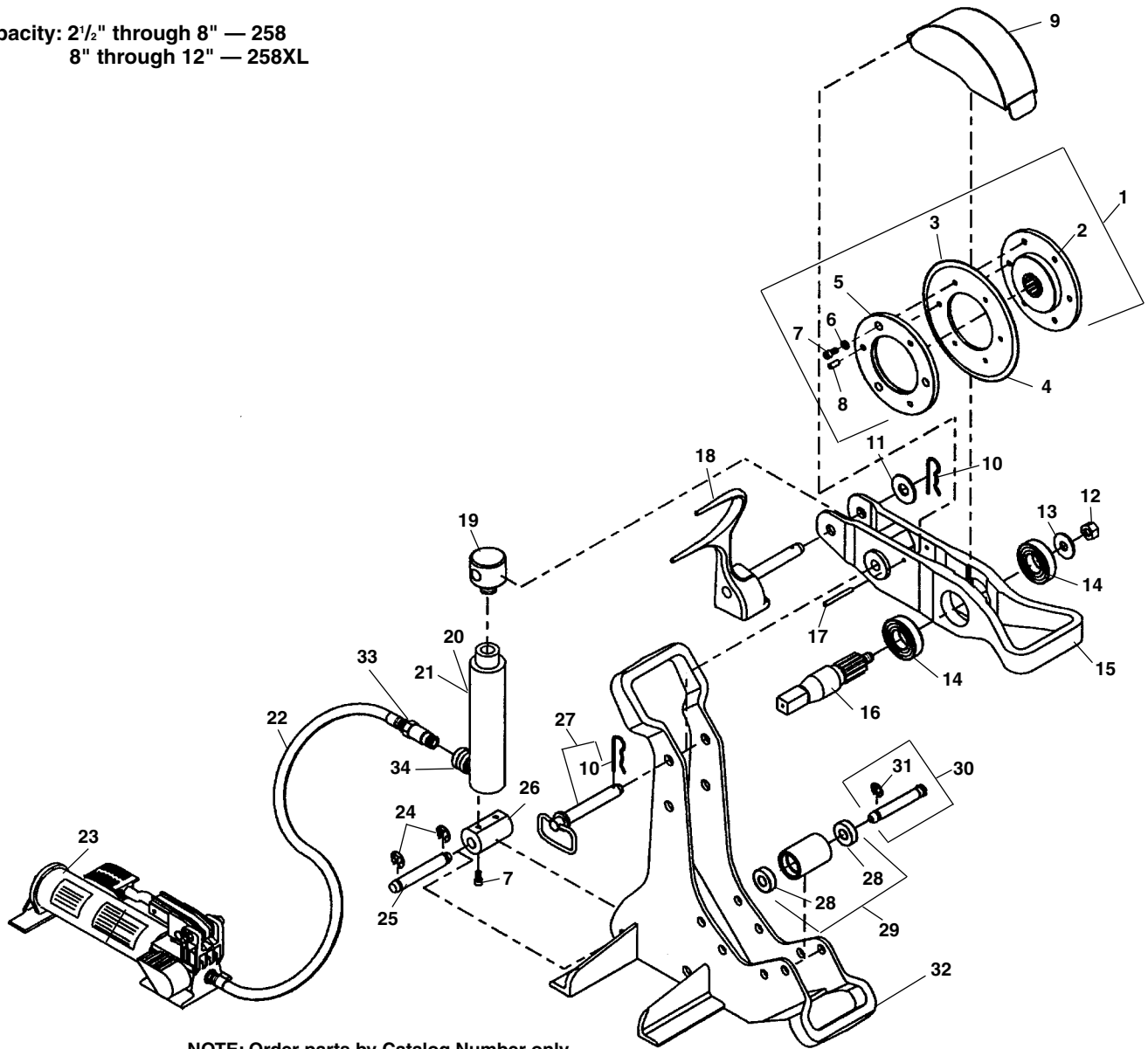
## Front Bracket Assembly



| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 70817       | Front Bracket Assembly |
| 1        | 43806       | Front Bracket          |
| 2        | 43816       | Latch Handle (2)       |
| 3        | 43826       | Roll Pin (2)           |
| 4        | 43926       | Spring (2)             |
| 5        | 43916       | Warning Decal          |

## Frame

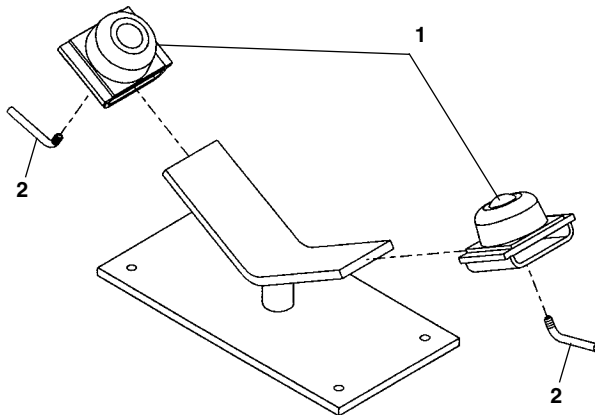
Capacity: 2½" through 8" — 258  
8" through 12" — 258XL



NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                               | Ref. No. | Catalog No. | Description                       |
|----------|-------------|-----------------------------------------------------------|----------|-------------|-----------------------------------|
| —        | 50767       | 258 Pipe Cutter                                           | 18       | 50882       | Reaction Arm (258)                |
| —        | 58227       | 258XL Pipe Cutter                                         | —        | 58887       | Reaction Arm (258XL)              |
| 1        | 66687       | Cutter Wheel Assy. Std.<br>Includes Ref. Nos. 2,3,5,6,7,8 | 19       | 50877       | Top Clevis                        |
| 2        | 50782       | Hub w/Pins                                                | 20       | 59517       | 10 Ton Hyd. Cylinder              |
| 3        | 50812       | Cutter Wheel Std.                                         | 21       | 62557       | Repair Kit f/Cylinder             |
| 4        | 58222       | Cutter Wheel – Thin                                       | 22       | 59507       | Hydraulic Hose                    |
| 5        | 50792       | Cover Plate                                               | 23       | 59512       | HF-32 Foot Pump Incl. Ref. No. 22 |
| 6        | 40770       | Lock Washer 5/16" (5)                                     | 24       | 58850       | E-Clip (2)                        |
| 7        | 50997       | Screw 5/16" x 3/4" (5)                                    | 25       | 54327       | Bottom Clevis Pin                 |
| 8        | 50787       | Pins (3)                                                  | 26       | 50867       | Bottom Clevis                     |
| 9        | 50777       | Guard                                                     | 27       | 50847       | Hitch Pin w/Hairpin (258 Only)    |
| 10       | 50852       | Hairpin Cotter (2)                                        | 28       | 44565       | Ball Bearing (8)                  |
| 11       | 60995       | Flat Washer 3/4" (258XL Only)                             | 29       | 50837       | Roller                            |
| 12       | 50797       | Locking Nut                                               | 30       | 54887       | Roller Pin (4)                    |
| 13       | 41220       | Flat Washer 5/8"                                          | 31       | 42580       | E-Clips (8)                       |
| 14       | 50802       | Ball Bearing (2)                                          | 32       | 50842       | Frame (258)                       |
| 15       | 50807       | Pivot Arm                                                 | —        | 58882       | Frame (258XL)                     |
| 16       | 50827       | Drive Shaft                                               | 33       | 62552       | Hose Half Coupler                 |
| 17       | 27052       | Roll Pin 1/4" x 2 3/8"                                    | 34       | 62547       | Ram Half Coupler                  |

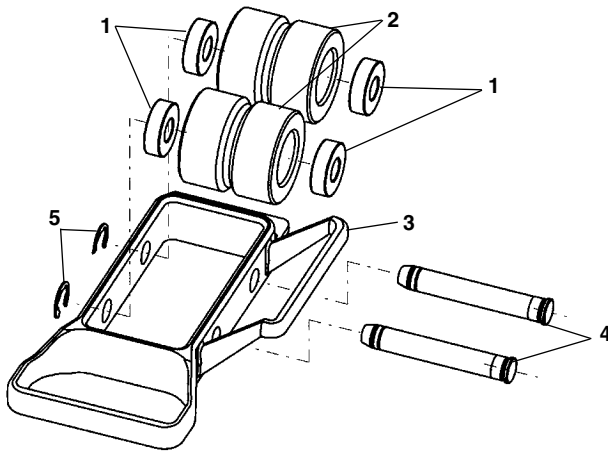
## Pipe Support Assembly



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

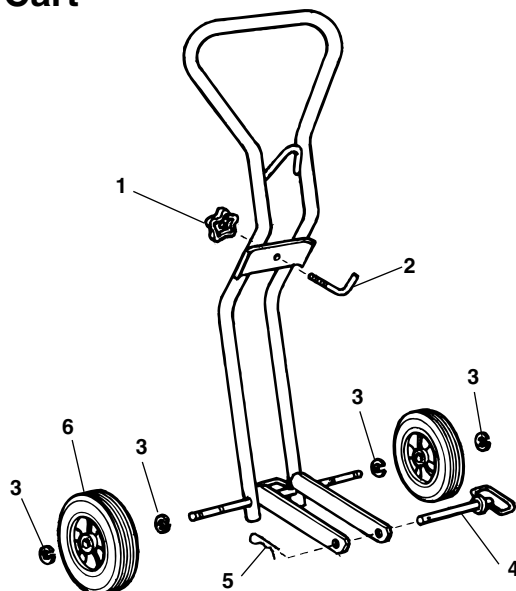
| Ref. No. | Catalog No. | Description                                  |
|----------|-------------|----------------------------------------------|
| —        | 60002       | Pipe Support Assembly                        |
| 1        | 60007       | Ball Transfer Head Set (Includes Ref. No. 2) |
| 2        | 60012       | Locking Rod                                  |

## Pipe Roller Attachment



| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 61757       | Pipe Roller Attachment |
| 1        | 44565       | Ball Bearing (4)       |
| 2        | 62447       | Roller (2)             |
| 3        | 62452       | Frame – Pipe Roller    |
| 4        | 54887       | Roller Pin w/Clip (2)  |
| 5        | 42580       | Pkg. of 5 E-Clips      |

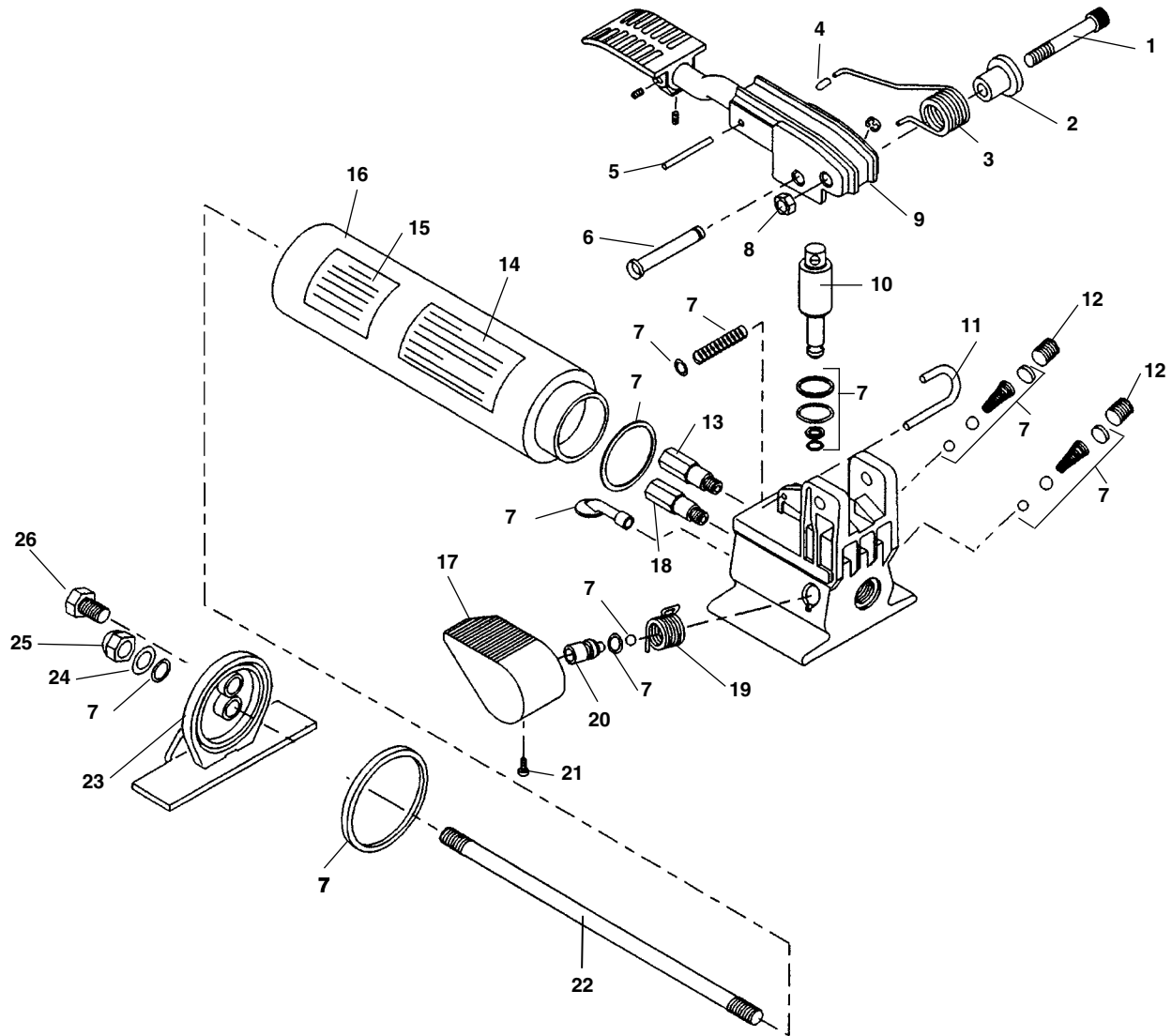
## Transport Cart



| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 54397       | Transport Cart      |
| 1        | 54897       | Knob                |
| 2        | 62642       | Latch Bolt          |
| 3        | 42580       | Pkg. of 5 E-Clips   |
| 4        | 50847       | Hitch Pin w/Hairpin |
| 5        | 50852       | Hairpin Cotter      |
| 6        | 93325       | Wheel (2)           |



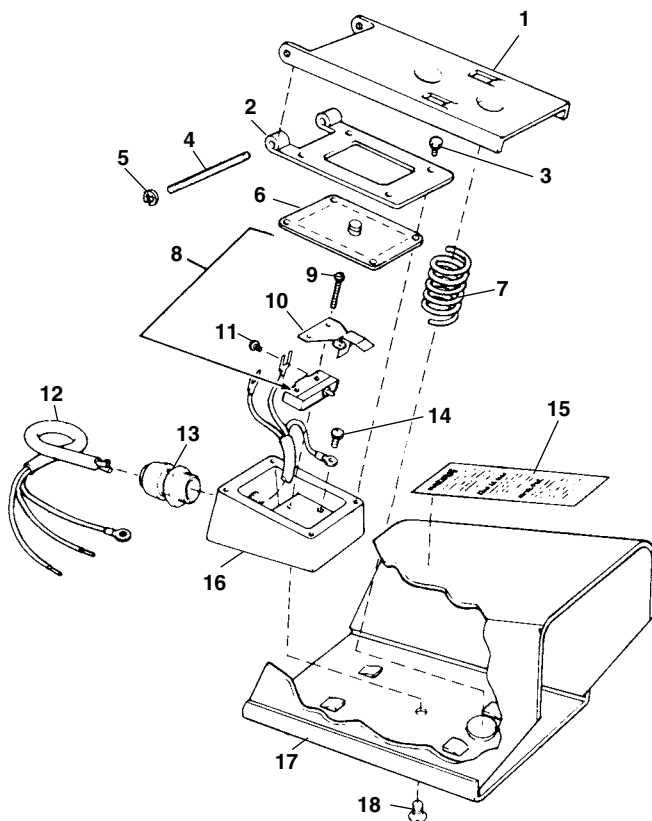
## Hydraulic Foot Pump, HF 32



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description           | Ref. No. | Catalog No. | Description             |
|----------|-------------|-----------------------|----------|-------------|-------------------------|
| —        | 59512       | HF32 Foot Pump        | 14       | 62572       | Decal, HF32 Instruction |
| 1        | 63767       | Socket Head Capscrew  | 15       | 62567       | Decal, HF32/Logo        |
| 2        | 63777       | Spacer                | 16       | 63687       | Reservoir               |
| 3        | 63772       | Torsion Spring        | 17       | 63727       | Release Foot Pedal      |
| 4        | 63787       | Cap                   | 18       | 63757       | Relief Valve Assembly   |
| 5        | 63807       | Pin                   | 19       | 63722       | Release Spring          |
| 6        | 63762       | Cross Pin w/Ret. Ring | 20       | 63737       | Valve Spindle           |
| 7        | 63657       | HF32 Repair Kit       | 21       | 63732       | Screw                   |
| 8        | 63782       | Hex Nut               | 22       | 63692       | Tie Rod                 |
| 9        | 63812       | Foot Pedal            | 23       | 63702       | Reservoir Support       |
| 10       | 63817       | Plunger Assembly      | 24       | 63717       | Pkg. of 2 Washers       |
| 11       | 63747       | Locking Pin           | 25       | 63707       | Acorn Nut               |
| 12       | 63742       | Pipe Plug             | 26       | 63712       | Plug                    |
| 13       | 63752       | By-Pass Valve         |          |             |                         |

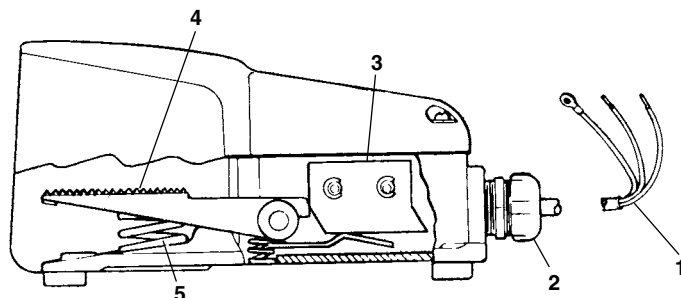
**B-293**  
**B-436**



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

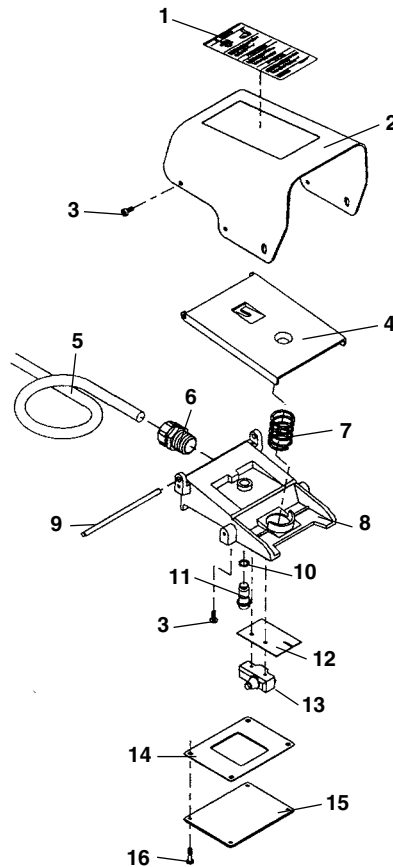
| Ref. No. | Catalog No. | Description                           |
|----------|-------------|---------------------------------------|
| 1        | 83565       | C-546 Foot Pedal                      |
| 2        | 83570       | C-569 Plate                           |
| 3        | 83625       | E-3084 Screw (4)                      |
| 4        | 83580       | E-3058 Pin                            |
| 5        | 78780       | E-3562 Ret. Ring (2)                  |
| 6        | 83590       | E-3050 Diaphragm w/Gasket             |
| 7        | 83615       | E-3051 Spring                         |
| 8        | 83585       | E-2988X Micro Switch                  |
| 9        | 83595       | E-3060 Screw (2)                      |
| 10       | 83575       | E-3031 Actuator Assembly              |
| 11       | 46310       | Screw #6 - 32 x $\frac{3}{16}$ \" (2) |
| 12       | 68880       | D-620 Cord (B-293)                    |
|          | 83605       | D-1297 Cord (B-436)                   |
| 13       | 68885       | E-1511 Cord Connector (B-293)         |
|          | 36732       | E-2668 Cord Connector (B-436)         |
| 14       | 45420       | E-3467 Screw                          |
| 15       | 85940       | E-2220 Warning Label (B-293)          |
|          |             | E-3173 Warning Label (B-436)          |
| 16       | 85935       | C-532 Housing                         |
| 17       | 83560       | B-345 Housing Cover                   |
| 18       | 83610       | E-3095 Screw                          |

**E-2497**  
**301**



| Ref. No. | Catalog No. | Description               |
|----------|-------------|---------------------------|
| 1        | 68880       | D-620 Cord (E-2497)       |
|          | 83600       | D-1221 Cord (301)         |
| 2        | 68885       | E-1511 Connector (E-2497) |
|          | 85565       | E-2668 Connector (301)    |
| 3        | 83940       | E-2900 Micro Switch       |
| 4        | 83945       | E-2901 Treadle            |
| 5        | 83950       | E-3349 Spring             |

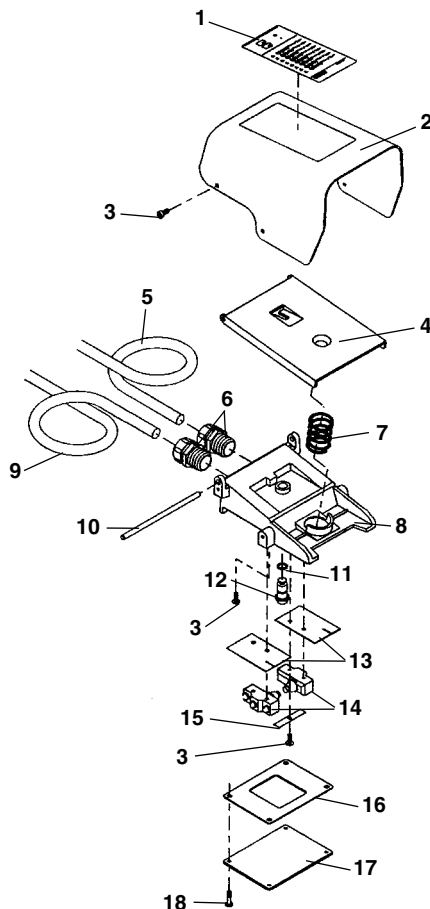
**B-294  
B-295  
301-A  
B-294 HD**



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

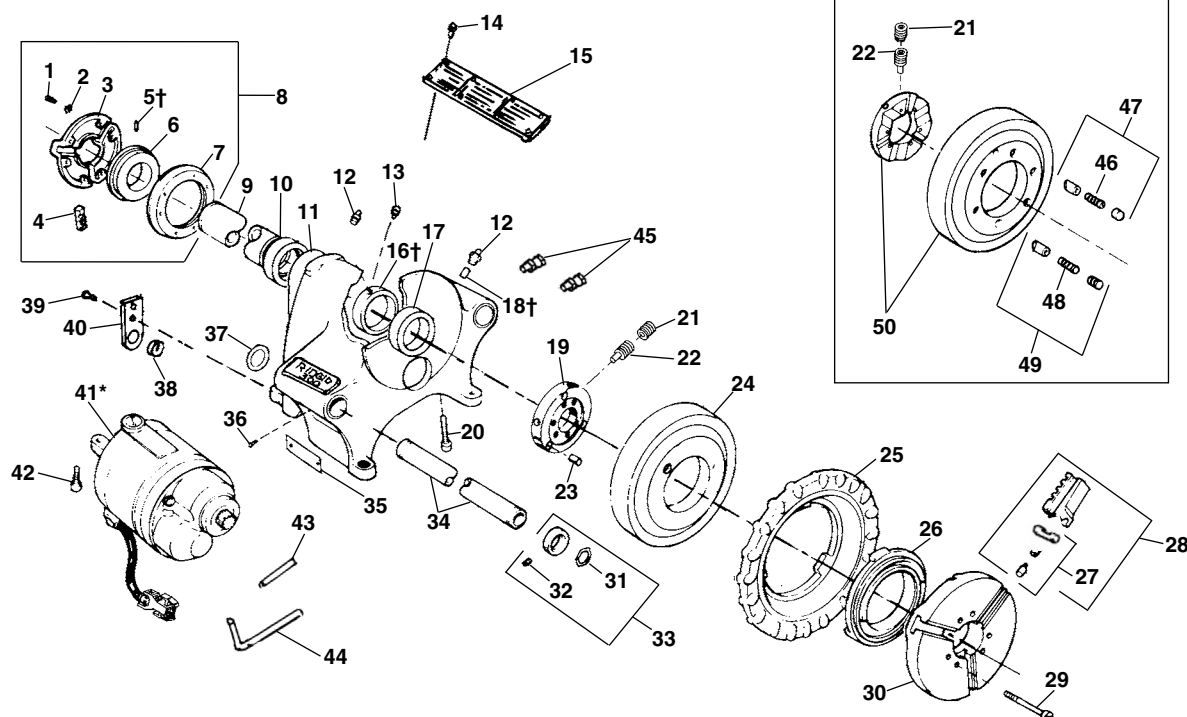
| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| —        | 36642       | B-294 Foot Switch          |
| —        | 36647       | B-295 Foot Switch          |
| —        | 36662       | 301-A Foot Switch          |
| —        | 75962       | B-294 HD Foot Switch       |
| 1        | 36667       | Warning Label (B-294)      |
|          | 36672       | Warning Label (B-295)      |
|          | 36687       | Warning Label (301-A)      |
|          | 76352       | Warning Label (B-294 HD)   |
| 2        | 36692       | Cover                      |
| 3        | 36787       | Screw #10 Self-tapping (5) |
| 4        | 36697       | Foot Pedal                 |
| 5        | 68880       | Cord (B-294)               |
|          | 36712       | Cord (B-295)               |
|          | 36727       | Cord (301-A)               |
|          | 75972       | Cord (B-294 HD)            |
| 6        | 36732       | Cord Connector             |
|          | 75977       | Cord Connector (B-294 HD)  |
| 7        | 36702       | Spring                     |
| 8        | 54347       | Base                       |
| 9        | 36747       | Pivot Pin                  |
| 10       | 36767       | O-Ring                     |
| 11       | 36772       | Poppet                     |
| 12       | 54367       | Insulator                  |
| 13       | 36762       | Micro Switch               |
| 14       | 54372       | Seal                       |
| 15       | 54362       | Bottom Cover               |
| 16       | 54357       | Bottom Cover Screw (4)     |

**B-296  
B-297  
B-298  
B-299**



| Ref. No. | Catalog No. | Description                   |
|----------|-------------|-------------------------------|
| —        | 36652       | B-296 Foot Switch             |
| —        | 36657       | B-297 Foot Switch             |
| —        | 40017       | B-298 Foot Switch (U.K.)      |
| —        | 40022       | B-299 Foot Switch (Australia) |
| 1        | 36677       | Warning Label (B-296)         |
|          | 36682       | Warning Label (B-297)         |
|          | 54392       | Warning Label (B-298)         |
|          | 45017       | Warning Label (B-299)         |
| 2        | 54382       | Cover                         |
| 3        | 36787       | Screw #10 Self-tapping (6)    |
| 4        | 36697       | Foot Pedal                    |
| 5        | 36717       | Cord (B-299)                  |
|          | 18906       | Cord (B-296)                  |
|          | 36722       | Cord (B-297)                  |
|          | 45027       | Cord (B-298)                  |
| 6        | 36732       | Cord Connector (2 )           |
| 7        | 36702       | Spring                        |
| 8        | 54352       | Base                          |
| 9        | 18916       | Line Cord (B-296)             |
|          | 36797       | Line Cord (B-297)             |
|          | 45022       | Line Cord (B-298)             |
|          | 93210       | Line Cord (B-299)             |
| 10       | 36747       | Pivot Pin                     |
| 11       | 36767       | O-Ring                        |
| 12       | 36772       | Poppet                        |
| 13       | 54367       | Insulator (2)                 |
| 14       | 36762       | Micro Switch (2)              |
| 15       | 54377       | Switch Bracket                |
| 16       | 54372       | Seal                          |
| 17       | 54362       | Bottom Cover                  |
| 18       | 54357       | Bottom Cover Screw (4)        |

## Main Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

**For Information on Cutters, Die Heads and Reamers SEE INDEX**

| Ref. No. | Catalog No. | Description                                                                                     | Ref. No. | Catalog No. | Description                               |
|----------|-------------|-------------------------------------------------------------------------------------------------|----------|-------------|-------------------------------------------|
| 1        | 46790       | Screw, 12 - 24 x 3/4" (6)                                                                       | 27       | 44715       | Jaw Insert Set                            |
| 2        | 40270       | Lock Washer (6)                                                                                 |          | 97365       | Jaw Insert Set F/Coated Pipe              |
| 3        | 43735       | Centering Head                                                                                  | 28       | 44090       | Chuck Jaw Set                             |
|          | 19346       | Centering Head (Europe)                                                                         | 29       | 45295       | Screw 5/16" - 18 x 2 3/4" (6)             |
| 4        | 46500       | Rear Jaw (3)                                                                                    | 30       | 43525       | Cap                                       |
| 5†       | 45260       | Step Pin (3)                                                                                    | 31       | 44720       | Snap Ring (2)                             |
| 6        | 44095       | Scroll                                                                                          | 32       | 46050       | Set Screw 1/4" - 18 x 1/4" (2)            |
| 7        | 43740       | Back Plate                                                                                      | 33       | 44725       | Ring Assembly (2)                         |
|          | 19356       | Back Plate (Europe)                                                                             | 34       | 44425       | Support Bar (Incl. Ref. No. 37)           |
| 8        | 44165       | Rear Centering Assembly                                                                         | 35       | 90392       | FOR/OFF/REV Label                         |
| 9        | 44100       | Drive Shaft                                                                                     | 36       | 45280       | Screw #8 - 32 x 5/8" (2)                  |
| 10       | 45335       | Rear Bearing-Bronze                                                                             | 37       | 44525       | Spring Ring (2)                           |
| 11       | 42845       | 300 Body Assembly (Incl. Ref. No. 10, 11, 12, 13, 14, 15, 17, 18, 38, 39, 40)                   | 38       | 46735       | Cord Grommet                              |
|          | 19056       | 300A Body Assy.- Europe (Incl. Ref. No. 10, 11, 12, 13, 14, 15, 17, 18, 38, 39, 40, 43, 44, 45) | 39       | 44735       | Screw 1/4" - 20 x 5/8" (2)                |
|          | 96805       | 300A Body Assy. (Incl. Ref. No. 10, 11, 12, 13, 14, 15, 17, 18, 38, 39, 40, 43, 44, 45)         | 40       | 45825       | Strain Relief Plate                       |
| 12       | 46860       | Grease Fitting                                                                                  | 41*      | 87740       | 3177 Motor 115V (300)                     |
| 13       | 33785       | Set Screw 5/16" - 24 x 1/4" (2)                                                                 |          | 87780       | 3277 Motor 230V (300)                     |
| 14       | 85920       | Pop Rivet (10)                                                                                  |          | 96910       | 3181 Motor 115V (300A)                    |
| 15       | 88690       | Warning Plate                                                                                   |          | 96975       | 3281 Motor 230V (300A)                    |
| 16†      | 45345       | Thrust Ring                                                                                     |          | 61202       | 3177-CE Motor 115V (300CE)                |
| 17       | 45270       | Front Bearing                                                                                   |          | 61207       | 3277-CE Motor 230V (300CE)                |
| 18†      | 45310       | Split Roll Pin                                                                                  |          | 61192       | 3181-CE Motor 115V (300A CE)              |
| 19       | 30027       | Drive Ring, Type II                                                                             |          | 61197       | 3281-CE Motor 230V (300A CE)              |
| 20       | 46035       | Screw 5/16" - 18 x 1 3/4"                                                                       | 42       | 46745       | Screw 3/8" - 16 x 1 1/4" (2)              |
| 21       | 45300       | Set Screw 5/16" - 24 x 1/4" (2)                                                                 | 43       | 96850       | Tubing (300A)                             |
| 22       | 45265       | Set Screw 5/16" - 24 x 1/2" (3)                                                                 | 44       | 96855       | Tubing (300A)                             |
| 23       | 30022       | Drive Pin, Type II (3)                                                                          | 45       | 96860       | Bulkhead Union (2) (300A)                 |
| 24       | 30017       | Ring Gear, Type II                                                                              | 46       | 44310       | Drive Spring (3)                          |
| 25       | 89150       | Hand Wheel                                                                                      | 47       | 91552       | Drive Wedge Kit                           |
| 26       | 43540       | Scroll                                                                                          | 48       | 45285       | Pressure Spring (3)                       |
|          |             |                                                                                                 | 49       | 91557       | Plunger Kit                               |
|          |             |                                                                                                 | 50       | 91562       | Conversion Kit (Includes Ref. Nos. 19-24) |

\* Refer to Motor Model No. for Component Parts

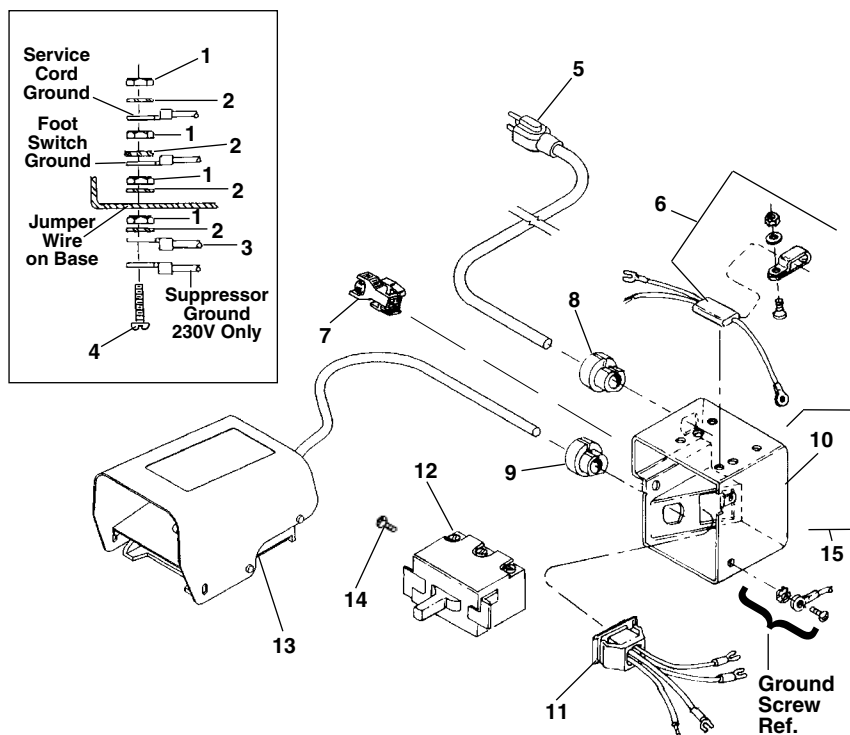
### Service Notes:

†Ref. 5 Stop Pins are easily removed by pushing from inside to outside.

†Ref. 18 Before removing front bearing sleeve (Ref. No. 17), dowel pin and grease fitting must be pushed out from inside.

†Ref. 16 Position thrust ring so that offset screw holes are closer to chuck.

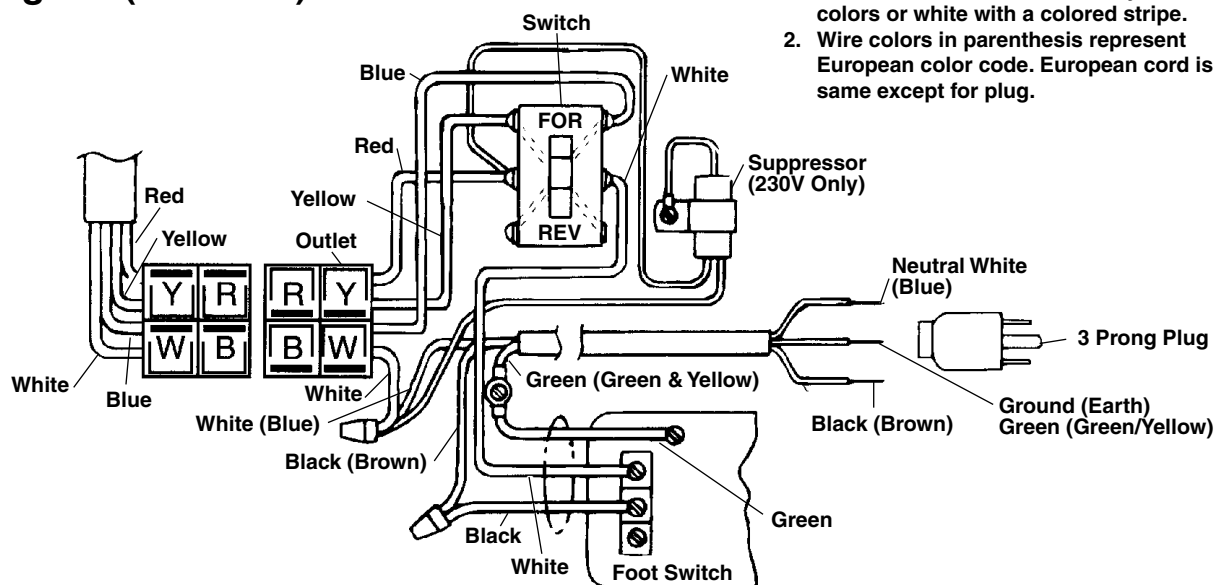
## Electrical Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                 |
|----------|-------------|---------------------------------------------|
| 1        | 44695       | Hex Nut #10 - 24 (4)                        |
| 2        | 46985       | Ext. Tooth Washer #10 (4)                   |
| 3        | 85925       | Jumper Wire                                 |
| 4        | 92455       | Screw #10 - 24 x 3/4"                       |
| 5        | 46740       | Power Cord w/Plug (115V)                    |
|          | 46410       | Power Cord w/Plug (230V)                    |
|          | 75045       | Power Cordless Plug (230V Europe/S. Africa) |
| 6        | 46320       | Suppressor Kit (230V Europe)                |
|          | 99170       | Suppressor (230V S. Africa)                 |
| 7        | 50552       | Plug                                        |
| 8        | 46735       | Cord Grommet                                |
|          | 46730       | Cord Grommet (230V Europe/S. Africa)        |
| 9        | 46735       | Cord Grommet                                |
| 10       | 50612       | Switch Box                                  |
| 11       | 50617       | Outlet Jumper Assembly                      |
| 12       | 44505       | Switch                                      |
| 13       | 36642       | B-294 Foot Switch                           |
| 14       | 45405       | Screw                                       |
| 15       | 91187       | Switch Box Kit (Includes Ref. Nos. 7-11)    |

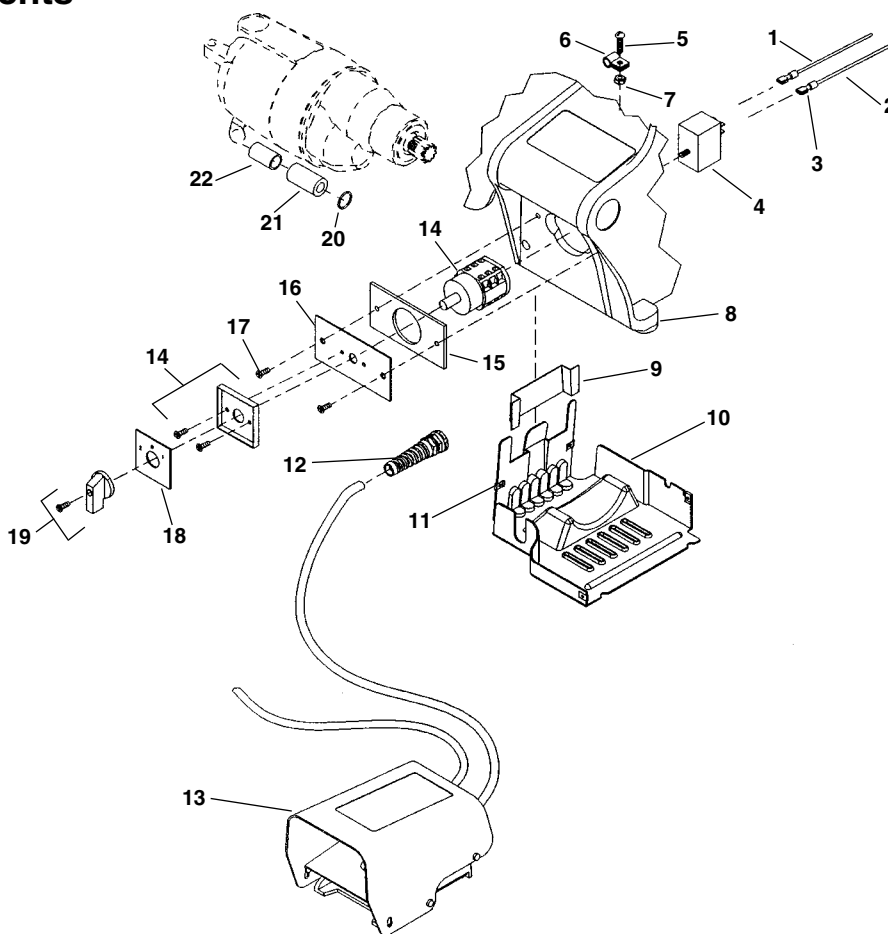
## Wiring Diagram (115/230V)



1. Brush and Armature Leads may be solid colors or white with a colored stripe.
2. Wire colors in parenthesis represent European color code. European cord is the same except for plug.

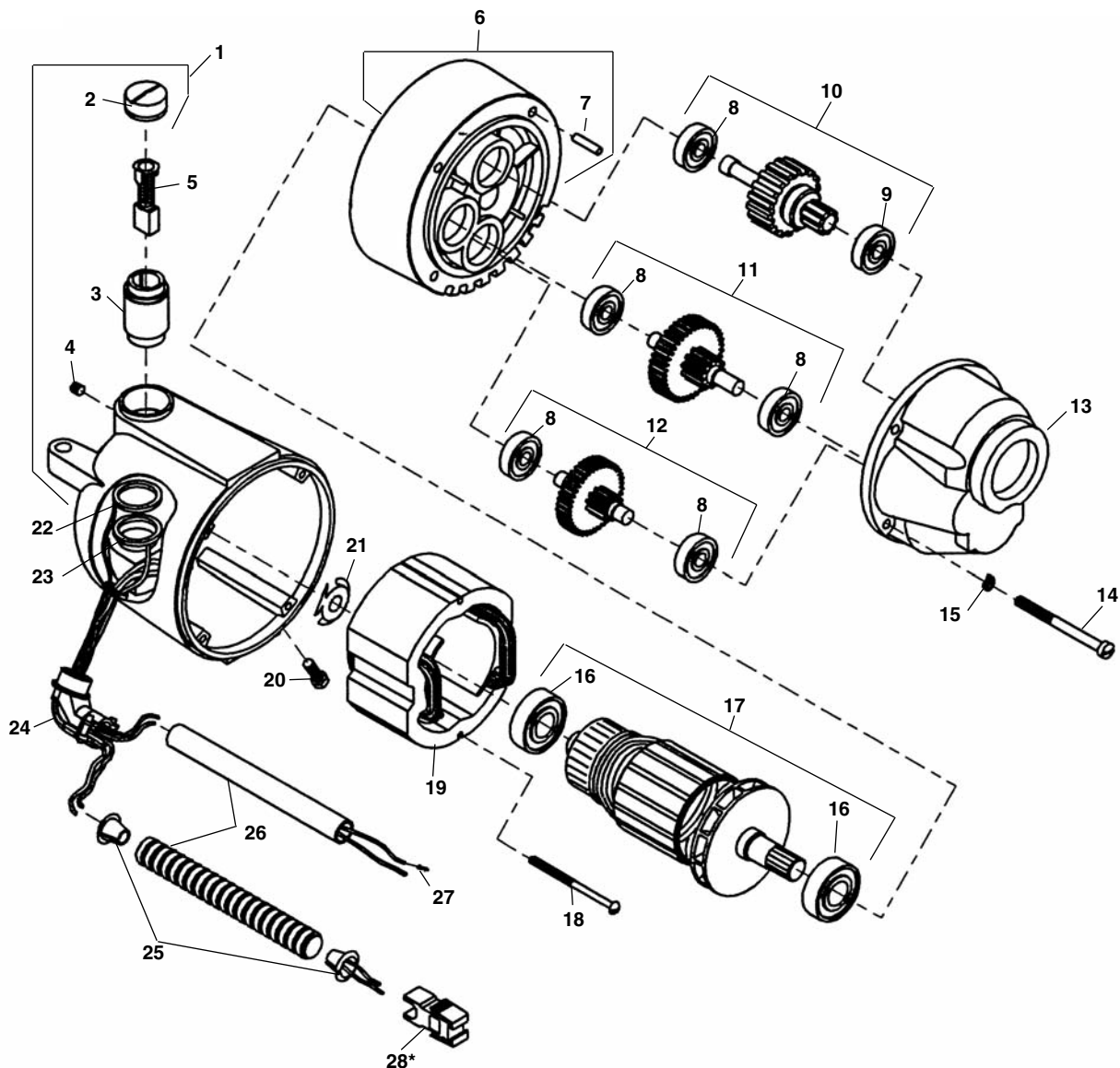
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| <b>Ref.<br/>No.</b> | <b>Catalog<br/>No.</b> | <b>Description</b>              |
|---------------------|------------------------|---------------------------------|
| 1                   | 63387                  | Brown Lead Wire                 |
| 2                   | 63392                  | Blue Lead Wire                  |
| 3                   | 62027                  | Quick Disconnect Terminal (4)   |
| 4                   | 63372                  | Suppressor                      |
| 5                   | 92455                  | 10 - 24 x $\frac{3}{4}$ " Screw |
| 6                   | 54222                  | Cord Clamp                      |
| 7                   | 44695                  | Nut                             |
| 8                   | 63417                  | Base                            |
| 9                   | 64067                  | Shield                          |
| 10                  | 64062                  | Bottom Cover                    |
| 11                  | 43362                  | "J" Clips (6)                   |
| 12                  | 54177                  | Strain Relief                   |
| 13                  | 36652                  | B- 296 Foot Switch Assembly     |
| 14                  | 54157                  | Switch                          |
| 15                  | 64052                  | Switch Plate                    |
| 16                  | 64057                  | Switch Gasket                   |
| 17                  | 41597                  | 12 - 24 x $\frac{3}{4}$ " Screw |
| 18                  | 57517                  | Switch Face Plate               |
| 19                  | 61397                  | Switch Knob                     |
| 20                  | 64467                  | Cable Tie                       |
| 21                  | 46880                  | Plastic Tube                    |
| 22                  | 63377                  | Ferrite Bead                    |





3177  
3277  
3177-CE  
3277-CE



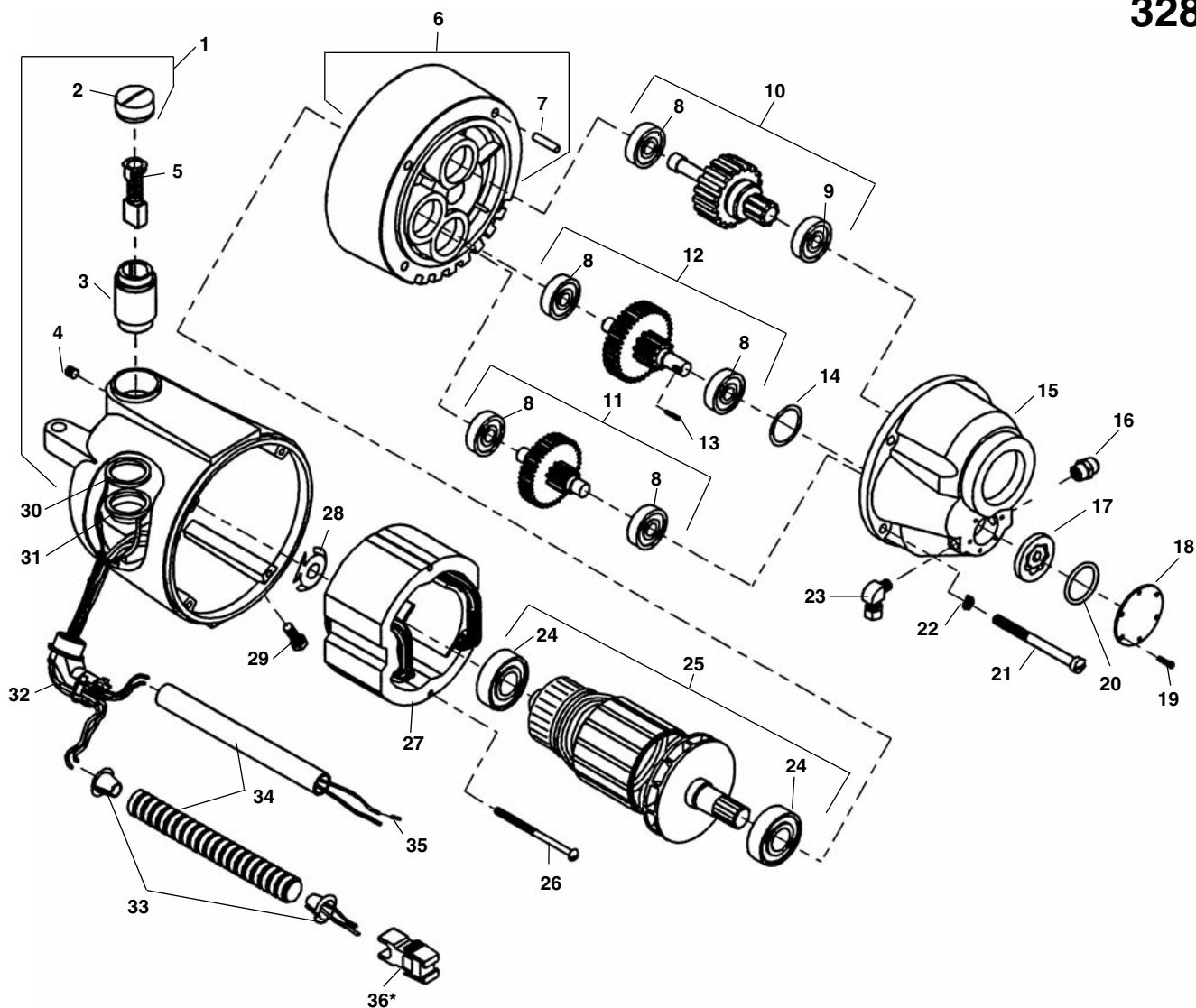
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description                               |
|----------|-------------|----------------------|----------|-------------|----------------------|----------|-------------|-------------------------------------------|
| †        | 87740       | 3177 Motor 115V      | 10       | 45370       | Drive Gear           | 20       | 83500       | Locking Screw                             |
| †        | 87780       | 3277 Motor 230V      | 11       | 44985       | 1st Gear Assembly    | 21       | 44580       | Loading Spring                            |
| †        | 61202       | 3177-CE Motor 115V   | 12       | 45005       | 2nd Gear Assembly    | 22       | 86680       | White Upper Lead                          |
| †        | 61207       | 3277-CE Motor 230V   | 13       | 42875       | Gear Housing         | 23       | 86685       | Red Lower lead                            |
| 1        | 43160       | Housing Assembly     | 14       | 45075       | Screw (4)            | 24       | 46900       | Connector 90 Degree                       |
| 2        | 44545       | Brush Cap Set        | 15       | 45150       | Lock Washer          | 25       | 46890       | E-918 Insulator (2)                       |
| 3        | 45025       | Brush Holder Set     | 16       | 44565       | Armature Bearing (2) | 26       | 47407       | Flexible Conduit                          |
| 4        | 39770       | Set Screw (2)        | 17       | 44010       | Armature (115V)      |          | 46880       | Plastic Tube (CE Only)                    |
| 5        | 44540       | Brush Assembly Set   |          | 44030       | Armature (230V)      | 27       | 88402       | Wire Terminal (4) (CE Only)               |
| 6        | 43165       | Fan Housing Assembly | 18       | 44555       | Mounting Screw (2)   | 28*      | 50552       | Plug (Included in Switch Box Assy. 91187) |
| 7        | 45165       | Dowel Pin            | 19       | 44015       | Field (115V)         |          |             |                                           |
| 8        | 45060       | Gear Bearings (5)    |          | 44035       | Field (230V)         |          |             |                                           |
| 9        | 45315       | Front Bearing        |          |             |                      |          |             |                                           |

† Refer to Speed Change Chart for Optional Speeds on Page 25



**3181**  
**3281**  
**3181-CE**  
**3281-CE**



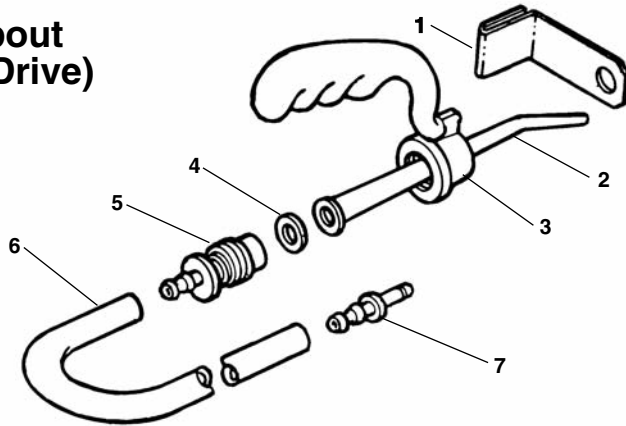
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description                               |
|----------|-------------|----------------------|----------|-------------|----------------------|----------|-------------|-------------------------------------------|
| †        | 96810       | 3181 Motor 115V      | 12       | 45005       | 2nd Gear Assembly    | 26       | 44555       | Mounting Screw (2)                        |
| †        | 96975       | 3281 Motor 230V      | 13       | 96885       | Pin                  | 27       | 44015       | Field (115V)                              |
| †        | 61197       | 3181-CE Motor 115V   | 14       | 96880       | Oil Seal             |          | 44035       | Field (230V)                              |
| †        | 61192       | 3281-CE Motor 230V   | 15       | 96830       | Gear Housing         | 28       | 44580       | Loading Spring                            |
| 1        | 43160       | Housing Assembly     | 16       | 46830       | Male Connector       | 29       | 83500       | Locking Screw (2)                         |
| 2        | 44545       | Brush Cap Set        | 17       | 96870       | Gerotor Set          | 30       | 86680       | White Upper Lead                          |
| 3        | 45025       | Brush Holder Set     | 18       | 96840       | Cover Plate          | 31       | 86685       | Red Lower lead                            |
| 4        | 39770       | Set Screw (2)        | 19       | 96890       | Screw (6)            | 32       | 46900       | Connector 90                              |
| 5        | 44540       | Brush Assembly Set   | 20       | 96875       | O Ring               | 33       | 46890       | E-918 Insulator (2)                       |
| 6        | 43165       | Fan Housing Assembly | 21       | 45075       | Screw (4)            | 34       | 47407       | Flexible Conduit                          |
| 7        | 45165       | Dowel Pin            | 22       | 45150       | Lock Washer          |          | 46880       | Plastic Tube (CE Only)                    |
| 8        | 45060       | Gear Bearings (5)    | 23       | 96910       | Male Elbow           | 35       | 88402       | Wire Terminal (4) (CE Only)               |
| 9        | 45315       | Front Bearing        | 24       | 44565       | Armature Bearing (2) | 36*      | 50552       | Plug (Included in Switch Box Assy. 91187) |
| 10       | 45370       | Drive Gear           | 25       | 44010       | Armature (115V)      |          |             |                                           |
| 11       | 97000       | 1st Gear Assembly    |          | 44030       | Armature (230V)      |          |             |                                           |

† Refer to Speed Change Chart for Optional Speeds on Page 25

**309**  
**330**  
**331**

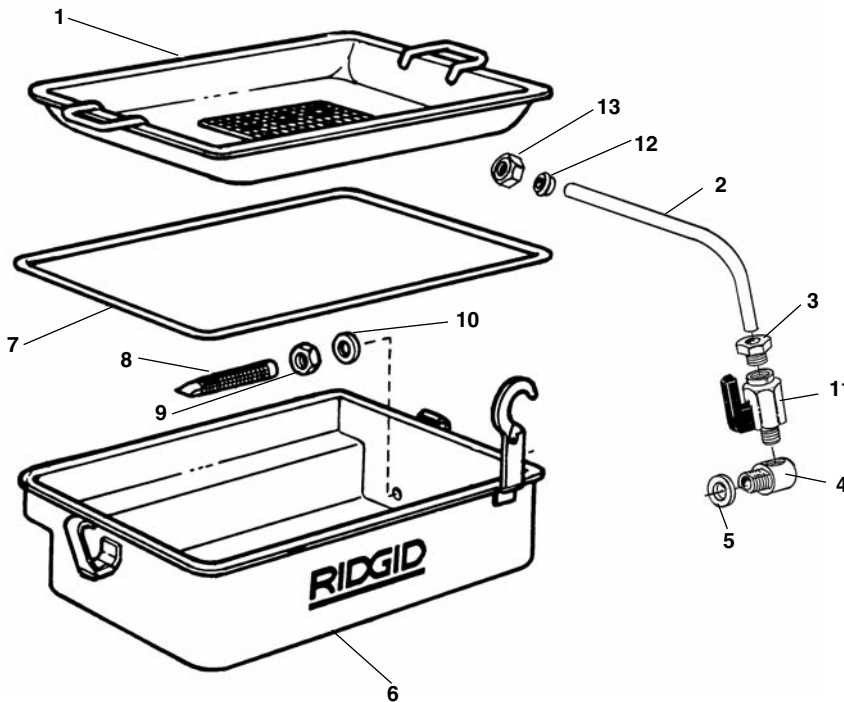
## No. 309 Oil Spout (300A Power Drive)



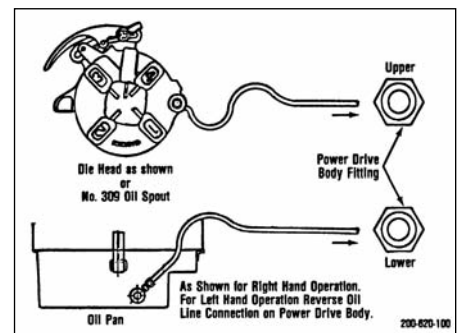
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| <b>Ref.<br/>No.</b> | <b>Catalog<br/>No.</b> | <b>Description</b>     |
|---------------------|------------------------|------------------------|
| —                   | 97090                  | 309 Oil Spout          |
| 1                   | 97110                  | Spout Bracket Assembly |
| 2                   | 97095                  | Oil Spout              |
| 3                   | 41690                  | Handle                 |
| 4                   | 41715                  | Spout Washer           |
| 5                   | 97100                  | Handle Adapter         |
| 6                   | 97195                  | Hose                   |
| 7                   | 97105                  | Hose Adapter           |

## No. 330 Oil Pan (300A Power Drive)



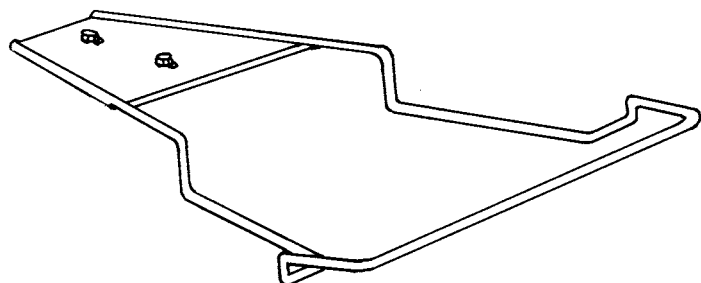
| <b><u>Ref.</u></b> | <b><u>Catalog</u></b> | <b><u>Description</u></b> |
|--------------------|-----------------------|---------------------------|
| —                  | 97245                 | 330 Oil Pan and Chip Tray |
| 1                  | 96925                 | Chip Pan Assembly         |
| 2                  | 19946                 | 300 Oil Line              |
| 3                  | 96930                 | Union                     |
| 4                  | 41705                 | Coupling                  |
| 5                  | 41780                 | Washer                    |
| 6                  | 96920                 | Oil Pan Assembly          |
| 7                  | 96905                 | Gasket                    |
| 8                  | 41765                 | Strainer                  |
| 9                  | 40640                 | Hex Jam Nut               |
| 10                 | 41790                 | Washer                    |
| 11                 | 19936                 | Valve (Europe)            |
| —                  | 26846                 | Bolt (Europe) (Not Shown) |
| 12                 | 19966                 | Ferrule                   |
| 13                 | 19956                 | Nut                       |



# No. 331 Oil Pan Support Tray

## Catalog No. 97250

### (300A Power Drive)

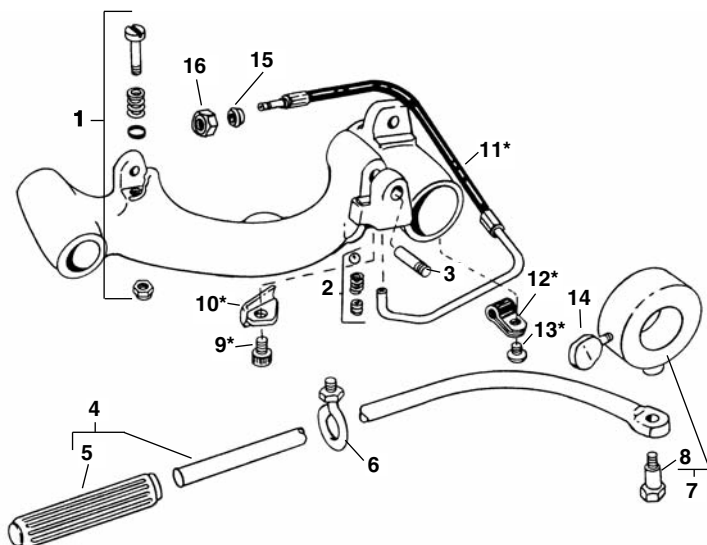


**No. 311 Carriage w/Lever** (200, 300 Power Drive)

**No. 311A Carriage w/Lever** (300A, 304 Retrofit)

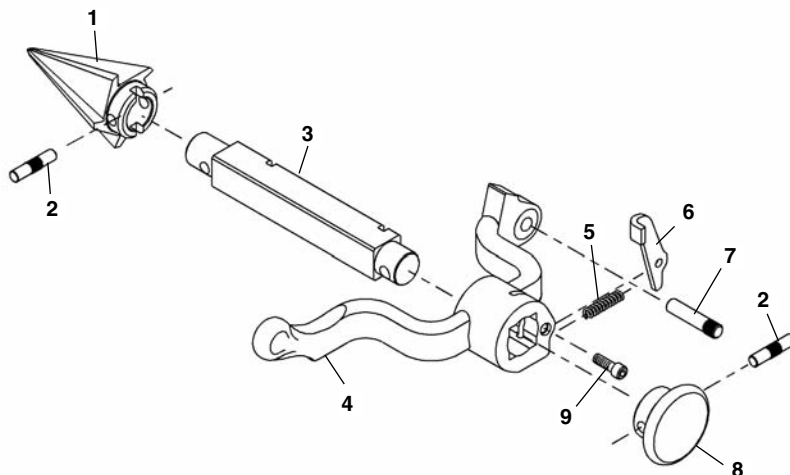
**311**  
**311A**  
**341**  
**360**

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**



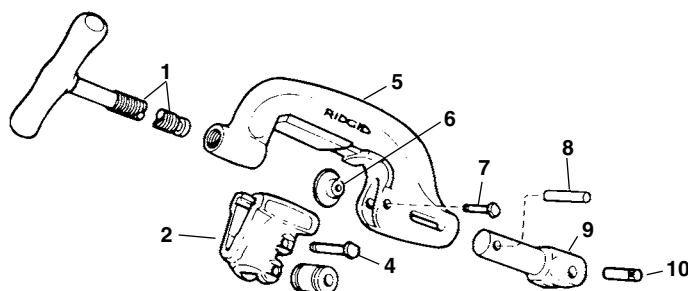
| Ref. No. | Catalog No. | Description                                |
|----------|-------------|--------------------------------------------|
| —        | 68815       | 311 Carriage w/Lever                       |
| —        | 96945       | 311A Carriage w/Lever                      |
| —        | 42385       | 312 Lever Kit (incl. Ref. No. 4, 6, 7, 14) |
| 1        | 45515       | Stop Bolt Assembly                         |
| 2        | 46810       | Detente Assembly                           |
| 3        | 47065       | Reamer Hinge Pin                           |
| 4        | 43400       | Lever Arm Assembly                         |
| 5        | 46235       | Handgrip                                   |
| 6        | 46205       | Eye Bolt Assembly                          |
| 7        | 46215       | Collar Assembly                            |
| 8        | 46210       | Shoulder Bolt                              |
| 9        | 96900       | Screw                                      |
| 10       | 96970       | Oil Line Cover                             |
| 11       | 96965       | Hose Assembly                              |
|          | 19336       | Hose Assembly (Europe)                     |
| 12       | 96895       | Clamp                                      |
| 13       | 96915       | Screw                                      |
| 14       | 46220       | Thumbcrew                                  |
| 15       | 19966       | Ferrule                                    |
| 16       | 19956       | Nut                                        |

## No. 341 Reamer



| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 42365       | 341 Reamer Complete    |
| 1        | 36277       | Cone (R.H.)            |
|          | 46660       | Cone (L.H. & R.H.)     |
| 2        | 47155       | Pin                    |
| 3        | 43790       | Reamer Bar             |
| 4        | 43230       | Reamer Arm             |
| 5        | 44700       | Latch Spring           |
| 6        | 46665       | Reamer Latch           |
| 7        | 47065       | Hinge Pin              |
| 8        | 46585       | Reamer Knob            |
| 9        | 46515       | Screw 1/4" - 20 x 3/4" |

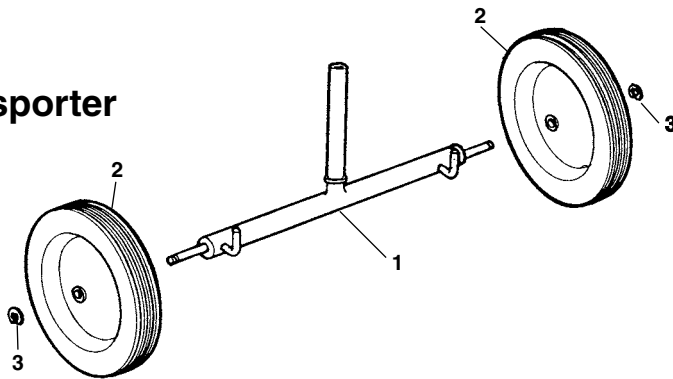
## No. 360 Cutter



| Ref. No. | Catalog No. | Description           |
|----------|-------------|-----------------------|
| —        | 42370       | 360 Cutter Complete   |
| 1        | 43625       | Screw Handle          |
| 2        | 33400       | Roll Housing Assembly |
| 3        | 34305       | Roll (2)              |
| 4        | 34310       | Roll Pin (2)          |
| 5        | 43595       | Cutter Frame          |
| 6        | 33100       | Cutter Wheel Thin     |
|          | 33105       | Cutter Wheel H.D.     |
|          | 44185       | Cutter Wheel Std.     |
| 7        | 34780       | Wheel Pin             |
| 8        | 45435       | Retaining Pin         |
| 9        | 45505       | Support Arm           |
| 10       | 45520       | Pin                   |

32  
1452  
1206

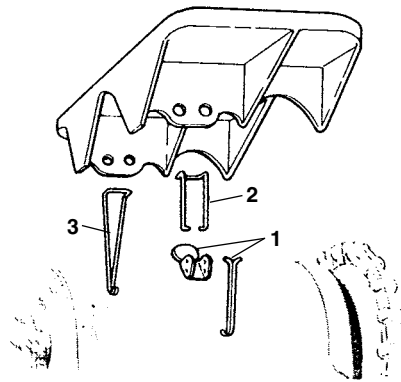
### No. 32 Transporter



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

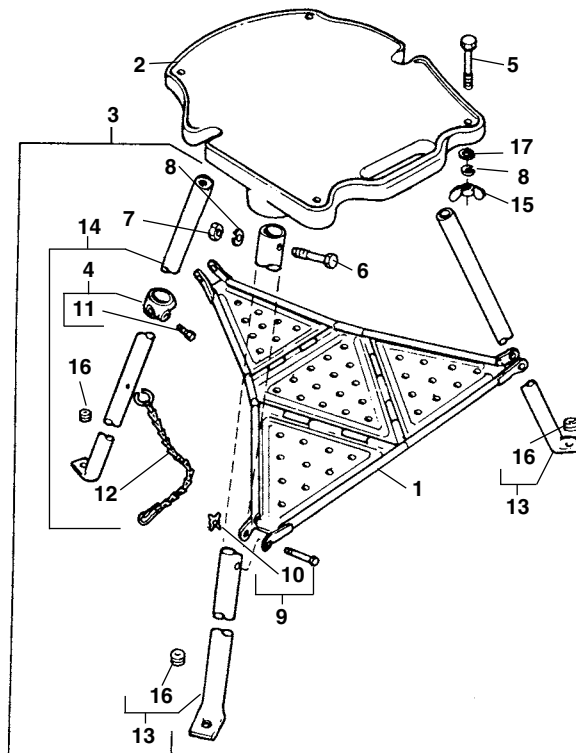
| Ref. No. | Catalog No. | Description                  |
|----------|-------------|------------------------------|
| —        | 42575       | No. 32 Transporter           |
| 1        | 42590       | Axle & Support Tube Assembly |
| 2        | 42585       | Wheel (2)                    |
| 3        | 42580       | Retaining Ring (2)           |

### No. 1452 Clip-On Tool Tray



| Ref. No. | Catalog No. | Description               |
|----------|-------------|---------------------------|
| —        | 22638       | No. 1452 Tool Tray        |
| 1        | 45535       | Hook & Lever Assembly     |
| 2        | 45540       | Top Hook                  |
| 3        | 45545       | Side Hook                 |
| 4        | 78367       | Warning Decal (Not Shown) |

### No. 1206 Stand



| Ref. No. | Catalog No. | Description                                             |
|----------|-------------|---------------------------------------------------------|
| —        | 42360       | 1206 Stand Complete                                     |
| —        | 83540       | 1206 Stand Export                                       |
| 1        | 43475       | B-547 Tool Tray                                         |
| 2        | 42870       | B-1058 Base                                             |
| 3        | 42990       | B-1983-X Tray & Leg Assembly                            |
| 4        | 41235       | D-488-X Tray Support                                    |
| 5        | 46670       | E-867 Bolt $\frac{3}{8}$ " - 16 x 2" (4)                |
| 6        | 46675       | E-868 Bolt $\frac{3}{8}$ " - 16 x 2 $\frac{3}{4}$ " (3) |
| 7        | 44225       | E-1094 Nut $\frac{3}{8}$ " - 16 (3)                     |
| 8        | 40930       | E-1095 Lock Washer $\frac{3}{8}$ " (7)                  |
| 9        | 41265       | E-1375-X Pin w/Washer (1 $\frac{7}{8}$ " Long)          |
| 9        | 89720       | E-10396-X Pin w/Washer (1 $\frac{5}{8}$ " Long)         |
| 10       | 41270       | E-1377 X-Washer (6)                                     |
| 11       | 41245       | E-1380 Set Screw $\frac{3}{8}$ " - 16 x 1"              |
| 12       | 40945       | E-1444-X Chain Assembly                                 |
| 13       | 45325       | E-1336-X Front Leg (2)                                  |
| 14       | 45330       | E-3237-X Rear Leg                                       |
| 15       | 45385       | E-3328 Wing Nut $\frac{3}{8}$ " - 16 (4)                |
| 16       | 40940       | F-532 Grommet (3)                                       |
| 17       | 44230       | E-1096 Washer $\frac{3}{8}$ " (4)                       |

### SPEED CHANGE GEAR CHART MACHINE MODEL NO. 300 MOTORS

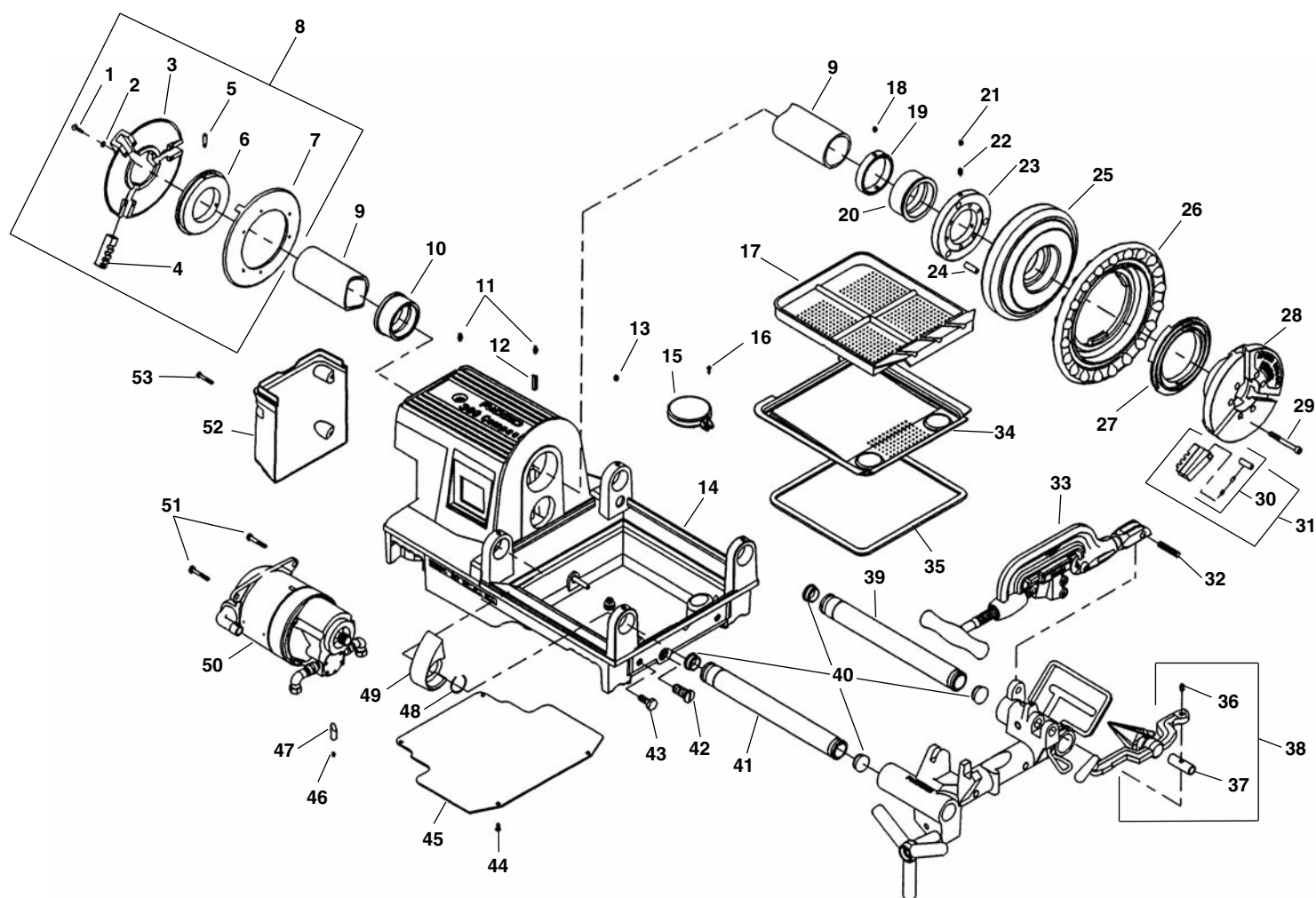
| Catalog Number                   | Model No.                          | Volts                        | Spindle Speed | Ref. #17 Armature | Ref. No. 11 - 1st Intermediate Gear Assembly             | Ref. No. 12 - 2nd Intermediate Gear Assembly             | Ref. No. 10 Drive Gear                |
|----------------------------------|------------------------------------|------------------------------|---------------|-------------------|----------------------------------------------------------|----------------------------------------------------------|---------------------------------------|
| 87740<br>87780<br>61202<br>61207 | 3177<br>3277<br>3177-CE<br>3277-CE | 115V<br>230V<br>115V<br>230V | 38 STD.       | Pinion - 14 T.    | CAT. NO. 44985<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | CAT. NO. 45005<br>(E-2601-X)<br>42 T. GEAR 13 T. PINION  | CAT. NO. 45370<br>(E-3283-X)<br>48 T. |
| 87750<br>87790                   | 3177A<br>3277A                     | 115V<br>230V                 | 57 STD.       |                   | CAT. NO. 44985<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | CAT. NO. 44990<br>(E-2601-AX)<br>42 T. GEAR 18 T. PINION | CAT. NO. 45375<br>(E-3284-X)<br>43 T. |
| 87760<br>87800                   | 3177B<br>3277B                     | 115V<br>230V                 | 77            |                   | CAT. NO. 44975<br>(E-2600-BX)<br>51 T. GEAR 15 T. PINION | CAT. NO. 44995<br>(E-2601-BX)<br>39 T. GEAR 18 T. PINION | CAT. NO. 45375<br>(E-3284-X)<br>43 T. |
| 87770<br>87810                   | 3177C<br>3277C                     | 115V<br>230V                 | 108           |                   | CAT. NO. 44980<br>(E-2600-CX)<br>51 T. GEAR 19 T. PINION | CAT. NO. 45000<br>(E-2601-CX)<br>35 T. GEAR 18 T. PINION | CAT. NO. 45375<br>(E-3284-X)<br>43 T. |

### SPEED CHANGE GEAR CHART MACHINE MODEL NO. 300A MOTORS

| Catalog No.                      | Model No.                          | Volts                        | Spindle Speed | Ref. #17 Armature | Ref. No. 11 - 1st Intermediate Gear Assembly             | Ref. No. 12 - 2nd Intermediate Gear Assembly             | Ref. No. 10 Drive Gear                |
|----------------------------------|------------------------------------|------------------------------|---------------|-------------------|----------------------------------------------------------|----------------------------------------------------------|---------------------------------------|
| 96810<br>96975<br>61192<br>91197 | 3181<br>3281<br>3181-CE<br>3281-CE | 115V<br>230V<br>115V<br>230V | 38 STD.       | Pinion - 14 T.    | CAT. NO. 97000<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | CAT. NO. 45005<br>(E-2601-X)<br>42 T. GEAR 13 T. PINION  | CAT. NO. 45370<br>(E-3283-X)<br>48 T. |
| 96815<br>96980                   | 3181A<br>3281A                     | 115V<br>230V                 | 57 STD.       |                   | CAT. NO. 97000<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | CAT. NO. 44990<br>(E-2601-AX)<br>42 T. GEAR 18 T. PINION | CAT. NO. 45375<br>(E-3284-X)<br>43 T. |
| 96820<br>96985                   | 3181B<br>3281B                     | 115V<br>230V                 | 77            |                   | CAT. NO. 97005<br>(E-2600-BX)<br>51 T. GEAR 15 T. PINION | CAT. NO. 44995<br>(E-2601-BX)<br>39 T. GEAR 18 T. PINION | CAT. NO. 45375<br>(E-3284-X)<br>43 T. |



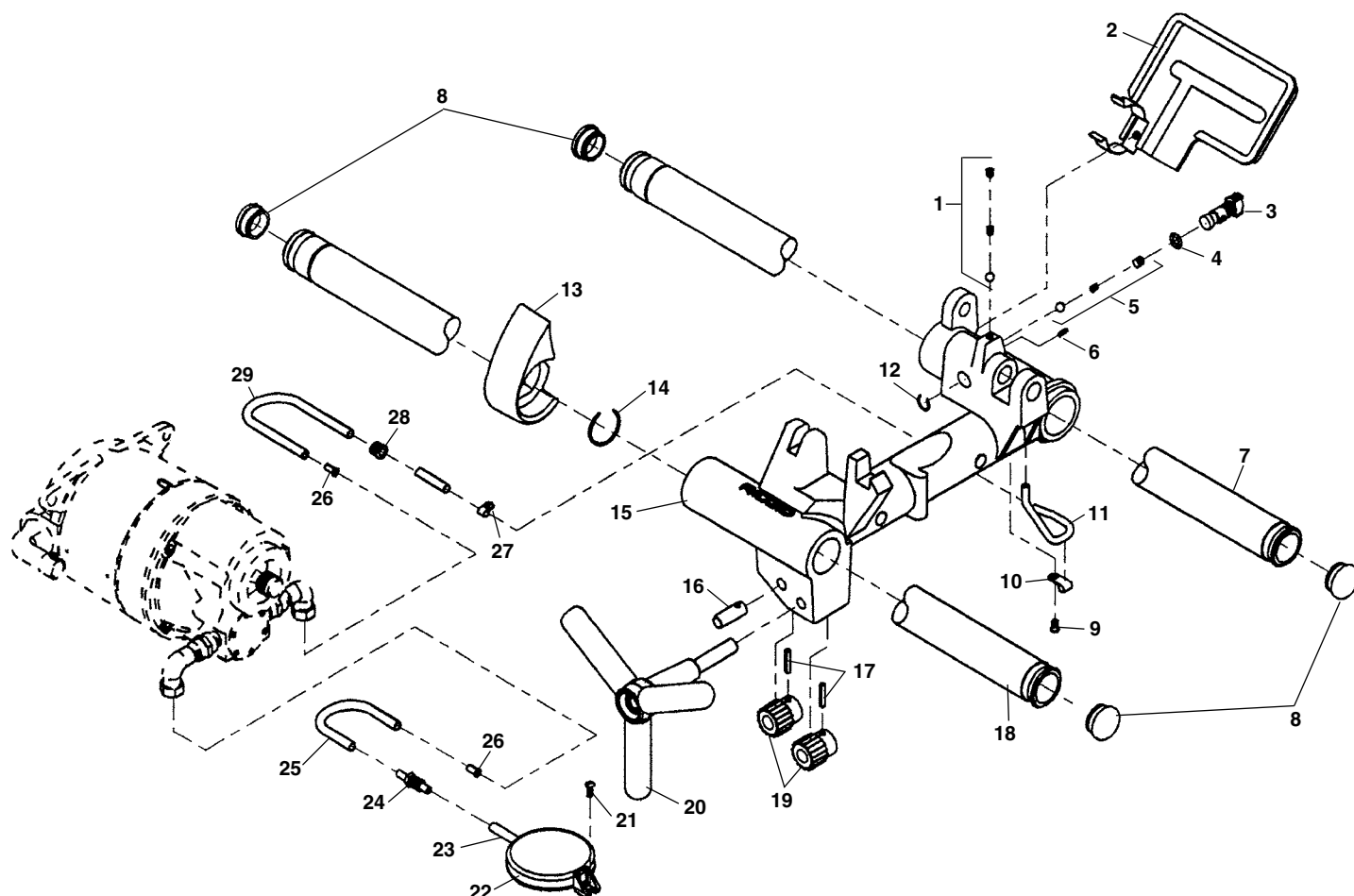
## Main Drive Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                      | Ref. No. | Catalog No. | Description                      |
|----------|-------------|----------------------------------|----------|-------------|----------------------------------|
| 1        | 46790       | Screw 12 - 24 x 3/4" (6)         | 28       | 43525       | Chuck Cap                        |
| 2        | 40270       | Lock Washer (6)                  | 29       | 45295       | Screw 5/16" x 2 3/4" (6)         |
| 3        | 43735       | Rear Centering Head              | 30       | 44715       | Jaw Insert Set (3)               |
|          | 19346       | Rear Centering Head (Europe)     |          | 97365       | Jaw Insert Set f/Coated Pipe (3) |
| 4        | 46500       | Rear Jaw                         | 31       | 44090       | Chuck Jaw Set                    |
| 5        | 45260       | Step Pin                         | 32       | 45520       | Hinge Pin                        |
| 6        | 44095       | Scroll                           | 33       | 42370       | 360 Cutter Complete              |
| 7        | 43740       | Back Plate                       | 34       | 54052       | Oil Pan Liner                    |
|          | 19356       | Back Plate (Europe)              | 35       | 75632       | Oil Pan Liner Gasket             |
| 8        | 44165       | Rear Centering Assembly          | 36       | 36262       | Shoulder Screw                   |
| 9        | 44100       | Drive Shaft                      | 37       | 36267       | Pivot Pin                        |
| 10       | 45335       | Rear Bearing                     | 38       | 34612       | 344 Reamer                       |
| 11       | 46860       | Grease Fitting (2)               | 39       | 54112       | Rear Rail                        |
| 12       | 45310       | Pin Split Roll                   | 40       | 35162       | Rail Plug (4)                    |
| 13       | 60025       | Set Screw 5/16" - 18 (4)         | 41       | 54117       | Front Rail                       |
| 14       | 54522       | Base Export                      | 42       | 54302       | Drain Plug                       |
|          | 76342       | Base N.A.                        | 43       | 54042       | M10-1.5 Hex Hd. Cap Screw        |
| 15       | 58467       | Filter Screen Assembly           | 44       | 87730       | Screw 1/4" x 3/8" (4)            |
| 16       | 45420       | Screw 10 - 24 x 3/8"             | 45       | 61937       | Bottom Cover                     |
| 17       | 54047       | Chip Tray                        | 46       | 77905       | Set Screw 5/16" x 1/4"           |
| 18       | 33785       | Set Screw 5/16" x 24 x 5/16" (3) | 47       | 54037       | Motor Wedge                      |
| 19       | 45345       | Thrust Ring                      | 48       | 87620       | Retaining Ring                   |
| 20       | 54502       | Front Bearing                    | 49       | 54507       | Carriage Stop                    |
| 21       | 45300       | Set Screw 5/16" x 24 x 1/4" (3)  | 50       | 54797       | Model 2192, 115V                 |
| 22       | 45265       | Set Screw 5/16" x 24 x 1/2" (3)  |          | 54802       | Model 2292R, 230V                |
| 23       | 30027       | Drive Ring                       |          | 74182       | Model 2199R, 115V, 52 RPM        |
| 24       | 30022       | Drive Pin (3)                    | 51       | 85915       | Motor Mounting Bolt (2)          |
| 25       | 30017       | Ring Gear                        | 52       | 61932       | Motor Cover                      |
| 26       | 89150       | Hand Wheel                       | 53       | 54532       | Motor Cover Screw (4)            |
| 27       | 43540       | Chuck Scroll                     |          |             |                                  |

## Carriage and Oil System



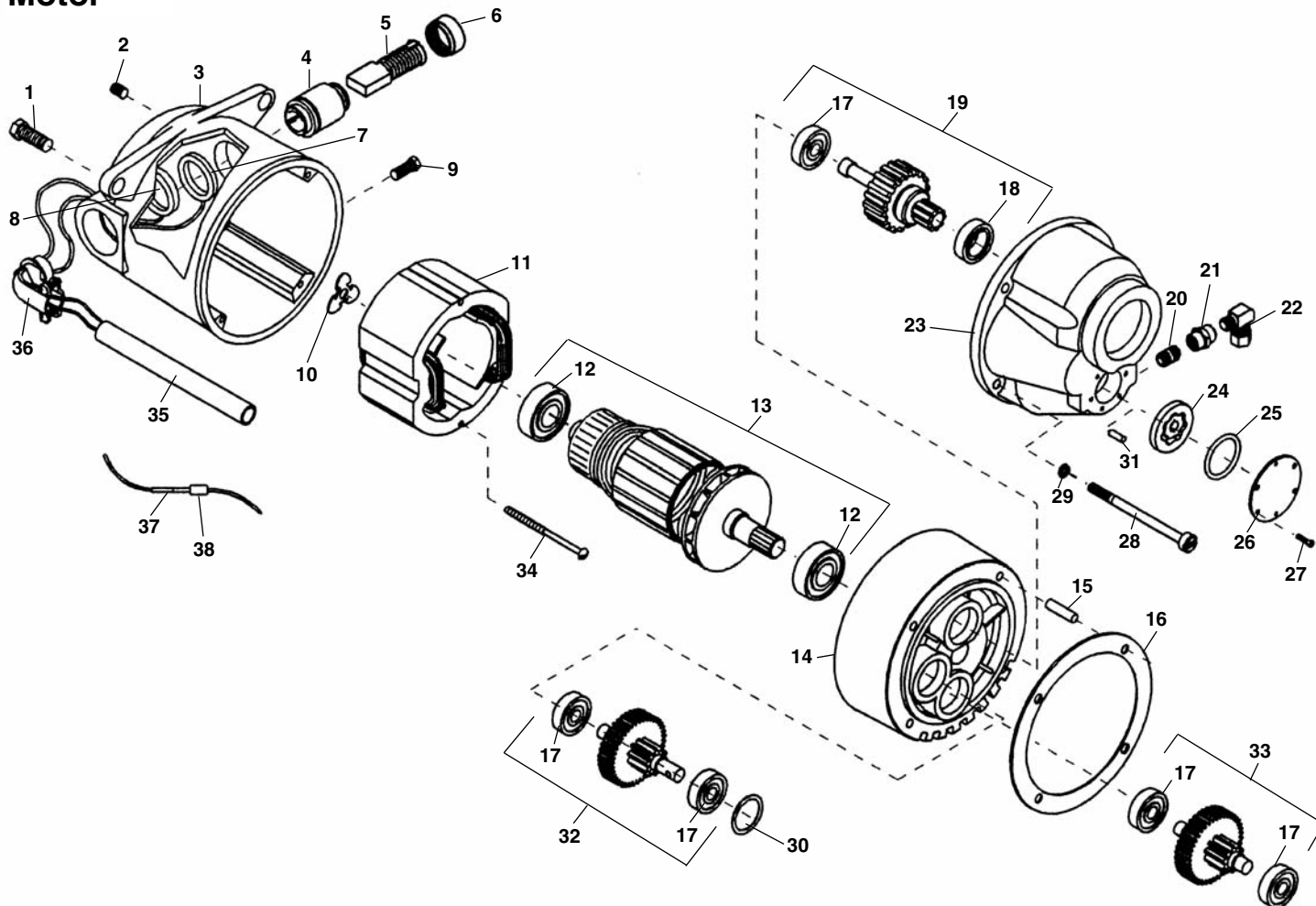
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description             |
|----------|-------------|-------------------------|
| 1        | 46810       | Detente Assembly        |
| 2        | 54517       | Drip Pan                |
| 3        | 54097       | Spool Valve             |
| 4        | 54102       | O-Ring                  |
| 5        | 35307       | Oil Pressure Relief Set |
| 6        | 58417       | Roll Pin 1/8" x 3/8"    |
| 7        | 54112       | Rear Rail               |
| 8        | 35162       | Rail Plug (4)           |
| 9        | 79965       | Screw 10 - 32 x 1/2"    |
| 10       | 35062       | Oil Line Clamp          |
| 11       | 35067       | Oil Tube                |
| 12       | 54107       | Retaining Ring          |
| 13       | 54507       | Carriage Stop           |
| 14       | 87620       | Retaining Ring          |
| 15       | 54512       | Carriage                |
| 16       | 35187       | Pinion Idler Shaft      |
| 17       | 54122       | Cap Plug (not shown)    |
| 18       | 34342       | Roll Pin                |
| 19       | 54117       | Front Rail              |
| 20       | 59092       | Pinion                  |
| 21       | 35182       | Hand Wheel              |
| 22       | 45420       | Screw 10 - 24 x 3/8"    |
| 23       | 58467       | Filter Screen Assembly  |
| 24       | 61897       | Oil Filter Tube         |
| 25       | 54142       | Bulkhead Fitting        |
| 26       | 54152       | Oil Intake Line         |
| 27       | 35117       | Oil Line Insert         |
| 28       | 35142       | Hose Clamp              |
| 29       | 47080       | Oil Line Grommet        |
|          | 61282       | Carriage Oil Line       |



2192  
2292  
2192R  
2292R

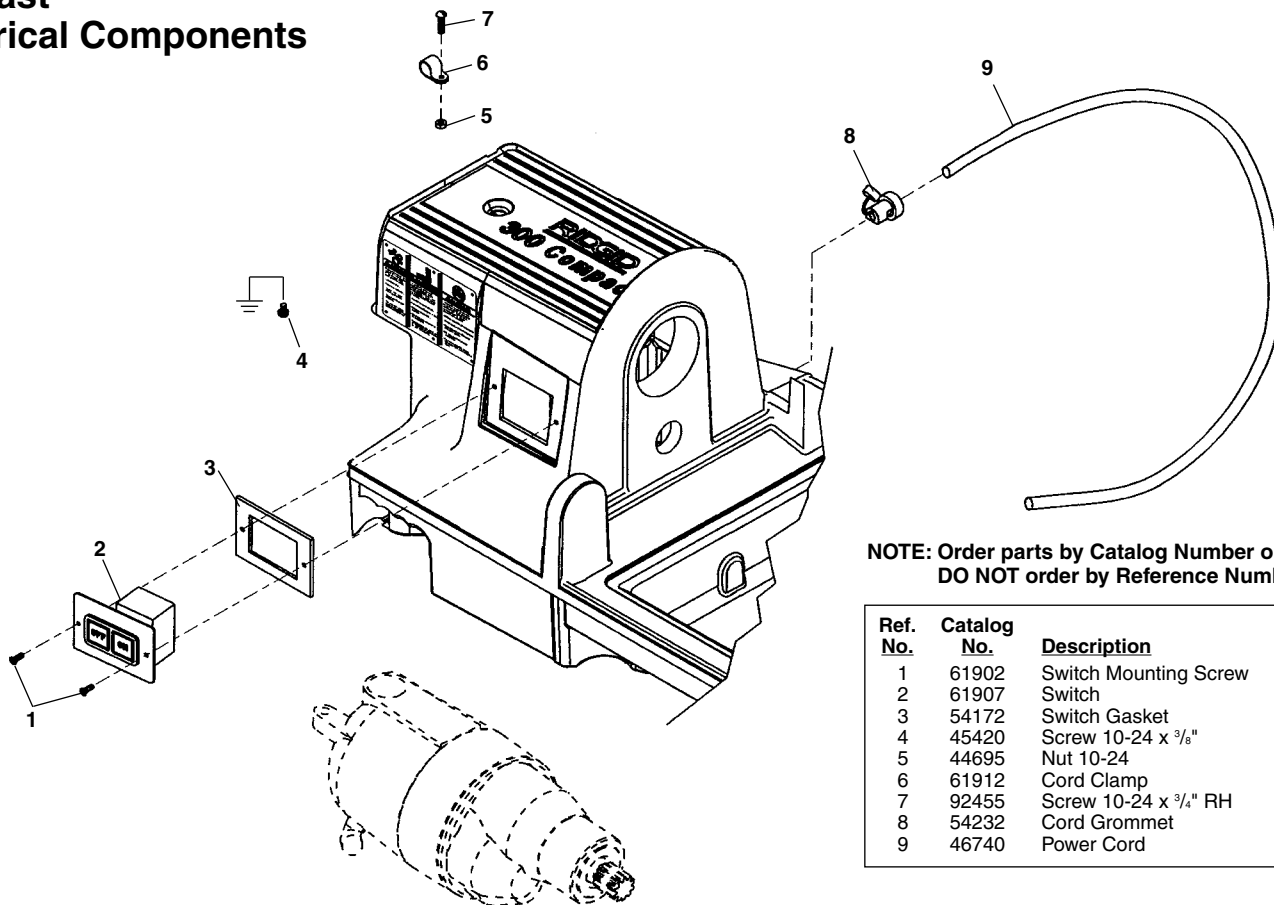
## Motor



NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

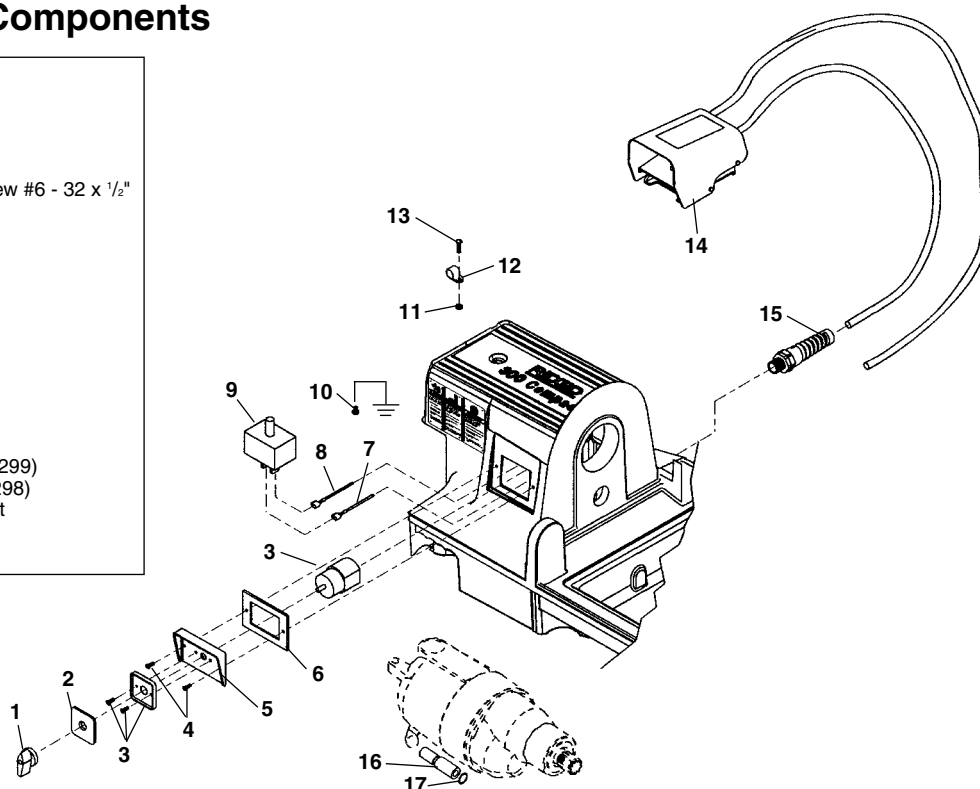
| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description           |
|----------|-------------|--------------------------------|----------|-------------|-------------------------------|----------|-------------|-----------------------|
| —        | 72127       | Motor Model 2292, 230V         | 12       | 44565       | Armature Bearing (2)          | 26       | 96840       | Cover Plate           |
| —        | 54797       | Motor Model 2192R, 115V        | 13       | 52497       | 115V Armature                 | 27       | 96890       | Screw #4 x 3/8" (6)   |
| —        | 54802       | Motor Model 2292R, 230V        | 14       | 54542       | 230V Armature                 | 28       | 45075       | Screw 1/4" - 20       |
| 1        | 85915       | Motor Mounting Bolt (2)        | 15       | 54552       | Fan Housing Assembly          | 29       | 45150       | Lock Washer 1/4"      |
| 2        | 39770       | Set Screw 1/4" - 20 x 1/4" (2) | 16       | 45165       | Dowel Pin                     | 30       | 96880       | Oil Seal              |
| 3        | 52482       | Motor Housing                  | 17       | 52502       | Gasket                        | 31       | 96885       | Pin                   |
| 4        | 45025       | Brush Holder Set (2)           | 18       | 44760       | Gear Bearing                  | 32       | 52522       | 1st Gear Assembly     |
| 5        | 44540       | Brush Assembly Set (2)         | 19       | 45315       | Front Bearing                 | 33       | 54547       | 2nd Gear Assembly     |
| 6        | 44545       | Brush Cap Set (2)              | 20       | 54537       | Main Drive Gear Assembly      | 34       | 44555       | Screw 10 - 24 x 3"    |
| 7        | 86685       | Red Brush Lead                 | 21       | 52507       | 1/8" NPT Close Nipple (2)     | 35       | 63382       | Plastic Tube          |
| 8        | 86680       | White Brush Lead               | 22       | 52512       | 1/8" Coupling (2)             | 36       | 46900       | 90 Connector          |
| 9        | 83500       | Field Locking Screw            | 23       | 52517       | Elbow Compression Fitting (2) | —        | 47412       | Male Wire Connector   |
| 10       | 44580       | Loading Spring                 | 24       | 96830       | Gear Case                     | —        | 52537       | Female Wire Connector |
| 11       | 44015       | Field 100/115V                 | 25       | 96870       | Gerotor Set                   | 37       | 16946       | Male Connector        |
|          | 44035       | Field 230V                     |          | 96875       | "O" Ring                      | 38       | 16956       | Female Connector      |

## Far East Electrical Components



## European Electrical Components

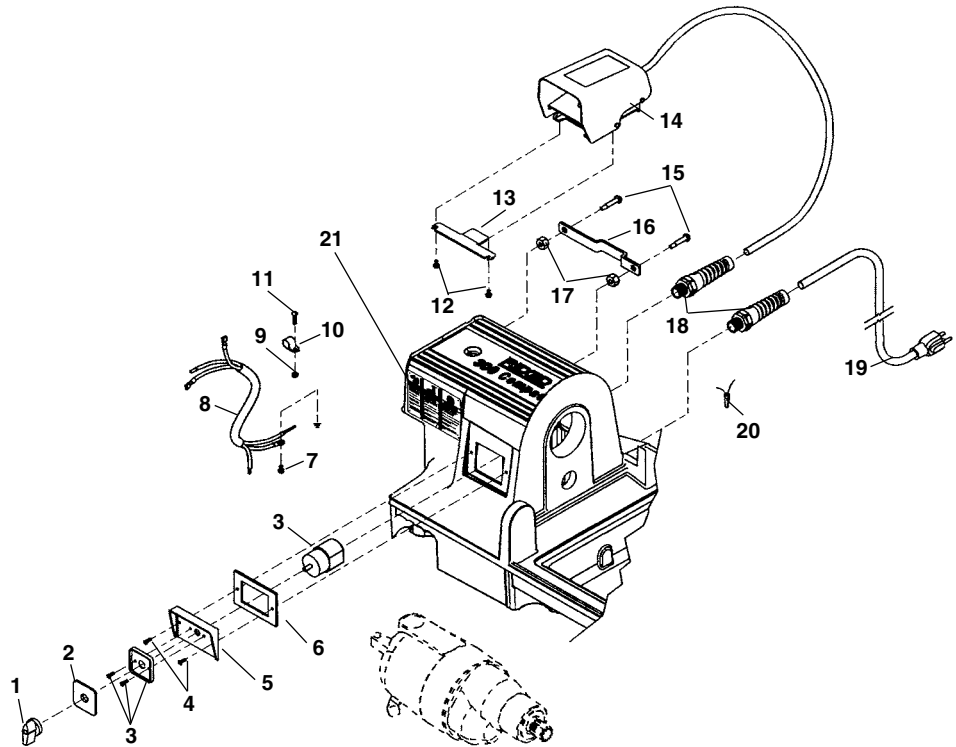
| Ref. No. | Catalog No. | Description                           |
|----------|-------------|---------------------------------------|
| 1        | 61397       | Switch Knob                           |
| 2        | 54167       | Switch Face Plate                     |
| 3        | 54157       | Switch & Screws                       |
| 4        | 61902       | Slotted Pan Head Screw #6 - 32 x 1/2" |
| 5        | 61917       | Switch Plate                          |
| 6        | 54172       | Switch Gasket                         |
| 7        | 63387       | Brown Wire                            |
| 8        | 63392       | Blue Wire                             |
| 9        | 63372       | Suppressor                            |
| —        | 63387       | Brown Lead Wire                       |
| —        | 63392       | Blue Lead Wire                        |
| 10       | 45420       | Screw 10-24 x 3/8"                    |
| 11       | 44695       | Nut 10-24                             |
| 12       | 61912       | Cord Clamp                            |
| 13       | 92455       | Screw 10-24 x 3/4" RH                 |
| 14       | 36652       | Foot Switch (B-296)                   |
| —        | 40022       | Foot Switch f/Aust. (B-299)           |
| —        | 40017       | Foot Switch f/U.K. (B-298)            |
| 15       | 46730       | Strain Relief w/Locknut               |
| 16       | 63377       | Ferrite Bead                          |
| 17       | 43552       | Cable Tie                             |



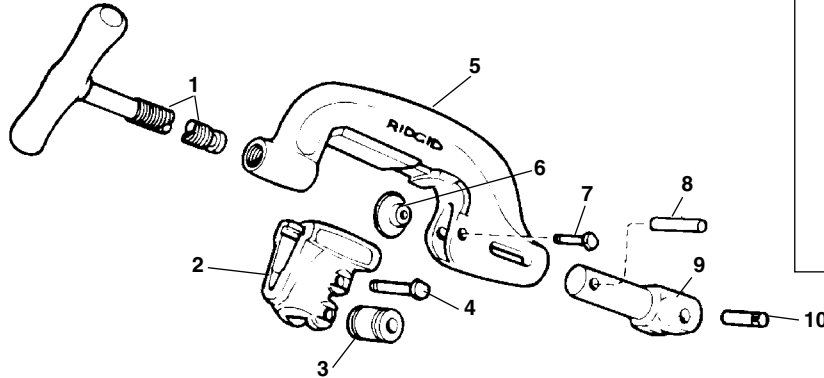
### 120V 60Hz Electrical

NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| 1        | 61397       | Switch Knob                |
| 2        | 61967       | Switch Face Plate          |
| 3        | 54157       | Switch Assembly            |
| 4        | 54162       | Screw (2)                  |
| 5        | 61917       | Switch Plate               |
| 6        | 54172       | Gasket                     |
| 7        | 45420       | Screw #10 - 24 x 3/8"      |
| 8        | 72132       | Connecting Cord            |
| 9        | 44695       | Hex Nut #10 - 24           |
| 10       | 61912       | Cord Retainer              |
| 11       | 92455       | Screw #10 - 24 x 3/4"      |
| 12       | 54357       | Screw 5/16" - 18 (2)       |
| 13       | 58602       | Foot Switch Hook           |
| 14       | 36642       | B-294 Foot Switch          |
| 15       | 54137       | Screw (2)                  |
| 16       | 58267       | Foot Switch Hanger Bracket |
| 17       | 96730       | Hex Nut 5/16" - 18         |
| 18       | 72107       | Strain Relief              |
| 19       | 46740       | Power Cord                 |
| 20       | 44635       | End Splice Connector       |
| 21       | 78367       | Warning Plate              |



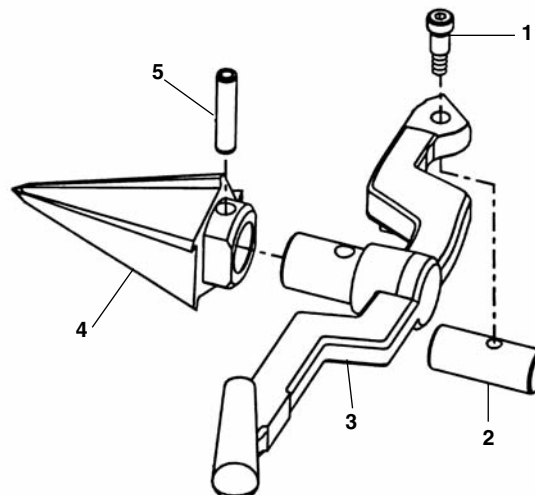
### No. 360 Cutter

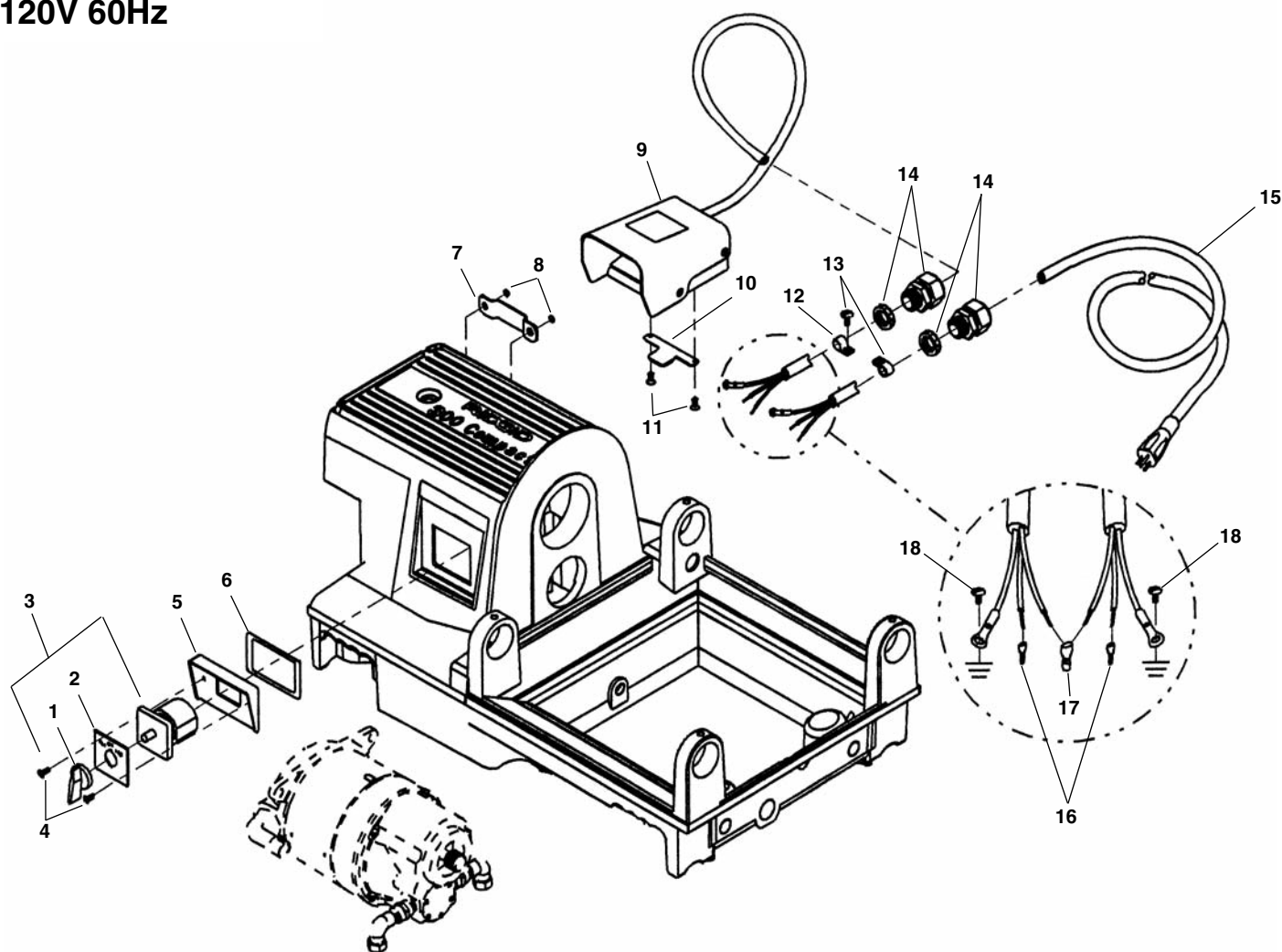


| Ref. No. | Catalog No. | Description                   |
|----------|-------------|-------------------------------|
| —        | 42370       | 360 Cutter Complete           |
| 1        | 43625       | D-1024-X Screw Handle         |
| 2        | 33400       | C-878-X Roll Housing Assembly |
| 3        | 34305       | E-1751 Roll (2)               |
| 4        | 34310       | E-1752 Roll Pin (2)           |
| 5        | 43595       | C-877 Cutter Frame            |
| 6        | 33100       | F-514 Cutter Wheel Thin       |
|          | 33105       | F-3 Cutter Wheel H.D.         |
|          | 44185       | E-1032 Cutter Wheel Std.      |
| 7        | 34780       | F-9 Wheel Pin                 |
| 8        | 45435       | E-3549 Retaining Pin          |
| 9        | 45505       | E-3759 Support Arm            |
| 10       | 45520       | E-3819 Pin                    |

### No. 344 Reamer

| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 34612       | 344 Reamer Complete |
| 1        | 36262       | Shoulder Screw      |
| 2        | 36267       | Pivot Pin           |
| 3        | 36272       | Reamer Arm          |
| 4        | 36277       | Reamer Cone         |
| 5        | 35355       | Split Roll Pin      |



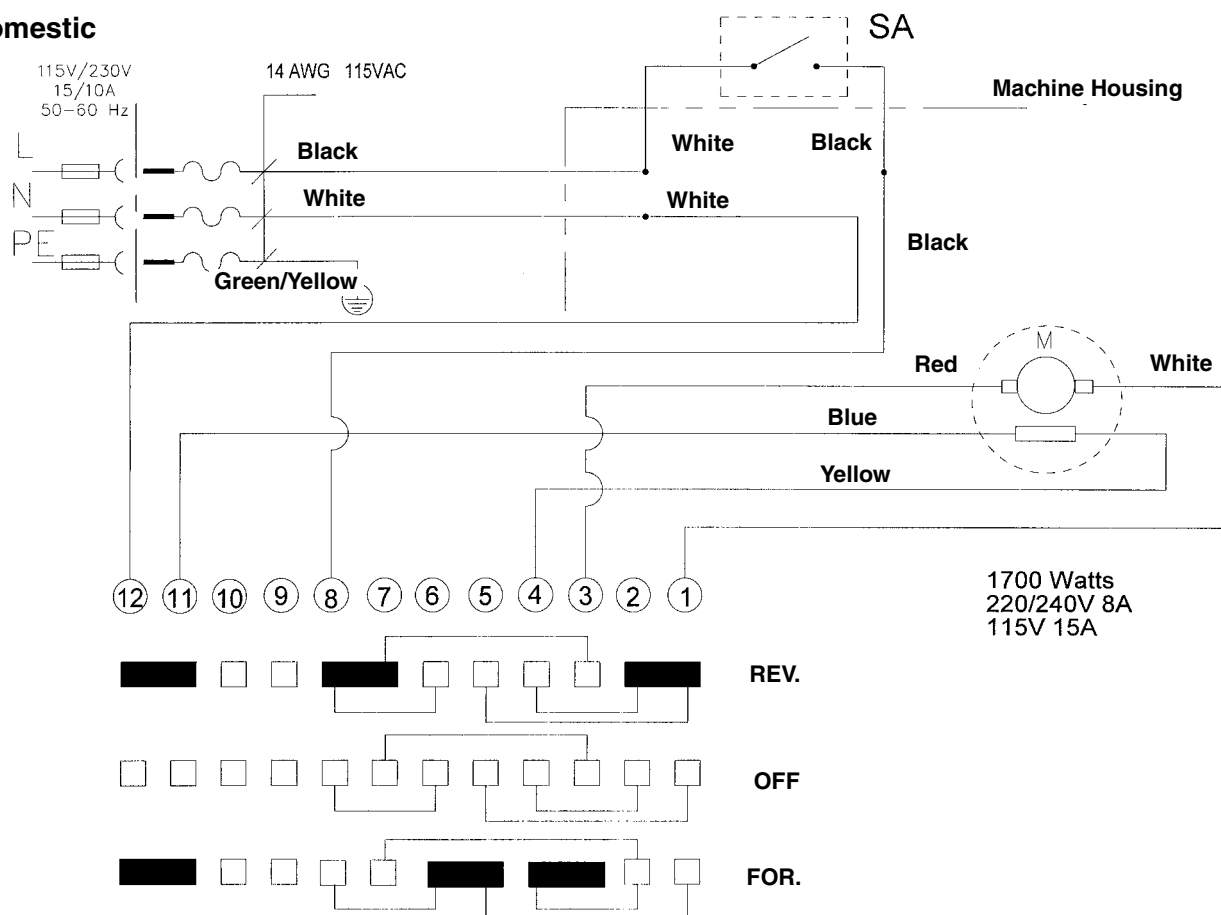
**52 RPM Electrical  
120V 60Hz**


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

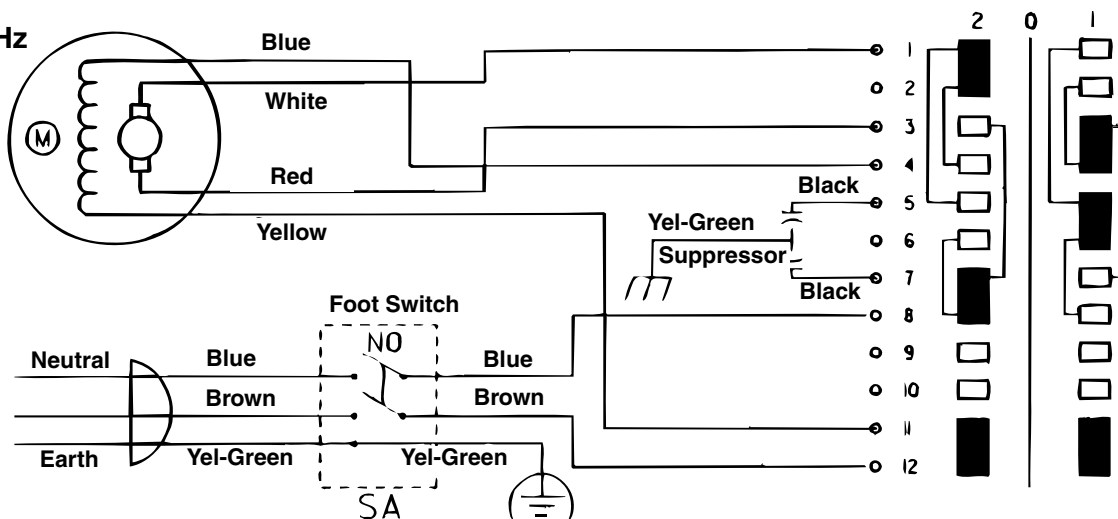
| Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description                              |
|----------|-------------|----------------------------|----------|-------------|------------------------------------------|
| 1        | 61397       | Switch Knob                | 10       | 58602       | Foot Switch Hook                         |
| 2        | 61967       | Switch Face Plate          | 11       | 54357       | Screw $\frac{5}{16}$ " - 18 (2)          |
| 3        | 54157       | Switch Assembly            | 12       | 75937       | Cable Clamp (2)                          |
| 4        | 54162       | Screw (2)                  | 13       | 92455       | Screw #10-24 x $\frac{3}{4}$ "           |
| 5        | 61917       | Switch Plate               | 14       | 75952       | Strain Relief with Nut                   |
| 6        | 54172       | Gasket                     | 15       | 75902       | Power Cord                               |
| 7        | 58267       | Foot Switch Hanger Bracket | 16       | 76347       | Wire Terminals (6)                       |
| 8        | 54137       | Screw (2)                  | 17       | 44635       | Wire End Splice                          |
| 9        | 75962       | B294 HD Foot Switch        | 18       | 45420       | Grand Screw #10-24 x $\frac{3}{8}$ " (2) |

## Wiring Diagrams

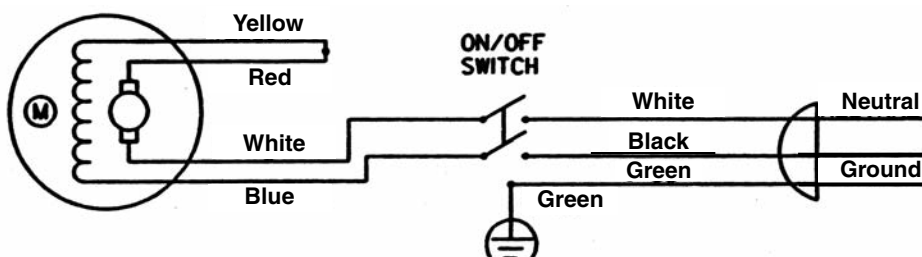
### 115V Domestic



### 115V/230V 25-60 Hz

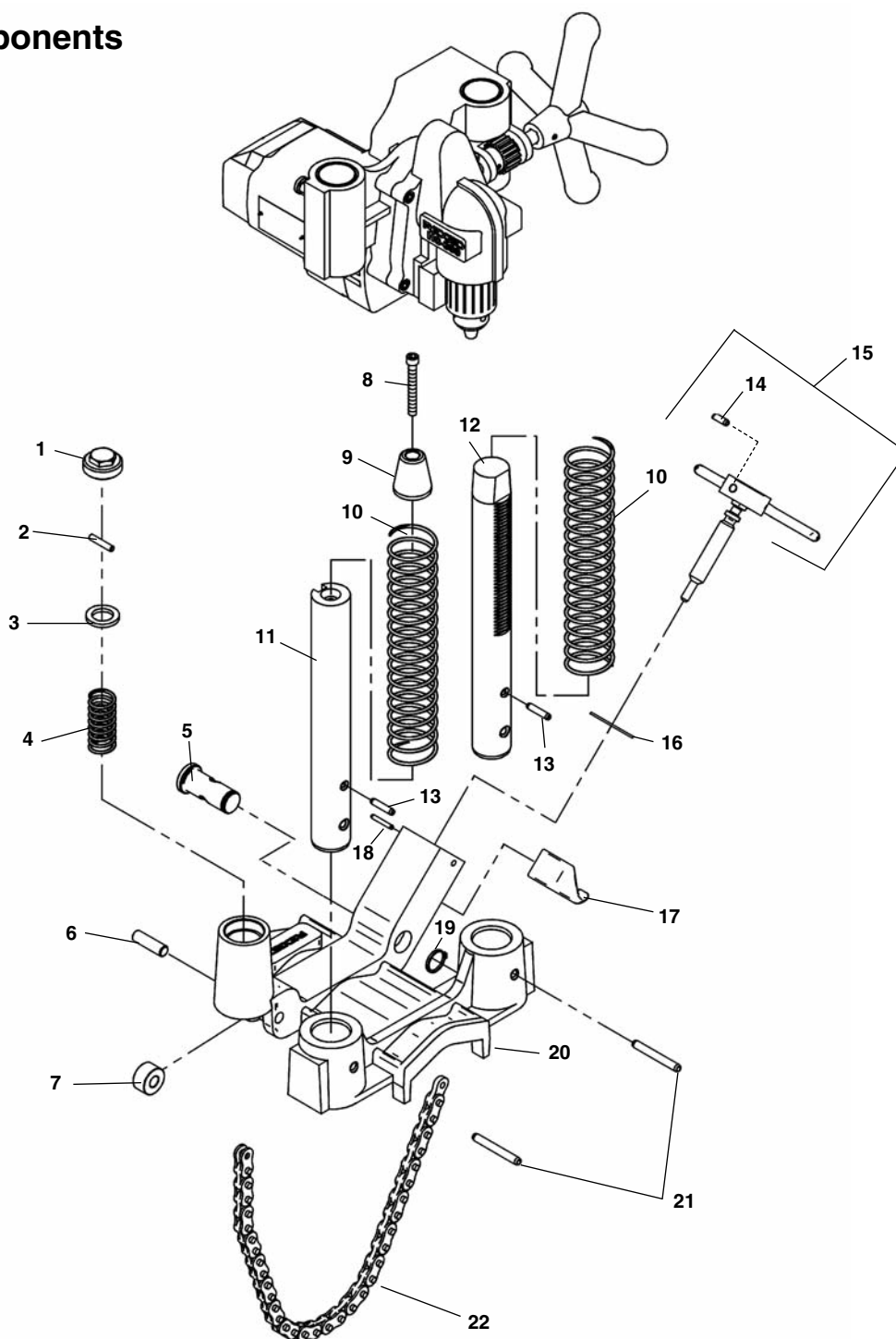


### 115/230V Far East





## Main Components

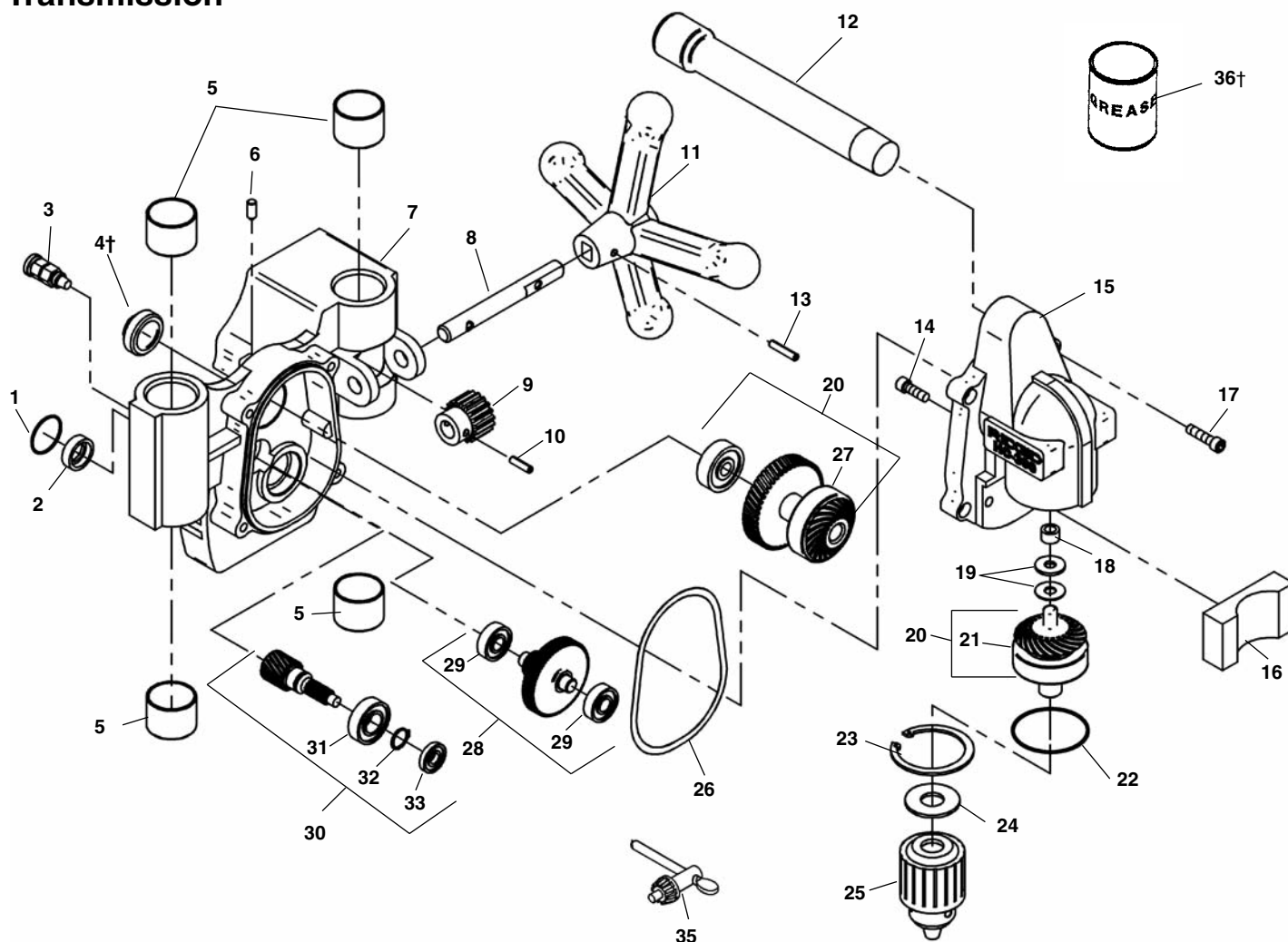


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                               | Ref. No. | Catalog No. | Description                       |
|----------|-------------|-------------------------------------------|----------|-------------|-----------------------------------|
| 1        | 77092       | Cap                                       | 12       | 77052       | Rack w/Pins (Incls. Refs. 13, 21) |
| 2        | 77097       | Pin                                       | 13       | 34342       | Spring Pin (2)                    |
| 3        | 77242       | Washer                                    | 14       | 77067       | Ball Detente                      |
| 4        | 77087       | Compression Spring                        | 15       | 77077       | Crank Screw Assembly              |
| 5        | 77257       | Pivot Pin                                 | 16       | 77072       | Friction Ring                     |
| 6        | 41035       | Roller Pin                                | 17       | 77082       | Chain Hook                        |
| 7        | 40990       | Roller                                    | 18       | 76735       | Spring Pin                        |
| 8        | 32145       | Soc. Hd. Cap Screw, 1/4" - 20 x 1 1/2"    | 19       | 77252       | Retaining Ring                    |
| 9        | 77262       | Plunger Stop                              | 20       | 77042       | Base w/Pins (Incls. Ref. 21)      |
| 10       | 77057       | Compression Spring (2)                    | 21       | 44850       | Spring Pin (2)                    |
| 11       | 77047       | Post Assembly (Incls. Refs. 8, 9, 13, 21) | 22       | 77247       | Chain Assembly (Incls. Ref. 2, 3) |



## Transmission



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

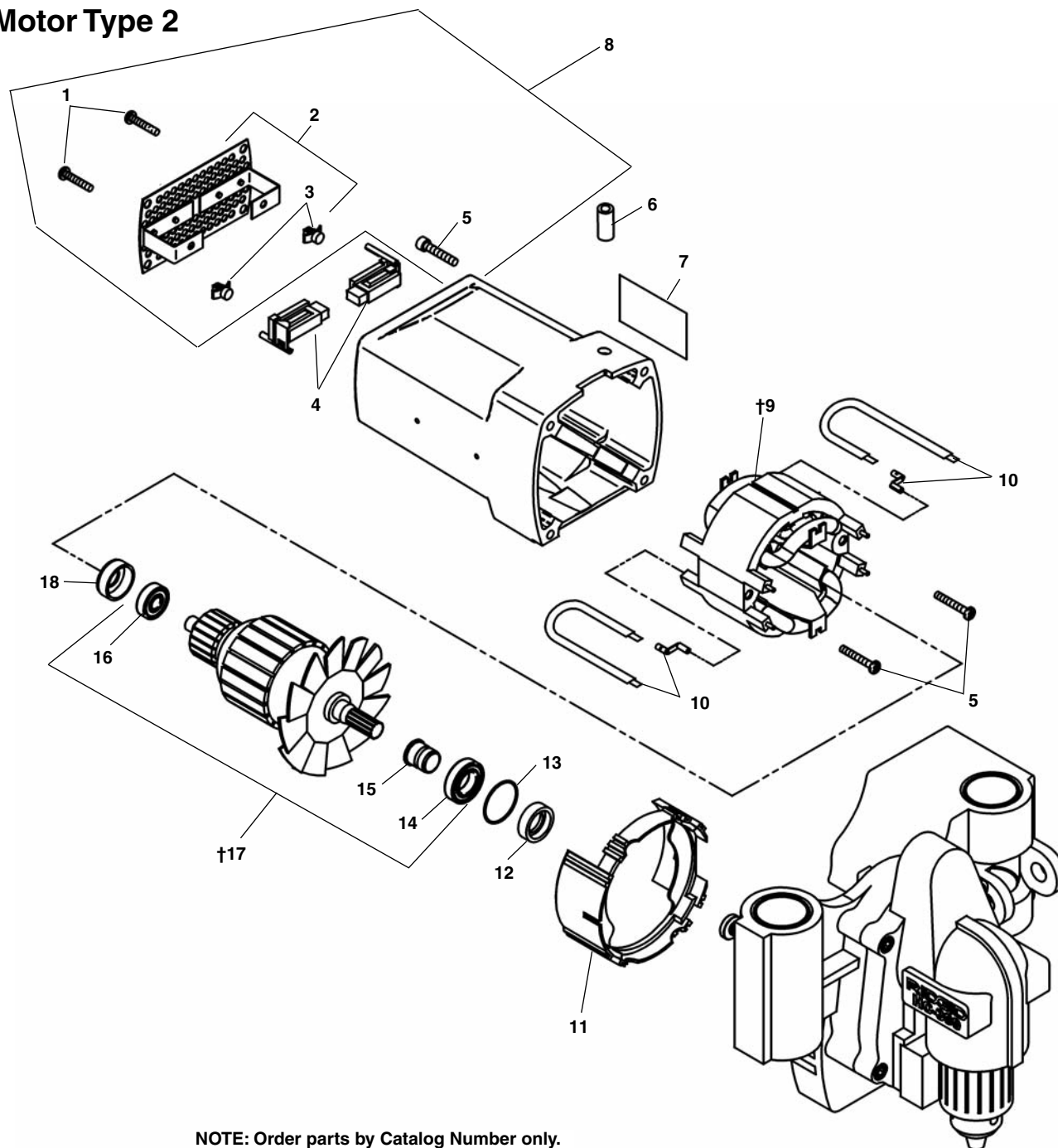
| Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No. | Description                    |
|----------|-------------|----------------------|----------|-------------|--------------------------|----------|-------------|--------------------------------|
| 1        | 77202       | O-Ring               | 13       | 36387       | Roll Pin                 | 25       | 77012       | Chuck w/Key                    |
| 2        | 77207       | Grease Seal          | 14       | 40910       | Screws (4)               | 26       | 77177       | Gasket, Transmission           |
| 3        | 61567       | Plunger Assembly     | 15       | 77142       | Front Gear Case          | 27       | 45315       | Ball Bearing                   |
| †4       | 77092       | Adjusting Cap        | 16       | 77172       | Chuck Guard              | 28       | 77112       | 2nd Intermediate Gear Assembly |
| 5        | 59027       | Bearing (4)          | 17       | 83685       | Screw (4)                | 29       | 77187       | Ball Bearing (2)               |
| 6        | 77167       | Set Screw, Nylon Tip | 18       | 77122       | Needle Bearing           | 30       | 77117       | 1st Intermediate Gear Assembly |
| 7        | 77147       | Rear Gear Case       | 19       | 77127       | Thrust Bearing Assembly  | 31       | 77197       | Ball Bearing                   |
| 8        | 77007       | Feed Shaft           | 20       | 77102       | Spiral Gear Set          | 32       | 83027       | Retaining Ring                 |
| 9        | 59092       | Carriage Pinion      | 21       | 45315       | Ball Bearing             | 33       | 77192       | Ball Bearing                   |
| 10       | 44662       | Roll Pin             | 22       | 77157       | O-Ring                   | †34      | 26707       | Transmission Grease, 1 Lb.     |
| 11       | 58957       | Hand Wheel           | 23       | 77132       | Retaining Ring, Internal | 35       | 77017       | Chuck Key                      |
| 12       | 77152       | Carry Handle         | 24       | 46295       | Spacer                   |          |             |                                |

### † Service Notes:

Ref. 4 Backlash Adjustment – Use 6" C-Clamp to lightly push chuck into housing. Apply thin coat of Loctite No. 545 Hydraulic/Pneumatic Thread Sealant (or equivalent) to threads on adjusting cap, Ref. 4. Tighten cap to 40 - 50 in-lbs then back off to eliminate torque. Re-tighten finger tight then back off 20° to 30°. Remove clamp and check by gripping chuck with fingertips and feeling for minimal rotational backlash in output gear. Tighten set screw, Ref. 6, to hold cap securely.

Ref. 36 Grease Fill – Use only recommended transmission grease (Molytex EPO). Fill bearing pockets with grease and apply coating to gear teeth. Fill two separate transmission cavities approximately ½ full of grease using about ¼ of pound can

## Motor Type 2

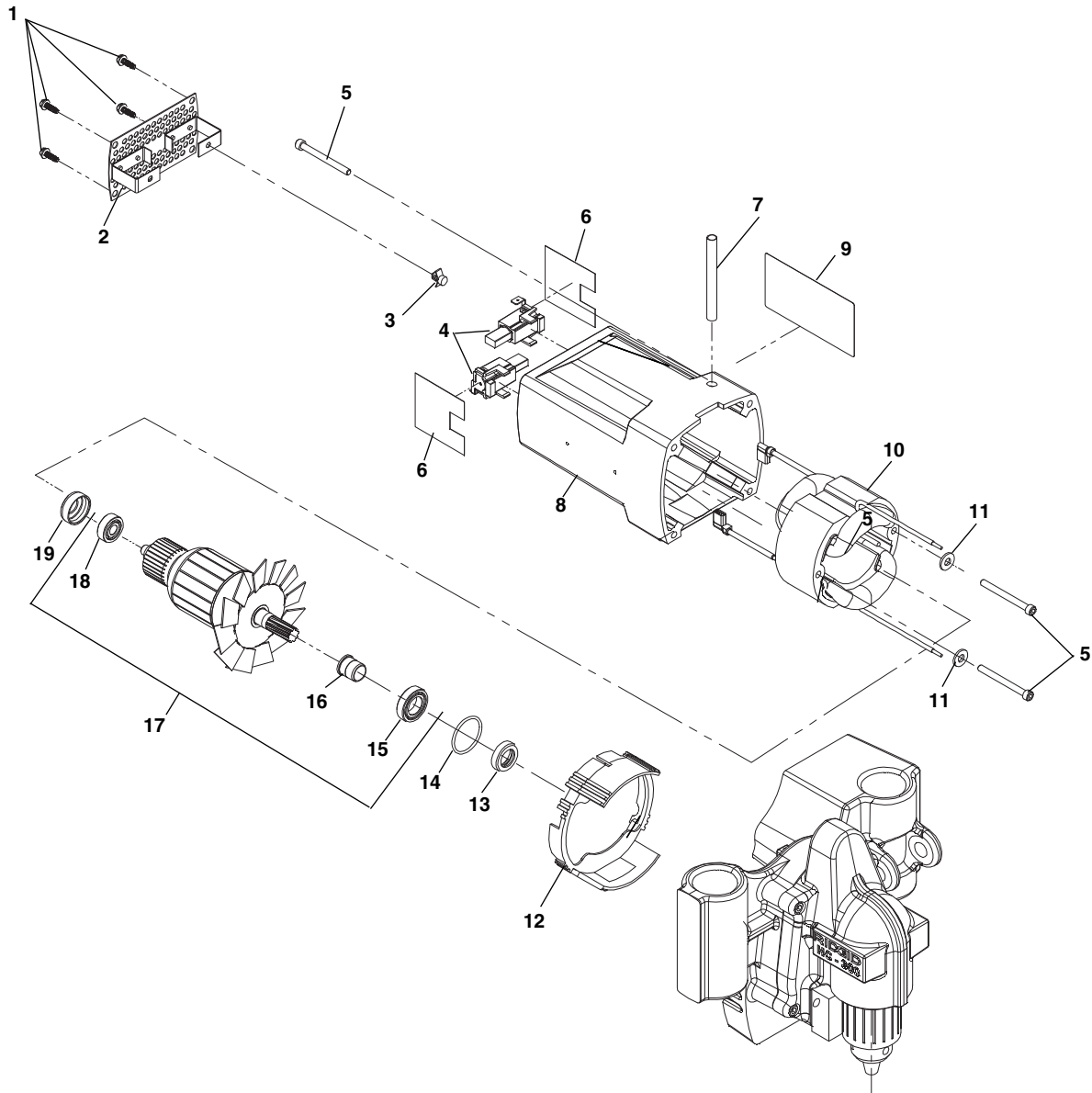


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------------------|----------|-------------|------------------------|
| 1        | 10908       | Screw, Self Tapping (4)             | 10       | 77027       | Motor Lead Set         |
| 2        | 10913       | End Cap                             | 11       | 35328       | Fan Shroud             |
| 3        | 10918       | Bumper (2)                          | 12       | 77207       | Seal                   |
| 4        | 34078       | Brush Assembly Set 115V             | 13       | 77202       | O-Ring                 |
|          | 34083       | Brush Assembly Set 230V             | 14       | 77232       | Bearing                |
| 5        | 10923       | Screw, #10-24 x 2" Soc. Hd. Cap (6) | 15       | 77227       | Armature Sleeve        |
| 6        | 10928       | Insulator                           | 16       | 43017       | Bearing                |
| 7        | 77267       | Warning Label Set                   | †17      | 84087       | Armature Assembly 115V |
| 8        | 22038       | Motor Housing                       |          | 84082       | Armature Assembly 230V |
| †9       | 45897       | Field 115V                          |          | 84092       | Armature Assembly 100V |
|          | 58567       | Field 230V                          | 18       | 42777       | Rubber Sleeve          |
|          | 58572       | Field 100V                          |          |             |                        |

† Service Note: When replacing early style 115V or 230V armature# or field# you must replace with both new style armature#, field# and brushes#.

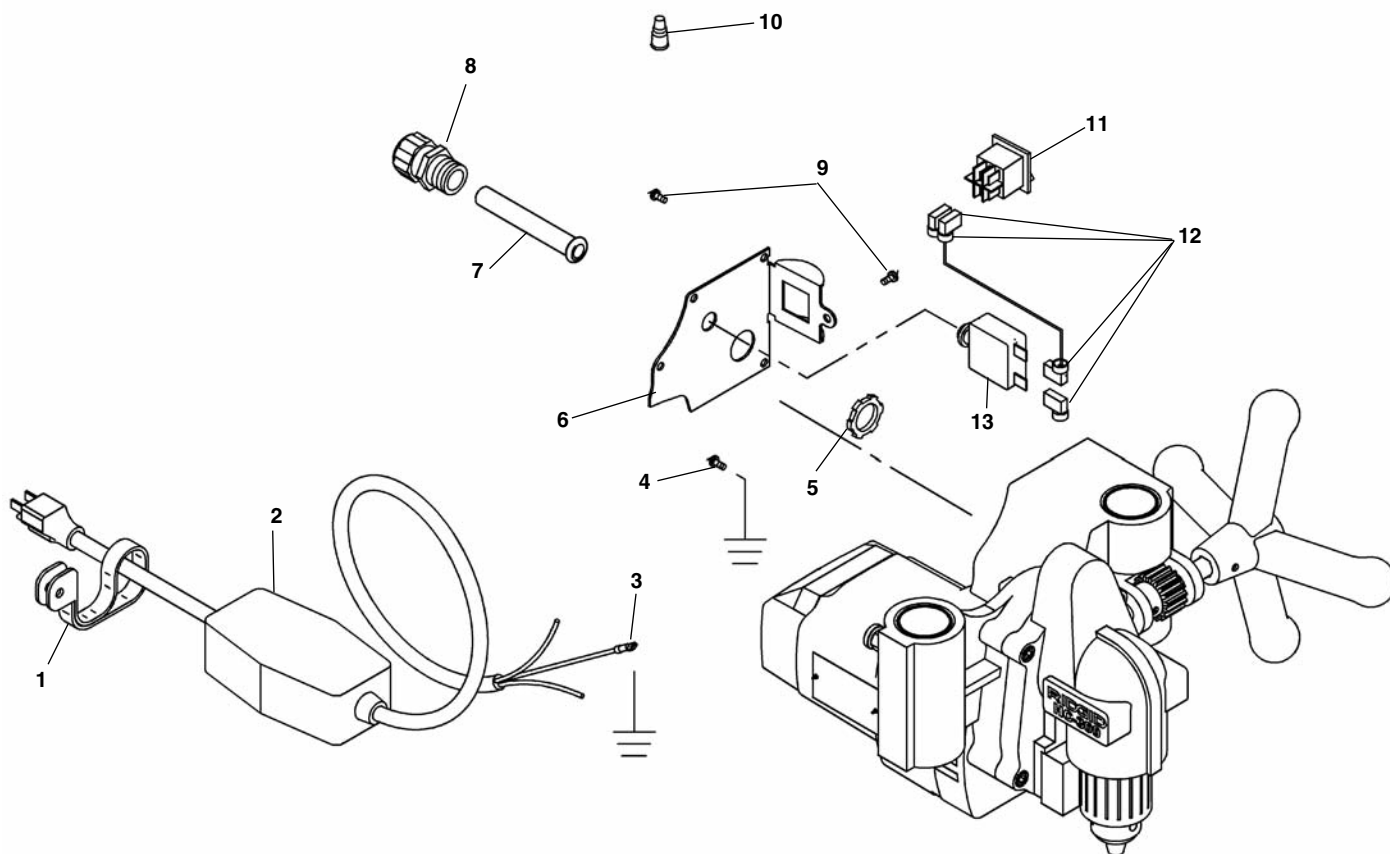
## Motor Type 2 – Motors built after serial number EBH XXXXX 1109



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------------------|----------|-------------|------------------------|
| 1        | 10908       | Screw, Self Tapping (4)             | 11       | 41592       | Washer                 |
| 2        | 10913       | End Cap                             | 12       | 35328       | Fan Shroud             |
| 3        | 10918       | Bumper                              | 13       | 77207       | Seal                   |
| 4        | 34078       | Brushes                             | 14       | 77202       | O-Ring                 |
| 5        | 10923       | Screw, #10-24 x 2" Soc. Hd. Cap (6) | 15       | 77232       | Bearing                |
| 6        | 39003       | Shields (2)                         | 16       | 77227       | Armature Sleeve        |
| 7        | 10928       | Insulator                           | 17       | 38833       | Armature Assembly 120V |
| 8        | 22038       | Motor Housing HC-300                |          | 38838       | Armature Assembly 220V |
| 9        | 77267       | Warning Label Set                   |          | 38843       | Armature Assembly 100V |
| 10       | 38848       | Field 115V                          | 18       | 43017       | Bearing                |
|          | 38853       | Field 220V                          | 19       | 42777       | Rubber Sleeve          |
|          | 38858       | Field 100V                          |          |             |                        |

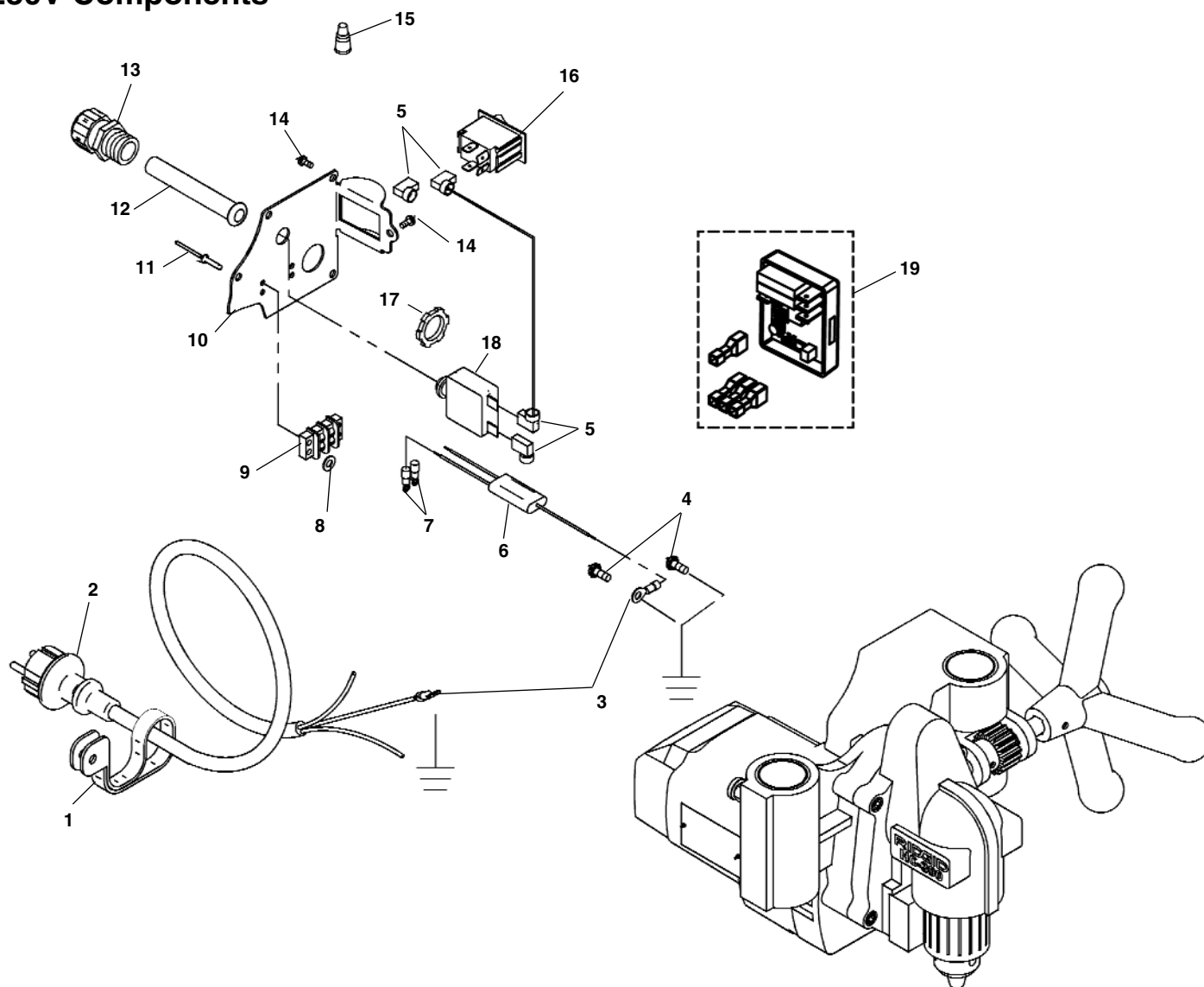
## 115V Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description        | Ref. No. | Catalog No. | Description                       |
|----------|-------------|--------------------|----------|-------------|-----------------------------------|
| 1        | 59102       | Key Retainer       | 8        | 65602       | Strain Relief                     |
| 2        | 50507       | Line Cord w/GFI    | 9        | 46795       | Screw #10 - 24 x 1/2" (5)         |
| 3        | 26292       | Ring Terminal      | 10       | 44635       | Wire Nut                          |
| 4        | 45420       | Screw w/Washer     | 11       | 58597       | Switch                            |
| 5        | 65642       | Lock Nut, 1/2" NPT | 12       | 76992       | Quick Disconnect, Right Angle (4) |
| 6        | 87047       | Switch Box Cover   | 13       | 61302       | Circuit Breaker, 12 Amp           |
| 7        | 77002       | Cord Guard         |          |             |                                   |

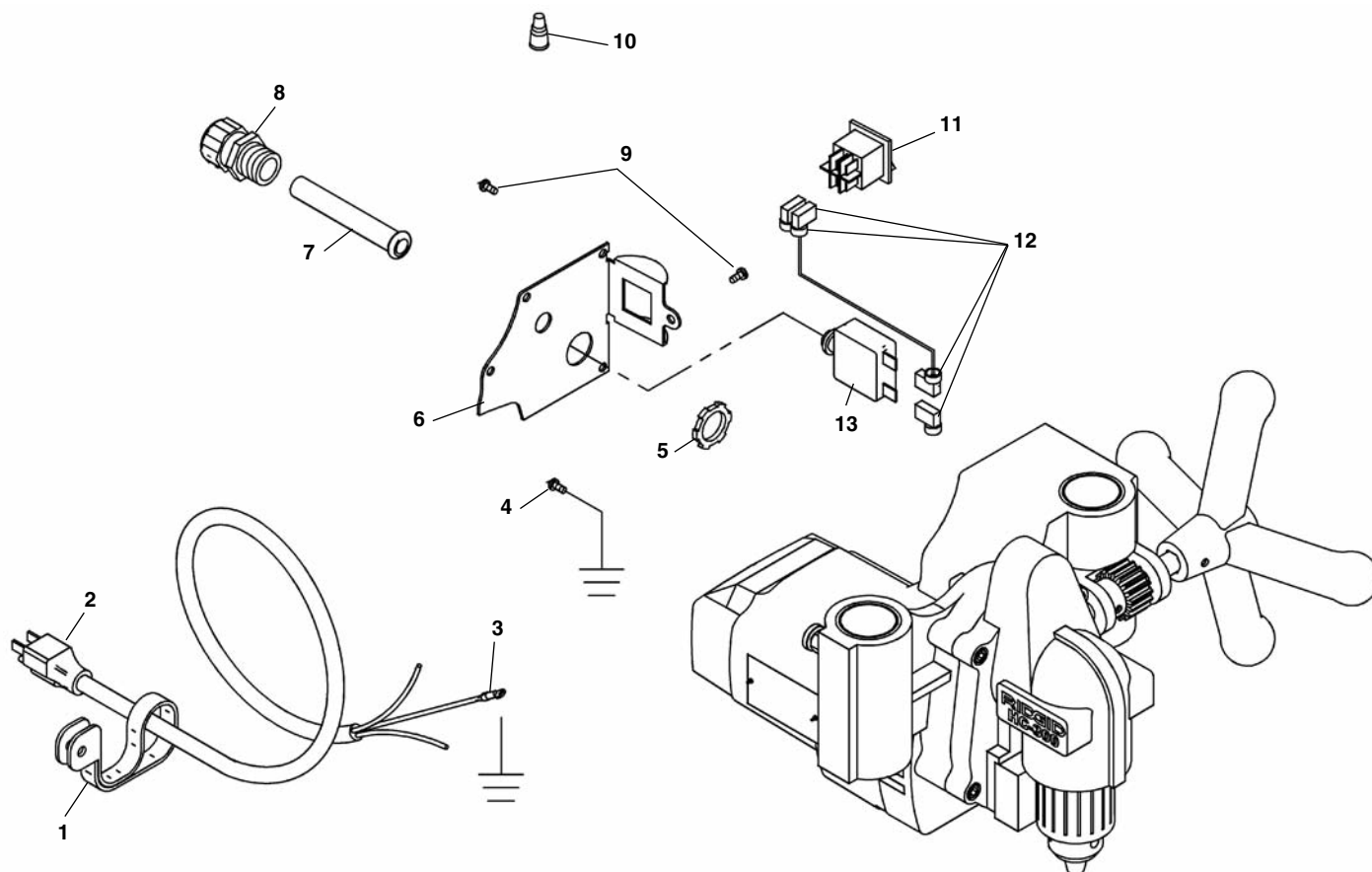
## 230V Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                       | Ref. No. | Catalog No. | Description                          |
|----------|-------------|-----------------------------------|----------|-------------|--------------------------------------|
| 1        | 59102       | Key Retainer                      | 11       | 59112       | Pop Rivet $\frac{5}{32}$ " (2)       |
| 2        | 65842       | Line Cord                         | 12       | 77002       | Cord Guard                           |
| 3        | 26292       | Ring Terminal                     | 13       | 65602       | Strain Relief                        |
| 4        | 45420       | Screw w/Washer (2)                | 14       | 46795       | Screw #10 - 24 x $\frac{1}{2}$ " (5) |
| 5        | 76992       | Quick Disconnect, Right Angle (4) | 15       | 44635       | Wire Nut                             |
| 6        | 36502       | Suppressor                        | 16       | 59597       | Switch                               |
| 7        | 90807       | Ring Terminal (2)                 | 17       | 65642       | Lock Nut, $\frac{1}{2}$ " NPT        |
| 8        | 90817       | Washer                            | 18       | 59357       | Circuit Breaker, 6 Amp               |
| 9        | 59367       | Terminal Block                    | 19       | 39318       | 230 V Soft Start Assy.               |
| 10       | 87052       | Switch Box Cover                  |          |             |                                      |

## 100V Components

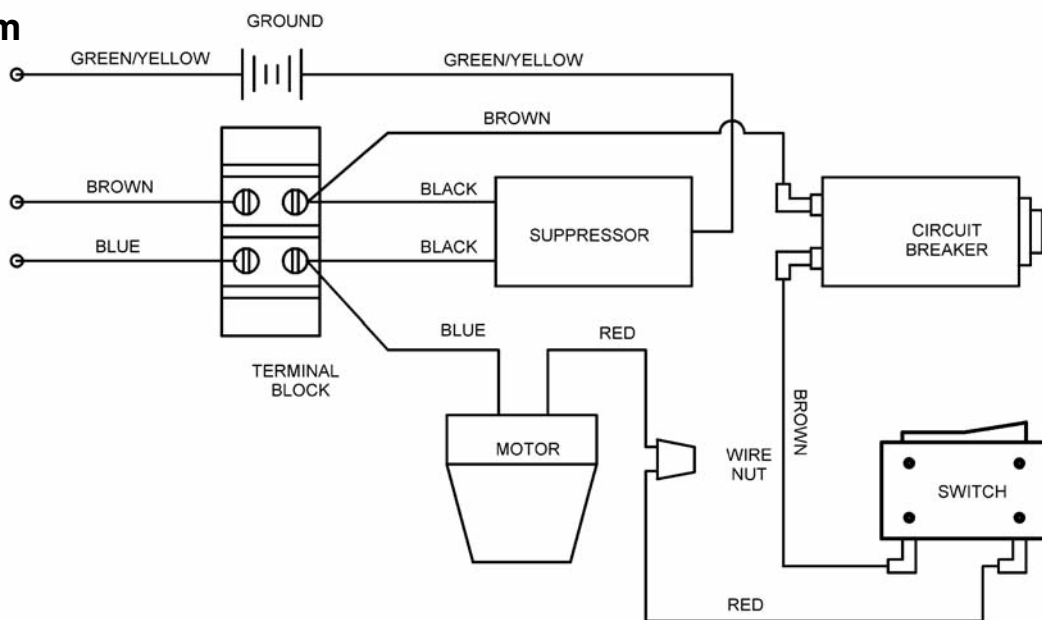


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

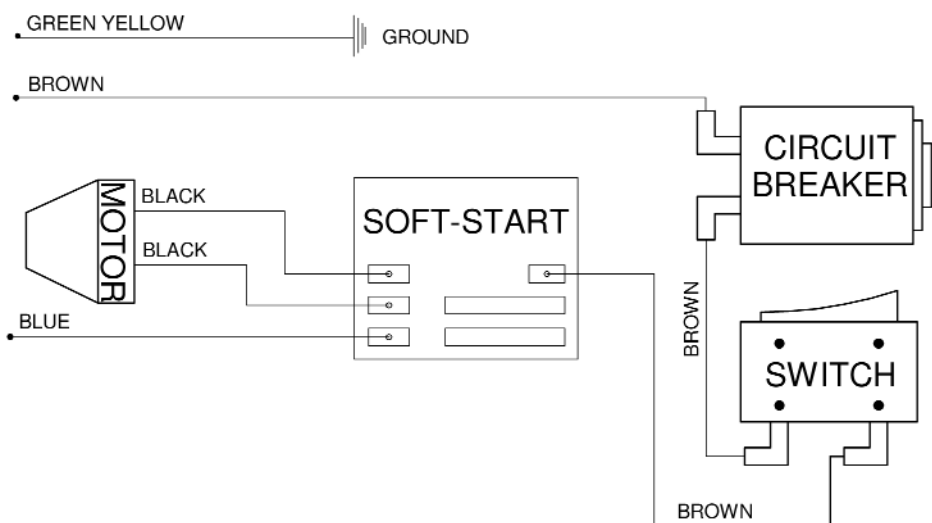
| Ref. No. | Catalog No. | Description        | Ref. No. | Catalog No. | Description                       |
|----------|-------------|--------------------|----------|-------------|-----------------------------------|
| 1        | 59102       | Key Retainer       | 8        | 65602       | Strain Relief                     |
| 2        | 89155       | Line Cord          | 9        | 46795       | Screw #10 - 24 x 1/2" (5)         |
| 3        | 26292       | Ring Terminal      | 10       | 44635       | Wire Nut                          |
| 4        | 45420       | Screw w/Washer (2) | 11       | 58597       | Switch                            |
| 5        | 65642       | Lock Nut, 1/2" NPT | 12       | 76992       | Quick Disconnect, Right Angle (4) |
| 6        | 87047       | Switch Box Cover   | 13       | 58962       | Circuit Breaker, 15 Amp           |
| 7        | 77002       | Cord Guard         |          |             |                                   |



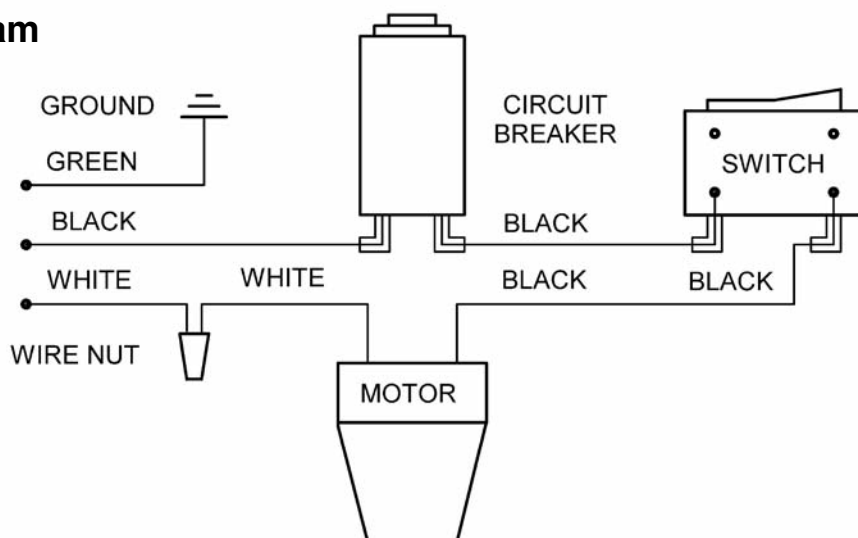
## 230V Wiring Diagram



## 230V Wiring Diagram (w/Soft Start)



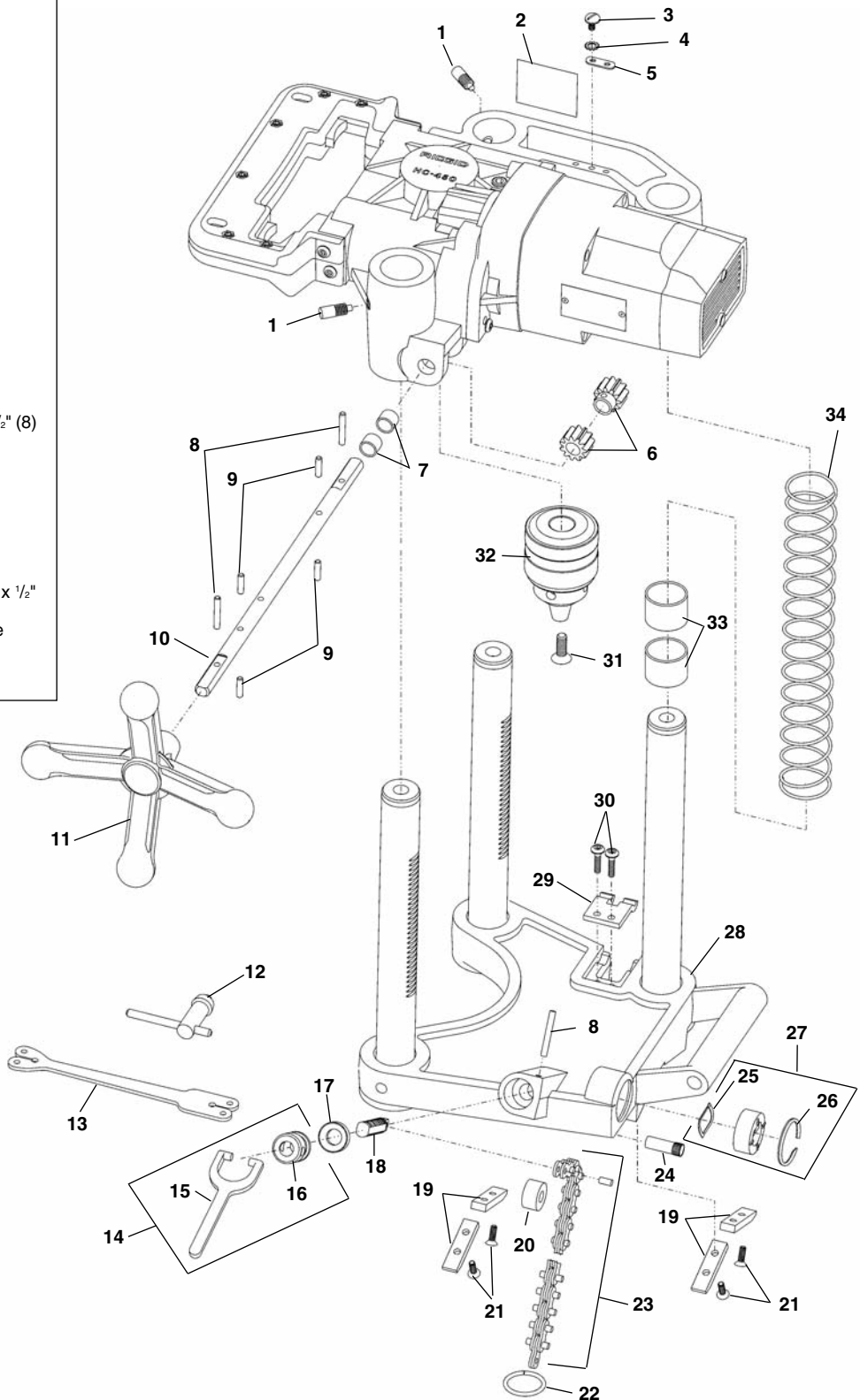
## 100V/115V Wiring Diagram



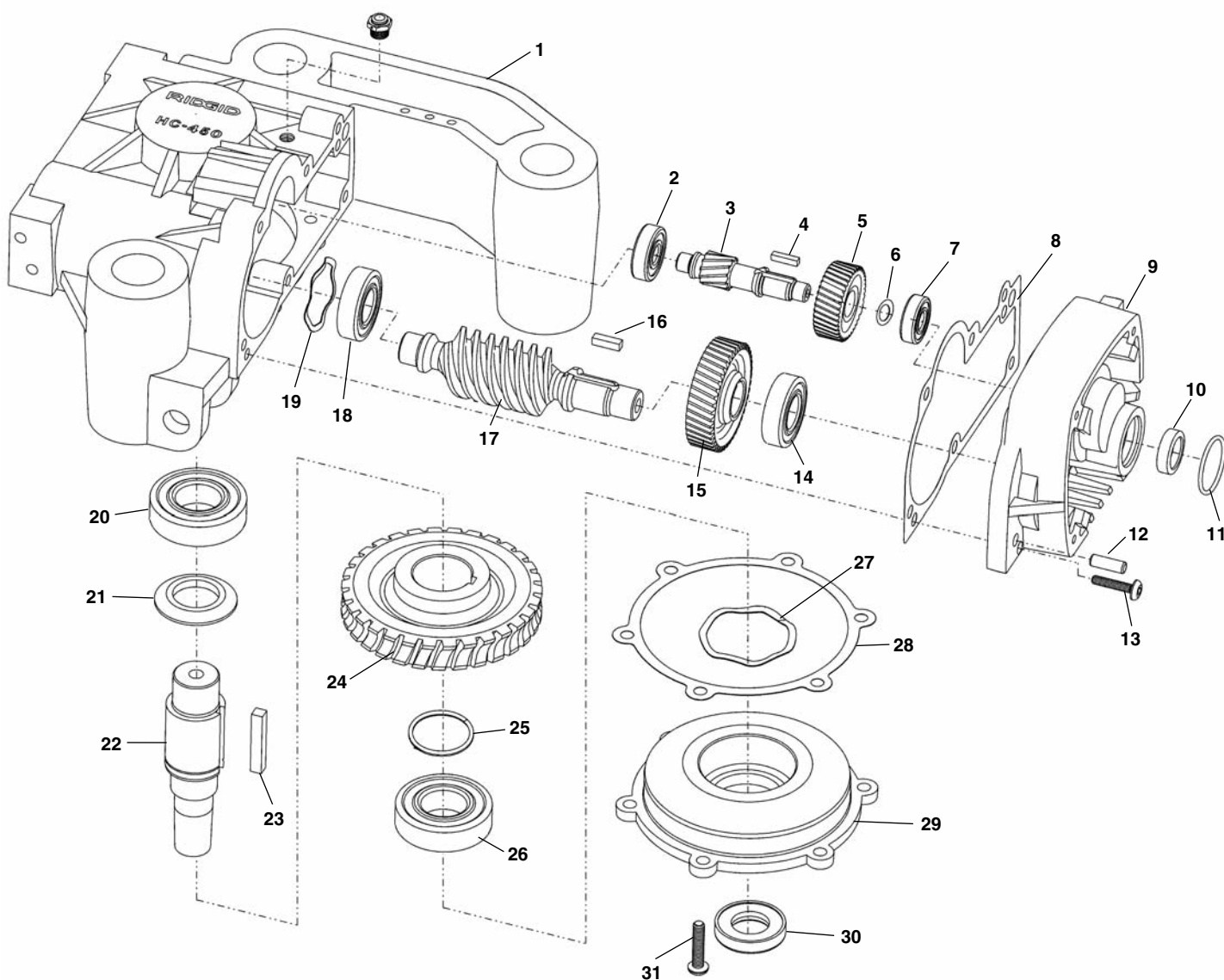
## Main Components

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                            |
|----------|-------------|----------------------------------------|
| 1        | 59382       | Gib Screw (2)                          |
| 2        | 59337       | Warning Label                          |
| 3        | 45420       | Screw, #10-24 x 3/8"                   |
| 4        | 46985       | Lock Washer #10                        |
| 5        | 59407       | Ground Spacer                          |
| 6        | 59092       | Pinion (2)                             |
| 7        | 53072       | Bearing (3)                            |
| 8        | 36387       | Split Roll Pin 3/16" x 1" (3)          |
| 9        | 34342       | Roll Pin, 3/16" x 15/16" (4)           |
| 10       | 70797       | Feed Shaft, 120V/230V                  |
| 11       | 70802       | Feed Shaft, 100V                       |
| 12       | 58957       | Handwheel                              |
| 13       | 59132       | Chuck Key – Jacobs Style               |
| 14       | 59057       | Chuck Key – JIS Style                  |
| 15       | 59102       | Key Keeper                             |
| 16       | 32115       | Handle Assembly w/Nut                  |
| 17       | 32120       | Handle                                 |
| 18       | 32130       | Swivel Nut                             |
| 19       | 58987       | Friction Ring                          |
| 20       | 32135       | Chain Screw                            |
| 21       | 59187       | Wear Pad with Screws (4)               |
| 22       | 40990       | Roll </td                              |
| 23       | 59192       | Soc. Flat Hd. Screw, #10-24 x 1/2" (8) |
| 24       | 32555       | Wire Ring                              |
| 25       | 59012       | Chain Assembly                         |
| 26       | 41035       | Knurl Pin                              |
| 27       | 59017       | Wave Washer                            |
| 28       | 59182       | Retaining Ring                         |
| 29       | 58997       | Level Vial Assembly                    |
| 30       | 58977       | Base Assembly w/Posts                  |
| 31       | 58992       | Wear Plate                             |
| 32       | 40260       | Soc Head Cap Screw, #10-24 x 1/2"      |
| 33       | 59377       | Flat Head Screw, 5/16" - 18 x 1"       |
| 34       | 59247       | Chuck with Key – Jacobs Style          |
| 35       | 59022       | Chuck with Key – JIS Style             |
| 36       | 59027       | Bearing (6)                            |
| 37       | 59177       | Compression Spring (3)                 |



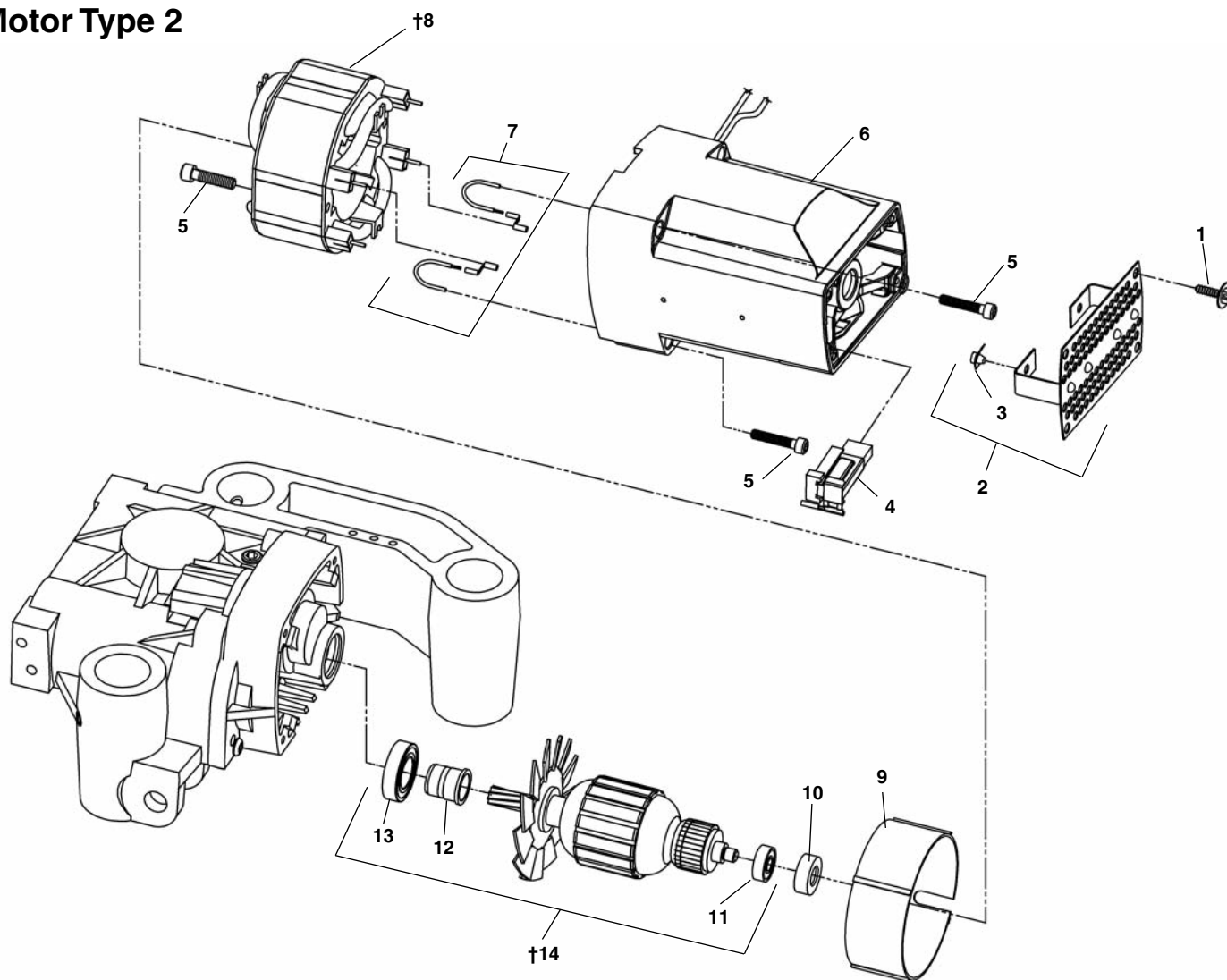
## Transmission



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                      | Ref. No. | Catalog No. | Description                                     |
|----------|-------------|--------------------------------------------------|----------|-------------|-------------------------------------------------|
| 1        | 29062       | Transmission Housing                             | 15       | 59052       | Helical Gear                                    |
| 2        | 44760       | Ball Bearing                                     | 16       | 26657       | Key, $\frac{3}{16}$ " Sq. x $\frac{5}{8}$ " Lg. |
| 3        | 77222       | Intermediate Gear Shaft, T2                      | 17       | 59047       | Worm Shaft                                      |
|          | 59037       | Intermediate Gear Shaft                          | 18       | 44565       | Ball Bearing                                    |
| 4        | 34472       | Key                                              | 19       | 72267       | Wave Washer                                     |
| 5        | 59042       | Helical Gear                                     | 20       | 59152       | Angular Contact Bearing                         |
| 6        | 77237       | Spacer, T2                                       | 21       | 59162       | Spacer                                          |
| 7        | 77217       | Ball Bearing, T2                                 | 22       | 59142       | Output Spindle                                  |
|          | 59147       | Ball Bearing                                     | 23       | 26457       | Key, $\frac{1}{4}$ " Sq. x $1\frac{3}{16}$ "    |
| 8        | 72192       | Gasket, T2                                       | 24       | 59167       | Worm Gear                                       |
|          | 59077       | Gasket                                           | 25       | 72217       | Retaining Ring                                  |
| 9        | 77212       | Motor Adapter, T2                                | 26       | 45315       | Ball Bearing                                    |
| 10       | 77207       | Grease Seal, T2                                  | 27       | 59082       | Wave Washer                                     |
| 11       | 77202       | O-Ring, T2                                       | 28       | 72207       | Gasket                                          |
|          | 60227       | O-Ring                                           | 29       | 72202       | Cover                                           |
| 12       | 44640       | Dowel Pin, $\frac{1}{4}$ " x $\frac{3}{4}$ " (2) | 30       | 59392       | Oil Seal                                        |
| 13       | 72212       | Hex Button Hd Scr w/Sealant (12)                 | 31       | 59935       | Screw, $\frac{1}{4}$ " x 20 x 1" SHC            |
| 14       | 59137       | Angular Contact Bearing                          | 32       | 40628       | Breather Plug 100V Only (NOT SHOWN)             |

## Motor Type 2

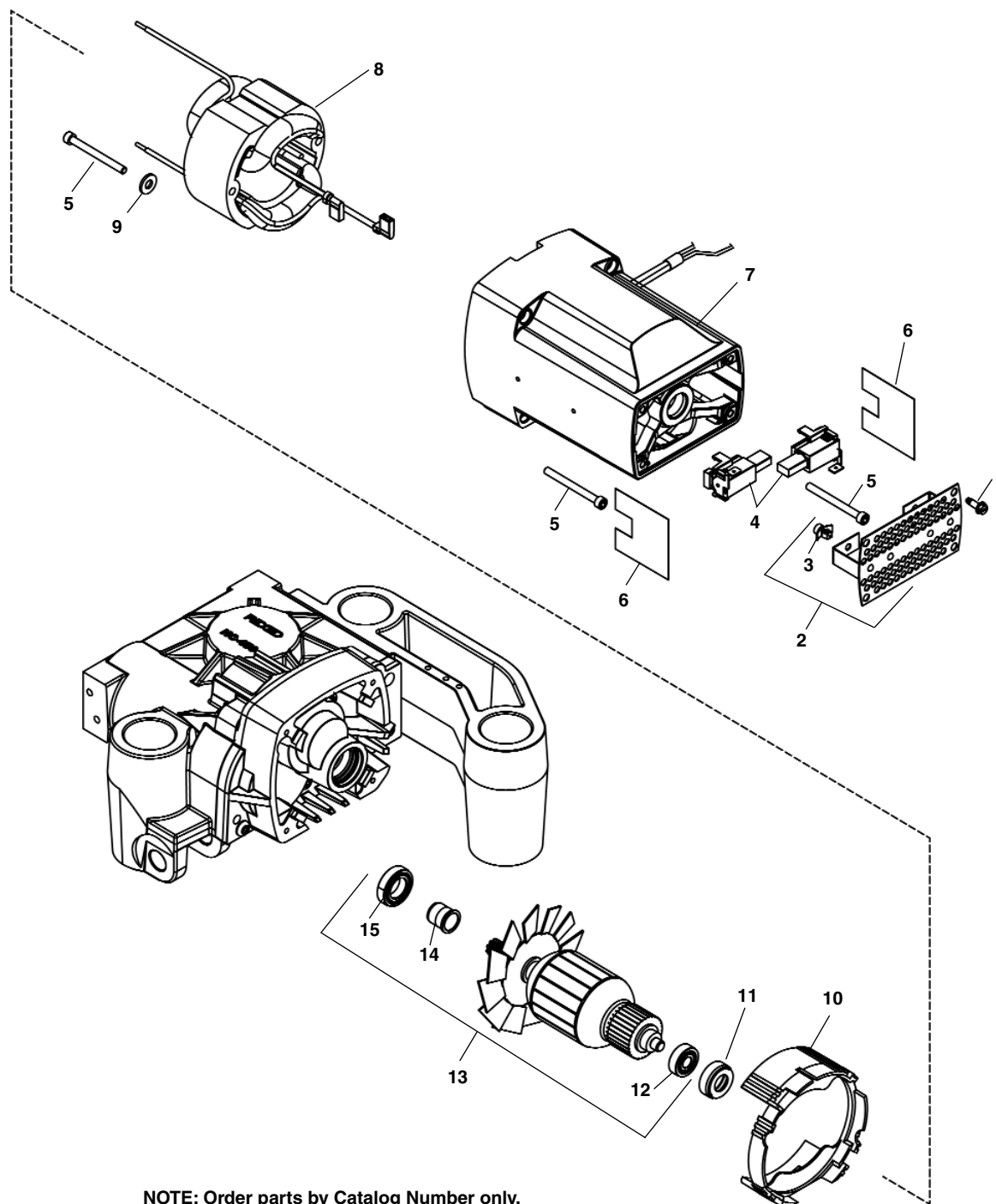


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------------------|----------|-------------|------------------------|
| 1        | 10908       | Screw, Self Tapping (4)             | 9        | 35328       | Fan Shroud             |
| 2        | 10913       | End Cover                           | 10       | 42777       | Rubber Sleeve          |
| 3        | 10918       | Bumper (2)                          | 11       | 43017       | Bearing                |
| 4        | 34078       | Brush Assembly Set 115V             | 12       | 77227       | Armature Sleeve        |
|          | 34083       | Brush Assembly Set 230V             | 13       | 77232       | Bearing                |
| 5        | 10923       | Screw, #10-24 x 2" Soc. Hd. Cap (6) | †14      | 84087       | Armature Assembly 120V |
| 6        | 10903       | Motor Housing                       |          | 84082       | Armature Assembly 230V |
| 7        | 77027       | Motor Lead Set                      |          | 84092       | Armature Assembly 100V |
| †8       | 45897       | Field 120V                          |          |             |                        |
|          | 58567       | Field 220V                          |          |             |                        |
|          | 58572       | Field 100V                          |          |             |                        |

† Service Note: When replacing early style 115V or 230V armature# or field# you must replace with both new style armature#, field# and brushes#.

### Motor Type 2 – Motors built after Serial Number EAL XXXX 1109

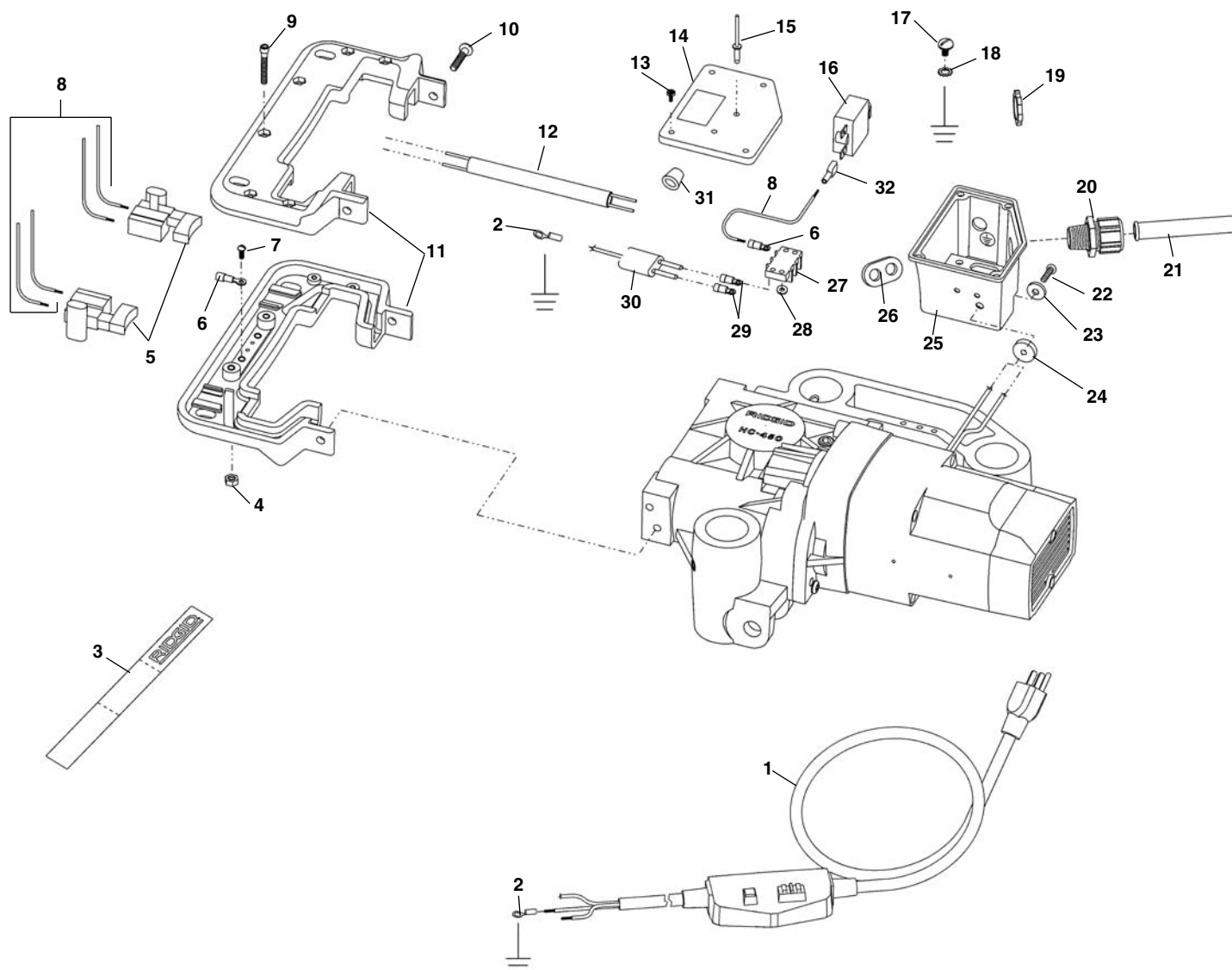


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------------------|----------|-------------|------------------------|
| 1        | 10908       | Screw, Self Tapping (4)             | 9        | 41592       | Washer                 |
| 2        | 10913       | End Cover                           | 10       | 35328       | Fan Shroud             |
| 3        | 10918       | Bumper (2)                          | 11       | 42777       | Rubber Sleeve          |
| 4        | 34078       | Brush Assembly Set 115V             | 12       | 43017       | Bearing                |
|          | 34083       | Brush Assembly Set 230V             | 13       | 38833       | Armature Assembly 120V |
| 5        | 10923       | Screw, #10-24 x 2" Soc. Hd. Cap (6) |          | 38838       | Armature Assembly 230V |
| 6        | 39003       | Shields (2)                         |          | 38843       | Armature Assembly 100V |
| 7        | 10903       | Motor Housing HC-450                | 14       | 77227       | Armature Sleeve        |
| 8        | 38848       | Field 120V                          | 15       | 77232       | Bearing                |
|          | 38853       | Field 220V                          |          |             |                        |
|          | 38858       | Field 100V                          |          |             |                        |



## 120V/220 Components Switch In Handle

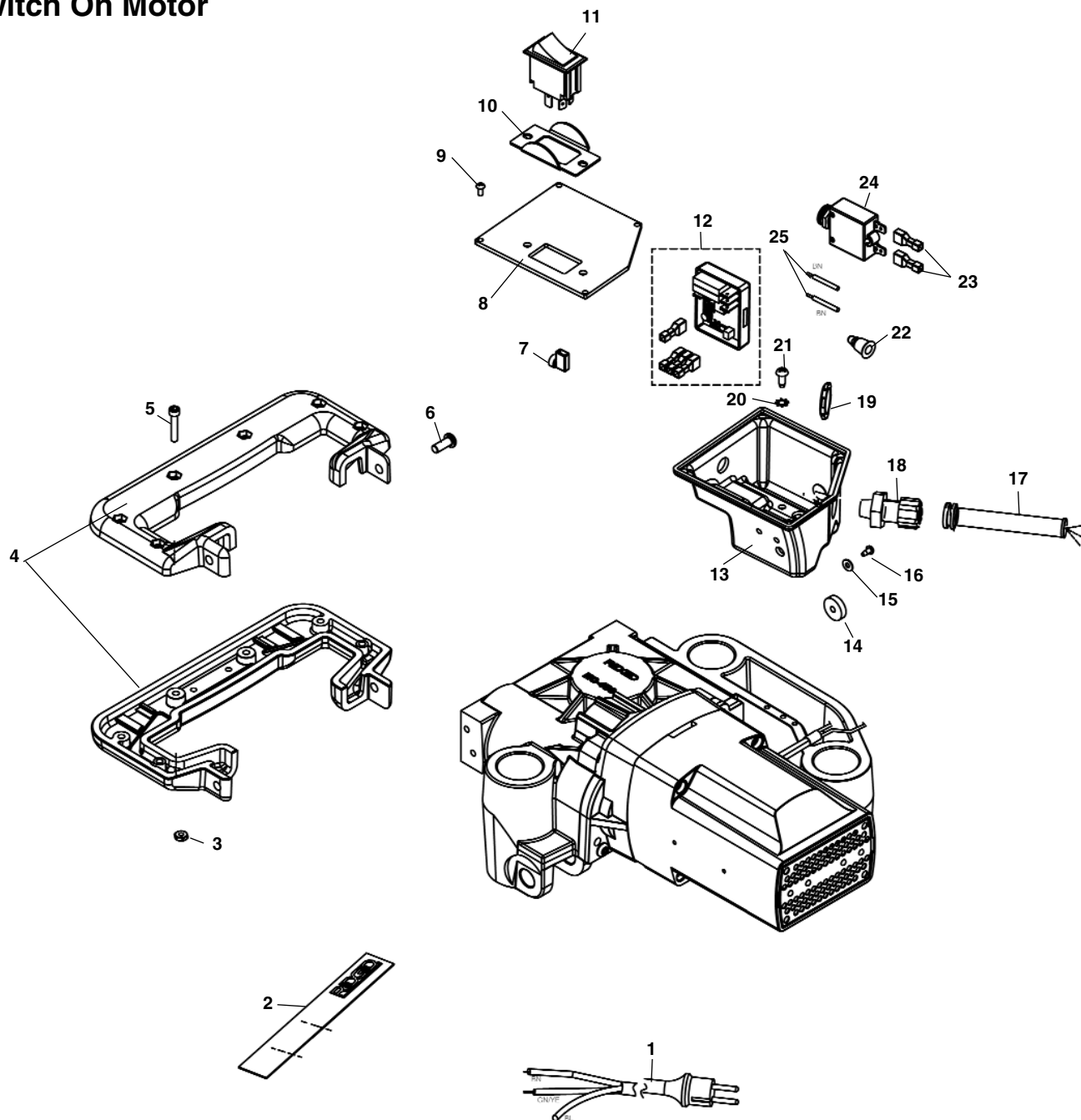


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                              | Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description                   |
|----------|-------------|------------------------------------------|----------|-------------|-------------------------------|----------|-------------|-------------------------------|
| 1        | 50502       | Power Cord w/GFCI 120V                   | 11       | 59257       | Handle Set                    | 21       | 77002       | Cord Guard                    |
|          | 65842       | Power Cord w/GFCI 220V                   | 12       | 59342       | Insulator Tube                | 22       | 93740       | Screw Self Tap (2)            |
| 2        | 26292       | Ring Terminal                            | 13       | 72167       | Screw, #6-32 x 5/16" (4)      | 23       | 90812       | Washer                        |
| 3        | 59097       | Cinch Strap                              | 14       | 72147       | Cover Plate 120V              | 24       | 59397       | Gasket                        |
| 4        | 44695       | Hex Nut #10-24 (6)                       |          | 59227       | Cover Plate, 230V             | 25       | 59122       | Junction Box                  |
| 5        | 59317       | Switch 115V (2)                          | 15       | 59112       | Pop Rivet, 5/32" (4)          | 26       | 59402       | Seal                          |
|          | 59362       | Switch, 230V (2)                         | 16       | 61302       | Circuit Breaker 15 Amp (120V) | 27       | 59367       | Terminal Block (220V Only)    |
| 6        | 83895       | Ring Terminal                            |          | 59357       | Circuit Breaker, 6 Amp (220V) | 28       | 90817       | Washer (220V only)            |
| 7        | 32318       | Screw, #6-32 x 5/16" (2)                 | 17       | 59192       | Screw, #10-24 x 1/2" FH Soc.  | 29       | 90807       | Ring Terminal (2) (220V Only) |
| 8        | 77027       | Switch Wire Set                          | 18       | 46985       | Lock Washer #10               | 30       | 36502       | Suppressor (220V Only)        |
| 9        | 93680       | Soc. Hd. Cap Screw #10-24 x 1" (8)       | 19       | 65642       | Lock Nut 1/2" NPT             | 31       | 44635       | Wire Nut                      |
| 10       | 32205       | Soc. Hd. Cap Screw, 1/2" - 20 x 5/8" (4) | 20       | 65602       | Strain Relief                 | 32       | 59007       | Terminal Set                  |



## Switch On Motor



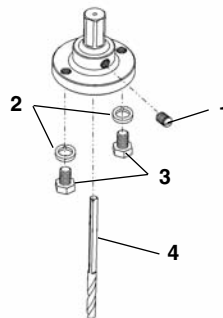
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                          | Ref. No. | Catalog No. | Description                  | Ref. No. | Catalog No. | Description                   |
|----------|-------------|--------------------------------------|----------|-------------|------------------------------|----------|-------------|-------------------------------|
| 1        | 50502       | Power Cord w GFCI 115V               | 9        | 72167       | Screw #6-32 x 5/16" (4)      | 19       | 65642       | Lock Nut 1/2"                 |
|          | 65842       | Power Cord w GFCI 220V               | 10       | 10408       | Switch Guard                 | 20       | 49685       | Washer                        |
|          | 89155       | Power Cord 100V                      | 11       | 58597       | Switch                       | 21       | 59192       | Flat Head Screw #10-24 x 1/2" |
| 2        | 59097       | Cinch Strap                          | 12       | 39318       | Soft Start Assy. (220V Only) | 22       | 44635       | Wire Nut                      |
| 3        | 44695       | Hex Nut #10-24 (6)                   | 13       | 40758       | Junction Box                 | 23       | 59007       | Terminal Set                  |
| 4        | 40748       | Handle Set w/o Switch Holes          | 14       | 59397       | Gasket                       | 24       | 61302       | Circuit Breaker 12 Amp (120V) |
| 5        | 93680       | Soc. Hd Cap Screw #10-24 x 1" (6)    | 15       | 90812       | Washer                       |          | 59357       | Circuit Breaker 6 Amp (220V)  |
| 6        | 32205       | Soc. Hd Cap Screw 1/2"-20 x 5/8" (4) | 16       | 93740       | Self Tap Screw (2)           |          | 58962       | Circuit Breaker 15 Amp (100V) |
| 7        | 40773       | Right Angle Disconnect (2)           | 17       | 77002       | Cord Guard                   | 25       | 73012       | Lead Wire Asm                 |
| 8        | 40753       | Cover Plate 120V                     | 18       | 65602       | Strain Relief                |          |             |                               |

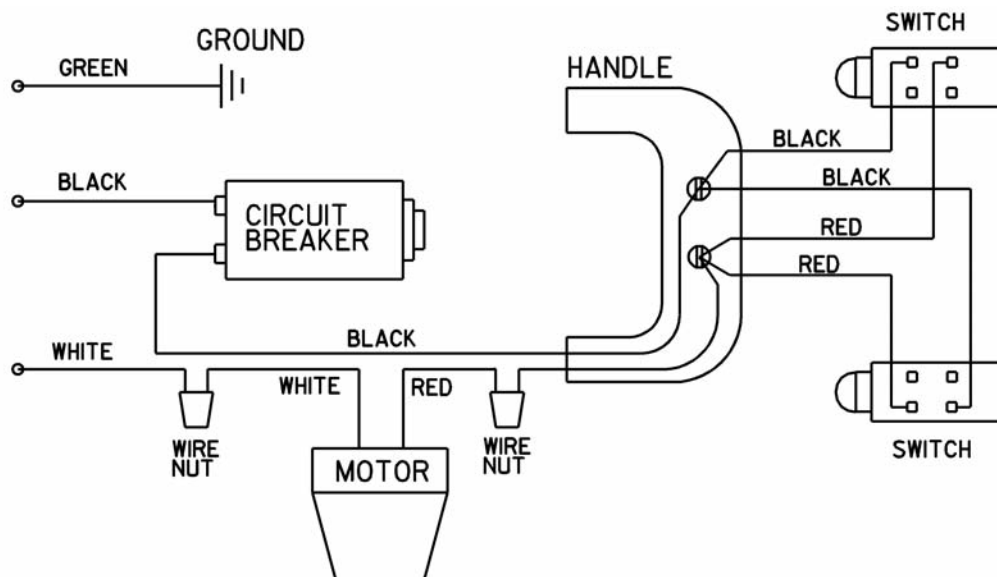
## R-4 Arbor Assembly

**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

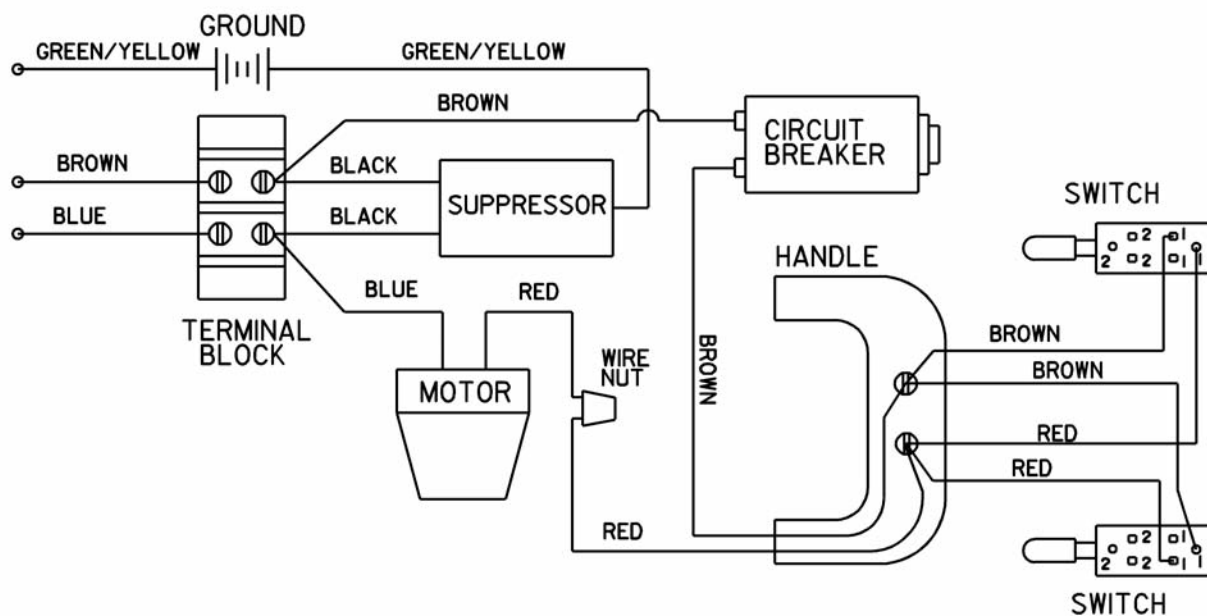
| Ref. No. | Catalog No. | Description                                                 |
|----------|-------------|-------------------------------------------------------------|
| —        | 59502       | R-4 Arbor Assembly                                          |
| 1        | 59387       | Set Screw, $\frac{5}{16}$ " - 24 x $\frac{1}{2}$ ", Cup Pt. |
| 2        | 60080       | Lock Washer, $\frac{5}{16}$ " (2)                           |
| 3        | 60010       | Hex Screw, $\frac{5}{16}$ " - 18 x $\frac{1}{2}$ " (2)      |
| 4        | 53085       | Pilot Drill, $\frac{1}{4}$ "                                |



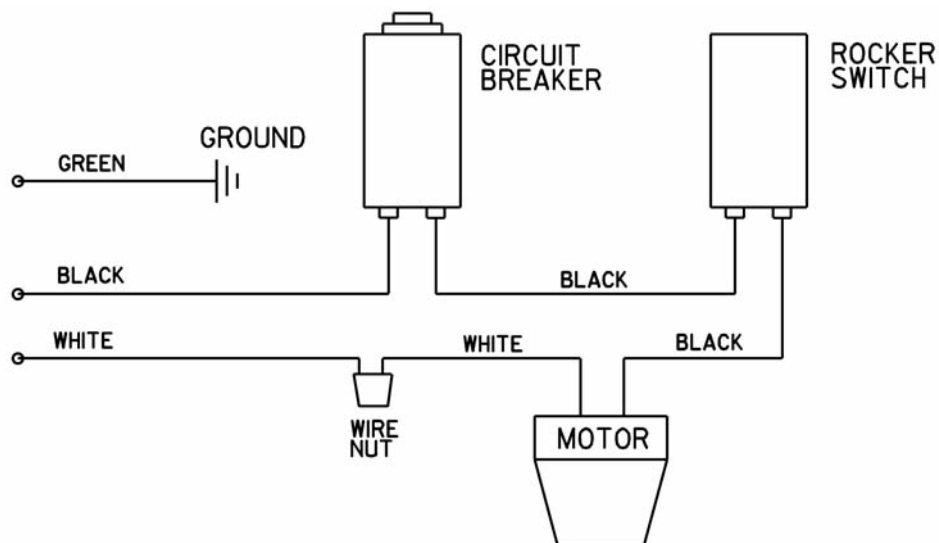
## 120V Wiring Diagram Switch In Handle



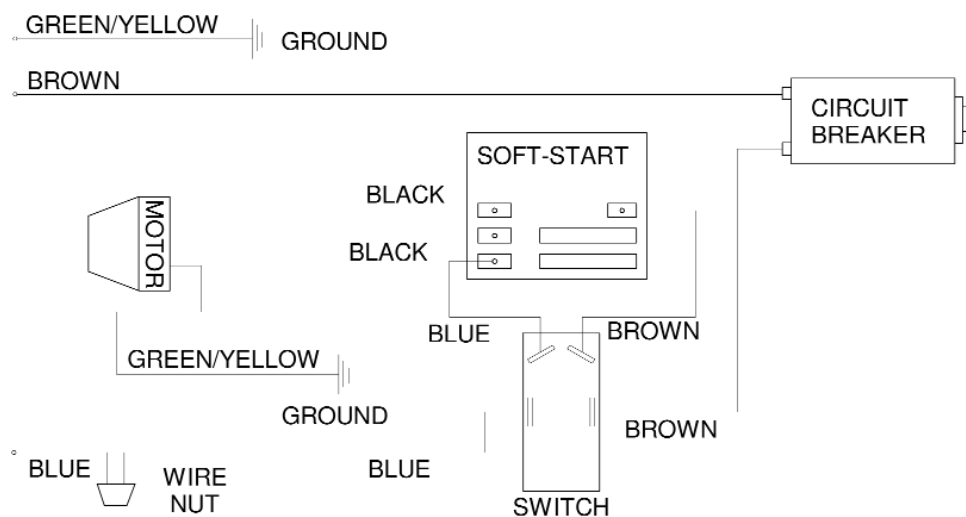
## 230V Wiring Diagram Switch In Handle



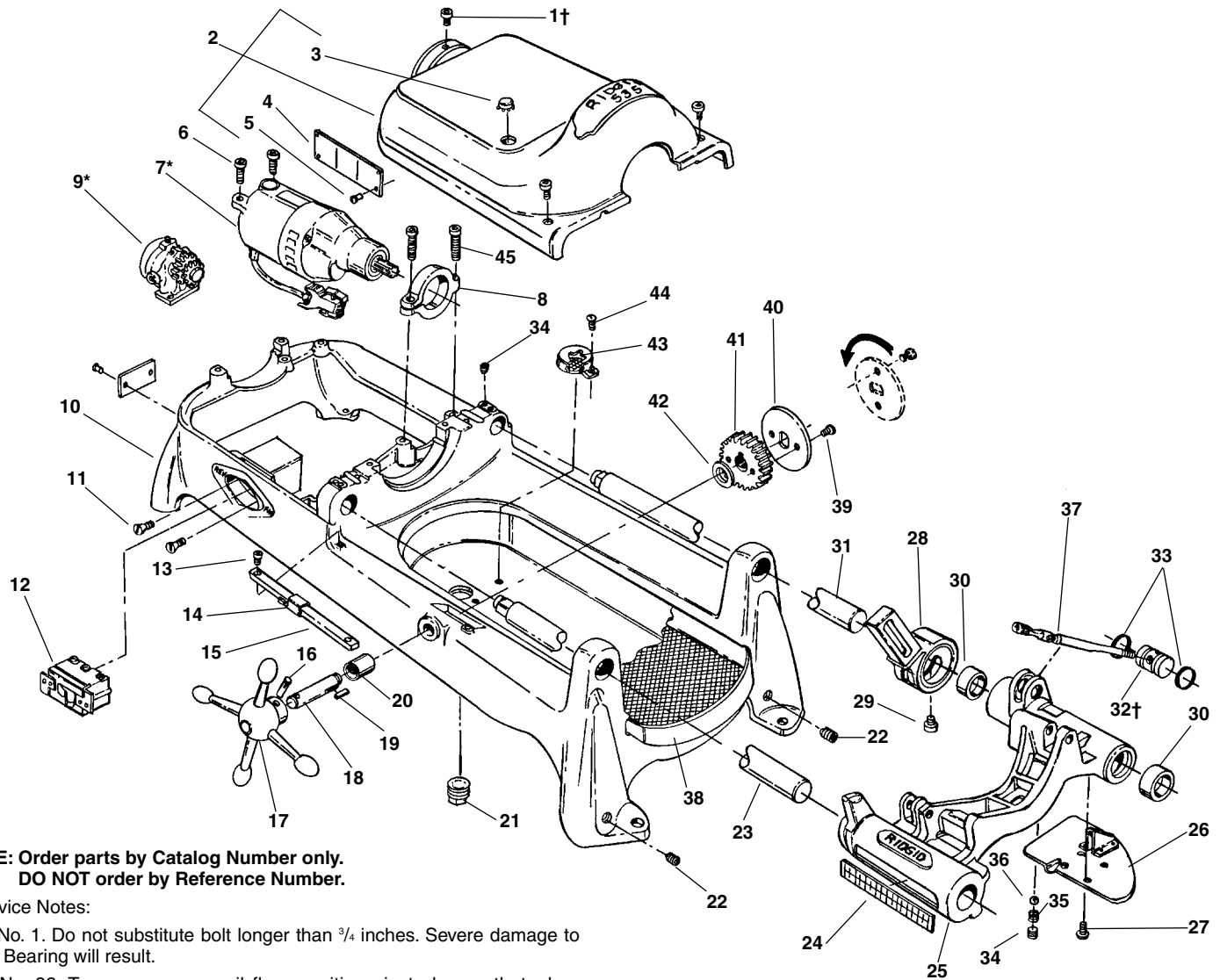
## 100V/115V Wiring Diagram Switch On Motor



## 230V Wiring Diagram Switch On Motor (w/Soft Start)



## Main Components – Early Style



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

†Service Notes:

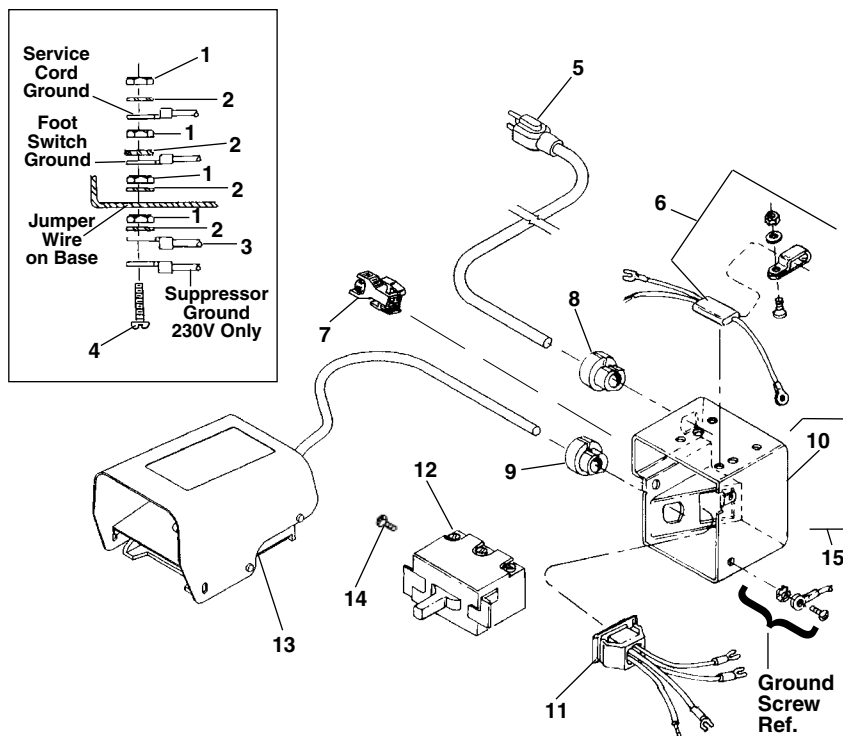
Ref. No. 1. Do not substitute bolt longer than  $\frac{3}{4}$  inches. Severe damage to Rear Bearing will result.

Ref. No. 32. To assure proper oil flow, position pivot plug so that when spout is in up position, oil flow hole is visible in carriage slot below spout.

| Ref. No. | Catalog No. | Description                                          | Ref. No. | Catalog No. | Description                                                            |
|----------|-------------|------------------------------------------------------|----------|-------------|------------------------------------------------------------------------|
| 1†       | 46760       | Screw $\frac{3}{8}$ " - 16 x $\frac{3}{4}$ " (3)     | 24       | 46370       | Scale                                                                  |
| 2        | 43190       | Cover (Incls. Ref. No. 3, 4, 5)                      | 25       | 62057       | Carriage Assy. (Includes Ref. Nos. 24, 26, 27, 28, 29, 30, 34, 35, 36) |
| 3        | 89310       | Plug Button                                          | 26       | 45195       | Drip Plate                                                             |
| 4        | 88690       | Warning Plate                                        | 27       | 46270       | Screw $\frac{1}{4}$ " - 20 x $\frac{1}{2}$ " Pan Head (4)              |
| 5        | 85920       | Pop Rivet (8)                                        | 28       | 43690       | Cutter Arm                                                             |
| 6        | 46745       | Screw $\frac{3}{8}$ " - 16 x $1\frac{1}{4}$ " (2)    | 29       | 44930       | Screw, $\frac{5}{16}$ " x $\frac{9}{32}$ "                             |
| 7*       | 88125       | Motor Model 1177, 115V                               | 30       | 46720       | Oil Seal (2)                                                           |
|          | 88165       | Motor Model 2377, 230V                               | 31       | 45220       | Support Bar - Rear                                                     |
| 8        | 43795       | Motor Bracket                                        | 32†      | 44340       | Pivot Plug                                                             |
| 9*       | 47195       | Model A Oil Pump                                     | 33       | 44470       | O-Ring (2)                                                             |
| 10       | 43030       | Base (Incls. Ref. No. 20, 21, 22, 44)                | 34       | 46800       | Set Screw $\frac{3}{8}$ " - 16 x $\frac{3}{8}$ " (3)                   |
| 11       | 45280       | Screw #8-32 x $\frac{5}{8}$ " Flat Head (2)          | 35       | 46680       | Spring                                                                 |
| 12       | 44505       | Switch                                               | 36       | 46925       | Ball                                                                   |
| 13       | 45615       | Screw #10-32 x $\frac{1}{2}$ " Flat Head (2)         | 37       | 44495       | Oil Spout Assembly                                                     |
| 14       | 47110       | Indicator Slide                                      | 38       | 43355       | Chip Tray                                                              |
| 15       | 47105       | Indicator Bar                                        | 39       | 46785       | Screw #10-32 x $\frac{3}{8}$ "                                         |
| 16       | 47165       | Pin                                                  | 40       | 47120       | Lock Plate                                                             |
| 17       | 46510       | Handwheel                                            | 41       | 45430       | Pinion                                                                 |
| 18       | 47115       | Pinion Shaft                                         | 42       | 47145       | Spacer                                                                 |
| 19       | 46930       | Key $\frac{3}{16}$ " Square                          | 43       | 46655       | Filter                                                                 |
| 20       | 46540       | Bushing                                              | 44       | 45420       | Screw #10-24 x $\frac{3}{8}$ "                                         |
| 21       | 44485       | Drain Plug                                           | 45       | 44220       | Screw $\frac{3}{8}$ " - 16 x $1\frac{1}{2}$ "                          |
| 22       | 42037       | Set Screw $\frac{1}{2}$ " - 13 x $\frac{1}{2}$ " (4) |          |             |                                                                        |
| 23       | 45440       | Support Bar - Front                                  |          |             |                                                                        |

\*Refer to Motor Model No./Refer to Model "A" Oil Pump for Component Parts

## Electrical Components

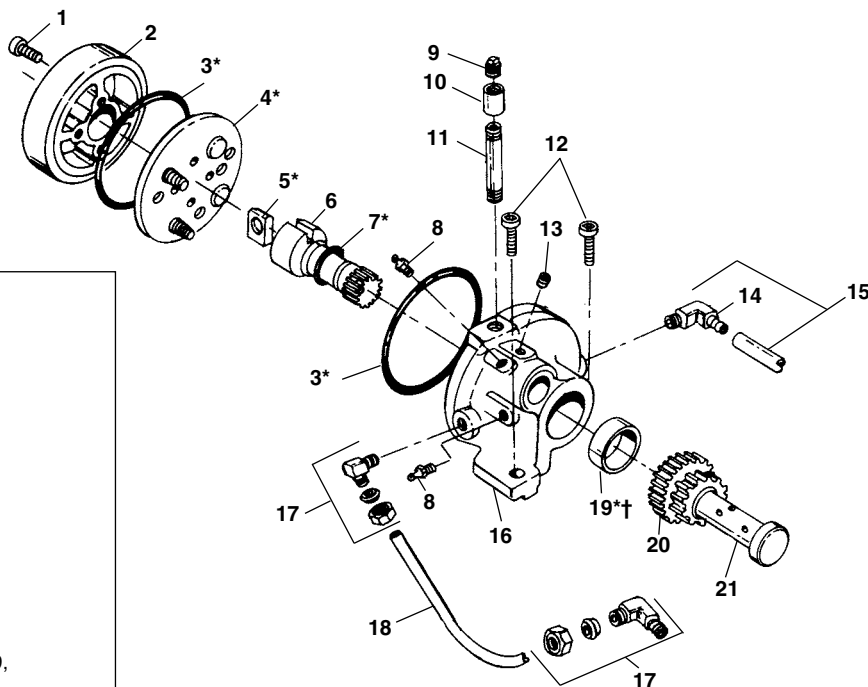


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

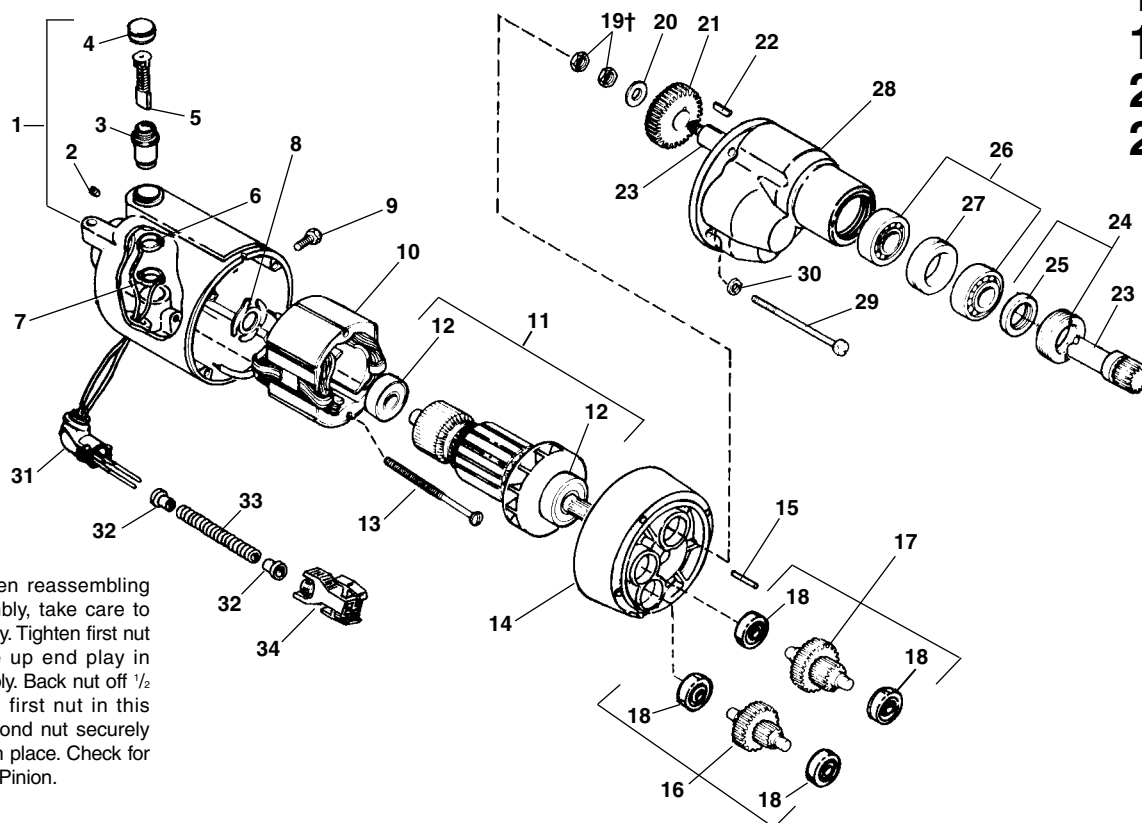
| Ref. No. | Catalog No. | Description                                 |
|----------|-------------|---------------------------------------------|
| 1        | 44695       | Hex Nut #10 - 24 (4)                        |
| 2        | 46985       | Ext. Tooth Washer #10 (4)                   |
| 3        | 85925       | Jumper Wire                                 |
| 4        | 92455       | Screw #10 - 24 x 3/4"                       |
| 5        | 46740       | Power Cord w/Plug (115V)                    |
|          | 46410       | Power Cord w/Plug (230V)                    |
|          | 75045       | Power Cordless Plug (230V Europe/S. Africa) |
| 6        | 46320       | Suppressor Kit (230V Europe)                |
|          | 99170       | Suppressor (230V S. Africa)                 |
| 7        | 50552       | Plug                                        |
| 8        | 46735       | Cord Grommet                                |
|          | 46730       | Cord Grommet (230V Europe/S. Africa)        |
| 9        | 46735       | Cord Grommet                                |
| 10       | 50612       | Switch Box                                  |
| 11       | 50617       | Outlet Jumper Assembly                      |
| 12       | 44505       | Switch                                      |
| 13       | 36642       | B-294 Foot Switch                           |
| 14       | 44180       | Screw                                       |
| 15       | 91187       | Switch Box Kit (Includes Ref. Nos. 7-11)    |

## Model "A" Pump

| Ref. No. | Catalog No. | Description                                               |
|----------|-------------|-----------------------------------------------------------|
| 1        | 46770       | Screw #10-32 x 1" SHCS (4)                                |
| 2        | 46350       | Cover                                                     |
| 3*       | 44650       | O-Ring (2)                                                |
| 4*       | 46645       | Valve Assembly                                            |
| 5*       | 47100       | Rotor Blade                                               |
| 6        | 46355       | Pinion Shaft                                              |
| 7*       | 44645       | O-Ring                                                    |
| 8        | 46860       | Grease Fitting                                            |
| 9        | 46815       | Pipe Plug                                                 |
| 10       | 89725       | Coupling                                                  |
| 11       | 89730       | Nipple                                                    |
| 12       | 46750       | Screw 3/8"-16 x 1" SHCS (2)                               |
| 13       | 44455       | Set Screw 5/16" x 3/8"                                    |
| 14       | 87945       | 90° Fitting                                               |
| 15       | 75065       | Intake Line                                               |
| 16       | 43470       | Pump Body (Incls. Ref. Nos. 3, 8, 16, 19, Roller Bearing) |
| 17       | 46840       | 90° Fitting (2)                                           |
| 18       | 44105       | Feed Line                                                 |
| 19*†     | 46715       | Oil Seal                                                  |
| 20       | 44350       | Idler Gear                                                |
| 21       | 44345       | Gear Shaft                                                |
| —        | 91055       | Repair Kit (Includes items marked with *)                 |



†Service Note: When replacing Oil Seal, open side should face towards outside of Pump Body. Use care in installing Seal so that lip is not damaged.

**Motors**


†Service Note: When reassembling Drive Pinion Assembly, take care to set Jam Nuts properly. Tighten first nut moderately to take up end play in Pinion Shaft Assembly. Back nut off 1/2 turn. While holding first nut in this position, tighten second nut securely against first to lock in place. Check for free rotation of Drive Pinion.

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description            |
|----------|-------------|--------------------------------|----------|-------------|------------------------|
| 1        | 43160       | Housing                        | 18       | 45060       | Gear Bearing (4)       |
| 2        | 39770       | Set Screw 1/4" - 20 x 1/4" (2) | 19†      | 40350       | Lock Nut 3/8" - 24 (2) |
| 3        | 45025       | Brush Holder Set               | 20       | 45035       | Washer                 |
| 4        | 44545       | Brush Cap Set                  | 21       | See Chart   | Main Drive Gear        |
| 5        | 44540       | Brush Set                      | 22       | 45015       | Key 5/32" Sq.          |
| 6        | 87865       | White Upper Lead               | 23       | 44960       | Drive Pinion           |
| 7        | 87870       | Red Lower Lead                 | 24       | 45010       | Lock Nut w/Seal        |
| 8        | 44580       | Loading Spring                 | 25       | 45085       | Seal                   |
| 9        | 83500       | Screw 1/4" - 20 x 3/4"         | 26       | 45040       | Bearing Set w/Spacer   |
| 10       | 44015       | Field - 115V                   | 27       | 45045       | Spacer                 |
|          | 44035       | Field - 230V                   | 28       | 43170       | Housing                |
| 11       | 44010       | Armature - 115V                | 29       | 45075       | Screw 1/4" - 20 x 3"   |
|          | 44030       | Armature - 230V                | 30       | 45150       | Lock Washer (4)        |
| 12       | 44565       | Armature Bearing (2)           | 31       | 46900       | Connector 90°          |
| 13       | 44555       | Mounting Screw (2)             |          | 46905       | Connector 45°          |
| 14       | 43165       | Fan Housing Assembly           | 32       | 46890       | Insulator (2)          |
| 15       | 45165       | Dowel Pin                      | 33       | 47412       | Flexible Conduit       |
| 16       | See Chart   | 1st Gear Assembly              | 34       | 50552       | Plug                   |
| 17       | See Chart   | 2nd Gear Assembly              |          |             |                        |

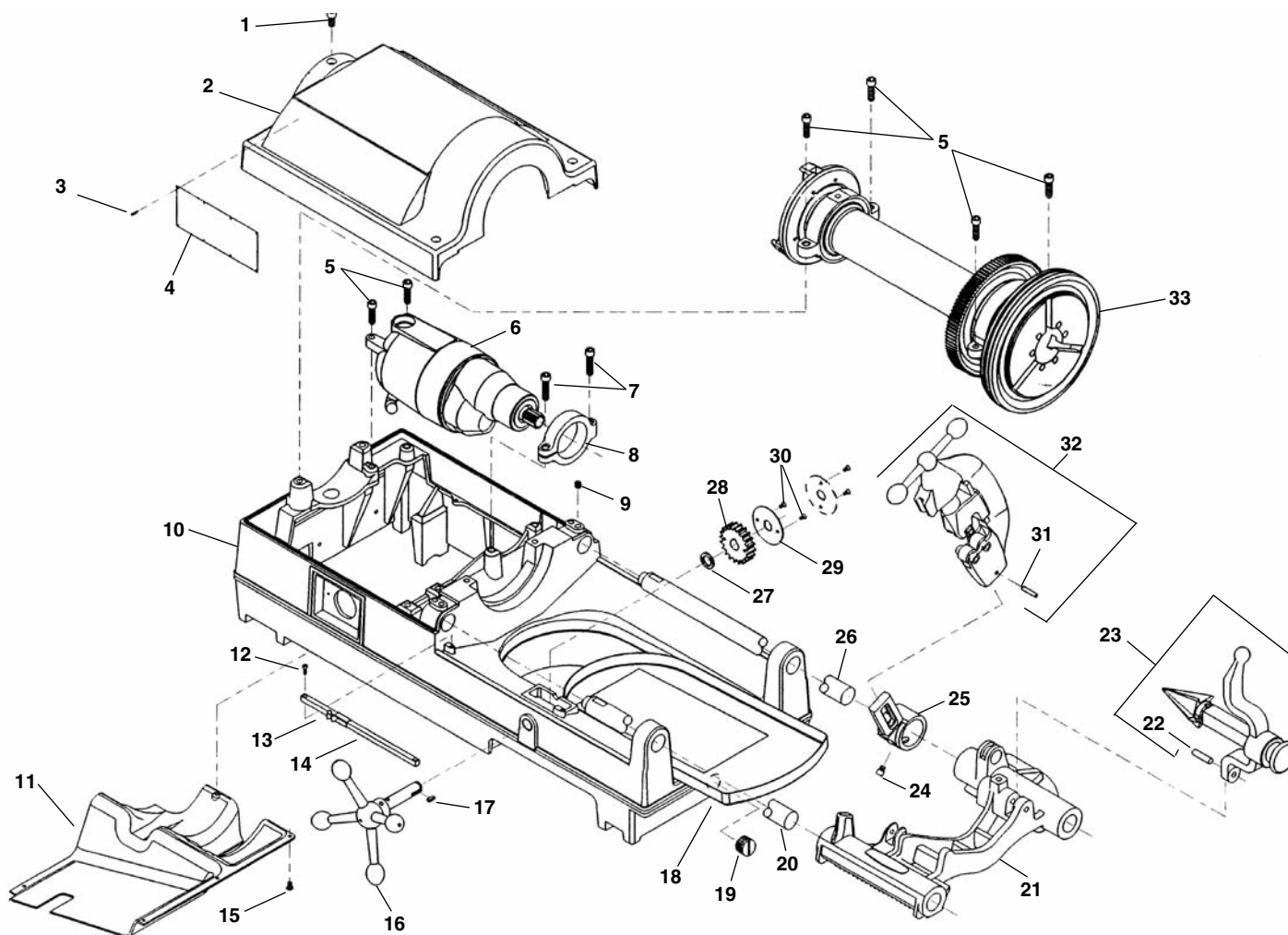
**SPEED CHANGE GEAR CHART MACHINE MODEL NO. 400A - 535 - 802**

| Model No.      | Volts        | Spindle Speed     | Ref. #11                | Ref. No. 16 - 1st Intermediate Gear Assembly             | Ref. No. 17 - 2nd Intermediate Gear Assembly             | Ref. No. 21 Drive Gear              |
|----------------|--------------|-------------------|-------------------------|----------------------------------------------------------|----------------------------------------------------------|-------------------------------------|
| 1177<br>2377   | 115V<br>230V | 36 STD.           | Armature Pinion - 14 T. | PART NO. 44985<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | PART NO. 45005<br>(E-2601-X)<br>42 T. GEAR 13 T. PINION  | PART NO. 44965<br>(E-2597)<br>48 T. |
| 1177A<br>2377A | 115V<br>230V | 54 STD.<br>ON 802 |                         | PART NO. 44985<br>(E-2600-X)<br>51 T. GEAR 12 T. PINION  | PART NO. 44990<br>(E-2601-AX)<br>42 T. GEAR 18 T. PINION | PART NO. 44865<br>(E-1926)<br>43 T. |
| 1177B          | 115V         | 72                |                         | PART NO. 44975<br>(E-2600-BX)<br>51 T. GEAR 15 T. PINION | PART NO. 44995<br>(E-2601-BX)<br>39 T. GEAR 18 T. PINION | PART NO. 44865<br>(E-1926)<br>43 T. |
| 1177C<br>2377C | 115V<br>230V | 102               |                         | PART NO. 44980<br>(E-2600-CX)<br>51 T. GEAR 19 T. PINION | PART NO. 45000<br>(E-2601-CX)<br>35 T. GEAR 18 T. PINION | PART NO. 44865<br>(E-1926)<br>43 T. |

\*Supplied with Motor Complete



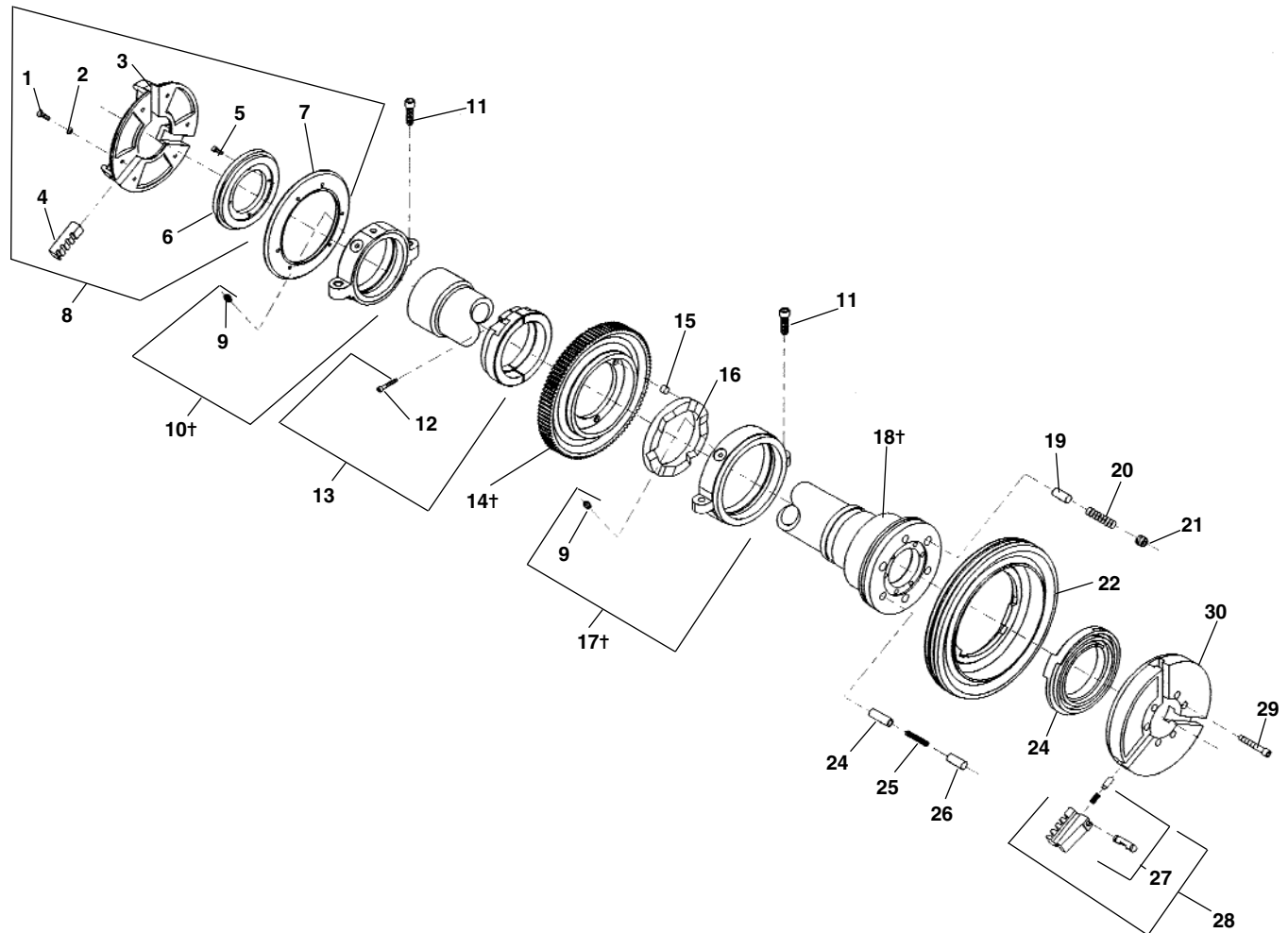
## Main Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description                                |
|----------|-------------|----------------------------|----------|-------------|--------------------------------------------|
| 1        | 46760       | Screw (3)                  | 17       | 46930       | Key $\frac{3}{16}$ " Sq. x $\frac{1}{2}$ " |
| 2        | 62062       | Top Cover                  | 18       | 43355       | Chip Tray                                  |
| 3        | 85920       | Pop Rivet (8)              | 19       | 48337       | Drain Plug                                 |
| 4        | 88690       | Warning Plate              | 20       | 45440       | Front Support Bar                          |
| 5        | 46745       | Screw                      | 21       | 62057       | Carriage Assembly                          |
| 6        | 64447       | 1194 Motor, 115V, 36 RPM   | 22       | 47065       | Hinge Pin                                  |
| —        | 64452       | 1194 A Motor, 115V, 54 RPM | 23       | 42365       | 341 Reamer Assembly                        |
| —        | 64457       | 2394 Motor, 230V, 36 RPM   | 24       | 44930       | Stop Screw                                 |
| 7        | 44220       | Screw (2)                  | 25       | 43690       | Cutter Arm                                 |
| 8        | 43795       | Motor Bracket              | 26       | 45220       | Rear Support Bar                           |
| 9        | 46800       | Set Screw (2)              | 27       | 47145       | Spacer                                     |
| 10       | 61952       | Base                       | 28       | 45430       | Pinion Gear                                |
| 11       | 61947       | Bottom Cover               | 29       | 47120       | Lock Plate                                 |
| 12       | 45615       | Screw (2)                  | 30       | 46785       | Screw 10 - 32 x $\frac{3}{8}$ " (2)        |
| 13       | 47110       | Indicator Slide            | 31       | 47135       | Stop Pin                                   |
| 14       | 47105       | Indicator Bar              | 32       | 42390       | 820 Cutter Assembly                        |
| 15       | 45420       | Screw (5)                  | 33       | 47585       | Drive Shaft Assembly                       |
| 16       | 46510       | Handwheel                  |          |             |                                            |

## Drive Shaft



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

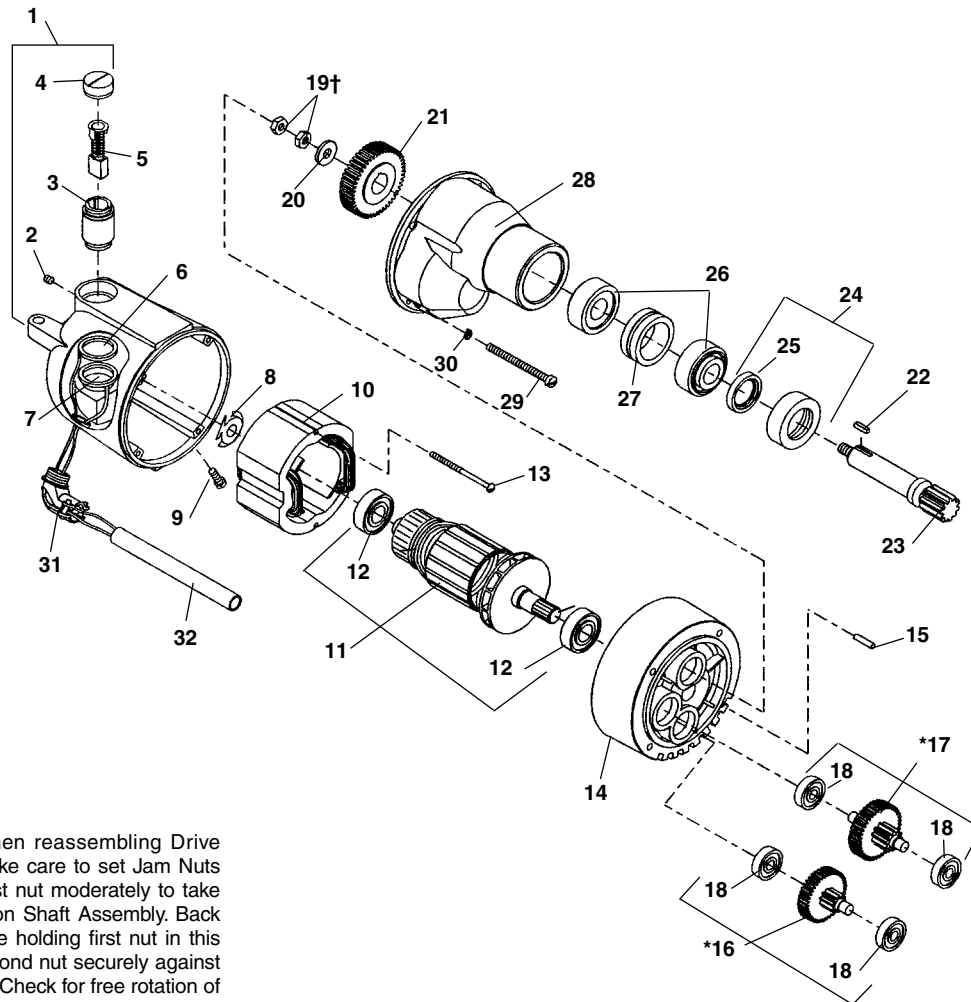
| Ref. No. | Catalog No. | Description                  | Ref. No. | Catalog No. | Description                        |
|----------|-------------|------------------------------|----------|-------------|------------------------------------|
| —        | 47585       | Drive Shaft Assembly         | 15       | 44490       | Drive Plug (3)                     |
| 1        | 46790       | Screw (6)                    | 16       | 43895       | Pressure Plate                     |
| 2        | 40270       | Lock Washer (6)              | 17†      | 43455       | Front Bearing Assembly             |
| 3        | 43735       | Centering Head               | 18†      | 43105       | Drive Shaft                        |
|          | 19346       | Centering Head (Europe)      | 19       | 44320       | Pressure Plunger (3)               |
| 4        | 46500       | Centering Jaw Set            | 20       | 44325       | Pressure Spring (3)                |
| 5        | 46765       | Screw 10 – 32 x 1/2"         | 21       | 44330       | Pressure Set Screw (3)             |
| 6        | 43750       | Scroll                       | 22       | 43420       | Handwheel                          |
| 7        | 43740       | Back Plate                   | 23       | 43450       | Scroll                             |
|          | 19356       | Back Plate (Europe)          | 24       | 44315       | Drive Wedge                        |
| 8        | 47570       | Centering Head Assembly      | 25       | 44310       | Drive Spring                       |
| 9        | 46860       | Grease Fitting               | 26       | 44305       | Drive Cap                          |
| 10†      | 41338       | Rear Bearing Assembly        | 27       | 44715       | Jaw Insert Set                     |
| 11       | 46745       | Screw 3/8" – 16 x 1 1/4" (4) |          | 97365       | Jaw Insert Set f/Plas. Coated Pipe |
| 12       | 90255       | Screw 10 – 32 x 1 1/4"       | 28       | 43900       | Chuck Jaw Set                      |
| 13       | 83525       | Split Ring Assembly          | 29       | 45160       | Screw 5/16" – 18 x 2" (6)          |
| 14†      | 43460       | Drive Gear                   | 30       | 43440       | Chuck Cap                          |

† Service Notes: Ref. Nos. 14 & 18 - When installing gear on shaft, align "O" mark on front of gear with "O" mark on the rear of the drive shaft flange.

Ref. Nos. 11 & 17 - When replacing the front or rear bearing brackets, position grease fittings toward the operator's side of the machine.

1194  
1194A  
2394

Motor



†Service Note: When reassembling Drive Pinion Assembly, take care to set Jam Nuts properly. Tighten first nut moderately to take up end play in Pinion Shaft Assembly. Back nut off 1/2 turn. While holding first nut in this position, tighten second nut securely against first to lock in place. Check for free rotation of Drive Pinion.

NOTE: Order parts by Catalog Number only.  
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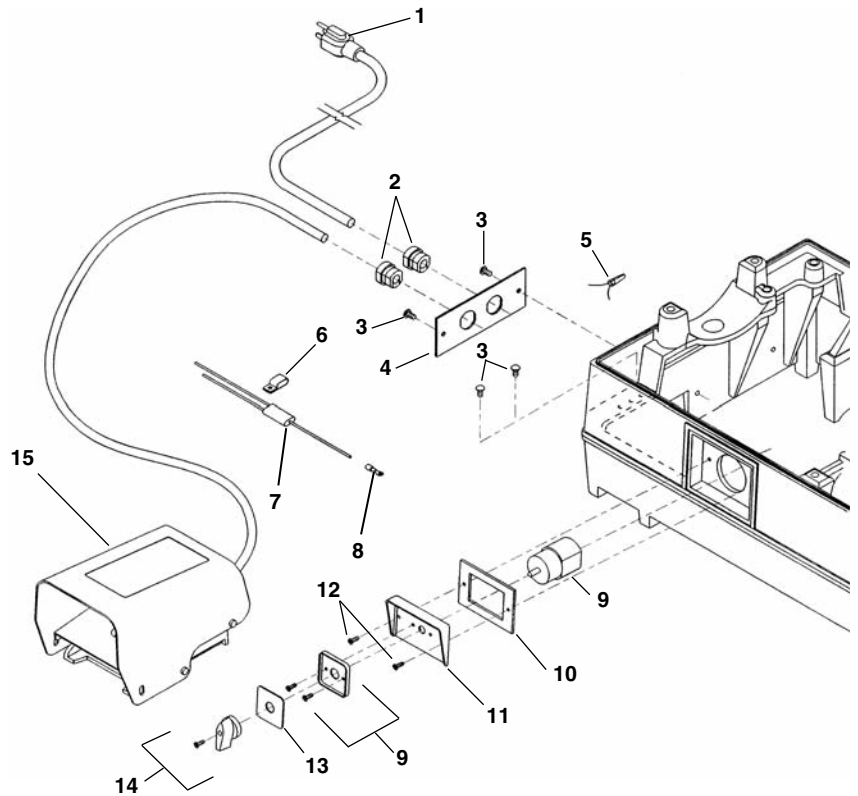
| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description                 |
|----------|-------------|--------------------------------|----------|-------------|-----------------------------|
| —        | 64447       | 1194 Motor, 115V, 36RPM        | 16*      | 62022       | 1st. Int. Gear Assy.— 36RPM |
| —        | 64452       | 1194A Motor, 115V, 54RPM       | —        | 44985       | 1st. Int. Gear Assy.— 54RPM |
| —        | 64457       | 2394 Motor, 230V, 36RPM        | 17*      | 52527       | 2nd. Int. Gear Assy.— 36RPM |
| 1        | 43160       | Field Housing                  | —        | 44990       | 2nd. Int. Gear Assy.— 54RPM |
| 2        | 39770       | Set Screw 1/4" x 20 x 1/4" (2) | 18       | 45060       | Bearing (4)                 |
| 3        | 45025       | Brush Holder Set               | 19†      | 40350       | Lock Nut 3/8" — 54RPM       |
| 4        | 44545       | Brush Cap Set                  | 20       | 45035       | Washer                      |
| 5        | 44540       | Brush Set                      | 21       | 44965       | Drive Gear — 36RPM          |
| 6        | 87865       | White Upper Lead               | —        | 44865       | Drive Gear — 54RPM          |
| 7        | 87870       | Red Lower Lead                 | 22       | 45015       | Key 5/16" Square            |
| 8        | 44580       | Load Spring                    | 23       | 44960       | Drive Pinion                |
| 9        | 83500       | Screw 1/4" x 20 x 3/4"         | 24       | 45010       | Lock Nut w/Seal             |
| 10       | 44015       | Field 115V                     | 25       | 45085       | Seal                        |
| —        | 44035       | Field 230V                     | 26       | 45040       | Bearing Set w/Spacer        |
| 11*      | 52497       | Armature — 115V - 36RPM        | 27       | 45045       | Spacer                      |
| —        | 52492       | Armature — 230V                | 28       | 43170       | Gear Housing                |
| —        | 44010       | Armature — 115V - 54RPM        | 29       | 45075       | Screw 1/4" - 20 x 3" (4)    |
| 12       | 44565       | Armature Bearing (2)           | 30       | 45150       | Lock Washer (4)             |
| 13       | 44555       | Mounting Screw (2)             | 31       | 46900       | Right Angle Connector       |
| 14       | 54552       | Fan Housing Assembly           | 32       | 64462       | PVC Tubing                  |
| 15       | 45165       | Dowel Pin                      |          |             |                             |

Note: \*Helical gear not interchangeable with old style 535 machines.

## Electrical Components

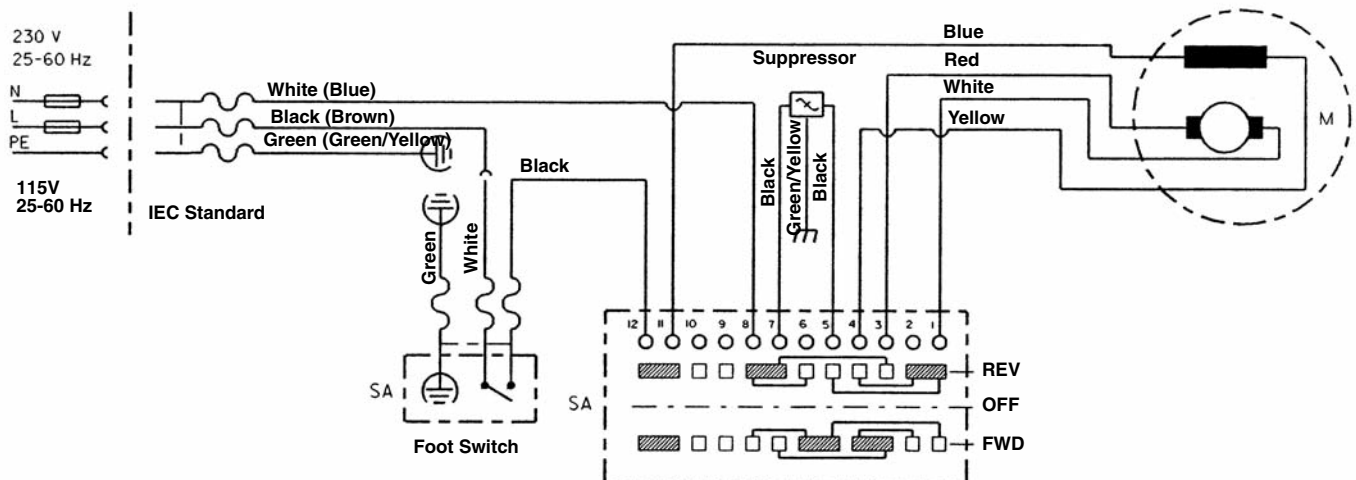
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                         |
|----------|-------------|-------------------------------------|
| 1        | 46740       | Power Cord 115V                     |
| —        | 46410       | Power Cord 230V                     |
| —        | 75045       | Power Cord 230V Export              |
| 2        | 46735       | Grommet (2)                         |
| 3        | 45420       | Screw (4)                           |
| 4        | 62037       | Cord Mounting Plate                 |
| 5        | 44635       | End Splice Connector                |
| 6        | 61962       | Clamp (230V)                        |
| 7        | 36502       | Suppressor (230V)                   |
| 8        | 54192       | Connector (230V)                    |
| 9        | 54157       | Switch Assy. (Includes Ref. No. 14) |
| 10       | 54172       | Gasket                              |
| 11       | 61917       | Switch Plate                        |
| 12       | 54162       | Screw (2)                           |
| 13       | 61967       | Switch Face Plate                   |
| 14       | 61397       | Switch Knob                         |
| 15       | 36642       | B-294 Foot Switch Assembly          |



## Wiring Diagram

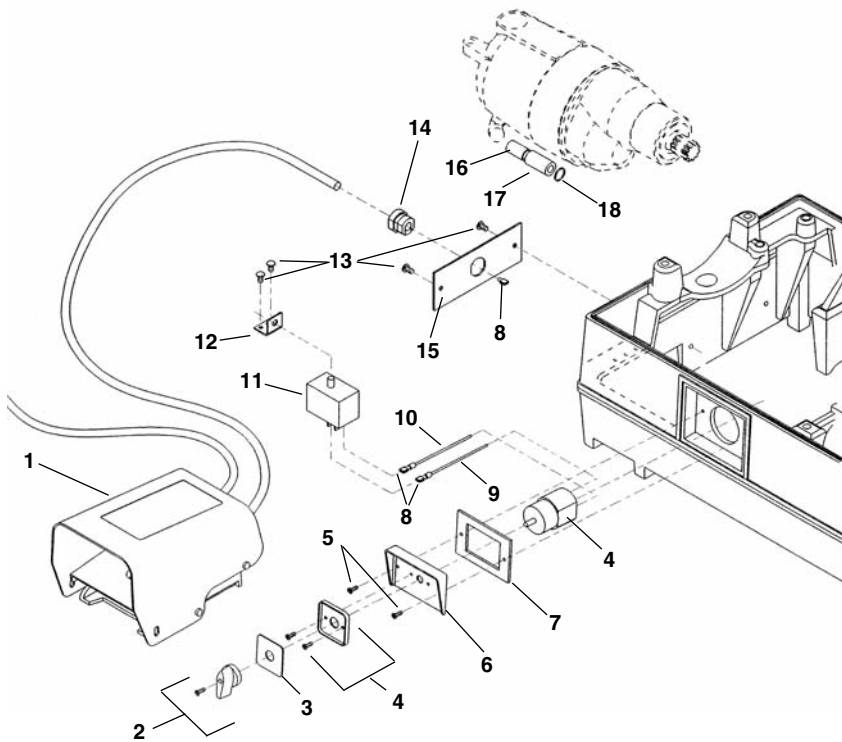
**1194 Motor (115V)**  
**2394 Motor (230V)**  
**1194A Motor (115V)**



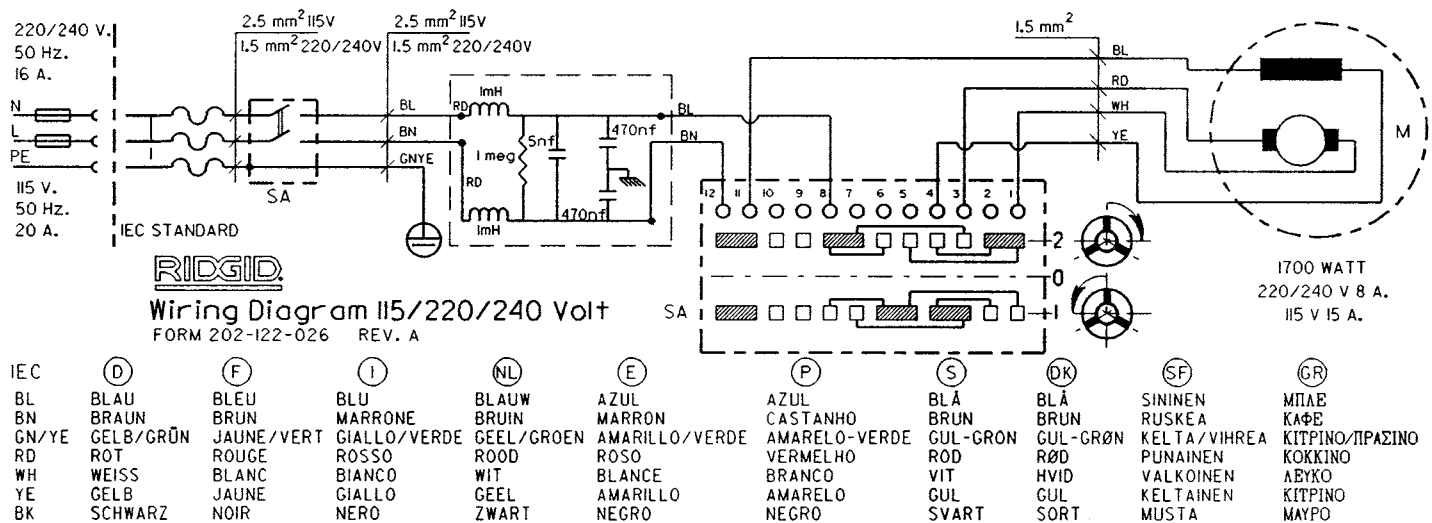
## European Electrical Components

NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                        |
|----------|-------------|------------------------------------|
| 1        | 36652       | B-296 Foot Switch                  |
| 2        | 61397       | Switch Knob                        |
| 3        | 57517       | Switch Face Plate                  |
| 4        | 54157       | Switch Assy. (includes Ref. No. 2) |
| 5        | 54162       | Screw (2)                          |
| 6        | 61917       | Switch Plate                       |
| 7        | 54172       | Gasket                             |
| 8        | 89190       | Quick Disconnect Terminal (4)      |
| 9        | 63392       | Blue Wire                          |
| 10       | 63387       | Brown Wire                         |
| 11       | 63372       | Suppressor                         |
| 12       | 61987       | Mounting Bracket                   |
| 13       | 45420       | Screw (4)                          |
| 14       | 54177       | Grommet                            |
| 15       | 62042       | Cord Mounting Plate                |
| 16       | 64462       | PVC Tubing                         |
| 17       | 63377       | Ferrite Bead                       |
| 18       | 64467       | Cable Tie                          |

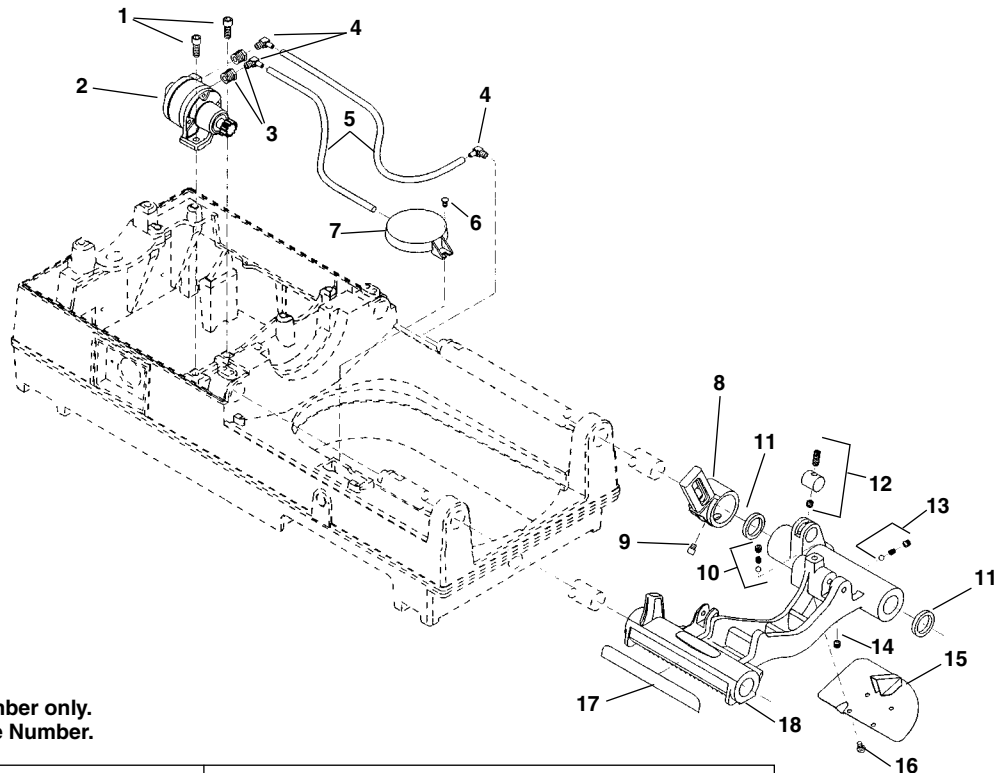


## European Wiring Diagram





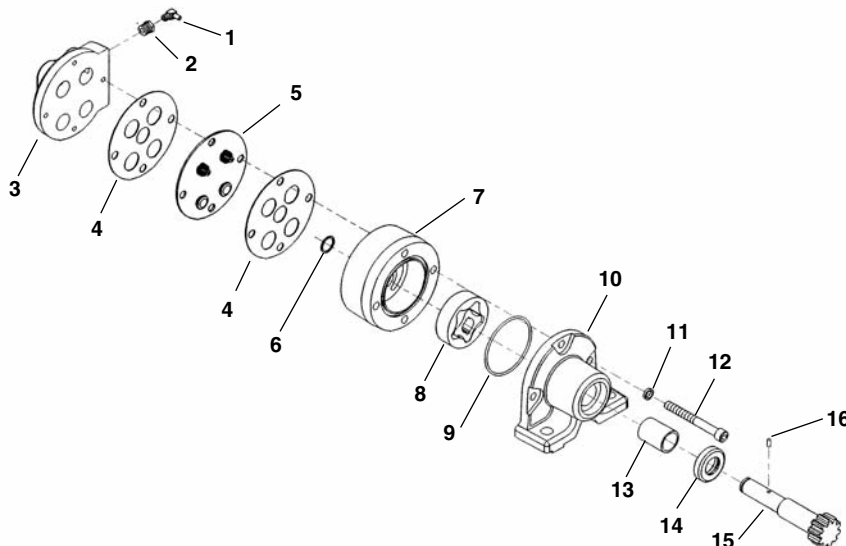
## Carriage and Oiling System



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description             | Ref. No. | Catalog No. | Description                             |
|----------|-------------|-------------------------|----------|-------------|-----------------------------------------|
| 1        | 46750       | Screw (2)               | 10       | 46810       | Detente Assembly                        |
| 2        | 62052       | Model MJ Oil Pump       | 11       | 46720       | Oil Seal (2)                            |
| 3        | 62047       | Reducing Bushing (2)    | 12       | 61957       | Plug Assembly                           |
| 4        | 87945       | Right Angle Fitting (3) | 13       | 35307       | Pressure Relief Assembly                |
| 5        | 87950       | Oil Line (2)            | 14       | 46815       | Pipe Plug 1/8" NPT                      |
| 6        | 45420       | Screw                   | 15       | 45195       | Drip Plate                              |
| 7        | 58467       | Oil Filter Assembly     | 16       | 46270       | Screw (4)                               |
| 8        | 43690       | Cutter Arm              | 17       | 46370       | Scale                                   |
| 9        | 44930       | Stop Screw              | 18       | 62057       | Carriage Assy. (Includes Ref. No. 8-17) |

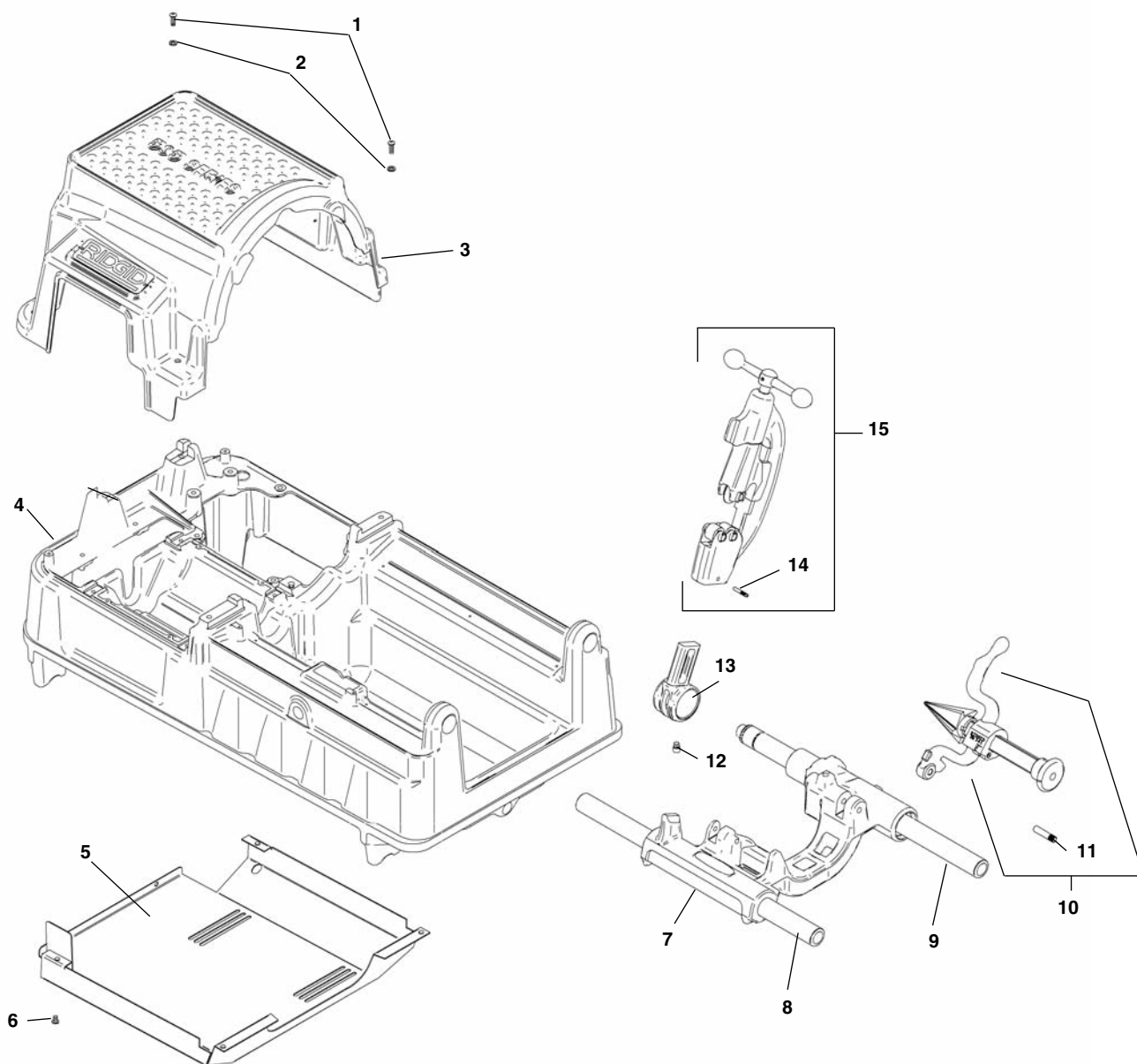
## Model MJ Oil Pump



| Ref. No. | Catalog No. | Description                                                |
|----------|-------------|------------------------------------------------------------|
| —        | 62052       | Model MJ Oil Pump                                          |
| 1        | 87945       | Right Angle Fitting (2)                                    |
| 2        | 62047       | Reducing Bushing (2)                                       |
| 3        | 33442       | Valve Body                                                 |
| 4        | 33457       | Gasket (2)                                                 |
| 5        | 33452       | Valve Body Assembly                                        |
| 6        | 61997       | Retaining Ring                                             |
| 7        | 62002       | Gerotor Housing                                            |
| 8        | 62007       | Gerotor Set                                                |
| 9        | 33477       | O-Ring                                                     |
| 10       | 62012       | Pump Body                                                  |
| 11       | 45150       | Lock Washer (3)                                            |
| 12       | 62017       | Screw (3)                                                  |
| 13       | 61972       | Bushing                                                    |
| 14       | 33472       | Oil Seat                                                   |
| 15       | 61982       | Pump Shaft                                                 |
| 16       | 26907       | Drive Pin                                                  |
| 17       | 61977       | Pump Repair Kit (Includes Ref. No. 4-6, 9, 13, 14, and 16) |



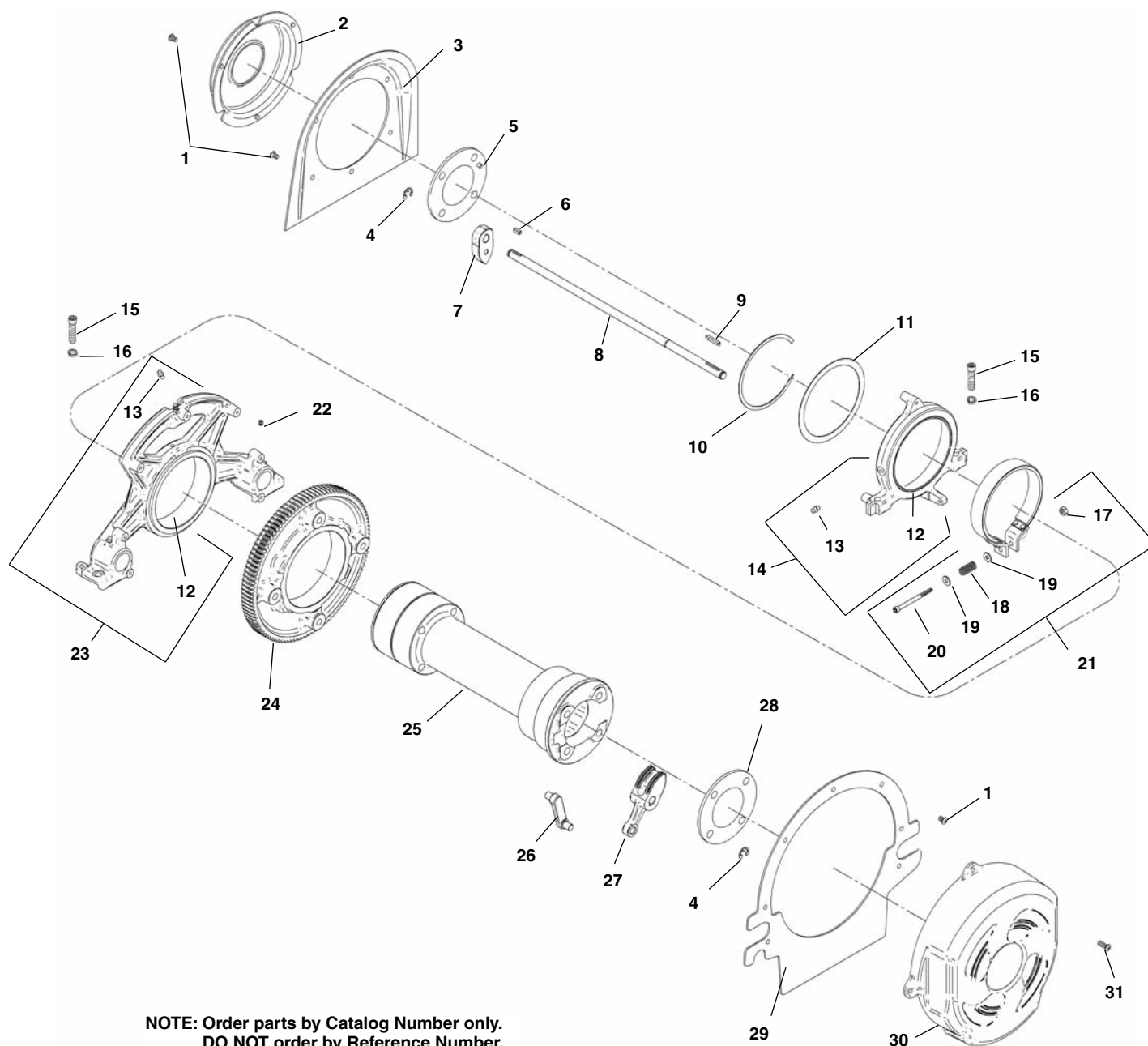
## Main Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                             | Ref. No. | Catalog No. | Description         |
|----------|-------------|-----------------------------------------|----------|-------------|---------------------|
| 1        | 94332       | Screw, Button Head 1/4" - 20 x 3/4" (4) | 9        | 45220       | Rear Support Bar    |
| 2        | 94322       | Washer, Flat 1/4" (4)"                  | 10       | 42365       | 341 Reamer Assembly |
| 3        | 94432       | Top Cover                               | 11       | 47065       | Pin                 |
| 4        | 94042       | Base                                    | 12       | 44930       | Stop Screw          |
| 5        | 94147       | Bottom Cover                            | 13       | 43690       | Cutter Arm          |
| 6        | 94312       | Screw, Pan Head #6 - 32 x 2" (4)        | 14       | 47135       | Stop Pin            |
| 7        | 94357       | Carriage Assembly                       | 15       | 42390       | 820 Cutter Assembly |
| 8        | 45440       | Front Support Bar                       |          |             |                     |

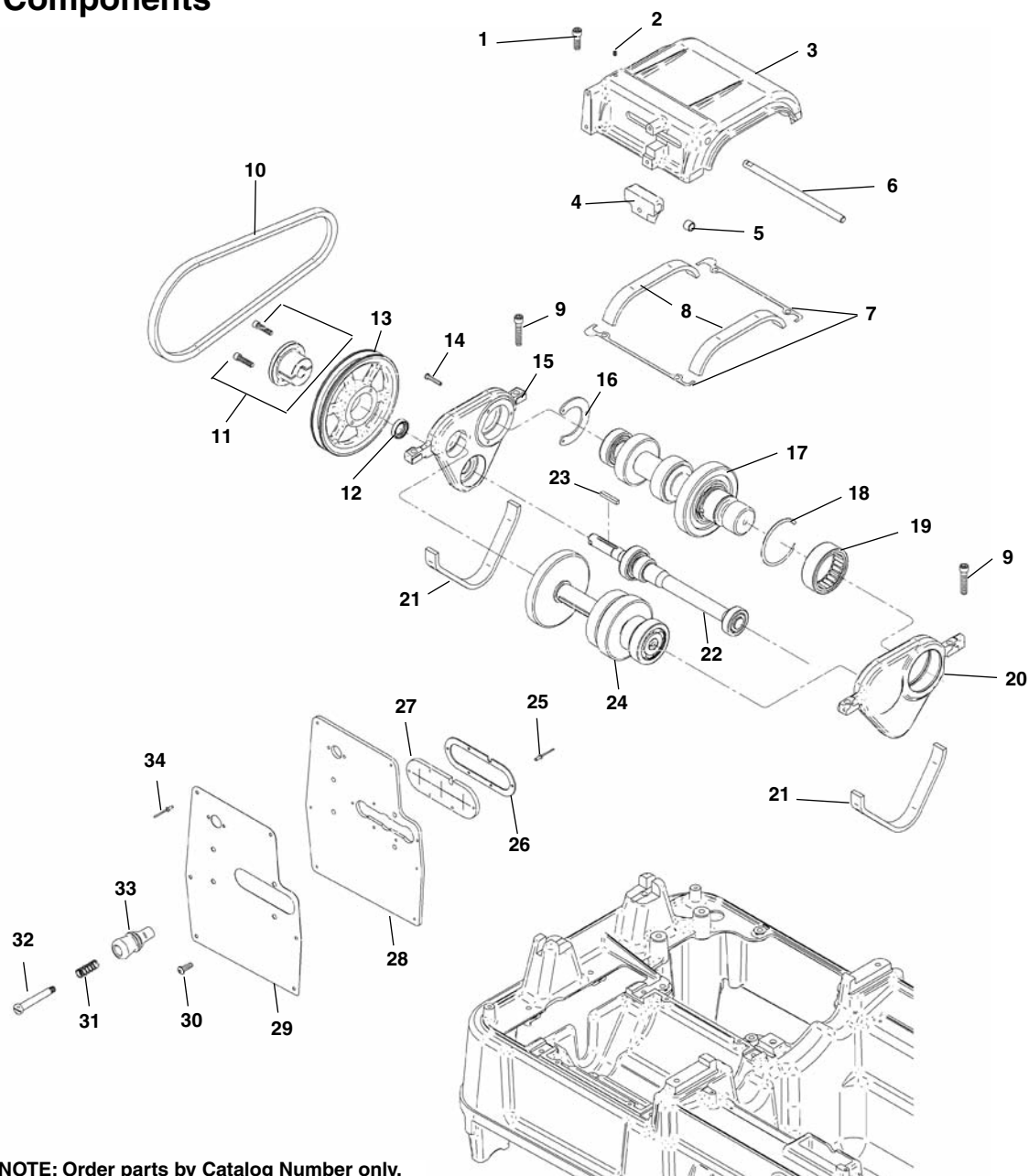
## Drive Shaft Assembly



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                             | Ref. No. | Catalog No. | Description                             |
|----------|-------------|-----------------------------------------|----------|-------------|-----------------------------------------|
| 1        | 94337       | Screw, Button Head 1/4" - 20 x 3/8" (7) | 17       | 77710       | Lock Nut 1/4" - 20                      |
| 2        | 94082       | Rear Cover                              | 18       | 45895       | Spring                                  |
| 3        | 94077       | Rear Plate                              | 19       | 27402       | Washer, Flat 1/4" (2)                   |
| 4        | 26937       | Retaining Ring (8)                      | 20       | 94327       | Screw, Socket Head 1/4" - 20 x 2 1/2"   |
| 5        | 94022       | Rear Pivot Rod Support                  | 21       | 94002       | Brake Assembly                          |
| 6        | 94267       | Key, 3/16" Square x 1/2" (4)            | 22       | 40910       | Set Screw 1/4" - 20 x 3/16" (4)         |
| 7        | 93987       | Rear Jaw (4)                            | 23       | 94027       | Front Bracket Assembly                  |
| 8        | 93977       | Pivot Rod (4)                           | 24       | 94087       | Drive Gear                              |
| 9        | 94197       | Key, 3/16" Square x 1 3/16" (4)         | 25       | 94032       | Drive Shaft                             |
| 10       | 94397       | Retaining Ring                          | 26       | 94047       | Connecting Link (4)                     |
| 11       | 94392       | Thrust Washer                           | 27       | 94017       | Front Jaw (4)                           |
| 12       | 93957       | Spindle Bearing (2)                     | 28       | 93992       | Front Pivot Rod Support                 |
| 13       | 46860       | Grease Fitting (2)                      | 29       | 94072       | Front Plate                             |
| 14       | 94037       | Rear Bracket Assembly                   | 30       | 94097       | Front Cover                             |
| 15       | 46745       | Screw, 3/8" - 16 x 1 1/4" (4)           | 31       | 94332       | Screw, Button Head 1/4" - 20 x 3/4" (9) |
| 16       | 40930       | Washer, Lock 3/8" (4)                   |          |             |                                         |

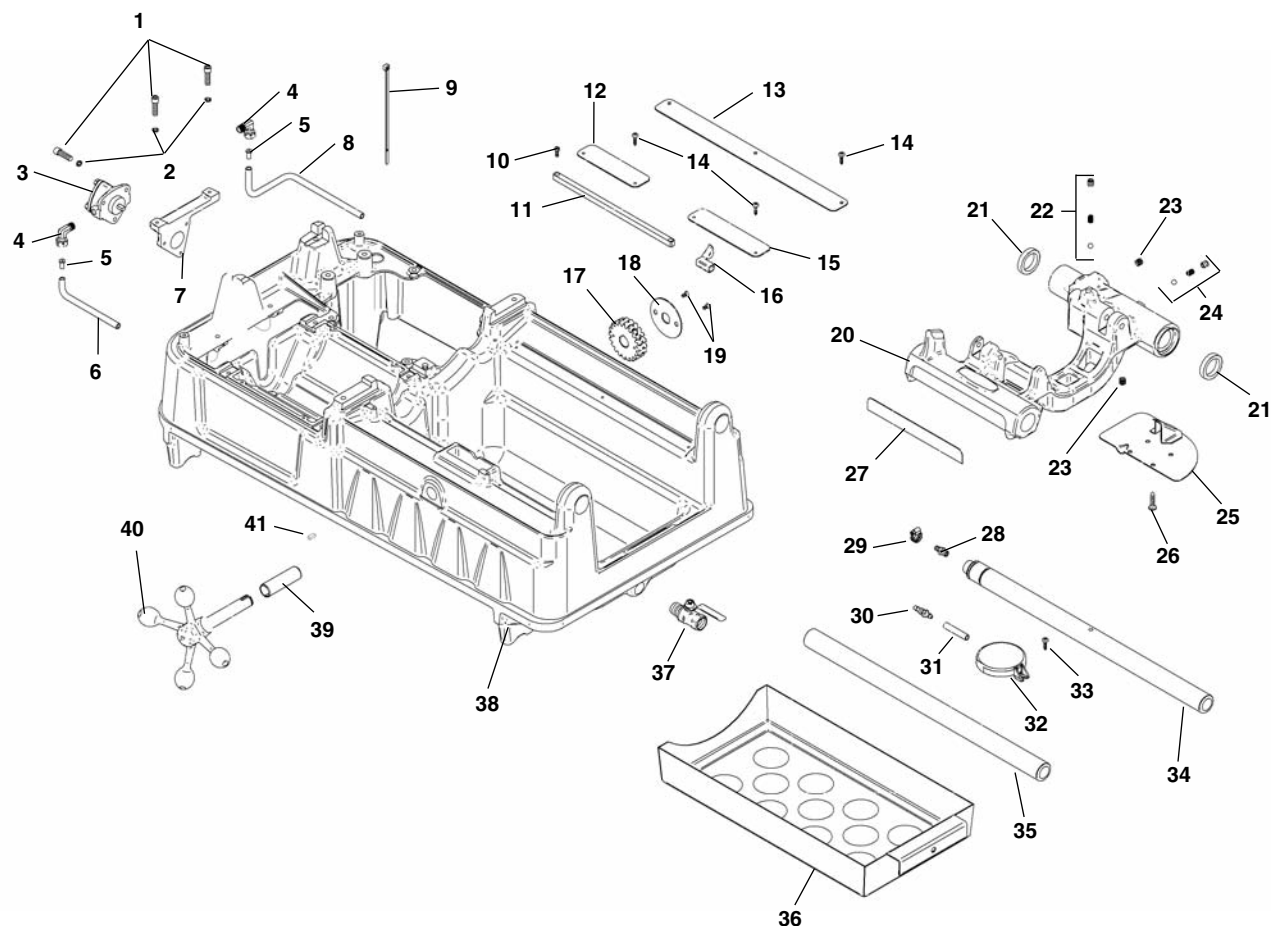
## Gearbox Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                | Ref. No. | Catalog No. | Description                             |
|----------|-------------|--------------------------------------------|----------|-------------|-----------------------------------------|
| 1        | 40910       | Screw, Socket Head 1/4" - 20 x 3/4" (4)    | 18       | 94062       | Retaining Ring                          |
| 2        | 34892       | Set Screw 1/4" - 20 x 1/2"                 | 19       | 94052       | Bearing                                 |
| 3        | 94107       | Transmission Cover                         | 20       | 94167       | Front Transmission Bracket              |
| 4        | 94227       | Shifter Fork                               | 21       | 94247       | Gasket (2)                              |
| 5        | 26447       | Bushing (2)                                | 22       | 93967       | Input Shaft Assembly                    |
| 6        | 94132       | Shifter Rod                                | 23       | 94277       | Key, 3/16" Square x 1/4"                |
| 7        | 94252       | Gasket (2)                                 | 24       | 94182       | Intermediate Shaft Assembly             |
| 8        | 94242       | Gasket (2)                                 | 25       | 94387       | Pop Rivet (5)                           |
| 9        | 40367       | Screw, Socket Head 5/16" - 18 x 1 1/4" (4) | 26       | 94367       | Gasket                                  |
| 10       | 94262       | V Belt                                     | 27       | 94372       | Gasket                                  |
| 11       | 94217       | Bushing f/Input Pulley                     | 28       | 94187       | Control Panel                           |
| 12       | 94202       | Seal                                       | 29       | 94207       | Control Panel Label                     |
| 13       | 94102       | Input Pulley                               | 30       | 94332       | Screw, Button Head 1/4" - 20 x 3/4" (4) |
| 14       | 94317       | Screw, Pan Head #8 - 32 x 1" (3)           | 31       | 94292       | Spring                                  |
| 15       | 94172       | Rear Transmission Bracket                  | 32       | 94137       | Shifter Shaft                           |
| 16       | 94177       | Bearing Retainer                           | 33       | 94142       | Shifter Knob                            |
| 17       | 93972       | Output Shaft Assembly                      | 34       | 94427       | Pop Rivet (6)                           |

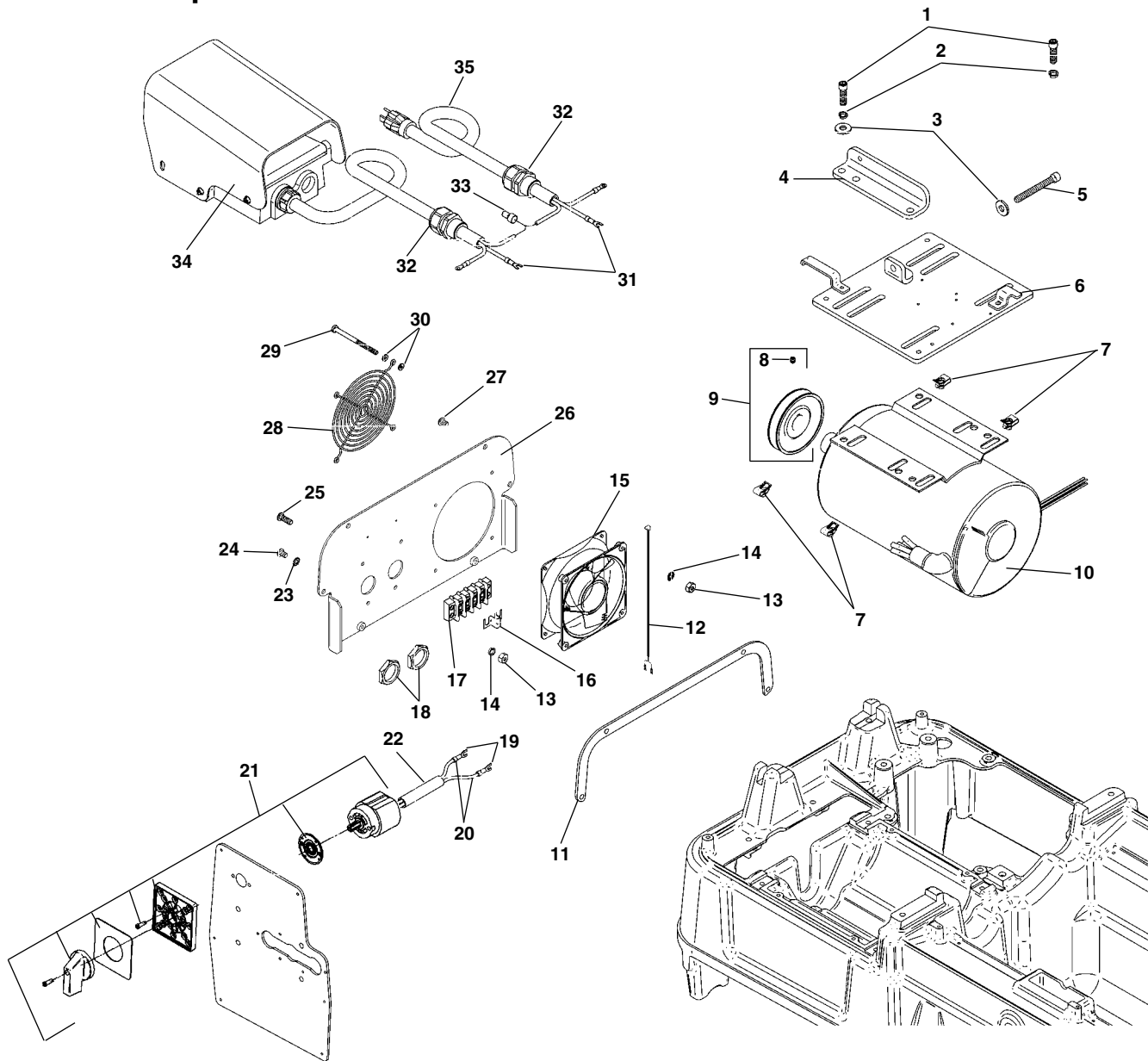
## Carriage and Oiling Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                    | Ref. No. | Catalog No. | Description                 |
|----------|-------------|------------------------------------------------|----------|-------------|-----------------------------|
| 1        | 83685       | Screw, Socket Head 1/4" - 20 x 1" (5)          | 22       | 46810       | Die Head Détente            |
| 2        | 44740       | Lock Washer, 1/4" (5)                          | 23       | 46815       | Pipe Plug, 1/8" NPT (2)     |
| 3        | 94092       | Oil Pump                                       | 24       | 35307       | Pressure Relief Set         |
| 4        | 35122       | Fitting (2)                                    | 25       | 45195       | Drip Tray                   |
| 5        | 35117       | Tube Insert                                    | 26       | 46270       | Screw, 1/4" - 20 x 1/2" (4) |
| 6        | 26822       | Oil Hose                                       | 27       | 46370       | Length Gauge                |
| 7        | 27123       | Oil Pump Bracket                               | 28       | 69157       | Barbed Fitting              |
| 8        | 94362       | Oil Hose                                       | 29       | 35142       | Hose Clamp                  |
| 9        | 94407       | Cable Tie                                      | 30       | 54142       | Bulkhead Fitting            |
| 10       | 45615       | Screw, Flat Head #10 - 32 x 1/2" (2)           | 31       | 87950       | Hose                        |
| 11       | 47105       | Length Indicator Bar                           | 32       | 58467       | Filter Screen Assembly      |
| 12       | 94122       | Drip Edge                                      | 33       | 45420       | Screw, #10 - 32 x 3/8"      |
| 13       | 94127       | Drip Edge                                      | 34       | 45220       | Support Bar, Rear           |
| 14       | 43367       | Screw, #8 x 3/4"                               | 35       | 45440       | Support Bar, Front          |
| 15       | 94117       | Drip Edge                                      | 36       | 94112       | Chip Tray                   |
| 16       | 47110       | Indicator Slide                                | 37       | 94347       | Valve, Oil Drain            |
| 17       | 45430       | Pinion                                         | 38       | 94042       | Base                        |
| 18       | 47120       | Pinion Lock Ring                               | 39       | 94222       | Bushing                     |
| 19       | 46785       | Screw, Flat Head #10 - 32 x 3/8" (2)           | 40       | 94012       | Handwheel                   |
| 20       | 94357       | Carriage Assembly (Includes Ref. Nos. 21 - 27) | 41       | 94267       | Key, 3/16" Square x 1/2"    |
| 21       | 46720       | Oil Seal (2)                                   |          |             |                             |

## Electrical Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

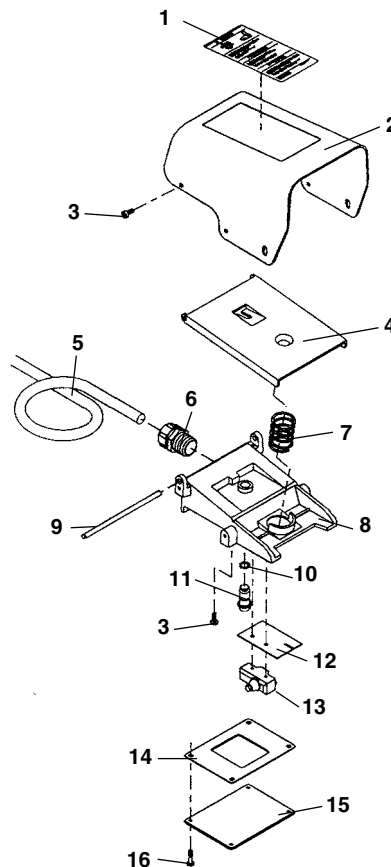
| Ref. No. | Catalog No. | Description                                                     | Ref. No. | Catalog No. | Description                                                   |
|----------|-------------|-----------------------------------------------------------------|----------|-------------|---------------------------------------------------------------|
| 1        | 40367       | Screw, Socket Head $\frac{5}{16}$ " - 18 x $1\frac{1}{4}$ " (8) | 19       | 46875       | Spade Terminal (2)                                            |
| 2        | 40770       | Washer, Split Lock $\frac{5}{16}$ " (12)                        | 20       | 93947       | Wire Set                                                      |
| 3        | 96740       | Washer, Flat $\frac{5}{16}$ " (5)                               | 21       | 94257       | Switch Assembly                                               |
| 4        | 94162       | Adjuster Bracket                                                | 22       | 59342       | Insulator Sleeve                                              |
| 5        | 94402       | Screw, Socket Head $\frac{5}{16}$ " - 18 x $\frac{3}{4}$ "      | 23       | 46985       | Washer, Lock Ext. Tooth #10 (2)                               |
| 6        | 94192       | Motor Table                                                     | 24       | 47147       | Screw, Button Head #10 - 32 x $\frac{3}{8}$ " (2)             |
| 7        | 96367       | Tinnerman Nut (4)                                               | 25       | 34667       | Screw, Button Head #10 - 32 x $\frac{3}{4}$ " (2)             |
| 8        | 35307       | Set Screw $\frac{5}{16}$ " - 18 x $\frac{1}{4}$ "               | 26       | 94152       | Back Cover                                                    |
| 9        | 94237       | Pulley                                                          | 27       | 94337       | Screw, Button Head $\frac{1}{4}$ " - 20 x $\frac{3}{8}$ " (4) |
| 10       | 94007       | Motor 120V 60 Hz                                                | 28       | 94232       | Fan Guard                                                     |
| 11       | 94422       | Gasket                                                          | 29       | 94312       | Screw, Pan Head #6 - 32 x 2" (4)                              |
| 12       | 94447       | Fan Cord                                                        | 30       | 94302       | Washer, Flat #6 (8)                                           |
| 13       | 34722       | Nut, Hex #10 - 32 (4)                                           | 31       | 93952       | Spade Terminal (2)                                            |
| 14       | 58542       | Washer, Lock #10 (4)                                            | 32       | 75952       | Strain Relief (2)                                             |
| 15       | 94212       | Fan                                                             | 33       | 44635       | End Splice                                                    |
| 16       | 94377       | Jumper                                                          | 34       | 74272       | Foot Switch, B-294HD                                          |
| 17       | 94382       | Terminal Block                                                  | 35       | 75902       | Power Cord 115V                                               |
| 18       | 93962       | Lock Nut (2)                                                    |          |             |                                                               |



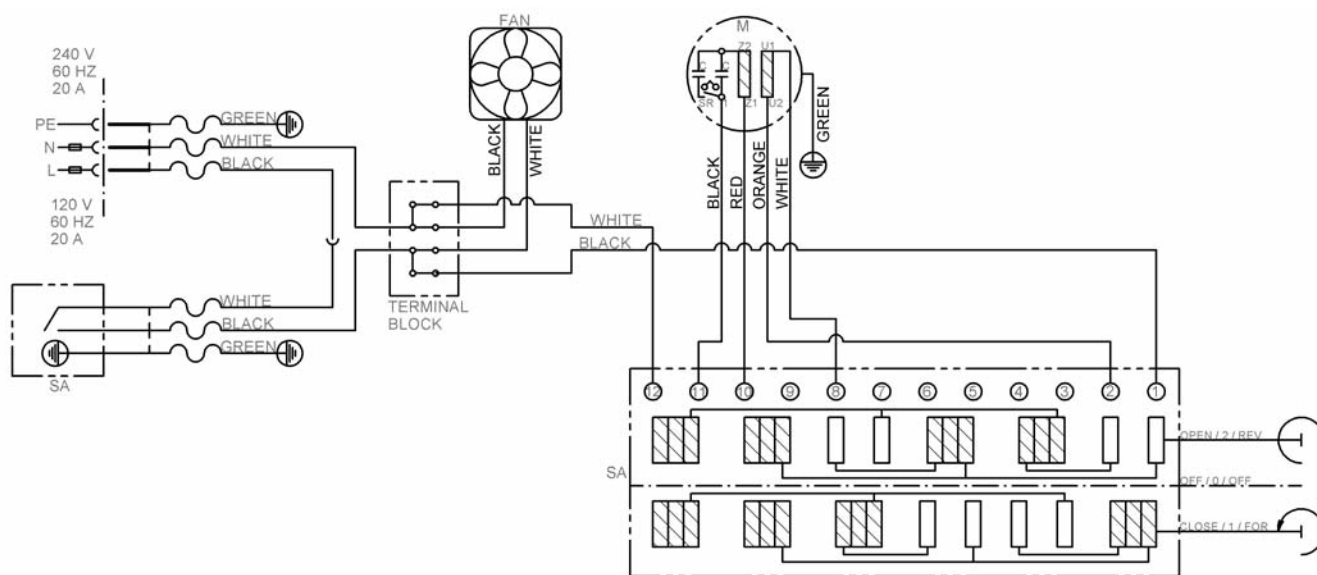
## B-294 HD Foot Switch

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| —        | 36642       | B-294 Foot Switch          |
| —        | 36647       | B-295 Foot Switch          |
| —        | 36662       | 301-A Foot Switch          |
| —        | 75962       | B-294 HD Foot Switch       |
| 1        | 36667       | Warning Label (B-294)      |
|          | 36672       | Warning Label (B-295)      |
|          | 36687       | Warning Label (301-A)      |
|          | 76352       | Warning Label (B-294 HD)   |
| 2        | 36692       | Cover                      |
| 3        | 36787       | Screw #10 Self-tapping (5) |
| 4        | 36697       | Foot Pedal                 |
| 5        | 68880       | Cord (B-294)               |
|          | 36712       | Cord (B-295)               |
|          | 36727       | Cord (301-A)               |
|          | 75972       | Cord (B-294 HD)            |
| 6        | 36732       | Cord Connector             |
|          | 75977       | Cord Connector (B-294 HD)  |
| 7        | 36702       | Spring                     |
| 8        | 54347       | Base                       |
| 9        | 36747       | Pivot Pin                  |
| 10       | 36767       | O-Ring                     |
| 11       | 36772       | Poppet                     |
| 12       | 54367       | Insulator                  |
| 13       | 36762       | Micro Switch               |
| 14       | 54372       | Seal                       |
| 15       | 54362       | Bottom Cover               |
| 16       | 54357       | Bottom Cover Screw (4)     |

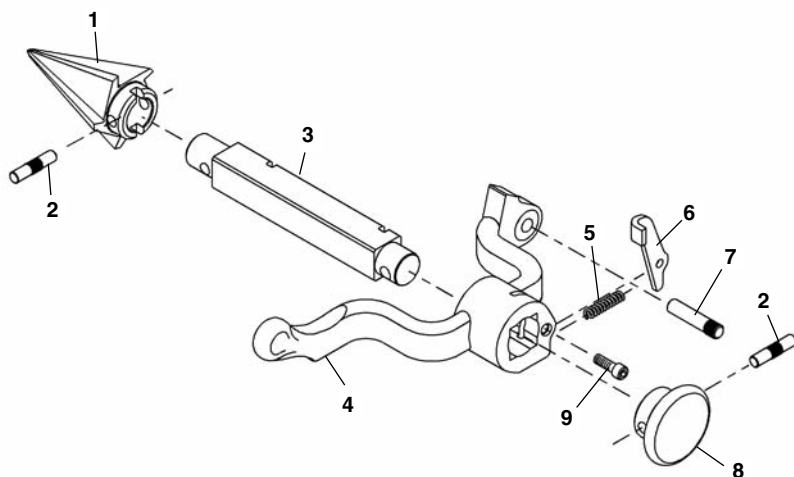


## Wiring Diagram





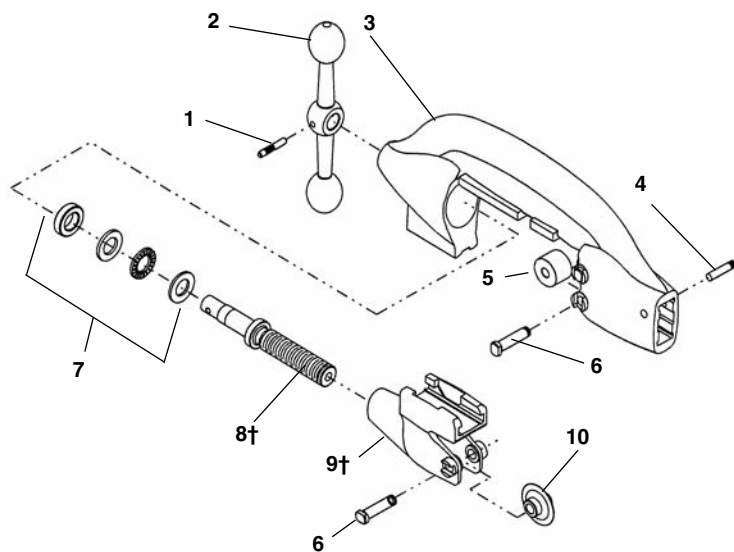
## No. 341 Reamer



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 42365       | 341 Reamer Complete    |
| 1        | 36277       | Cone (R.H.)            |
|          | 46660       | Cone (L.H. & R.H.)     |
| 2        | 47155       | Pin                    |
| 3        | 43790       | Reamer Bar             |
| 4        | 43230       | Reamer Arm             |
| 5        | 44700       | Latch Spring           |
| 6        | 46665       | Reamer Latch           |
| 7        | 47065       | Hinge Pin              |
| 8        | 46585       | Reamer Knob            |
| 9        | 46515       | Screw 1/4" - 20 x 3/4" |

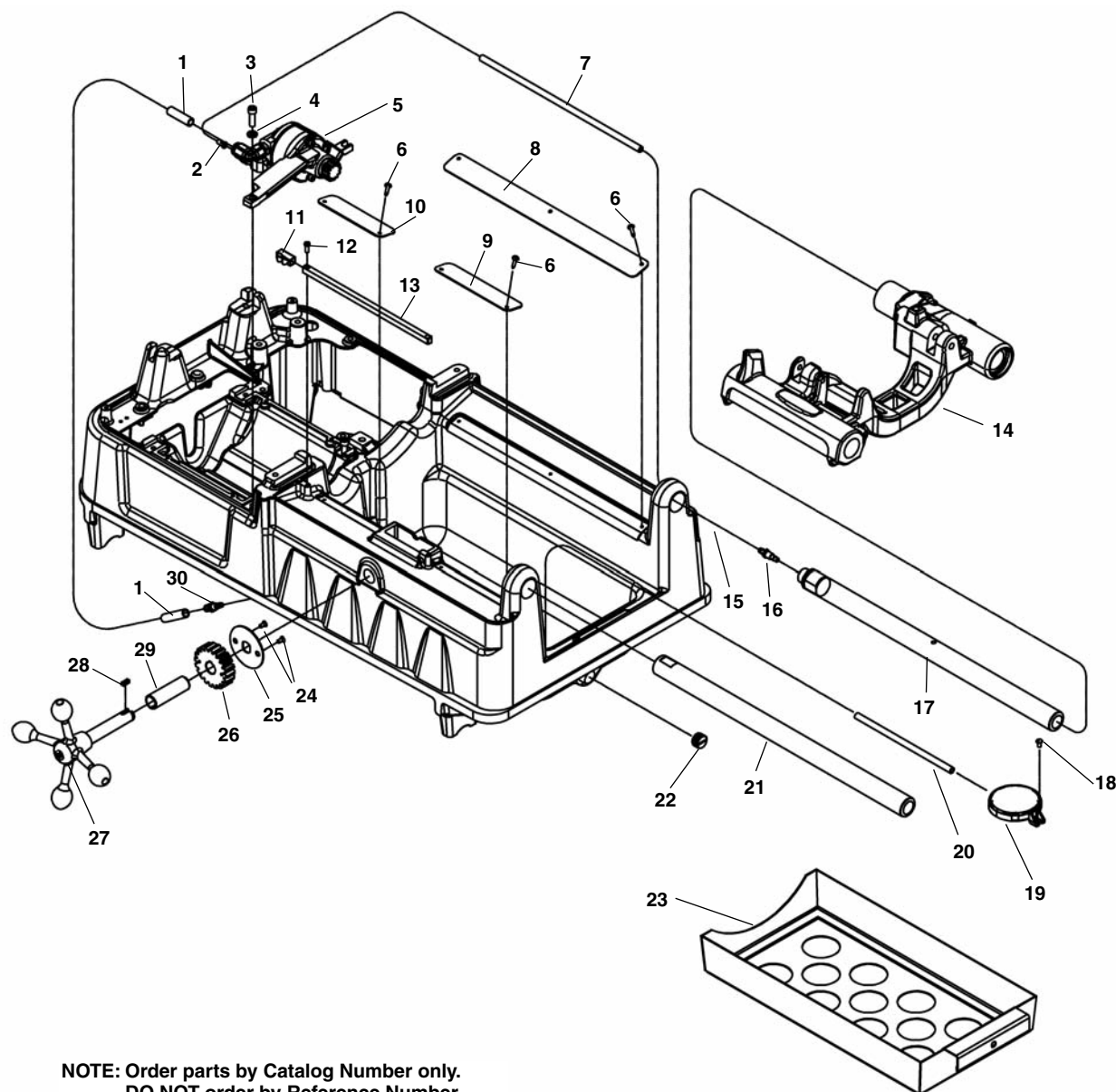
## No. 820 Cutter



| Ref. No. | Catalog No. | Description              |
|----------|-------------|--------------------------|
| —        | 42390       | 820 Cutter Complete      |
| 1        | 47160       | Crank Pin                |
| 2        | 45765       | Feed Screw Crank         |
| 3        | 43040       | Cutter Frame             |
| 4        | 47135       | Stop Pin                 |
| 5        | 34775       | Cutter Roll (2)          |
| 6        | 34780       | Cutter & Roll Pin (3)    |
| 7        | 46725       | Thrust Bearing Assembly  |
| 8†       | 45780       | Feed Screw               |
| 9†       | 43245       | Wheel Housing            |
| 10       | 44185       | Cutter Wheel             |
|          | 44190       | Cutter Wheel f/Stainless |

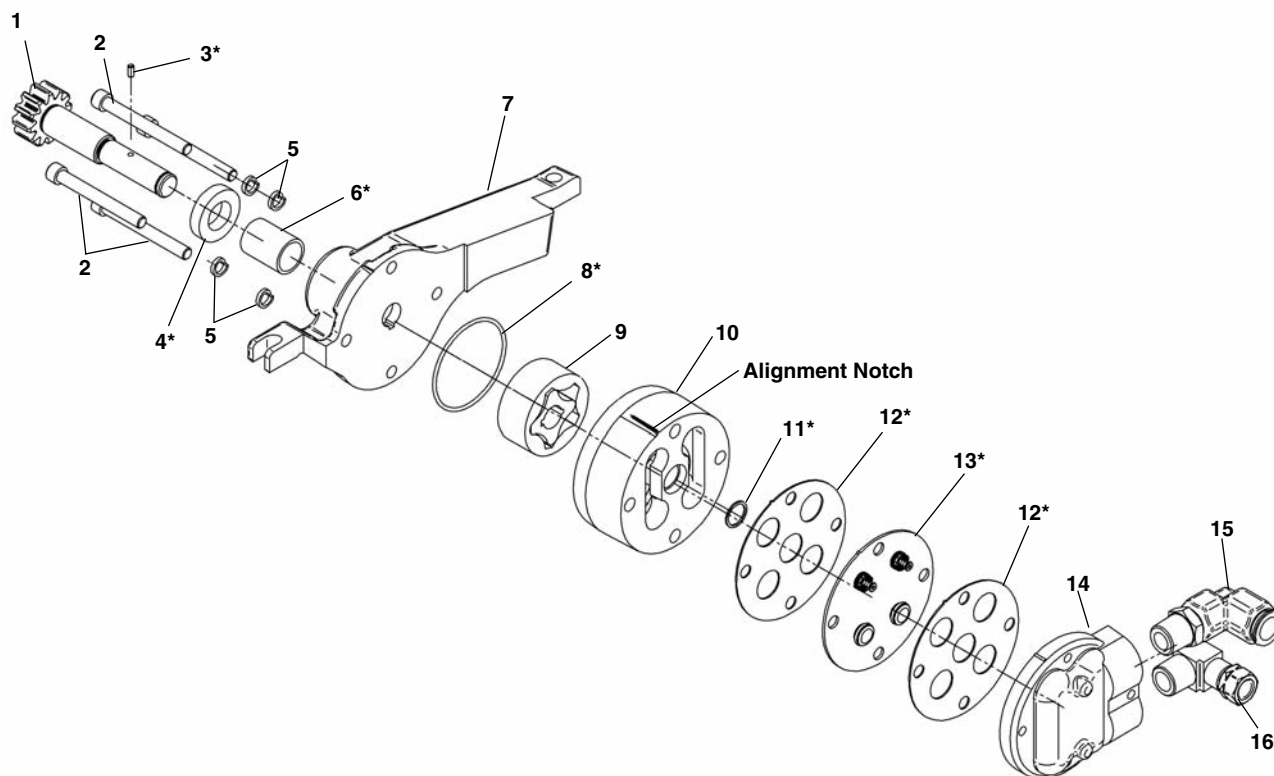
† Service Note: When replacing parts on early style (fine thread) cutters, both feed screw and wheel housing must be replaced.

## Carriage and Oiling Components – Universal Motor Machines



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

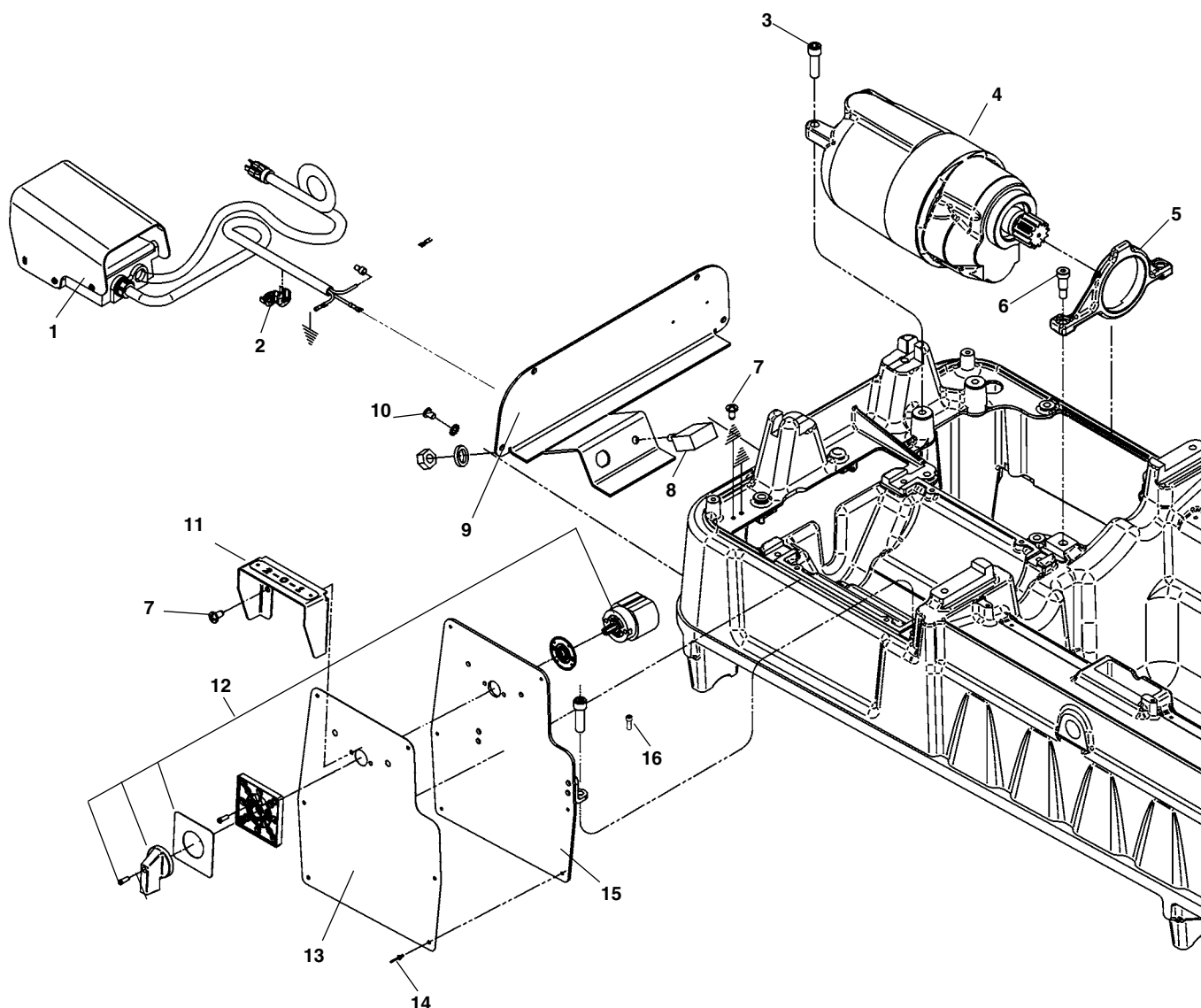
| Ref. No. | Catalog No. | Description                                     | Ref. No. | Catalog No. | Description                                     |
|----------|-------------|-------------------------------------------------|----------|-------------|-------------------------------------------------|
| 1        | 26822       | Oil Hose, Input 21"                             | 16       | 69157       | Barbed Fitting                                  |
| 2        | 35117       | Tube Insert                                     | 17       | 45220       | Support Bar, Rear                               |
| 3        | 44590       | Screw, $\frac{5}{16}$ " - 18 x 1" S.H.C.S.      | 18       | 45420       | Screw, #10 - 32 x $\frac{3}{8}$ "               |
| 4        | 40770       | $\frac{5}{16}$ " Lock Washer                    | 19       | 58467       | Filter Screen Assembly                          |
| 5        | 96517       | Oil Pump                                        | 20       | 87950       | Oil Hose, Filter                                |
| 6        | 43367       | Screw, #8 x $\frac{3}{4}$ "                     | 21       | 45440       | Support Bar, Front                              |
| 7        | 94362       | Oil Hose, Output                                | 22       | 96447       | Drain Plug $\frac{1}{2}$ " NPT                  |
| 8        | 94127       | Drip Edge                                       | 23       | 94112       | Chip Tray                                       |
| 9        | 94117       | Drip Edge                                       | 24       | 46785       | Screw, Flat Head #10 - 32 x $\frac{3}{8}$ " (2) |
| 10       | 94122       | Drip Edge                                       | 25       | 47120       | Pinion Lock Ring                                |
| 11       | 47110       | Indicator Slide                                 | 26       | 45430       | Pinion                                          |
| 12       | 45615       | Screw, Flat Head #10 - 32 x $\frac{1}{2}$ " (2) | 27       | 94012       | Handwheel                                       |
| 13       | 47105       | Length Indicator Bar                            | 28       | 94267       | Key, $\frac{3}{16}$ " Square x $\frac{1}{2}$ "  |
| 14       | 94357       | Carriage Assembly                               | 29       | 94222       | Bushing                                         |
| 15       | 35142       | Hose Clamp                                      | 30       | 54142       | Bulkhead Fitting                                |



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| Ref. No. | Catalog No. | Description                                             |
|----------|-------------|---------------------------------------------------------|
| —        | 96517       | 535M Left Hand Threading Kit                            |
| 1        | 21813       | Pinion Shaft                                            |
| 2        | 62017       | Screw, Soc. Hd. Cap<br>1/4" - 20 x 2 1/4" (4)           |
| 3        | 26907       | Roll Pin 3/32" x 1/4"                                   |
| 4        | 33472       | Oil Seal                                                |
| 5        | 45150       | Lockwasher (4)                                          |
| 6        | 61972       | Bronze Bearing                                          |
| 7        | 21818       | Pump Body                                               |
| 8        | 33477       | O-Ring                                                  |
| 9        | 62007       | Gerotor                                                 |
| 10       | 62002       | Gerotor Housing                                         |
| 11       | 61997       | Retaining Ring                                          |
| 12       | 33457       | Valve Gasket (2)                                        |
| 13       | 33452       | Valve Retainer                                          |
| 14       | 33442       | Valve Body                                              |
| 15       | 21823       | Elbow Fitting, Swivel                                   |
| 16       | 21828       | Elbow Fitting, Compression                              |
| *        | 61977       | Repair Kit (Includes Ref. Nos. 3,<br>4, 6, 8 and 11-13) |

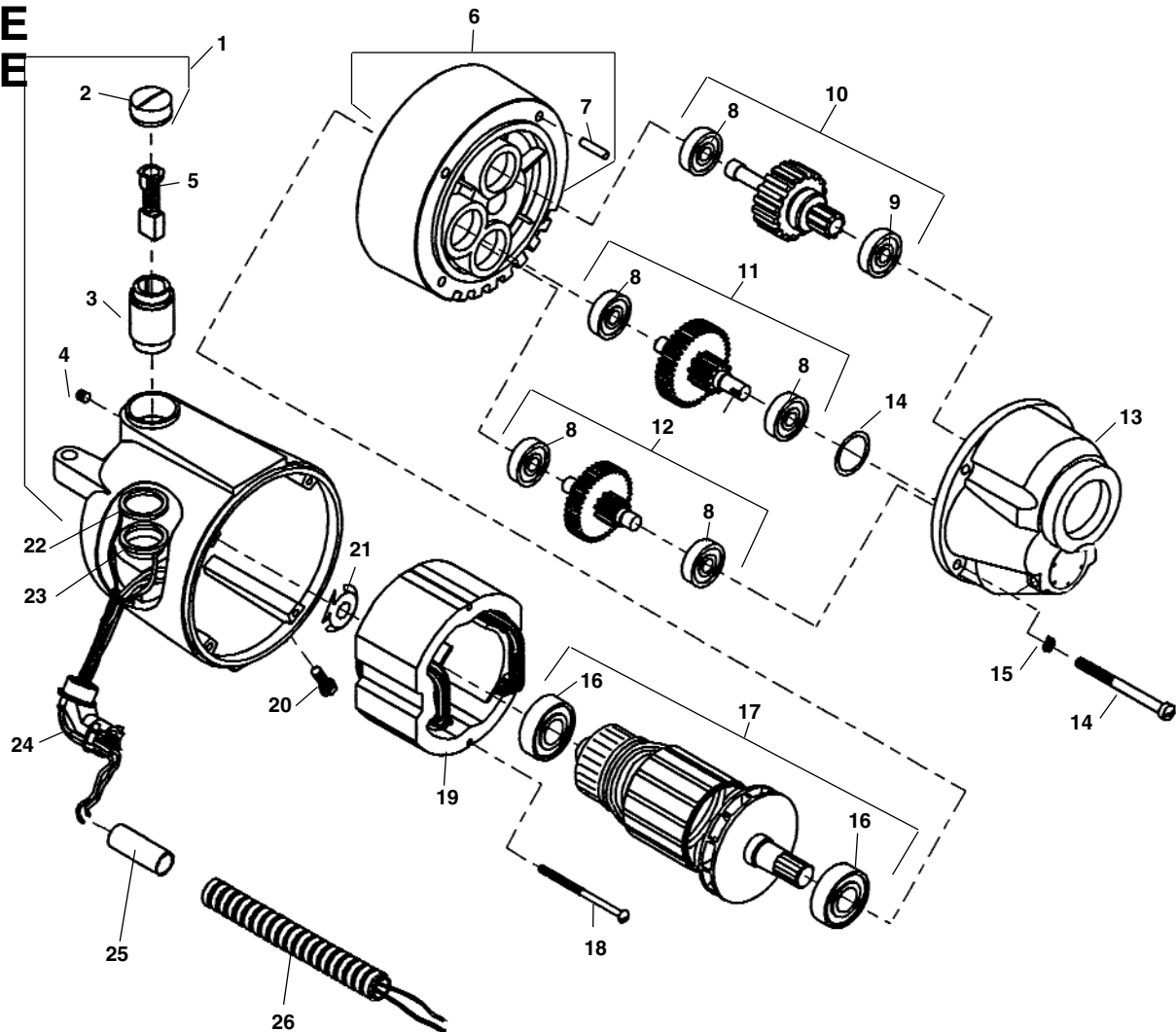
## Electrical Components – Universal Motor Machine



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description        | Ref. No. | Catalog No. | Description     |
|----------|-------------|--------------------|----------|-------------|-----------------|
| 1        | 36652       | Foot Switch, B-296 | 9        | 26972       | Back Cover      |
| 2        | 40017       | Foot Switch, B-298 | 10       | 47147       | Screw (2)       |
| 3        | 75952       | Strain Relief (2)  | 11       | 96452       | Switch Cover    |
| 4        | 46745       | Screw (2)          | 12       | 20123       | Switch Assembly |
| 5        | 96442       | Motor              | 13       | 96472       | Warning Label   |
| 6        | 96402       | Motor Bracket      | 14       | 94427       | Pop Rivet (6)   |
| 7        | 36262       | Shoulder Bolt (2)  | 15       | 96457       | Control Panel   |
| 8        | 45420       | Screw (2)          | 16       | 40910       | Screw           |
| 9        | 63373       | Suppressor         |          |             |                 |

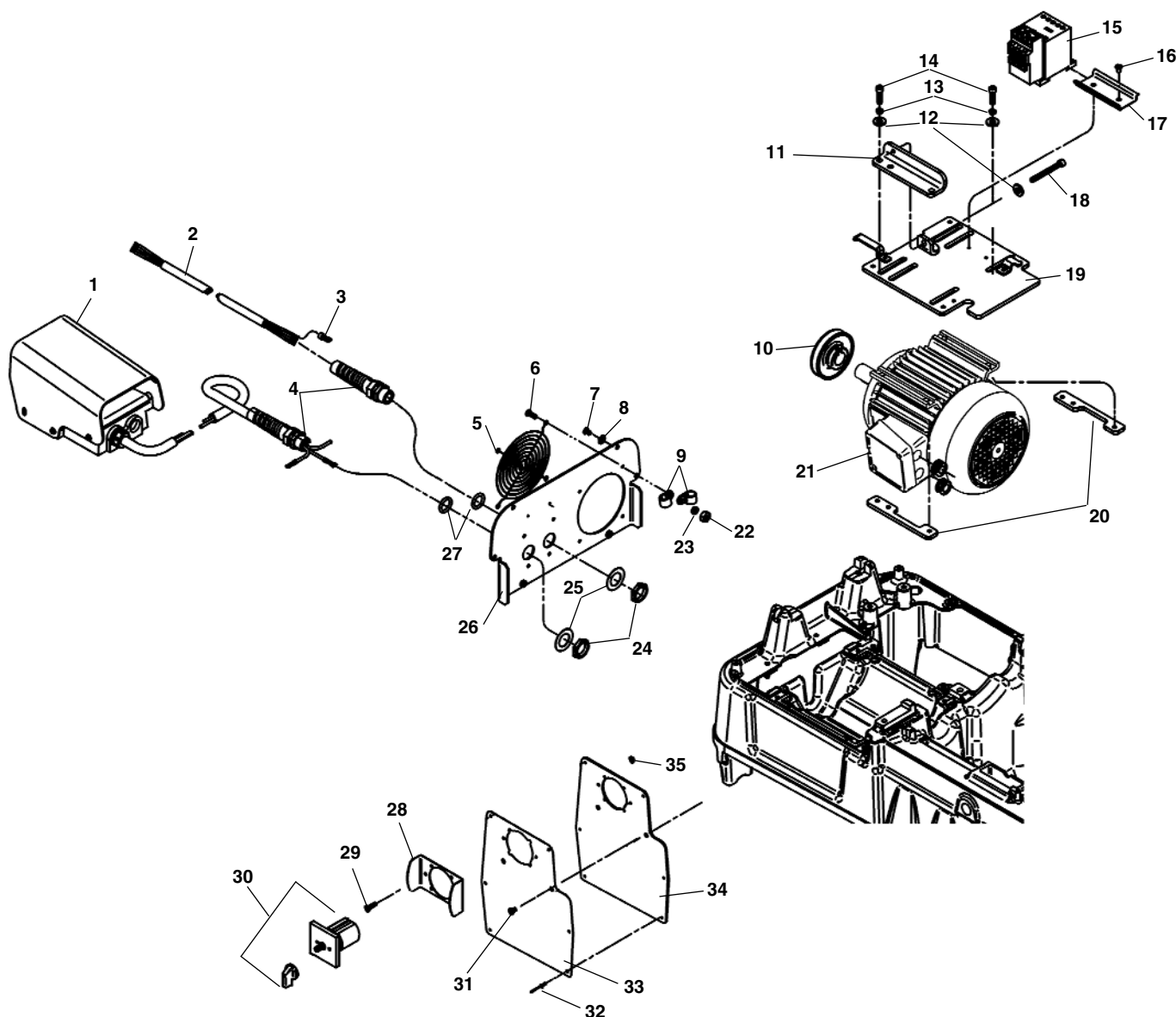
1102-CE  
1103-CE  
2302-CE  
2303-CE



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description             |
|----------|-------------|----------------------|----------|-------------|----------------------|----------|-------------|-------------------------|
| 1        | 43160       | Housing Assembly     | 11       | 44985       | 1st Gear Assembly    | 17       | 44010       | Armature 1103-CE (115V) |
| 2        | 44545       | Brush Cap Set        |          |             | 1103-CE and 2303-CE  |          | 44030       | Armature 2303-CE (230V) |
| 3        | 45025       | Brush Holder Set     |          | 62022       | 1st Gear Assembly    |          | 52497       | Armature 1102-CE (115V) |
| 4        | 39770       | Set Screw (2)        |          |             | 1102-CE and 2302-CE  |          | 52492       | Armature 2302-CE (230V) |
| 5        | 44540       | Brush Assembly Set   | 12       | 45005       | 2nd Gear Assembly    | 18       | 44555       | Mounting Screw (2)      |
| 6        | 43165       | Fan Housing Assembly |          |             | 1103-CE and 2303-CE  | 19       | 44015       | Field (115V)            |
|          |             | 1103-CE and 2303-CE  |          | 52527       | 2nd Gear Assembly    |          | 44038       | Field (230V)            |
|          | 54552       | Fan Housing Assembly |          |             | 1102-CE and 23032    | 20       | 83500       | Locking Screw (2)       |
|          |             | 1102-CE and 2302-CE  | 13       | 42875       | Gear Housing         | 21       | 44580       | Loading Spring          |
| 7        | 45165       | Dowel Pin            | 14       | 45075       | Screw (4)            | 22       | 86680       | White Upper Lead        |
| 8        | 45060       | Gear Bearings (5)    | 15       | 45150       | Lock Washer          | 23       | 86685       | Red Lower lead          |
| 9        | 45315       | Front Bearing        | 16       | 44565       | Armature Bearing (2) | 24       | 46900       | Connector 90 Degree     |
| 10       | 45370       | Drive Gear           |          |             |                      | 25       | 63377       | Ferrite Bead            |
|          |             |                      |          |             |                      | 26       | 95690       | Flexible Conduit        |

## 400V Electrical

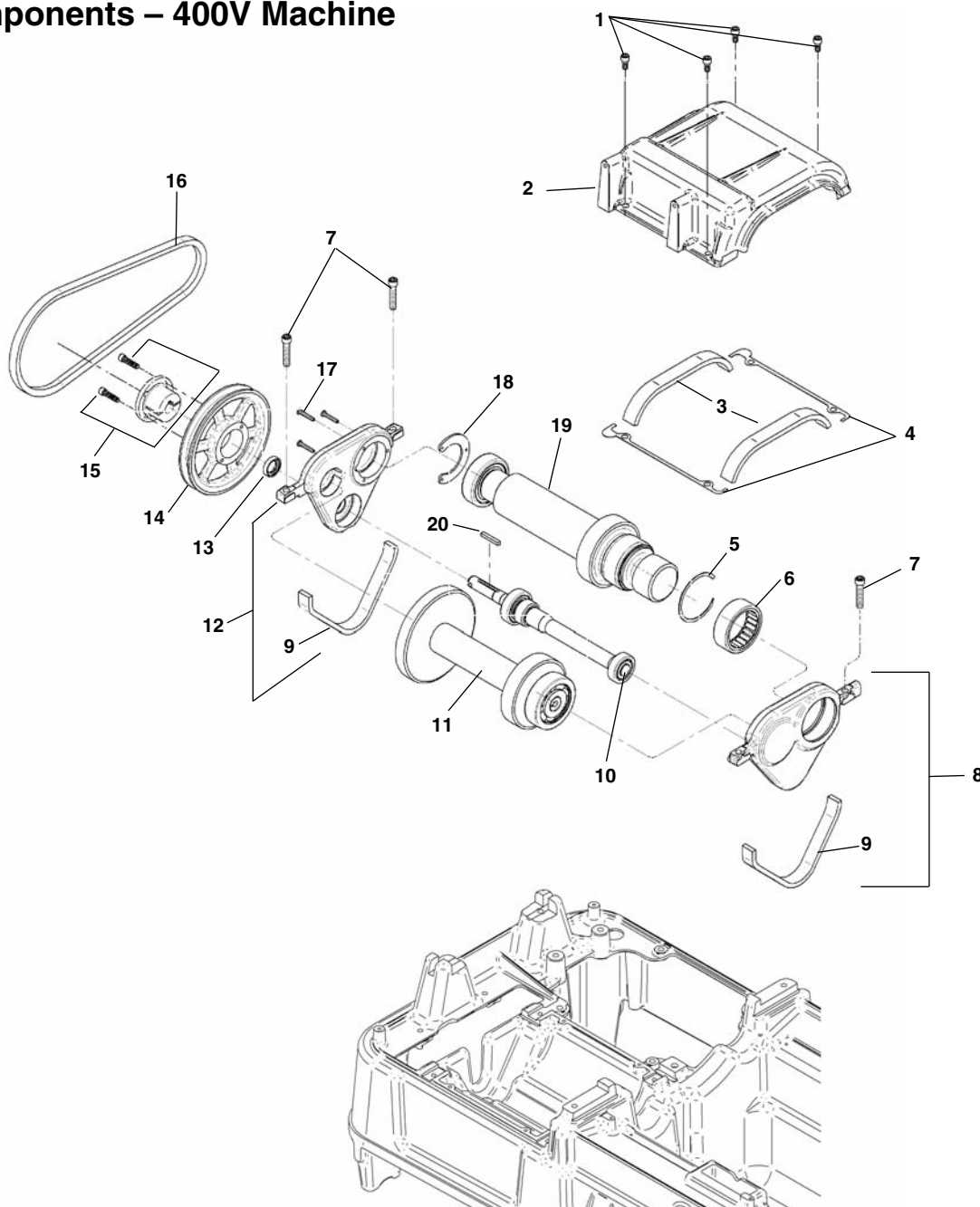


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                | Ref. No. | Catalog No. | Description                              |
|----------|-------------|--------------------------------------------|----------|-------------|------------------------------------------|
| 1        | 27063       | Foot Switch                                | 19       | 94192       | Motor Table                              |
| 2        | 75902       | Power Cord 115V                            | 20       | 94157       | Motor Mounting Brackets                  |
| 3        | 44635       | End Splice                                 | 21       | 27078       | Motor                                    |
| 4        | 27187       | Strain Relief w/Lock Nut (2)               | 22       | 34722       | Nut, Hex #10 - 32 (4)                    |
| 5        | 94232       | Fan Guard                                  | 23       | 58542       | Washer, Lock #10 (4)                     |
| 6        | 27118       | Screw, Pan Head #6 - 32 x 3/4" (4)         | 24       | 93962       | Lock Nut (2)                             |
| 7        | 94337       | Screw, Button Head 1/4" - 20 x 3/8"        | 25       | 36247       | Hole Adapter                             |
| 8        | 40270       | Lock Washer, 1/4" External Tooth           | 26       | 94152       | Back Cover                               |
| 9        | 61912       | 1/2" Clamp                                 | 27       | 47147       | Screw, Button Head #10 - 32 x 3/8" (2)   |
| 10       | 27073       | Pulley                                     | 28       | 27103       | Switch Guard                             |
| 11       | 94162       | Adjuster Bracket                           | 29       | 45405       | Screw, Slotted Round Hd. #8 - 32 x 7/16" |
| 12       | 96740       | Washer, Flat 5/16" (5)                     | 30       | 27108       | Switch Assembly                          |
| 13       | 40770       | Washer, Split Lock 5/16" (12)              | 31       | 94332       | Screw, Socket Head 5/16" - 18 x 3/4"     |
| 14       | 36652       | Screw, Socket Head 5/16" - 18 x 1 1/4" (8) | 32       | 94427       | Pop Rivet (6)                            |
| 15       | 27093       | Contactor                                  | 33       | 27083       | Control Panel Label                      |
| 16       | 94332       | Screw, Button Head 1/4" - 20 x 3/4"        | 34       | 27088       | Control Panel                            |
| 17       | 90517       | in Rail                                    | 35       | 76190       | Hex Nut, #8-32                           |
| 18       | 27113       | Screw, Socket Head 5/16" - 18 x 3 1/2"     |          |             |                                          |



## Gearbox Components – 400V Machine



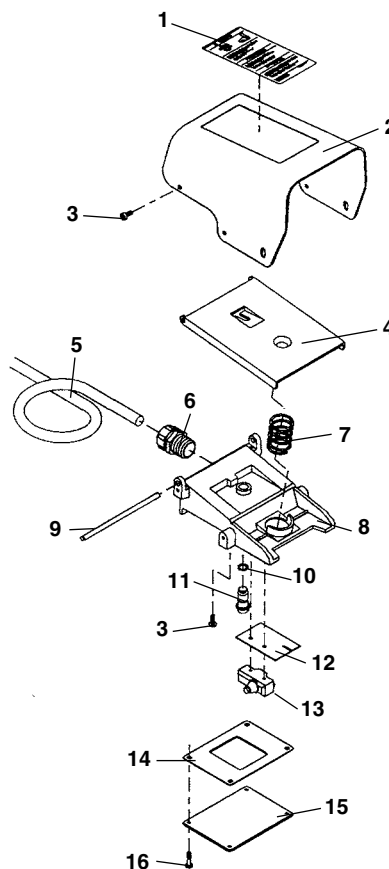
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                | Ref. No. | Catalog No. | Description                      |
|----------|-------------|--------------------------------------------|----------|-------------|----------------------------------|
| 1        | 36652       | Screw, Socket Head 1/4" - 20 x 3/4" (4)    | 12       | 94172       | Rear Transmission Bracket        |
| 2        | 26968       | Transmission Cover                         | 13       | 94202       | Seal                             |
| 3        | 94252       | Gasket (2)                                 | 14       | 26948       | Input Pulley                     |
| 4        | 94242       | Gasket (2)                                 | 15       | 94217       | Bushing f/Input Pulley           |
| 5        | 94062       | Retaining Ring                             | 16       | 94262       | V Belt                           |
| 6        | 94052       | Bearing                                    | 17       | 94317       | Screw, Pan Head #8 - 32 x 1" (3) |
| 7        | 40367       | Screw, Socket Head 5/16" - 18 x 1 1/4" (4) | 18       | 94177       | Bearing Retainer                 |
| 8        | 94167       | Front Transmission                         | 19       | 26958       | Output Shaft Assembly            |
| 9        | 94247       | Gasket (2)                                 | 20       | 94277       | Key, 3/16" Square                |
| 10       | 26963       | Input Shaft Assembly                       |          |             |                                  |
| 11       | 26953       | Intermediate Shaft                         |          |             |                                  |

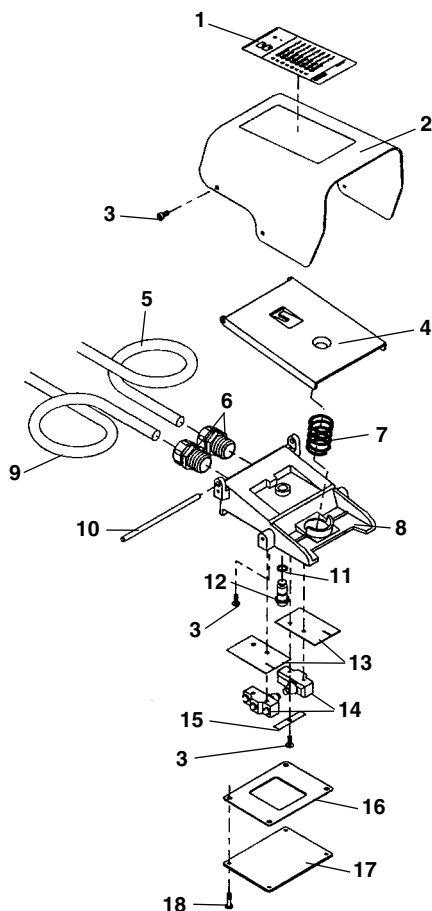
## 400V Machine

**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| 1        | 26938       | Warning Label              |
| 2        | 36692       | Cover                      |
| 3        | 36787       | Screw #10 Self-tapping (5) |
| 4        | 36697       | Foot Pedal                 |
| 5        | 36717       | Cord                       |
| 6        | 36732       | Cord Connector             |
| 7        | 36702       | Spring                     |
| 8        | 54347       | Base                       |
| 9        | 36747       | Pivot Pin                  |
| 10       | 36767       | O-Ring                     |
| 11       | 36772       | Poppet                     |
| 12       | 54367       | Insulator                  |
| 13       | 26943       | Micro Switch               |
| 14       | 54372       | Seal                       |
| 15       | 54362       | Bottom Cover               |
| 16       | 54357       | Bottom Cover Screw (4)     |

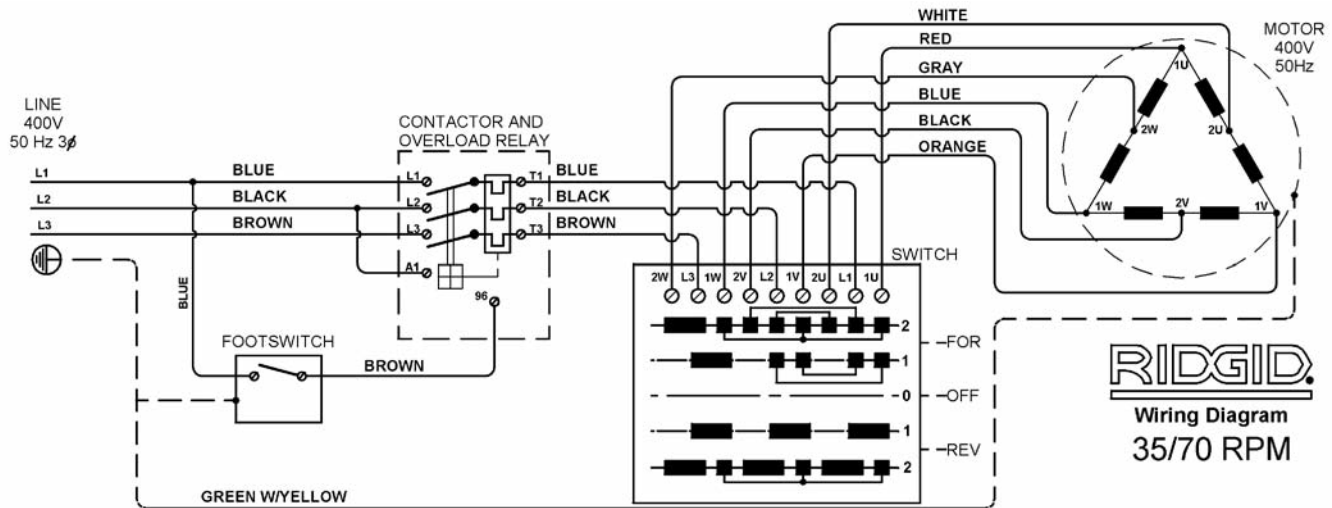


## B-296 B-297 B-298 B-299

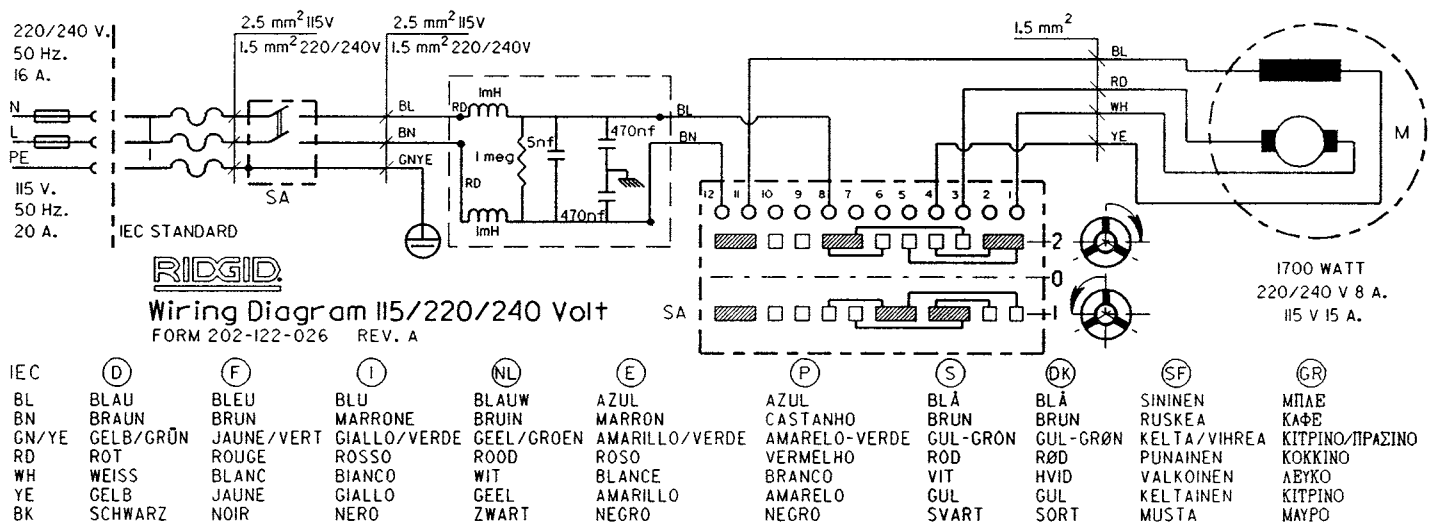


| Ref. No. | Catalog No. | Description                   |
|----------|-------------|-------------------------------|
| —        | 36652       | B-296 Foot Switch             |
| —        | 36657       | B-297 Foot Switch             |
| —        | 40017       | B-298 Foot Switch (U.K.)      |
| —        | 40022       | B-299 Foot Switch (Australia) |
| 1        | 36677       | Warning Label (B-296)         |
|          | 36682       | Warning Label (B-297)         |
|          | 54392       | Warning Label (B-298)         |
|          | 45017       | Warning Label (B-299)         |
| 2        | 54382       | Cover                         |
| 3        | 36787       | Screw #10 Self-tapping (6)    |
| 4        | 36697       | Foot Pedal                    |
| 5        | 36717       | Cord (B-299)                  |
|          | 18906       | Cord (B-296)                  |
|          | 36722       | Cord (B-297)                  |
|          | 45027       | Cord (B-298)                  |
| 6        | 36732       | Cord Connector (2 )           |
| 7        | 36702       | Spring                        |
| 8        | 54352       | Base                          |
| 9        | 18916       | Line Cord (B-296)             |
|          | 36797       | Line Cord (B-297)             |
|          | 45022       | Line Cord (B-298)             |
|          | 93210       | Line Cord (B-299)             |
| 10       | 36747       | Pivot Pin                     |
| 11       | 36767       | O-Ring                        |
| 12       | 36772       | Poppet                        |
| 13       | 54367       | Insulator (2)                 |
| 14       | 36762       | Micro Switch (2)              |
| 15       | 54377       | Switch Bracket                |
| 16       | 54372       | Seal                          |
| 17       | 54362       | Bottom Cover                  |
| 18       | 54357       | Bottom Cover Screw (4)        |

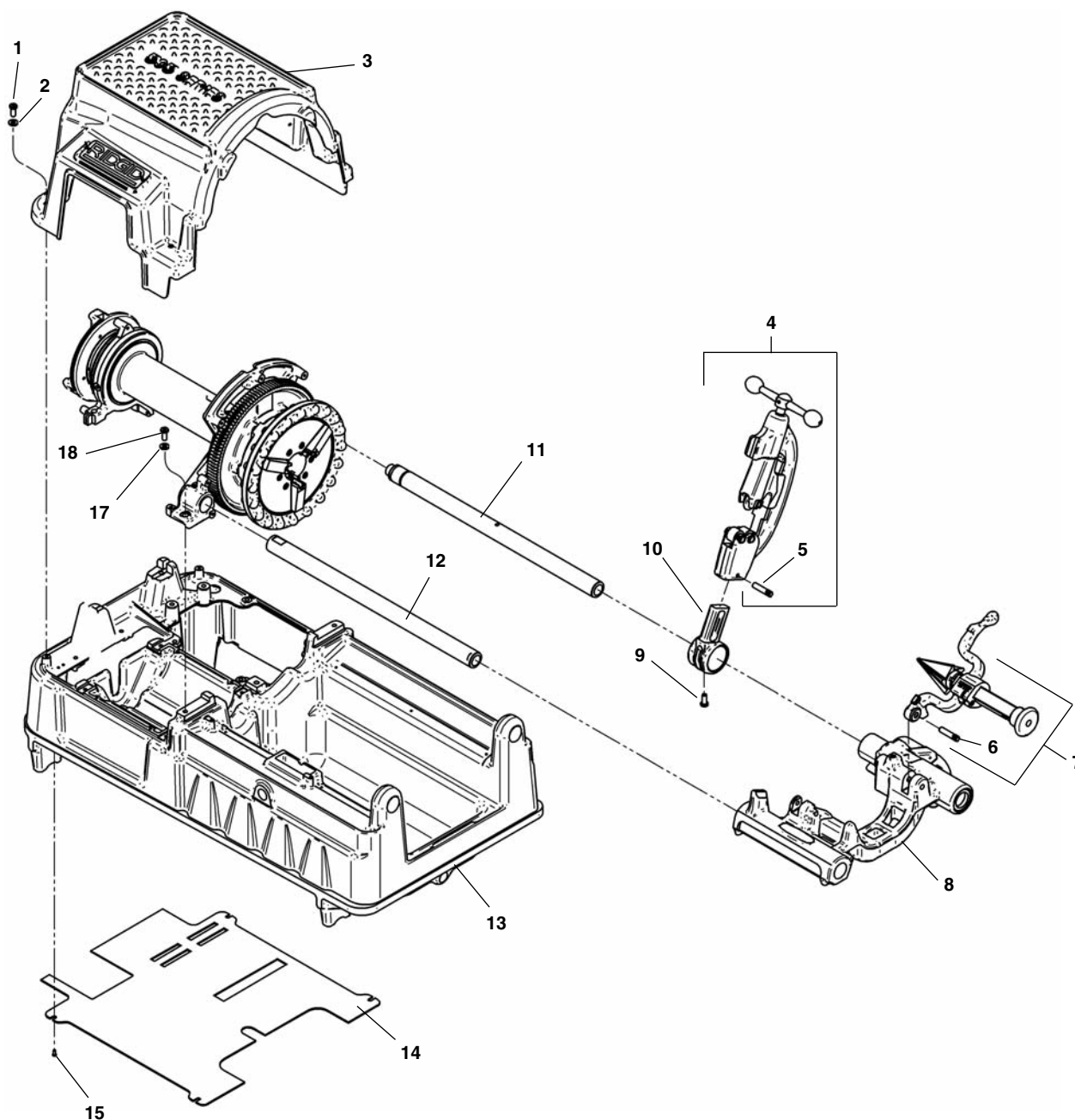
## 400V Wiring



## European Wiring Diagram - Universal Machines



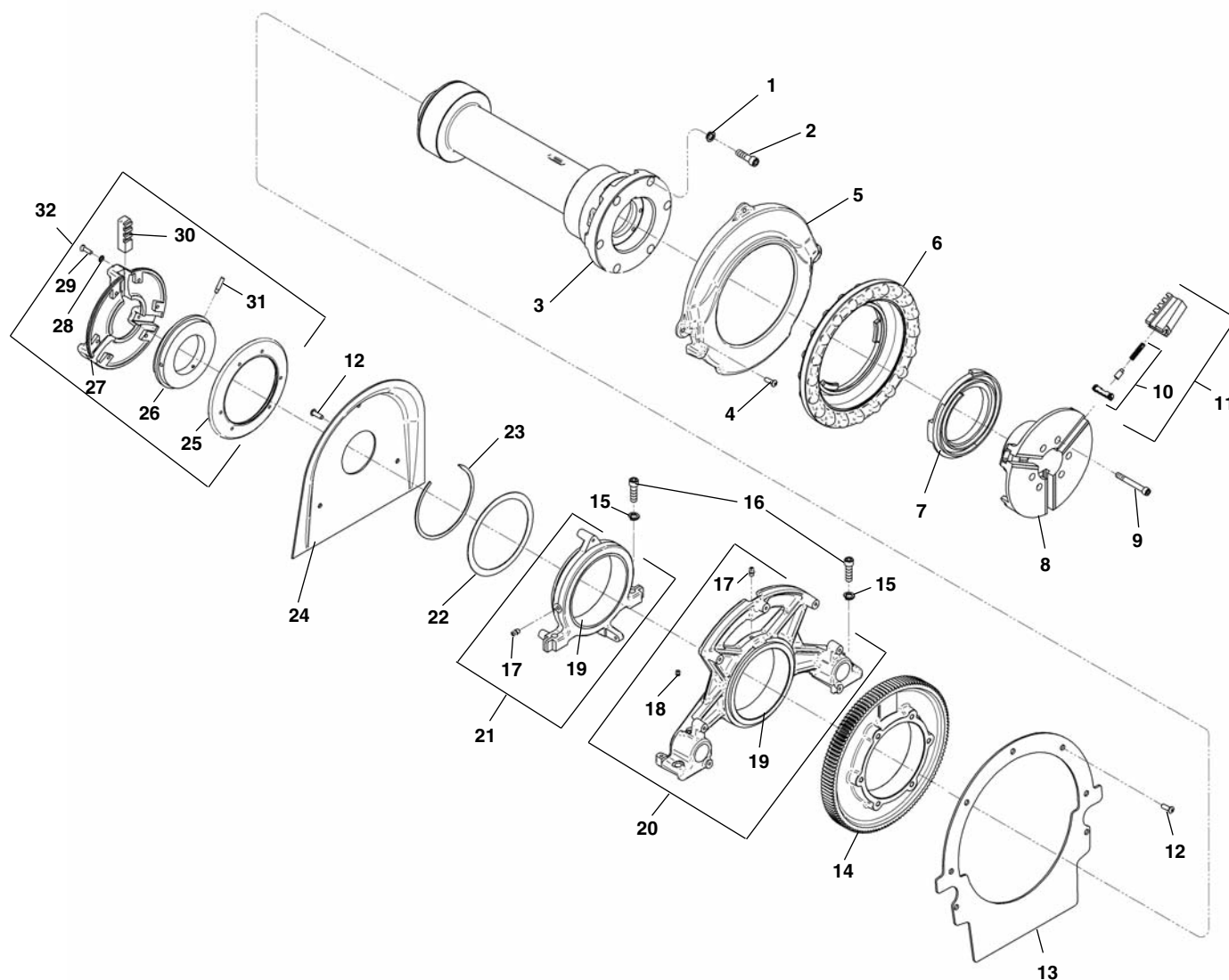
## Main Components



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                             | Ref. No. | Catalog No. | Description                      |
|----------|-------------|-----------------------------------------|----------|-------------|----------------------------------|
| 1        | 94332       | Screw, Button Head 1/4" - 20 x 3/4" (4) | 9        | 44930       | Stop Screw                       |
| 2        | 94322       | Washer, Flat 1/4" (4)"                  | 10       | 43690       | Cutter Arm                       |
| 3        | 94432       | Top Cover                               | 11       | 45220       | Rear Support Bar                 |
| 4        | 42390       | 820 Cutter Assembly                     | 12       | 45440       | Front Support Bar                |
| 5        | 47135       | Stop Pin                                | 13       | 94042       | Base                             |
| 6        | 47065       | Pin                                     | 14       | 96432       | Bottom Cover                     |
| 7        | 42365       | 341 Reamer Assembly                     | 15       | 94312       | Screw, Pan Head #6 - 32 x 2" (4) |
| 8        | 94357       | Carriage Assembly                       |          |             |                                  |

## Drive Shaft Assembly



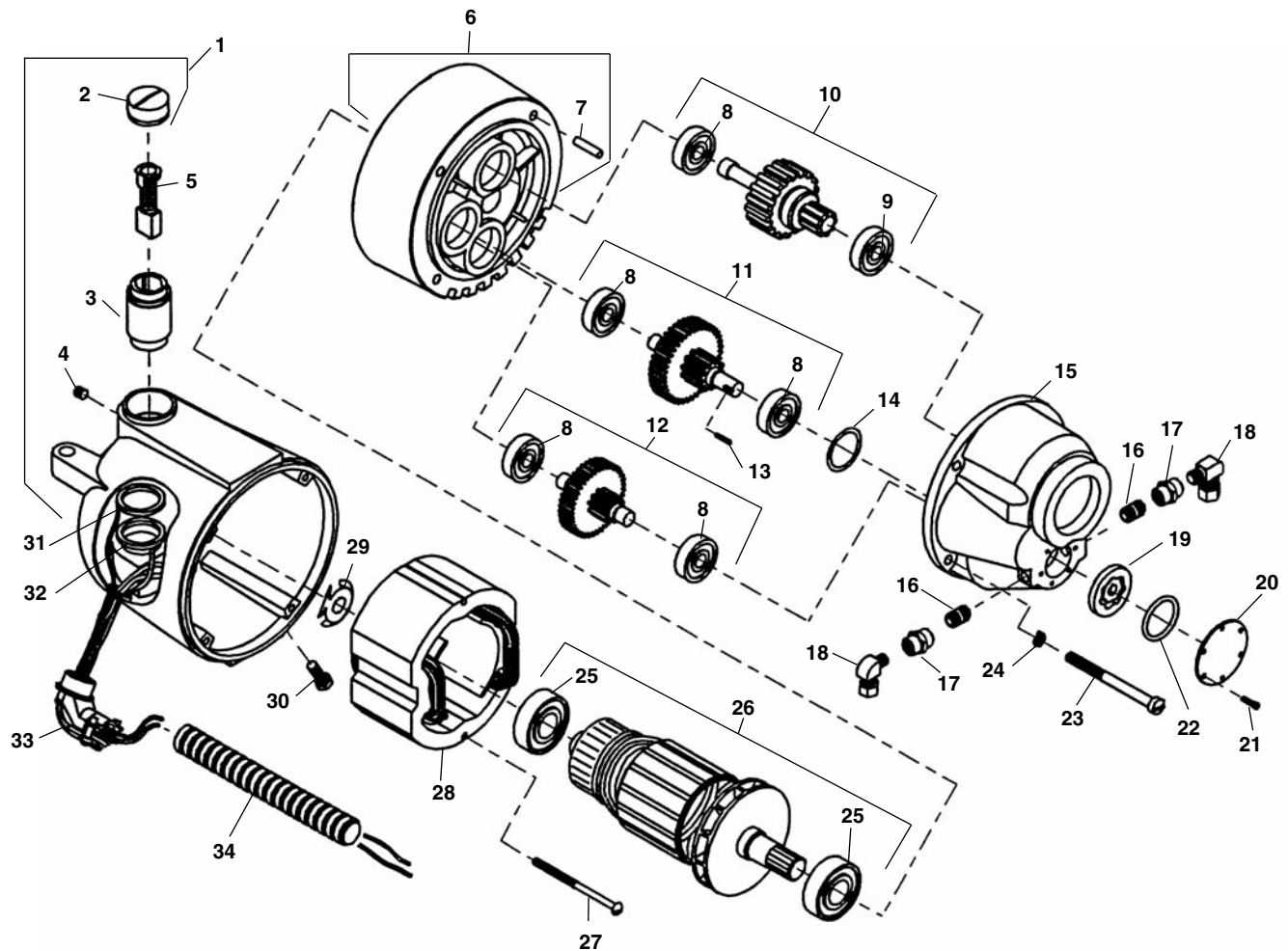
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                                   | Ref. No. | Catalog No. | Description                                          |
|----------|-------------|---------------------------------------------------------------|----------|-------------|------------------------------------------------------|
| 1        | 40930       | Washer, Lock $\frac{3}{8}$ "                                  | 18       | 40910       | Set Screw $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " (4) |
| 2        | 46475       | Screw, Soc. Hd. $\frac{3}{8}$ " - 16 x $1\frac{1}{4}$ "       | 19       | 93957       | Spindle Bearing (2)                                  |
| 3        | 96427       | Drive Shaft                                                   | 20       | 94027       | Front Bracket Assembly                               |
| 4        | 94332       | Screw, Button Head $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " (9) | 21       | 94037       | Rear Bracket Assembly                                |
| 5        | 96407       | Front Cover                                                   | 22       | 94392       | Thrust Washer                                        |
| 6        | 96422       | Handwheel                                                     | 23       | 94397       | Retaining Ring                                       |
| 7        | 43540       | Scroll                                                        | 24       | 96487       | Rear Cover                                           |
| 8        | 43525       | Chuck Cap                                                     | 25       | 43740       | Back Plate                                           |
| 9        | 45295       | Screw, $\frac{5}{16}$ " - 18 x $2\frac{3}{4}$ " (6)           |          | 19356       | Back Plate - Europe                                  |
| 10       | 44715       | Insert Set                                                    | 26       | 44095       | Scroll                                               |
| 11       | 44090       | Front Jaw (4)                                                 | 27       | 43735       | Centering Head                                       |
| 12       | 94337       | Screw, Button Head $\frac{1}{4}$ " - 20 x $\frac{3}{8}$ " (7) |          | 19346       | Centering Head - Europe                              |
| 13       | 94072       | Front Plate                                                   | 28       | 40270       | Lock Washer (6)                                      |
| 14       | 96417       | Drive Gear                                                    | 29       | 46790       | Screw, #12-24 x $\frac{3}{4}$ " (6)                  |
| 15       | 40930       | Washer, Lock $\frac{3}{8}$ " (4)                              | 30       | 46500       | Centering Jaw (3)                                    |
| 16       | 46745       | Screw, $\frac{3}{8}$ " - 16 x $1\frac{1}{4}$ " (4)            | 31       | 45260       | Step Pin (3)                                         |
| 17       | 46860       | Grease Fitting (2)                                            | 32       | 44165       | Centering Head Assembly                              |



## Motor

1101  
2301

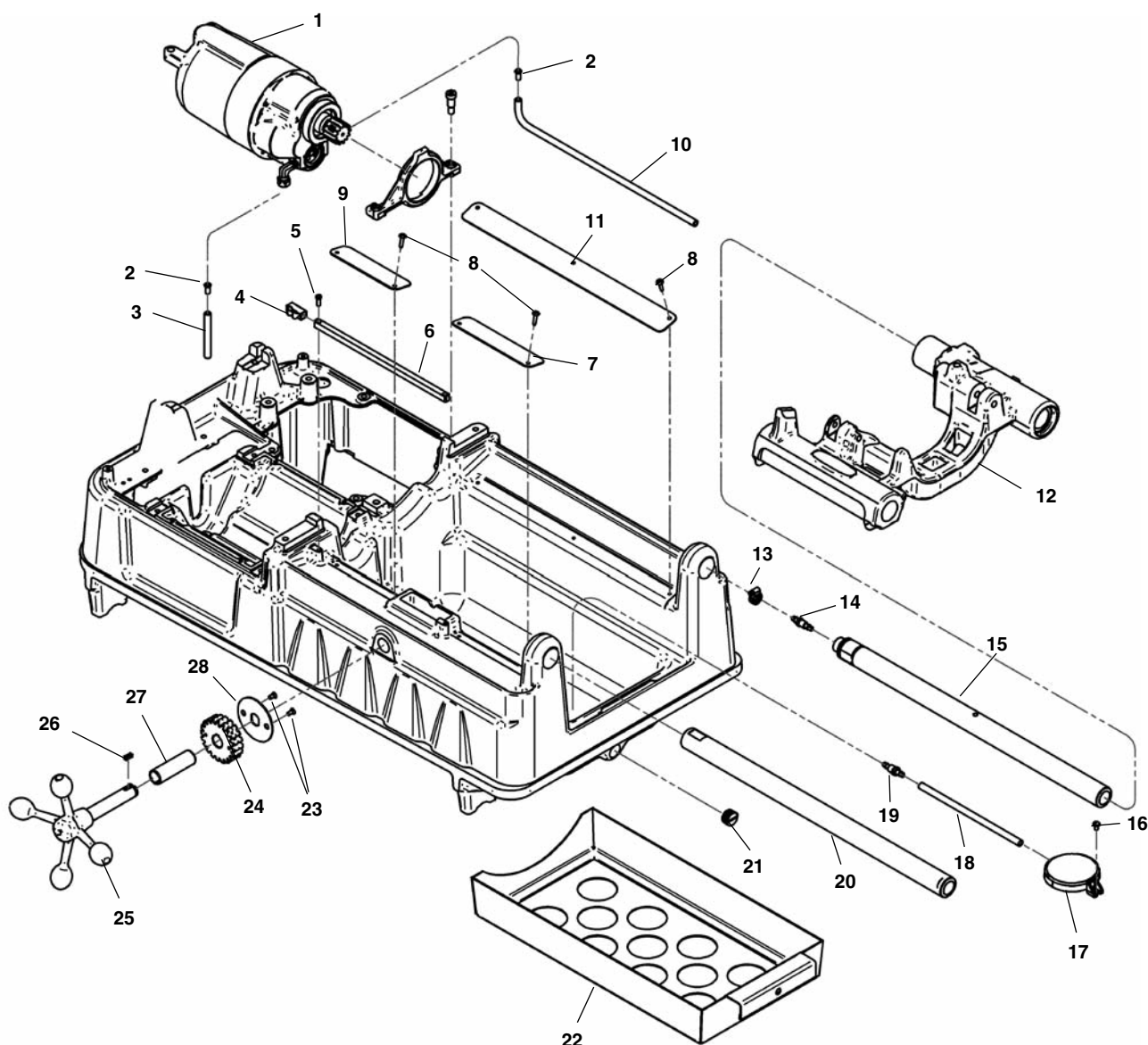


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description             | Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No.     | Description          |
|----------|-------------|-------------------------|----------|-------------|--------------------------|----------|-----------------|----------------------|
| —        | 96442       | 1101 Motor 115V         | 11       | 52522       | 1st Gear Assembly        | 24       | 45150           | Lock Washer          |
| —        | 21208       | 2301 Motor 230V         | 12       | 52527       | 2nd Gear Assembly        | 25       | 44565           | Armature Bearing (2) |
| —        | 25353       | 1101A Motor 115V 54 RPM | 13       | 96885       | Pin                      | 26       | 52497           | Armature (115V)      |
| 1        | 43160       | Housing Assembly        | 14       | 96880       | Oil Seal                 | 52492    | Armature (230V) |                      |
| 2        | 44545       | Brush Cap Set           | 15       | 96830       | Gear Housing             | 27       | 44555           | Mounting Screw (2)   |
| 3        | 45025       | Brush Holder Set        | 16       | 52507       | Pipe Nipple 1/8" NPT (2) | 28       | 44015           | Field (115V)         |
| 4        | 39770       | Set Screw (2)           | 17       | 52512       | Coupling 1/8" NPT (2)    | 44035    | Field (230V)    |                      |
| 5        | 44540       | Brush Assembly Set      | 18       | 52517       | 90° Elbow Fitting (2)    | 29       | 44580           | Loading Spring       |
| 6        | 54552       | Fan Housing Assembly    | 19       | 96870       | Gerotor Set              | 30       | 83500           | Locking Screw (2)    |
| 7        | 45165       | Dowel Pin               | 20       | 96840       | Cover Plate              | 31       | 96942           | White Upper Lead     |
| 8        | 45060       | Gear Bearings (5)       | 21       | 46130       | Screw (6)                | 32       | 96492           | Red Lower lead       |
| 9        | 45315       | Front Bearing           | 22       | 96875       | O Ring                   | 33       | 46900           | Connector 90         |
| 10       | 96437       | Drive Gear              | 23       | 45075       | Screw (4)                | 34       | 96482           | Flexible Conduit     |



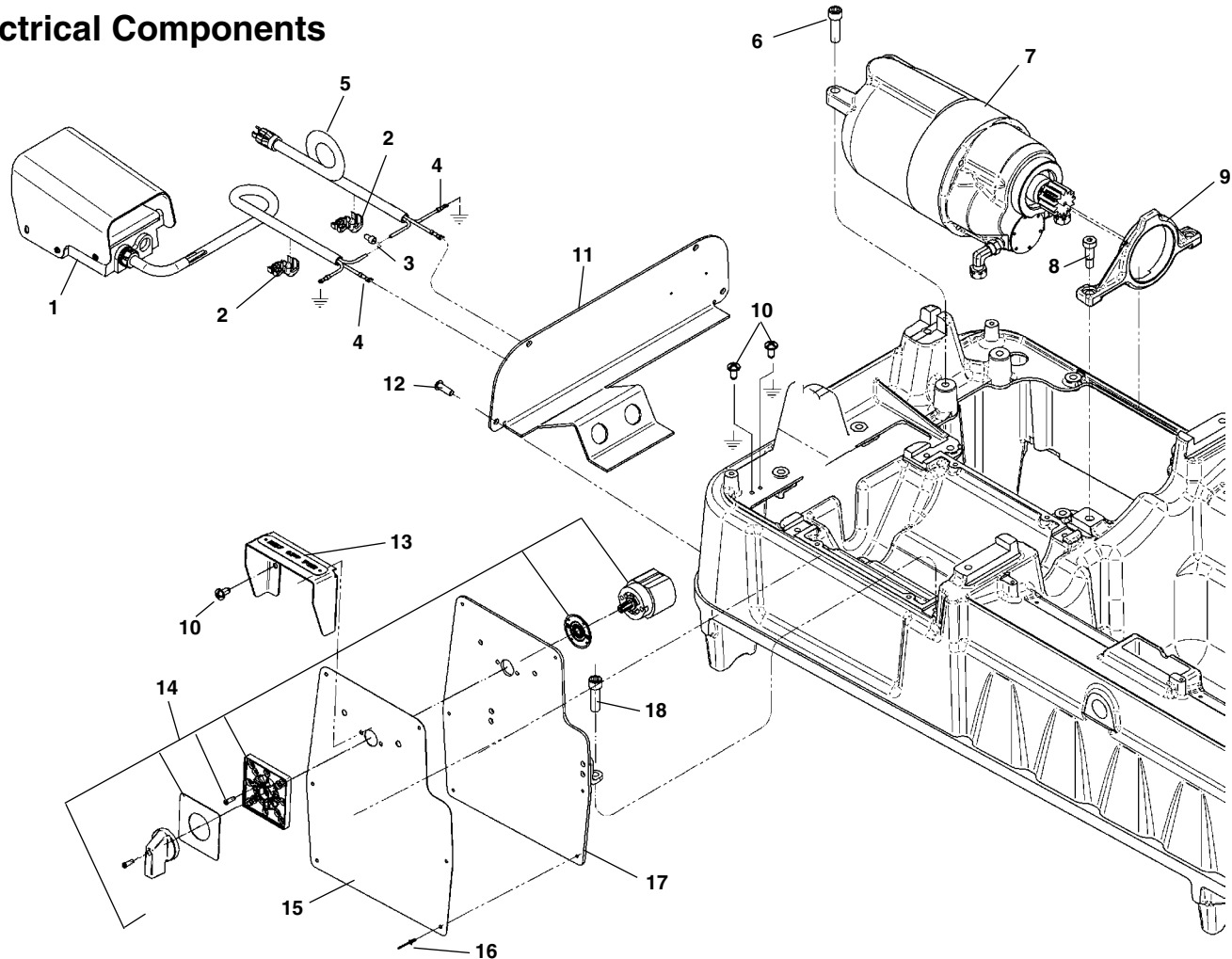
## Oiling Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                          | Ref. No. | Catalog No. | Description                          |
|----------|-------------|--------------------------------------|----------|-------------|--------------------------------------|
| 1        | 96442       | 1101 Motor Assembly 115V             | 15       | 45220       | Support Bar, Rear                    |
|          | 21208       | 2301 Motor Assembly 230V             | 16       | 45420       | Screw, #10 - 32 x 3/8"               |
| 2        | 35117       | Tube Insert                          | 17       | 58467       | Filter Screen Assembly               |
| 3        | 97950       | Oil Hose, Input 13"                  | 18       | 87950       | Oil Hose, Filter                     |
| 4        | 47110       | Indicator Slide                      | 19       | 54142       | Bulkhead Fitting                     |
| 5        | 45615       | Screw, Flat Head #10 - 32 x 1/2" (2) | 20       | 45440       | Support Bar, Front                   |
| 6        | 47105       | Length Indicator Bar                 | 21       | 96447       | Drain Plug 1/2" NPT                  |
| 7        | 94117       | Drip Edge                            | 22       | 94112       | Chip Tray                            |
| 8        | 43367       | Screw, #8 x 3/4"                     | 23       | 46785       | Screw, Flat Head #10 - 32 x 3/8" (2) |
| 9        | 94122       | Drip Edge                            | 24       | 45430       | Pinion                               |
| 10       | 58482       | Oil Hose, Input 25"                  | 25       | 94012       | Handwheel                            |
| 11       | 94127       | Drip Edge                            | 26       | 94267       | Key, 3/16" Square x 1/2"             |
| 12       | 94357       | Carriage Assembly                    | 27       | 94222       | Bushing                              |
| 13       | 35142       | Hose Clamp                           | 28       | 47120       | Pinion Lock Ring                     |
| 14       | 69157       | Barbed Fitting                       |          |             |                                      |

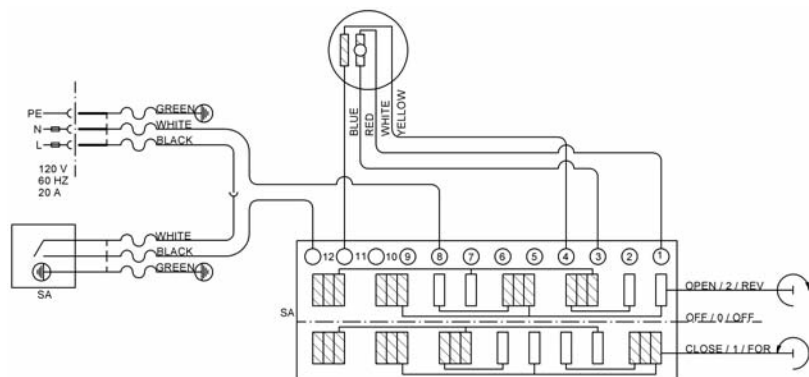
## Electrical Components



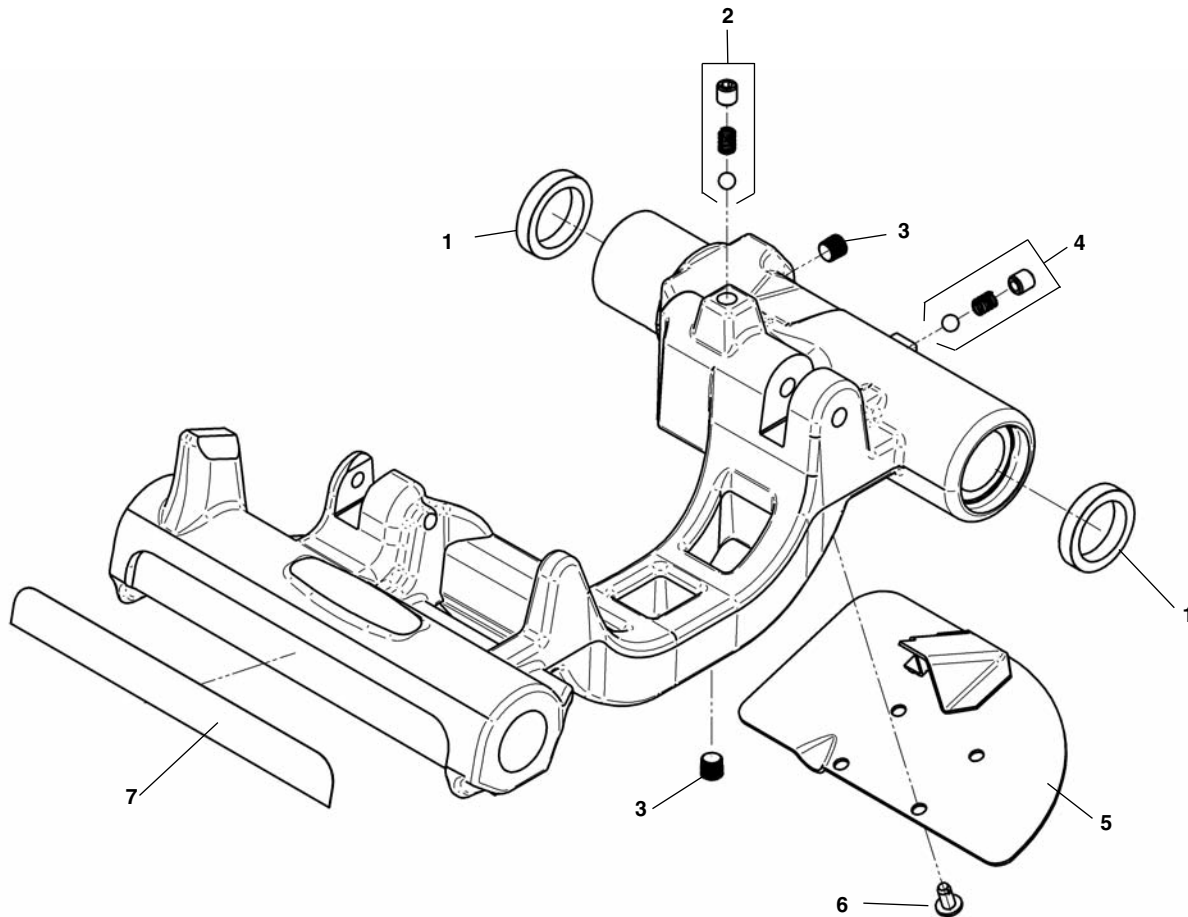
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description        | Ref. No. | Catalog No. | Description                                         |
|----------|-------------|--------------------|----------|-------------|-----------------------------------------------------|
| 1        | 36642       | Foot Switch, B-294 | 11       | 94152       | Back Cover                                          |
| 2        | 75952       | Strain Relief (2)  | 12       | 94337       | Screw, Button Head<br>1/4" x 20 x 3/8" B.H.C.S. (4) |
| 3        | 44635       | End Splice         | 13       | 96452       | Switch Cover                                        |
| 4        | 46875       | Spade Terminal (2) | 14       | 20123       | Switch Assembly                                     |
| 5        | 46740       | Power Cord 115V    | 15       | 96472       | Warning Label                                       |
| 6        | 46745       | Screw (2)          | 16       | 94427       | Pop Rivet (6)                                       |
| 7        | 96442       | Motor              | 17       | 96457       | Control Panel                                       |
| 8        | 36262       | Shoulder Bolt (2)  | 18       | 40910       | Screw                                               |
| 9        | 96402       | Motor Bracket      |          |             |                                                     |
| 10       | 45420       | Screw (4)          |          |             |                                                     |

## Wiring Diagram



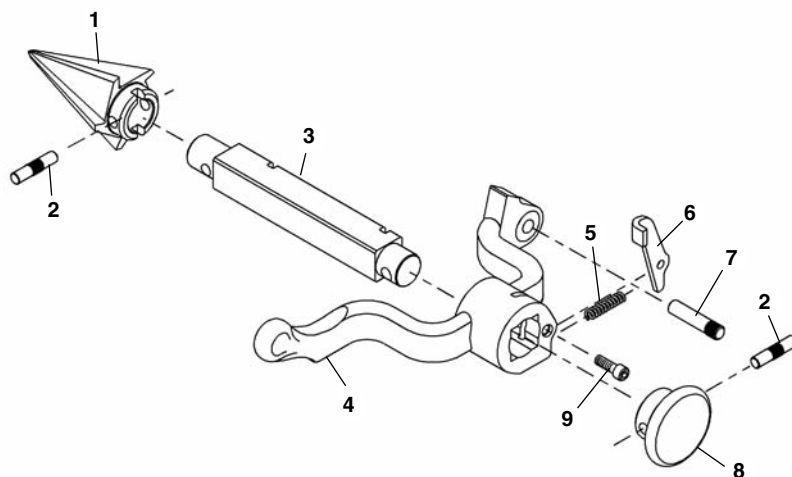
## Carriage



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|
| —        | 94357       | Carriage Assembly           |
| 1        | 46720       | Oil Seal                    |
| 2        | 46810       | Die Head Détente            |
| 3        | 46815       | Pipe Plug, 1/8" NPT (2)     |
| 4        | 35307       | Pressure Relief Set         |
| 5        | 45195       | Drip Tray                   |
| 6        | 46270       | Screw, 1/4" - 20 x 1/2" (4) |
| 7        | 46370       | Length Gauge                |

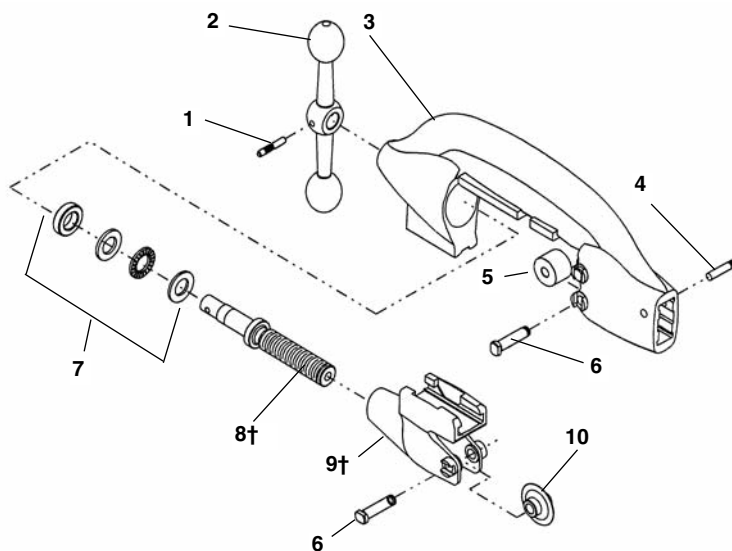
## No. 341 Reamer



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

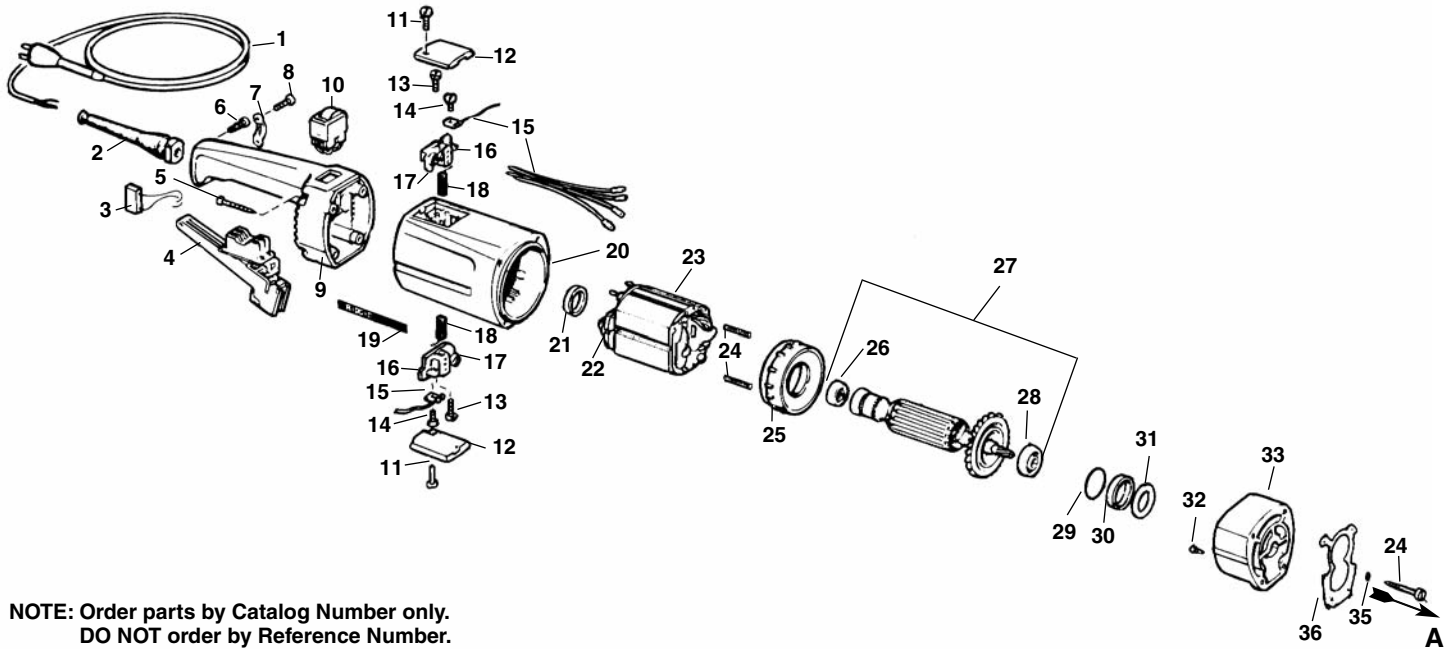
| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 42365       | 341 Reamer Complete    |
| 1        | 36277       | Cone (R.H.)            |
|          | 46660       | Cone (L.H. & R.H.)     |
| 2        | 47155       | Pin                    |
| 3        | 43790       | Reamer Bar             |
| 4        | 43230       | Reamer Arm             |
| 5        | 44700       | Latch Spring           |
| 6        | 46665       | Reamer Latch           |
| 7        | 47065       | Hinge Pin              |
| 8        | 46585       | Reamer Knob            |
| 9        | 46515       | Screw 1/4" - 20 x 3/4" |

## No. 820 Cutter



| Ref. No. | Catalog No. | Description              |
|----------|-------------|--------------------------|
| —        | 42390       | 820 Cutter Complete      |
| 1        | 47160       | Crank Pin                |
| 2        | 45765       | Feed Screw Crank         |
| 3        | 43040       | Cutter Frame             |
| 4        | 47135       | Stop Pin                 |
| 5        | 34775       | Cutter Roll (2)          |
| 6        | 34780       | Cutter & Roll Pin (3)    |
| 7        | 46725       | Thrust Bearing Assembly  |
| 8†       | 45780       | Feed Screw               |
| 9†       | 43245       | Wheel Housing            |
| 10       | 44185       | Cutter Wheel             |
|          | 44190       | Cutter Wheel f/Stainless |

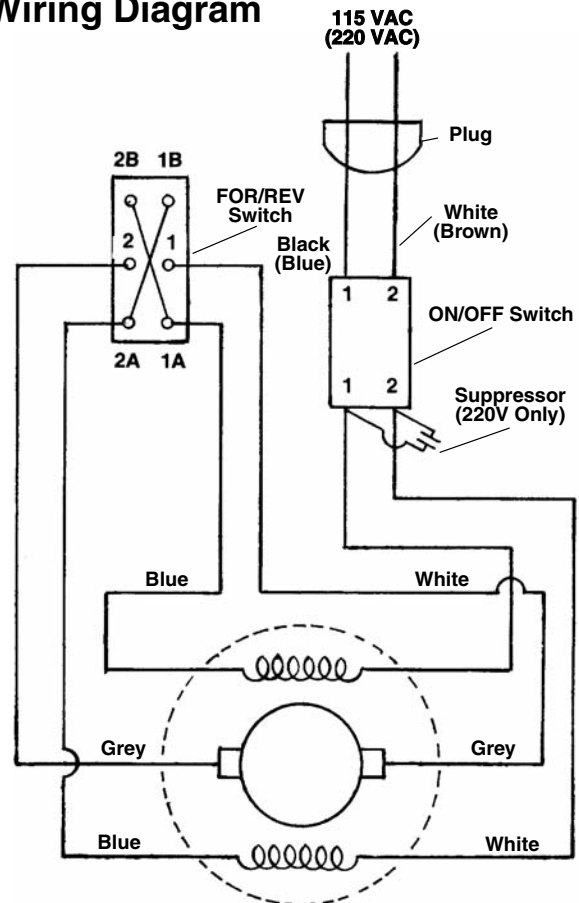
† Service Note: When replacing parts on early style (fine thread) cutters, both feed screw and wheel housing must be replaced.



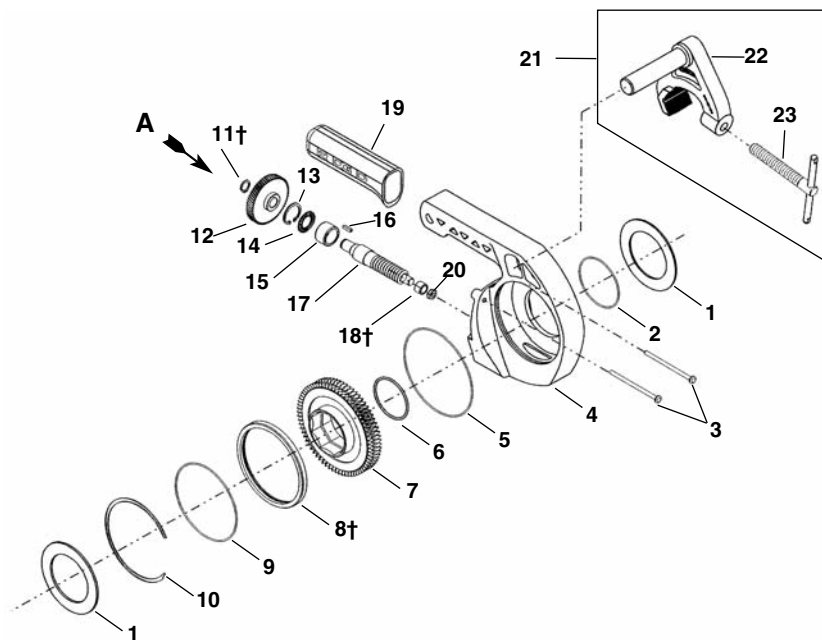
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|
| 1        | 20746       | Cord w/Plug (115V)          |
|          | 20276       | Cord w/Plug (230V - Europe) |
| 2        | 20286       | Sleeve                      |
| 3        | 20326       | Suppressor                  |
| 4        | 20266       | ON/OFF Switch               |
| 5        | 20586       | Screw (4)                   |
| 6        | 20576       | Screw (3)                   |
| 7        | 20296       | Cable Clamp                 |
| 8        | 20566       | Screw (2)                   |
| 9        | 20526       | Handle                      |
| 10       | 21796       | Switch (115V)               |
|          | 20516       | Switch (230V)               |
| 11       | 20546       | Screw (2)                   |
| 12       | 20496       | Cap (2)                     |
| 13       | 20556       | Screw (2)                   |
| 14       | 20406       | Screw (2)                   |
| 15       | 20396       | P.V.C. Wire (2)             |
| 16       | 20356       | Brush Holder (2)            |
| 17       | 20316       | Coil Spring (2)             |
| 18       | 20306       | Set of 2 Brushes            |
| 19       | 34382       | Name Plate                  |
| 20       | 20236       | Motor Housing               |
| 21       | 20506       | Spacer                      |
| 22       | 20386       | Lead Wire Plate             |
| 23       | 21716       | Field (115V)                |
|          | 20246       | Field (230V)                |
| 24       | 20486       | Pressure Spring (2)         |
| 25       | 20476       | Fan Housing                 |
| 26       | 20336       | Bearing                     |
| 27       | 21736       | Armature (115V)             |
|          | 20256       | Armature (230V)             |
| 28       | 47477       | Bearing                     |
| 29       | 20466       | Spring Ring                 |
| 30       | 20456       | Spacer                      |
| 31       | 20446       | Washer                      |
| 32       | 34387       | Screw (2)                   |
| 33       | 34392       | Fan Housing                 |
| 34       | 34397       | Screw (2)                   |
| 35       | 34517       | Brass Washer (2)            |
| 36       | 34512       | Gasket                      |

## Wiring Diagram







**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

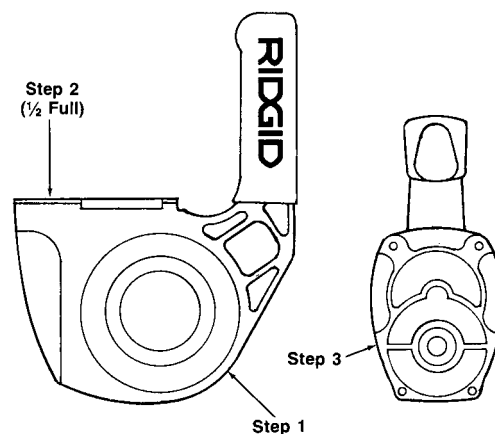
| Ref. No. | Catalog No. | Description                                                             |
|----------|-------------|-------------------------------------------------------------------------|
| 1        | 34402       | Cap (2)                                                                 |
| 2        | 34437       | O-Ring, 2 $\frac{1}{2}$ " x 2 $\frac{5}{8}$ " x $\frac{1}{16}$ " Buna N |
| 3        | 34412       | Screw (2)                                                               |
| 4        | 34417       | Gear Housing                                                            |
| 5        | 34422       | O-Ring, 4 $\frac{1}{2}$ " x 4 $\frac{5}{8}$ " x $\frac{1}{16}$ " Buna N |
| 6        | 38830       | Spring Ring                                                             |
| 7        | 34427       | Worm Gear                                                               |
| 8†       | 34432       | Ring Bearing                                                            |
| 9        | 34407       | O-Ring, 4" x 4 $\frac{1}{8}$ " x $\frac{1}{16}$ " Buna N                |
| 10       | 34442       | Spiral Ring                                                             |
| 11†      | 34447       | Retaining Ring                                                          |
| 12       | 34452       | Helical Gear                                                            |
| 13       | 34457       | Retaining Ring                                                          |
| 14       | 34462       | Thrust Bearing                                                          |
| 15       | 34467       | Needle Bearing                                                          |
| 16       | 34472       | Key                                                                     |
| 17       | 34477       | Worm                                                                    |
| 18†      | 34482       | Needle Bearing                                                          |
| 19       | 34487       | Hand Grip                                                               |
| 20       | 77710       | Hex Nut                                                                 |
| 21       | 34497       | Support Arm Assembly                                                    |
| 22       | 34502       | Arm                                                                     |
| 23       | 34507       | Screw Assembly                                                          |
|          | 34522       | Worm Gear Lubricant (2 oz.)                                             |
|          | 20826       | Carrying Case w/Insert                                                  |
|          | 34527       | Insert (only)                                                           |

## Service Notes

### Gear Head Assembly

#### Proper Oil Fill Procedure: Capacity 2 ozs.

- Step 1: Wipe Gear Cavity with oil and assemble Gear Head.  
 Step 2: Fill Worm Cavity  $\frac{1}{2}$  full of oil - install Worm.  
 Step 3: Pour remaining oil in Helical Gear Cavity - install Helical Gear.  
 Step 4: Install new Gasket and attach motor Assembly with Gear Head upright.



#### †Ref. No. 18

Hex Nut has been inserted behind Needle Bearing (Ref. No. 18) in the Gear Housing Assembly (Ref. No. 4). To replace Needle Bearing, thread 6 mm or  $\frac{1}{4}$  - 20 rod into nut and pull Bearing.

#### †Ref. No. 8

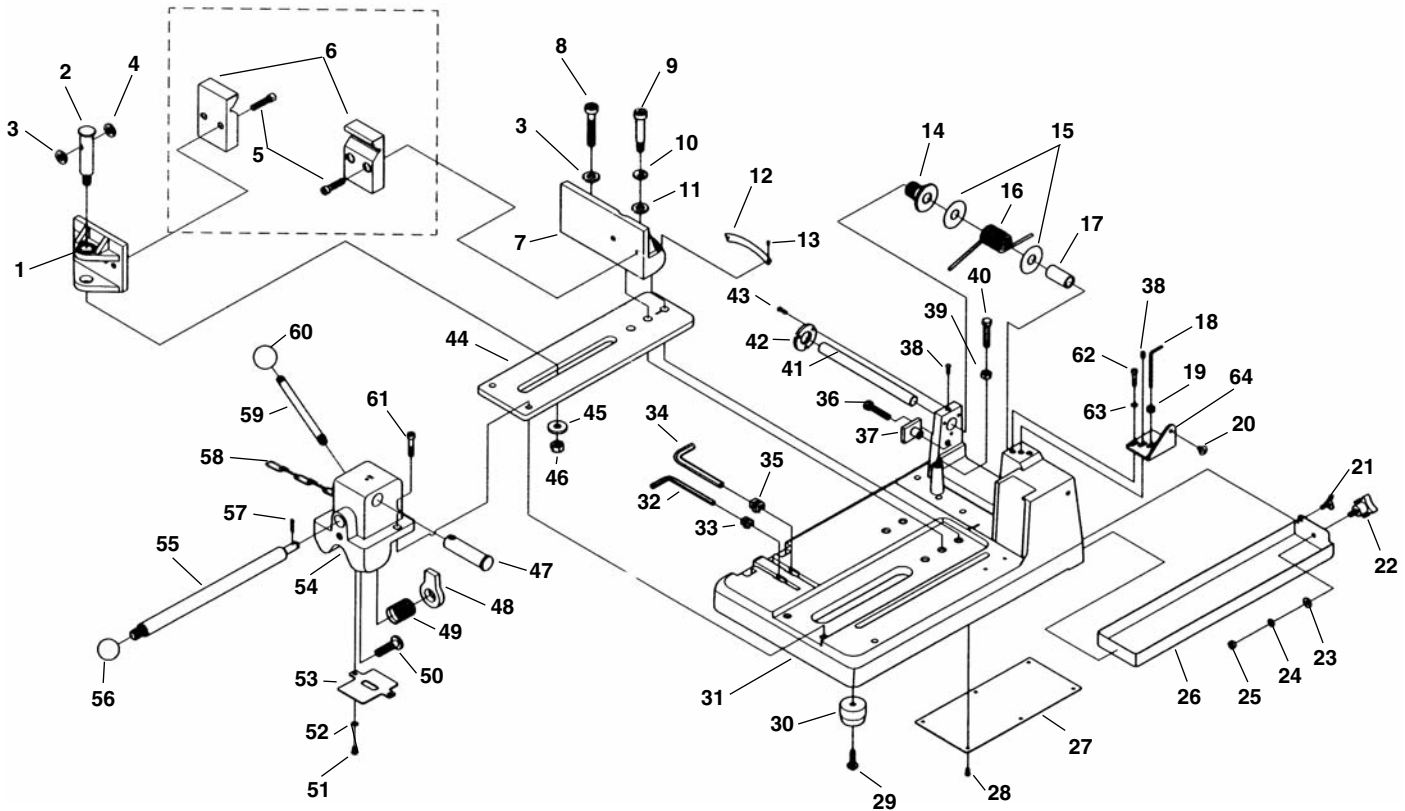
Chamfered edge of Ring Bearing must be installed (down) into Worm Gear.

#### †Ref. No. 11

Chamfered edge of Retaining Ring must be installed facing Gear.



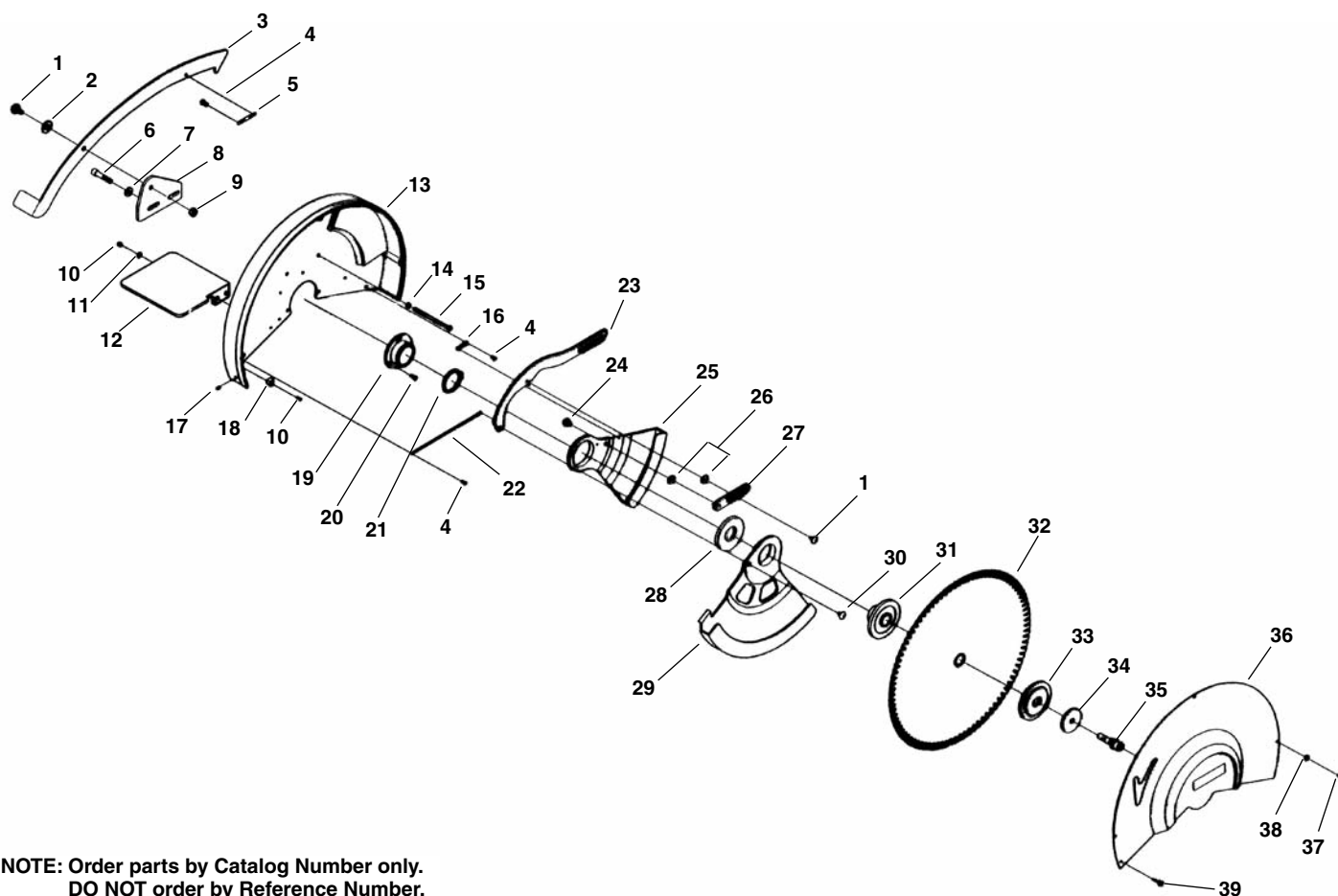
## Base Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

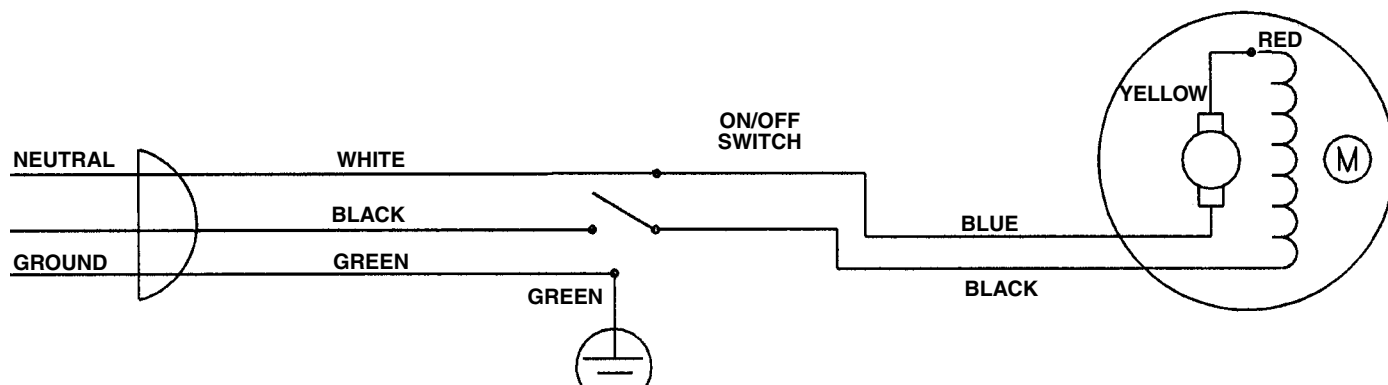
| Ref. No. | Catalog No. | Description             | Ref. No. | Catalog No. | Description             | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------|----------|-------------|-------------------------|----------|-------------|------------------------|
| 1        | 75142       | Vise Jaw                | 23       | 74932       | 1/4" Flat Washer        | 45       | 75237       | Washer                 |
| 2        | 75137       | Pin                     | 24       | 74952       | 1/4" Lock Washer        | 46       | 75242       | M10 Hex Nut            |
| 3        | 75132       | M10 Flat Washer         | 25       | 74797       | 1/4" x 20 UNC Hex Nut   | 47       | 75497       | Pivot Pin              |
| 4        | 75147       | M10 Flat Washer         | 26       | 75377       | Chip Box                | 48       | 75502       | Locking Ring           |
| 5        | 75447       | Pan Head Screw M4 x 8MM | 27       | 75372       | Support Plate           | 49       | 75507       | Spring                 |
| 6        | 75452       | Positioning Plate       | 28       | 74767       | M4 x 12MM Pan Hd. Screw | 50       | 75512       | Locating Screw         |
| 7        | 75187       | Vise Back Plate         | 29       | 75357       | M6 x 20MM Pan Hd. Screw | 51       | 75517       | #10 x 24 Pan Hd. Screw |
| 8        | 75207       | M10 x 45MM Hex Screw    | 30       | 75352       | Pad                     | 52       | 75772       | M5 Ext. Tooth Washer   |
| 9        | 75202       | Bolt                    | 31       | 75362       | Base                    | 53       | 75522       | Cover Plate            |
| 10       | 75197       | M12 Lock Washer         | 32       | 75342       | Hex Wrench 6MM          | 54       | 75162       | Vise Grip Housing      |
| 11       | 75192       | M12 Flat Washer         | 33       | 75347       | Wrench Holder           | 55       | 75152       | Push Rod               |
| 12       | 75227       | Scale                   | 34       | 75332       | Hex Wrench 8MM          | 56       | 75527       | Handle Knob, Push      |
| 13       | 75232       | Rivet                   | 35       | 75337       | Wrench Holder           | 57       | 75157       | Pin                    |
| 14       | 75247       | Adjusting Bushing       | 36       | 75327       | MB x 45MM Hex Hd. Screw | 58       | 75167       | Chain                  |
| 15       | 75252       | Flat Washer             | 37       | 75322       | Special Nut             | 59       | 75492       | Pivot Arm              |
| 16       | 75257       | Spring                  | 38       | 75297       | Hex Soc Sat Screw       | 60       | 75487       | Handle Knob, Pivot     |
| 17       | 75262       | Axle Sleeve             | 39       | 75302       | MB Hex Nut              | 61       | 75172       | M8 x 40MM Hex Screw    |
| 18       | 75097       | 2.5MM Hex Wrench        | 40       | 75327       | MB x 45MM Hex Hd. Screw | 62       | 75267       | M5 x 16MM Hex Screw    |
| 19       | 75107       | Wrench Holder           | 41       | 75317       | Swinging Shaft          | 63       | 75272       | M5 Flat Washer         |
| 20       | 75422       | Shoulder Bolt           | 42       | 75312       | Setting Nut             | 64       | 75282       | Brace Bracket          |
| 21       | 75382       | M5 x 10MM Wing Screw    | 43       | 74767       | M4 x 12MM Pan Hd. Screw |          |             |                        |
| 22       | 75042       | Tilt Lock Washer        | 44       | 75177       | Setting Up Piece        |          |             |                        |

## Blade and Guard Components

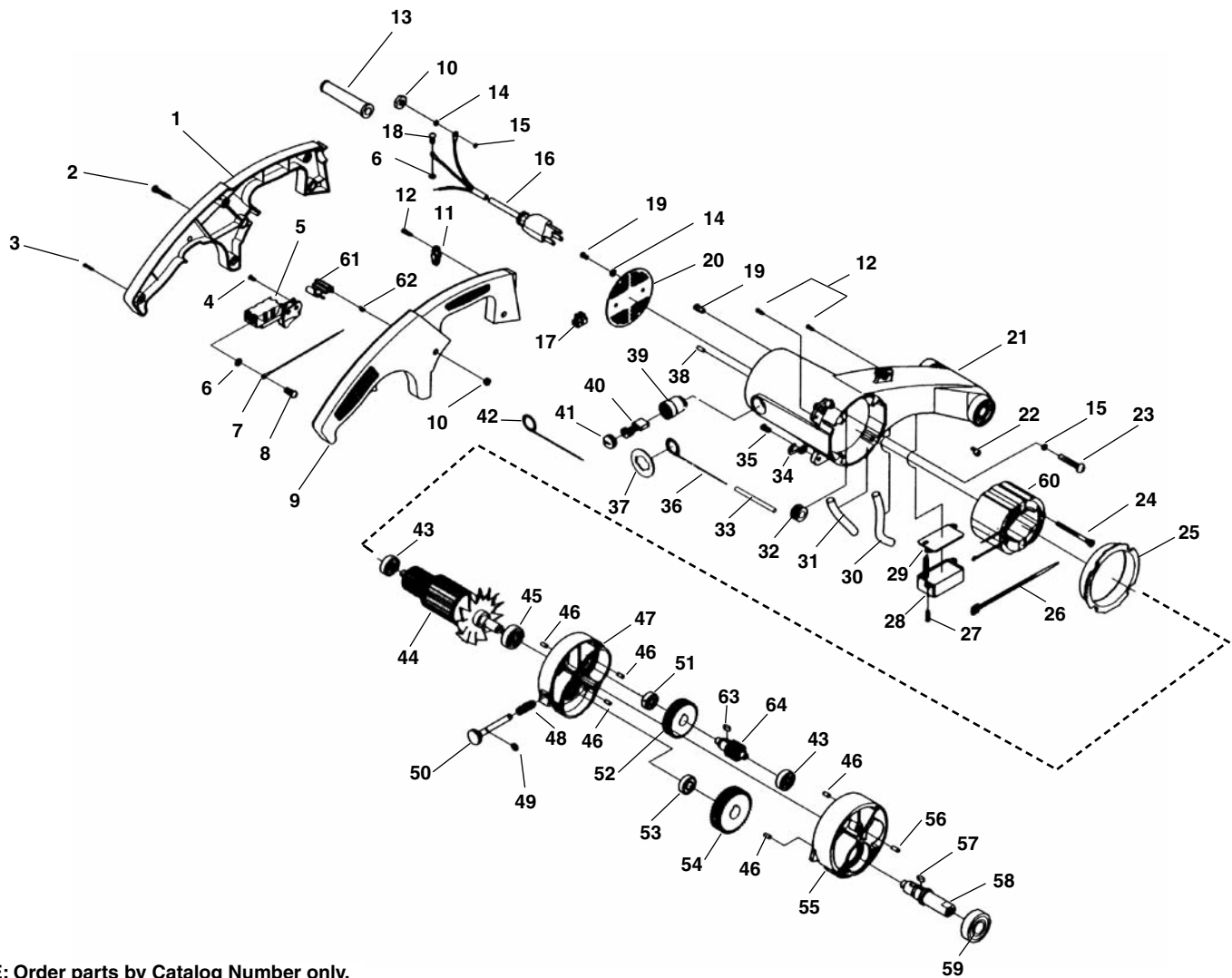


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description            |
|----------|-------------|-------------------------------------|----------|-------------|--------------------------------|----------|-------------|------------------------|
| 1        | 75417       | Shoulder Screw (230V Only)          | 13       | 74712       | Safety Cover                   | 26       | 74762       | Spacer                 |
| 2        | 75732       | M8 Flat Washer (230V Only)          | 14       | 74717       | M5 Tooth Washer                | 27       | 74757       | Lever                  |
| 3        | 75727       | Lever (230V Only)                   | 15       | 74722       | M5 x 85MM Flat Head Screw      | 28       | 74807       | Spacer                 |
| 4        | 74732       | M4 x 8MM Shoulder Screw (230V Only) | 16       | 74727       | Spring                         | 29       | 74802       | Big Blade Guard        |
| 5        | 75697       | Spring (230V Only)                  | 17       | 75477       | M4 x 4MM Set Screw (115V Only) | 30       | 75427       | Shoulder Screw         |
| 6        | 75267       | M5 x 16MM Hex Screw (230V Only)     | 18       | 74857       | Stop                           | 31       | 74812       | Flange                 |
| 7        | 75717       | M5 Flat Washer (230V Only)          | 19       | 74777       | Bearing Cover                  | 32       | 71692       | Blade                  |
| 8        | 75712       | Brace Bracket (230V Only)           | 20       | 74782       | M4 x 10MM Flat Hd. Screw       | 33       | 74822       | Flange                 |
| 9        | 75707       | M5 Hex Nut (230V Only)              | 21       | 74787       | Retaining Ring                 | 34       | 74832       | M10 Flat Washer        |
| 10       | 74767       | M4 x 12MM Pan Hd Screw              | 22       | 74792       | Spring                         | 35       | 74827       | M10 x 25MM Hex Screw   |
| 11       | 75472       | M4 Flat Washer                      | 23       | 74737       | Lever                          | 36       | 74837       | Cover                  |
| 12       | 74772       | Protection Plate                    | 24       | 74747       | Shoulder Screw                 | 37       | 74842       | M4 x 12MM Button Screw |
|          |             |                                     | 25       | 74752       | Small Blade Guard              | 38       | 75687       | M4 Lock Washer         |
|          |             |                                     |          |             |                                | 39       | 75692       | Lock Pin (115V Only)   |

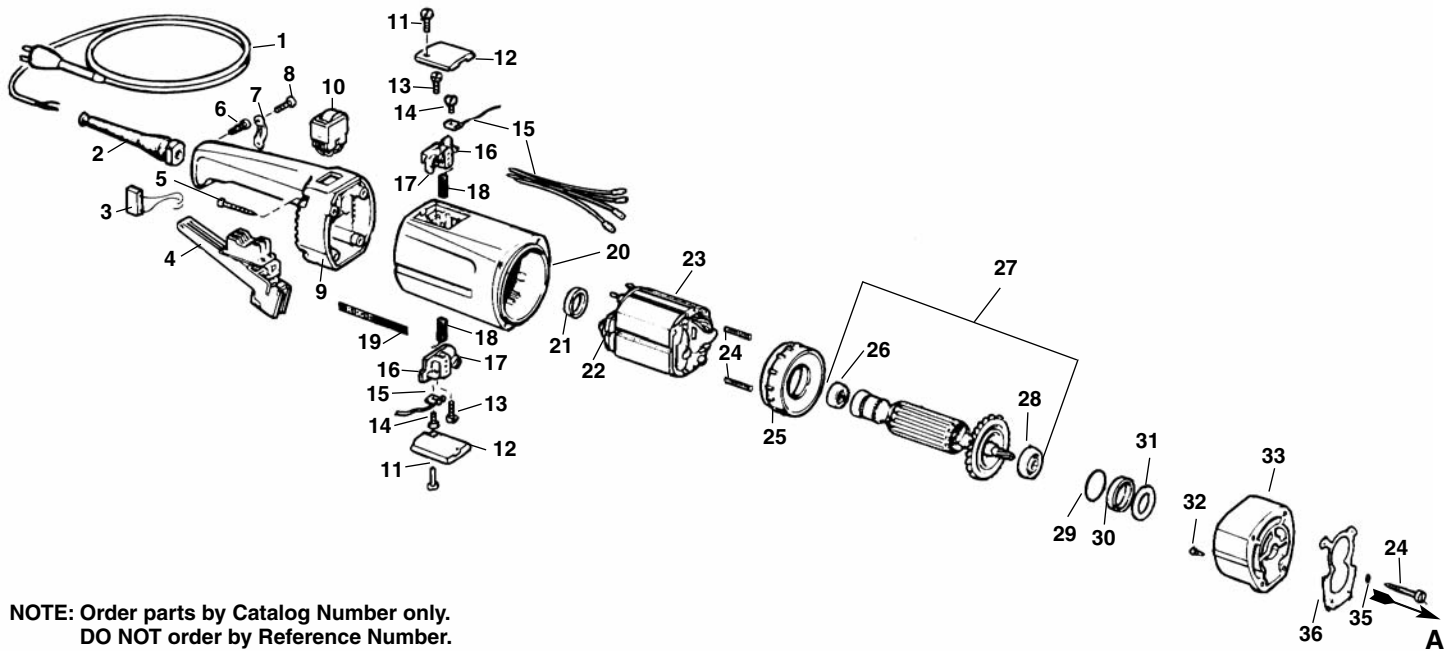


## Electrical Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

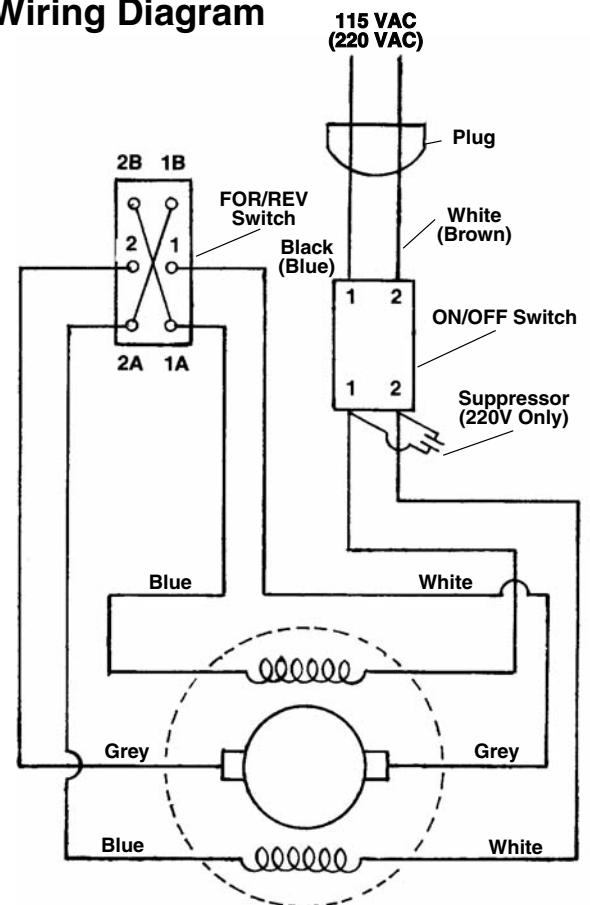
| Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description           |
|----------|-------------|----------------------------|----------|-------------|----------------------------|----------|-------------|-----------------------|
| 1        | 74892       | Handle Left Hand           | 24       | 75007       | M5 x 70MM Pan Hd. Screw    | 46       | 75032       | Rubber Pin            |
| 2        | 74882       | M5 x 27MM Pan Hd Screw     | 25       | 75012       | Baffle                     | 47       | 75037       | Gear Housing - Inward |
| 3        | 74887       | 1/8" x 5/8" Self Tap Screw | 26       | 75442       | Locking Cable Ties         | 48       | 75052       | Spring                |
| 4        | 74897       | 4M4 x 10MM Self Tap Screw  | 27       | 75412       | M5 x 12MM Pan Hd. Screw    | 49       | 75062       | Retaining Ring        |
| 5        | 74902       | Switch                     | 28       | 75407       | Filter                     | 50       | 75057       | Lock Pin              |
| 6        | 74852       | M 3.5 Ext. Tooth Washer    | 29       | 75402       | Cover                      | 51       | 75047       | Ball Bearing          |
| 7        | 74987       | Jumper Wire                | 30       | 75437       | Sleeving                   | 52       | 75072       | Gear                  |
| 8        | 74847       | #6 x 6.8MM Pan Hd. Screw   | 31       | 75432       | Sleeving                   | 53       | 75087       | Ball Bearing          |
| 9        | 74917       | Handle Right Hand          | 32       | 75767       | Sleeve                     | 54       | 75092       | Gear                  |
| 10       | 74922       | M5 Hex Nut                 | 33       | 75392       | Sleeving                   | 55       | 75112       | Gear Housing-Inner    |
| 11       | 74912       | Clamp                      | 34       | 74992       | Chain Hook                 | 56       | 75117       | Pin                   |
| 12       | 74907       | M4 x 16MM Self Tap Screw   | 35       | 74997       | 1/4" x 5/8" Shoulder Screw | 57       | 75077       | Square Key            |
| 13       | 74867       | Cord Guard                 | 36       | 74987       | Jumper Wire                | 58       | 75127       | Spindle               |
| 14       | 74932       | M5 Lock Washer             | 37       | 75212       | Fiberplate                 | 59       | 75217       | Ball Bearing          |
| 15       | 74877       | M5 Ext. Tooth Washer       | 38       | 74962       | Rubber Pin                 | 60       | 75002       | Field 115V            |
| 16       | 75542       | Power Cord                 | 39       | 74967       | Brush Holder               |          | 75577       | Field 230V            |
| 17       | 75387       | Terminal block             | 40       | 74972       | Brush                      | 61       | 75532       | Lock Button           |
| 18       | 74847       | #6 x 6.8MM Pan Hd. Screw   | 41       | 74977       | Brush Cap                  | 62       | 75537       | Spring                |
| 19       | 75412       | M5 x 12MM Pan Hd. Screw    | 42       | 75182       | Jumper Wire                | 63       | 75077       | Square Key            |
| 20       | 74937       | End Cover                  | 43       | 75017       | Ball Bearing               | 64       | 75082       | Gear Shaft            |
| 21       | 74957       | Motor Housing              | 44       | 75022       | Armature 115V              |          |             |                       |
| 22       | 75287       | Wire Nut                   |          | 75582       | Armature 230V              |          |             |                       |
| 23       | 75762       | M5 x 20MM Pan Hd. Screw    | 45       | 75027       | Ball Bearing               |          |             |                       |

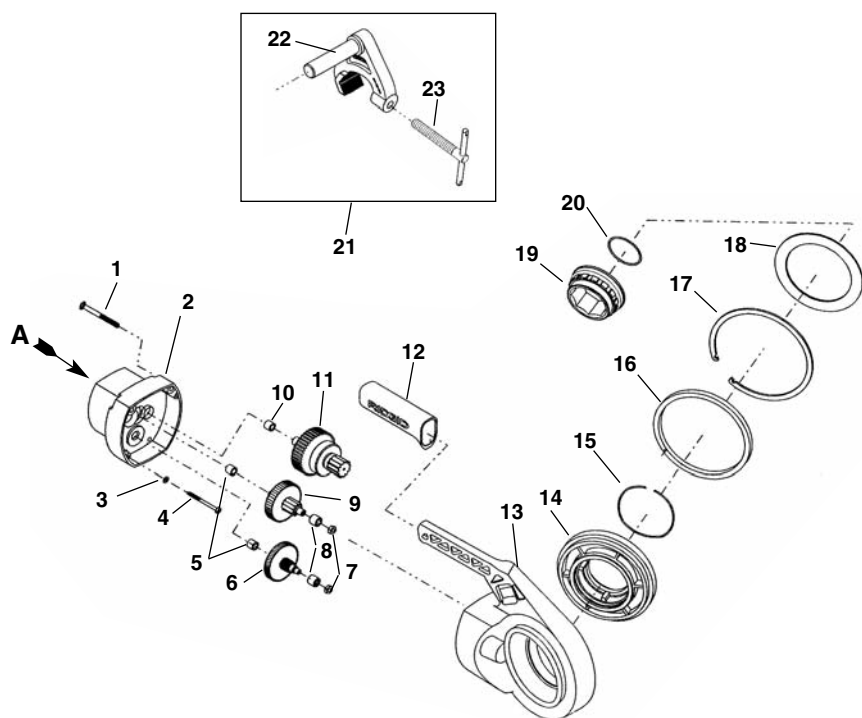


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|
| 1        | 20746       | Cord w/Plug (115V)          |
|          | 20276       | Cord w/Plug (230V - Europe) |
| 2        | 20286       | Sleeve                      |
| 3        | 20326       | Suppressor                  |
| 4        | 20266       | ON/OFF Switch               |
| 5        | 20586       | Screw (4)                   |
| 6        | 20576       | Screw (3)                   |
| 7        | 20296       | Cable Clamp                 |
| 8        | 20566       | Screw (2)                   |
| 9        | 20526       | Handle                      |
| 10       | 21796       | Switch (115V)               |
|          | 20516       | Switch (230V)               |
| 11       | 20546       | Screw (2)                   |
| 12       | 20496       | Cap (2)                     |
| 13       | 20556       | Screw (2)                   |
| 14       | 20406       | Screw (2)                   |
| 15       | 20396       | P.V.C. Wire (2)             |
| 16       | 20356       | Brush Holder (2)            |
| 17       | 20316       | Coil Spring (2)             |
| 18       | 20306       | Set of 2 Brushes            |
| 19       | 34382       | Name Plate                  |
| 20       | 20236       | Motor Housing               |
| 21       | 20506       | Spacer                      |
| 22       | 20386       | Lead Wire Plate             |
| 23       | 21716       | Field (115V)                |
|          | 20246       | Field (230V)                |
| 24       | 20486       | Pressure Spring (2)         |
| 25       | 20476       | Fan Housing                 |
| 26       | 20336       | Bearing                     |
| 27       | 21736       | Armature (115V)             |
|          | 20256       | Armature (230V)             |
| 28       | 47477       | Bearing                     |
| 29       | 20466       | Spring Ring                 |
| 30       | 20456       | Spacer                      |
| 31       | 20446       | Washer                      |
| 32       | 34387       | Screw (2)                   |
| 33       | 34392       | Fan Housing                 |
| 34       | 34397       | Screw (2)                   |
| 35       | 34517       | Brass Washer (2)            |
| 36       | 34512       | Gasket                      |

## Wiring Diagram



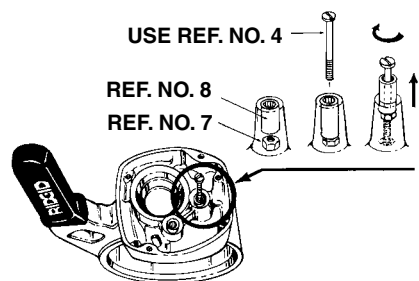


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

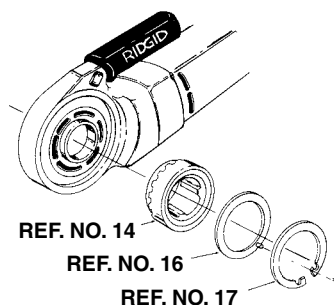
| Ref. No. | Catalog No. | Description                  |
|----------|-------------|------------------------------|
| 1        | 43227       | 1/4" - 20 x 2 1/2" Screw (4) |
| 2        | 43232       | Fan Housing                  |
| 3        | 34517       | Brass Washer (4)             |
| 4        | 34397       | 4.8 x 65mm Screw (4)         |
| 5        | 43247       | Needle Bearing (2)           |
| 6        | 43237       | 1st Intermediate Gear        |
| 7        | 77710       | 1/4" - 20 Hex Nut            |
| 8        | 43242       | Needle Bearing (2)           |
| 9        | 43252       | 2nd Intermediate Gear        |
| 10       | 43257       | Needle Bearing               |
| 11       | 43262       | Main Drive Pinion            |
| 12       | 34487       | Hand Grip                    |
| 13       | 43267       | Gear Housing                 |
| 14       | 43272       | Face Gear w/Cap              |
| 15       | 39172       | Spring Ring                  |
| 16       | 43277       | Ring Bearing w/Pin           |
| 17       | 43282       | Retaining Ring               |
| 18       | 43287       | Cap                          |
| 19       | 39187       | Ratchet Ring Adapter         |
| 20       | 38830       | Ratchet Ring Spring          |
| 21       | 43292       | Support Arm Assembly         |
| 22       | 43297       | Arm                          |
| 23       | 43302       | Screw Assembly               |

## Service Notes

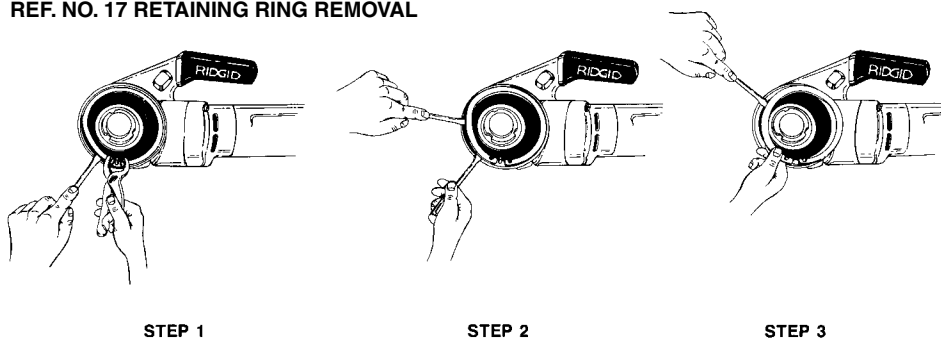
### REF. NO. 8 BEARING REMOVAL



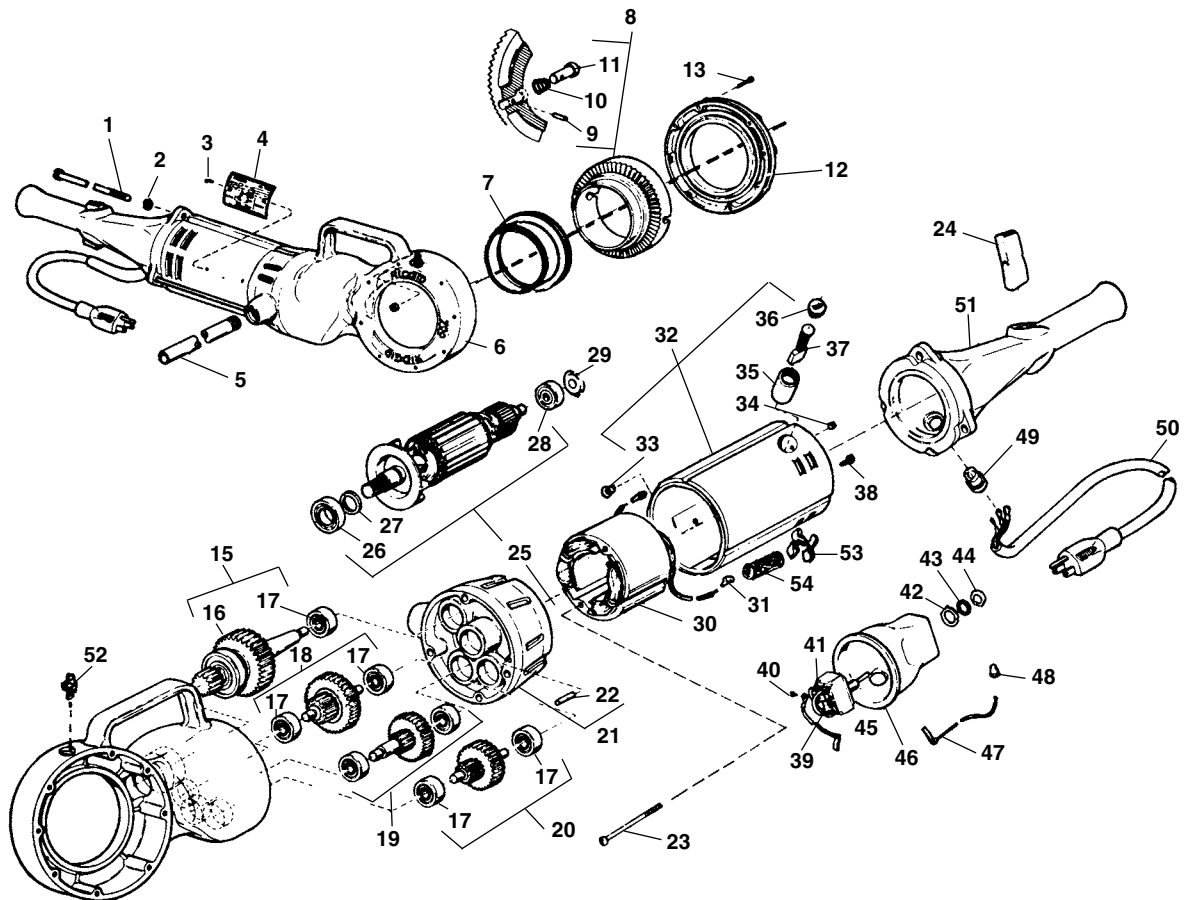
### REF. NO. 16 RING BEARING (PIN) ORIENTATION



### REF. NO. 17 RETAINING RING REMOVAL





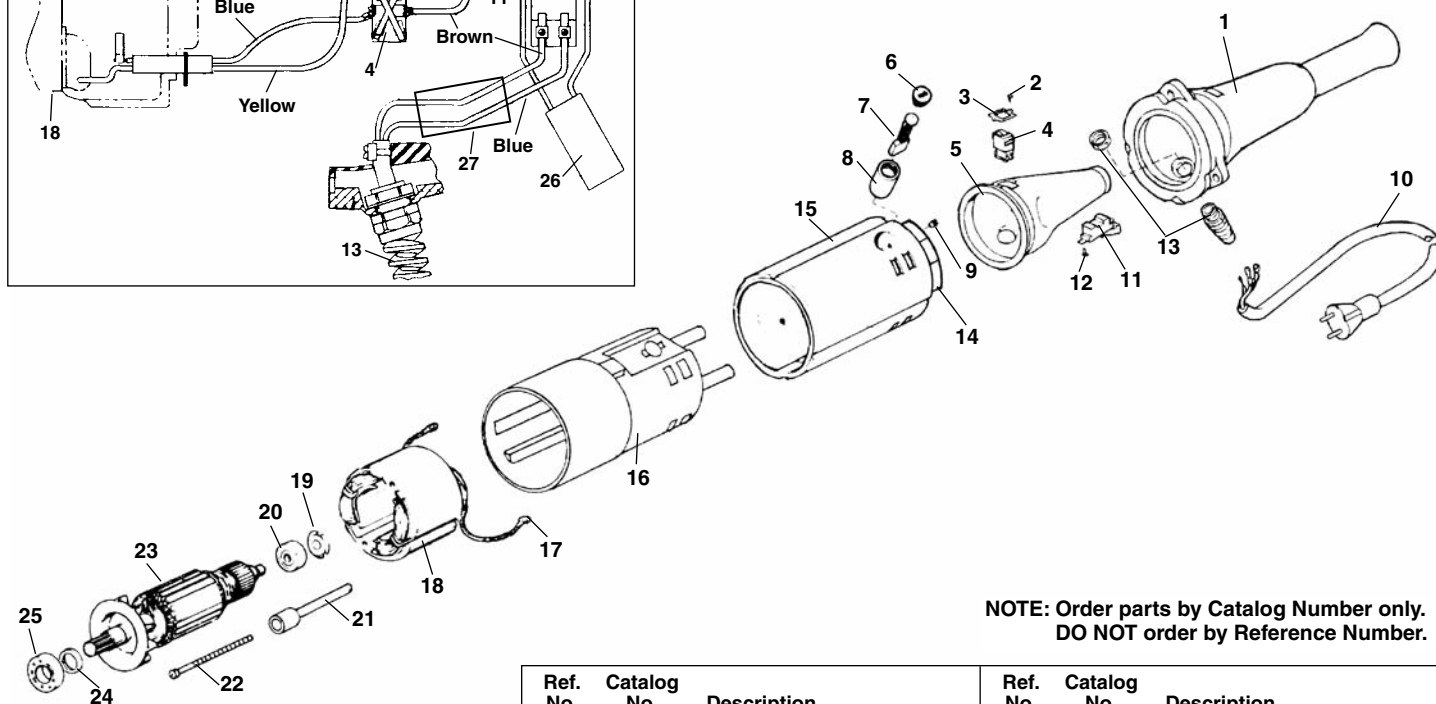
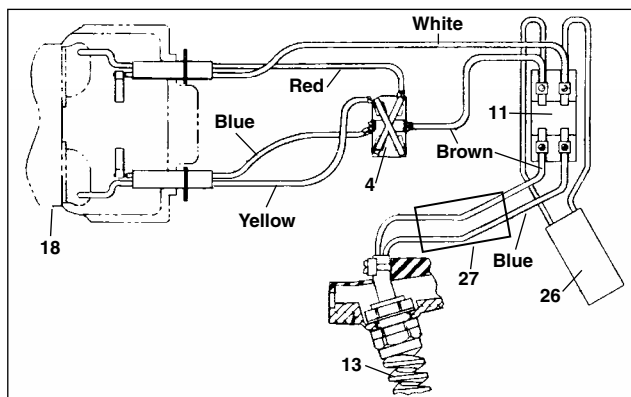
**Type 1**


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                         | Ref. No. | Catalog No. | Description                      |
|----------|-------------|-----------------------------------------------------|----------|-------------|----------------------------------|
| 1        | 44785       | Tie Bolt (4)                                        | 28       | 44760       | Bearing                          |
| 2        | 40770       | Lock Washer (4)                                     | 29       | 44790       | Load Spring                      |
| 3        | 85920       | Pop Rivet (2)                                       | 30       | 44070       | Field (115V) (Incl. Ref. No. 31) |
| 4        |             | Name Plate (115V)                                   |          | 28922       | Field (230V) (Incl. Ref. No. 31) |
|          |             | Name Plate (230V)                                   | 31       | 83895       | Ring Tongue Terminal (2)         |
| 5        | 46615       | Torque Arm                                          | 32       | 42975       | Motor Housing Assembly           |
| 6        | 42970       | Gear Case Assembly<br>(Includes Ref. 7, 13, 14, 52) | 33       | 44765       | Lock Screw                       |
| 7        | 44060       | Bearing                                             | 34       | 39770       | Set Screw (2)                    |
| 8        | 43395       | Face Gear Assembly                                  | 35       | 44795       | Brush Holder (2)                 |
| 9        | 32475       | Spring Pin (2)                                      | 36       | 45660       | Brush Cap (2)                    |
| 10       | 44915       | Spring (2)                                          | 37       | 44815       | Brush Assembly (2)               |
| 11       | 44910       | Adapter Pawl (2)                                    | 38       | 45420       | Ground Screw                     |
| 12       | 43345       | Cover                                               | 39       | 44905       | Switch                           |
| 13       | 46775       | Screw (8)                                           | 40       | 46310       | Screw (5)                        |
| 14       | 83890       | Lock Nut (8)                                        | 41       | 44890       | Jumper (2)                       |
| 15       | 44900       | 4th Gear Assembly                                   | 42       | 75700       | Lock Ring                        |
| 16       | 76562       | Bearing                                             | 43       | 75695       | Lock Washer (Internal Tooth)     |
| 17       | 45060       | Bearing (7)                                         | 44       | 46590       | Lock Nut                         |
| 18       | 44830       | 3rd Gear Assembly                                   | 45       | 44880       | Brush Lead (Blue)                |
| 19       | 44820       | 1st Gear Assembly                                   | 46       | 43390       | Switch Insulator                 |
| 20       | 44825       | 2nd Gear Assembly                                   | 47       | 44885       | Brush Lead (White)               |
| 21       | 43335       | Fan Housing Assembly                                | 48       | 44635       | Wire Nut                         |
| 22       | 45165       | Dowel Pin                                           | 49       | 46730       | Cord Retainer                    |
| 23       | 44555       | Field Mtg. Screw (2)                                | 50       | 89155       | Service Cord (115V)              |
| 24       | 97260       | Switch Button                                       |          | 44045       | Service Cord (230V)              |
| 25       | 44055       | Armature & Fan Assy. (115V)                         | 51       | 97255       | Handle                           |
|          | 44075       | Armature & Fan Assy. (230V)                         | 52       | 46860       | Grease Fitting                   |
| 26       | 44565       | Bearing                                             | 53       | 41270       | "X" Washer                       |
| 27       | 44430       | Retaining Ring                                      | 54       | 44755       | Insulator Tube                   |
|          |             |                                                     | 55       | 41620       | Grease                           |



## No. 700 Power Drive-w/Dual Switch (Europe Only) – Type 1



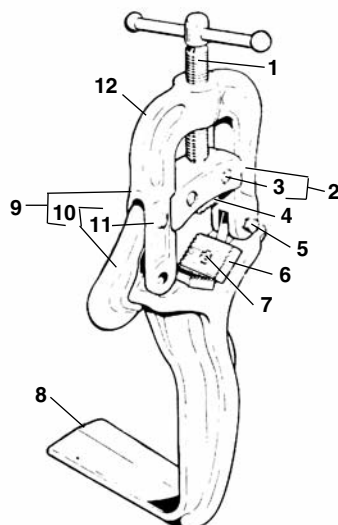
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

### Service Note:

For service parts used in early style machines, refer to the model 700 with a single control switch.

| Ref. No. | Catalog No. | Description                  | Ref. No. | Catalog No. | Description                          |
|----------|-------------|------------------------------|----------|-------------|--------------------------------------|
| 1        | 32116       | Handle                       | 15       | 18676       | Motor Housing                        |
| 2        | 32176       | Screw                        | 16       | 18506       | Sleeve f/Field                       |
| 3        | 32166       | Clip                         | 17       | 12456       | Terminal (2)                         |
| 4        | 32126       | Reversing Switch             | 18       | 18606       | Field                                |
| 5        | 32106       | Switch Liner                 | 19       | 44790       | Load Spring                          |
| 6        | 30906       | Brush Cap                    | 20       | 44760       | Bearing                              |
| 7        | 44815       | Brush Assembly               | 21       | 18566       | Sleeve f/Screw                       |
| 8        | 30916       | Brush Holder                 | 22       | 18486       | Field Mounting Screw (2)             |
| 9        | 39770       | Set Screw (2)                | 23       | 18596       | Armature and Fan Assembly (Eur. Di.) |
| 10       | 18666       | Line Cord (Eur. Di.)         | 24       | 44430       | Retaining Ring                       |
| 11       | 32136       | ON/OFF Switch                | 25       | 44565       | Bearing                              |
| 12       | 32156       | Screw                        | 26       | 18406       | Suppressor                           |
| 13       | 32246       | Strain Relief w/Cable Sleeve | 27       | 63377       | Ferrite Bead                         |
| 14       | 32096       | Insulating Cap               |          |             |                                      |

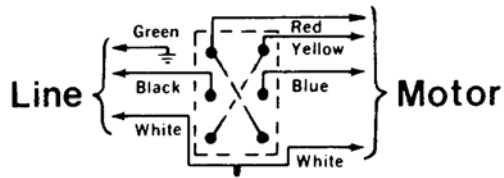
## No. 775 Support Arm



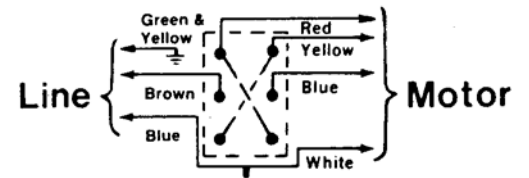
| Ref. No. | Catalog No. | Description                                             |
|----------|-------------|---------------------------------------------------------|
| 1        | 40355       | Feed Screw                                              |
| 2        | 40360       | Jaw Clamp (Incl. Ref. No. 3)                            |
| 3        | 40345       | Screw and Washer (2)                                    |
| 4        | 40335       | Upper Jaw                                               |
| 5        | 40325       | Hinge Bolt, Washer and Nut                              |
| 6        | 32100       | Lower Jaws (1 set) (2 per set)                          |
| 7        | 32205       | Lower Jaw Screw (2)                                     |
| 8        | 42945       | Base                                                    |
| 9        | 40310       | Yoke and Hook Assembly (Incl. Ref. No. 10)              |
| 10       | 40320       | Hook (Incl. Ref. No. 11)                                |
| 11       | 40340       | Hinge Pin                                               |
| 12       | 40315       | Yoke Assembly Complete (Incl. Ref. Nos. 1, 2, 4, 5 & 9) |

## Wiring Diagram (115/230V)

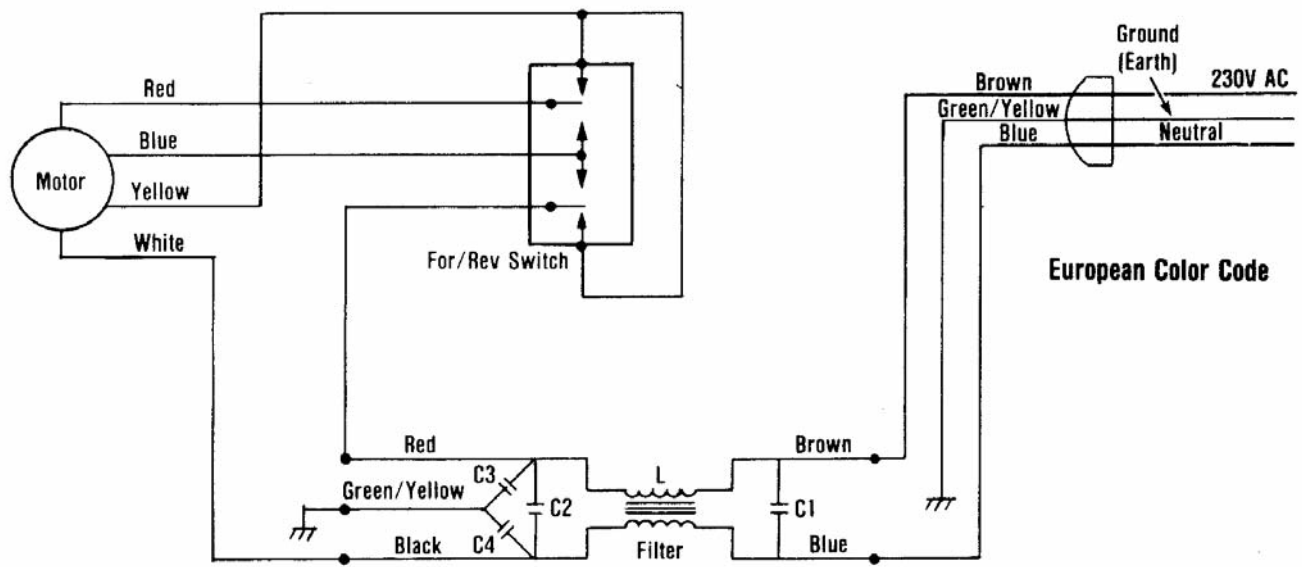
### Standard Color Code



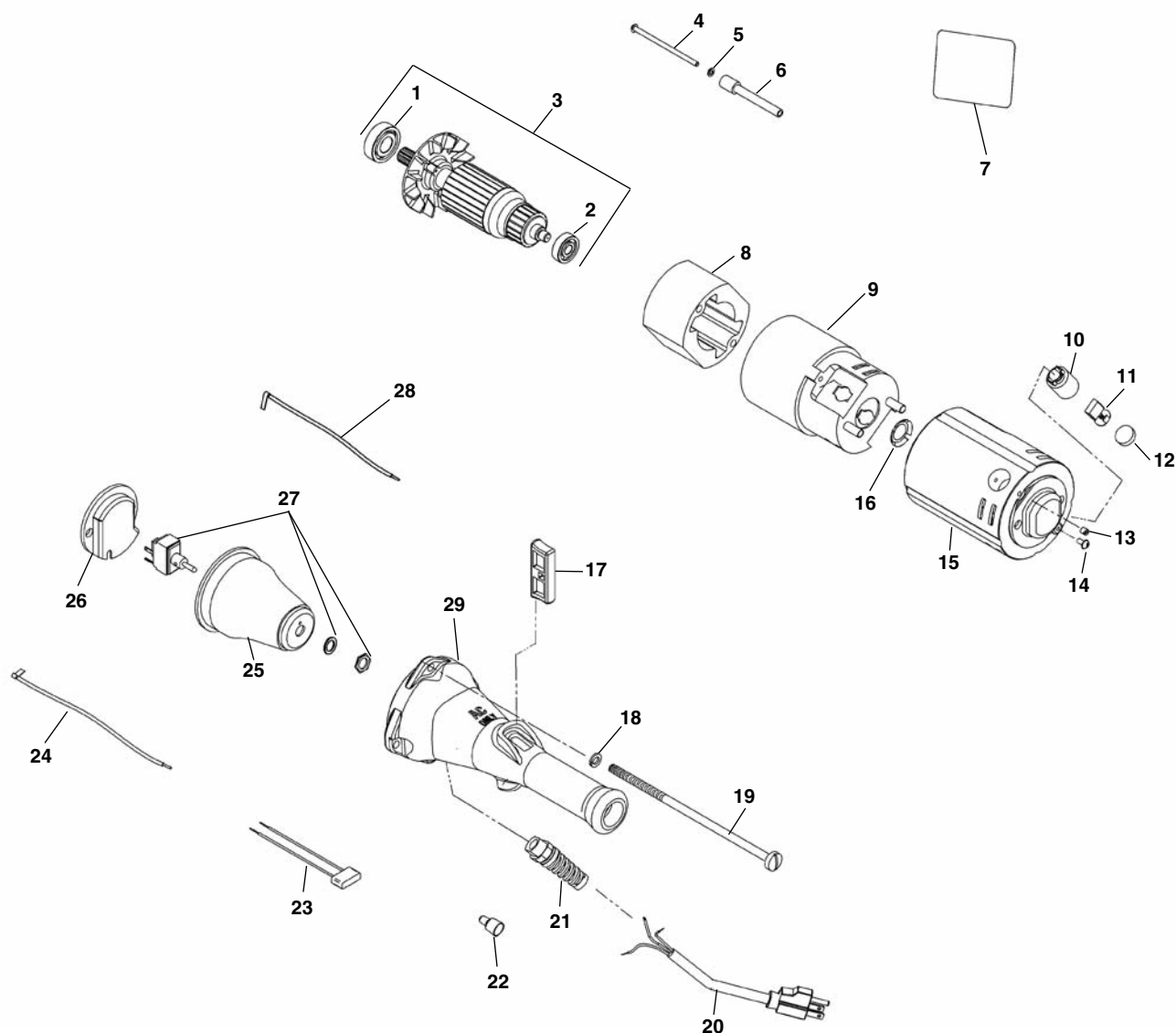
### European Color Code



## Wiring Schematic (230V) - with Line Filter



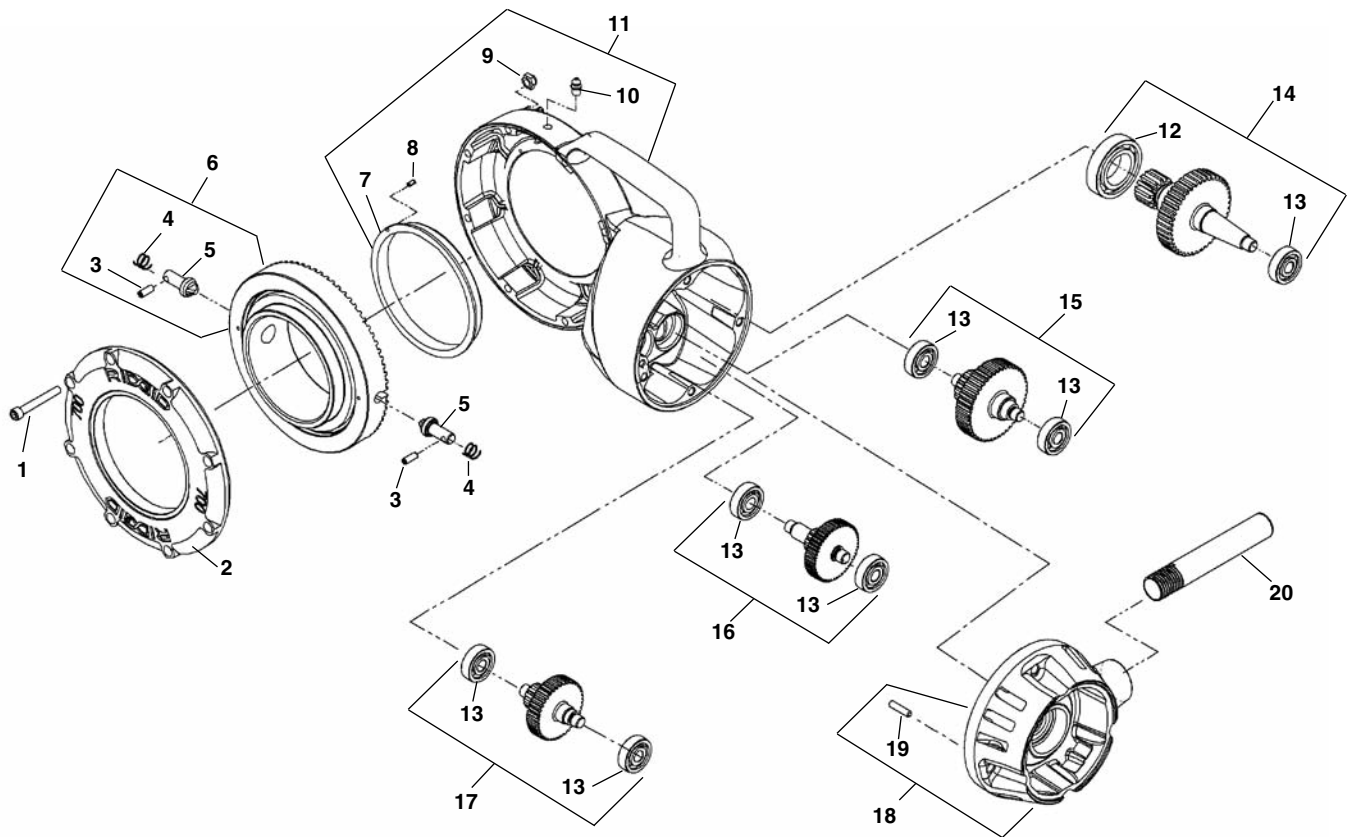
## Electrical Components – Type 2



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                        | Ref. No. | Catalog No. | Description             |
|----------|-------------|----------------------------------------------------|----------|-------------|-------------------------|
| 1        | 44565       | Bearing                                            | 16       | 44790       | Load Spring             |
| 2        | 44760       | Bearing                                            | 17       | 97260       | Switch Button           |
| 3        | 44055       | Armature Assembly 115V                             | 18       | 40770       | Lock Washer (4)         |
|          | 18596       | Armature Assembly 230V                             | 19       | 44785       | Tie Bolt (4)            |
| 4        | 18486       | Field Mounting Screw (2)                           | 20       | 31938       | Power Cord 115V         |
| 5        | 58542       | Lock Washer (2)                                    |          | 31943       | Power Cord 230V         |
| 6        | 18566       | Field Screw Sleeve (2)                             | 21       | 29788       | Cord Retainer           |
| 7        | 27418       | Warning Decal                                      | 22       | 44635       | Wire Nut                |
| 8        | 27408       | Field 115V Type 2                                  | 23       | 18406       | Suppressor              |
|          | 27413       | Field 230V Type 2                                  | 24       | 44880       | Brush Lead - Blue       |
| 9        | 18506       | Field Insulator Sleeve                             | 25       | 43390       | Switch Insulator        |
| 10       | 44795       | Brush Holder (2)                                   | 26       | 27403       | Motor Housing Insulator |
| 11       | 44815       | Brush Assembly (2)                                 | 27       | 44905       | Switch                  |
| 12       | 45660       | Brush Cap (2)                                      | 28       | 44885       | Brush Lead - White      |
| 13       | 39770       | Set Screw (2)                                      | 29       | 27398       | Handle Type 2           |
| 14       | 45420       | Ground Screw                                       |          |             |                         |
| 15       | 18676       | Motor Housing Assy. (Includes Ref. Nos. 12 and 13) |          |             |                         |

## Gearhead Components

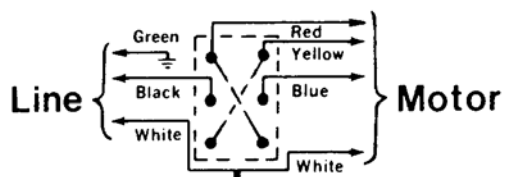


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

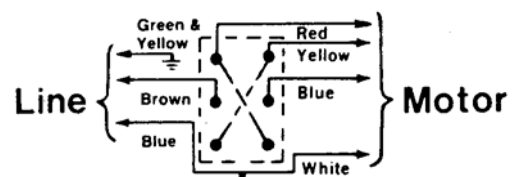
| Ref. No. | Catalog No. | Description                              | Ref. No. | Catalog No. | Description          |
|----------|-------------|------------------------------------------|----------|-------------|----------------------|
| 1        | 46775       | Screw (8)                                | 12       | 76522       | Bearing              |
| 2        | 43345       | Cover                                    | 13       | 45060       | Bearing (7)          |
| 3        | 32475       | Spring Pin (2)                           | 14       | 44900       | 4th Gear Assembly    |
| 4        | 44915       | Spring (2)                               | 15       | 44830       | 3rd Gear Assembly    |
| 5        | 44910       | Adapter Pawl (2)                         | 16       | 44820       | 1st Gear Assembly    |
| 6        | 43395       | Face Gear Assembly                       | 17       | 44825       | 2nd Gear Assembly    |
| 7        | 44060       | Bearing                                  | 18       | 45165       | Dowel Pin            |
| 8        | 89085       | Roll Pin 1/8" x 1/4"                     | 19       | 43335       | Fan Housing Assembly |
| 9        | 83890       | Lock Nut (8)                             | 20       | 46615       | Torque Arm           |
| 10       | 46860       | Grease Fitting                           |          |             |                      |
| 11       | 42970       | Gear Case Assembly (Includes Ref. No. 1) |          |             |                      |

## Wiring Diagram (115/230V)

### Standard Color Code

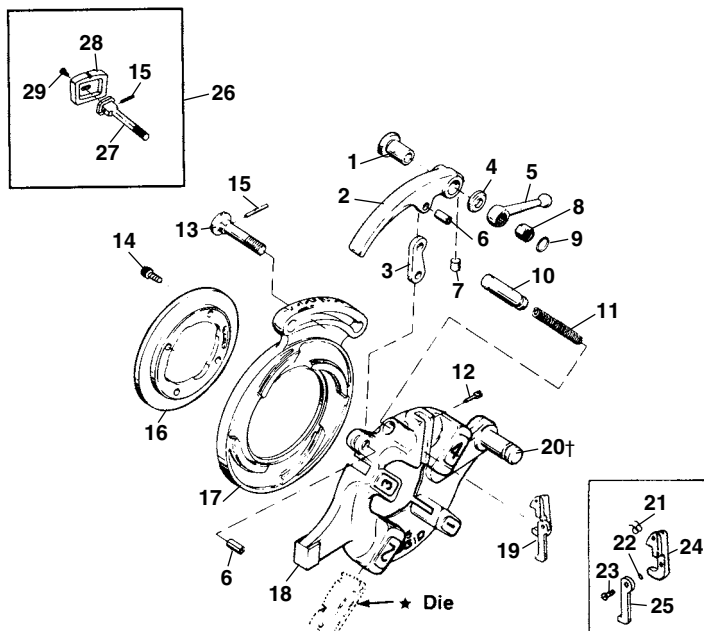


### European Color Code



## Nos. 711 & 911 Self-Opening Die Heads

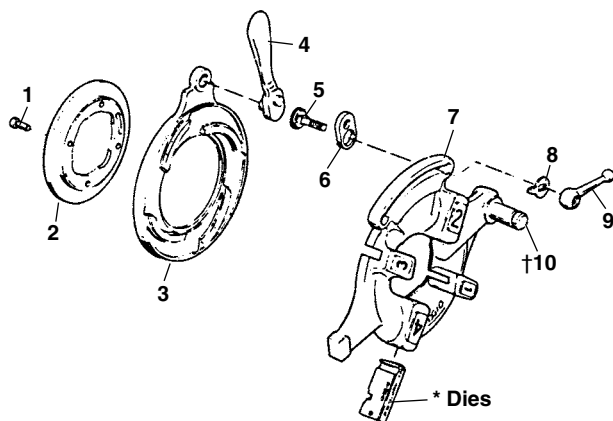
NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.



| Ref. No. | Catalog No. | Description                              |
|----------|-------------|------------------------------------------|
| —        | 26132       | 711 Self-Opening Die Head (NPT)          |
| —        | 26137       | 911 Self-Opening Die Head (BSPT)         |
| —        | 41382       | 911 Self-Opening Die Head f/Japan (BSPT) |
| —        | 46862       | 911 Self-Opening Die Head f/Europe       |
| 1        | 44240       | Bushing                                  |
| 2        | 43830       | Throw-out Lever                          |
| 3        | 44265       | Throw-out Link                           |
| 4        | 44245       | Thrust Washer                            |
| 5        | 44260       | Clamp Lever                              |
| 6        | 44270       | Spiral Pin                               |
| 7        | 45055       | Insert                                   |
| 8        | 44250       | Nut                                      |
| 9        | 44255       | Retaining Ring                           |
| 10       | 44275       | Throw-out Plunger                        |
| 11       | 11565       | Spring                                   |
| 12       | 44290       | Trigger Screw                            |
| 13       | 44235       | Lock Screw                               |
| 14       | 32205       | Screw 1/4" - 20 x 5/8"                   |
| 15       | 45050       | Pin                                      |
| 16       | 97020       | Retaining Ring                           |
| 17       | 40942       | Cam Plate (NPT)                          |
|          | 97040       | Cam Plate (BSPT)                         |
| 18       | 26717       | Head w/Post                              |
| 19       | 44285       | Trigger Assy.                            |
|          | 32982       | Adjustable Trigger Assy. (Europe)        |
|          | 44687       | Stepped Trigger Assy. (Japan)            |
| †20      | 59827       | Post                                     |
| 21       | 39982       | Spring                                   |
| 22       | 44460       | O-Ring                                   |
| 23       | 39967       | Screw (Left Hand)                        |
| 24       | 39977       | Trigger Pivot                            |
| 25       | 39972       | Adjustable Trigger (Europe)              |
|          | 44672       | Stepped Trigger (Japan)                  |
|          | 45327       | Stepped Trigger (Europe)                 |
| 26       | 45332       | Adj. Gage Plate Assy.                    |
| 27       | 46722       | Adj. Lock Screw                          |
| 28       | 46717       | Adj. Gage Plate                          |
| 29       | 47147       | Button Head Screw                        |

† - See Service Notes

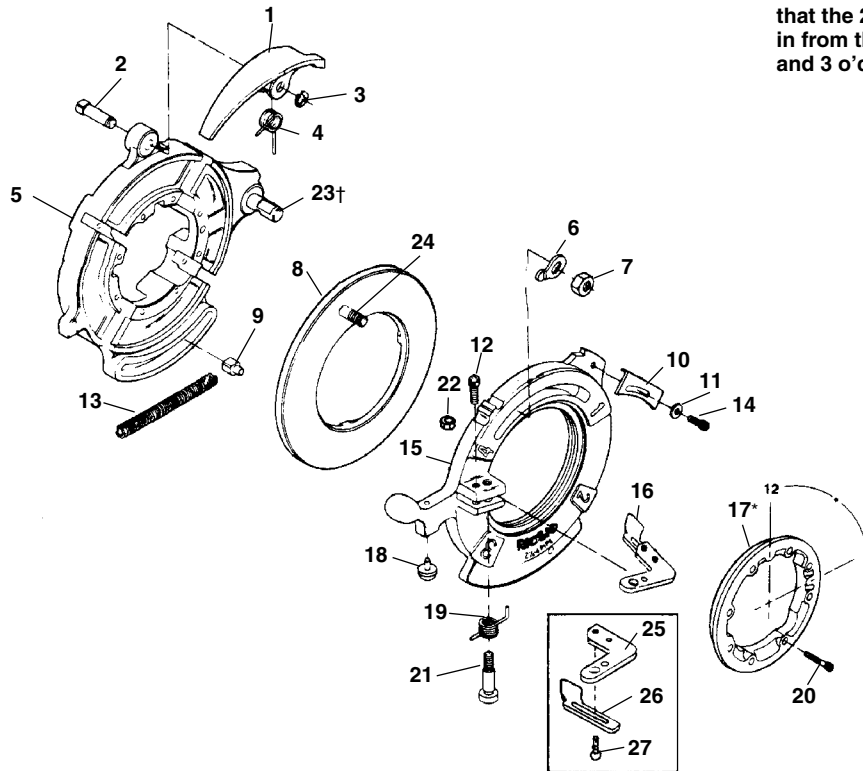
## Nos. 541, 542, 713 & 913 Quick-Opening Die Heads



| Ref. No. | Catalog No. | Description                                 |
|----------|-------------|---------------------------------------------|
| —        | 26162       | 541 Quick-Opening Bolt Die Head 1/4" - 1"   |
| —        | 26167       | 542 Quick-Opening Bolt Die Head 1 1/8" - 2" |
| —        | 26142       | 713 Quick-Opening Die Head (NPT) 1/4" - 2"  |
| —        | 26147       | 913 Quick-Opening Die Head (BSPT) 1/4" - 2" |
| 1        | 32205       | Screw 1/4" - 20 x 5/8" (4)                  |
| 2        | 23292       | Retaining Ring L.H. (713, 913)              |
|          | 46620       | Retaining Ring (541)                        |
|          | 46625       | Retaining Ring (542)                        |
| 3        | 43360       | Cam Plate L.H. (713, 913)                   |
|          | 43405       | Cam Plate (541)                             |
|          | 43410       | Cam Plate (542)                             |
| 4        | 46520       | Throw-out Lever (713, 913)                  |
|          | 46555       | Throw-out Lever (541, 542)                  |
| 5        | 39860       | Lock Screw (713, 913)                       |
|          | 39955       | Lock Screw (541, 542)                       |
| 6        | 39950       | Link                                        |
| 7        | 26897       | Head w/Post & Latch Assembly (913)          |
|          | 26982       | Head w/Post (541)                           |
|          | 26987       | Head w/Post (542)                           |
|          | 27267       | Head w/Post & Latch Assembly (713)          |
| 8        | 39460       | Lever Washer                                |
| 9        | 39970       | Clamp Lever                                 |
| †10      | 59827       | Post                                        |

† - See Service Notes

## Nos. 714 & 914 Self-Opening Receding Die Heads



\*Position Retaining Ring so that the 2 blind holes coming in from the rear are in the 12 and 3 o'clock positions.

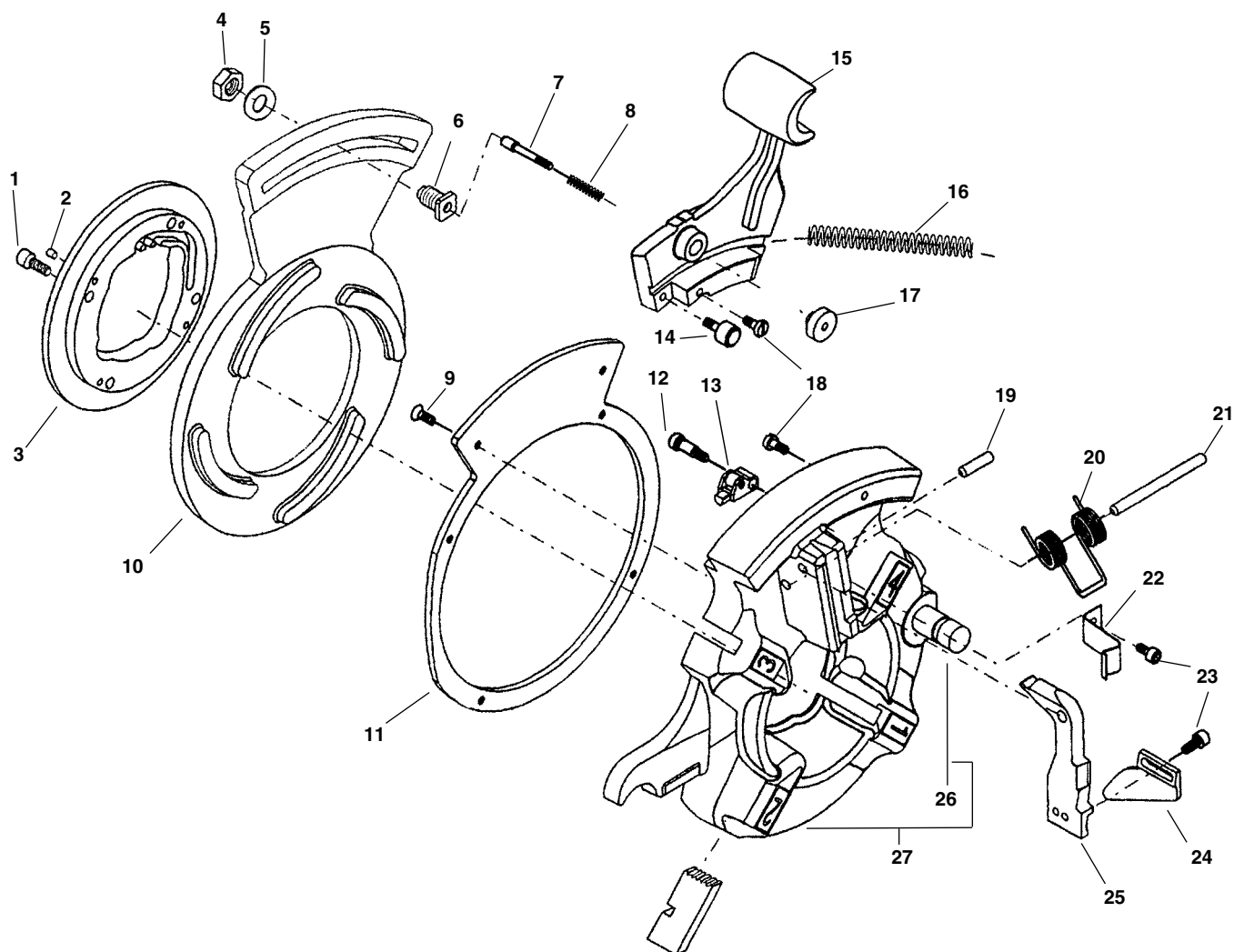
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                                    | Ref. No. | Catalog No. | Description                        |
|----------|-------------|----------------------------------------------------------------|----------|-------------|------------------------------------|
| —        | 26152       | 714 Self-Opening Receding Die Head (NPT)                       | 12       | 27357       | Screw 1/4" - 20 x 7/8"             |
| —        | 26157       | 914 Self-Opening Receding Die Head (BSPT)                      | 13       | 26612       | Drive Block Spring                 |
| —        | 41387       | 914 Self-Opening Receding Die Head (BSPT) w/Adjustable Trigger | 14       | 32145       | Screw 1/4" - 20 x 1/2"             |
| 1        | 26877       | Release Lever                                                  | 15       | 26882       | Cam Locking Plate                  |
| 2        | 26932       | Groove Pin                                                     | 16       | 26617       | Release Foot (NPT)                 |
| 3        | 26937       | Retaining Ring                                                 |          | 32507       | Release Foot (BSPT)                |
| 4        | 26872       | Spring                                                         |          | 32977       | Adjustable Release Foot            |
| 5        | 26712       | Die Head w/Post                                                | *17      | 26637       | Retaining Ring                     |
| 6        | 26957       | Lever Washer                                                   | 18       | 26962       | Sine Bar Ball                      |
| 7        | 26887       | Hex Nut 7/16" - 20                                             | 19       | 26622       | Torsion Spring                     |
| 8        | 26952       | Cam Assy. (NPT)                                                | 20       | 26642       | Screw #10 - 32 x 1 3/8" (8)        |
|          | 27277       | Cam Assy. (BSPT)                                               | 21       | 26627       | Shoulder Bolt                      |
| 9        | 26632       | Drive Block                                                    | 22       | 77710       | Hex Nut 1/4" - 20                  |
| 10       | 26867       | Lockout Plate                                                  | †23      | 59827       | Post                               |
| 11       | 27097       | Washer 9/32"                                                   | 24       | 33227       | Cam Bolt                           |
|          |             |                                                                | 25       | 39992       | Release Foot Pivot                 |
|          |             |                                                                | 26       | 39987       | Release Foot (BSPT)                |
|          |             |                                                                | 27       | 32205       | Screw                              |
|          |             |                                                                | 28       | 10673       | Ball Detente Assy. (4) (Not Shown) |

† - See Service Notes

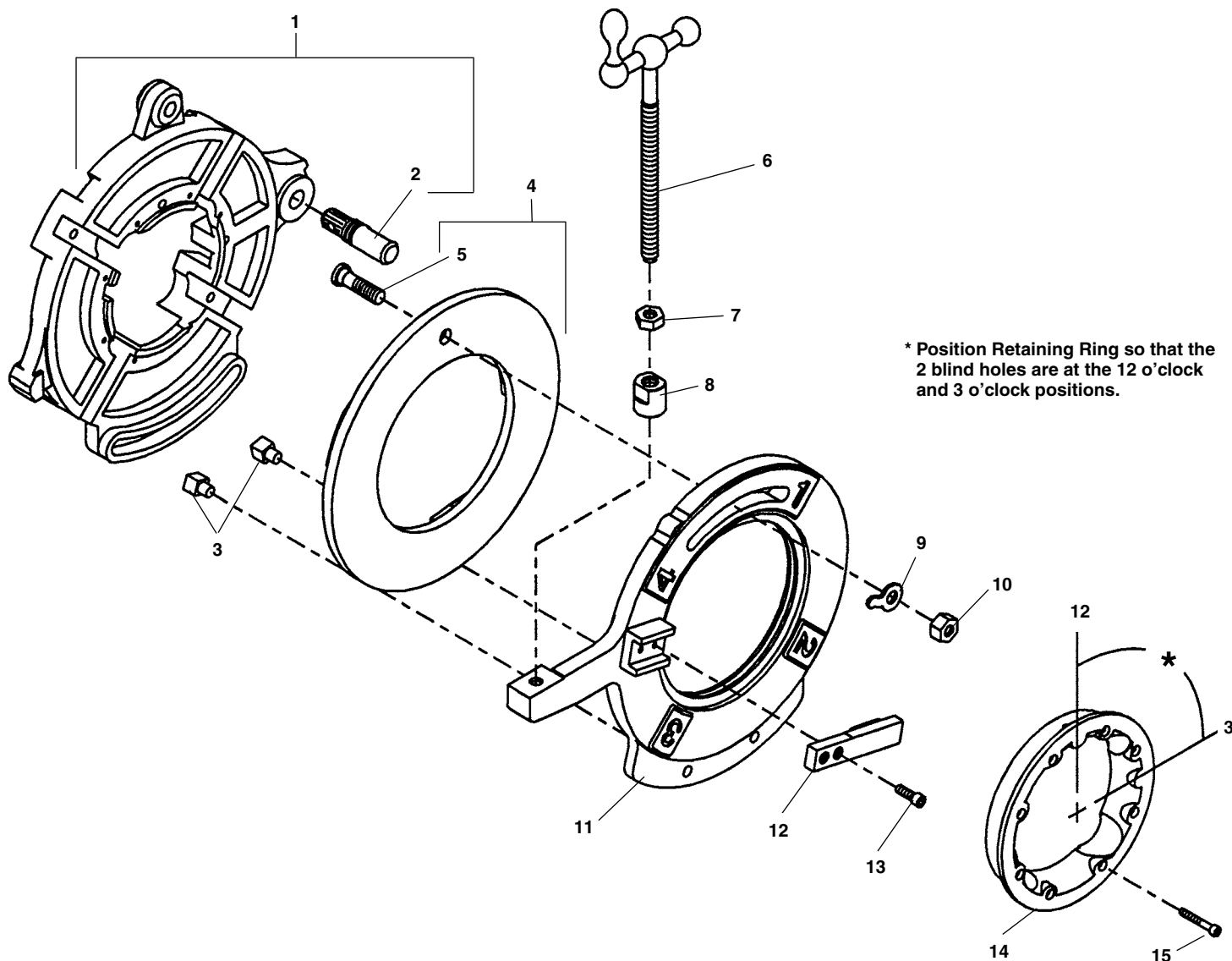


**No. 724 NPT & 924 BSPT 1/2" - 3/4" Die Heads**  
**No. 726 NPT & 926 BSPT 1" - 2" Die Heads**



**NOTE: Order parts by Catalog Number only.  
 DO NOT order by Reference Number.**

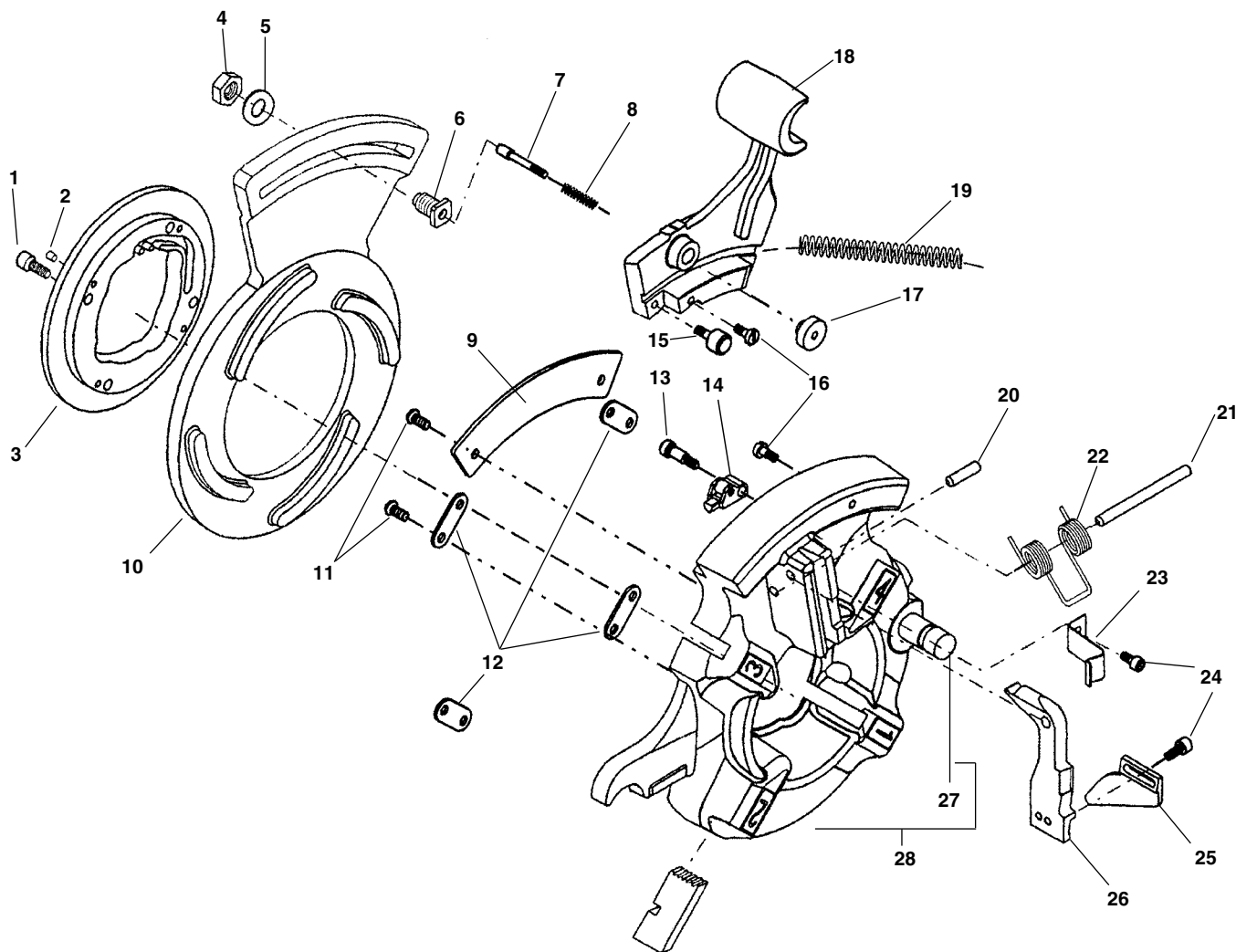
| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description                        |
|----------|-------------|-------------------------------------|----------|-------------|------------------------------------|
| —        | 50317       | 924 1/2" - 3/4" BSPT Die Head       | 11       | 52442       | Support Ring                       |
| —        | 50322       | 926 1" - 2" BSPT Die Head           | 12       | 34877       | Soc. Hd. Shoulder Bolt 1/4" x 1/2" |
| —        | 54447       | 724 1/2" - 3/4" NPT Die Head        | 13       | 61617       | Rocker Release Assembly            |
| —        | 54442       | 726 1" - 2" NPT Die Head            | 14       | 52377       | Slide Roller Bearing (2)           |
| 1        | 32205       | Screw 1/4" - 20 x 5/8" SHCS (4)     | 15       | 58667       | Adjuster Slide                     |
| 2        | 60097       | Detente Plunger (4)                 | 16       | 61612       | Release Spring                     |
| 3        | 52292       | Retaining Ring 1/2" - 3/4", 1" - 2" | 17       | 61597       | Adjuster Knob                      |
| 4        | 61587       | Jam Nut 3/8"                        | 18       | 52372       | Spring Retainer (2)                |
| 5        | 61592       | Flat Washer 3/8"                    | 19       | 87940       | Roll Pin 1/4" x 1/8"               |
| 6        | 61607       | Adjuster Bolt                       | 20       | 52387       | Trigger Spring                     |
| 7        | 61602       | Adjuster Plunger                    | 21       | 52397       | Spring Mounting Pin                |
| 8        | 52342       | Adjuster Spring                     | 22       | 60092       | Trigger Spring                     |
| 9        | 52447       | Screw #10-24 x 1/2" FHCS (6)        | 23       | 45750       | Screw #10-24 x 3/8" SHCS (2)       |
| 10       | 52312       | Cam Plate BSPT 924, 1/2" - 3/4"     | 24       | 52417       | Adjustable Trigger                 |
|          | 52317       | Cam Plate BSPT 926, 1" - 2"         | 25       | 52422       | Trigger Pivot                      |
|          | 56067       | Cam Plate NPT 724, 1/2" - 3/4"      | 26       | 59832       | Die Head Post                      |
|          | 56072       | Cam Plate NPT 726, 1" - 2"          | 27       | 52432       | Die Head w/Post                    |



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|
| —        | 55447       | 725 Grooving Die Head       |
| 1        | 58687       | Die Head With Post          |
| 2        | 59827       | Die Head post               |
| 3        | 26632       | Drive Block                 |
| 4        | 26952       | Cam Assembly                |
| 5        | 33227       | Cam Bolt                    |
| 6        | 58692       | Feed Screw Assembly         |
| 7        | 44745       | Jam Nut                     |
| 8        | 58697       | Adjusting Nut               |
| 9        | 26957       | Lever Washer                |
| 10       | 26887       | Hex Nut 7/16" - 20          |
| 11       | 58702       | Cam Locking Plate           |
| 12       | 58707       | Stop                        |
| 13       | 40910       | Screw #1/2 - 20 x 3/4" (2)  |
| 14       | 26637       | Retaining Ring              |
| 15       | 26642       | Screw #10 - 32 x 1 3/8" (8) |

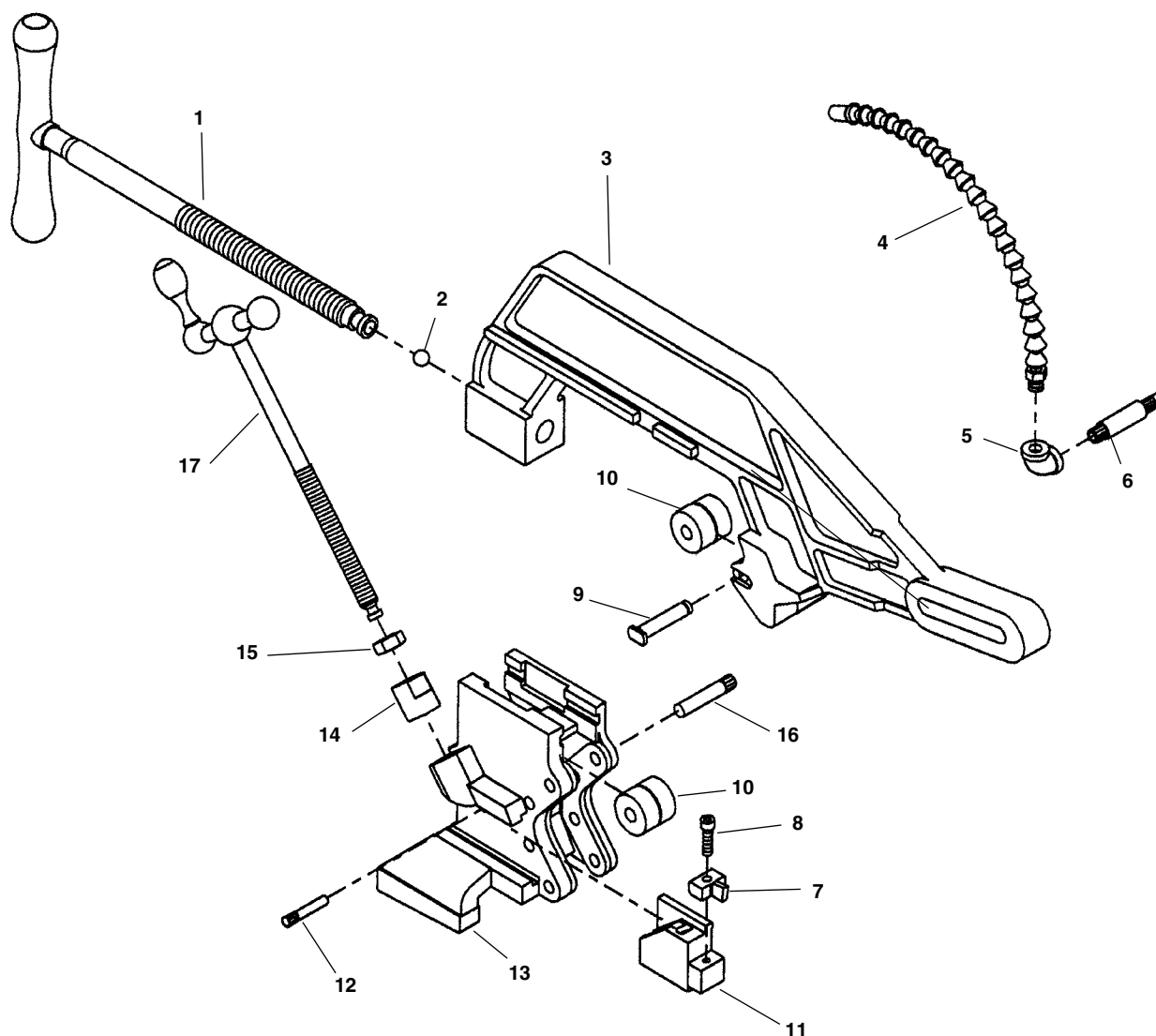
## No. 728 NPT &amp; 928 BSPT 2½" - 3" Die Heads



NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description                    |
|----------|-------------|-------------------------------------|----------|-------------|--------------------------------|
| —        | 54437       | 728 2½" - 3" NPT Die Head           | 13       | 34877       | Soc. Hd. Shoulder Bolt ¼" x ½" |
| —        | 50327       | 928 2½" - 3" BSPT Die Head          | 14       | 61617       | Rocker Release Assembly        |
| —        | 59522       | 928 2½" - 3" BSPT Die Head - Taiwan | 15       | 52377       | Slide Roller Bearing (2)       |
| 1        | 32205       | Screw ¼" - 20 x ⅝" SHCS (4)         | 16       | 52372       | Spring Retainer (2)            |
| 2        | 60097       | Detente Plunger (4)                 | 17       | 61597       | Adjuster Knob                  |
| 3        | 52287       | Retaining Ring                      | 18       | 58667       | Adjuster Slide                 |
| 4        | 61587       | Jam Nut ⅜" - 16 (2)                 | 19       | 61612       | Release Spring                 |
| 5        | 61592       | Flat Washer ⅜"                      | 20       | 87940       | Roll Pin ¼" x ⅞"               |
| 6        | 61607       | Adjuster Bolt                       | 21       | 52397       | Spring Mounting Pin            |
|          | 59527       | Adjuster Bolt - Taiwan              | 22       | 52387       | Trigger Spring                 |
| 7        | 61602       | Adjuster Plunger                    | 23       | 60092       | Trigger Spring                 |
| 8        | 52342       | Adjuster Spring                     | 24       | 45750       | Screw #10-24 x ⅜" SHCS (2)     |
| 9        | 75802       | Rocker Cover                        | 25       | 52412       | Adjustable Trigger             |
| 10       | 56077       | Cam Plate NPT - 728 Die head        | 26       | 52422       | Trigger Pivot                  |
|          | 52307       | Cam Plate BSPT - 928 Die head       | 27       | 59832       | Die Head Post                  |
| 11       | 39542       | Screw #10-24 x ½" BHCS (10)         | 28       | 72272       | Die Head w/Post                |
| 12       | 75797       | Retaining Plate (4)                 |          |             |                                |

## No. 766 Saran Cut-Off Tool

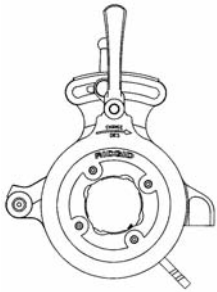


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

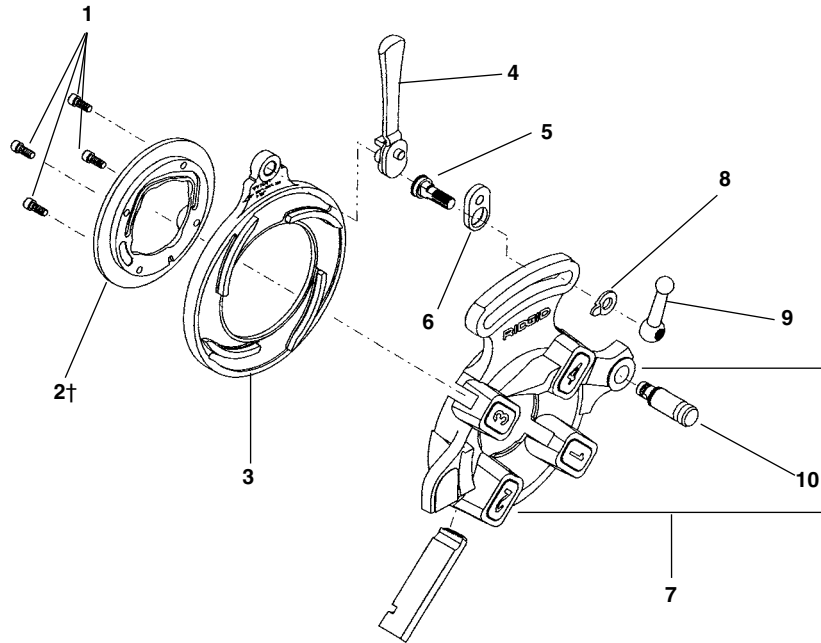
| Ref. No. | Catalog No. | Description              |
|----------|-------------|--------------------------|
| —        | 55452       | 766 Saran Cut-Off Tool   |
| 1        | 26752       | Feed Screw Handle        |
| 2        | 41730       | Steel Ball               |
| 3        | 26742       | Cutter Frame             |
| 4        | 39845       | Coolant Nozzle           |
| 5        | 39855       | 90° Elbow                |
| 6        | 57522       | Carriage Bypass Pin      |
| 7        | 58712       | Tool Bit                 |
| 8        | 27357       | Screw 1/4" - 20 x 7/8"   |
| 9        | 56932       | Pin                      |
| 10       | 34785       | Rolls (5)                |
| 11       | 58717       | Tool Holder Slide        |
| 12       | 26757       | Groove Pin               |
| 13       | 58722       | Roll Housing             |
| 14       | 58697       | Adjustment Nut           |
| 15       | 44745       | Jam Nut                  |
| 16       | 26762       | Groove Pin (4)           |
| 17       | 40027       | Feed Screw Assembly      |
| —        | 46190       | 1/4" Hex Key             |
| —        | 49737       | Lockout Plate F/Die Head |

**811A**  
**842**  
**555**  
**531B**  
**532B**  
**500A MONO**

### Service Note



†2 Retaining Ring must be oriented as shown for proper oil flow.



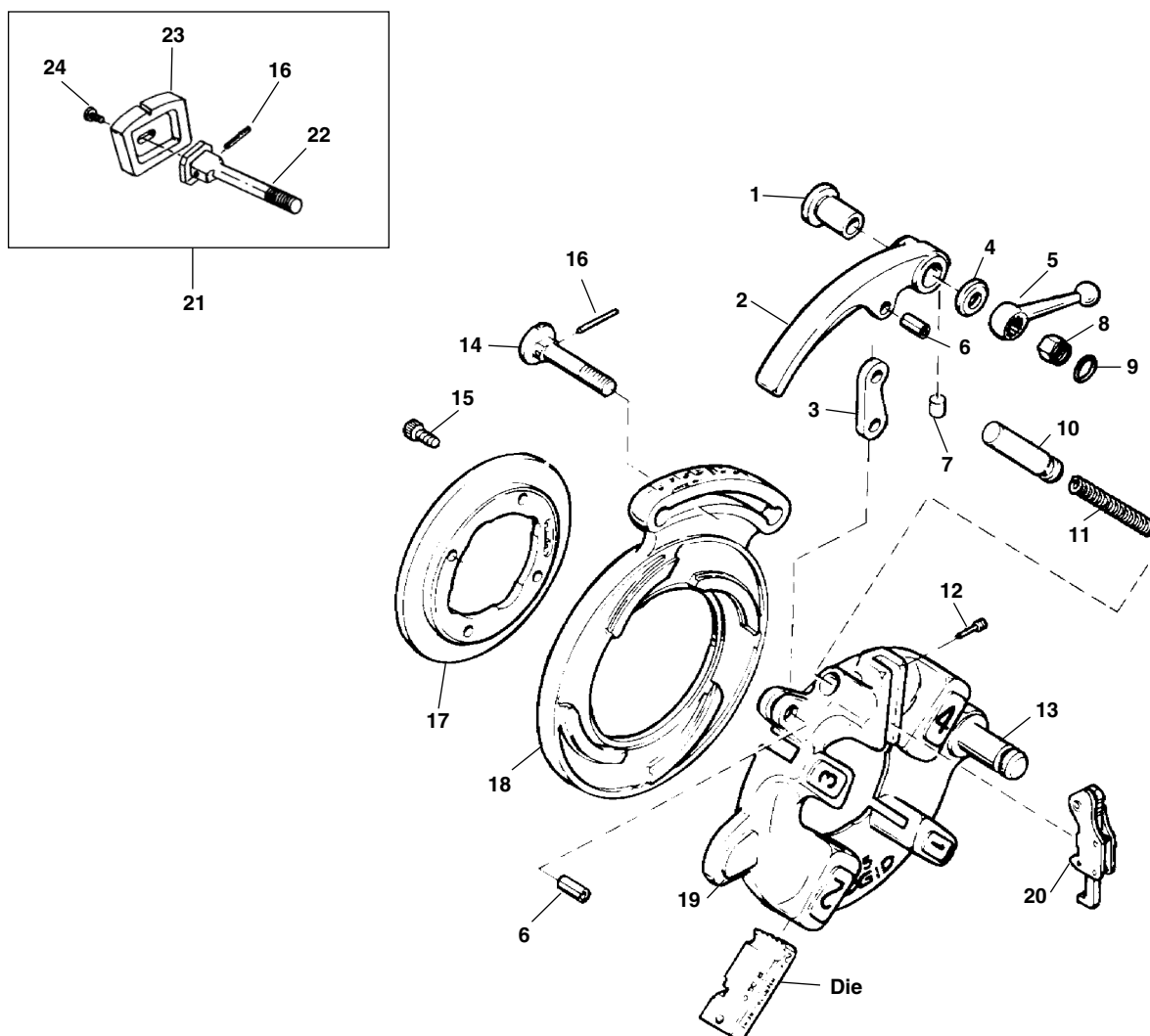
### QUICK OPENING DIE HEADS

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No.                                                                 | 1     | 2†                                     | 3         | 4               | 5          | 6     | 7           | 8            | 9           | 10    |
|--------------------------------------------------------------------------|-------|----------------------------------------|-----------|-----------------|------------|-------|-------------|--------------|-------------|-------|
| Die Head & Catalog No.                                                   | Screw | Retaining Ring                         | Cam Plate | Throw-Out Lever | Lock Screw | Link  | Head/w Post | Lever Washer | Clamp Lever | Post  |
| 811A (97065)<br>1/8"-2" RH NPT                                           | 32205 | 97020                                  | 43360     | 46520           | 39860      | 39950 | 40922       | 26957        | 39970       | 59832 |
| 842 (23282)<br>1/8"-2" LH NPT                                            | 32205 | 23292                                  | 43360     | 46520           | 39860      | 39950 | 23287       | 26957        | 39970       | 59832 |
| 555 (10491)<br>1/8"-3/4"                                                 | 32205 | 24256                                  | 43365     | 46555           | 39860      | 39950 | 24006       | 26957        | 39970       | 59832 |
| 531B (97045)<br>1/4"-1" RH/LH                                            | 32205 | 46620                                  | 43405     | 46555           | 39955      | 39950 | 97055       | 26957        | 39970       | 59832 |
| 532B (97050)<br>1 1/8"-2" RH/LH                                          | 32205 | 46625                                  | 43410     | 46555           | 39955      | 39950 | 97060       | 26957        | 39970       | 59832 |
| 811A (97070)<br>1/8"-2" BSPT                                             | 32205 | 97020                                  | 43360     | 46520           | 39860      | 39950 | 40957       | 26957        | 39970       | 59832 |
| 842 (23297)<br>1/8"-2" LH (BSPT)                                         | 32205 | 23292                                  | 43360     | 46520           | 39860      | 39950 | 23202       | 26957        | 39970       | 59832 |
| 500A Mono (1/8"-3/8") RH<br>1/8" (41032)<br>1/4" (41037)<br>3/8" (41042) | 32205 | 1/8"-41862<br>1/4"-41867<br>3/8"-41872 | 43305     | 46555           | 47140      | 39950 | 41907       | 26957        | 46820*      | 59832 |
| 500A Mono (1/2"-3/4") RH<br>1/2" (41047)<br>3/4" (41062)                 | 32205 | 1/2"-41877<br>3/4"-41882               | 43300     | 46555           | 47140      | 39950 | 41912       | 26957        | 46820*      | 59832 |
| 500A Mono (1"-1 1/4") RH<br>1" (41057)<br>1 1/4" (41062)                 | 32205 | 1"-41887<br>1 1/4"-41892               | 43295     | 46555           | 47140      | 39950 | 41917       | 26957        | 46820*      | 59832 |
| 500A Mono (1 1/2"-2") RH<br>1 1/2" (41067)<br>2" (41072)                 | 32205 | 1 1/2"-41897<br>2"-41902               | 43290     | 46555           | 47140      | 39950 | 41922       | 26957        | 46820*      | 59832 |

\*Hex Nut For Mono Die Heads

## 815A Self-Opening Through-Head Oiling Die Head

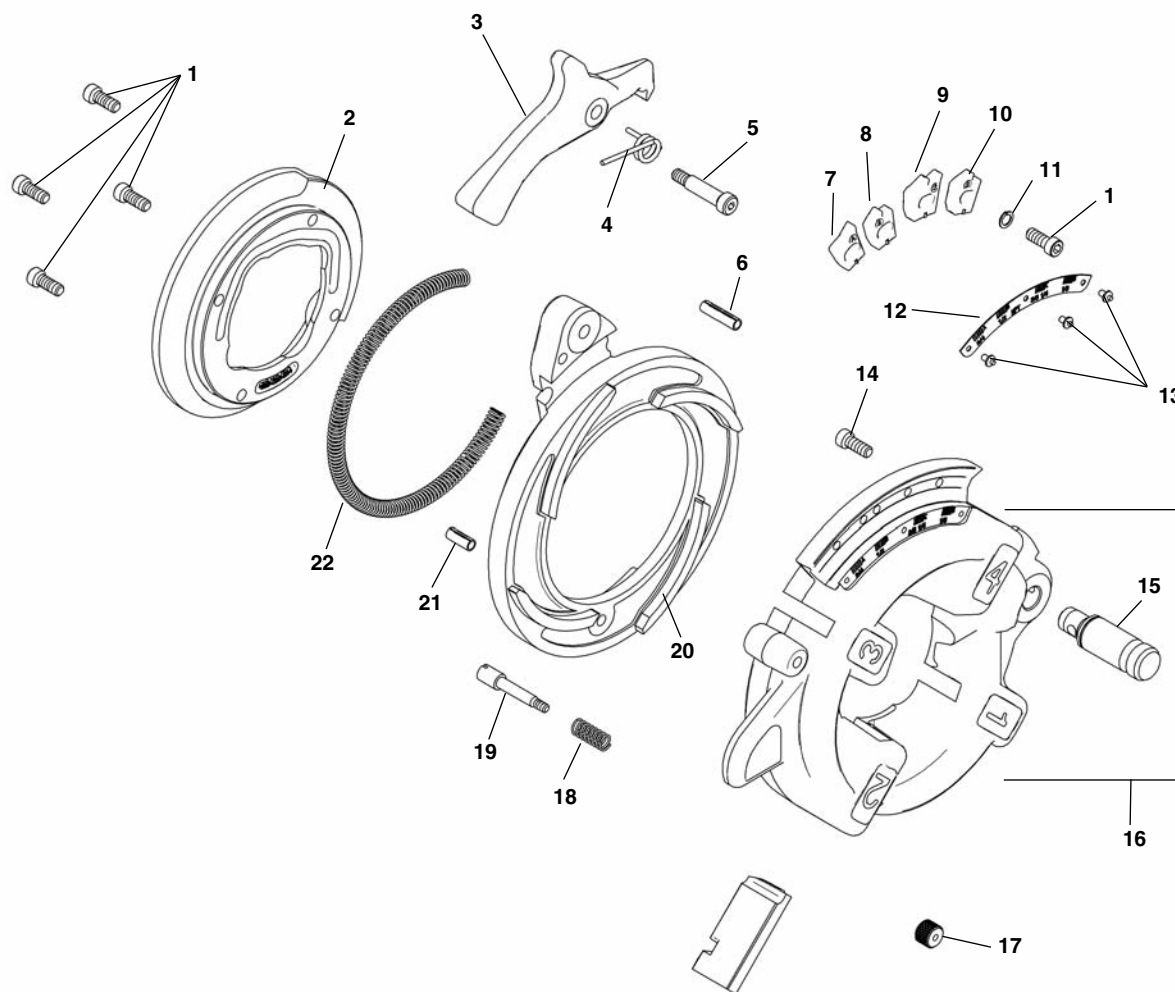


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                             | Ref. No. | Catalog No. | Description                 |
|----------|-------------|---------------------------------------------------------|----------|-------------|-----------------------------|
| —        | 97075       | 815A Self-Opening (Through-Head-Oiling) Die Head (NPT)  | 13       | 59832       | Post                        |
|          | 97080       | 815A Self-Opening (Through-Head-Oiling) Die Head (BSPT) | 14       | 44235       | Lock Screw                  |
| 1        | 44240       | Bushing                                                 | 15       | 32205       | Screw (4)                   |
| 2        | 43830       | Throw-Out Lever                                         | 16       | 45050       | Pin                         |
| 3        | 44265       | Throw-Out Link                                          | 17       | 97020       | Retaining Ring              |
| 4        | 44245       | Washer                                                  | 18       | 40942       | Cam Plate (815A NPT)        |
| 5        | 44260       | Clamp Lever                                             |          | 97040       | Cam Plate (815A BSPT)       |
| 6        | 44270       | Roll Pin (2)                                            | 19       | 40932       | Head w/Post                 |
| 7        | 45055       | Insert                                                  | 20       | 44285       | Trigger Assembly            |
| 8        | 44250       | Nut                                                     |          | 32982       | Adj. Trigger Assy. (Europe) |
| 9        | 44255       | Retaining Ring                                          |          | 45327       | Trigger Assy. (Europe)      |
| 10       | 44275       | Throw-Out Plunger                                       | 21       | 45332       | Gauge Plate Assy.           |
| 11       | 11565       | Spring                                                  | 22       | 46722       | Adj. Lock Screw             |
| 12       | 44290       | Trigger Screw                                           | 23       | 46717       | Gauge Plate                 |
|          |             |                                                         | 24       | 47147       | Buttonhead Screw            |

NOTE: Early Style 815/845 parts interchangeable with 815A NPT  
Early Style 855 parts interchangeable with 815A BSPT





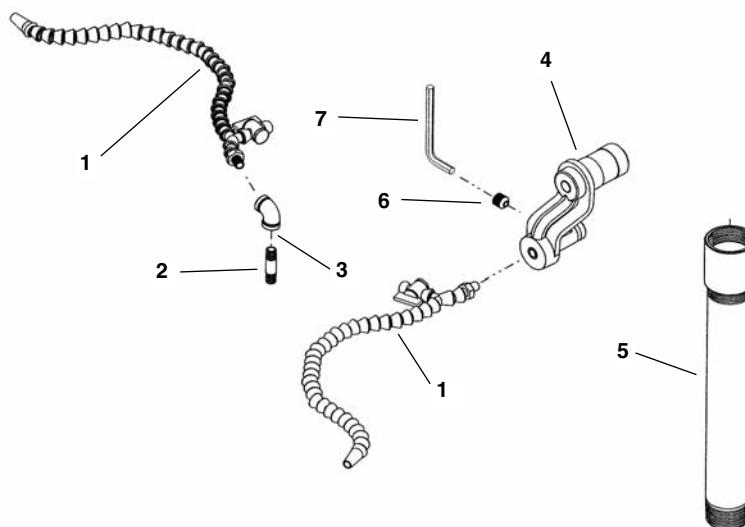
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                                 | Ref. No. | Catalog No. | Description                                            |
|----------|-------------|-------------------------------------------------------------|----------|-------------|--------------------------------------------------------|
| —        | 84537       | 816 Die Head $\frac{1}{8}$ " - $\frac{3}{4}$ "              | 11       | 44740       | Split Lock Washer, $\frac{1}{4}$ " (4)                 |
| —        | 84532       | 817 Die Head 1" - 2"                                        | 12       | 92772       | Size Plate 816 $\frac{1}{8}$ " - $\frac{3}{4}$ "       |
| 1        | 40910       | Screw, $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " S.H.C.S. (8)  | 12       | 92777       | Size Plate 817 1" - 2"                                 |
| 2        | 92767       | Retaining Ring                                              | 13       | 85920       | Pop Rivet $\frac{3}{32}$ " (3)                         |
| 3        | 92822       | Handle                                                      | 14       | 32145       | Screw, $\frac{1}{4}$ " - 20 x $\frac{1}{2}$ " S.H.C.S. |
| 4        | 92817       | Spring                                                      | 15       | 59832       | Die Head Post                                          |
| 5        | 92812       | Shoulder Bolt                                               | 16       | 92757       | Die Head Body w/Post                                   |
| 6        | 92832       | Roll Pin $\frac{1}{4}$ " x $\frac{5}{16}$ "                 | 17       | 92802       | Plunger Knob                                           |
| 7        | 92782       | Adjusting Block 816/817 $\frac{3}{4}$ ", 2" Type A          | 18       | 92807       | Plunger Spring                                         |
| 8        | 92787       | Adjusting Block 816 $\frac{1}{2}$ " Type B                  | 19       | 92797       | Plunger Shaft                                          |
|          | 92782       | Adjusting Block 817 $1\frac{1}{2}$ " Type A                 | 20       | 92762       | Cam Plate                                              |
| 9        | 92792       | Adjusting Block 816 $\frac{1}{4}$ ", $\frac{3}{8}$ " Type C | 21       | 58090       | Roll Pin $\frac{1}{4}$ " x 1"                          |
|          | 92787       | Adjusting Block 817 $1\frac{1}{4}$ " Type B                 | 22       | 92827       | Spring                                                 |
| 10       | 92787       | Adjusting Block 816/817 $\frac{1}{8}$ ", 1" Type B          |          |             |                                                        |

## No. 768 Drive Link Assembly

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description             |
|----------|-------------|-------------------------|
| —        | 42415       | 768 Drive Link Assy.    |
| 1        | 39845       | Coolant Nozzle          |
| 2        | 39850       | Nipple                  |
| 3        | 39855       | Elbow                   |
| 4        | 36182       | Drive Link Assembly     |
| 5        | 39515       | Pipe Extension Assembly |
| 6        | 39755       | Set Screw               |
| 7        | 46190       | 1/4" Hex Wrench         |



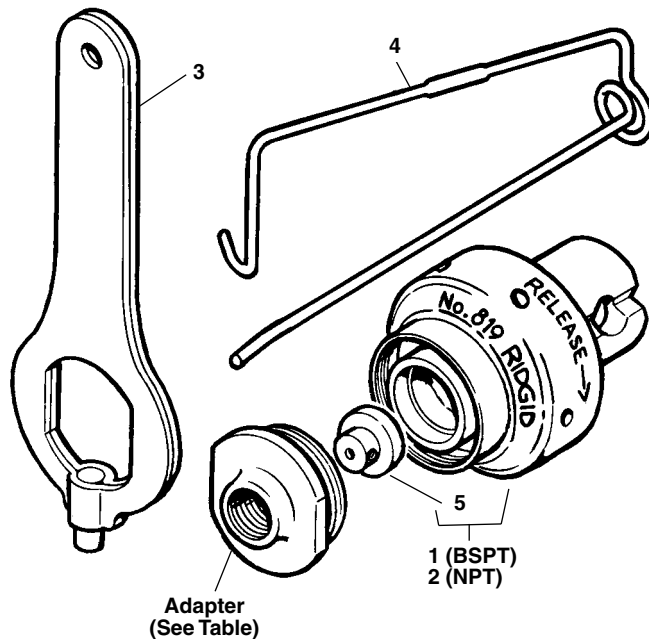
## No. 819 Nipple Chuck and Adapters

**Standard Pipe (NPT) Capacity: 1/8" – 2"**

| Ref. No. | Catalog No. | Description                          |
|----------|-------------|--------------------------------------|
| 1        | 68285       | Nipple Chuck Body with Insert (BSPT) |
| 2        | 51025       | Nipple Chuck with Insert (NPT)       |
| 3        | 51020       | Nipple Chuck Wrench                  |
| 4        | 51010       | Carrier                              |
| 5        | 51035       | Insert                               |

### Pipe Adapters

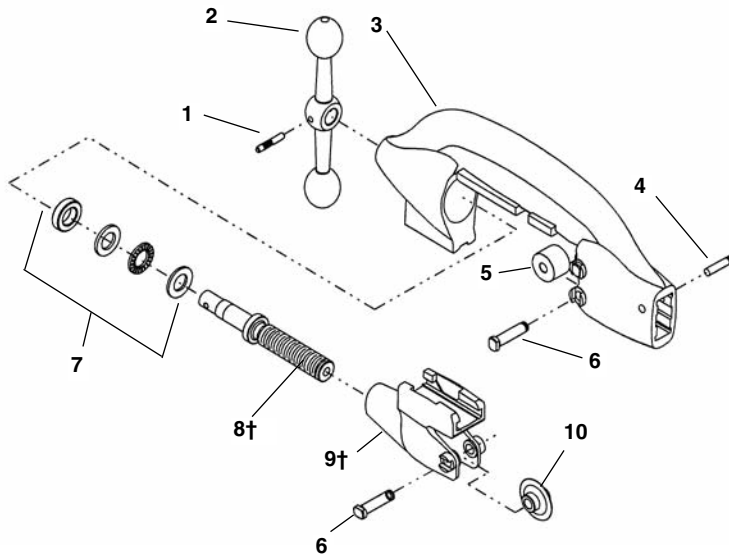
| Size (in.) | NPT Standard |           | BSPT Standard |           | Weight |      |
|------------|--------------|-----------|---------------|-----------|--------|------|
|            | Catalog No.  | Model No. | Catalog No.   | Model No. | lb.    | kg.  |
| 1/8        | 51040        | E-729     | 68190         | E-729-B   | 1/2    | 0,23 |
| 1/4        | 51045        | E-730     | 68195         | E-730-B   | 1/2    | 0,23 |
| 3/8        | 51050        | E-731     | 68200         | E-731-B   | 1/2    | 0,23 |
| 1/2        | 51055        | E-732     | 68165         | E-732-B   | 1/2    | 0,23 |
| 3/4        | 51060        | E-733     | 68170         | E-733-B   | 1/2    | 0,23 |
| 1          | 51065        | E-734     | 68175         | E-734-B   | 1/2    | 0,23 |
| 1 1/4      | 51070        | E-735     | 68180         | E-735-B   | 1/2    | 0,23 |
| 1 1/2      | 51075        | E-736     | 68185         | E-736-B   | 1/2    | 0,23 |



### Bolts and Studs Adapters

| UNC Catalog No. | UNF Catalog No. | Description        | UNC Catalog No. | UNF Catalog No. | Description         |
|-----------------|-----------------|--------------------|-----------------|-----------------|---------------------|
| 51080           | 51160           | Stud Adapter 1/4"  | 51120           | 51200           | Stud Adapter 7/8"   |
| 51085           | 51165           | Stud Adapter 5/16" | 51125           | 51205           | Stud Adapter 1"     |
| 51090           | 51170           | Stud Adapter 3/8"  | 51130           | 51210           | Stud Adapter 1 1/8" |
| 51095           | 51175           | Stud Adapter 7/16" | 51135           | 51215           | Stud Adapter 1 1/4" |
| 51100           | 51180           | Stud Adapter 1/2"  | 51140           | 51220           | Stud Adapter 1 3/8" |
| 51105           | 51185           | Stud Adapter 9/16" | 51145           | 51225           | Stud Adapter 1 1/2" |
| 51110           | 51190           | Stud Adapter 5/8"  | 51150           | —               | Stud Adapter 1 3/4" |
| 51115           | 51195           | Stud Adapter 3/4"  | 51155           | —               | Stud Adapter 2"     |

## No. 820 Cutter

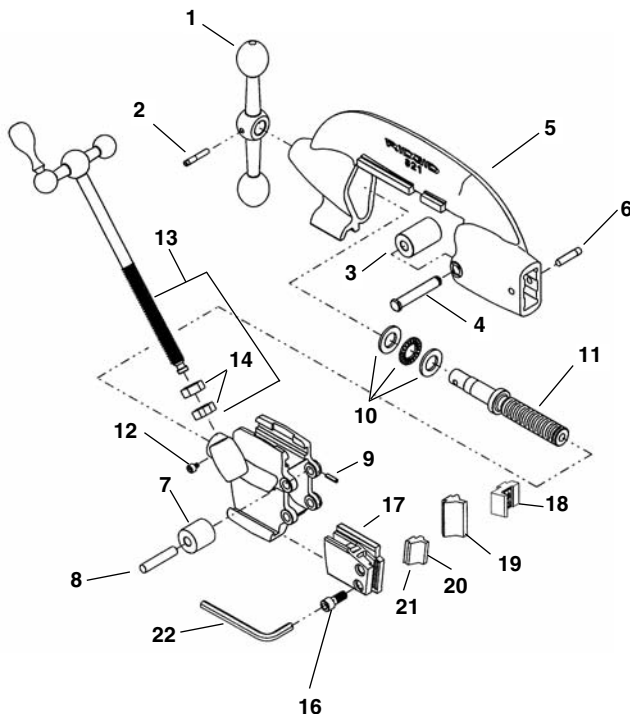


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description              |
|----------|-------------|--------------------------|
| —        | 42390       | 820 Cutter Complete      |
| 1        | 47160       | Crank Pin                |
| 2        | 45765       | Feed Screw Crank         |
| 3        | 43040       | Cutter Frame             |
| 4        | 47135       | Stop Pin                 |
| 5        | 34775       | Cutter Roll (2)          |
| 6        | 34780       | Cutter & Roll Pin (3)    |
| 7        | 46725       | Thrust Bearing Assembly  |
| 8†       | 45780       | Feed Screw               |
| 9†       | 43245       | Wheel Housing            |
| 10       | 44185       | Cutter Wheel             |
|          | 44190       | Cutter Wheel f/Stainless |

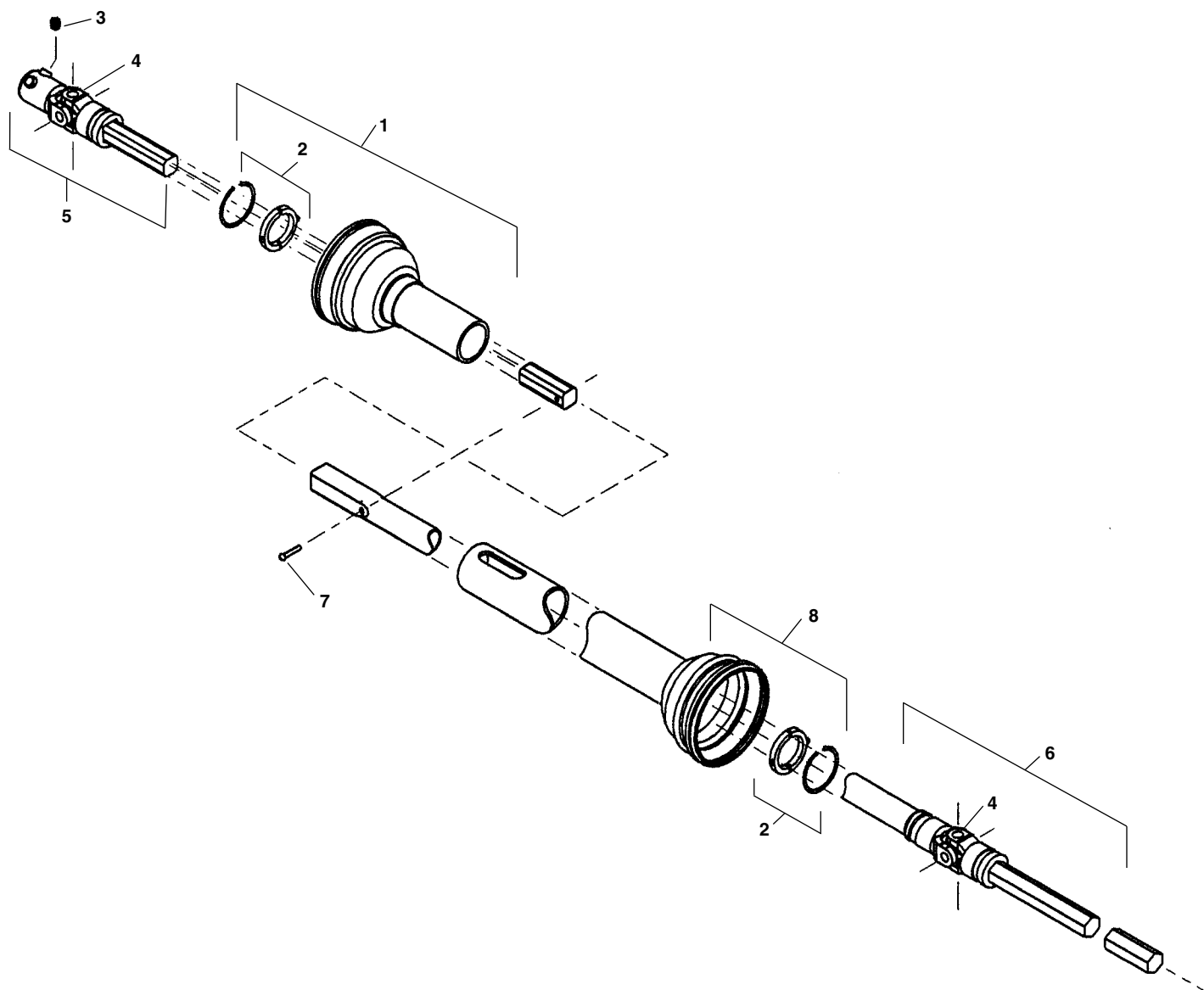
†Service Note: When replacing parts on early style (fine thread) cutters, both feed screw and wheel housing must be replaced.

## No. 821 Blade - Type Cutter



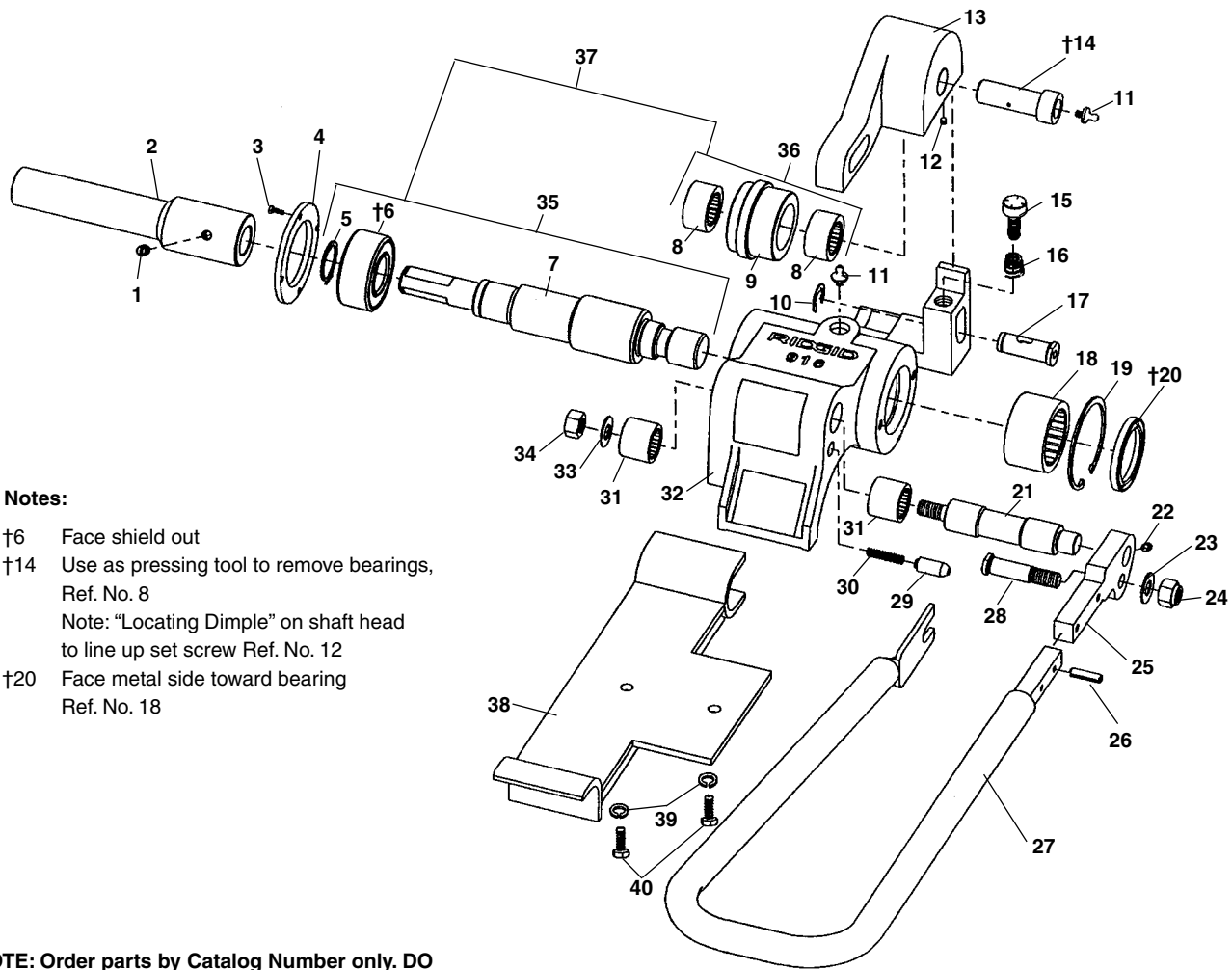
| Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|
| 1        | 45765       | Feed Screw Crank            |
| 2        | 47160       | Crank Pin                   |
| 3        | 46965       | Wide Roll                   |
| 4        | 34310       | Wide Roll Pin               |
| 5        | 42910       | Cutter Frame                |
| 6        | 47135       | Stop Pin                    |
| 7        | 46960       | Narrow Roll (2)             |
| 8        | 46970       | Narrow Roll Pin (2)         |
| 9        | 39820       | Spring Pin (2)              |
| 10       | 44920       | Bearing Assembly            |
| 11†      | 45780       | Feed Screw                  |
| 12       | 46920       | Screw #10 - 24 x 1/4"       |
| 13       | 43825       | Cutter Screw Assembly       |
| 14       | 44745       | Stop Nut (2)                |
| 15†      | 42915       | Roll Housing                |
| 16       | 32270       | Screw 5/16" - 18 x 3/4" (2) |
| 17       | 43820       | Tool Holder Slide           |
| 18       | 34217       | Grooving Tool               |
| 19       | 44200       | Saran Tool                  |
| 20       | 43890       | Cut-Off Tool, 45° Bevel     |
| 21       | 34212       | Cut-Off Tool, 37 1/2° Bevel |
| 22       | 46190       | Hex Wrench, 1/4"            |

†Service Note: When replacing parts on early style (fine thread) cutters, both feed screw and roll housing must be replaced.



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

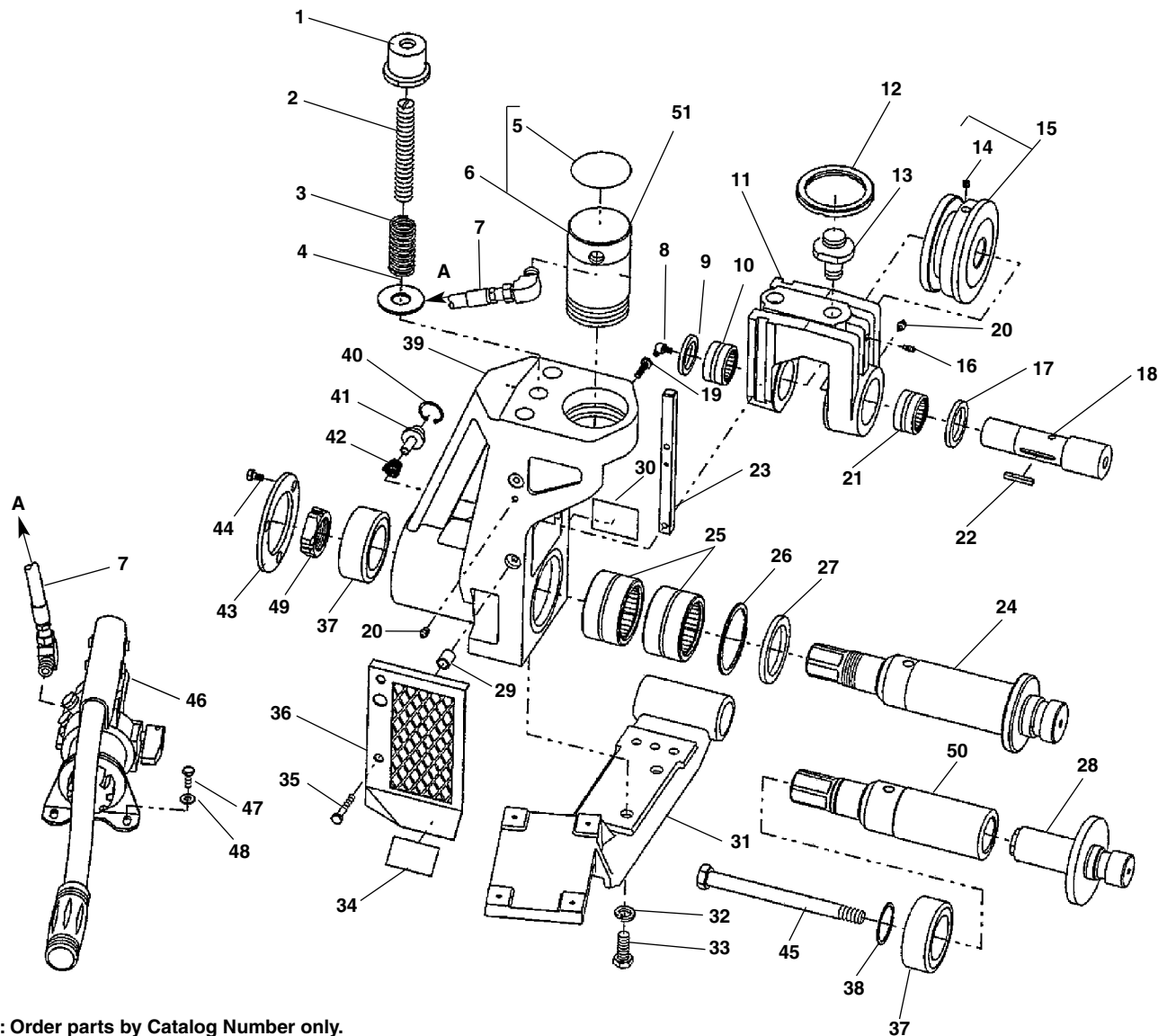
| Ref.<br>No. | Catalog<br>No. | Description               |
|-------------|----------------|---------------------------|
| 1           | 62332          | Outer Bell                |
| 2           | 62327          | Nylon Bearing w/Retainer  |
| 3           | 42037          | Screw (2)                 |
| 4           | 62342          | Cross w/Pins (2)          |
| 5           | 62317          | Sliding Shank Assy.       |
| 6           | 62312          | Chuck Shank & Shaft Assy. |
| 7           | 62322          | Roll Pin                  |
| 8           | 62337          | Inner Bell                |

**Service Notes:**

- Ref. No. †6 Face shield out  
 Ref. No. †14 Use as pressing tool to remove bearings,  
 Ref. No. 8  
 Note: "Locating Dimple" on shaft head  
 to line up set screw Ref. No. 12  
 Ref. No. †20 Face metal side toward bearing  
 Ref. No. 18

**NOTE: Order parts by Catalog Number only. DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                            | Ref. No. | Catalog No. | Description                                      |
|----------|-------------|----------------------------------------|----------|-------------|--------------------------------------------------|
| 1        | 48497       | Screw 3/16" - 16 x 1/2" (2)            | 23       | 77720       | Washer                                           |
| 2        | 48442       | Coupling - Short                       | 24       | 78005       | Hex Stop Nut 1/2" - 13 (2)                       |
|          | 66547       | Coupling - Long                        | 25       | 47037       | Drive Link                                       |
| 3        | 45207       | Hex Hd Screw 10 - 32 x 1/2" (4)        | 26       | 87940       | Roll Pin (2)                                     |
| 4        | 45202       | Retaining Plate                        | 27       | 45137       | Handle                                           |
| 5        | 45152       | Retaining Ring                         | 28       | 45182       | Drive Pin                                        |
| †6       | 45147       | Double Roll Ball Bearing               | 29       | 47027       | Detente Pin                                      |
| 7        | 45122       | Drive Shaft 1 1/4" - 6"                | 30       | 47032       | Detente Spring                                   |
|          | 45652       | Drive Shaft f/Copper Tubing            | 31       | 45172       | Drive Link Bearing (2)                           |
|          | 45662       | Drive Shaft f/1" Pipe                  | 32       | 48437       | Lower Roll Housing f/1822 Includes Ref. No. 11   |
|          | 69647       | Drive Shaft 1 1/4" to 1 1/2" (AWWA)    |          | 48507       | Lower Roll Housing f/300 Includes Ref. No. 11    |
|          | 69672       | Drive Shaft 2" to 6" (AWWA)            | 33       | 83420       | Flat Washer                                      |
| 8        | 45167       | Hd Caged Roller Bearing (2)            | 34       | 78005       | Hex Stop Nut 1/2" - 13 (2)                       |
| 9        | 45127       | Grooving Roll                          | 35       | 45397       | Drive Shaft Assembly                             |
|          | 45657       | Grooving Roll f/Copper Tubing          |          | 45557       | Drive Shaft Assembly f/Copper Tubing             |
|          | 45667       | Grooving Roll f/1" Pipe                |          | 45572       | Drive Shaft Assembly f/1" Pipe                   |
|          | 69652       | Grooving Roll 1 1/4" to 1 1/2" (AWWA)  |          | 69657       | Drive Shaft Assembly 1 1/4" to 1 1/2" (AWWA)     |
|          | 69677       | Grooving Roll 2" to 6" (AWWA)          |          | 69682       | Drive Shaft Assembly 2" to 6" (AWWA)             |
| 10       | 42580       | Retaining Ring                         | 36       | 45587       | Grooving Roll Assembly w/Bearing                 |
| 11       | 46860       | Grease Fitting                         |          | 45562       | Grooving Roll Assembly w/Bearing f/Copper Tubing |
| 12       | 45187       | Cone Pt. Screw 10 - 32 x 1/4"          |          | 45577       | Grooving Roll Assembly w/Bearing f/1" Pipe       |
| 13       | 45112       | Upper Roll Housing                     |          | 69662       | Grooving Roll Assembly 1 1/4" to 1 1/2" (AWWA)   |
| †14      | 45132       | Groove Roll Shaft includes Ref. No. 11 |          | 69687       | Grooving Roll Assembly 2" to 6" (AWWA)           |
| 15       | 48447       | Adjusting Screw                        | 37       | 45352       | Roll Set f/Copper Tubing incl. Ref. No. 35 & 36  |
| 16       | 45402       | Adjusting Screw Spring                 |          | 45347       | Roll Set f/1" incl. Ref. No. 35 & 36             |
| 17       | 48452       | Pivot Pin                              |          | 69667       | Roll Set 1 1/4" to 1 1/2" (AWWA)                 |
| 18       | 45142       | Caged Roller Bearing                   |          | 69692       | Roll Set 2" to 6" (AWWA)                         |
| 19       | 45162       | Retaining Ring                         |          | 47492       | Warning & Depth Adjusting Label                  |
| †20      | 45157       | Front Seal                             | 38       | 61242       | Base - 535                                       |
| 21       | 45117       | Drive Link Shaft                       | 39       | 40930       | 3/8" Locker Washer                               |
| 22       | 45192       | Cone Pt. Screw 1/4" - 20 x 1/2"        | 40       | 46675       | 3/8" x 3/4" Bolt                                 |

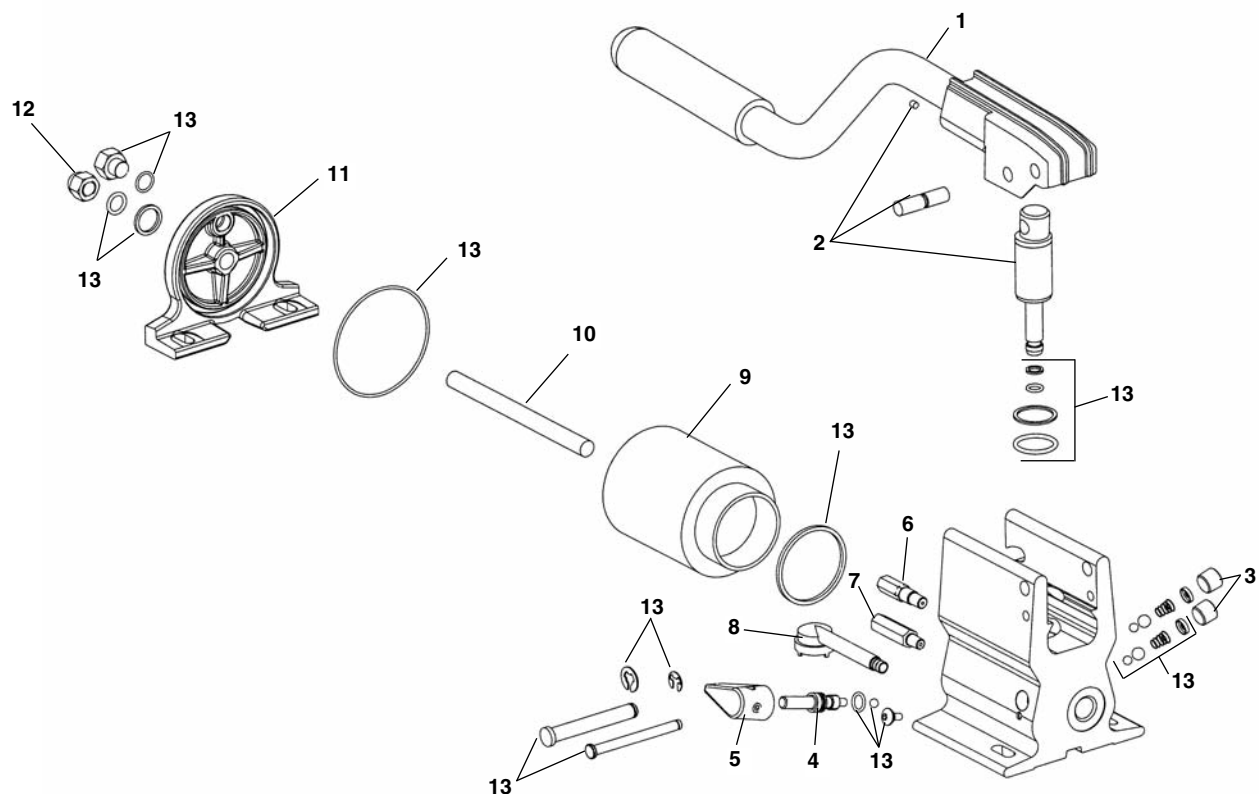


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                            | Ref. No. | Catalog No. | Description                                                | Ref. No.                          | Catalog No. | Description                                                        |
|----------|-------------|--------------------------------------------------------|----------|-------------|------------------------------------------------------------|-----------------------------------|-------------|--------------------------------------------------------------------|
| 1        | 49117       | Depth Adjustment Nut                                   | 22       | 27002       | Key, 3/16 Sq. x 1 5/16                                     | 36                                | 49197       | Guard (Incls. Ref. 29)                                             |
| 2        | 49112       | Depth Rod                                              | 23       | 49107       | Set of 2 Slide Keys                                        | 37                                | 49127       | Bearing                                                            |
| 3        | 49122       | Spring                                                 | 24       | 51427       | Drive Shaft, 2-6" Sch. 10 & 40                             | 38                                | 49192       | Spiral Retaining Ring                                              |
| 4        | 60995       | Flat Washer, 3/4"                                      |          | 51432       | Drive Shaft Assy. - same as above and includes Ref. 37, 49 | 39                                | 49057       | Lower Roll Housing (Incls. Ref. 20)                                |
| 5        | 49262       | Label, Depth Adjustment                                |          |             |                                                            | 40                                | 49177       | Retaining Ring                                                     |
| 6        | 49147       | Hydraulic Cylinder                                     |          | 51817       | Drive Shaft, 8-12" Sch 10, 8" Sch 40                       | 41                                | 49172       | Lock Pin                                                           |
| 7        | 49142       | Hydraulic Hose                                         |          | 51812       | Drive Shaft Assy. - same as above and includes Ref. 37, 49 | 42                                | 44915       | Spring                                                             |
| 8        | 46915       | Grease Fitting - 65 Deg.                               |          |             |                                                            | 43                                | 49132       | Retaining Plate                                                    |
| 9        | 87695       | Seal                                                   | 25       | 87600       | Roller Bearing (2)                                         | 44                                | 60265       | Hex Screw, 1/4" - 20 x 1/2" (3)                                    |
| 10       | 87710       | Roller Bearing                                         | 26       | 49187       | Spiral Retaining Ring                                      | 45                                | 49667       | Hex Bolt 5/8" - 11 x 7"                                            |
| 11       | 49062       | Upper Roll Housing (Incls. Ref. 9, 10, 16, 17, 20, 21) | 27       | 91000       | Seal                                                       | 46                                | 61132       | Hydraulic Pump                                                     |
| 12       | 49152       | Lock Ring                                              | 28       | 49157       | Drive Roll, 1"                                             | 47                                | 60005       | Hex Screw, 1/4" - 20 x 3/4" (4)                                    |
| 13       | 49082       | Piston Rod Coupling                                    |          | 49072       | Drive Roll, 1 1/4" - 1 1/2"                                | 48                                | 27402       | Flat Washer (4)                                                    |
| 14       | 45192       | Set Screw, 1/4" - 20 x 3/8"                            |          | 51732       | Drive Roll, Copper 2" - 6"                                 | 49                                | 49607       | Bearing Retaining Nut                                              |
| 15       | 49162       | Groove Roll, 1"                                        | 29       | 49202       | Set of 2 Spacers                                           | 50                                | 49067       | Drive Shaft - for 1", 1 1/4", 1 1/2" rolls and copper roll 2" - 6" |
|          | 49097       | Groove Roll, 1 1/4" - 1 1/2"                           | 30       | 49207       | Label, Warning                                             |                                   | 49627       | Drive Shaft Assy. - same as above and includes Ref. 37, 38, 45     |
|          | 49217       | Groove Roll 2" - 6" SC 10/40                           | 31       | 48292       | Mounting Base Kit - 300                                    | 51                                | 35943       | Repair Kit                                                         |
|          | 51822       | Groove Roll, 8" - 12" Sch. 10, 8" Sch. 40              |          | 48392       | Mounting Base Kit - 1822                                   | <b>Following Items Not Shown:</b> |             |                                                                    |
|          | 50127       | Groove Roll, Copper 2" - 6"                            |          | 48397       | Mounting Base Kit - 1224                                   |                                   | 49087       | T-Handle Hex Key, 1/8"                                             |
| 16       | 45265       | Set Screw, 1/4" - 20 x 1/2"                            |          | 48402       | Mounting Base Kit - 535                                    |                                   | 49167       | Coupling - 535/1822/1224                                           |
| 17       | 87690       | Seal                                                   |          | 60212       | Mounting Base Kit - 1233/300 Compact                       |                                   | 53987       | Roll Storage Case                                                  |
| 18       | 49102       | Upper Roll Shaft (Incls. Ref. 8, 22)                   | 33       | 45500       | Hex Screw, 1/2" x 1 1/4" (2)                               |                                   | 54317       | Box Wrench                                                         |
| 19       | 49252       | Hex Screw, 1/4" - 20 x 1" (2)                          | 32       | 86445       | Lock Washer, 1/2" (2)                                      |                                   |             |                                                                    |
| 20       | 46860       | Grease Fitting (4)                                     | 34       | 49257       | Label, Warning                                             |                                   |             |                                                                    |
| 21       | 87610       | Roller Bearing                                         | 35       | 49212       | Hex Screw, 1/4" - 20 x 1 3/4" (2)                          |                                   |             |                                                                    |



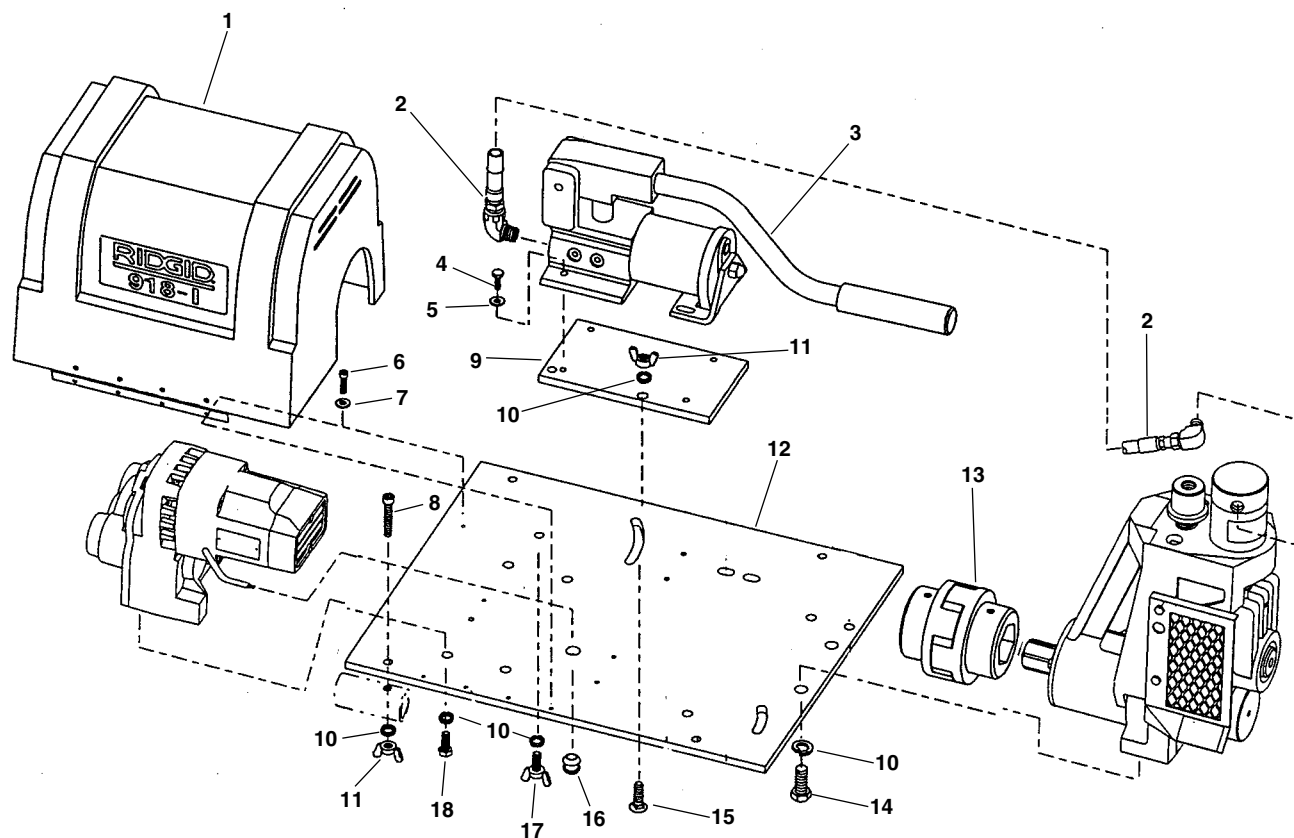
## Hydraulic Pump, P392U001



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

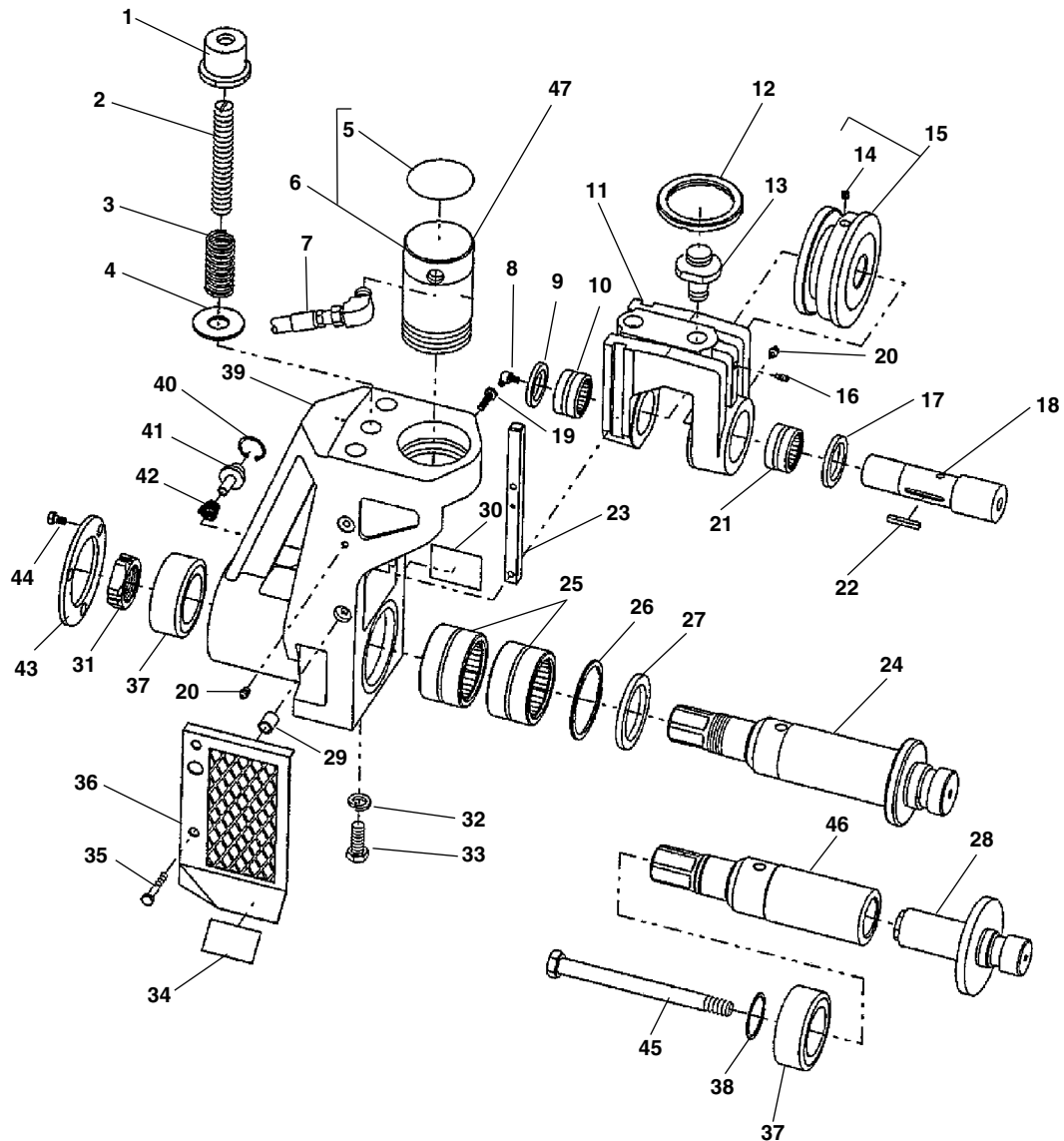
| <u>Ref. No.</u> | <u>Catalog No.</u> | <u>Description</u>   |
|-----------------|--------------------|----------------------|
| 1               | 64427              | Handle Assembly      |
| 2               | 97757              | Plunger Assembly     |
| 3               | 63742              | Pipe Plug (2)        |
| 4               | 97762              | Valve Stem           |
| 5               | 64437              | Release Knob         |
| 6               | 63752              | Low Pressure Bypass  |
| 7               | 63757              | High Pressure Relief |
| 8               | 97782              | Oil Filter           |
| 9               | 64412              | Reservoir            |
| 10              | 64417              | Tie Rod              |
| 11              | 97767              | End Cap              |
| 12              | 63707              | Acorn Nut            |
| 13              | 97772              | Repair Kit           |

## Base Assembly



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

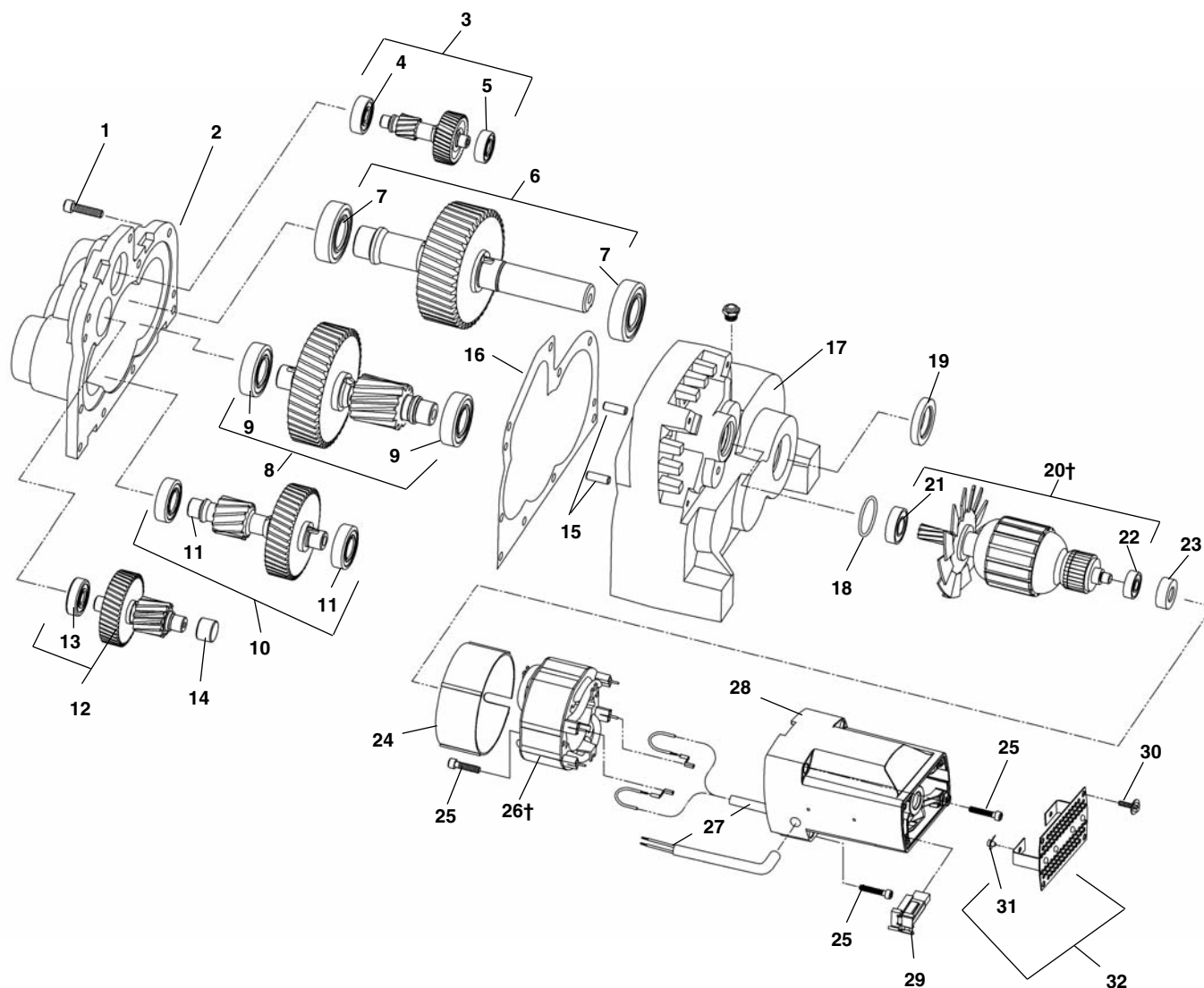
| Ref. No. | Catalog No. | Description                          |
|----------|-------------|--------------------------------------|
| 1        | 65557       | Motor Shroud                         |
| 2        | 49142       | Hydraulic Hose Assembly – 115V, 230V |
|          | 61372       | Hydraulic Hose Assembly – 100V       |
| 3        | 61132       | Hydraulic Pump Complete              |
| 4        | 60005       | Hex Screw, 1/4" - 20 x 3/4" (4)      |
| 5        | 44740       | Lock Washer 1/4" (4)                 |
| 6        | 40260       | Screws #10 - 24 x 1/2" S.H.C.S. (5)  |
| 7        | 45365       | Flat Washer, #10 (5)                 |
| 8        | 58052       | Hex Screw, 3/8" - 16 x 2 1/2" (4)    |
| 9        | 87527       | Pump Mount Plate, 115V, 230V         |
|          | 65552       | Pump Mount Plate, 100V               |
| 10       | 40930       | Lock Washer 3/8"                     |
| 11       | 45385       | Wing Nut, 3/8" - 16" (5)             |
| 12       | 65577       | Base Plate                           |
| 13       | 65567       | Drive Coupling                       |
| 14       | 45500       | Hex Screw, 1/2" - 13 x 1 1/4" (2)    |
| 15       | 61367       | Plow Bolt                            |
| 16       | 65112       | Rubber Grommet                       |
| 17       | 61362       | Wing Screw, 3/8" - 16 x 3/4"         |
| 18       | 45470       | Hex Screw 3/8" - 16 x 1"             |



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                            | Ref. No. | Catalog No. | Description                                                | Ref. No. | Catalog No. | Description                                                        |
|----------|-------------|--------------------------------------------------------|----------|-------------|------------------------------------------------------------|----------|-------------|--------------------------------------------------------------------|
| 1        | 49117       | Depth Adjustment Nut                                   | 18       | 49102       | Upper Roll Shaft (Incls. Ref. 8, 22)                       | 34       | 49257       | Label, Warning                                                     |
| 2        | 49112       | Depth Rod                                              | 19       | 49252       | Hex Screw, 1/4" - 20 x 1" (2)                              | 35       | 49212       | Hex Screw, 1/4" - 20 x 1 3/4" (2)                                  |
| 3        | 49122       | Spring                                                 | 20       | 46860       | Grease Fitting (4)                                         | 36       | 49197       | Guard (Incls. Ref. 29)                                             |
| 4        | 60995       | Flat Washer, 3/4"                                      | 21       | 87610       | Roller Bearing                                             | 37       | 49127       | Bearing                                                            |
| 5        | 49262       | Label, Depth Adjustment                                | 22       | 27002       | Key, 3/16" Sq. x 1 5/16"                                   | 38       | 49192       | Spiral Retaining Ring                                              |
| 6        | 49147       | Hydraulic Cylinder                                     | 23       | 49107       | Set of 2 Slide Keys                                        | 39       | 49057       | Lower Roll Housing (Incls. Ref. 20)                                |
| 7        | 49142       | Hydraulic Hose Assembly - 115V/230V                    | 24       | 51427       | Drive Shaft, 2" - 6" Sch 10 & 40                           | 40       | 49177       | Retaining Ring                                                     |
| 8        | 46915       | Grease Fitting - 65 Deg.                               | 25       | 51432       | Drive Shaft Assy. - same as above and includes Ref. 31, 37 | 41       | 49172       | Lock Pin                                                           |
| 9        | 87695       | Seal                                                   | 26       | 51817       | Drive Shaft, 8" - 12" Sch. 10, 8" Sch 40                   | 42       | 44915       | Spring                                                             |
| 10       | 87710       | Roller Bearing                                         | 27       | 51812       | Drive Shaft Assy. - same as above and includes Ref. 31, 37 | 43       | 49132       | Retaining Plate                                                    |
| 11       | 49062       | Upper Roll Housing (Incls. Ref. 9, 10, 16, 17, 20, 21) | 28       | 87600       | Roller Bearing (2)                                         | 44       | 60265       | Hex Screw, 1/4" - 20 x 1/2" (3)                                    |
| 12       | 49152       | Lock Ring                                              | 29       | 49187       | Spiral Retaining Ring                                      | 45       | 49667       | Hex Bolt 5/8" - 11 x 7"                                            |
| 13       | 49082       | Piston Rod Coupling                                    | 30       | 49157       | Drive Roll, 1"                                             | 46       | 49067       | Drive Shaft - for 1", 1 1/4", 1 1/2" Rolls and Copper Roll 2" - 6" |
| 14       | 45192       | Cone Pt. Screw, 1/4" - 20 x 3/8"                       | 31       | 49072       | Drive Roll, 1 1/4" - 1 1/2"                                | 47       | 49627       | Drive Shaft Assy. - same as above and includes Ref. 37, 38, 45     |
| 15       | 49162       | Groove Roll, 1"                                        | 32       | 51732       | Drive Roll, Copper 2" - 6"                                 |          |             | <b>Following Items Not Shown:</b>                                  |
|          | 49097       | Groove Roll, 1 1/4" - 1 1/2"                           | 33       | 49202       | Set of 2 Spacers                                           | 49087    |             | T-Handle Hex Key, 1/8"                                             |
|          | 49217       | Groove Roll 2" - 6" SC 10/40                           | 34       | 49207       | Label, Warning                                             | 53987    |             | Roll Storage Case                                                  |
|          | 51822       | Groove Roll, 8" - 12" Sch. 10, 8" Sch 40               | 35       | 49607       | Bearing Retaining Nut                                      | 54317    |             | Box Wrench                                                         |
|          | 50127       | Groove Roll, Copper 2" - 6"                            | 36       | 84150       | Lock Washer, 1/2" (2)                                      | 67192    |             | Spanner Wrench                                                     |
| 16       | 45265       | Set Screw, 1/4" - 20 x 1/2"                            | 37       | 45500       | Hex Screw, 1/2" x 1 1/4" (2)                               | 67197    |             | Hex Key 3/8"                                                       |
| 17       | 87690       | Seal                                                   |          |             |                                                            |          |             |                                                                    |

## Motor Transmission Type 2 – Early Style

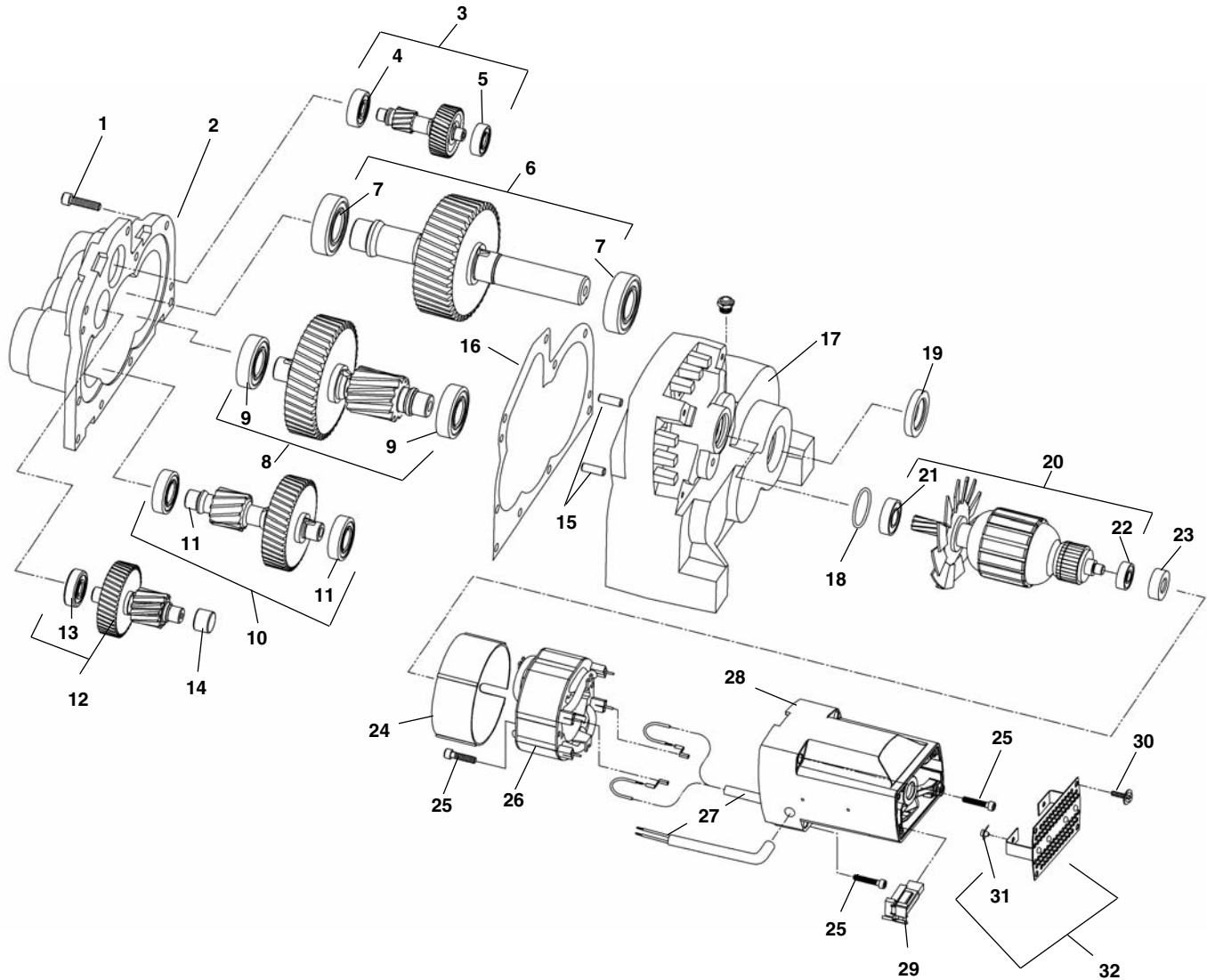


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No. | Description                   |
|----------|-------------|--------------------------------|----------|-------------|--------------------------|----------|-------------|-------------------------------|
| 1        | 83685       | Screws                         | 14       | 65492       | Needle Bearing           | 24       | 35328       | Fan Shroud                    |
| 2        | 65452       | Transmission Housing Cover     | 15       | 44640       | Dowel Pin (2)            | 25       | 10923       | Screw #10-24 x 2" (6)         |
| 3        | 65457       | 1st Intermediate Gear Assembly | 16       | 65502       | Gasket                   | †26      | 58572       | Field Assembly – 100V         |
| 4        | 44760       | Ball Bearing                   | 17       | 65507       | Transmission Housing     |          | 45897       | Field Assembly – 115V         |
| 5        | 59147       | Ball Bearing                   | 18       | 60227       | O-Ring Seal              |          | 58567       | Field Assembly – 230V         |
| 6        | 65462       | Output Shaft Assembly          | 19       | 65512       | Grease Seal              | 27       | 58562       | Wiring Harness                |
| 7        | 45315       | Ball Bearing (2)               | †20      | 58557       | Armature Assembly – 100V | 28       | 22043       | Motor Housing                 |
| 8        | 65467       | 4th Intermediate Gear Assembly |          | 40907       | Armature Assembly – 115V | 29       | 34078       | Brush/Holder Set – 100V, 115V |
| 9        | 44565       | Ball Bearing (2)               |          | 58552       | Armature Assembly – 230V |          | 34083       | Brush/Holder Set – 230V       |
| 10       | 65472       | 3rd Intermediate Gear Assembly | 21       | 45912       | Ball Bearing             | 30       | 10908       | Screw (4)                     |
| 11       | 65477       | Ball Bearing (2)               | 22       | 43017       | Ball Bearing             | 31       | 10918       | Bumper (2)                    |
| 12       | 65482       | 2nd Intermediate Gear Assembly | 23       | 42777       | Bearing Mount            | 32       | 10913       | Motor Housing Cover           |
| 13       | 65487       | Ball Bearing                   |          |             |                          |          |             |                               |

† Service Note: When replacing early style 115V or 230V armature# or field# you must replace with both new style armature#, field# and brushes#.

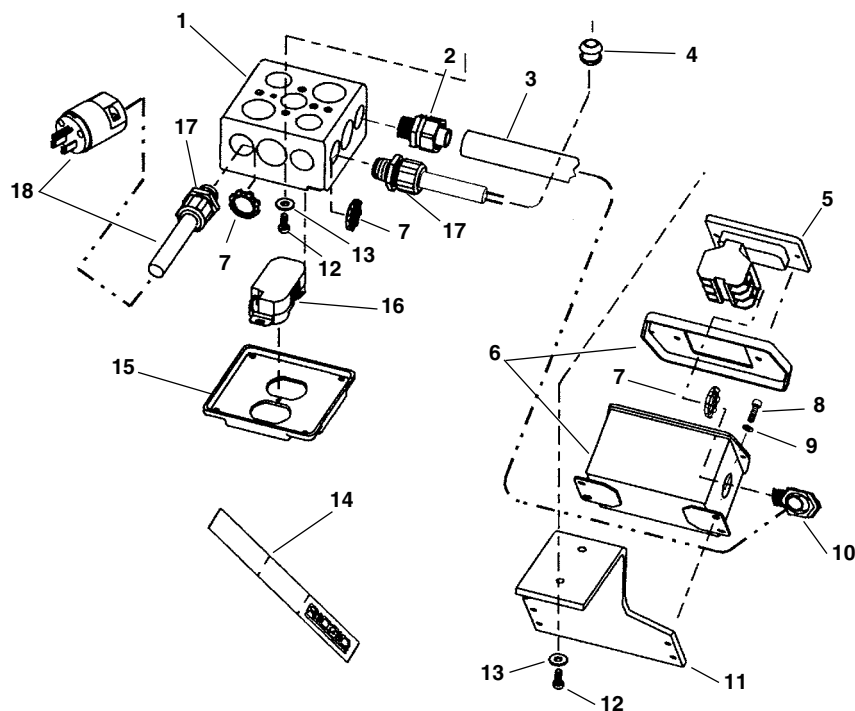
## Motor Transmission Type 2 – Motors built after Serial Number EAH XXXX 1109



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No. | Description                        |
|----------|-------------|--------------------------------|----------|-------------|--------------------------|----------|-------------|------------------------------------|
| 1        | 83685       | Screws                         | 14       | 65492       | Needle Bearing           | 24       | 35328       | Fan Shroud                         |
| 2        | 65452       | Transmission Housing Cover     | 15       | 44640       | Dowel Pin (2)            | 25       | 10923       | Screw #10-24 x 2" (6)              |
| 3        | 65457       | 1st Intermediate Gear Assembly | 16       | 65502       | Gasket                   | 26       | 38848       | Field Assembly - 115V              |
| 4        | 44760       | Ball Bearing                   | 17       | 65507       | Transmission Housing     |          | 38853       | Field Assembly - 230V              |
| 5        | 59147       | Ball Bearing                   | 18       | 60227       | O-Ring Seal              |          | 38858       | Field Assembly - 100V              |
| 6        | 65462       | Output Shaft Assembly          | 19       | 65512       | Grease Seal              | 27       | 58562       | Wiring Harness                     |
| 7        | 45315       | Ball Bearing(2)                | 20       | 40943       | Armature Assembly - 115V | 28       | 22043       | Motor Housing                      |
| 8        | 65467       | 4th Intermediate Gear Assembly |          | 40948       | Armature Assembly - 230V | 29       | 34078       | Brush Holder Assembly - 100V, 115V |
| 9        | 44565       | Ball Bearing (2)               |          | 40953       | Armature Assembly - 100V |          | 34083       | Brush Holder Assembly - 230V       |
| 10       | 65472       | 3rd Intermediate Gear Assembly | 21       | 45912       | Ball Bearing             | 30       | 10908       | Screw (4)                          |
| 11       | 65477       | Ball Bearing (2)               | 22       | 43017       | Ball Bearing             | 31       | 10918       | Bumper (2)                         |
| 12       | 65482       | 2nd Intermediate Gear Assembly | 23       | 42777       | Bearing Mount            | 32       | 10913       | Motor Housing Cover                |
| 13       | 65487       | Ball Bearing                   |          |             |                          |          |             |                                    |

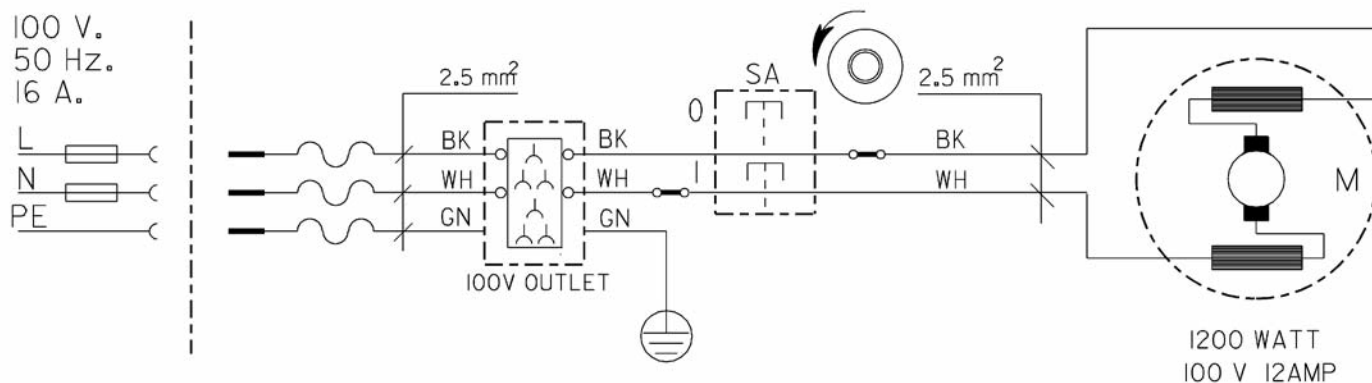
## Electrical, 100V



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

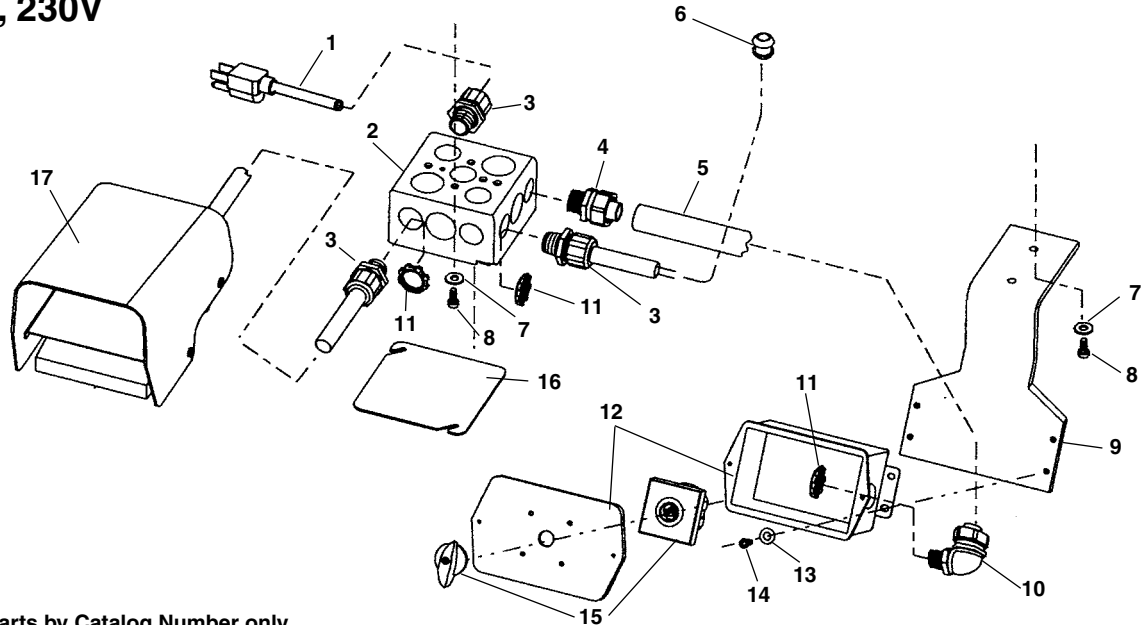
| Ref. No. | Catalog No. | Description                       |
|----------|-------------|-----------------------------------|
| 1        | 65587       | Junction Box                      |
| 2        | 65607       | Conduit Fitting, 1/2" Straight    |
| 3        | 65612       | Flexible Conduit, 1/2"            |
| 4        | 65112       | Rubber Grommet                    |
| 5        | 54227       | Switch, Push Button               |
| 6        | 65637       | Switch Box w/Cover                |
| 7        | 65642       | Locknut, 1/2" NPT (4)             |
| 8        | 45750       | Screw #10 - 24 x 3/8" S.H.C.S (4) |
| 9        | 45365       | Flat Washer, #10 (2)              |
| 10       | 65647       | Fitting, 90 Deg, 1/2"             |
| 11       | 61337       | Switch Bracket                    |
| 12       | 60005       | Hex Screw, 1/4" - 20 x 3/4" (2)   |
| 13       | 44740       | Lock Washer 1/4" (2)              |
| 14       | 65582       | Lanyard                           |
| 15       | 65597       | Junction Box Cover                |
| 16       | 65592       | Outlet                            |
| 17       | 65602       | Strain Relief (2)                 |
| 18       | 46740       | Power Cord w/Plug                 |

## Wiring Diagram





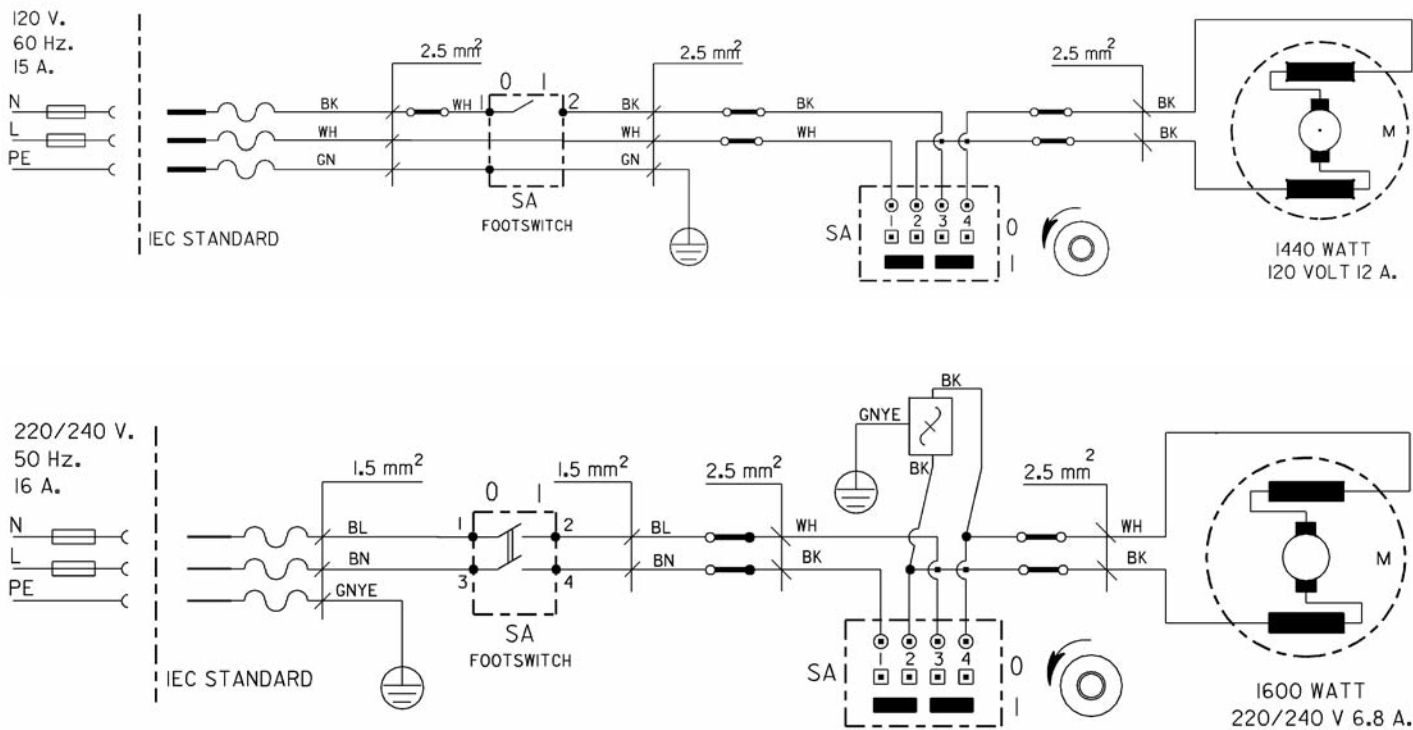
## Electrical, 115V, 230V



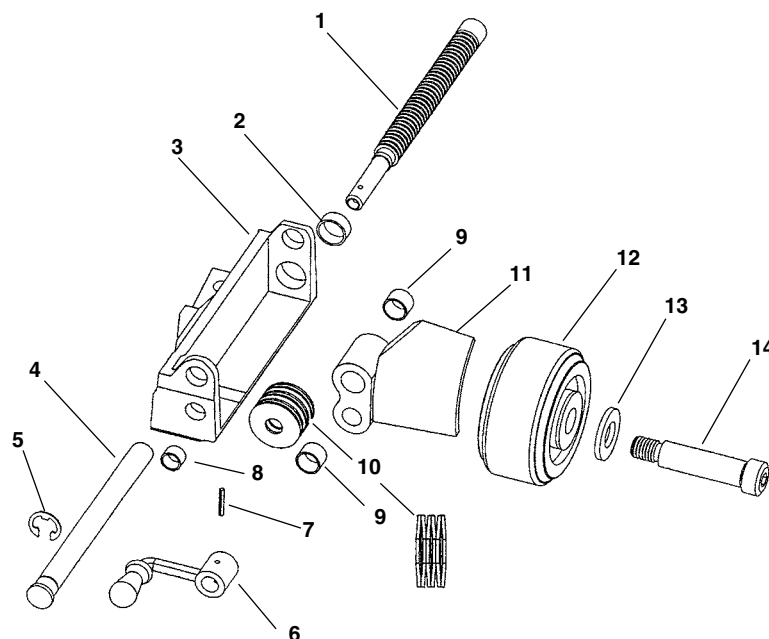
NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                     | Ref. No. | Catalog No. | Description                        |
|----------|-------------|---------------------------------|----------|-------------|------------------------------------|
| 1        | 46740       | Power Cord w/Plug               | 10       | 65647       | Fitting, 90 Deg. 1/2"              |
| 2        | 65587       | Junction Box                    | 11       | 65642       | Locknut, 1/2" NPT (5)              |
| 3        | 65602       | Strain Relief (3)               | 12       | 65962       | Switch Box w/Cover                 |
| 4        | 65607       | Conduit Fitting, 1/2" Straight  | 13       | 45365       | Flat Washer, #10 (4)               |
| 5        | 65612       | Flexible Conduit, 1/2"          | 14       | 45750       | Screw #10 - 24 x 3/8" S.H.C.S. (4) |
| 6        | 65112       | Rubber Grommet                  | 15       | 20108       | Switch w/Knob                      |
| 7        | 44740       | Lock Washer 1/4" (4)            | 16       | 65977       | Junction Box Cover                 |
| 8        | 60005       | Hex Screw, 1/4" - 20 x 3/4" (4) | 17       | 36642       | Foot Switch, B-294, 115V Model     |
| 9        | 61337       | Switch Bracket                  |          | 40017       | Foot Switch, B-298, 230V Model     |

## Wiring Diagram



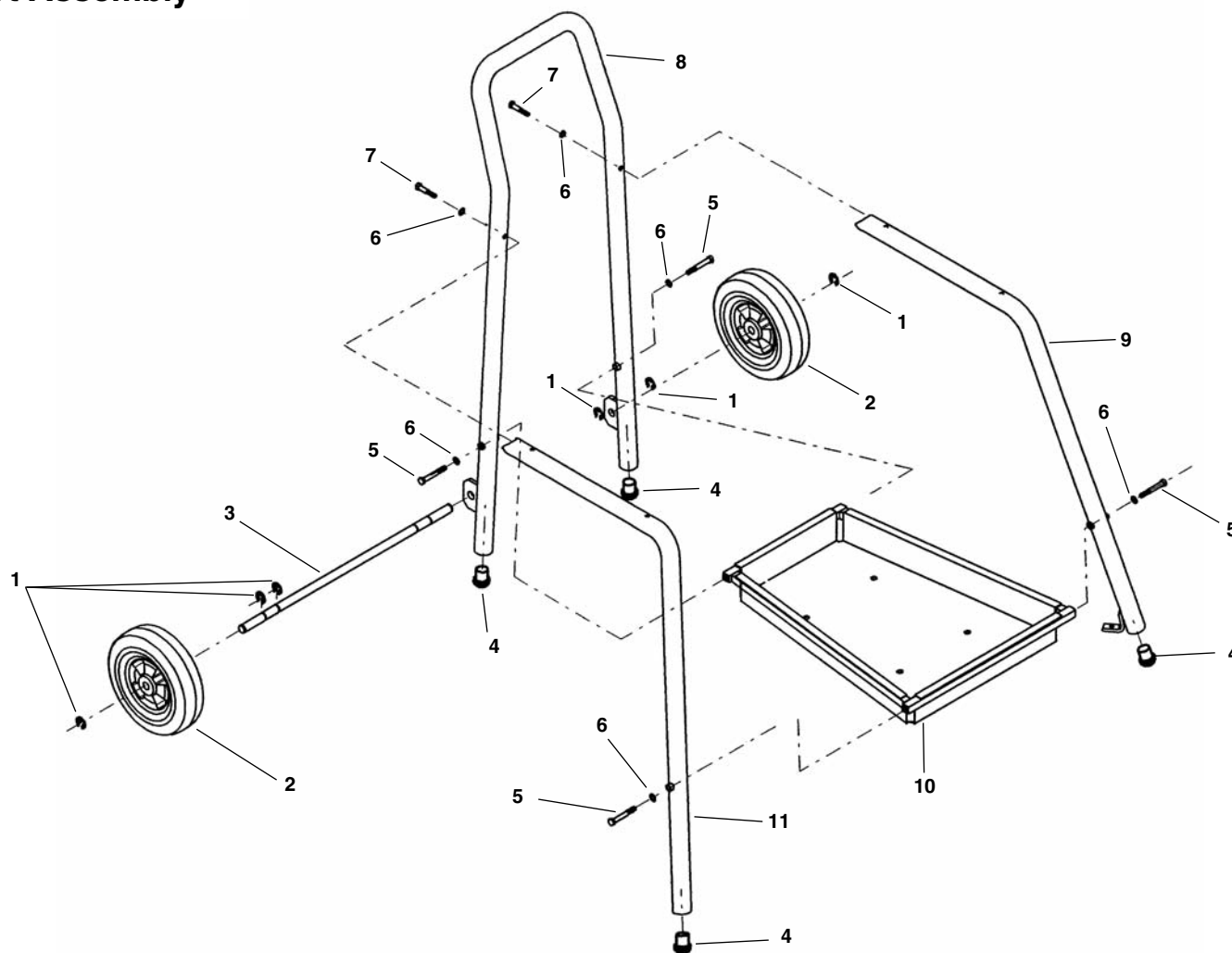
## Stabilizer



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref.<br>No. | Catalog<br>No. | Description                                         |
|-------------|----------------|-----------------------------------------------------|
| —           | 59992          | Stabilizer Kit, Non-Operator Side                   |
| —           | 59997          | Stabilizer Kit, Operator Side                       |
| 1           | 61802          | Feed Screw                                          |
| 2           | 61817          | Bearing, $\frac{3}{4}$ " x $\frac{3}{8}$ "          |
| 3           | 61797          | Slide Box, Operator Side                            |
| 4           | 61792          | Slide Box, Non-Operator Side                        |
| 5           | 61832          | Guide Shaft                                         |
| 6           | 42580          | E-Ring                                              |
| 7           | 53087          | Crank Handle                                        |
| 8           | 55222          | Pin                                                 |
| 9           | 53072          | Bearing, $\frac{1}{2}$ " x $\frac{3}{8}$ "          |
| 10          | 61822          | Set of 2 Bearing, $\frac{5}{8}$ " x $\frac{1}{2}$ " |
| 11          | 61827          | Set of 6 Bellville Washers                          |
| 12          | 61812          | Slide, Operator Side                                |
| 13          | 61807          | Slide, Non-Operator Side                            |
| 14          | 53052          | Wheel                                               |
| 15          | 60995          | Washer                                              |
| 16          | 53097          | Shoulder Bolt                                       |

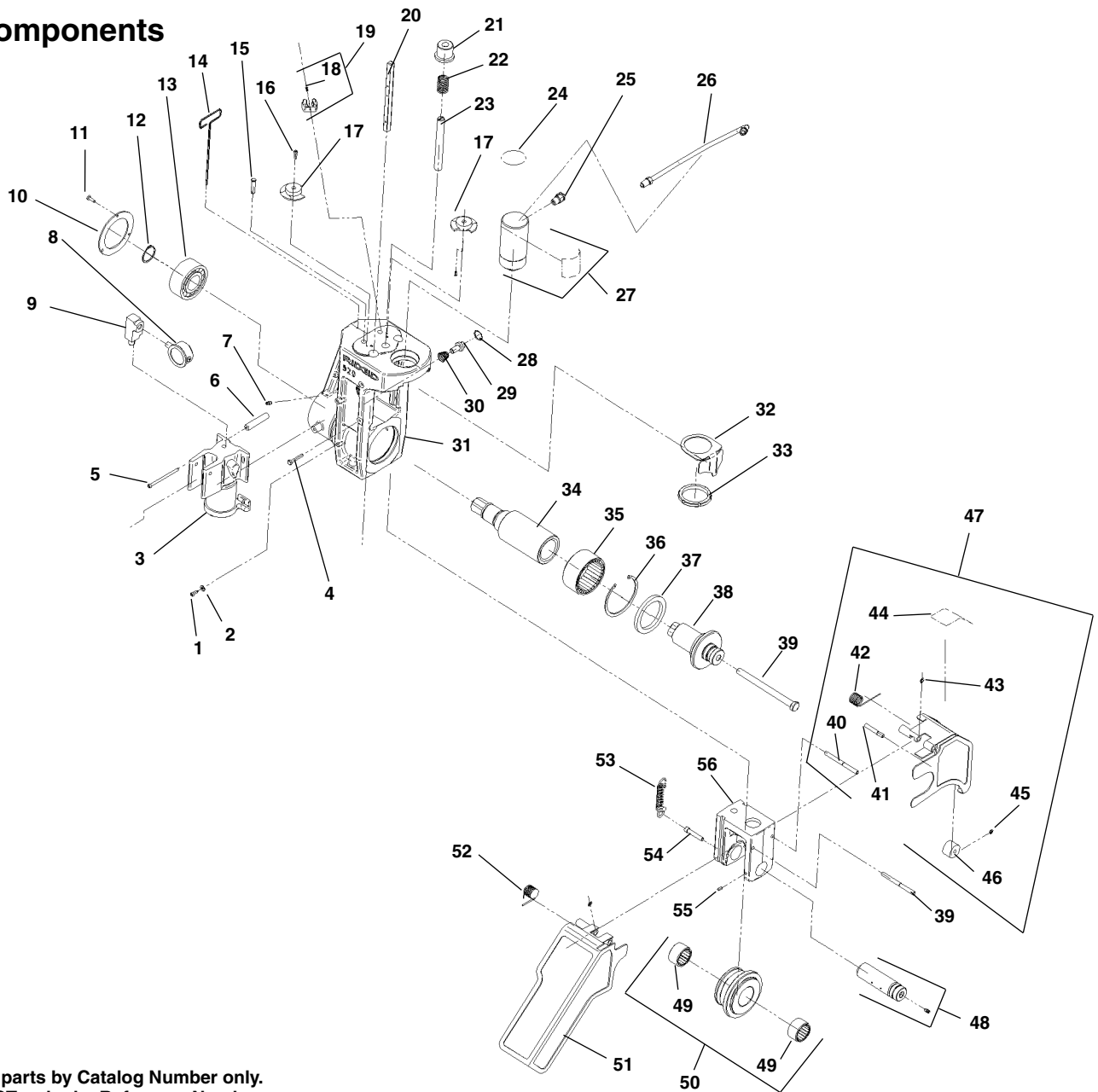
## Cart Assembly



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                            |
|----------|-------------|--------------------------------------------------------|
|          | 64192       | Stand Complete                                         |
| 1        | 58850       | Retaining Ring (6)                                     |
| 2        | 23602       | Wheel, 10" Dia. (2)                                    |
| 3        | 65522       | Wheel Axle                                             |
| 4        | 61470       | Rubber Foot (4)                                        |
| 5        | 46675       | Hex Screw $\frac{3}{8}$ " - 16 x $2\frac{3}{4}$ " (4)  |
| 6        | 40930       | Lock Washer $\frac{3}{8}$ " (6)                        |
| 7        | 58052       | Hex Screw, $\frac{3}{8}$ " - 16 x $2\frac{1}{2}$ " (2) |
| 8        | 65527       | Rear Leg Support/Handle - U.S.                         |
|          | 61342       | Rear Leg Support/Handle - Export                       |
| 9        | 65537       | Leg, Right Front - U.S.                                |
|          | 61347       | Leg, Right Front - Export                              |
| 10       | 65542       | Tool Tray Assembly                                     |
| 11       | 65547       | Leg, Left Front - U.S.                                 |
|          | 61352       | Leg, Left Front - Export                               |

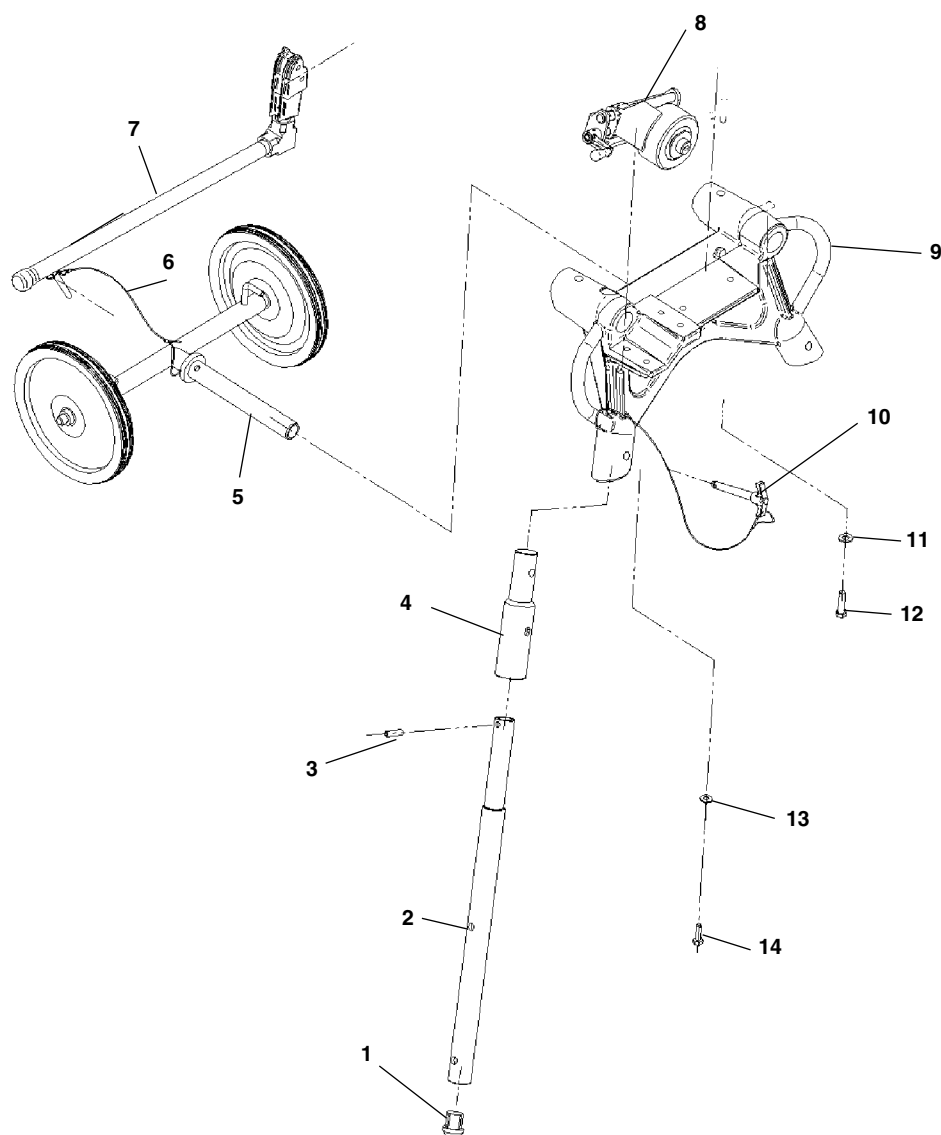
## Main Components



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

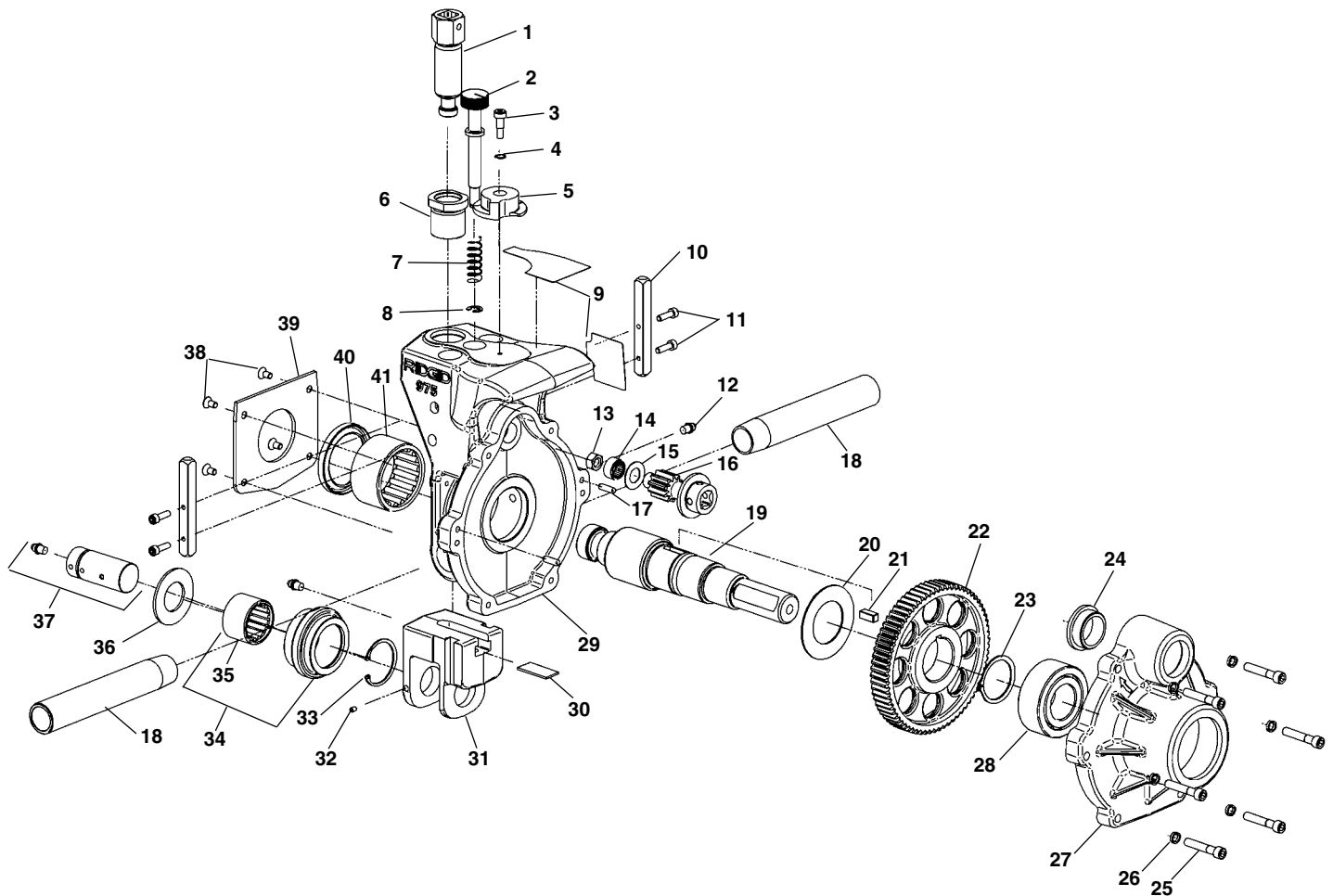
| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description                  |
|----------|-------------|--------------------------------|----------|-------------|-------------------------------|----------|-------------|------------------------------|
| 1        | 40910       | 1/4" - 20 x 3/4" Cap Screw (3) | 21       | 49117       | Depth Adj. Nut                | 40       | 11158       | Pivot Shaft (2)              |
| 2        | 27402       | 1/4" Flat Washer (4)           | 22       | 49122       | Compression Spring            | 41       | 11223       | Shaft Roller                 |
| 3        | 11173       | Hand Pump                      | 23       | 11123       | Depth Adj. Rod                | 42       | 11153       | Torsion Spring RH            |
| 4        | 64877       | 1/4" - 20 x 1 3/4" Screw (4)   | 24       | 49262       | Depth Setting Decal           | 43       | 61042       | Ret. Ring (3)                |
| 5        | 11203       | 1/4" - 20 x 5 1/2" Screw       | 25       | 11208       | 3/8" Swivel Connector         | 44       | 13198       | Warning Decal Guard          |
| 6        | 11198       | Pump Standoff                  | 26       | 11213       | Hydraulic Hose                | 45       | 61042       | Ret. Ring (3)                |
| 7        | 46860       | Grease Fitting (4)             | 27       | 11818       | Cylinder (Inc. Decals)        | 46       | 11218       | Guard Roller                 |
| 8        | 11058       | Pressure Gauge                 | 28       | 49177       | Retaining Ring                | 47       | 11143       | Right Guard                  |
| 9        | 11093       | Hydraulic Tee                  | 29       | 11118       | Stop Pin                      | 48       | 11078       | Roller Shaft                 |
| 10       | 11128       | Bearing Retaining Plate        | 30       | 11168       | Stop Pin Spring               | 49       | 11108       | Needle Bearing (6)           |
| 11       | 60265       | 1/4" - 20 x 1/2" Screw (3)     | 31       | 11003       | 920 Main Housing              | 50       | 11018       | 2" - 6" Upper Groove Roll    |
| 12       | 11088       | Retaining Ring                 | 32       | 11248       | Actuator                      |          | 11028       | 8" - 12" Upper Groove Roll   |
| 13       | 11163       | Angular Contact Bearing        | 33       | 49152       | Lock Ring                     |          | 11038       | 14" - 16" Upper Groove Roll  |
| 14       | 49087       | 1/8" Tee Handle Hex Wrench     | 34       | 11073       | Drive Shaft                   | 51       | 11138       | Left Guard                   |
| 15       | 11233       | Clevis Pin                     | 35       | 11063       | Roller Bearing (2)            | 52       | 11148       | Torsion Spring LH            |
| 16       | 11268       | Shoulder Screw                 | 36       | 11083       | Internal Ret. Ring            | 53       | 11238       | Return Spring                |
| 17       | 11048       | Depth Adj. Gauge LT            | 37       | 11133       | Grease Seal                   | 54       | 46745       | 3/8" - 16 x 1 1/4" Screw (2) |
|          | 11043       | Depth Adj. Gauge RT            | 38       | 11013       | 2" - 6" Drive Roll            | 55       | 34892       | Set Screw 1/4" - 20          |
| 18       | 54307       | Drive Screw                    |          | 11023       | 8" - 12" Drive Roll           | 56       | 11008       | Upper Roll Housing           |
| 19       | 11263       | Spring Clip (Inc. Ref. 18)     |          | 11033       | 14" - 16" Drive Roll          |          |             |                              |
| 20       | 11068       | Key Slide (2)                  | 39       | 11113       | 5/8" - 11 x 7 3/4" HX HD Bolt |          |             |                              |

## Base



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                  |
|----------|-------------|------------------------------|
| 1        | 61470       | Rubber Button                |
| 2        | 11183       | Lower Leg                    |
| 3        | 50307       | Spiral Pin                   |
| 4        | 11178       | Upper Leg                    |
| 5        | 42575       | #32 Transport Cart           |
| 6        | 11328       | Hitch Pin, Transporter       |
| 7        | 11243       | Pump Handle Assembly         |
| 8        | 59997       | Stabilizer                   |
| 9        | 11228       | Base                         |
| 10       | 11193       | Hitch Pin                    |
| 11       | 41735       | Flat Washer 7/16"            |
| 12       | 11188       | 7/16" - 14 x 1" HX HD Bolt   |
| 13       | 11293       | 3/8" Flat Washer             |
| 14       | 82915       | 3/8" - 16 x 3/4" HX HD Screw |



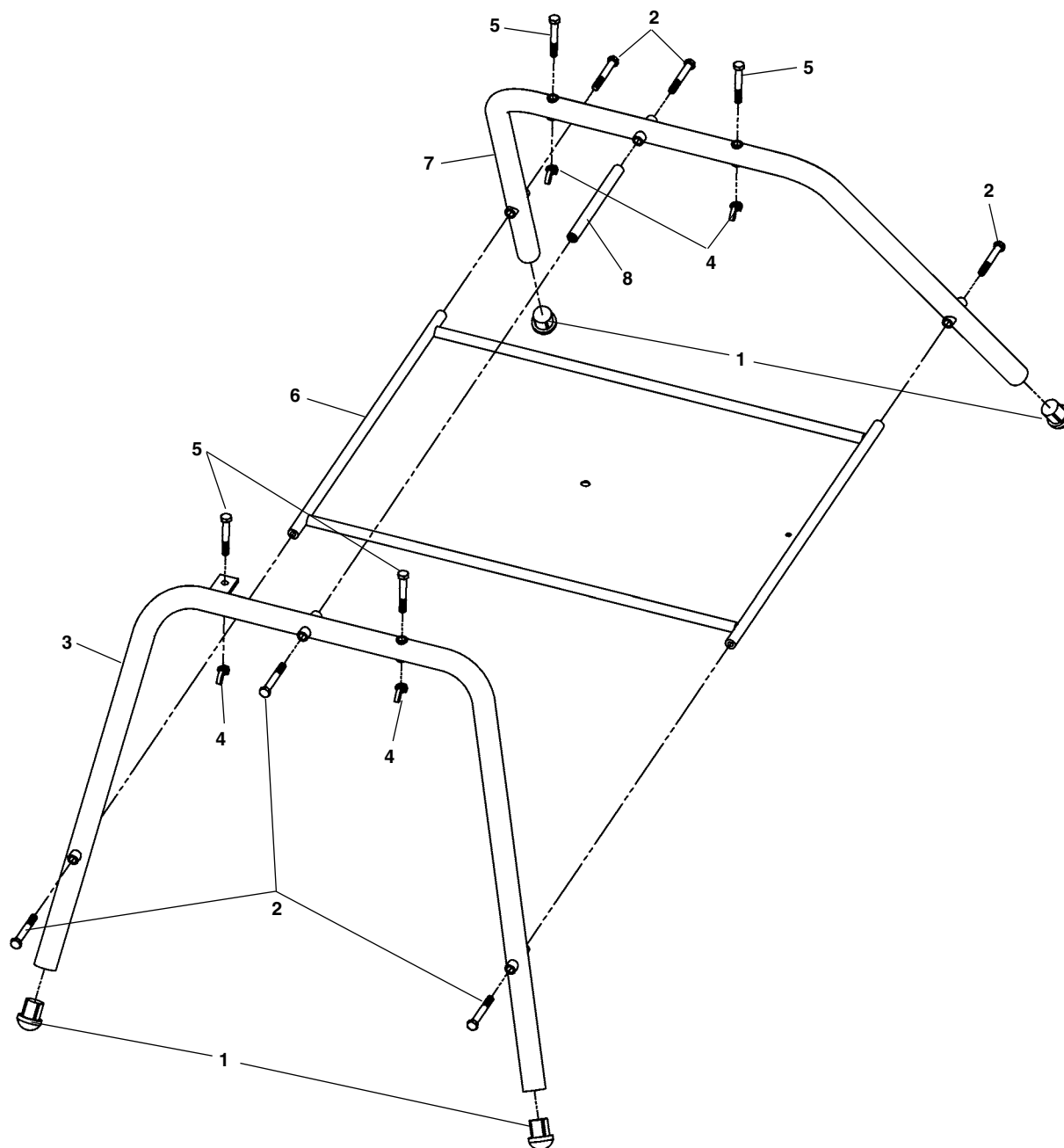
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description               | Ref. No. | Catalog No. | Description             | Ref. No. | Catalog No. | Description            |
|----------|-------------|---------------------------|----------|-------------|-------------------------|----------|-------------|------------------------|
| 1†       | 30948       | Feed Screw                | 16       | 30878       | Input Pinion            | 30       | 87977       | Wear Plate             |
| 2        | 87687       | Adjustment Screw          | 17       | 40287       | Dowel Pin (2)           | 31       | 30923       | Slide Block            |
| 3        | 87947       | Shoulder Screw            | 18       | 87682       | Support Bar (2)         | 32       | 87640       | Set Screw              |
| 4        | 87972       | Wave Spring               | 19       | 30883       | Large Drive Shaft       | 33†      | 33695       | Retaining Ring         |
| 5        | 87932       | Groove Setting Gauge      |          | 32838       | Drive Shaft f/Copper    | 34       | 30933       | Groove Roll            |
| 6†       | 93327       | Feed Screw Bushing        | 20       | 30888       | Thrust Washer           |          | 32843       | Groove Roll f/Copper   |
| 7        | 87912       | Spring                    | 21       | 30893       | Key .25 x .62           | 35†      | 87922       | Bearing                |
| 8        | 87937       | Retaining Ring            | 22       | 30898       | Large Drive Gear        | 36       | 30938       | Thrust Washer          |
| 9        | 30873       | Labels                    | 23       | 30903       | Retaining Ring          | 37       | 30943       | Groove Roll Shaft      |
| 10       | 93307       | Slide Key (2)             | 24       | 93812       | Bearing Flange          | 38       | 93282       | #10-24 Screw (4)       |
| 11       | 93302       | 10-24 x 1/2" Soc Head (4) | 25       | 30908       | Screw 1/4-20 x 1-38 SHC | 39       | 93312       | Cover Plate            |
| 12       | 46860       | Grease Fitting (3)        | 26       | 45150       | Washer (6)              | 40       | 45157       | Front Seal             |
| 13       | 96730       | Hex Nut                   | 27       | 30913       | Rear Cover Assembly     | 41       | 45142       | Needle Bearing         |
| 14       | 93777       | Needle Bearing            | 28       | 30918       | Bearing                 |          | 30708       | 1/2" Ratchet Extension |
| 15       | 93782       | Thrust Washer             | 29       | 30928       | Main Housing Assembly   |          | 30703       | 1/2" Drive Ratchet     |

† Service Notes: Ref. No. 1 – Coat with EP grease.  
 Ref. No. 6 – Apply Loctite #271 to external threads prior to assembly.  
 Ref. No. 33 – Install Retaining Ring burr side away from bearing.  
 Ref. No. 35 – Apply Loctite #271 to outside of bearing prior to assembly.

† Service Note: – Grease components monthly, more often during heavy usage.

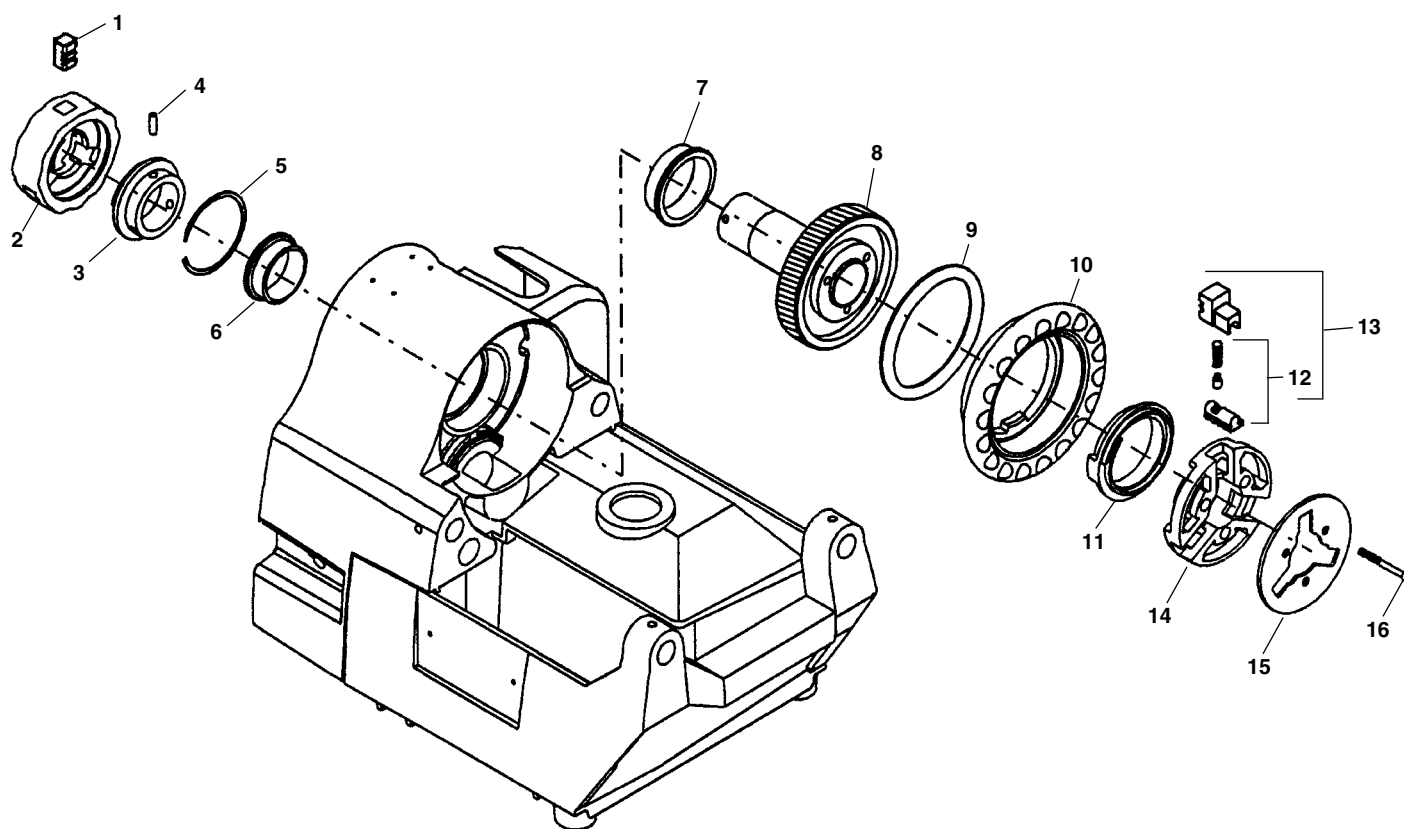




**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                           | Ref. No. | Catalog No. | Description                                                 |
|----------|-------------|-------------------------------------------------------|----------|-------------|-------------------------------------------------------------|
| —        | 52002       | 1205 Stand F/300 Pd                                   | 5        | 58052       | Screw, $\frac{3}{8}$ " - 16 X $2\frac{1}{2}$ " Hex Head (4) |
| 1        | 61470       | Button, Rubber (4)                                    | 6        | 96917       | Tray                                                        |
| 2        | 46675       | Bolt, $\frac{3}{8}$ " x $2\frac{3}{4}$ " Hex Head (6) | 7        | 96912       | Leg, Right                                                  |
| 3        | 96907       | Leg, Left                                             | 8        | 96922       | Brace                                                       |
| 4        | 45385       | Nut, Wing $\frac{3}{8}$ " - 16 (4)                    |          |             |                                                             |

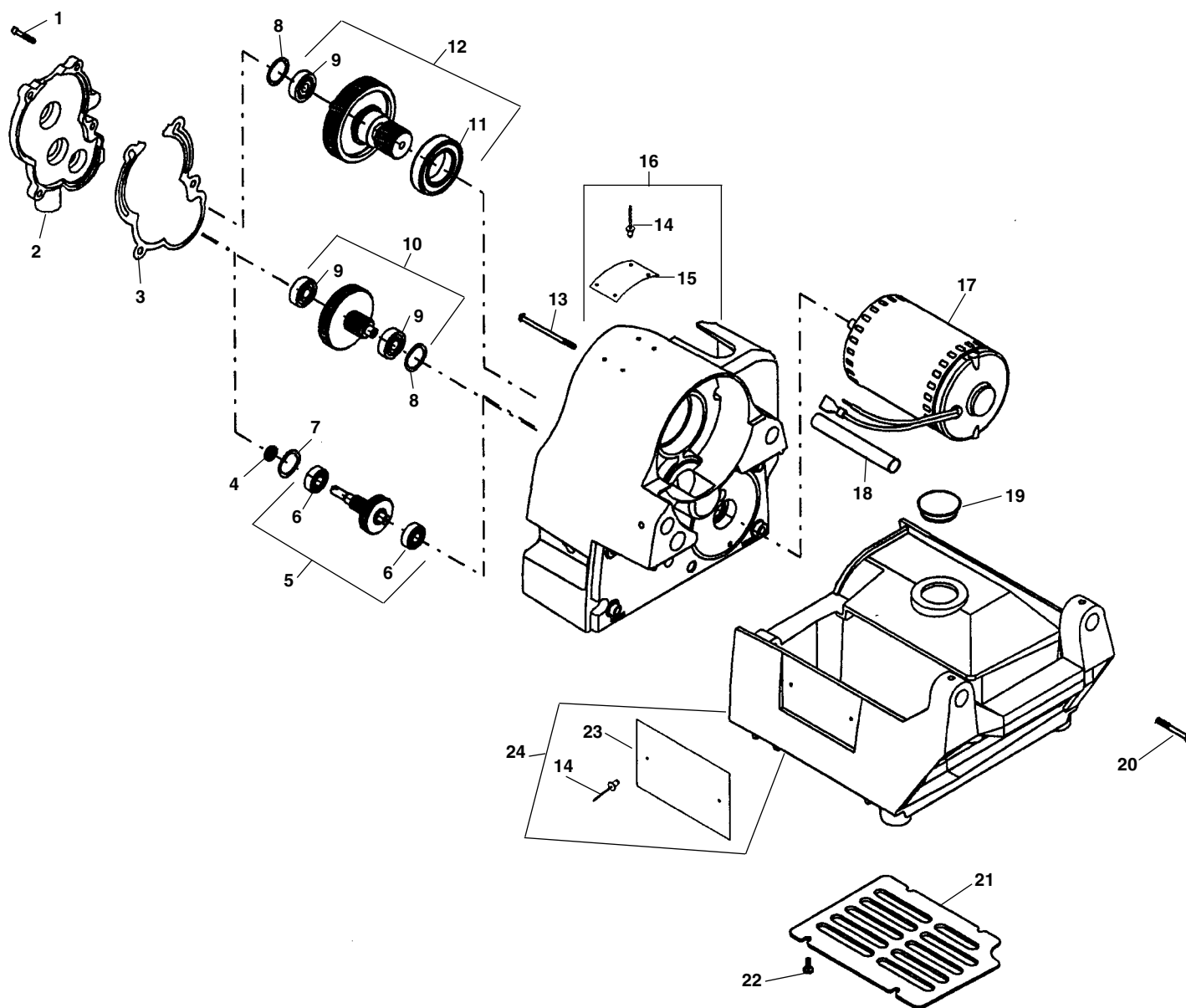
## Spindle Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No. | Description                            |
|----------|-------------|--------------------------|----------|-------------|----------------------------------------|
| 1        | 69447       | Centering Jaw Set        | 9        | 69297       | Spacer Ring                            |
| 2        | 69307       | Centering Head           | 10       | 69202       | Hand Wheel                             |
| 3        | 69312       | Centering Scroll         | 11       | 69197       | Scroll                                 |
| 4        | 54007       | Roll Pin 1/4" x 3/8" (3) | 12       | 69412       | Jaw Insert Set                         |
| 5        | 69317       | Retaining Ring           | 13       | 69237       | Chuck Jaw Set                          |
| 6        | 10968       | Rear Spindle Bearing     | 14       | 69262       | Chuck Cap                              |
| 7        | 10963       | Front Spindle Bearing    | 15       | 69267       | Chip Plate                             |
| 8        | 69272       | Drive Shaft              | 16       | 46035       | Screw 5/16" - 18 x 1 3/4" Soc. Hd. (3) |

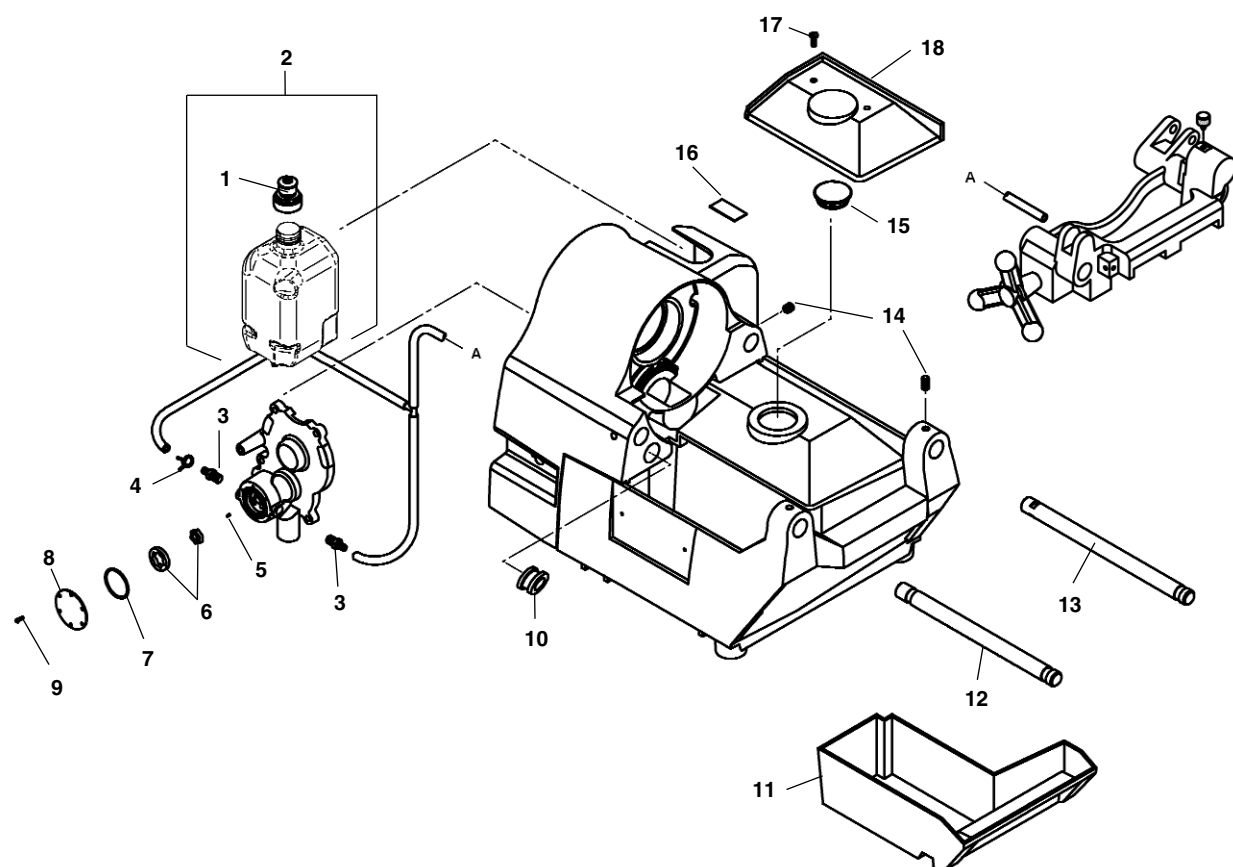
## Drive Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description                           |
|----------|-------------|-------------------------------------|----------|-------------|---------------------------------------|
| 1        | 40910       | Screw 1/4" - 20 x 1/2" Soc. Hd. (4) | 14       | 85920       | Pop Rivet 3/32" (6)                   |
| 2        | 69362       | Gear Case Cover                     | 15       | 69347       | Warning Plate                         |
| 3        | 69332       | Gear Case Gasket                    | 16       | 69227       | Spindle Housing w/Spindle Bearings    |
| 4        | 96880       | Seal                                | 17       | 69222       | Motor 115V                            |
| 5        | 69207       | 1st Intermediate Gear Assembly      |          | 72362       | Motor 230V                            |
| 6        | 59147       | Ball Bearing (2)                    |          | 72402       | Motor 100V                            |
| 7        | 35365       | Wave Spring                         | 18       | 59342       | Insulator Sleeve                      |
| 8        | 68037       | Wave Spring                         | 19       | 69367       | Brush Cover Plastic Plug              |
| 9        | 44760       | Ball Bearing (3)                    | 20       | 40657       | Screw 1/4" - 20 x 1 1/2" Soc. Hd. (4) |
| 10       | 69212       | 2nd Intermediate Gear Assembly      | 21       | 69252       | Motor Cover                           |
| 11       | 69277       | Ball Bearing                        | 22       | 79965       | Screw #10 - 32 x 1/2" Pan Head (4)    |
| 12       | 69217       | Main Drive Gear Assembly            | 23       | 69387       | Name Plate                            |
| 13       | 69402       | Screw #10 - 32 x 4" Pan Head (2)    | 24       | 69242       | Base                                  |

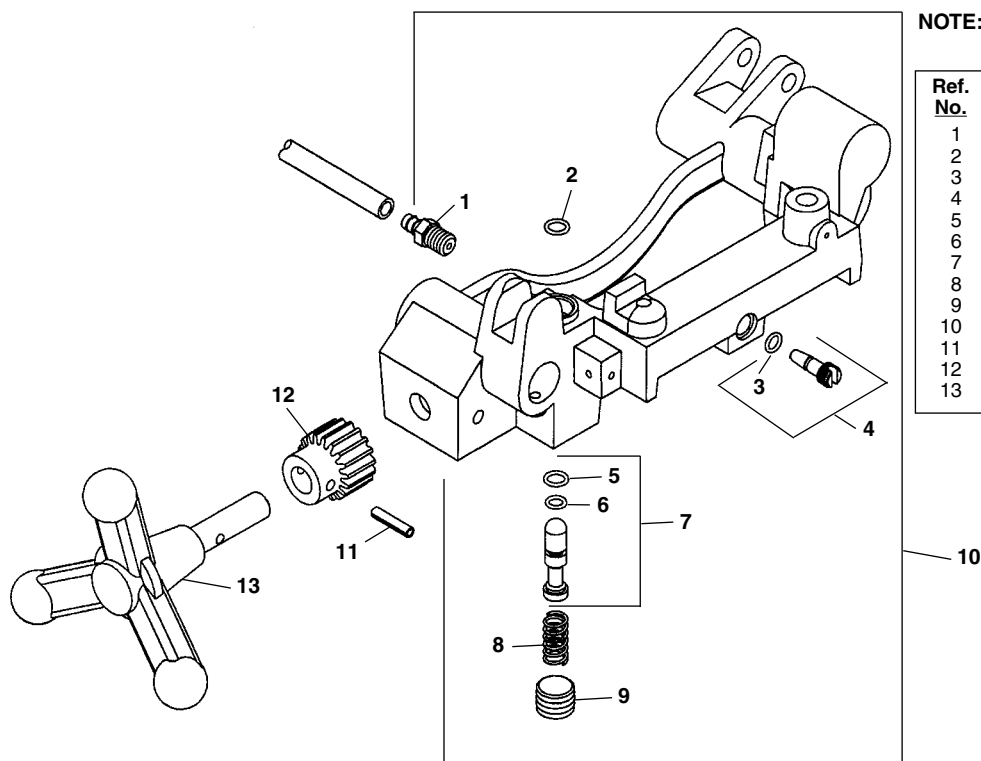
## Coolant System Components



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                           | Ref. No. | Catalog No. | Description                     |
|----------|-------------|---------------------------------------|----------|-------------|---------------------------------|
| 1        | 69452       | Reservoir Cap                         | 11       | 69257       | Chip Tray                       |
| 2        | 94707       | Coolant Reservoir Assy. w/Hoses       | 12       | 69322       | Front Rail                      |
| 3        | 69157       | Hose Fitting 1/8" NPT x 1/4" Barb (2) | 13       | 69247       | Rear Rail                       |
| 4        | 72457       | Hose Clamp                            | 14       | 69397       | Set Screw 1/4" - 20 x 5/16" (4) |
| 5        | 96885       | Gerotor Pin                           | 15       | 69367       | Brush Cover Plastic Plug        |
| 6        | 96870       | Gerotor Set                           | 16       | 72387       | Vent Cap Decal                  |
| 7        | 96875       | O-Ring                                |          | 72392       | Vent Cap Decal (Europe, Japan)  |
| 8        | 96840       | Cover Plate                           | 17       | 79965       | Screw #10 - 32 x 1/2" (2)       |
| 9        | 46130       | Screw #4-28 Self Forming (6)          | 18       | 72027       | Drip Cover                      |
| 10       | 47080       | Grommet                               |          |             |                                 |

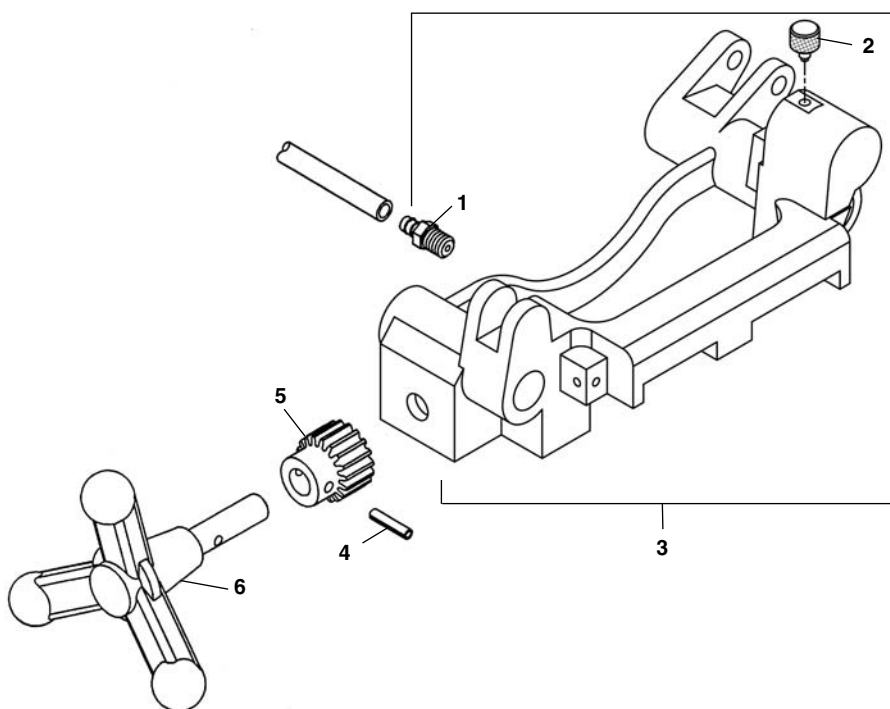
## Carriage Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                         |
|----------|-------------|-------------------------------------|
| 1        | 69157       | Hose Fitting 1/8" NPT x 1/4" v Barb |
| 2        | 36767       | O-Ring                              |
| 3        | 69182       | O-Ring                              |
| 4        | 69177       | Needle Pin                          |
| 5        | 69167       | O-Ring                              |
| 6        | 69162       | O-Ring                              |
| 7        | 69152       | Poppet Valve                        |
| 8        | 69172       | Spring                              |
| 9        | 69187       | Pipe Plug 3/8" NPT                  |
| 10       | 69142       | Carriage Assembly                   |
| 11       | 34342       | Roll Pin 3/16" x 15/16"             |
| 12       | 59092       | Pinion                              |
| 13       | 69147       | Hand Wheel                          |

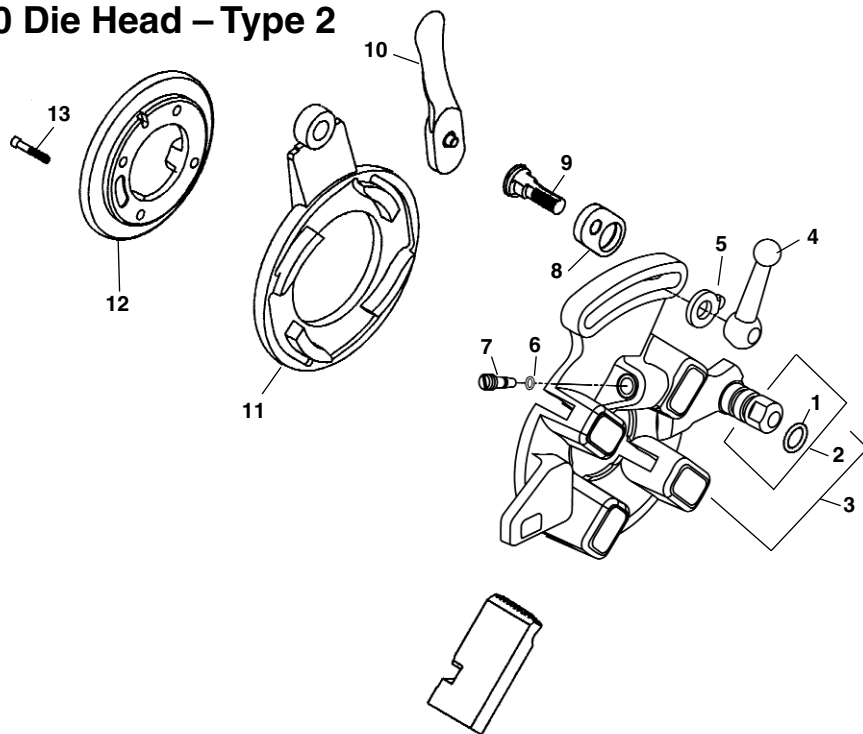
## Carriage Components – Type 2



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                       |
|----------|-------------|-----------------------------------|
| 1        | 69157       | Hose Fitting 1/8" NPT x 1/4" Barb |
| 2        | 30763       | Retainer, Die Head                |
| 3        | 69142       | Carriage Assembly                 |
| 4        | 34342       | Roll Pin 3/16" x 15/16"           |
| 5        | 59092       | Pinion                            |
| 6        | 69147       | Hand Wheel                        |

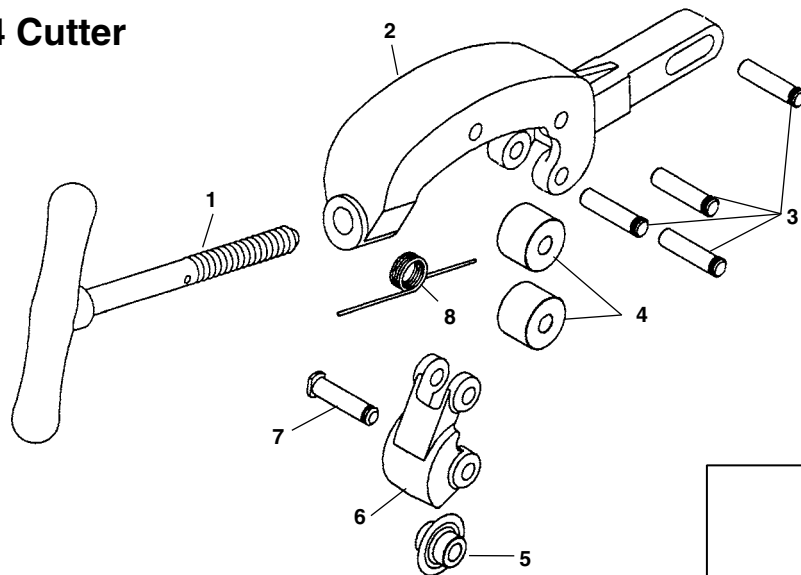
## 610 Die Head – Type 2



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                            |
|----------|-------------|----------------------------------------|
| —        | 67817       | 610 Die Head                           |
| 1        | 69392       | O-Ring                                 |
| 2        | 69292       | Post                                   |
| 3        | 69302       | Die Head Body w/Post & O-Ring          |
| 4        | 39970       | Clamp Lever                            |
| 5        | 26957       | Washer                                 |
| 6        | 69182       | O-Ring                                 |
| 7        | 69177       | Needle Pin                             |
| 8        | 39950       | Throwout Link                          |
| 9        | 39860       | Lock Screw                             |
| 10       | 46555       | Throwout Lever                         |
| 11       | 69442       | Cam Plate                              |
| 12       | 69352       | Retaining Ring                         |
| 13       | 32205       | Screw 1/4" - 20 x 3/8" Socket Head (4) |

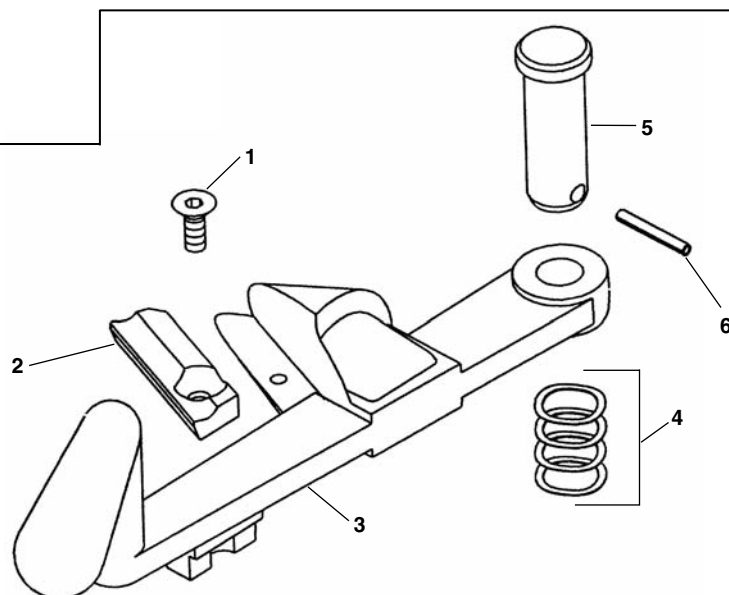
## 354 Cutter



| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 68877       | 354 Cutter Assembly |
| 1        | 69007       | Feedscrew & Handle  |
| 2        | 69017       | Cutter Frame        |
| 3        | 46662       | Roller Pin (4)      |
| 4        | 34775       | Roll (2)            |
| 5        | 33105       | F3 Cutter Wheel     |
| 6        | 69012       | Wheel Housing       |
| 7        | 34780       | Pin & Clip          |
| 8        | 58617       | Torsion Spring      |

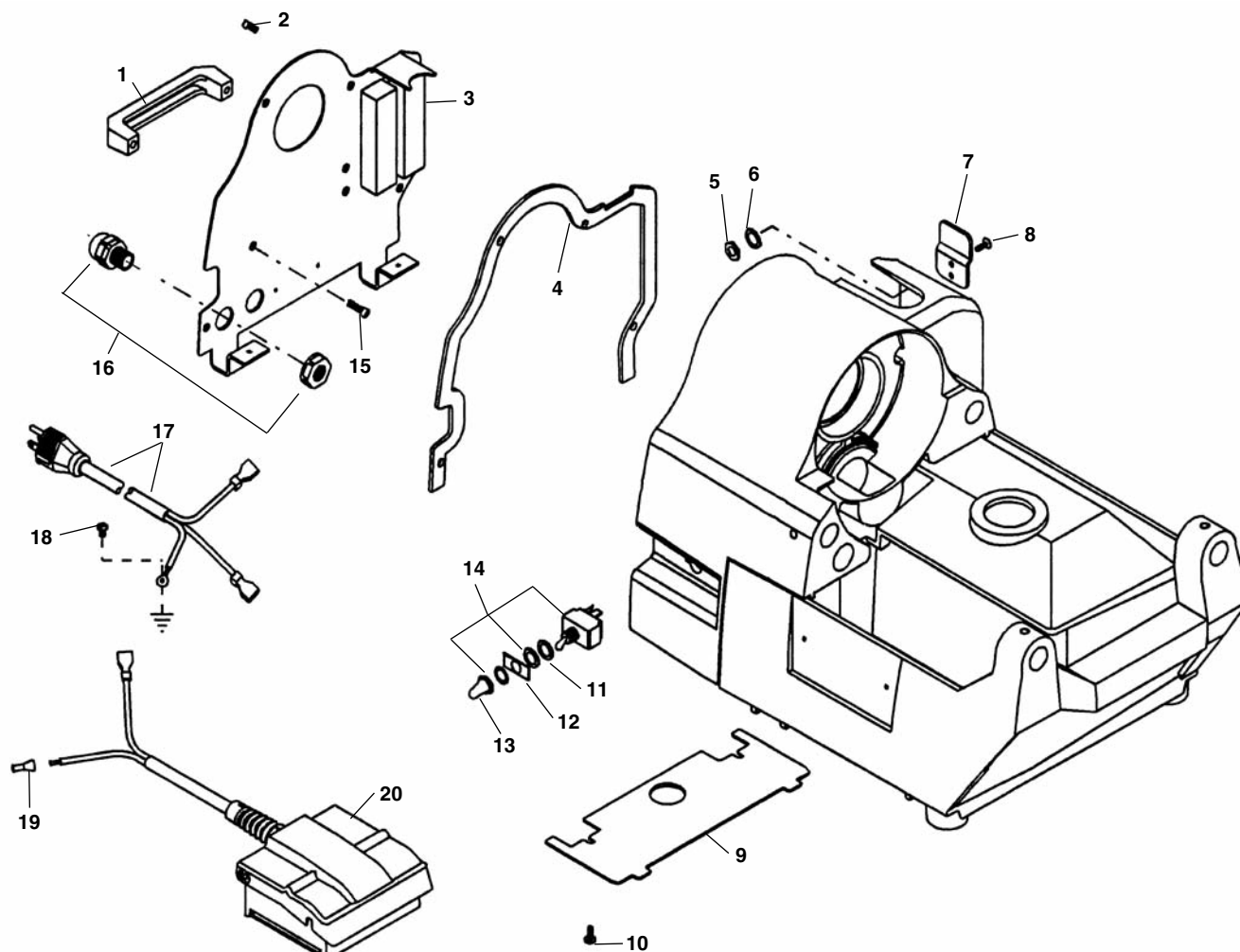
## 334 Reamer

| Ref. No. | Catalog No. | Description                   |
|----------|-------------|-------------------------------|
| —        | 68872       | 334 Reamer Assembly           |
| 1        | 68997       | Screw #8-32 x 7/16" Flat Head |
| 2        | 68977       | Reamer Blade                  |
| 3        | 68992       | Reamer Arm w/Cone             |
| 4        | 39885       | Wave Washer                   |
| 5        | 68987       | Clevis Pin                    |
| 6        | 69002       | 3/32" x 3/4" Roll Pin         |





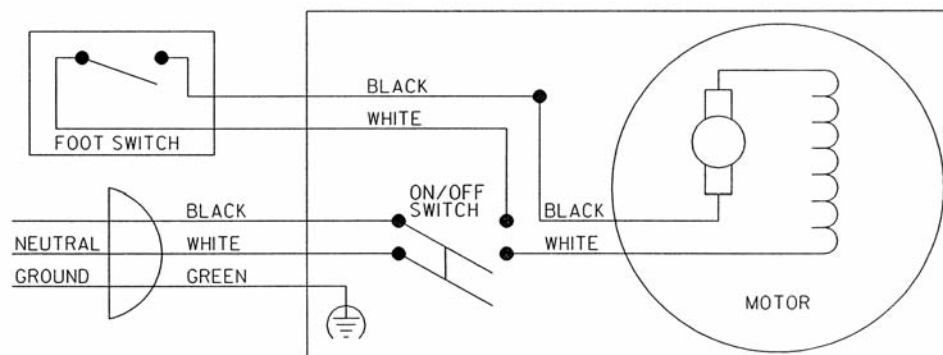
## Electrical Components - 120V 60Hz



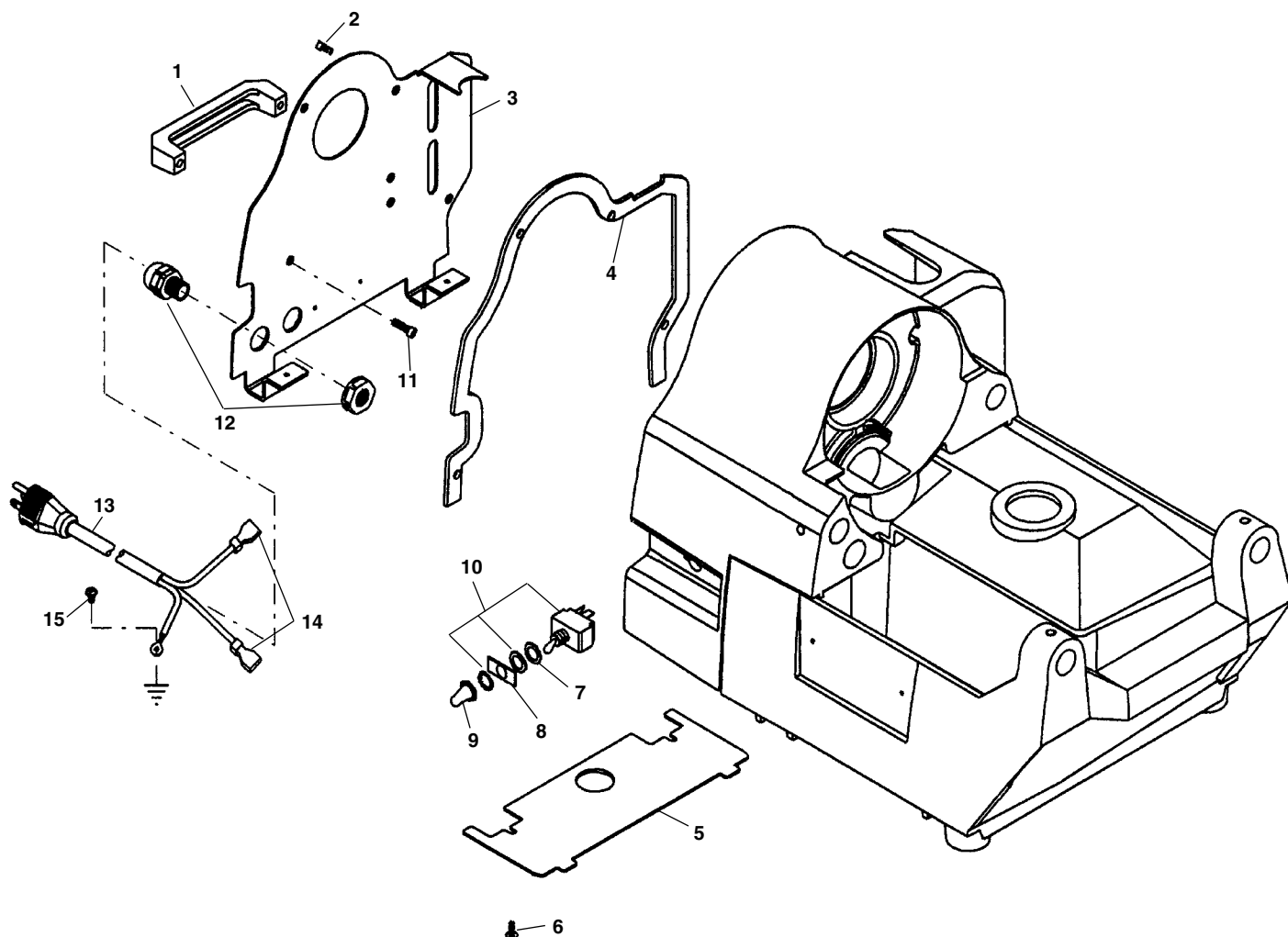
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                            | Ref. No. | Catalog No. | Description                            |
|----------|-------------|----------------------------------------|----------|-------------|----------------------------------------|
| 1        | 69342       | Handle                                 | 11       | 23512       | Rubber Washer                          |
| 2        | 69192       | Screw 1/4" - 20 x 1/2" Button Head (5) | 12       | 69457       | Switch Plate                           |
| 3        | 69357       | Rear Cover                             | 13       | 23507       | Switch Boot                            |
| 4        | 69372       | Rear Cover Gasket                      | 14       | 69382       | Switch                                 |
| 5        | 34722       | Lock Nut #10-32 (2)                    | 15       | 32145       | Screw 1/4" - 20 x 1 1/2" Soc. Head (2) |
| 6        | 58542       | Lock Washer #10 (2)                    | 16       | 69107       | Strain Relief (2)                      |
| 7        | 69377       | Foot Switch Hook                       | 17       | 69327       | Power Cord 115V                        |
| 8        | 35217       | Screw #10-32 x 1/2" Button Head (2)    | 18       | 45420       | Ground Screw                           |
| 9        | 69287       | Bottom Cover                           | 19       | 44635       | Wire Nut                               |
| 10       | 45420       | Screw #10-24 x 3/8" Pan Head (2)       | 20       | 69087       | B-292 Foot Switch Assembly             |

## 120V 60 Hz



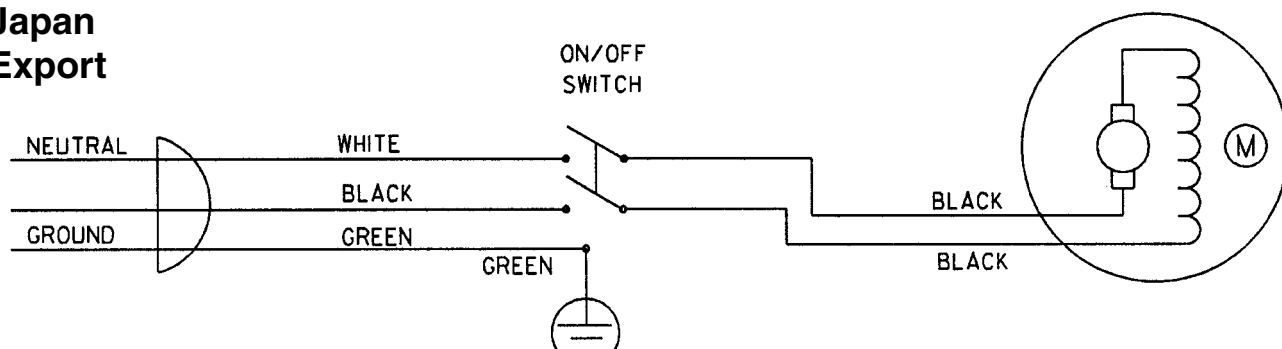
## Electrical Components - 100V 50/60 Hz Japan 220V 50 Hz Export



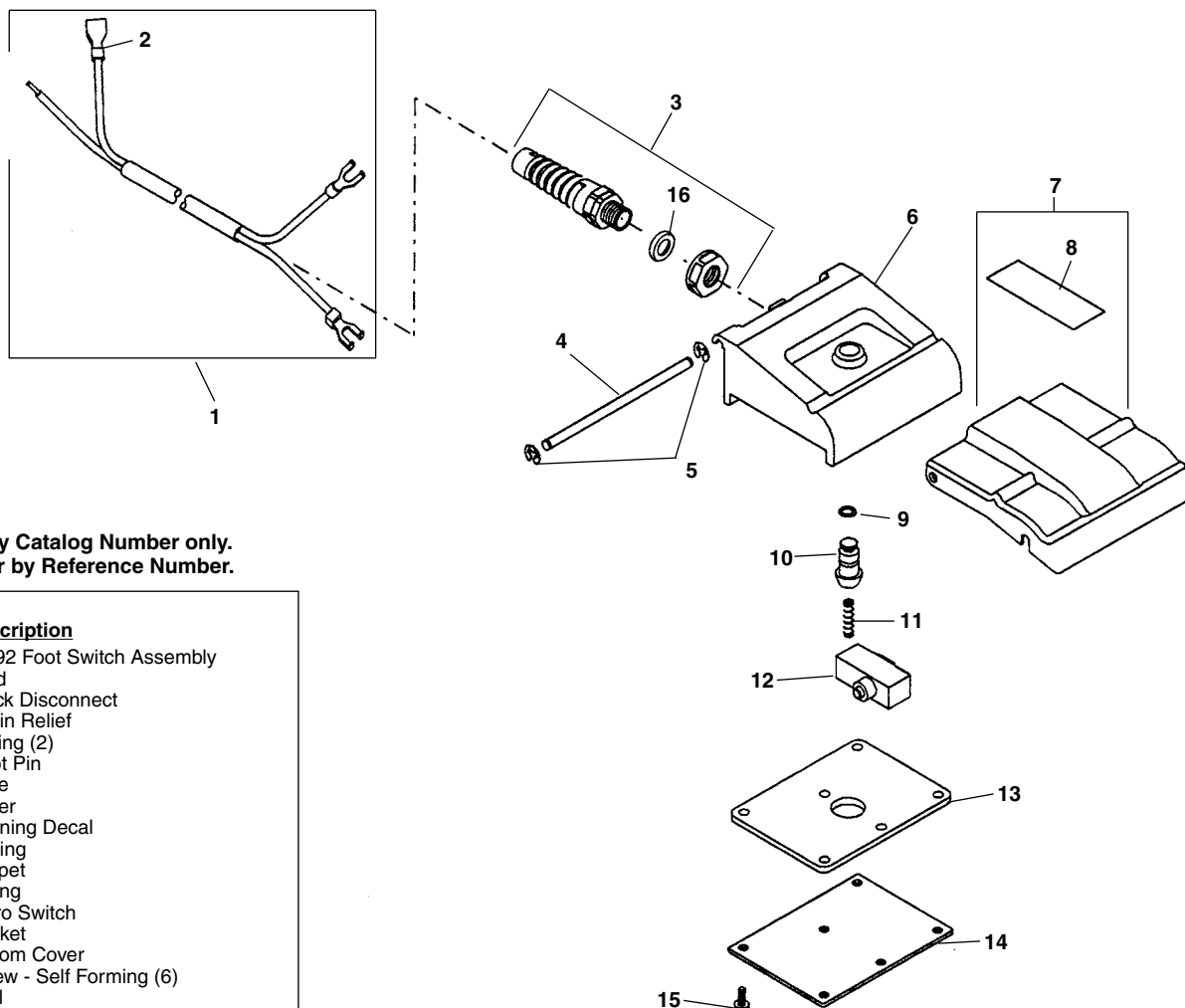
**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                            | Ref. No. | Catalog No. | Description                            |
|----------|-------------|----------------------------------------|----------|-------------|----------------------------------------|
| 1        | 69342       | Handle                                 | 9        | 23507       | Switch Boot                            |
| 2        | 69192       | Screw 1/4" - 20 x 1/2" Button Head (5) | 10       | 69382       | Switch                                 |
| 3        | 69357       | Rear Cover                             | 11       | 32145       | Screw 1/4" - 20 x 1 1/2" Soc. Head (2) |
| 4        | 69372       | Rear Cover Gasket                      | 12       | 69107       | Strain Relief (2)                      |
| 5        | 69287       | Bottom Cover                           | 13       | 69327       | Power Cord 115V                        |
| 6        | 79965       | Screw #10-32 x 1/2" Pan Head (2)       | 14       | 89190       | Quick Disconnect (2)                   |
| 7        | 23512       | Rubber Washer                          | 15       | 45420       | Ground Screw                           |
| 8        | 69457       | Switch Plate                           |          |             |                                        |

## 100V Japan 230V Export



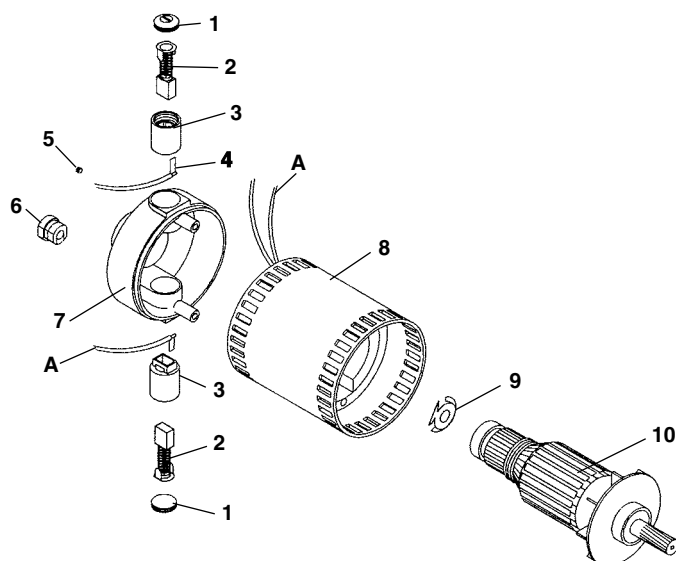
## B-292 Foot Switch



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

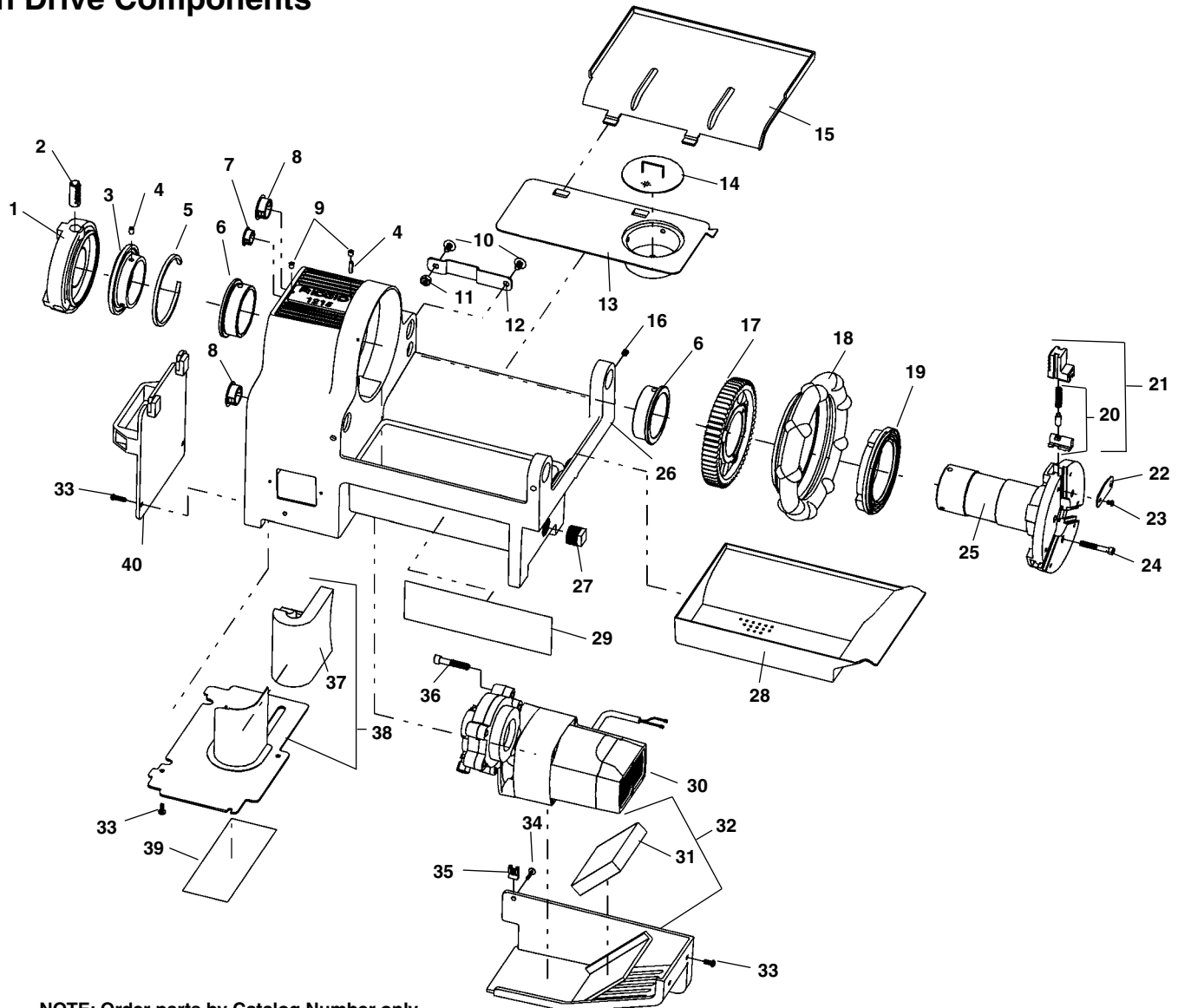
| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| —        | 69087       | B-292 Foot Switch Assembly |
| 1        | 69112       | Cord                       |
| 2        | 89190       | Quick Disconnect           |
| 3        | 90402       | Strain Relief              |
| 4        | 78780       | E-Ring (2)                 |
| 5        | 69117       | Pivot Pin                  |
| 6        | 69092       | Base                       |
| 7        | 69097       | Cover                      |
| 8        | 72432       | Warning Decal              |
| 9        | 36767       | O-Ring                     |
| 10       | 69102       | Poppet                     |
| 11       | 69127       | Spring                     |
| 12       | 36762       | Micro Switch               |
| 13       | 69137       | Gasket                     |
| 14       | 69122       | Bottom Cover               |
| 15       | 69132       | Screw - Self Forming (6)   |
| 16       | 90397       | Seal                       |

## Motor



| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 69222       | Motor 115V          |
| —        | 72362       | Motor 230V          |
| —        | 72402       | Motor 100V          |
| 1        | 60467       | Brush Cap (2)       |
| 2        | 60472       | Brush (2)           |
| 3        | 60482       | Brush Holder (2)    |
| 4        | 69462       | Brush Lead - Black  |
| 5        | 60492       | Set Screw           |
| 6        | 69467       | Cord Retainer       |
| 7        | 60522       | End Bell            |
| 8        | 69467       | Brush Lead - Red    |
| 9        | 69472       | Field Assembly 115V |
|          | 72447       | Field Assembly 230V |
|          | 72452       | Field Assembly 100V |
| 10       | 60512       | Load Spring         |
| 11       | 69477       | Armature 115V       |
|          | 72437       | Armature 230V       |
|          | 72442       | Armature 100V       |

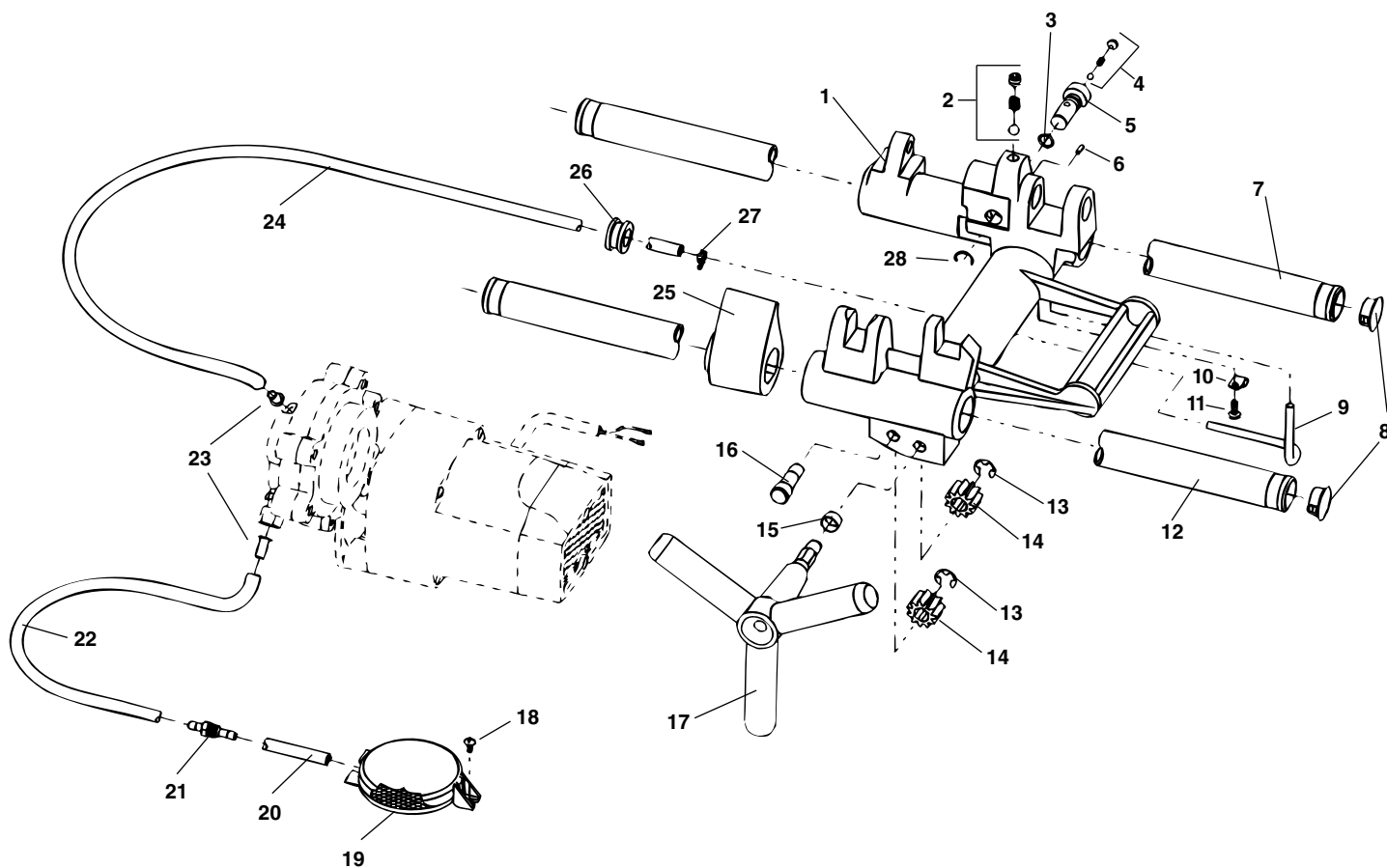
## Main Drive Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

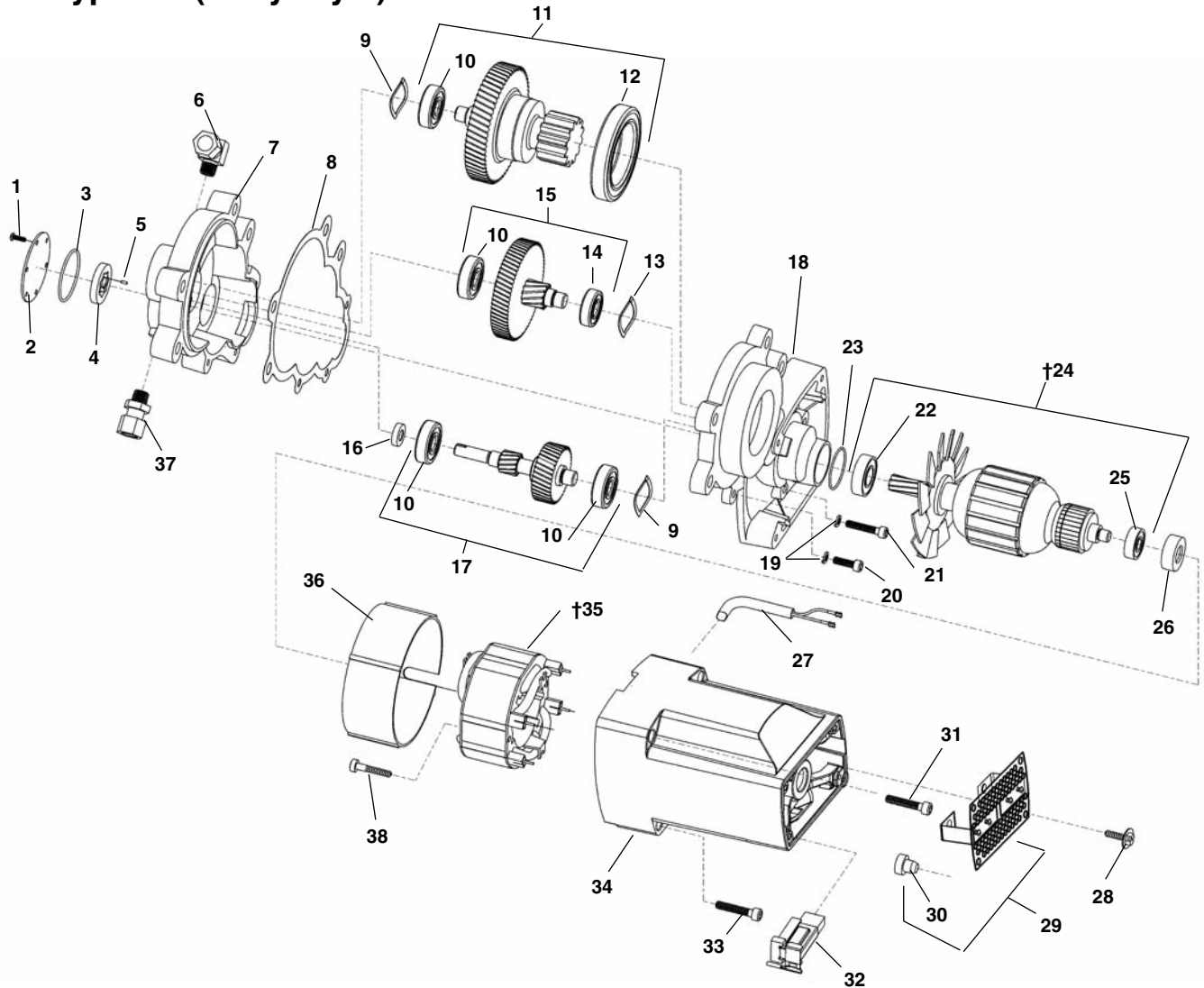
| Ref. No. | Catalog No. | Description                                                           | Ref. No. | Catalog No. | Description                              |
|----------|-------------|-----------------------------------------------------------------------|----------|-------------|------------------------------------------|
| 1        | 58232       | Centering Head                                                        | 21       | 58312       | Chuck Jaw Set                            |
| 2        | 58237       | Centering Jaw Set                                                     | 22       | 58317       | Chip Guard                               |
| 3        | 58242       | Centering Scroll                                                      | 23       | 58322       | Screw #6-32 Button HD C.S. (6)           |
| 4        | 54007       | Roll Pin (4)                                                          | 24       | 46775       | Screw 1/4" - 20 S.H.C.S. (6)             |
| 5        | 58247       | Internal Spiral Ring                                                  | 25       | 58327       | Chuck Cap and Spindle Assembly           |
| 6        | 58252       | Spindle Bearing (2)                                                   | 26       | 58332       | Base Assembly (includes Ref. #6, 9 & 10) |
| 7        | 58257       | Plug 13/16"                                                           | 27       | 54302       | Pipe Plug                                |
| 8        | 58262       | Plug 1 3/16" (2)                                                      | 28       | 58337       | Chip Tray                                |
| 9        | 54022       | Ball Valve Oilier (2)                                                 | 29       | 58342       | Warning Plate                            |
| 10       | 54137       | Screw 5/16" - 18                                                      | 30       | 58352       | 4194 Motor Assembly - 115V               |
| 11       | 96730       | Hex Nut 5/16" - 18                                                    | 31       | 58362       | Motor Cover Foam                         |
| 12       | 62767       | Foot Switch Bracket                                                   | 32       | 58367       | Motor Cover                              |
| 13       | 58272       | Oil Pan Liner                                                         | 33       | 79965       | Pan Head Screw #10 - 32 x 1/2" (6)       |
| 14       | 58277       | Baffle Screen Assembly                                                | 34       | 43367       | Self Tapping Screw                       |
| 15       | 58282       | Drip Tray                                                             | 35       | 43362       | J-Clip                                   |
| 16       | 45420       | Set Screw 5/16" - 18 x 1/4" (3)                                       | 36       | 46035       | Screw 5/16" x 1 3/4" S.H.C.S. (4)        |
| 17       | 58287       | Drive Gear                                                            | 37       | 58372       | Foam Baffle                              |
| 18       | 58292       | Hand Wheel                                                            | 38       | 58377       | Bottom Cover                             |
| 19       | 58297       | Chuck Scroll                                                          | 39       | 58382       | Wiring Diagram                           |
| 20       | 58307       | Jaw Insert Set                                                        |          | 58387       | Wiring Diagram (Europe)                  |
|          | 58302       | Jaw Insert Set (Optional for Stainless Steel and Plastic Coated Pipe) | 40       | 58392       | Rear Cover                               |

## Carriage and Oil System



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                 | Ref. No. | Catalog No. | Description              |
|----------|-------------|-----------------------------|----------|-------------|--------------------------|
| 1        | 58407       | Carriage (Includes Ref. #2) | 16       | 58457       | Idler Shaft              |
| 2        | 46810       | Die Head Detente            | 17       | 58427       | Plastic Plug (Not Shown) |
| 3        | 54102       | O-Ring                      | 18       | 58462       | Handwheel                |
| 4        | 35307       | Oil Pressure Relief         | 19       | 45420       | Screw                    |
| 5        | 54097       | Bypass Valve                | 20       | 58467       | Filter Screen Assembly   |
| 6        | 58417       | Roll Pin                    | 21       | 61897       | Oil Tube                 |
| 7        | 58422       | Rear Rail                   | 22       | 54142       | Bulkhead Fitting         |
| 8        | 58257       | Plug (2)                    | 23       | 58477       | Intake Oil Line - 11"    |
| 9        | 58432       | Oil Line                    | 24       | 35117       | Tube Insert              |
| 10       | 35062       | Clamp                       | 25       | 58482       | Output Oil Line - 25"    |
| 11       | 79965       | Screw 10-32 x 1/2"          | 26       | 58487       | Carriage Stop            |
| 12       | 58437       | Front Rail                  | 27       | 47080       | Grommet                  |
| 13       | 58442       | Retaining Ring              | 28       | 35142       | Hose Clamp               |
| 14       | 58447       | Carriage Pinion Gear        |          | 54107       | Retaining Ring           |
| 15       | 58452       | Bushing                     |          |             |                          |

**Motor Type 2 – (Early Style)**


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

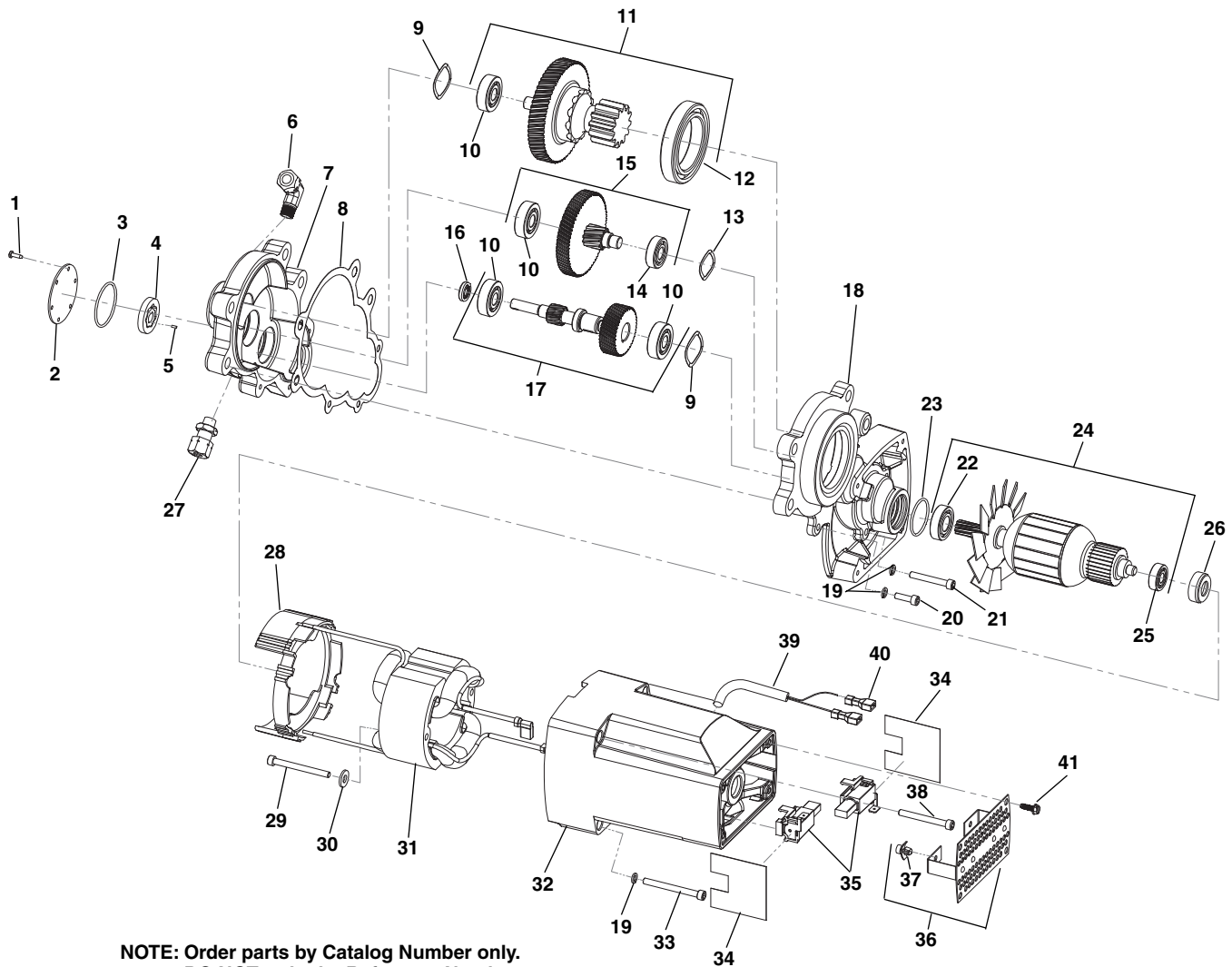
| Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description                    |
|----------|-------------|----------------------------|----------|-------------|--------------------------------|
| —        | 58352       | 4194 Motor Assembly - 115V | 20       | 58547       | Screw 10-32 x 3/4" S.H.C.S.    |
| 1        | 96890       | Screw 4-40 x 3/8" (6)      | 21       | 26642       | Screw 10-32 x 1 3/4" S.H.C.S.  |
| 2        | 96840       | Geroter Cover              | 22       | 60227       | O-Ring                         |
| 3        | 96875       | O-Ring                     | 23       | 45912       | Bearing                        |
| 4        | 96870       | Geroter Set                | †24      | 45907       | Armature Assembly - 115V       |
| 5        | 96885       | Geroter Pin                | 25       | 43017       | Bearing                        |
| 6        | 52517       | 90 degree fitting          | 26       | 42777       | Rubber Bearing Mount           |
| 7        | 58492       | Rear Gear Case             | 27       | 58562       | Wiring Harness                 |
| 8        | 58497       | Gasket                     | 28       | 10908       | Screw Self Tapping (4)         |
| 9        | 58502       | Wave Spring (2)            | 29       | 10913       | End Cover                      |
| 10       | 44760       | Bearing (4)                | 30       | 10918       | Bumper                         |
| 11       | 58507       | Drive Gear Assembly        | 31       | 10933       | Screw #10-32 x 1 5/8" S.H.C.S. |
| 12       | 58512       | Bearing                    | 32       | 34078       | Brush Holder Assembly (2) 115V |
| 13       | 35365       | Wave Spring                | 33       | 10938       | Screw #10-32 x 2" S.H.C.S. (5) |
| 14       | 58522       | Bearing                    | 34       | 22048       | Motor Housing                  |
| 15       | 58527       | 2nd Gear Assembly          | †35      | 45897       | Field Assembly 115V            |
| 16       | 96880       | Oil Seal                   | 36       | 35328       | Fan Shroud                     |
| 17       | 58532       | 1st Gear Assembly          | 37       | 58582       | Straight Fitting               |
| 18       | 58537       | Front Gear Case            | 38       | 10923       | Screw #10-24 x 2" S.H.C.S. (2) |
| 19       | 58542       | #10 Lock Washer (3)        |          |             |                                |

† Service Note: When replacing early style 100V, 115V or 230V armature# or field# you must replace with both new style armature#, field# and brushes#.



## Motor Type 2 – Motors built after Serial Number EAH XXXX 1109

4194



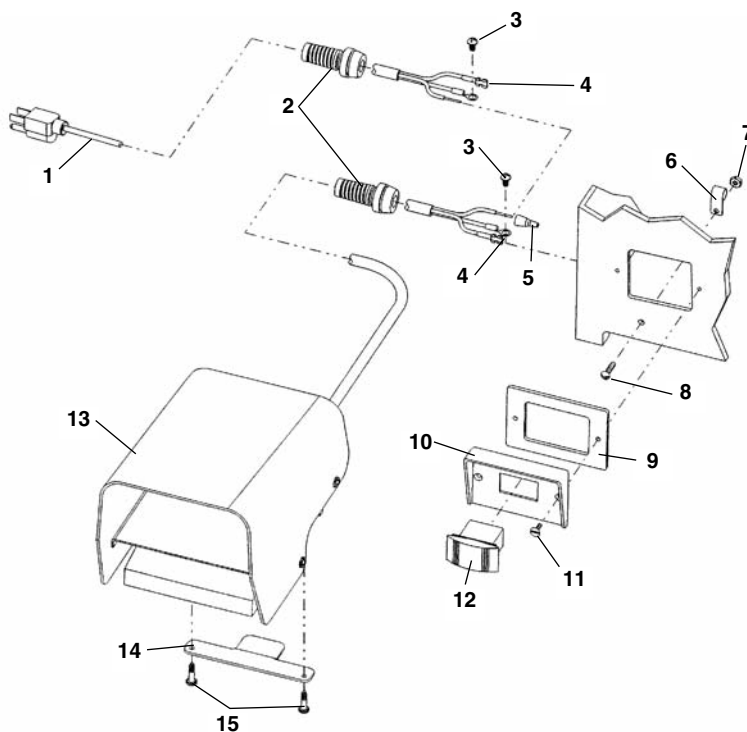
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description                       |
|----------|-------------|-------------------------------|----------|-------------|-----------------------------------|
| —        | 58352       | 4194 Motor Assembly - 115V    | 22       | 45912       | Bearing                           |
| —        | 58347       | Motor Assembly EU -230V       | 23       | 60227       | O-Ring                            |
| 1        | 96890       | Screw 4-40 x 3/8" (6)         | 24       | 40943       | Armature Assembly - 115V          |
| 2        | 96840       | Gerotor Cover                 |          | 40948       | Armature Assembly - 230V          |
| 3        | 96875       | O-Ring                        | 25       | 43017       | Bearing                           |
| 4        | 96870       | Gerotor Set                   | 26       | 42777       | Rubber Bearing Mount              |
| 5        | 96885       | Gerotor Pin                   | 27       | 58582       | Straight Fitting                  |
| 6        | 52517       | 90 Degree Fitting             | 28       | 35328       | Fan Shroud                        |
| 7        | 58492       | Rear Gear Case                | 29       | 10923       | Screw #10-24 x 2" S.H.C.S (2)     |
| 8        | 58497       | Gasket                        | 30       | 41592       | #12 Flat Washer                   |
| 9        | 58502       | Wave Spring (2)               | 31       | 38848       | Field Assembly 115V               |
| 10       | 44760       | Bearing (4)                   |          | 38853       | Field Assembly 230V               |
| 11       | 58507       | Drive Gear Assembly           | 32       | 22048       | Motor Housing                     |
| 12       | 58512       | Bearing                       | 33       | 10938       | Screw #10-32 x 2" S.H.C.S (5)     |
| 13       | 35365       | Wave Spring                   | 34       | 39003       | Shield (2)                        |
| 14       | 58522       | Bearing                       | 35       | 34078       | Brush Assembly 115V               |
| 15       | 58527       | 2nd Gear Assembly             |          | 34083       | Brush Assembly 230V               |
| 16       | 96880       | Oil Seal                      | 36       | 10913       | End Cover                         |
| 17       | 58532       | 1st Gear Assembly             | 37       | 10918       | Bumper (2)                        |
| 18       | 58537       | Front Gear Case               | 38       | 10933       | Screw #10-32 x 1 3/4" S.H.C.S (5) |
| 19       | 58542       | #10 Lock washer (3)           | 39       | 58562       | Wiring Harness                    |
| 20       | 58547       | Screw 10-32 x 3/4" S.H.C.S.   | 40       | 59007       | Female Disconnect (2)             |
| 21       | 26642       | Screw 10-32 x 1 3/4" S.H.C.S. | 41       | 10908       | Self Tapping Screw (4)            |

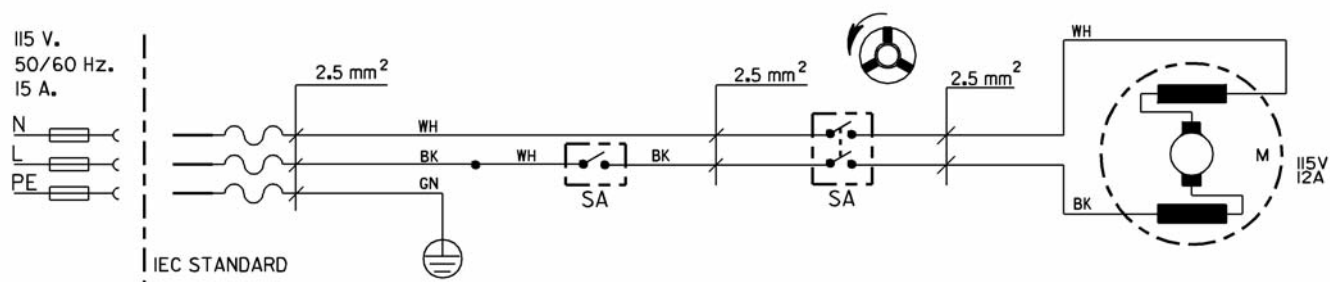
## Electrical Components – 115V/60Hz

**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                    |
|----------|-------------|--------------------------------|
| 1        | 46740       | Power Cord                     |
| 2        | 29788       | Strain Relief (2)              |
| 3        | 45420       | Ground Screw (2)               |
| 4        | 58587       | Quick Disconnect (2)           |
| 5        | 44635       | Wire Nut                       |
| 6        | 54222       | Cable Clamp (2)                |
| 7        | 44695       | Hex Nut #10-24                 |
| 8        | 92455       | Screw #10-24 x 3/4" Round Head |
| 9        | 54172       | Switch Gasket                  |
| 10       | 74412       | Switch Plate                   |
| 11       | 54162       | Screw 6-32 x 2" Flat Head (2)  |
| 12       | 58597       | Switch                         |
| 13       | 36642       | B-294 Foot Switch              |
| 14       | 58602       | Foot Switch Hanger Bracket     |
| 15       | 54357       | Screw                          |



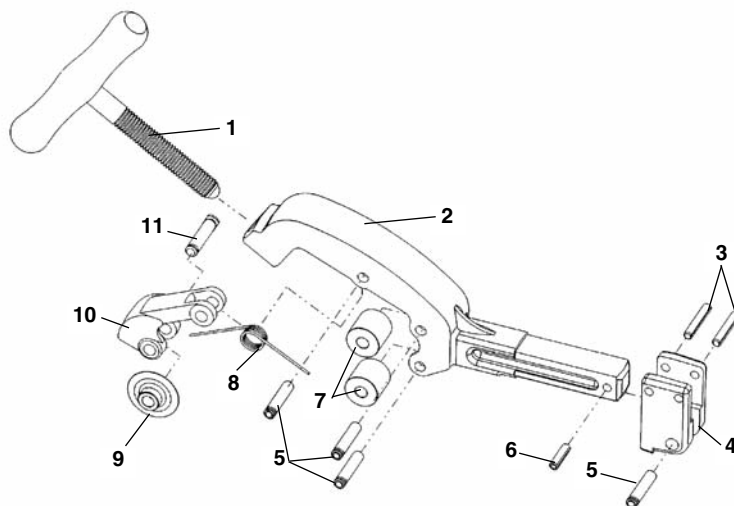
## Wiring Diagram – 115V



## No. 732 Pipe Cutter

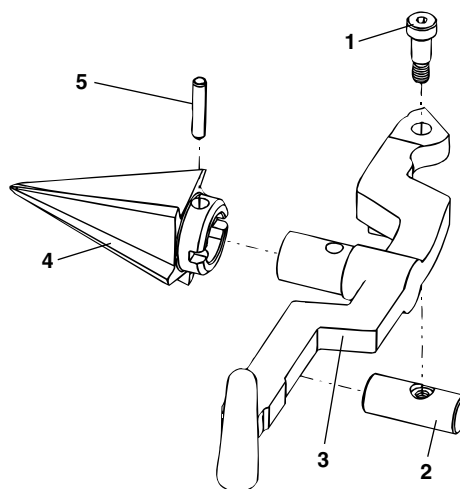
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                     |
|----------|-------------|-------------------------------------------------|
| —        | 58657       | 732 Cutter Assembly                             |
| 1        | 58607       | Handle Assembly                                 |
| 2        | 58612       | Cutter Frame                                    |
| 3        | 54300       | Roll Pin $\frac{1}{4}$ " x $1\frac{1}{2}$ " (2) |
| 4        | 58627       | Support Arm Bracket                             |
| 5        | 46662       | Roller Pin (4)                                  |
| 6        | 58090       | Roll Pin $\frac{1}{4}$ " x 1"                   |
| 7        | 46960       | Roll (2)                                        |
| 8        | 58617       | Torsion Spring                                  |
| 9        | 44185       | Cutter Wheel                                    |
| 10       | 58622       | Wheel Housing                                   |
| 11       | 34780       | Wheel Pin                                       |



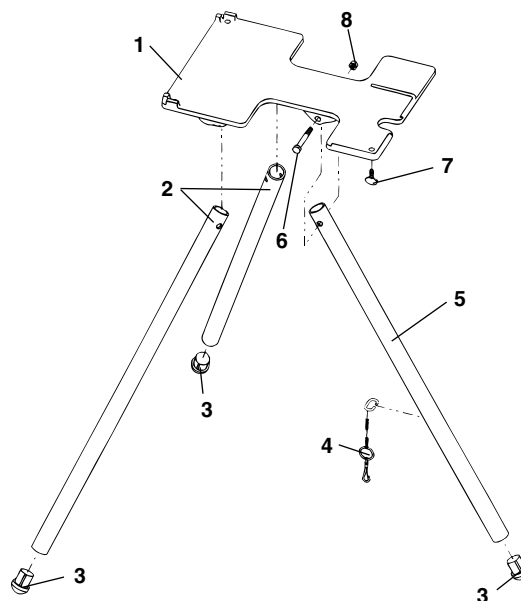
## No. 344 Reamer

| Ref. No. | Catalog No. | Description               |
|----------|-------------|---------------------------|
| —        | 34612       | 344 Reamer Complete       |
| 1        | 36262       | Shoulder Screw            |
| 2        | 36267       | Pivot Pin                 |
| 3        | 36272       | Reamer Arm                |
| 4        | 36277       | Reamer Cone (R.H.)        |
|          | 46660       | Reamer Cone (L.H. & R.H.) |
| 5        | 35355       | Split Roll Pin            |

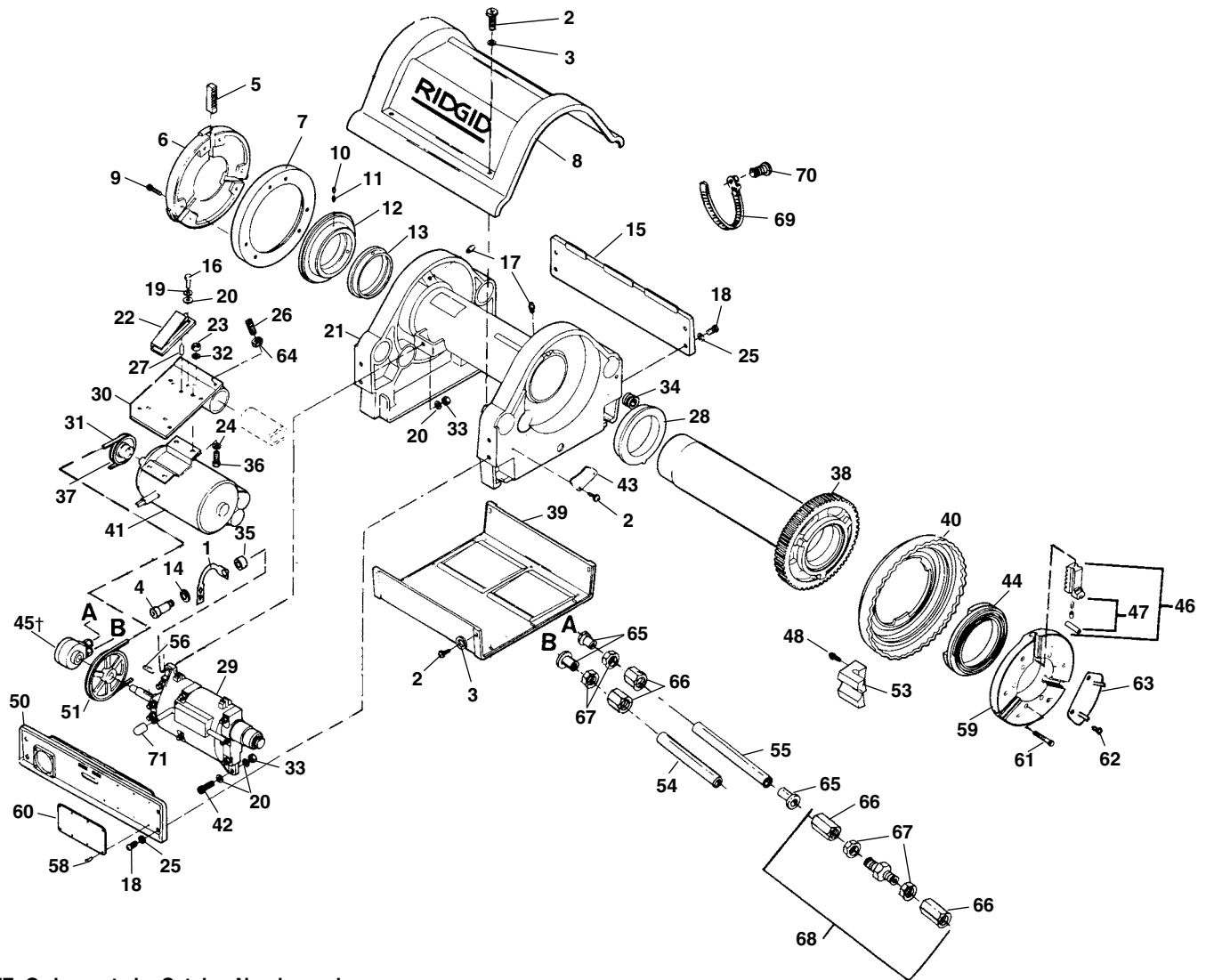


## No. 1203 Stand

| Ref. No. | Catalog No. | Description                                       |
|----------|-------------|---------------------------------------------------|
| —        | 61187       | 1203 Stand                                        |
| 1        | 61182       | Base                                              |
| 2        | 58637       | Front Leg (2)                                     |
| 3        | 61470       | Leg Rest (3)                                      |
| 4        | 40945       | Chain Assembly                                    |
| 5        | 58412       | Rear Leg                                          |
| 6        | 80045       | Screw $\frac{3}{8}$ " - 16 x $3\frac{1}{4}$ " (3) |
| 7        | 46220       | Thumb Screw (3)                                   |
| 8        | 79985       | Lock Nut $\frac{3}{8}$ " - 16 (3)                 |



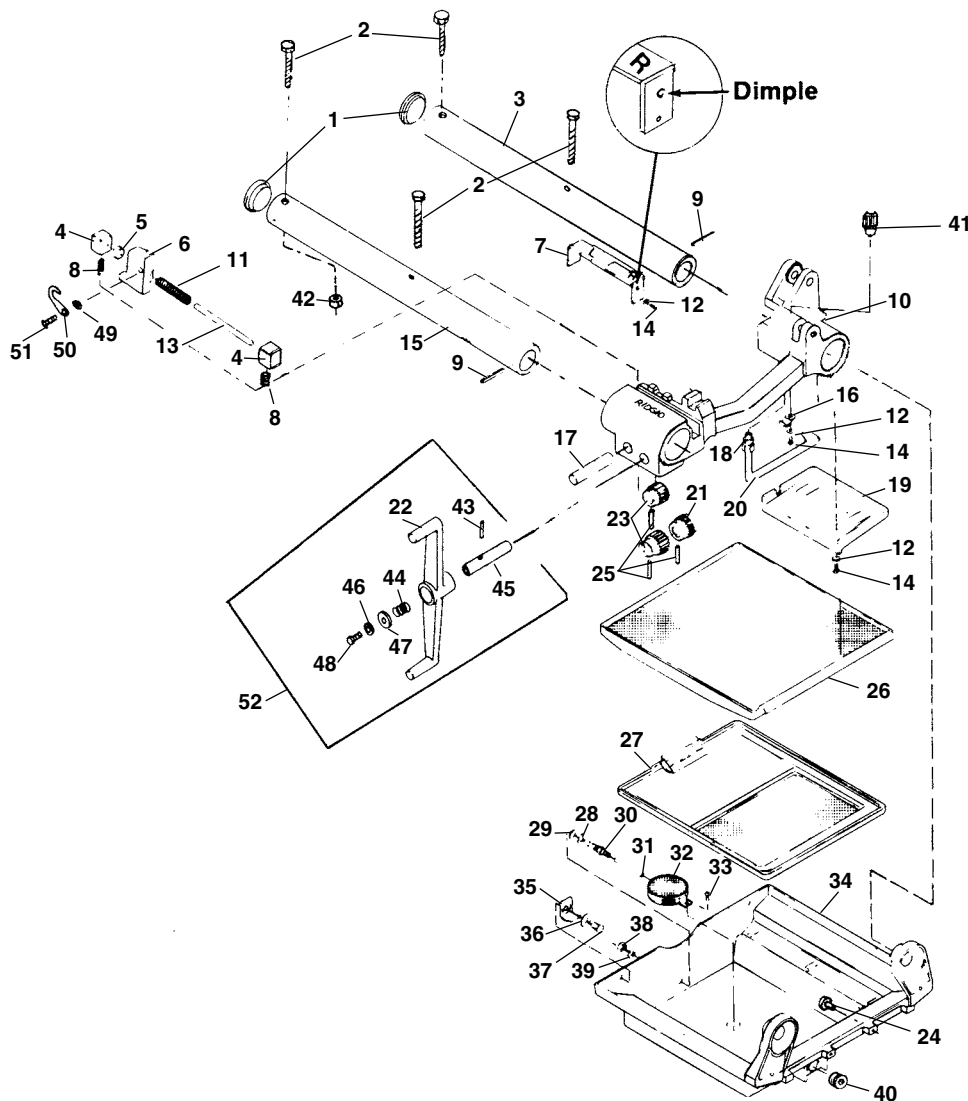
## Main Drive Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                           | Ref. No. | Catalog No. | Description                                   | Ref. No. | Catalog No.                        | Description                                        |
|----------|-------------|-------------------------------------------------------|----------|-------------|-----------------------------------------------|----------|------------------------------------|----------------------------------------------------|
| 1        | 33622       | Pump Bracket                                          | 25       | 40930       | Lock Washer $\frac{3}{8}$ " (8)               | 46       | 40087                              | Chuck Jaw Set                                      |
| 2        | 41597       | Screw (12)                                            | 26       | 88265       | Set Screw $\frac{3}{8}$ " - 16 x 1"           | 47517    | Chuck Jaw Set Pl. Ctd. Pipe        |                                                    |
| 3        | 41592       | Washer (10)                                           | 27       | 88230       | Roll Pin $\frac{1}{4}$ " x $\frac{9}{16}$ "   | 47       | 26242                              | Jaw Insert Set                                     |
| 4        | 33627       | Screw                                                 | 28       | 26767       | Front Bearing                                 | 26247    | Jaw Insert Set F/Coated Pipe       |                                                    |
| 5        | 32412       | Centering Jaw Set                                     | 29       | 26362       | Gear Box Assy.                                | 27067    | Self-Tapping Screw (2 Req. f/G.S.) |                                                    |
| 6        | 26537       | Centering Head                                        | 30       | 27062       | Motor Bracket                                 | 50       | 59722                              | Front Side Plate                                   |
| 7        | 26542       | Back Plate                                            | 31       | 26832       | V-Belt                                        | 51       | 26852                              | Gear Box Pulley                                    |
| 8        | 26477       | Top Cover                                             | 32       | 40770       | Lock Washer $\frac{5}{16}$ " (4)              | 53       | 26507                              | Pinch Point Boss (2 Req. f/G.S.)                   |
|          | 46867       | Die Head Decal (Not Shown)                            | 33       | 27517       | Lock Nut $\frac{5}{16}$ " - 18                | 54       | 27007                              | Inlet Hose                                         |
| 9        | 40910       | Screw $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " (6)      | 34       | 47080       | Grommet                                       | 55       | 26822                              | Output Hose                                        |
| 10       | 45300       | Set Screw $\frac{5}{16}$ " - 24 x $\frac{1}{4}$ " (3) | 35       | 33617       | Spacer                                        | 56       | 27002                              | Key                                                |
| 11       | 45265       | Set Screw $\frac{5}{16}$ " - 24 x $\frac{1}{2}$ " (3) | 36       | 85910       | Bolt $\frac{5}{16}$ " - 18 x $1\frac{1}{4}$ " | 58       | 85920                              | Rivets (8)                                         |
| 12       | 32407       | Scroll                                                | 37       | 26857       | Motor Pulley (60 Hz)                          | 59       | 26332                              | Chuck Cap                                          |
| 13       | 26352       | Rear Bearing                                          |          | 27082       | Motor Pulley (50 Hz)                          | 60       | 88690                              | Safety Plate                                       |
| 14       | 26307       | Washer                                                | 38       | 26347       | Drive Gear/Spindle Assy.                      | 61       | 26522                              | Screw $\frac{5}{16}$ " - 24 x $2\frac{1}{4}$ " (6) |
| 15       | 26487       | Rear Side Plate                                       | 39       | 26482       | Bottom Cover                                  | 62       | 27242                              | Screw 10 - 32 (6)                                  |
| 16       | 32145       | Screw $\frac{1}{4}$ " - 20 x $\frac{1}{2}$ "          | 40       | 26337       | Handwheel                                     | 63       | 33612                              | Set of 3 Cover Plates                              |
| 17       | 46860       | Grease Fitting (2)                                    | 41       | 26237       | Motor w/Capacitor 120V, 60 Hz                 | 64       | 83545                              | Jam Nut $\frac{3}{8}$ " - 16                       |
| 18       | 26997       | Screw $\frac{3}{8}$ " - 16 x $\frac{3}{4}$ " (8)      |          | 27287       | Motor w/Capacitor 110V, 50 Hz                 | 65       | 35117                              | Tube Insert (3)                                    |
| 19       | 44740       | Lock Washer $\frac{1}{4}$ "                           |          | 26232       | Motor w/Capacitor 240V, 60 Hz                 | 66       | 40602                              | Compression Nut                                    |
| 20       | 96740       | Washer $\frac{5}{16}$ "                               |          | 27282       | Motor w/Capacitor 220/240V, 50 Hz             | 67       | 40607                              | Ferrule                                            |
| 21       | 26357       | Base                                                  | 42       | 27037       | Shoulder Bolt                                 | 68       | 26972                              | Union                                              |
| 22       | 26492       | Belt Tensioner                                        | 43       | 27012       | Pinion Guard                                  | 69       | 43552                              | Tie Down Strap                                     |
| 23       | 96730       | Nut $\frac{5}{16}$ " - 18 (4)                         | 44       | 26517       | Scroll                                        | 70       | 45275                              | Screw 10 - 24 x $\frac{1}{2}$ "                    |
| 24       | 27402       | Washer $\frac{5}{16}$ " (4)                           | 45†      | 27307       | Oil Pump                                      | 71       | 27032                              | Shifter Knob                                       |

## Carriage and Chip Pan



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                                              | Ref. No. | Catalog No. | Description                                     | Ref. No. | Catalog No. | Description                                      |
|----------|-------------|--------------------------------------------------------------------------|----------|-------------|-------------------------------------------------|----------|-------------|--------------------------------------------------|
| —        | 49992       | Carriage Assembly (Includes Ref. #4-8, 10-14, 17, 21, 23, 25, 41, 49-52) | 17       | 26777       | Sine Bar/Pinion Shaft (2)                       | 36       | 40930       | Lock Washer $\frac{3}{8}$ " (2)                  |
| 1        | 26502       | Rail Plug (2)                                                            | 18       | 26562       | Supply Line Fitting                             | 37       | 26997       | Screw $\frac{3}{8}$ " - 16 x $\frac{3}{4}$ " (2) |
| 2        | 40167       | Bolt $\frac{5}{16}$ " - 18 x $\frac{3}{2}$ " (4)                         | 19       | 26772       | Drip Plate                                      | 38       | 83545       | Hex Nut $\frac{3}{8}$ " - 16                     |
| 3        | 49982       | Rear Rail                                                                | 20       | 26812       | Die Lubrication Tube                            | 39       | 26307       | Washer                                           |
| 4        | 26787       | Guide Block (2)                                                          | 21       | 26587       | Sine Bar Pinion                                 | 40       | 48337       | Drain Plug                                       |
| 5        | 26792       | Sine Bar Spacer                                                          | 22       | 40147       | Carriage Handwheel                              | 41       | 28462       | Ball Detente                                     |
| 6        | 40242       | Sine Bar                                                                 | 23       | 26572       | Carriage Pinion (2)                             | 42       | 27517       | Lock Nut $\frac{5}{16}$ " - 18 (4)               |
| 7        | 26912       | Sine Bar Cover Assembly                                                  | 24       | 26837       | Stud (2)                                        | 43       | 74965       | Pin                                              |
| 8        | 26582       | Guide Block Spring (2)                                                   | 25       | 74965       | Roll Pin $\frac{1}{4}$ " x $1\frac{1}{4}$ " (3) | 44       | 89530       | Spring                                           |
| 9        | 27052       | Roll Pin (2)                                                             | 26       | 26802       | Draw Tray Assembly                              | 45       | 40157       | Handwheel Shaft                                  |
| 10       | 49987       | Carriage (Includes Ref. #41)                                             | 27       | 26807       | Insert Assembly                                 | 46       | 41582       | Lock Washer                                      |
| 11       | 26592       | Sine Bar Return Spring                                                   | 28       | 27252       | Washer                                          | 47       | 40152       | Washer                                           |
| 12       | 41592       | Washer #10 (2)                                                           | 29       | 41715       | Seal Washer                                     | 48       | 26997       | Screw                                            |
| 13       | 26577       | Guide Bar                                                                | 30       | 26697       | Bulk Head Fitting                               | 49       | 40227       | Spring Washer                                    |
| 14       | 79965       | Screw #10 - 32 x $\frac{1}{2}$ " (5)                                     | 31       | 26927       | Tubing                                          | 50       | 40237       | Latch                                            |
| 15       | 49977       | Front Rail                                                               | 32       | 27262       | Screen Assembly                                 | 51       | 49472       | Spiral Pin                                       |
| 16       | 26652       | Oil Supply Clamp                                                         | 33       | 26797       | Screw #10 - 32 x $\frac{5}{16}$ "               | 52       | 42027       | Handwheel Kit                                    |
|          |             |                                                                          | 34       | 26847       | Chip Pan Hanger Assembly                        |          |             |                                                  |
|          |             |                                                                          | 35       | 26817       | Chip Pan Bracket (2)                            |          |             |                                                  |

†See Service Notes

## “ML” Oil Pump

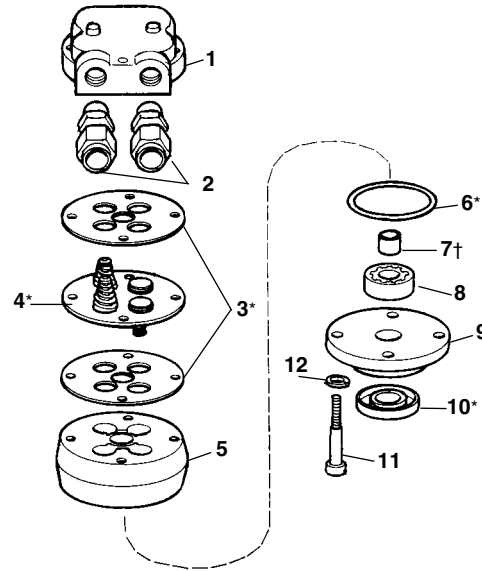
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                       |
|----------|-------------|-----------------------------------|
| —†       | 27307       | “ML” Oil Pump                     |
| 1        | 33442       | Pump Valve Body                   |
| 2        | 33432       | Compression Fitting (2)           |
| 3*       | 33457       | Gasket (Set of 2)                 |
| 4*       | 33452       | Valve Retainer Assy.              |
| 5        | 33482       | Gerotor Housing w/Bearing         |
| 6*       | 33477       | O-Ring                            |
| 7†       | 33462       | Sleeve Bearing                    |
| 8        | 33467       | Gerotor Set                       |
| 9        | 33447       | Pump Cap w/Seal                   |
| 10*      | 33472       | Oil Seal                          |
| 11       | 44510       | Soc. Hd. Cap Screw 1/4" - 20 x 2" |
| 12       | 45150       | Lock Washer 1/4"                  |
| *        | 33422       | “ML” Service Kit                  |

Note: Ref. 7 Sleeve Bearing used on older Gerotor Housings, not required on new pumps.

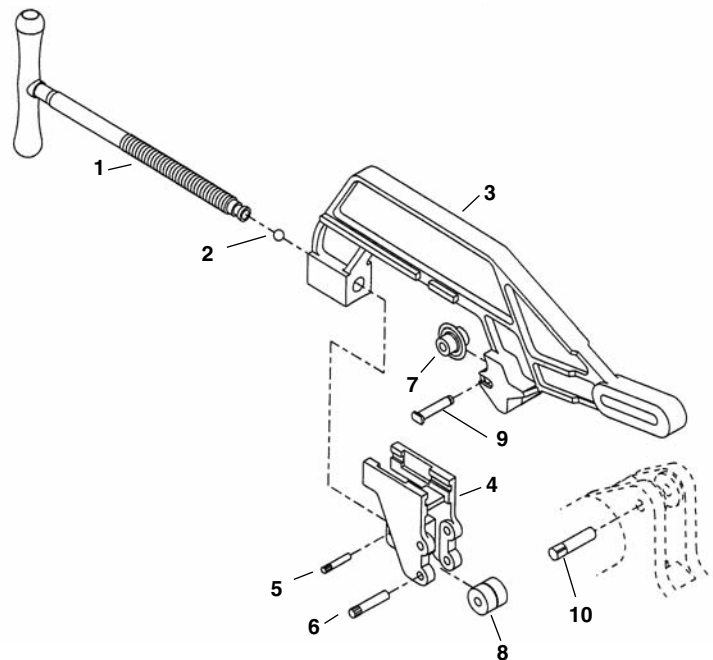
\* Indicates Part is Included in Service Kit.

† See Service Note



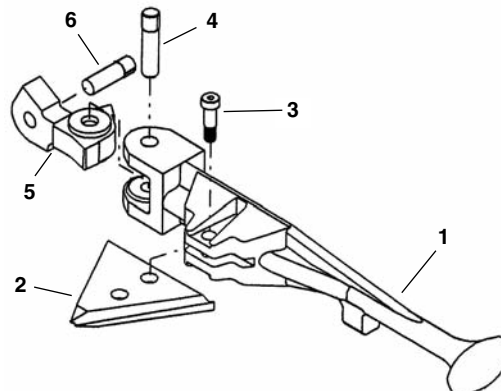
## No. 764 Pipe Cutter

| Ref. No. | Catalog No. | Description                    |
|----------|-------------|--------------------------------|
| —        | 26212       | 764 Pipe Cutter                |
| 1        | 26752       | Screw Handle                   |
| 2        | 41730       | Ball Bearing                   |
| 3        | 26742       | Cutter Frame                   |
| 4        | 26747       | Roll Housing                   |
| 5        | 26757       | Groove Pin                     |
| 6        | 26762       | Groove Pin (2)                 |
| 7        | 33125       | Cutter Wheel                   |
| 8        | 34785       | Roll (2)                       |
| 9        | 26252       | Roll F/Coated Pipe (2 per set) |
| 10       | 34790       | Wheel Pin                      |
| 10       | 27072       | Groove Pin                     |



## No. 744 Reamer Assembly

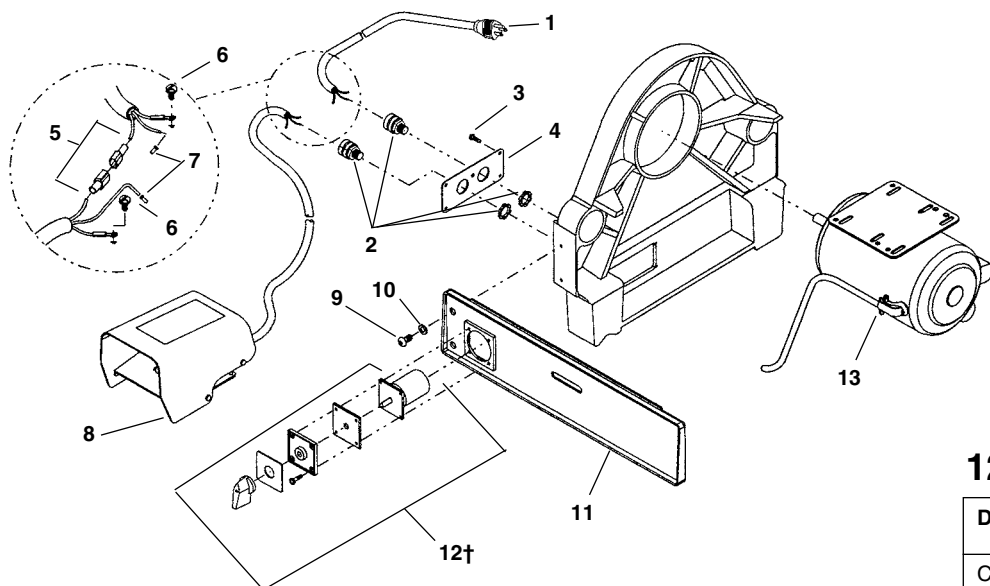
| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| —        | 26217       | 744 Reamer Assembly    |
| 1        | 26602       | Reamer Arm             |
| 2        | 34577       | Reamer Blade 1/4" - 4" |
| 3        | 27037       | Shoulder Bolt          |
| 4        | 27072       | Groove Pin             |
| 5        | 26607       | Pivot Block            |
| 6        | 26727       | Groove Pin (2)         |





## 60 Hz Electrical Components

NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.



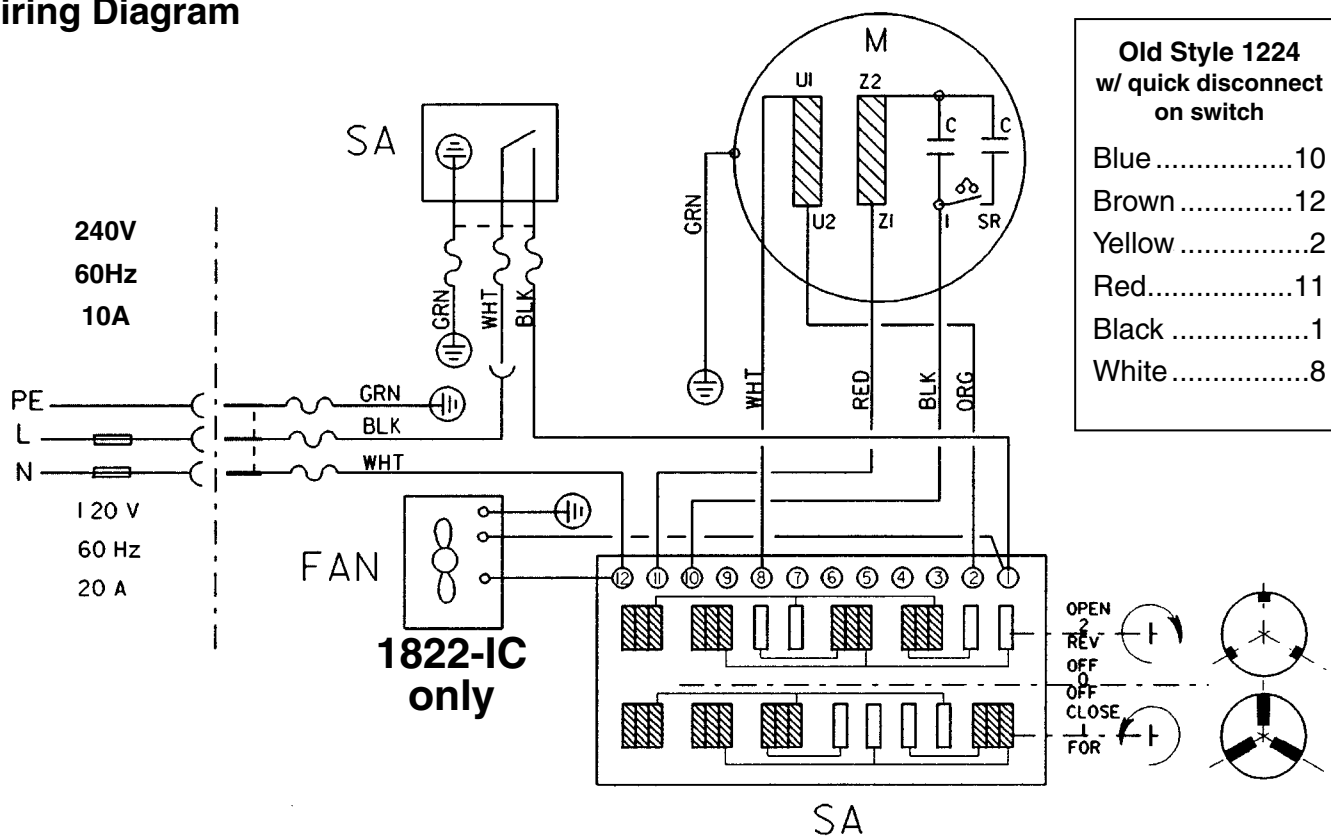
| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| 1        | 46740       | Power Cord                 |
|          | 46410       | Power Cord                 |
| 2        | 75977       | Strain Relief (2)          |
| 3        | 41597       | Self Tapping Screw (4)     |
| 4        | 27162       | Strain Relief Bracket      |
| 5        | 56407       | Quick Disconnect Set       |
| 6        | 45420       | Ground Screw               |
| 7        | 36222       | Wire Terminal              |
| 8        | 36642       | B-294 Foot Switch          |
| 9        | 26997       | Screw 3/8" - 16 x 3/4" (8) |
| 10       | 40930       | Lock Washer 3/8" (8)       |
| 11       | 59722       | Front Side Plate           |
| 12†      | 20113       | Switch Assembly            |
| 13       | 26237       | Motor 120V 60 Hz           |
|          | 26232       | Motor 240V 60 Hz           |

## 1224 Motor Parts

| Description          | 120V<br>60Hz | 240V<br>60Hz |
|----------------------|--------------|--------------|
| Contact Start Switch | 21148        | —            |
| Start Capacitor      | 54332        | —            |
| Run Capacitor        | 46807        | 46807        |

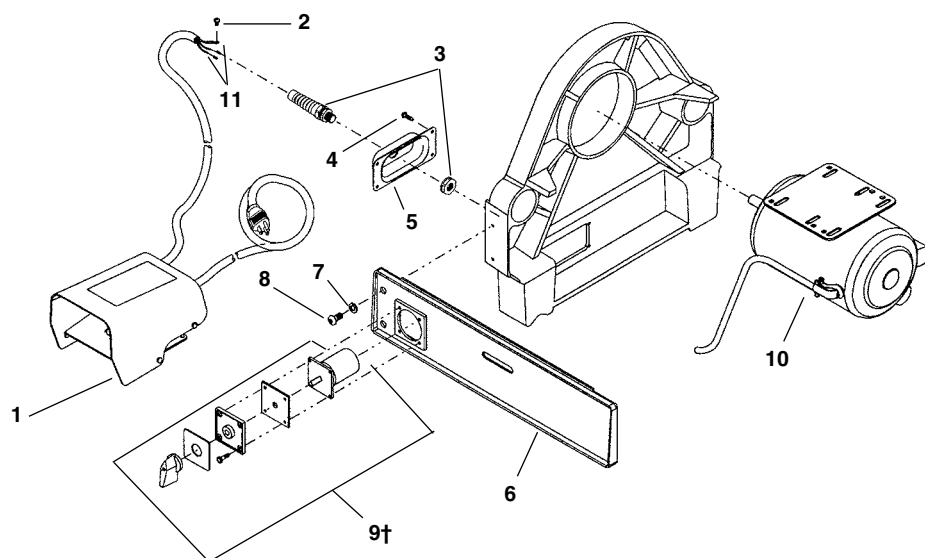
† Ref. No. 12 – When replacing early style switches, which have a black body, order Catalog No. 59742 Switch Adapter Plate

## 1224 &amp; 1822-I Replacement Switch Wiring Diagram



## 50 Hz Electrical Components

**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.



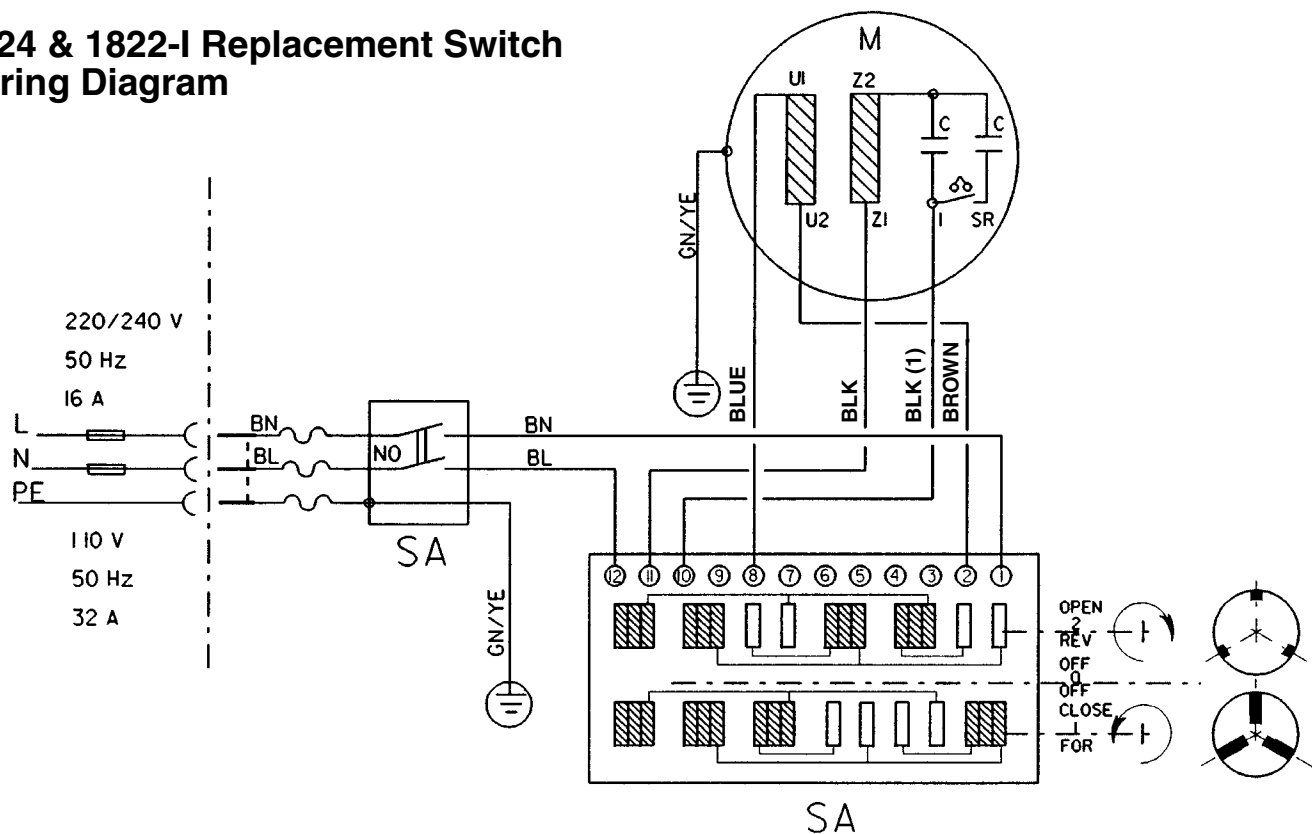
| Ref. No. | Catalog No. | Description                |
|----------|-------------|----------------------------|
| 1        | 36652       | B-296 Foot Switch          |
|          | 36657       | B-297 Foot Switch          |
| 2        | 45420       | Ground Screw               |
| 3        | 27187       | Strain Relief              |
| 4        | 41597       | Self Tapping Screw (4)     |
| 5        | 27197       | Strain Relief Bracket      |
| 6        | 59722       | Front Side Plate           |
| 7        | 40930       | Lock Washer 3/8" (8)       |
| 8        | 26997       | Screw 3/8" - 16 x 3/4" (8) |
| 9†       | 20113       | Switch Assembly            |
| 10       | 27282       | Motor 220/240V 50 Hz       |
|          | 27287       | Motor 110V 50 Hz           |
| 11       | 36222       | Wire Terminal              |

## 1224 Motor Parts

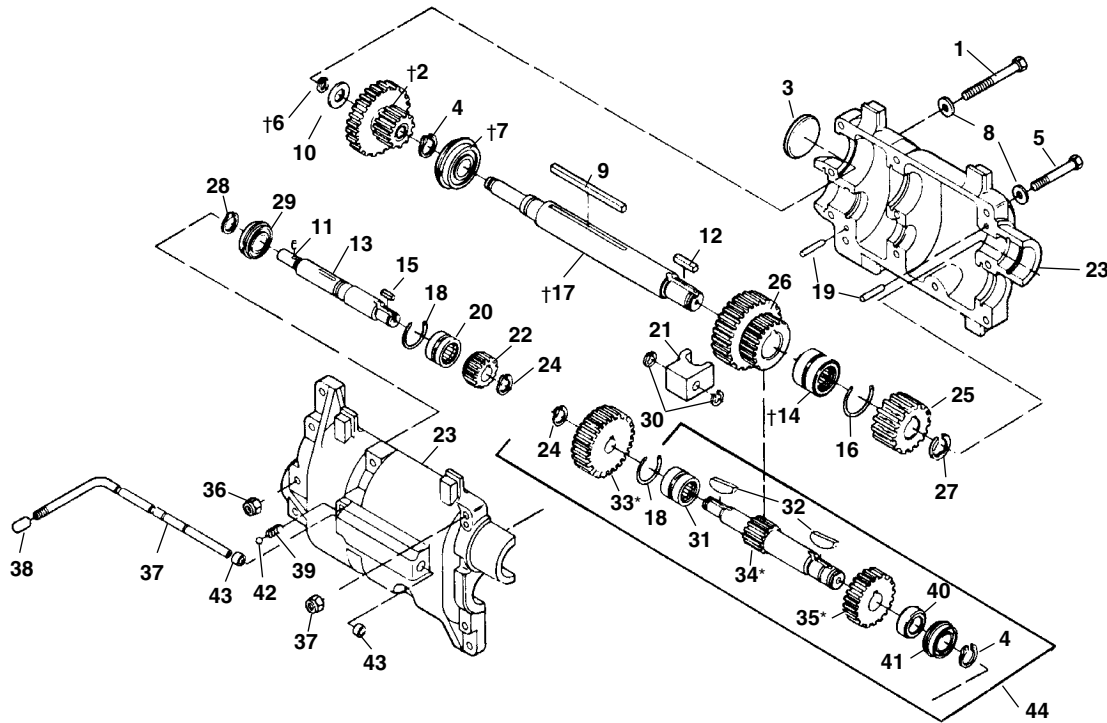
| Description               | 220V/240V<br>50Hz | 110V<br>50Hz |
|---------------------------|-------------------|--------------|
| Dual Contact Start Switch | 46772             | 46772        |
| Start Capacitor           | 46792             | —            |
| Run Capacitor             | 46807             | —            |

† Ref. No. 12 – When replacing early style switches, which have a black body, order Catalog No. 59742 Switch Adapter Plate

## 1224 & 1822-I Replacement Switch Wiring Diagram



## Gear Box



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

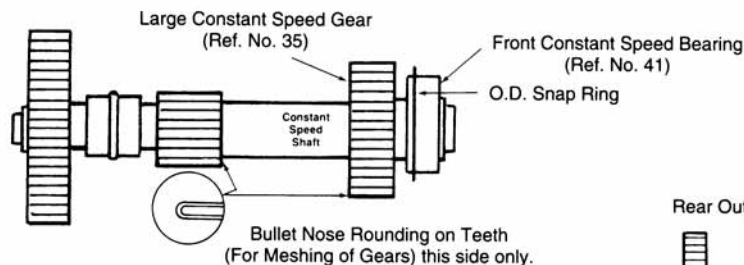
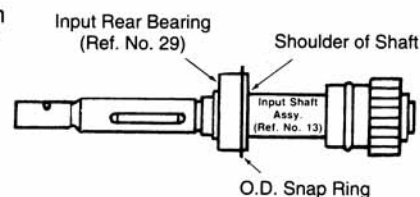
| Ref. No. | Catalog No. | Description                                        | Ref. No. | Catalog No. | Description         | Ref. No. | Catalog No. | Description                         |
|----------|-------------|----------------------------------------------------|----------|-------------|---------------------|----------|-------------|-------------------------------------|
| —        | 26362       | Gear Box Assembly                                  | 16       | 26922       | Wire Ring           | 32       | 33982       | Woodruff Key (2)                    |
| 1        | 27102       | Screw $\frac{5}{16}$ " - 18 x $\frac{3}{4}$ " (2)  | †17      | 26382       | Output Shaft        | 33*      | 33992       | 1st Gear Constant Speed             |
| †2       | 26702       | Fixed Gear Cluster Assembly                        | 18       | 26917       | Wire Ring (2)       | 34*      | 33987       | Constant Speed Shaft                |
| 3        | 26667       | Freeze Plug                                        | 19       | 26662       | Dowel Pin (2)       | †35*     | 33997       | Large Constant Speed Gear           |
| 4        | 26412       | Snap Ring (2)                                      | 20       | 26367       | Front Input Bearing | 36       | 75110       | Stop Nut $\frac{5}{16}$ " - 18 (11) |
| 5        | 27107       | Screw $\frac{5}{16}$ " - 18 x $2\frac{1}{2}$ " (9) | 21       | 26437       | Shifting Fork       | 37       | 26442       | Shift Slide                         |
| †6       | 27117       | Snap Ring                                          | 22       | 26377       | 1st Input Gear      | 38       | 27032       | Shifter Knob                        |
| †7       | 26417       | Rear Output Bearing                                | 23       | 26647       | Gear Box            | 39       | 26692       | Shifter Detente Spring              |
| 8        | 96740       | Washer $\frac{5}{16}$ " (11)                       | 24       | 26677       | Snap Ring           | 40       | 26452       | Spacer                              |
| 9        | 26552       | Shift Cluster Key                                  | †25      | 26432       | Output Pinion Gear  | 41       | 26407       | Front Constant Speed Bearing        |
| 10       | 26672       | Thrust Washer                                      | 26       | 26422       | Cluster Shift Gear  | 42       | 46925       | Steel Ball                          |
| 11       | 26907       | Spiral Pin                                         | 27       | 26557       | Snap Ring           | 43       | 26447       | Shift Slide Sleeve Bearing          |
| 12       | 26457       | Output Pinion Key                                  | 28       | 44430       | Retaining Ring      |          | 26707       | Grease (1 lb. can)                  |
| 13       | 26902       | Input Shaft Assembly                               | †29      | 26372       | Input Rear Bearing  | 44       | 28047       | Constant Speed Assembly             |
| †14      | 26427       | Front Output Bearing                               | 30       | 34245       | Rings Set of 5      |          |             |                                     |
| 15       | 26657       | Input Pinion Key                                   | 31       | 26397       | Rear Bearing        |          |             |                                     |

†See Service Notes

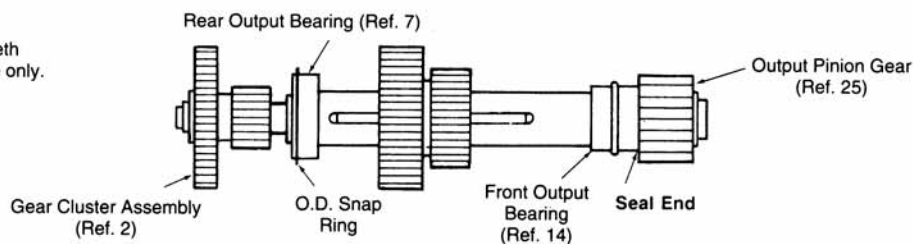
\*When replacing early style parts, using square keys, a complete shaft assembly (Ref. No. 44) should be used.

## Service Notes Transmission

Position Bearing (Ref. No. 29) with O.D. Snap Ring towards shoulder of Input Shaft.



Position Large Constant Speed Gear Ref. No. 35 so that bullet nose side of gear teeth are facing toward center of shaft.  
Position O.D. Snap Ring towards Large Constant Speed Gear.



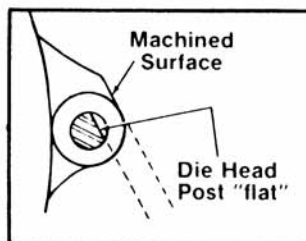
Position Bearing (Ref. No. 7) with O.D. Snap Ring towards Gear Cluster (Ref. No. 2)

Position Seal End of Front Output Bearing (Ref. No. 14) towards Output Pinion Gear (Ref. No. 25)

## Replacement Instructions for Die Head Post All 1224 Die Heads— 541, 542, 711, 713, 714, 911, 913, 914

### —IMPORTANT—

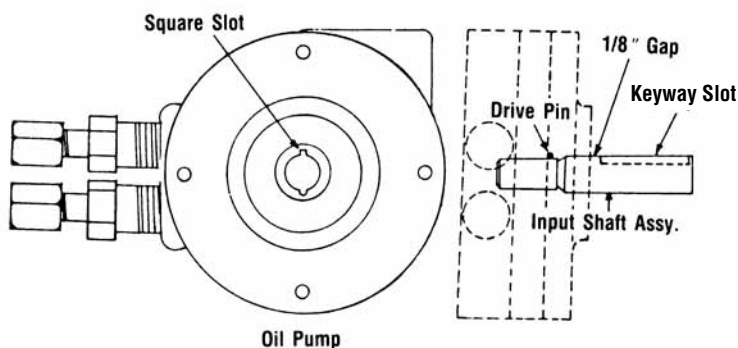
Post must be properly oriented to insure oil flow through head. Insert illustrates proper relationship (parallel) of "flat" on die head post to flat "machined surface" of die head casting.



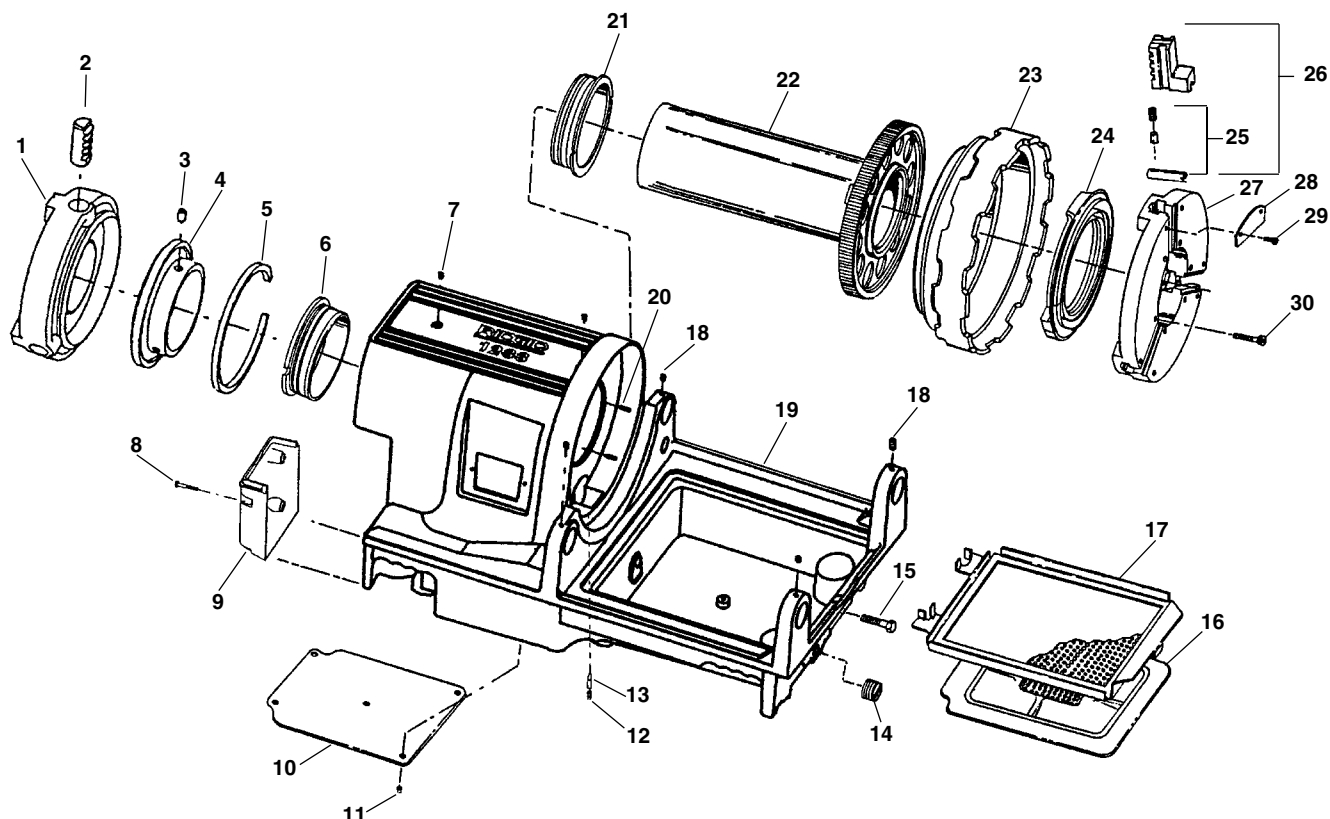
## Oil Pump

### Installing Oil Pump Onto Input Shaft Assembly

1. Align Square Slot (behind seal) in the No. 27307 Oil Pump with the Drive Pin in the No. 26902 Gear Box Input Shaft Assembly.
2. Slide Oil Pump onto Input Shaft Assembly.
3. When Pump is properly engaged onto Shaft, the distance between Pump body and Keyway Slot should not exceed 1/8 inch.



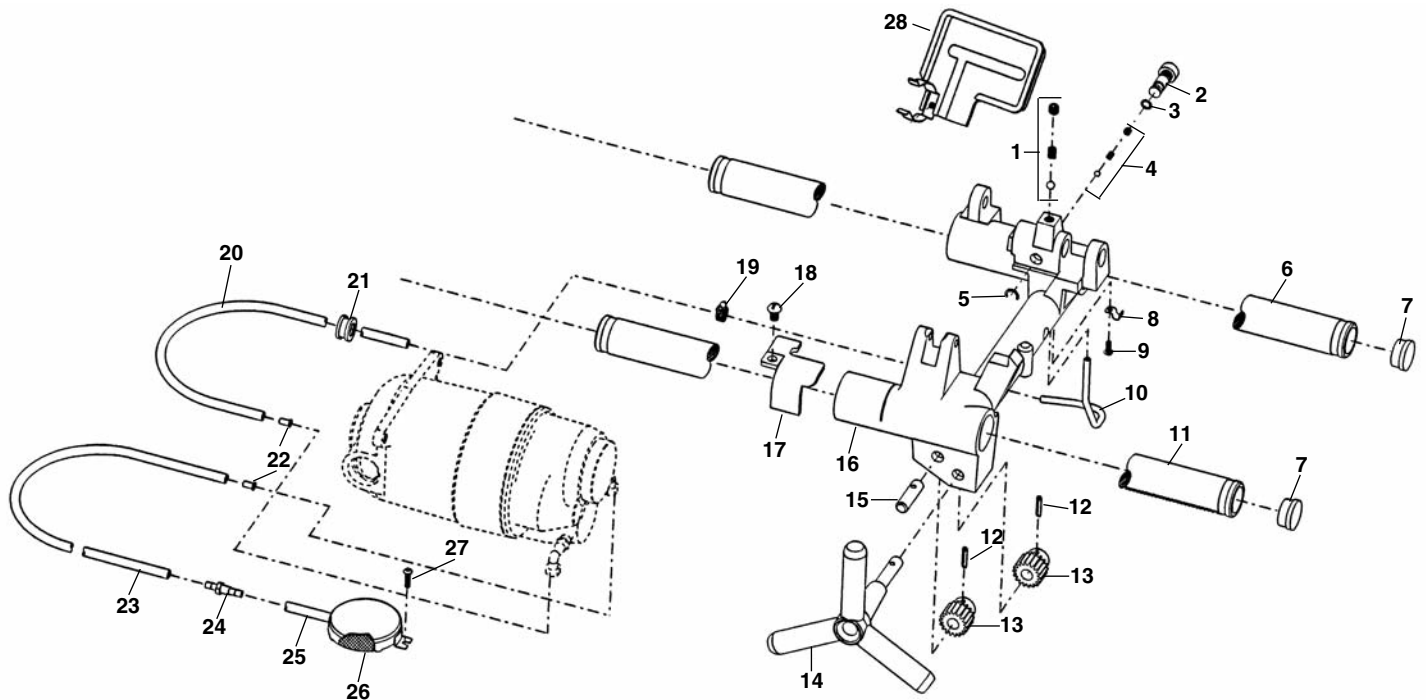
## Main Drive Components



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                 | Ref. No. | Catalog No. | Description                                            |
|----------|-------------|---------------------------------------------|----------|-------------|--------------------------------------------------------|
| 1        | 61882       | Rear Centering Head                         | 17       | 54047       | Chip Tray                                              |
| 2        | 61922       | Centering Jaw Set                           | 18       | 60025       | $\frac{5}{16}$ " - 18 Set Screw (4)                    |
| 3        | 61247       | Spiral Pins (3)                             | 19       | 61887       | Base (Incl. Ref. 9,10,11)                              |
| 4        | 54002       | Centering Scroll                            | 20       | 45475       | Bearing Retaining Pins (4)                             |
| 5        | 61927       | Retaining Ring                              | 21       | 54062       | Front Bearing                                          |
| 6        | 54017       | Rear Bearing                                | 22       | 54067       | Spindle Assembly                                       |
| 7        | 54022       | Oil Ball Valve (2)                          | 23       | 54072       | Hammer Wheel                                           |
| 8        | 92455       | #10 - 24 x $\frac{3}{4}$ " Screw            | 24       | 54077       | Chuck Scroll                                           |
| 9        | 61932       | Motor Cover                                 | 25       | 54212       | Jaw Insert Set                                         |
| 10       | 61937       | Bottom Cover                                | —        | 54217       | Jaw Insert f/Coated Pipe                               |
| 11       | 87730       | $\frac{1}{4}$ " x $\frac{3}{8}$ " Screw (4) | —        | 59612       | Jaw Insert f/SS Pipe                                   |
| 12       | 77905       | $\frac{5}{16}$ " x $\frac{1}{4}$ " Screw    | 26       | 54087       | Chuck Jaw Set                                          |
| 13       | 54037       | Motor Wedge                                 | 27       | 54082       | Chuck Cap                                              |
| 14       | 54302       | Drain Plug                                  | 28       | 54092       | Chip Guard                                             |
| 15       | 54042       | M-10 1.5 Hex Screw                          | 29       | 58322       | Screws 6 - 32 x $\frac{1}{2}$ " Pkg. of 6              |
| 16       | 54052       | Oil Pan Liner                               | 30       | 46775       | $\frac{1}{4}$ " x $1\frac{3}{4}$ " Soc. Head Screw (6) |

## Carriage and Oil System



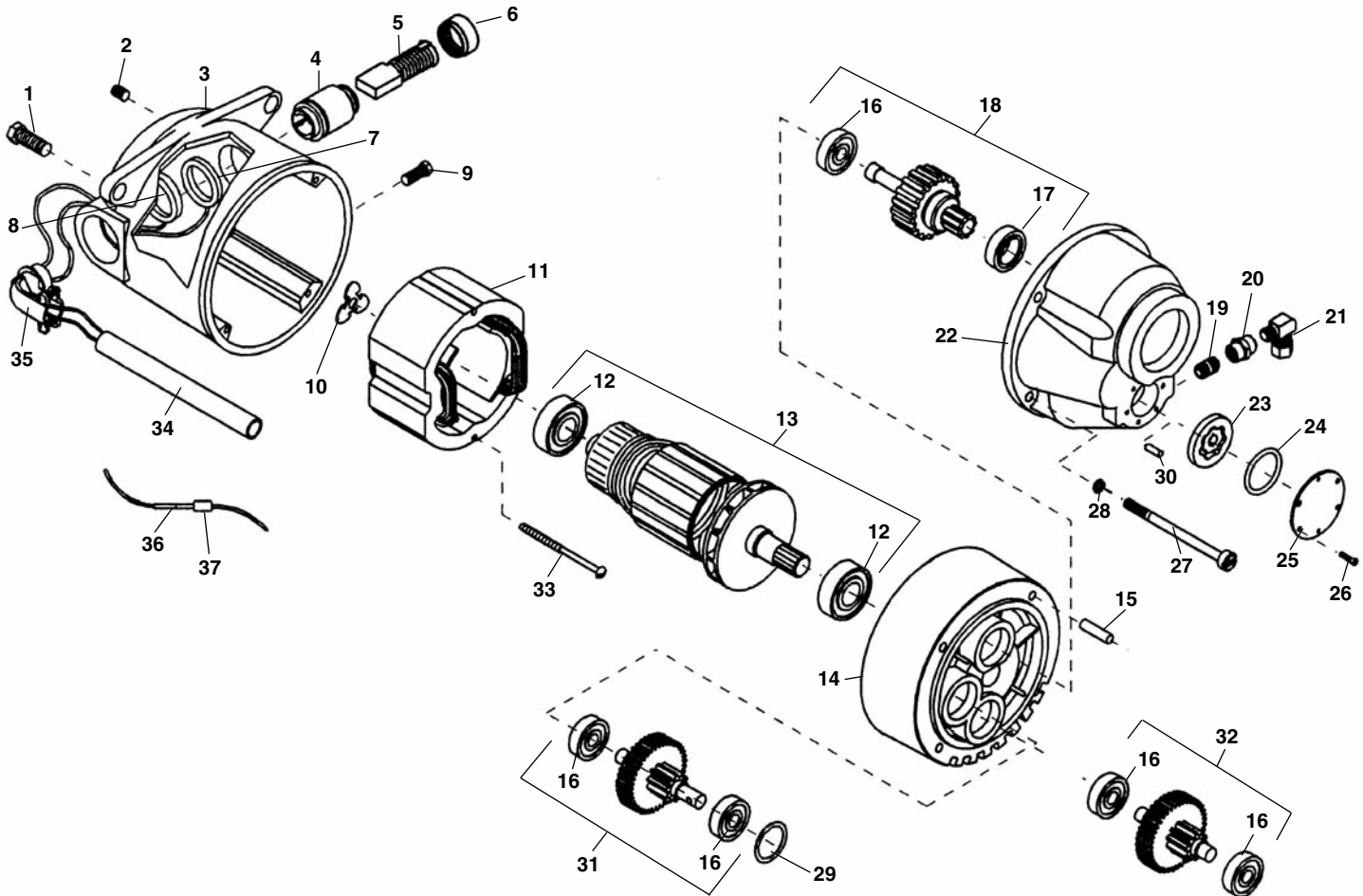
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref.<br>No. | Catalog<br>No. | Description             |
|-------------|----------------|-------------------------|
| 1           | 46810          | Detente Assembly        |
| 2           | 54097          | Spool Valve             |
| 3           | 54102          | O-Ring                  |
| 4           | 35307          | Oil Pressure Relief Set |
| 5           | 54107          | Crescent Ring           |
| 6           | 54112          | Rear Rail               |
| 7           | 35162          | Rail Plug (4)           |
| 8           | 35062          | Oil Line Clamp          |
| 9           | 79965          | 10-32 x 1/2" Screw      |
| 10          | 35067          | Oil Tube                |
| 11          | 54117          | Front Rail              |
| 12          | 34342          | Roll Pin                |
| 13          | 57097          | Pinion                  |
| 14          | 35182          | Hand Wheel              |
| 15          | 35187          | Pinion Idler Shaft      |
|             | 54122          | Cap Plug (not shown)    |
| 16          | 54127          | Carriage                |
| 17          | 54132          | Carriage Stop           |
| 18          | 54137          | 5/16" - 18 x 1/2" Screw |
| 19          | 35142          | Hose Clamp              |
| 20          | 61282          | Carriage Oil Line       |
| 21          | 47080          | Oil Line Grommet        |
| 22          | 35117          | Oil Line Insert         |
| 23          | 54152          | Oil Intake Line         |
| 24          | 54142          | Bulkhead Fitting        |
| 25          | 61897          | Oil Filter Tube         |
| 26          | 58467          | Filter Screen Assembly  |
| 27          | 45420          | 10-24 x 3/8" Screw      |
| 28          | 54517          | Drip Pan                |



3092  
3192  
3292  
3192R  
3292R

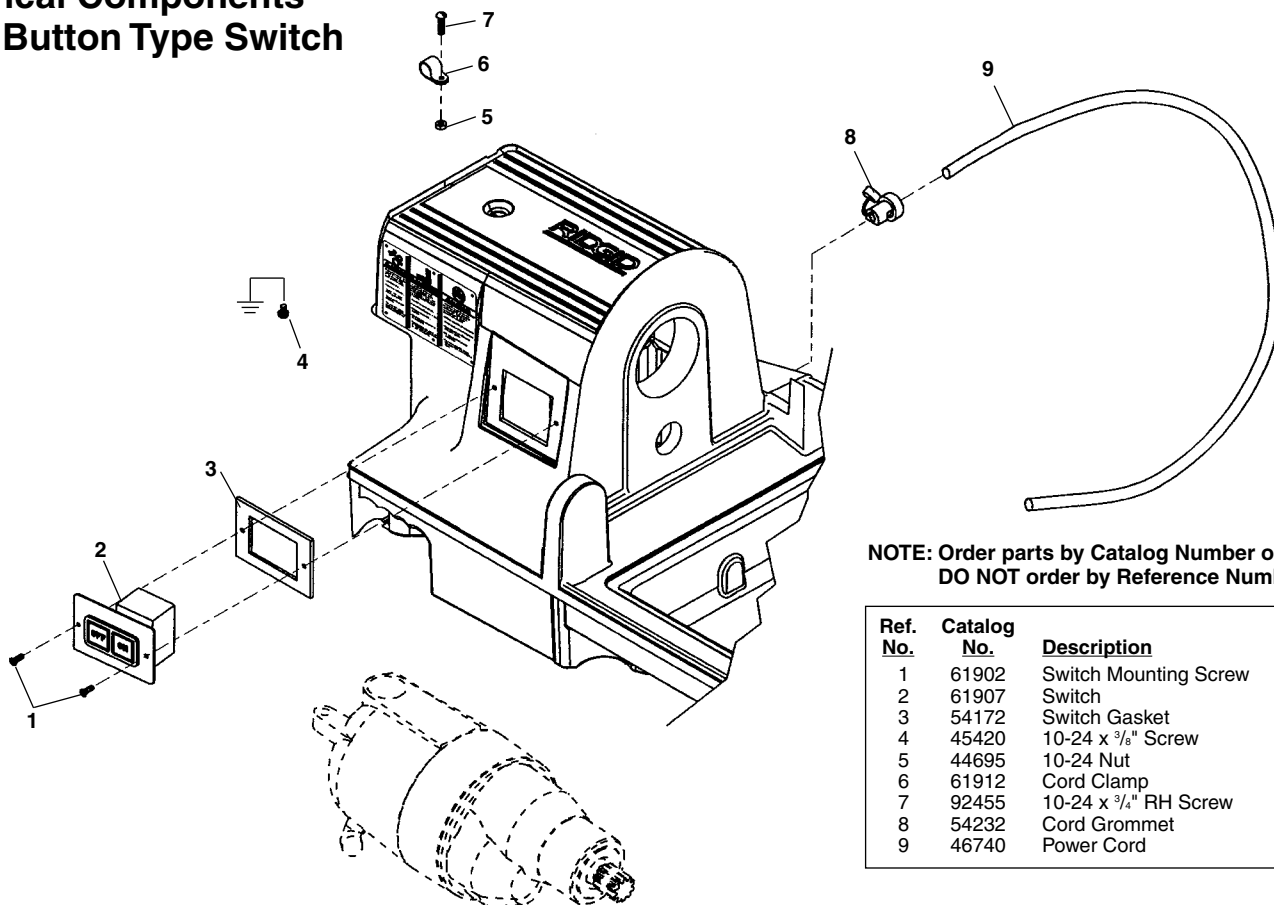
## Motor



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

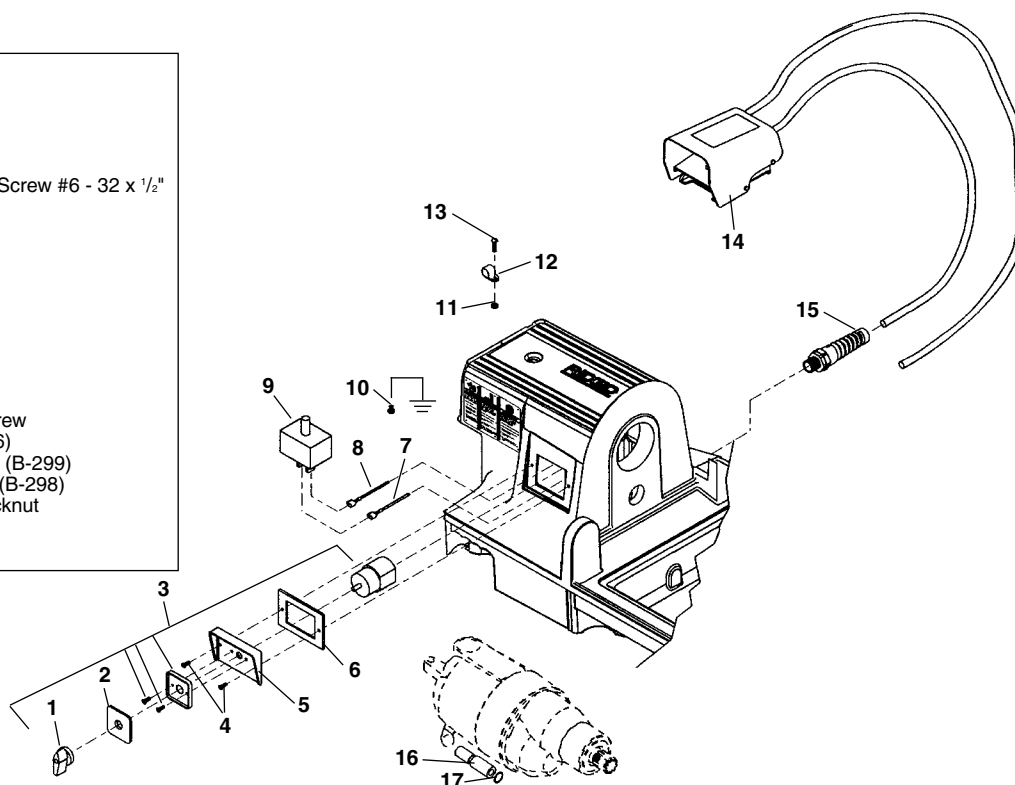
| Ref. No. | Catalog No. | Description                    | Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description           |
|----------|-------------|--------------------------------|----------|-------------|-------------------------------|----------|-------------|-----------------------|
| —        | 52457       | Motor Model 3092, 100V         | 11       | 44015       | Field 100/115V                | 23       | 96870       | Gerotor Set           |
| —        | 52462       | Motor Model 3192, 115V         | —        | 44035       | Field 230V                    | 24       | 96875       | O-Ring                |
| —        | 52467       | Motor Model 3292, 230V         | 12       | 44565       | Armature Bearing (2)          | 25       | 96840       | Cover Plate           |
| —        | 52472       | Motor Model 3192R, 115V Rev.   | 13       | 52487       | 100V Armature                 | 26       | 96890       | Screw #4 x 3/8" (6)   |
| —        | 52477       | Motor Model 3292R, 230V Rev.   | —        | 52497       | 115V Armature                 | 27       | 45075       | Screw 1/4" - 20       |
| 1        | 85915       | Motor Mounting Bolt (2)        | —        | 52492       | 230V Armature                 | 28       | 45150       | Lockwasher 1/4"       |
| 2        | 39770       | Set Screw 1/4" - 20 x 1/4" (2) | 14       | 54552       | Fan Housing Assembly          | 29       | 96880       | Oil Seal              |
| 3        | 52482       | Motor Housing                  | 15       | 45165       | Dowel Pin                     | 30       | 96885       | Pin                   |
| 4        | 45025       | Brush Holder Set (2)           | 16       | 44760       | Gear Bearing                  | 31       | 52522       | 1st Gear Assembly     |
| 5        | 44540       | Brush Assembly Set (2)         | 17       | 45315       | Front Bearing                 | 32       | 52527       | 2nd Gear Assembly     |
| 6        | 44545       | Brush Cap Set (2)              | 18       | 45370       | Main Drive Gear Assembly      | 33       | 44555       | Screw 10-24 x 3"      |
| 7        | 86685       | Red Brush Lead                 | 19       | 52507       | 1/8" NPT Close Nipple (2)     | 34       | 63382       | Plastic Tube          |
| 8        | 86680       | White Brush Lead               | 20       | 52512       | 1/8" Coupling (2)             | 35       | 46900       | 90 Connector          |
| 9        | 83500       | Field Locking Screw            | 21       | 52517       | Elbow Compression Fitting (2) | 36       | 16946       | Male Wire Connector   |
| 10       | 44580       | Loading Spring                 | 22       | 96830       | Gear Case                     | 37       | 16956       | Female Wire Connector |

## Electrical Components Push Button Type Switch



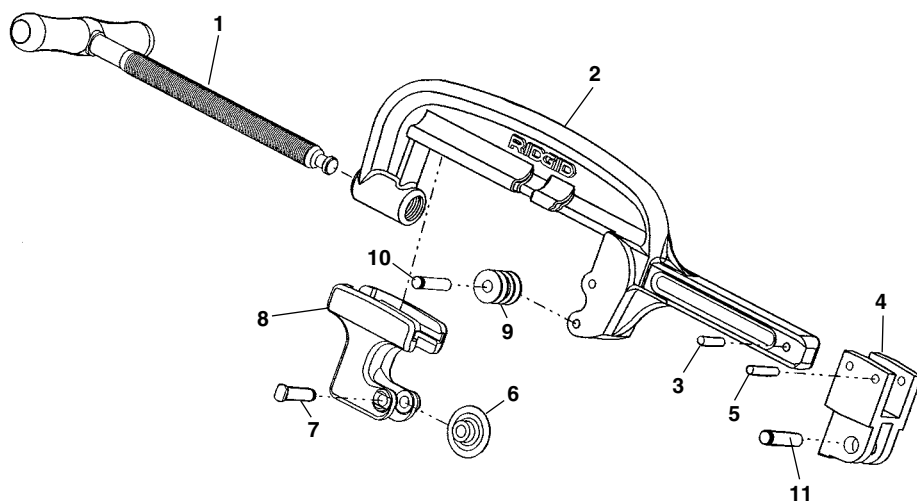
## Lever Type Switch

| Ref. No. | Catalog No. | Description                           |
|----------|-------------|---------------------------------------|
| 1        | 61397       | Switch Knob                           |
| 2        | 54167       | Switch Face Plate                     |
| 3        | 54157       | Switch & Screws                       |
| 4        | 61902       | Slotted Pan Head Screw #6 - 32 x 1/2" |
| 5        | 61917       | Switch Plate                          |
| 6        | 54172       | Switch Gasket                         |
| 7        | 63387       | Brown Wire                            |
| 8        | 63392       | Blue Wire                             |
| 9        | 63372       | Suppressor                            |
| —        | 63387       | Brown Lead Wire                       |
| —        | 63392       | Blue Lead Wire                        |
| 10       | 45420       | 10-24 x 3/8" Screw                    |
| 11       | 44695       | 10-24 Nut                             |
| 12       | 61912       | Cord Clamp                            |
| 13       | 92455       | 10-24 x 3/4" RH Screw                 |
| 14       | 36652       | Foot Switch (B-296)                   |
|          | 40022       | Foot Switch f/Aust. (B-299)           |
|          | 40017       | Foot Switch f/U.K. (B-298)            |
| 15       | 54177       | Strain Relief w/Locknut               |
| 16       | 63377       | Ferrite Bead                          |
| 17       | 43552       | Cable Tie                             |



## No. 763 Pipe Cutter

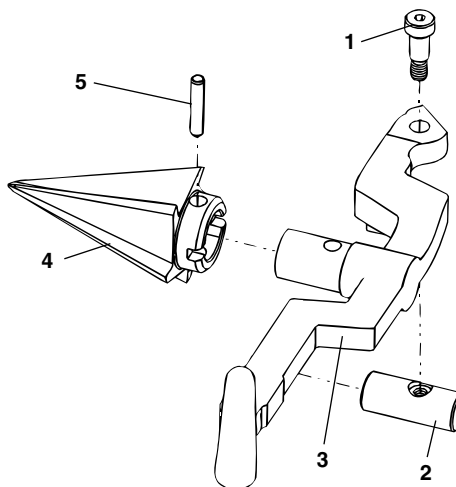
NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.



| Ref. No. | Catalog No. | Description             |
|----------|-------------|-------------------------|
| —        | 52452       | 763 Cutter Complete     |
| 1        | 54197       | Feed Screw Handle       |
| 2        | 61872       | Cutter Frame            |
| 3        | 58090       | 1/4\" x 1\" Roll Pin    |
| 4        | 61877       | Bracket                 |
| 5        | 54300       | Roll Pin                |
| 6        | 44185       | E1032 Cutter Wheel      |
| 7        | 34780       | Pin & Clip              |
| 8        | 52247       | Wheel Housing           |
| 9        | 46960       | Rolls f/Steel Pipe (2)  |
| —        | 43682       | Rolls f/Coated Pipe (2) |
| 10       | 46662       | Roll Pin (2)            |
| 11       | 45520       | Hinge Pin               |

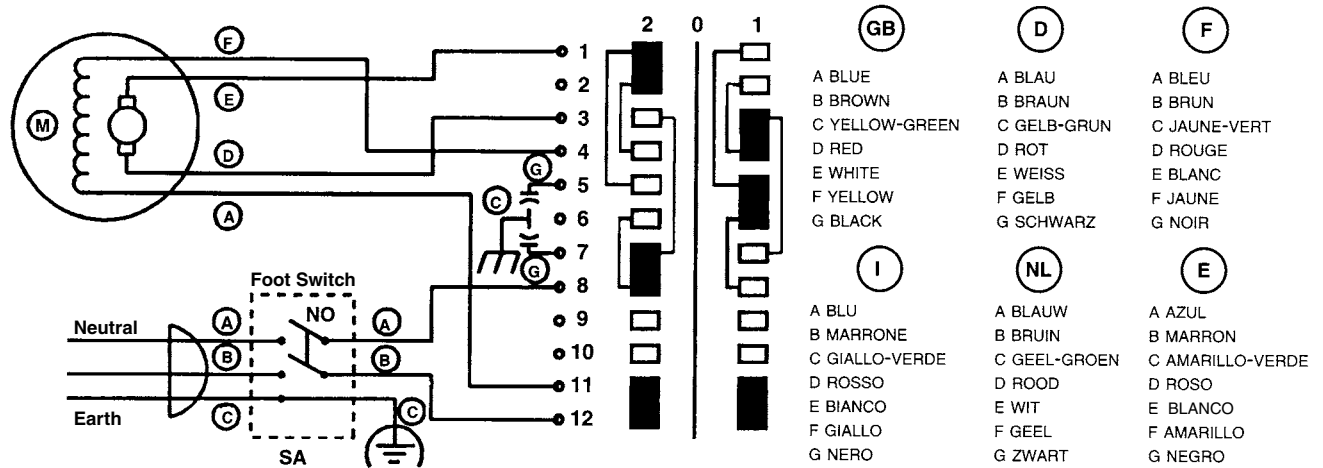
## No. 743 Reamer

| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 52272       | 743 Reamer Complete |
| 1        | 36262       | Shoulder Screw      |
| 2        | 36267       | Pivot Pin           |
| 3        | 36272       | Reamer Arm          |
| 4        | 52277       | Reamer Cone         |
| 5        | 35355       | Split Roll Pin      |

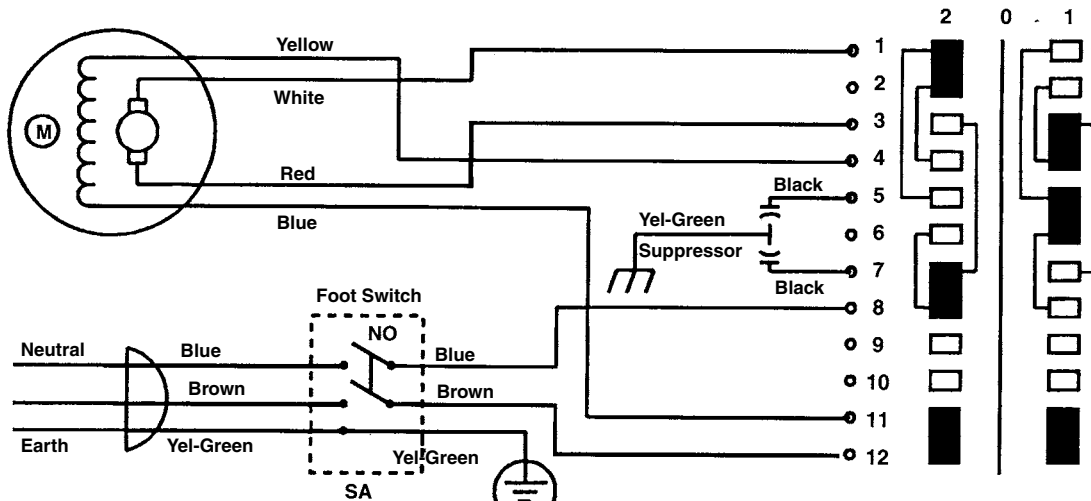


## Wiring Diagram

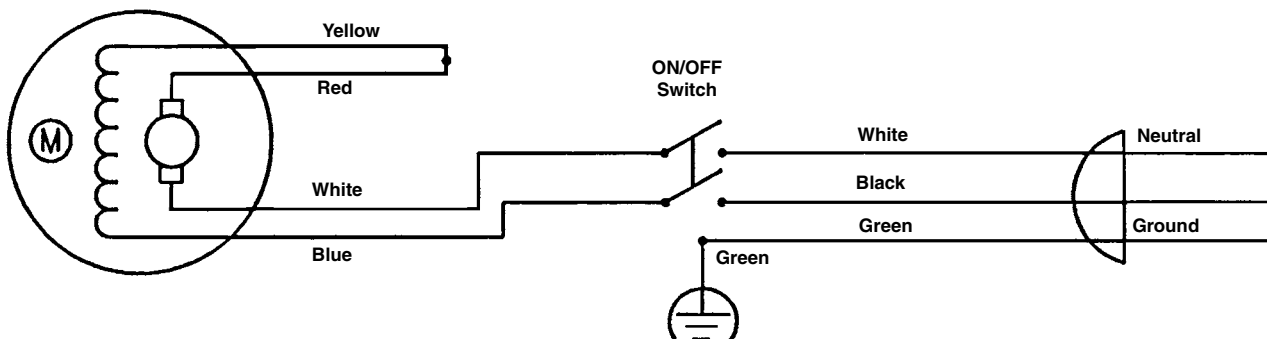
100V-115V-230V, 26-60 Hz



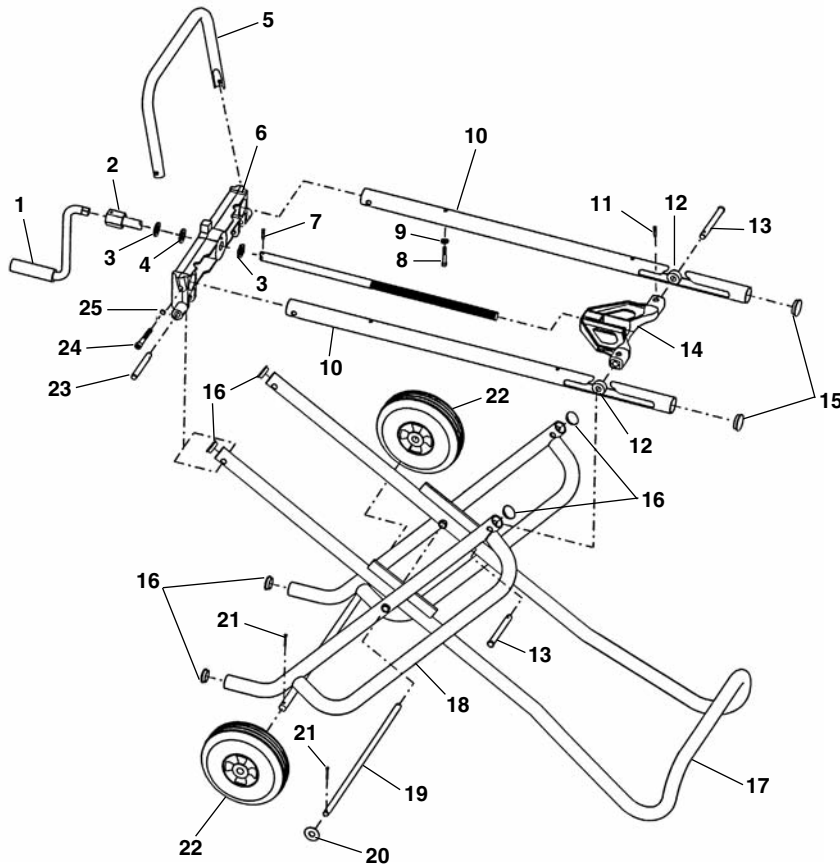
## Wiring Diagram 115V (European Model)



## Wiring Diagram 230V (European Model)

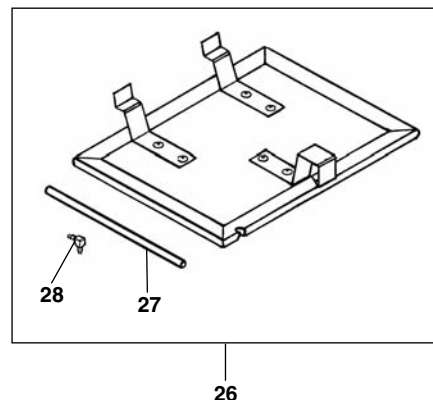


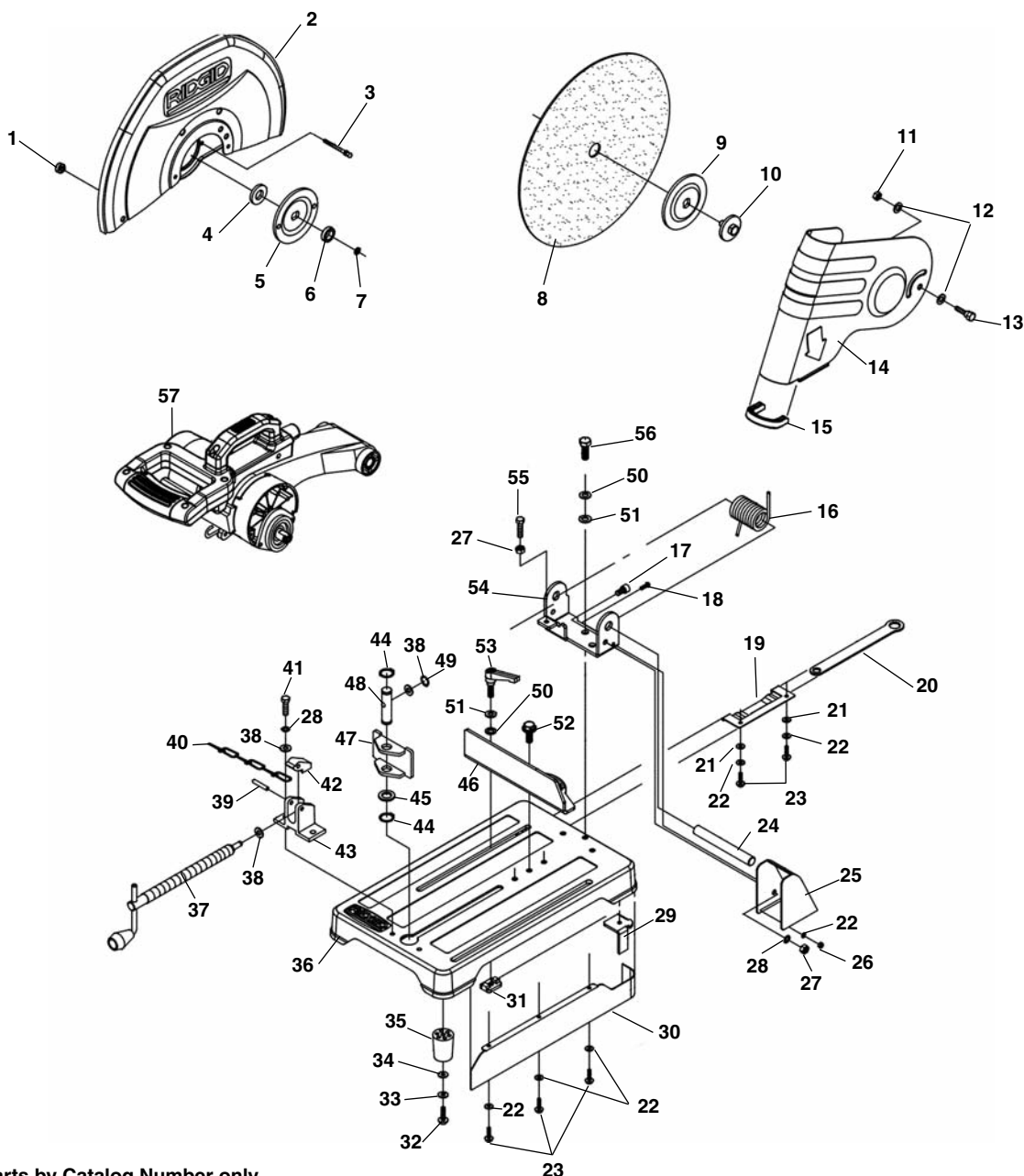
## 1406 Folding Wheel Stand



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                                          |
|----------|-------------|------------------------------------------------------|
| —        | 20105       | 1406 Folding Wheel Stand                             |
| 1        | 51777       | Crank Handle                                         |
| 2        | 51782       | Screw Shaft                                          |
| 3        | 54312       | Flat Washer (2)                                      |
| 4        | 36347       | Nylon Bearing                                        |
| 5        | 36352       | Rear Handle                                          |
| 6        | 45337       | Brace                                                |
| 7        | 54300       | Roll Pin $\frac{1}{4}$ " x $1\frac{1}{2}$ "          |
| 8        | 46775       | Screw $\frac{1}{4}$ " - 20 x $1\frac{3}{4}$ " (4)    |
| 9        | 26947       | Flat Washer $\frac{1}{4}$ " (4)                      |
| 10       | 36367       | Mounting Rail (2)                                    |
| 11       | 83325       | Roll Pin $\frac{3}{16}$ " x $1\frac{3}{8}$ " (2)     |
| 12       | 36377       | Roller (2)                                           |
| 13       | 36382       | Yoke Pin (2)                                         |
| 14       | 51787       | Traverse Yoke                                        |
| 15       | 36312       | Mounting Rail Cap (2)                                |
| 16       | 36417       | Pivot Assembly Cap (4)                               |
| 17       | 51792       | Leg Handle                                           |
| 18       | 51797       | Pivot Assembly                                       |
| 19       | 36412       | Pivot Shaft                                          |
| 20       | 83420       | Flat Washer $\frac{1}{2}$ " (2)                      |
| 21       | 47030       | Cotter Pin $\frac{1}{8}$ " x 1" (4)                  |
| 22       | 93325       | Wheel (2)                                            |
| 23       | 45342       | Groove Pin (2)                                       |
| 24       | 80045       | Hex Bolt $\frac{3}{8}$ " - 16 x $3\frac{1}{4}$ " (2) |
| 25       | 41582       | Washer-Int. Tooth (2)                                |
| 26       | 35882       | 1460 Oil Pan Cover                                   |
| 27       | 36447       | Tubing                                               |
| 28       | 36442       | Elbow Fitting                                        |



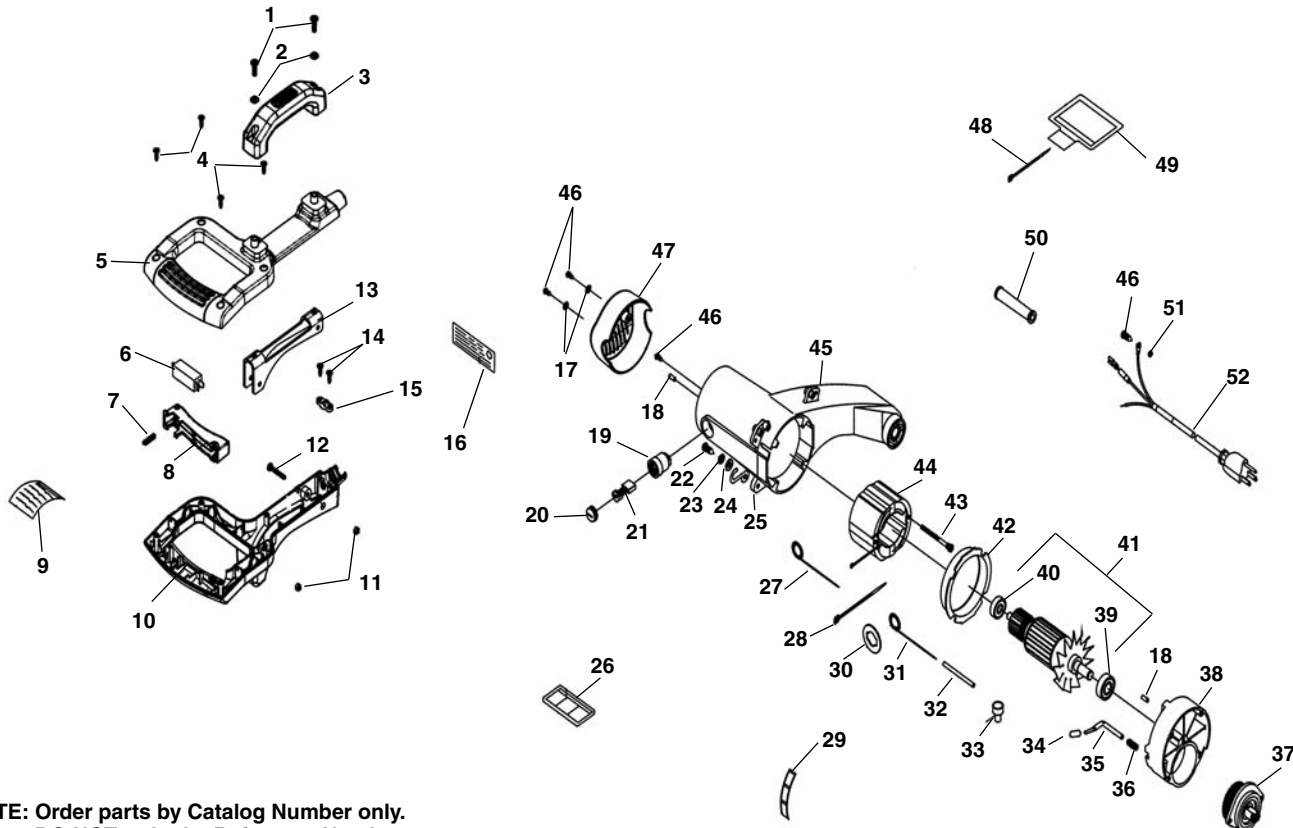


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| Ref. No. | Catalog No. | Description                   | Ref. No. | Catalog No. | Description                 | Ref. No. | Catalog No. | Description                     |
|----------|-------------|-------------------------------|----------|-------------|-----------------------------|----------|-------------|---------------------------------|
| 1        | 96122       | Pad-Guard Lower Guard         | 20       | 96312       | Wrench                      | 39       | 86147       | Pin Spring M6 x 32              |
| 2        | 96082       | Guard Upper                   | 21       | 96157       | Washer                      | 40       | 75167       | Chain                           |
| 3        | 96107       | Screw Pan M5 x 60             | 22       | 96172       | Lockwasher M5               | 41       | 87372       | Screw Hex Hd.                   |
| 4        | 82077       | Spacer                        | 23       | 79132       | Screw Pan Hd. M5 x 0.8 - 12 | 42       | 82147       | Nut Thread                      |
| 5        | 82082       | Flange Inner                  | 24       | 82132       | Shaft                       | 43       | 82177       | Support                         |
| 6        | 82087       | Outer Spacer                  | 25       | 82162       | Cover                       | 44       | 78632       | Ring Retaining                  |
| 7        | 96232       | O-Ring                        | 26       | 96177       | Nut Hex M5                  | 45       | 96132       | Washer M16.5                    |
| 8        | 85232       | Abrasive Wheel                | 27       | 96192       | Nut Hex M8 x 1.25           | 46       | 96147       | Fence Pivot Plate               |
| 9        | 82092       | Flange Outer                  | 28       | 96247       | Lockwasher Helical M8       | 47       | 82127       | Jaw Vice                        |
| 10       | 96222       | Screw Arbor                   | 29       | 96202       | Blade Guard                 | 48       | 82122       | Pin                             |
| 11       | 96112       | Locknut M6 x 1                | 30       | 96207       | Pad Support                 | 49       | 78642       | Ring                            |
| 12       | 96087       | Washer Fiber                  | 31       | 96162       | Nut-Tee                     | 50       | 96112       | Lockwasher M10                  |
| 13       | 96097       | Shoulder Bolt                 | 32       | 85337       | Screw Pan Hd. M6 x 1 x 25   | 51       | 86142       | Washer M10                      |
| 14       | 96092       | Lower Guard                   | 33       | 96217       | Lockwasher M6               | 52       | 96137       | Screw Vise Pivot M10 x 1.5 - 65 |
| 15       | 96127       | Protector                     | 34       | 96212       | Washer Flat M6              | 53       | 96152       | Handle Assembly                 |
| 16       | 82097       | Spring                        | 35       | 82137       | Foot                        | 54       | 96167       | Support                         |
| 17       | 85297       | Screw                         | 36       | 96197       | Base                        | 55       | 96187       | Screw Hex Hd. M8 x 30 x 1.25    |
| 18       | 96182       | Screw Soc. Hd. M8 x 1.25 - 15 | 37       | 78627       | Screw w/Handle              | 56       | 86157       | Hex Hd Screw M10 x 25 x 1.5     |
| 19       | 96242       | Holder Tool                   | 38       | 85377       | Washer M8 x 16 x 0.5        | 57       | 96102       | Motor Assembly                  |



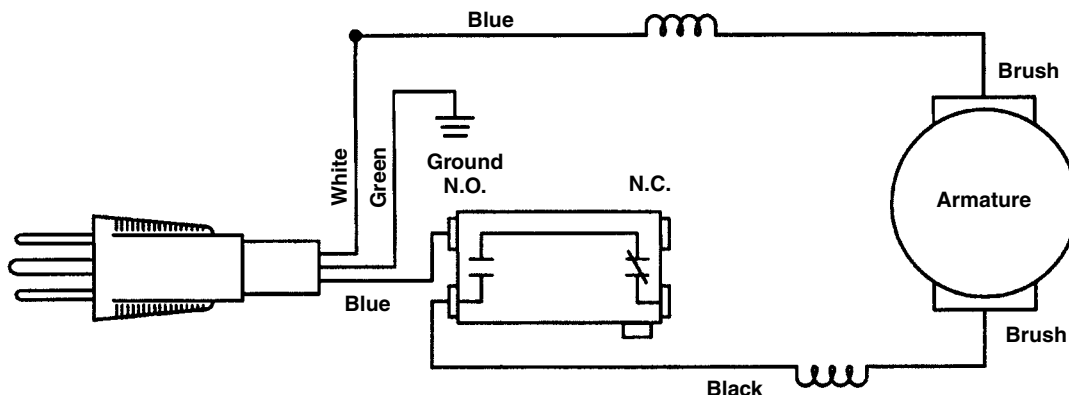
## Electrical Components



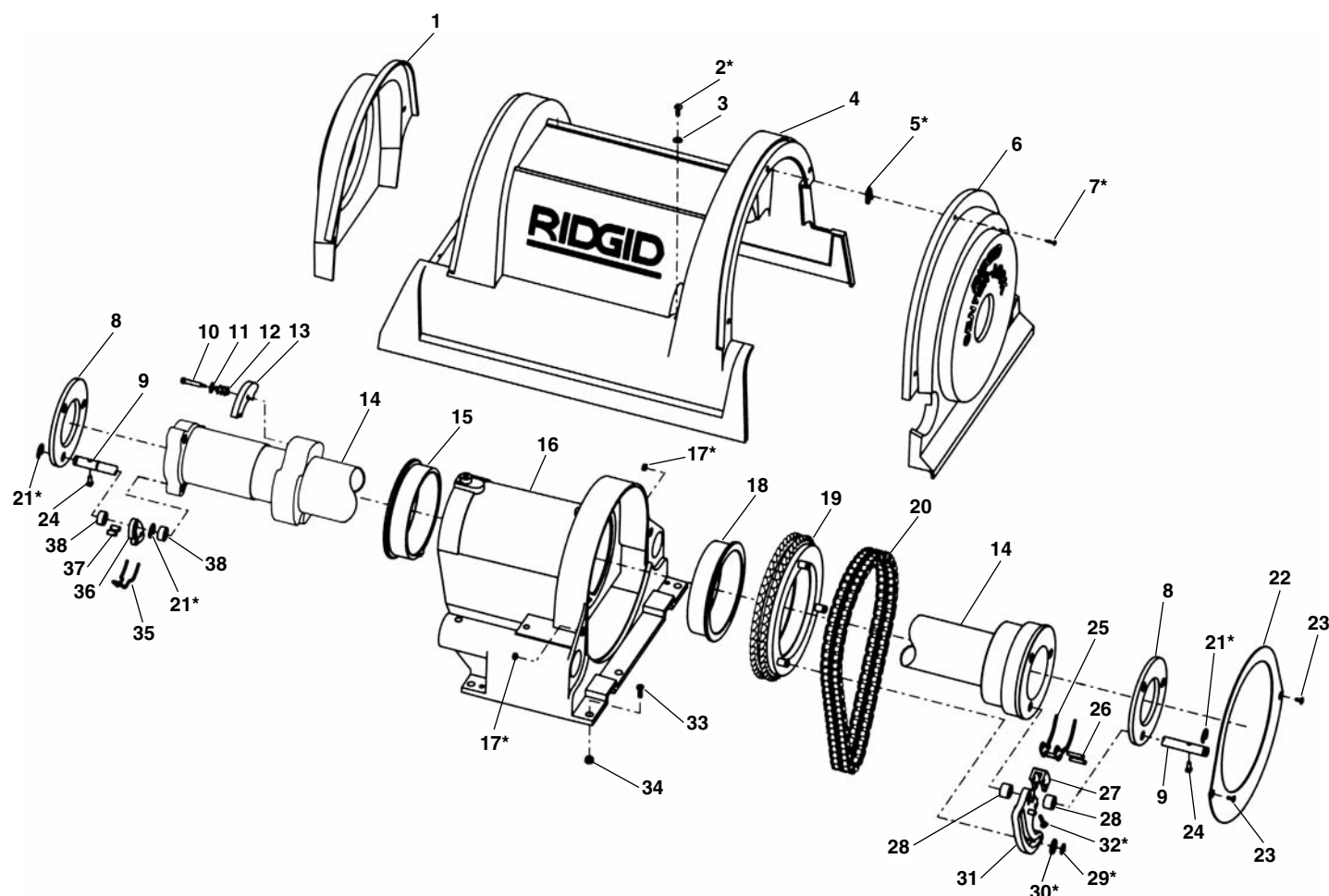
**NOTE:** Order parts by Catalog Number only.  
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| Ref. No. | Catalog No. | Description                 | Ref. No. | Catalog No. | Description                 | Ref. No. | Catalog No. | Description                 |
|----------|-------------|-----------------------------|----------|-------------|-----------------------------|----------|-------------|-----------------------------|
| 1        | 96297       | Screw Pan Hd. M6 x 1 - 30   | 19       | 26868       | Brush Holder                | 36       | 26863       | Spring                      |
| 2        | 96217       | Lockwasher M6               | 20       | 82107       | Brush Cap                   | 37       | 26858       | Shaft Assembly              |
| 3        | 96267       | Carrying Handle             | 21       | 82102       | Brush                       | 38       | 26853       | Gear Housing                |
| 4        | 96292       | Screw Pan Hd. M4 x 1.4 - 16 | 22       | 89952       | Screw Pan Hd 1/4" - 20 x 1" | 39       | 26838       | Bearing                     |
| 5        | 96257       | Handle Upper                | 23       | 96232       | Lockwasher 1/4"             | 40       | 26833       | Bearing                     |
| 6        | 81167       | Switch Spdt                 | 24       | 11398       | Washer 1/4" x 9/16" x 1/16" | 41       | 26828       | Armature Assembly           |
| 7        | 81137       | Spring                      | 25       | 82152       | Chain Hook                  | 42       | 26823       | Baffle                      |
| 8        | 96282       | Switch Actuator             | 26       | 26923       | Warning Label               | 43       | 26818       | Field Screw                 |
| 9        | 26933       | Warning Label               | 27       | 26873       | Jumper Wire                 | 44       | 26813       | Field                       |
| 10       | 96262       | Handle Lower                | 28       | 26883       | Cable Tie                   | 45       | 26808       | Motor Housing               |
| 11       | 96277       | Nut Hex M5 x 0.8            | 29       | 26908       | Warning Label               | 46       | 96302       | End Cover                   |
| 12       | 96287       | Screw Pan Hd. M5 x 0.8 - 37 | 30       | 26888       | Fiber Plate                 | 47       | 87442       | Screw Pan Hd. M5 x 0.8 - 12 |
| 13       | 96272       | Handle Hanger               | 31       | 26893       | Jumper Wire                 | 48       | 26928       | Cable Tie                   |
| 14       | 74907       | Screw                       | 32       | 26898       | Sleeve                      | 49       | 26913       | Warning Label               |
| 15       | 78622       | Cord Clamp                  | 33       | 26903       | Wire Nut                    | 50       | 82112       | Cord Guard                  |
| 16       | 26918       | Warning Label               | 34       | 26878       | Knob                        | 51       | 96252       | Lockwasher Ext M5           |
| 17       | 96307       | Lockwasher 5MM              | 35       | 26843       | Plunger                     | 52       | 82117       | Cord w/Plug                 |
| 18       | 26848       | Rubber Pin                  |          |             |                             |          |             |                             |

## Wiring



## Spindle Assembly

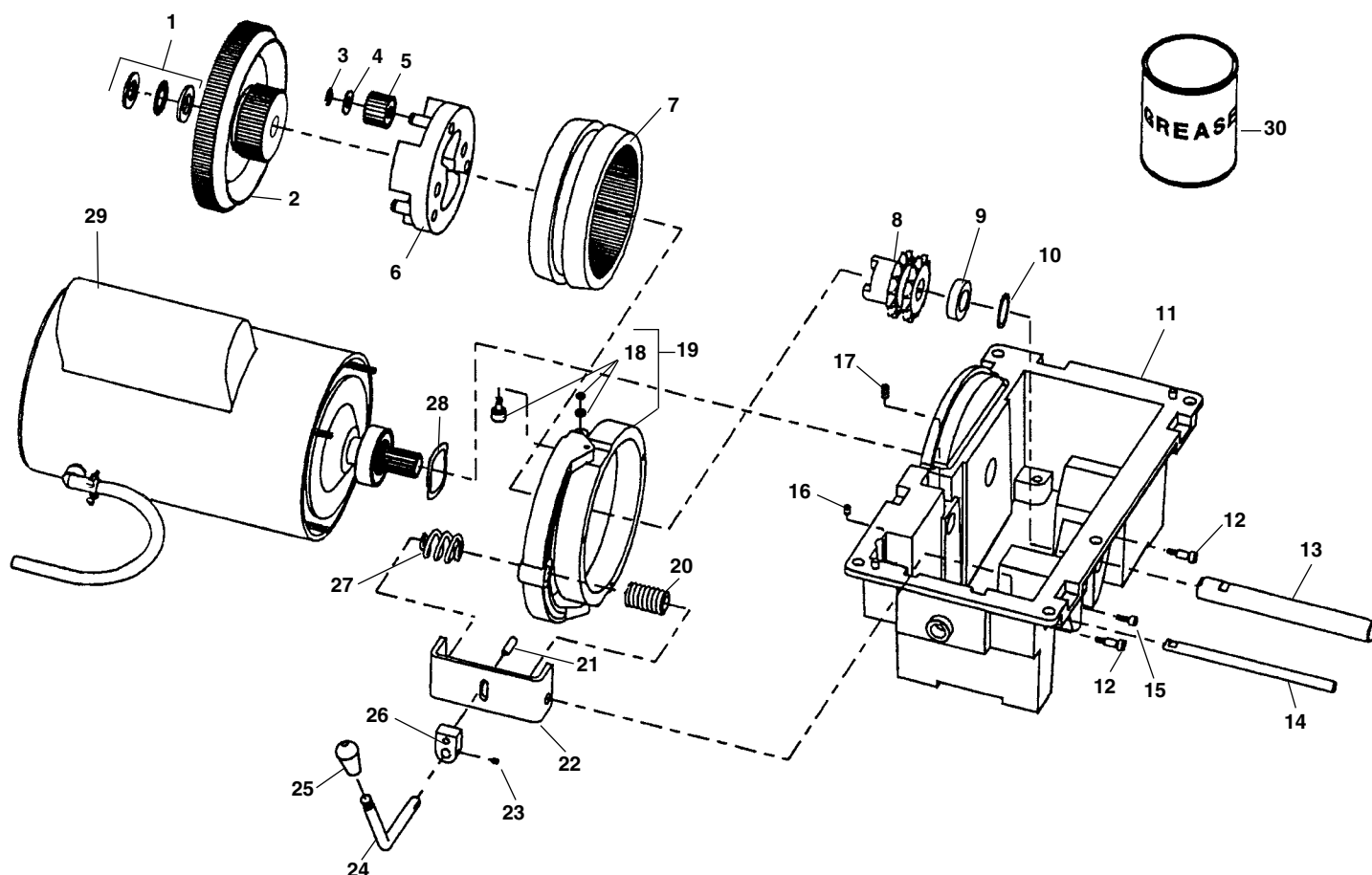


**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                          | Ref. No. | Catalog No. | Description                                        |
|----------|-------------|--------------------------------------|----------|-------------|----------------------------------------------------|
| 1        | 34652       | Rear Cover                           | 21*      | 26937       | Retaining Ring (9)                                 |
| 2*       | 43352       | Screw (3)                            | 22       | 34757       | Splash Guard                                       |
| 3*       | 43357       | Washer (3)                           | 23*      | 46785       | Screw 10-32 x 3/8" (2)                             |
| 4        | 34657       | Top Cover w/Clips (Includes 4, 5, 7) | 24       | 34762       | Pivot Rod Pin (6)                                  |
| 5*       | 43362       | "J" Clip (6)                         | 25       | 34772       | Front Pick-up Springs (3)                          |
| 6        | 34662       | Front Cover                          | 26       | 34777       | Roll Pin (6)                                       |
| 7*       | 43367       | Screw (6)                            | 27       | 34782       | Jaw Insert (3) (Includes Ref.# 25, 26)             |
| 8        | 47497       | Pivot Rod Support (2)                | 28       | 34787       | Front Jaw Spacer (6)                               |
| 9        | 34767       | Pivot Rod (3)                        | 29*      | 34245       | Retaining Ring (3)                                 |
| 10       | 39567       | Shoulder Screw 1/4" -20 x 1 1/2" (3) | 30*      | 34792       | Washer (3)                                         |
| 11       | 54290       | Flat Washer (3)                      | 31       | 40847       | Front Jaw (Includes Ref.# 25, 26, 27, 32)          |
| 12       | 35362       | Spring (3)                           | 32*      | 44557       | Jaw Insert Screw (3)                               |
| 13       | 34702       | Brake Shoe (3)                       | 33       | 45470       | Bolt 3/8" - 16 x 1" (5)                            |
| 14       | 44552       | Spindle Tube                         | 34       | 44225       | Nut 3/8" - 16 (5)                                  |
| 15       | 34712       | Rear Bearing                         | 35       | 34807       | Rear Pick-up Spring (3)                            |
| 16       | 34717       | Spindle Housing                      | 36       | 41347       | Rear Jaw Set (Includes Ref.# 35, 37)               |
| 17*      | 34722       | Nut #10 (2)                          | 37       | 34817       | Pick-up Spring Pin (6)                             |
| 18       | 34727       | Front Bearing                        | 38       | 34802       | Rear Jaw Spacer (6)                                |
| 19       | 34732       | Drive Sprocket w/Pins                | —        | 46727       | Hardware package<br>(Includes items marked with *) |
| 20       | 34742       | Drive Chain w/Master Link            |          |             |                                                    |
|          | 34747       | Master Link                          |          |             |                                                    |

†See Service Notes

## Transmission and Motor – Induction



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

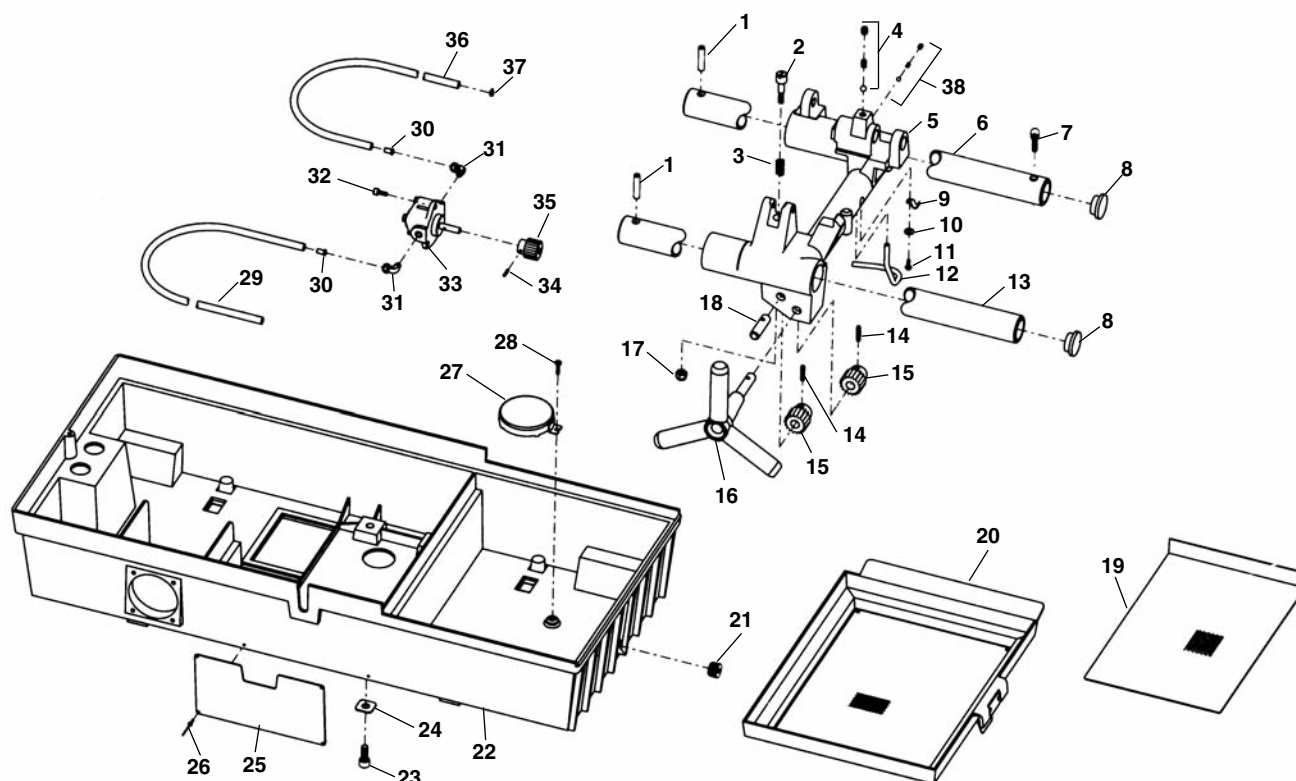
| Ref. No. | Catalog No. | Description               | Ref. No. | Catalog No. | Description                         | Ref. No. | Catalog No. | Description                   |
|----------|-------------|---------------------------|----------|-------------|-------------------------------------|----------|-------------|-------------------------------|
| 1        | 41425       | Thrust Bearing w/Washer   | 11       | 34872       | Transmission Housing                | 21       | 44640       | Dowel Pin                     |
| 2        | 44537       | Input Gear 60 Hz          | 12       | 34877       | Shoulder Screw 1/4" - 20 x 1/2" (2) | 22       | 34912       | Yoke Slide                    |
| 3        | 34245       | Retaining Ring (3)        | 13       | 34882       | Transmission Shaft                  | 23       | 34917       | Set Screw 10 - 32 x 1/4"      |
| 4        | 34792       | Washer (3)                | 14       | 34887       | Shifter Shaft                       | 24       | 34927       | Shifter Lever                 |
| 5        | 34837       | Planet Gear (3)           | 15       | 40260       | Screw 10 - 24 x 1/2"                | 25       | 34932       | Knob                          |
| 6        | 56822       | Planet Gear Spider w/Pins | 16       | 34897       | Set Screw 10 - 32 x 1/4"            | 26       | 34922       | Pivot Block                   |
| 7        | 44527       | Internal Ring Gear        | 17       | 34892       | Set Screw 1/4" - 20 x 1/2"          | 27       | 35362       | Barrel Spring                 |
| 8        | 34862       | Output Sprocket           | 18       | 44547       | 5/8" Cam Roller (2)                 | 28       | 34942       | Wave Washer                   |
| 9        | 34867       | Thrust Spacer             | 19       | 44542       | Stationary Cup Assembly             | 29       | 34947       | Motor 120V 60 Hz              |
| 10       | 68037       | Wave Washer               | 20       | 34907       | Large Spring                        | 30       | 26707       | Transmission Grease 1 lb. (2) |

## 1822-I Motor Parts

| Description               | 120V<br>60Hz |
|---------------------------|--------------|
| Dual Contact Start Switch | 46772        |
| Start Capacitor           | 46782        |
| Run Capacitor             | 46802        |
| Motor Bolts               | 46812        |

See 1822 Service Notes

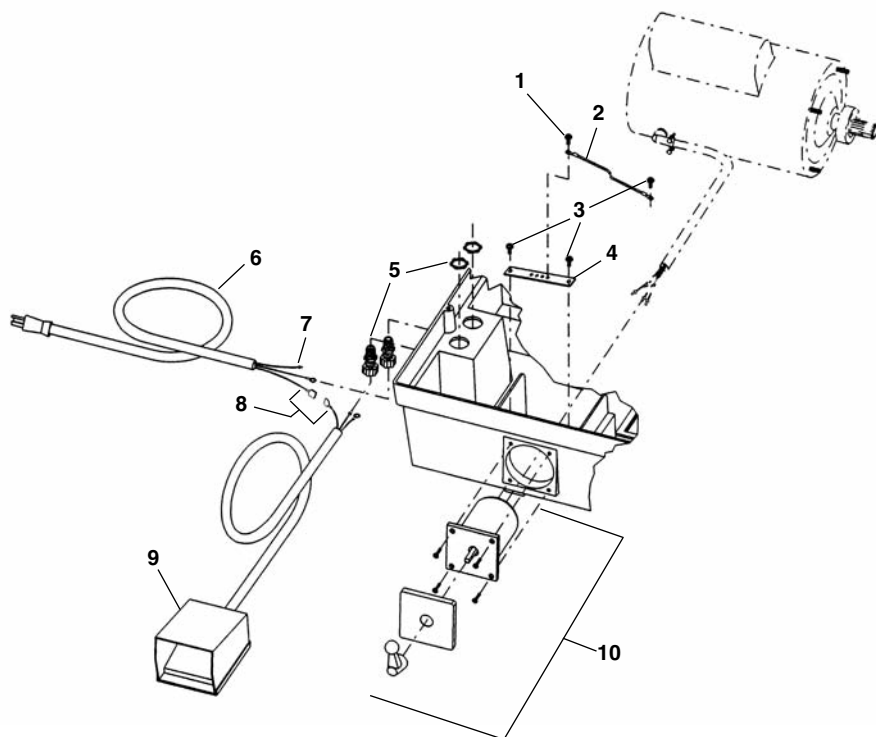
## Carriage and Oil System - Induction



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                        | Ref. No. | Catalog No. | Description                     |
|----------|-------------|------------------------------------|----------|-------------|---------------------------------|
| 1        | 34375       | Rail Pin (2)                       | 21       | 48337       | Drain Plug 3/4" NPT             |
| 2        | 35042       | Stop Bolt                          | 22       | 26842       | Drain Plug (Rubber-Early Style) |
| 3        | 35047       | Stop Bolt Spring                   |          | 59747       | Base                            |
| 4        | 46810       | Detente Assembly                   |          | 59752       | Base (1822-IC)                  |
| 5        | 35147       | Carriage (Includes 2, 3, 4, 5, 38) | 23       | 46755       | Bolt 3/8" -16 x 7/8" (4)        |
| 6        | 35057       | Rear Rail                          | 24       | 35107       | Square Washer (4)               |
| 7        | 34425       | Screw 5/16" -18 x 3/8"             | 25       | 36612       | Warning Plate 60Hz              |
| 8        | 35162       | Rail Plug (2)                      | 26       | 35222       | Pop Rivet (2)                   |
| 9        | 35062       | Oil Line Clamp                     | 27       | 58467       | Oil Screen Assembly             |
| 10       | 45365       | Washer #10                         | 28       | 26797       | Oil Screen Screw 10-32 x 5/16"  |
| 11       | 79965       | Screw 10-32 x 1/2                  | 29       | 35112       | Oil Intake Line 30"             |
| 12       | 35067       | Oil Tube                           | 30       | 35117       | Oil Line Insert (2)             |
| 13       | 35167       | Front Rail                         | 31       | 35122       | 90 Degree Fitting (2)           |
| 14       | 34342       | Roll Pin 3/16" x 15/16" (2)        | 32       | 32145       | Bolt 1/4" - 20 x 1/2" (3)       |
| 15       | 59092       | Carriage Pinion (2)                | 33       | 39162       | Oil Pump                        |
| 16       | 35182       | Handwheel                          | 34       | 39820       | Pin                             |
| 17       | 75110       | Stop Nut 5/16" -18                 | 35       | 35197       | 24 T Pump Gear - 60 Hz          |
| 18       | 35187       | Pinion Idler Shaft                 | 36       | 35137       | Oil Supply Line 40"             |
| 19       | 35192       | Lower Screen                       | 37       | 35142       | Hose Clamp                      |
| 20       | 35097       | Draw Tray Assembly                 | 38       | 35307       | Oil Pressure Relief             |

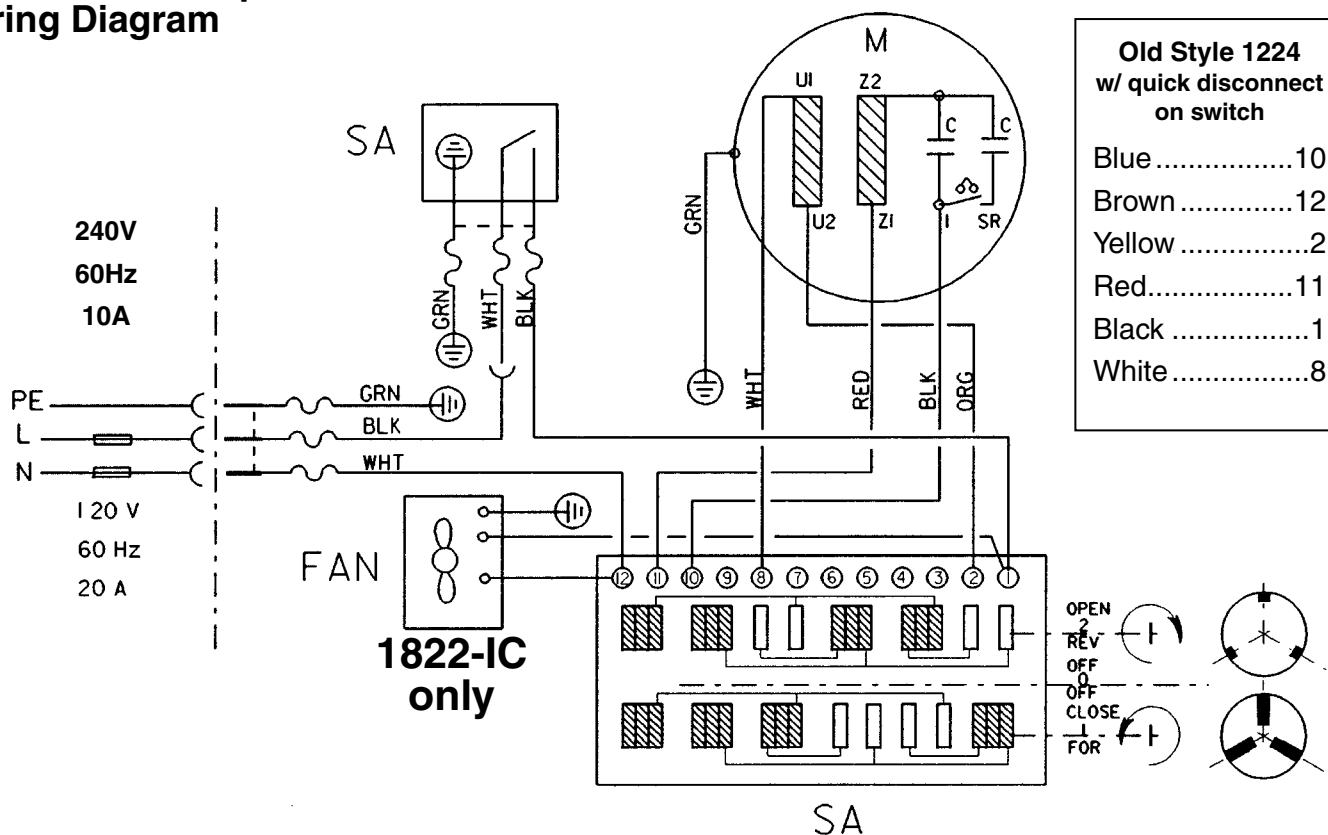
## 60 Hz Electrical Components



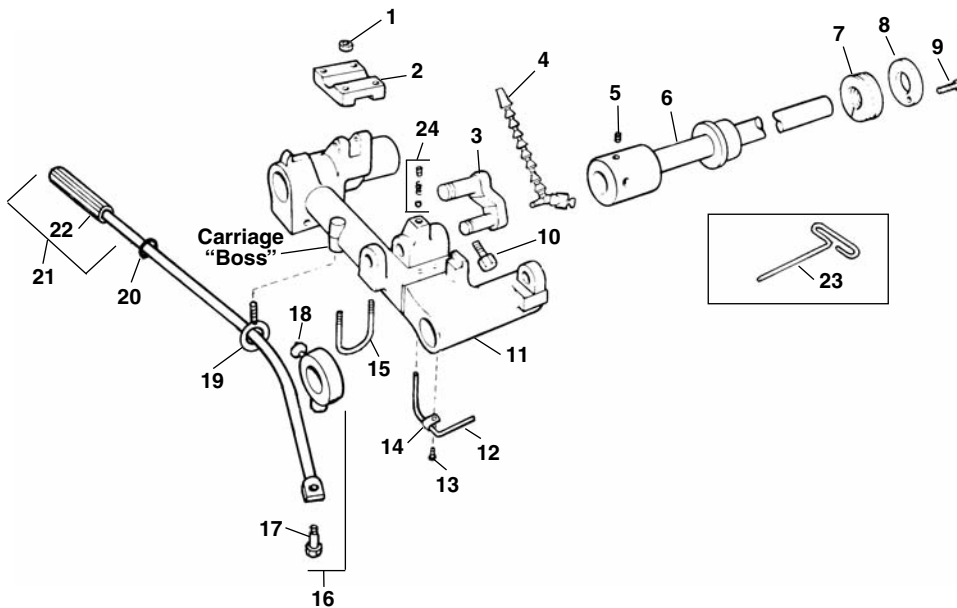
NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description            |
|----------|-------------|------------------------|
| 1        | 34715       | Screw 10-32 x 3/8" (3) |
| 2        | 33607       | Ground Wire            |
| 3        | 45420       | Screw 10-24 (4)        |
| 4        | 59732       | Ground Strap           |
| 5        | 68885       | Strain Relief (2)      |
| 6        | 46740       | Power Cord 120V        |
|          | 46410       | Power Cord 240V        |
| 7        | 36222       | Wire Terminal          |
| 8        | 56407       | Quick Disconnect Set   |
| 9        | 36642       | B-294 Foot Switch      |
| 10       | 20133       | Switch Assembly        |

## 1224 &amp; 1822-I Replacement Switch Wiring Diagram



## No. 241 Carriage Mount Kit Parts

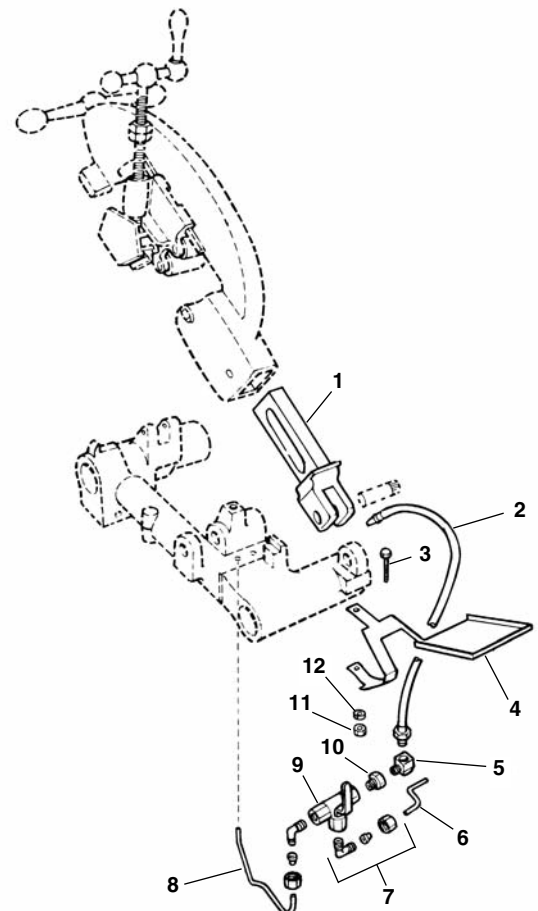


**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description                                       |
|----------|-------------|---------------------------------------------------|
| —        | 35877       | 241 Carriage Mount Kit                            |
| 1        | 96730       | Hex Nut, $\frac{5}{16}$ " - 18                    |
| 2        | 36177       | Saddle                                            |
| 3        | 36182       | Connecting Link                                   |
| 4        | 35277       | Coolant Nozzle                                    |
| 5        | 39775       | Set Screw, $\frac{5}{16}$ " - 11                  |
| 6        | 36187       | Drive Bar                                         |
| 7        | 36192       | Spring                                            |
| 8        | 36197       | End Cap                                           |
| 9        | 27357       | Cap Screw, $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " |
| 10       | 35202       | Sq. Hd. Set Screw, $\frac{1}{2}$ " - 13           |
| 11       | 35052       | Carriage                                          |
| 12       | 35067       | Oil Supply Line                                   |
| 13       | 79965       | Screw, 10-32 x $\frac{1}{2}$ "                    |
| 14       | 35062       | Oil Line Clamp                                    |
| 15       | 35207       | U-Bolt                                            |
| 16       | 35282       | Collar Assembly                                   |
| 17       | 46210       | Shoulder Bolt                                     |
| 18       | 46220       | Thumb Screw                                       |
| 19       | 35082       | Eye Bolt                                          |
| 20       | 35092       | O-Ring                                            |
| 21       | 43400       | Lever Arm Assembly                                |
| 22       | 46235       | Hand Grip                                         |
| 23       | 35212       | Hex Wrench                                        |
| 24       | 46810       | Detente Assembly                                  |

## No. 822 Blade Cutter Adapter Kit Parts 307 Oil Spout Assembly

| Ref. No. | Catalog No. | Description                             |
|----------|-------------|-----------------------------------------|
| —        | 35872       | 822 Adapter Kit                         |
| —        | 36602       | 307 Manifold Kit                        |
| 1        | 36137       | Cutter Arm (822 Kit Only) (1)           |
| 2        | 39845       | Coolant Nozzle (1)                      |
| 3        | 44510       | Cap Screw $\frac{1}{4}$ " - 20 x 2" (1) |
| 4        | 36142       | Drip Guard (1)                          |
| 5        | 36147       | 90° Street Elbow (1)                    |
| 6        | 36152       | Oil Line (3.3 in.) (1)                  |
| 7        | 36157       | 90° Comp. Fitting (2)                   |
| 8        | 36162       | Oil Line (7.4 in.) (1)                  |
| 9        | 36167       | 3-Way Valve (1)                         |
| 10       | 36172       | Reducer Bushing (1)                     |
| 11       | 83890       | Hex Nut, $\frac{1}{4}$ " - 20 (1)       |
| 12       | 27097       | Flat Washer, $\frac{1}{4}$ " (1)        |

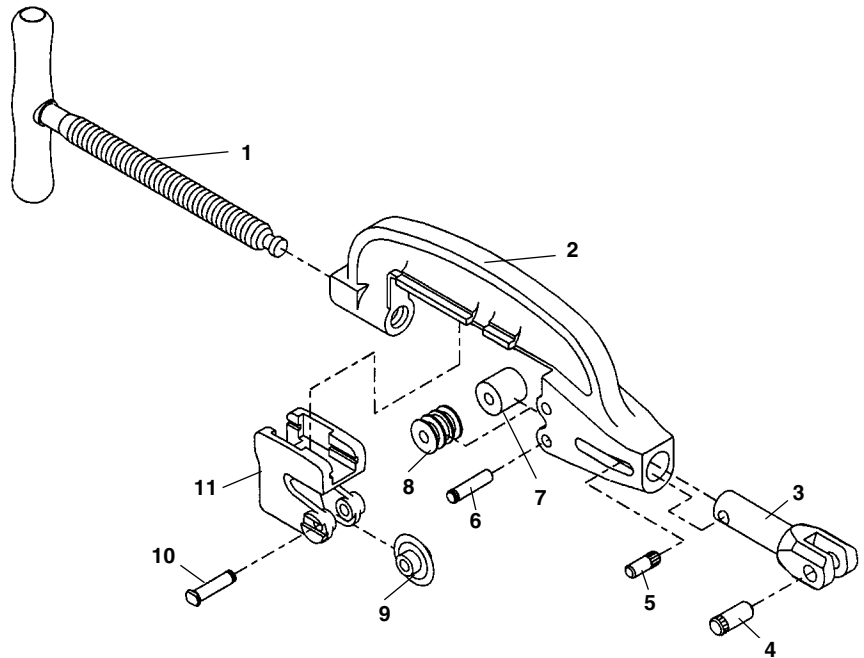




## No. 364 Cutter

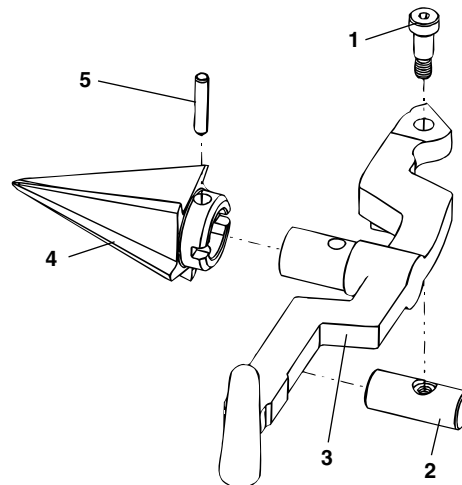
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description              |
|----------|-------------|--------------------------|
| —        | 34617       | 364 Cutter Complete      |
| 1        | 36287       | Feed Screw Handle        |
| 2        | 36292       | Cutter Frame             |
| 3        | 45505       | Support Arm              |
| 4        | 45520       | Hinge Pin                |
| 5        | 35317       | Retaining Pin            |
| 6        | 46662       | Roll Pin (2)             |
| 7        | 46960       | Roll (Steel) (2)         |
| 8        | 43682       | Roll Pl. Coated Pipe (2) |
| 9        | 44185       | Cutter Wheel E-1032      |
| 10       | 34780       | Wheel Pin                |
| 11       | 36282       | Wheel Housing            |



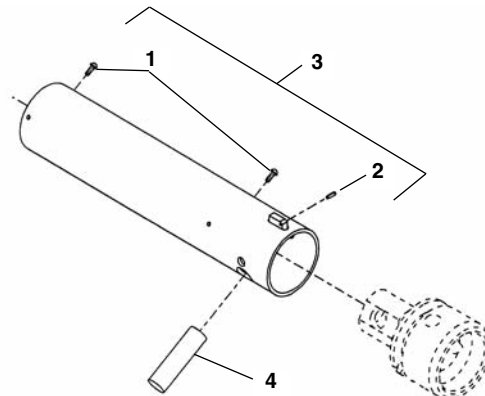
## No. 344 Reamer

| Ref. No. | Catalog No. | Description               |
|----------|-------------|---------------------------|
| —        | 34612       | 344 Reamer Complete       |
| 1        | 36262       | Shoulder Screw            |
| 2        | 36267       | Pivot Pin                 |
| 3        | 36272       | Reamer Arm                |
| 4        | 36277       | Reamer Cone (R.H.)        |
|          | 46660       | Reamer Cone (L.H. & R.H.) |
| 5        | 35355       | Split Roll Pin            |

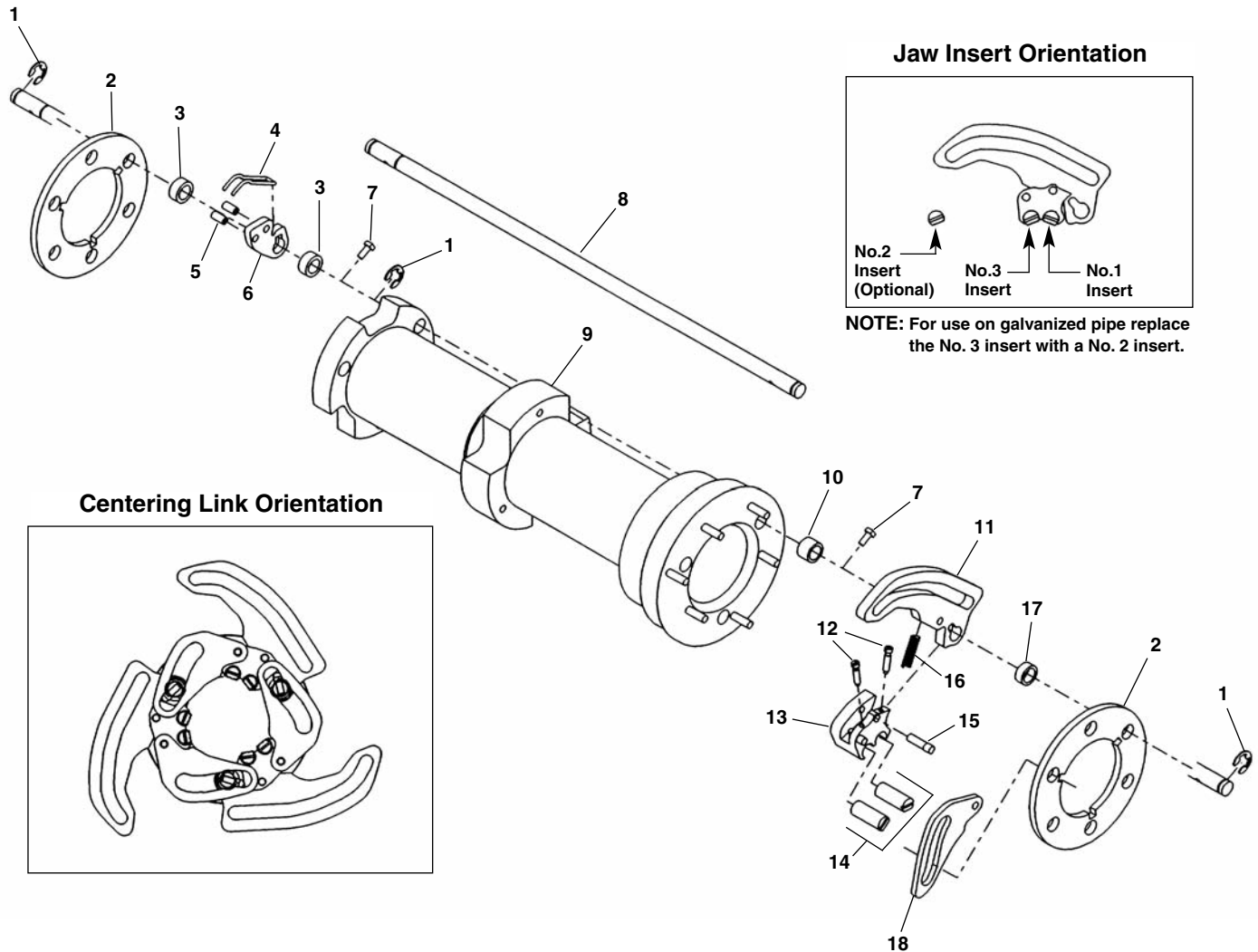


## No. 839 Nipple Chuck

| Ref. No. | Catalog No. | Description         |
|----------|-------------|---------------------|
| —        | 35867       | No. 839 Adapter Kit |
| 1        | 54307       | Drive Screw (6)     |
| 2        | 47502       | Roll Pin            |
| 3        | 47507       | Tube Assembly       |
| 4        | 47512       | Pin, 3/4" x 2 3/4"  |



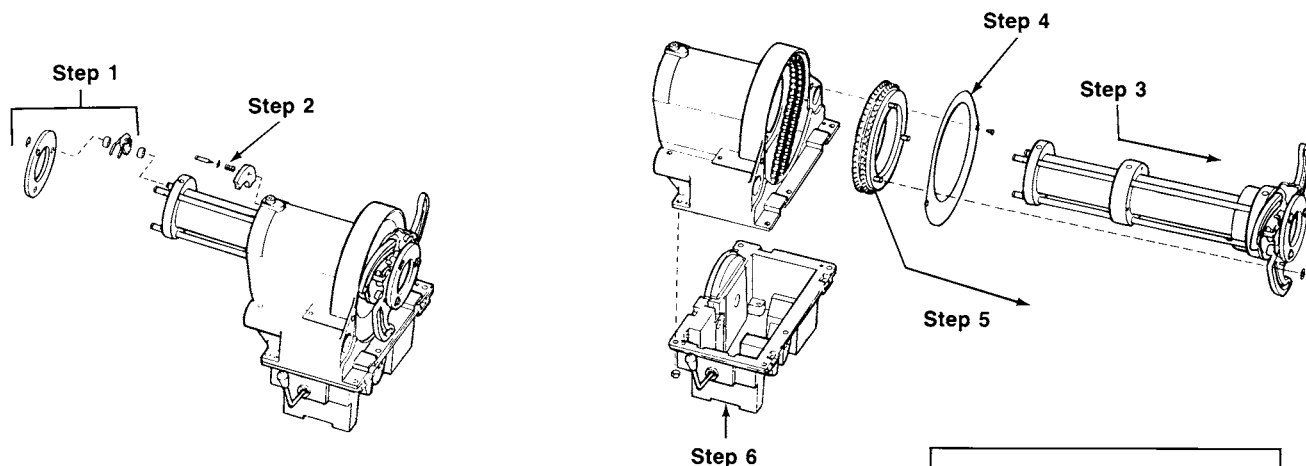
## Spindle Assembly For Plastic Coated Pipe



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

| Ref. No. | Catalog No. | Description                            | Ref. No. | Catalog No. | Description                                       |
|----------|-------------|----------------------------------------|----------|-------------|---------------------------------------------------|
| —        | 50107       | Plastic Coated Pipe Spindle Assembly   | 10       | 34787       | Large Front Spacer                                |
| 1        | 26937       | Retaining Clip (9)                     | 11       | 52977       | Jaw (3) (Includes Ref. No.12-16)                  |
| 2        | 47497       | Pivot Rod Support (2)                  | 12       | 46642       | Jaw Insert Screw (6)                              |
| 3        | 34802       | Rear Spacer (6)                        | 13       | 52982       | Insert Holder (3)                                 |
| 4        | 43407       | Rear Pick-up Spring (3)                | 14       | 43377       | Jaw Insert Set (Includes 3 each No.1 & 3 Inserts) |
| 5        | 34817       | Rear Pick-up Spring Pin (6)            | 15       | 46647       | Jaw Insert Set (No. 2 - Optional f/Galv. Pipe)    |
| 6        | 43412       | Rear Jaw (3) (Includes Ref. No. 4 & 5) | 16       | 43402       | Insert Holder Pin (3)                             |
| 7        | 34762       | Pivot Rod Pin (6)                      | 17       | 52987       | Insert Holder Spring (3)                          |
| 8        | 34767       | Pivot Rod (3)                          | 18       | 43392       | Small Front Spacer (3)                            |
| 9        | 61127       | Spindle Tube f/P.C.P.                  |          | 43387       | Centering Link (3)                                |

## Power Assembly/Drive Assembly Separation Procedure



Step 1: Remove Rear Centering Device.

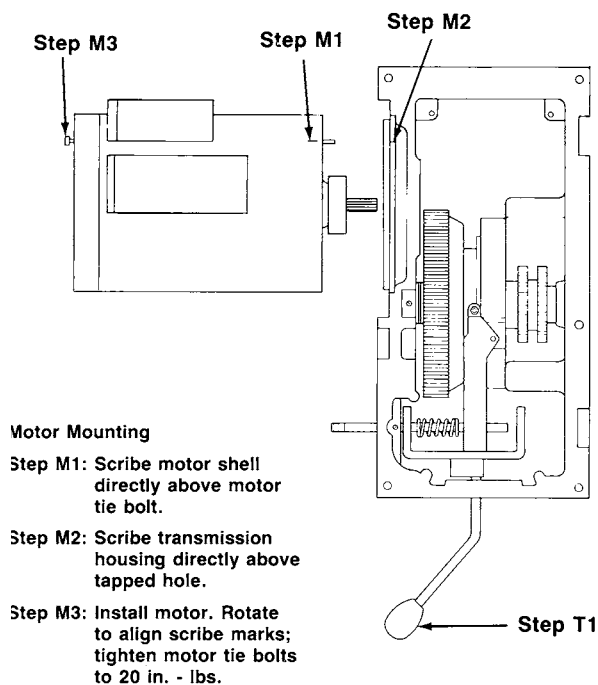
Step 2: Remove Brake Shoes (3).

Step 3: Remove clips - slide out Spindle Assembly.

Step 4/5: Remove Splash Guard and Sprocket.

Step 6: Separate housings.

## Motor Mounting and Transmission Shifter Assembly (Induction Only)

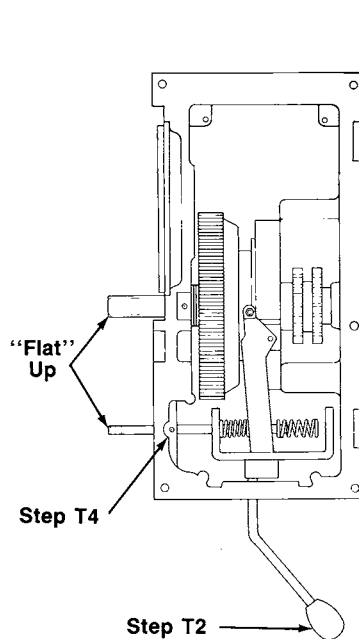


### Motor Mounting

Step M1: Scribe motor shell directly above motor tie bolt.

Step M2: Scribe transmission housing directly above tapped hole.

Step M3: Install motor. Rotate to align scribe marks; tighten motor tie bolts to 20 in. - lbs.



### Transmission Shifter Assembly

Step T1: Rotate shift lever to left and install small (short) spring over shifting shaft.

Step T2: Rotate shift lever to right and install large (long) spring.

Step T3: (Not shown) Rotate shift lever to center (upright) position and finish installing shaft.

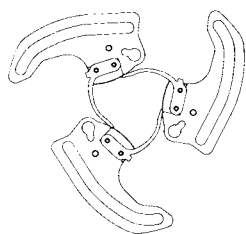
Step T4: Tighten set screw.

Note: Install "flat" on shafts UP.

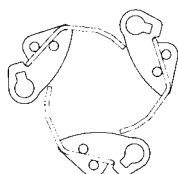
### Right Hand

### Jaw Orientation

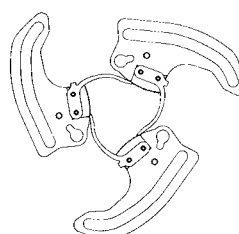
### Left Hand



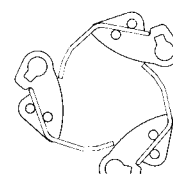
Front



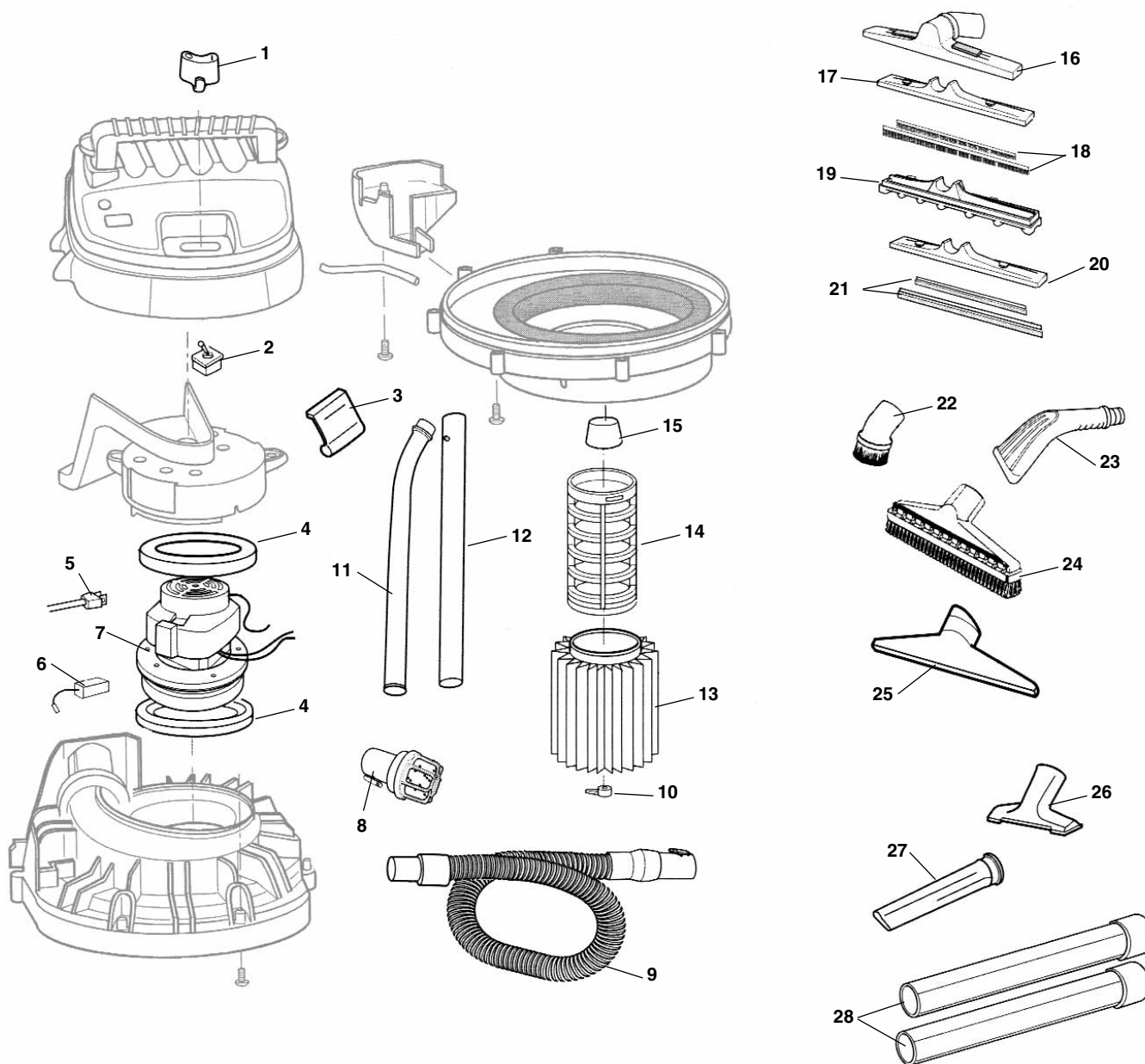
Rear



Front



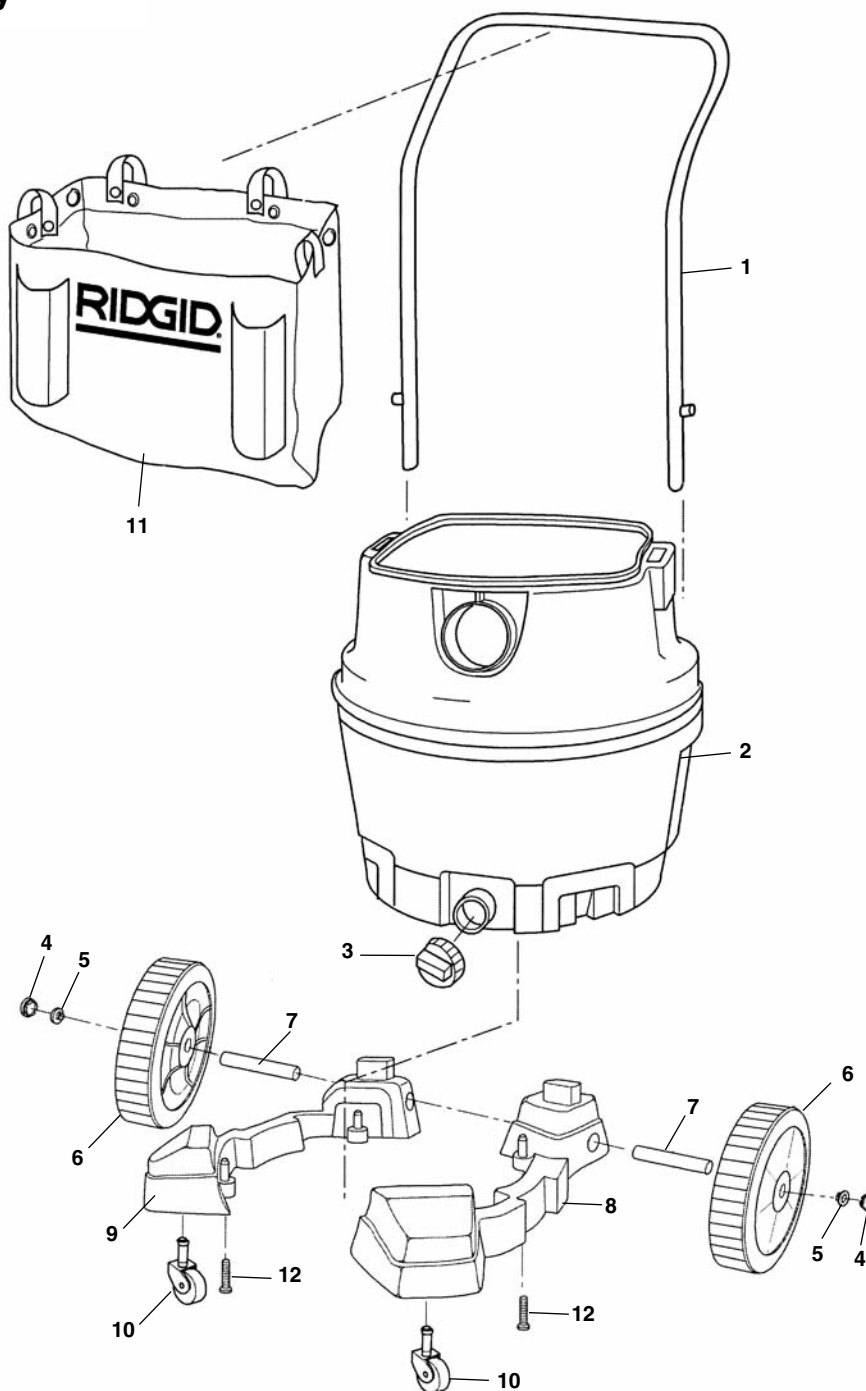
Rear



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

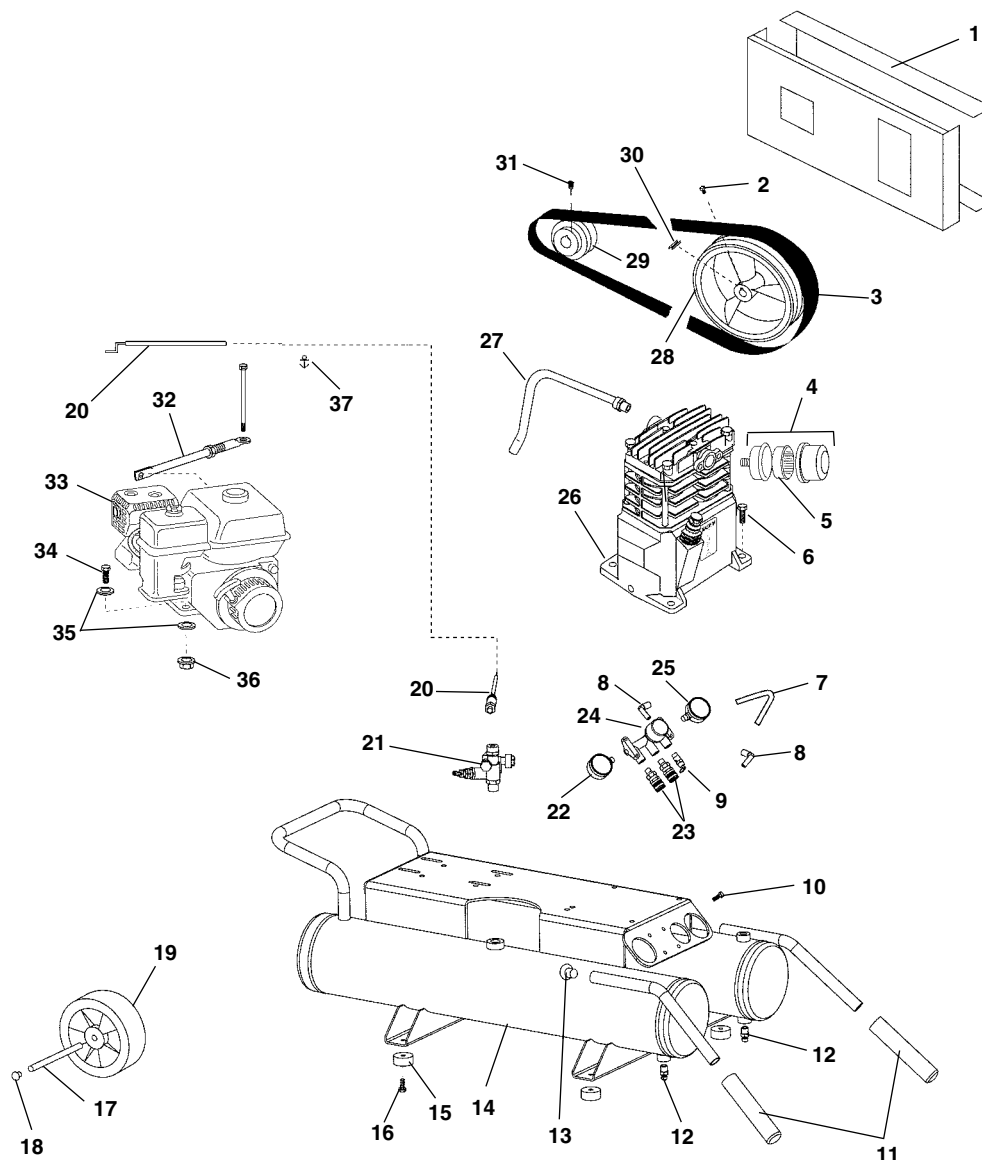
| Ref. No. | Catalog No. | Description               | Ref. No. | Catalog No. | Description                               | Ref. No. | Catalog No. | Description                            |
|----------|-------------|---------------------------|----------|-------------|-------------------------------------------|----------|-------------|----------------------------------------|
| 1        | 19818       | Actuator Switch           | 11       | 31103       | Extension Wand Upper (Metal)              | 21       | 30528       | Replacement Squeegee Inserts – RV2600B |
| 2        | 12313       | Toggle Switch             | 12       | 31108       | Extension Wand Lower (Metal)              | 22       | 23783       | Dusting Brush – RV2600B                |
| 3        | 83747       | Drum Latch                | 13       | 72952       | Filter                                    | 23       | 26578       | Claw Nozzle w/adapters – RV2600B       |
| 4        | 30453       | Motor Gasket (2)          | 14       | 73637       | Filter Cage                               | 24       | 72922       | Floor Brush – RV2400A                  |
| 5        | 30448       | Cord Assembly             | 15       | 19883       | Float                                     | 25       | 72912       | Wet Nozzle – RV2400A                   |
| 6        | 30438       | Motor Brush               | 16       | 31073       | Multi-Nozzle Body – RV2600B               | 26       | 72907       | Utility Nozzle – RV2400A               |
| 7        | 30443       | Motor Assembly            | 17       | 31078       | Floor Brush Insert – RV2600B              | 27       | 72932       | Crevice Tool – RV2400A                 |
| 8        | 72927       | Muffle/Diffuser           | 18       | 30523       | Replacement Floor Brush Inserts – RV2600B | 28       | 72902       | Extension Wands – RV2400A              |
| 9        | 30458       | Tug-A-Long Hose – RV2400A | 19       | 31083       | Carpet Insert – RV2600B                   |          |             |                                        |
|          | 31098       | Tug-A-Long Hose – RV2600B | 20       | 31088       | Squeegee Insert – RV2600B                 |          |             |                                        |
| 10       | 83872       | Filter Nut                |          |             |                                           |          |             |                                        |

## Cart Assembly



**NOTE:** Order parts by Catalog Number only.  
DO NOT order by Reference Number.

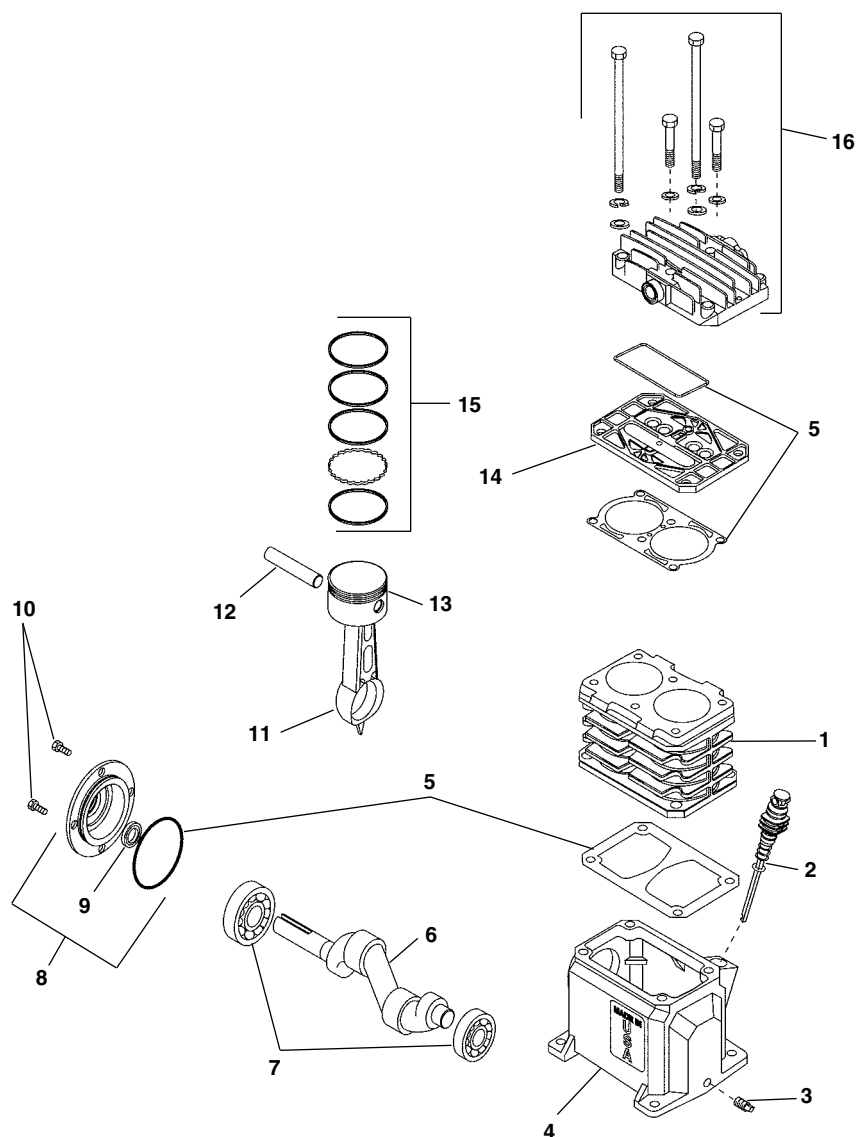
| Ref. No. | Catalog No. | Description              | Ref. No. | Catalog No. | Description                     |
|----------|-------------|--------------------------|----------|-------------|---------------------------------|
| 1        | 19893       | Handle Metal             | 7        | 30468       | Shaft                           |
| 2        | 19898       | Drum Assembly (RV2600B)  | 8        | 19928       | Caddy Right                     |
|          | 20058       | Drum Assembly (RV2400A)  | 9        | 19933       | Caddy Left                      |
| 3        | 73737       | Drain Cap                | 10       | 30473       | Caster                          |
| 4        | 19903       | Button Cap               | 11       | 30483       | Holder Accessory                |
| 5        | 19908       | Nut Washer Cap 1/2"      | 12       | 12338       | Screw PN Serr TY AB 10 x 1 3/4" |
| 6        | 19913       | Wheel Assembly (RV2400A) |          |             |                                 |
|          | 30478       | Wheel Assembly (RV2600B) |          |             |                                 |



**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

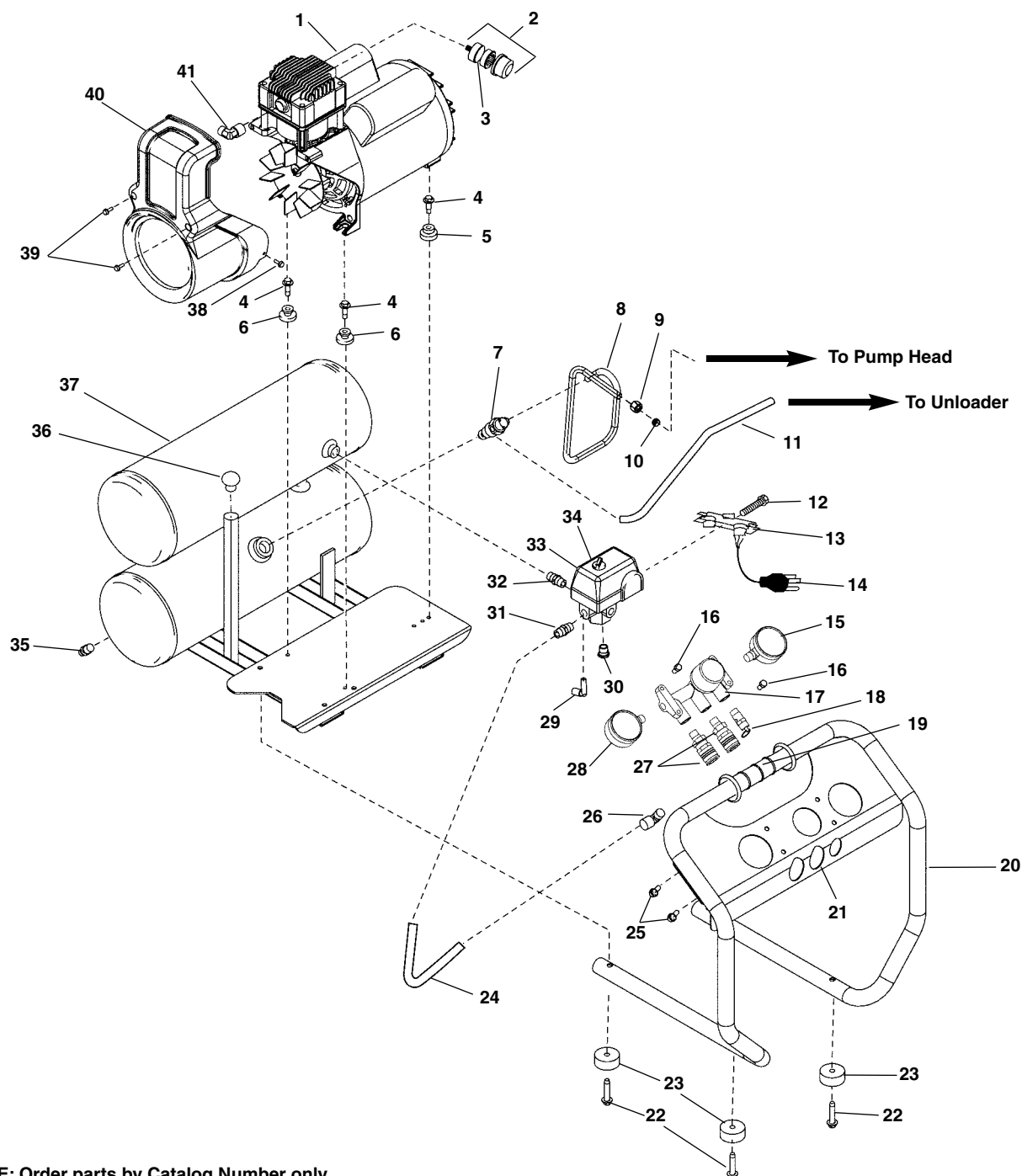
| Ref. No. | Catalog No. | Description                | Ref. No. | Catalog No. | Description            |
|----------|-------------|----------------------------|----------|-------------|------------------------|
| 1        | 17993       | Belt Guard Assembly        | 20       | 18058       | Throttle Control       |
| 2        | 17998       | Set Screw                  | 21       | 18063       | Throttle Unloader      |
| 3        | 18003       | Belt                       | 22       | 17878       | Gauge, Left            |
| 4        | 18008       | Filter Assembly            | 23       | 17873       | Coupler                |
| 5        | 18013       | Filter Element             | 24       | 17793       | Regulator              |
| 6        | 18018       | Screw                      | 25       | 17773       | Gauge, Right           |
| 7        | 18023       | $\frac{3}{8}$ " Nylon Tube | 26       | 18068       | Pump                   |
| 8        | 17868       | Elbow Fitting              | 27       | 18073       | Discharge Tube         |
| 9        | 17798       | Safety Valve               | 28       | 18078       | Flywheel               |
| 10       | 17783       | Screw, Torx                | 29       | 18083       | Pulley                 |
| 11       | 18028       | Handle Grip                | 30       | 18088       | Key, $\frac{3}{16}$ "  |
| 12       | 17913       | Drain Valve                | 31       | 18093       | Set Screw, Square Head |
| 13       | 17918       | Plug                       | 32       | 18098       | Brace Assembly         |
| 14       | 18033       | Tank                       | 33       | 18103       | Engine Complete        |
| 15       | 17853       | Rubber Foot                | 34       | 18108       | Screw, Hex Head        |
| 16       | 18038       | Screw                      | 35       | 18113       | Washer                 |
| 17       | 18043       | Axle rod                   | 36       | 18118       | Locknut                |
| 18       | 18048       | Plug                       | 37       | 18123       | Wire Retainer          |
| 19       | 18053       | Wheel, 10"                 |          |             |                        |





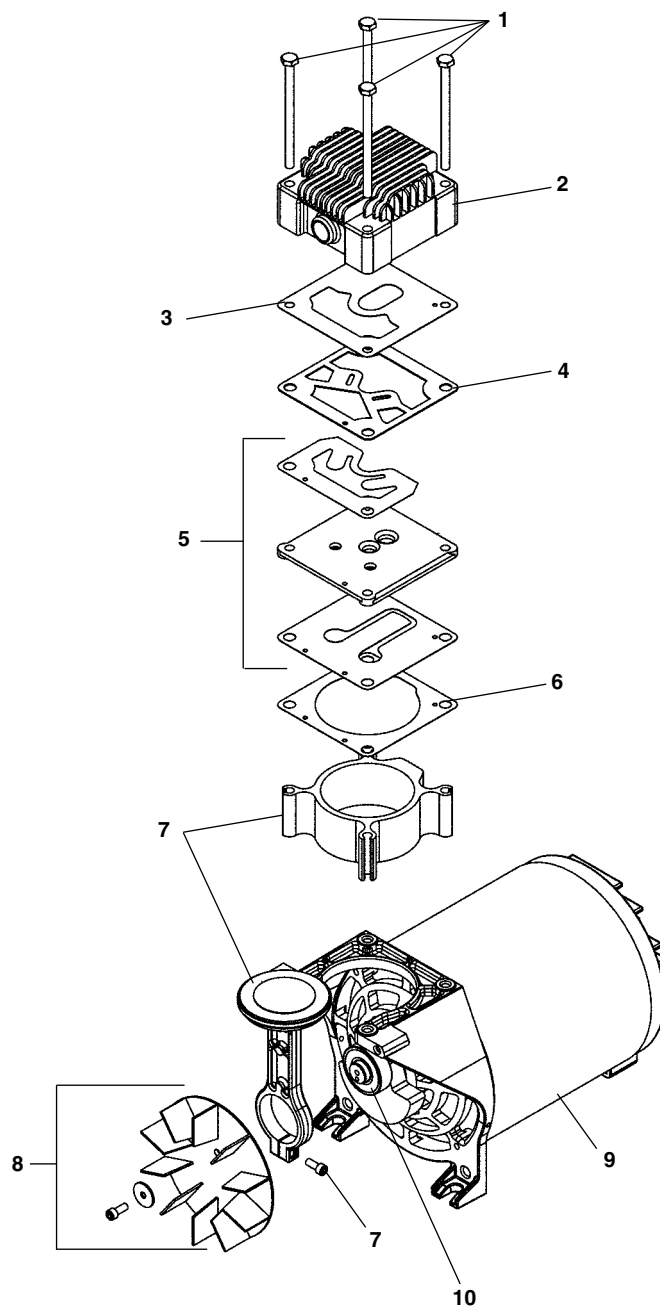
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DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description       | Ref. No. | Catalog No. | Description           |
|----------|-------------|-------------------|----------|-------------|-----------------------|
| 1        | 18128       | Cylinder          | 9        | 18178       | Oil Seal              |
| 2        | 18133       | Dipstick Breather | 10       | 18183       | Cap Screw             |
| 3        | 18138       | Oil Drain Plug    | 11       | 18158       | Connecting Rod        |
| 4        | 18143       | Crankcase         | 12       | 18163       | Piston Pin            |
| 5        | 18198       | Gasket Kit        | 13       | 18168       | Piston                |
| 6        | 18153       | Crankshaft        | 14       | 18188       | Valve Plate           |
| 7        | 18148       | Ball Bearing      | 15       | 18203       | Piston Ring Set       |
| 8        | 18173       | Bearing Cap       | 16       | 18193       | Cylinder Head w/bolts |



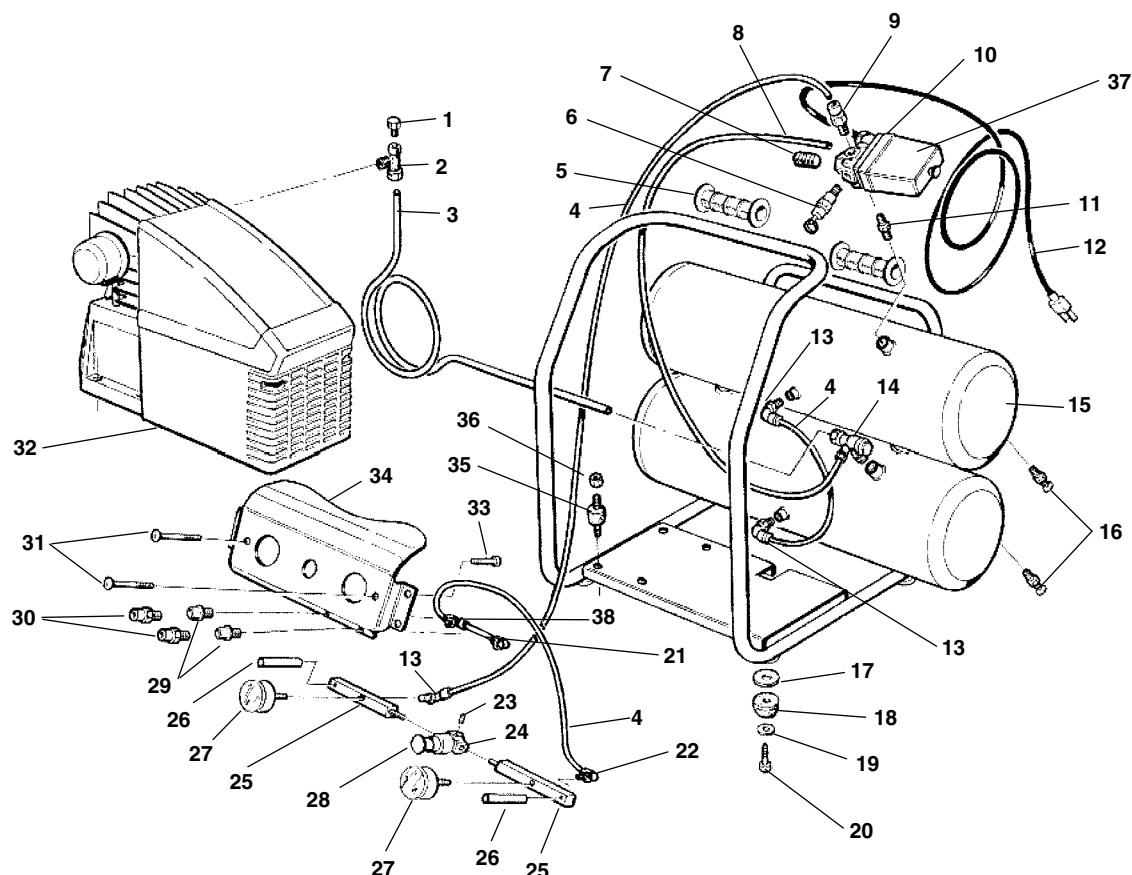
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| Ref. No. | Catalog No. | Description          | Ref. No. | Catalog No. | Description                     | Ref. No. | Catalog No. | Description           |
|----------|-------------|----------------------|----------|-------------|---------------------------------|----------|-------------|-----------------------|
| 1        | 17698       | Pump/Motor Assembly  | 15       | 17773       | Tank Gauge                      | 29       | 17883       | Unloader              |
| 2        | 17703       | Filter               | 16       | 17783       | Screw, 1/4" - 20 x 1/2"         | 30       | 17888       | Plug                  |
| 3        | 17708       | Filter Element       | 17       | 17793       | Regulator                       | 31       | 17893       | 3/8" Push To Connect  |
| 4        | 17713       | Shoulder Bolt        | 18       | 17798       | Safety Valve, 150 PSI           | 32       | 17898       | Nipple                |
| 5        | 17718       | Rubber Bushing-Rear  | 19       | 17808       | Grip                            | 33       | 17903       | Pressure Switch Cover |
| 6        | 17723       | Rubber Bushing-Front | 20       | 17813       | Roll Bar                        | 34       | 17908       | Pressure Switch       |
| 7        | 17728       | Check Valve          | 21       | 17838       | Control Panel Bracket           | 35       | 17913       | Tank Drain Valve      |
| 8        | 17733       | Exhaust Tube         | 22       | 17848       | Foot Screw                      | 36       | 17918       | Plug                  |
| 9        | 17738       | Nut                  | 23       | 17853       | Molded Rubber Bumper            | 37       | 17923       | 4.5 Gal. Twin Tank    |
| 10       | 17743       | Ferrule              | 24       | 17858       | 3/8" Nylon Tube                 | 38       | 17928       | Shroud Screw          |
| 11       | 17748       | 1/4" Flexible Tube   | 25       | 17863       | 1/4" - 20 x 1/2" Self Tap Screw | 39       | 17933       | Shroud Screw          |
| 12       | 17753       | Strain Relief screw  | 26       | 17868       | 3/8" 90 Degree Push to Connect  | 40       | 17938       | Shroud                |
| 13       | 17758       | Strain Relief        | 27       | 17873       | Coupler                         | 41       | 17943       | Exhaust Fitting       |
| 14       | 17763       | Cord                 | 28       | 17878       | Outlet Gauge                    |          |             |                       |



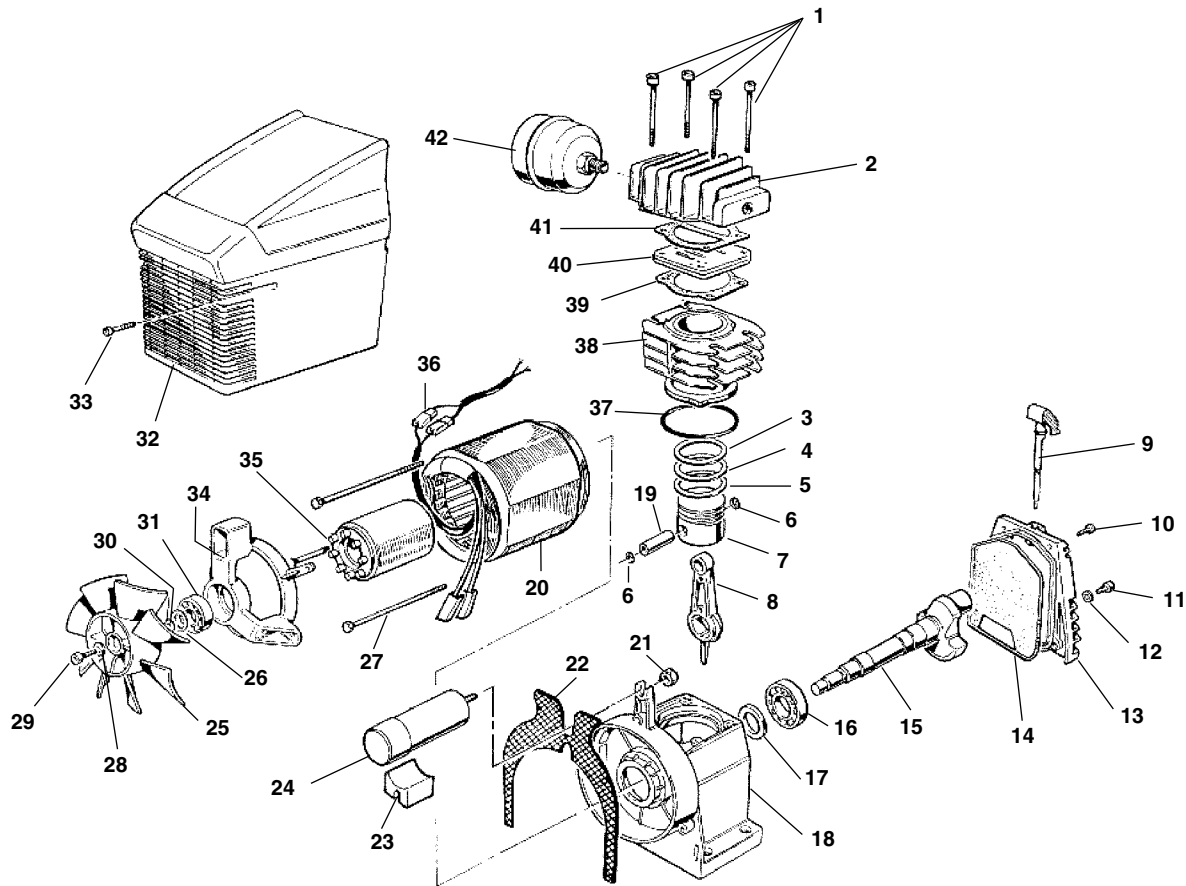
**NOTE: Order parts by Catalog Number only.  
DO NOT order by Reference Number.**

| Ref. No. | Catalog No. | Description             |
|----------|-------------|-------------------------|
| 1        | 17953       | Head Bolt Kit           |
| 2        | 17948       | Head                    |
| 3        | 17978       | Discharge Valve Gasket  |
| 4        | 17973       | Head Gasket             |
| 5        | 17983       | Valve Plate Kit         |
| 6        | 17958       | Cylinder Gasket         |
| 7        | 17968       | Piston Assembly w/Screw |
| 8        | 17988       | Fan Kit                 |
| 9        | 17963       | Motor Assembly          |
| 10       | 44565       | Bearing                 |



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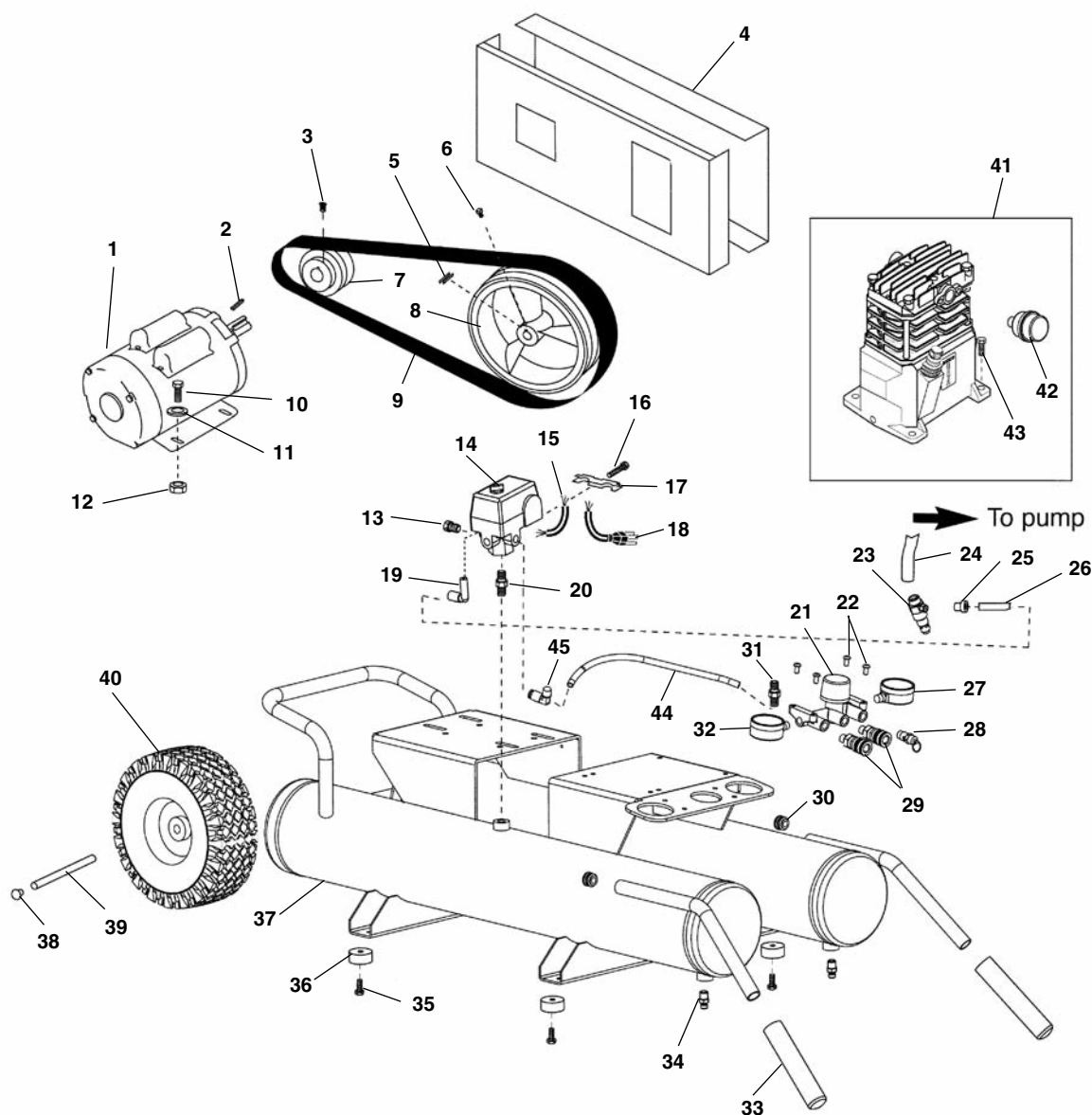
| Ref. No. | Catalog No. | Description                     | Ref. No. | Catalog No. | Description             |
|----------|-------------|---------------------------------|----------|-------------|-------------------------|
| 1        | 17353       | Valve Start Relief              | 20       | 17448       | Screw                   |
| 2        | 17358       | Tee Connector, Discharge        | 21       | 17453       | Elbow Connection        |
| 3        | 17363       | Delivery Pipe                   | 22       | 17458       | Tee Connector, Manifold |
| 4        | 17368       | Outlet Tube, Plastic            | 23       | 17463       | Plug, 1/8"              |
| 5        | 17373       | Rubber Handle                   | 24       | 17468       | Pressure Regulator      |
| 6        | 17378       | Safety Valve                    | 25       | 17473       | Gauge Manifold          |
| 7        | 17383       | Plug, 3/8"                      | 26       | 17478       | Nut, M6                 |
| 8        | 17388       | Discharge Tube, Alum.           | 27       | 17483       | Pressure Gauge          |
| 9        | 17393       | Quick Coupling, Pressure Switch | 28       | 17488       | Pressure Reducer Knob   |
| 10       | 17398       | Pressure Switch                 | 29       | 17493       | Reducer                 |
| 11       | 17403       | Double Screw, 1/4"              | 30       | 17498       | Coupling 3/8"           |
| 12       | 17408       | Cord w/Plug                     | 31       | 17503       | Bolt, control panel     |
| 13       | 17413       | Elbow Connection                | 32       | 17508       | Pump, Complete          |
| 14       | 17418       | Non Return Valve                | 33       | 17513       | Screw                   |
| 15       | 17423       | Air Tank                        | 34       | 17518       | Control Panel           |
| 16       | 17428       | Drain Tap 1/4 NPT               | 35       | 17523       | Anti-vibration Pads     |
| 17       | 17433       | Washer                          | 36       | 17528       | Nut, M8                 |
| 18       | 17438       | Anti-vibration Pads             | 37       | 21243       | Cover, Switch           |
| 19       | 17443       | Washer                          | 38       | 20493       | Tee, Connector          |



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| Ref. No. | Catalog No. | Description            | Ref. No. | Catalog No. | Description        | Ref. No. | Catalog No. | Description           |
|----------|-------------|------------------------|----------|-------------|--------------------|----------|-------------|-----------------------|
| 1        | 17143       | Bolt, Head             | 15       | 17213       | Crankshaft         | 29       | 17283       | Bolt, Fan             |
| 2        | 17148       | Pump Head              | 16       | 17218       | Bearing            | 30       | 17288       | Washer, Toothed       |
| 3        | 17153       | Piston Ring, Upper     | 17       | 17223       | Oil Seal           | 31       | 17293       | Bearing               |
| 4        | 17158       | Piston Ring, Center    | 18       | 17228       | Crankcase          | 32       | 17298       | Cover                 |
| 5        | 17163       | Piston Ring, Lower     | 19       | 17233       | Pin                | 33       | 17303       | Screw, Cover          |
| 6        | 17168       | Circlip                | 20       | 17238       | Stator             | 34       | 17308       | Motor Cover           |
| 7        | 17173       | Piston                 | 21       | 17243       | Nut, M8            | 35       | 17313       | Rotor                 |
| 8        | 17178       | Connecting Rod         | 22       | 17248       | Protection Grid    | 36       | 17318       | Motor Cable           |
| 9        | 17183       | Oil Fill Plug/Dipstick | 23       | 17253       | Support, Capacitor | 37       | 17323       | O-Ring                |
| 10       | 17188       | Screw, Crankcase Cover | 24       | 17258       | Capacitor          | 38       | 17328       | Cylinder              |
| 11       | 17193       | Plug, Oil Drain        | 25       | 17263       | Fan                | 39       | 17333       | Cylinder Plate Gasket |
| 12       | 17198       | Washer                 | 26       | 17268       | Circlip            | 40       | 17338       | Valve Plate Assembly  |
| 13       | 17203       | Crankcase Cover        | 27       | 17273       | Motor Bolts        | 41       | 17343       | Plate Head Gasket     |
| 14       | 17208       | Crankcase Cover Gasket | 28       | 17278       | Washer, Fan        | 42       | 17348       | Filter                |

# Unit

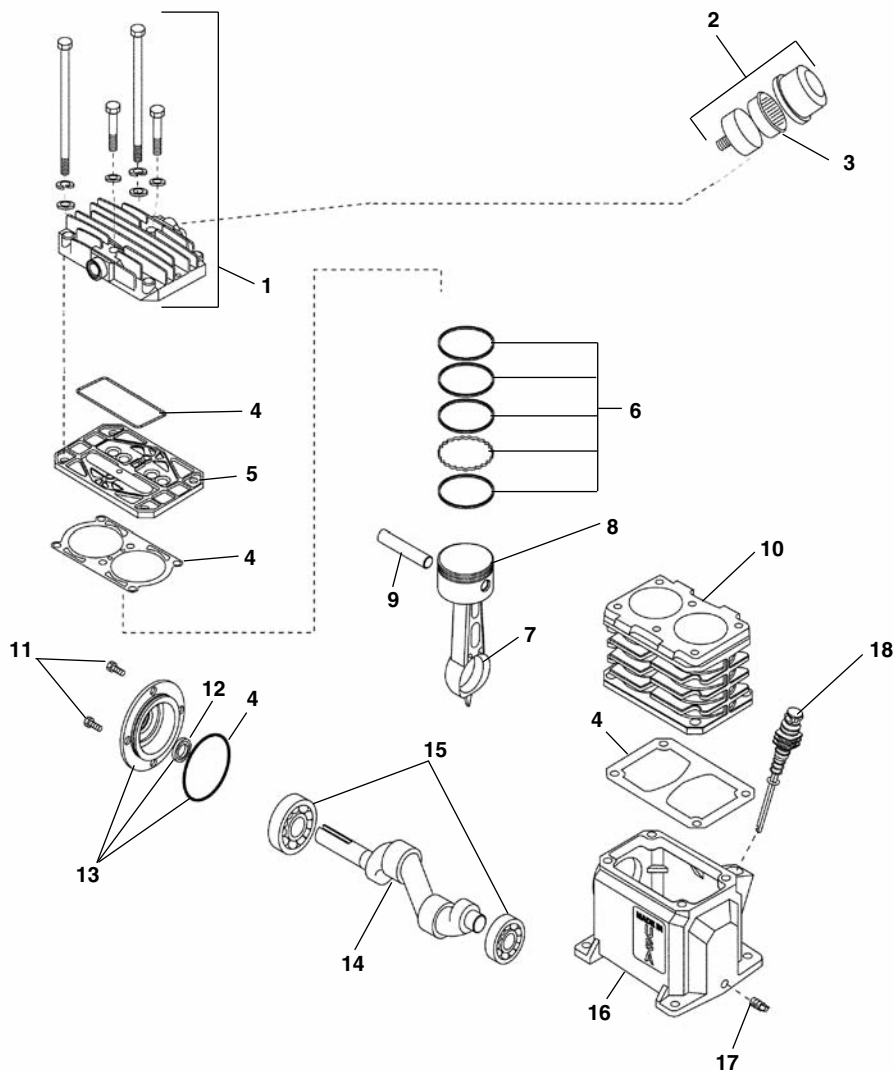


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| Ref. No. | Catalog No. | Description      | Ref. No. | Catalog No. | Description                 | Ref. No. | Catalog No. | Description         |
|----------|-------------|------------------|----------|-------------|-----------------------------|----------|-------------|---------------------|
| 1        | 20433       | Motor            | 16       | 17753       | Strain Relief Screw         | 31       | 17893       | 3/8 Push To Connect |
| 2        | 20418       | Key              | 17       | 20393       | Strain Relief               | 32       | 17878       | Outlet Gauge        |
| 3        | 18093       | Screw Set 1/4"   | 18       | 20388       | Power Cord                  | 33       | 20363       | Handle Grip (2)     |
| 4        | 20403       | Belt Guard       | 19       | 17883       | Unloader                    | 34       | 20358       | Drain Valve (2)     |
| 5        | 18088       | Key, 3/16"       | 20       | 17898       | Nipple                      | 35       | 18038       | Screw (4)           |
| 6        | 17998       | 3/8" Set Screw   | 21       | 17793       | Regulator                   | 36       | 17853       | Rubber Foot (4)     |
| 7        | 20408       | Pulley           | 22       | 20458       | Screw, Torx 1/4" x 20 x 1/2 | 37       | 20353       | Tank                |
| 8        | 18078       | Flywheel         | 23       | 20368       | Check Valve                 | 38       | 18048       | Plug, Axle (2)      |
| 9        | 20413       | Belt             | 24       | 20373       | Exhaust Tube                | 39       | 18043       | Axle Rod            |
| 10       | 20423       | Motor Bolt (4)   | 25       | 20378       | Push in Fitting             | 40       | 18053       | Wheel               |
| 11       | 18113       | Washer 5/16" (4) | 26       | 20383       | Unloader Tube               | 41       | 20443       | Pump                |
| 12       | 20428       | Nut, 5/16" (4)   | 27       | 17773       | Tank Gauge                  | 42       | 20448       | Filter              |
| 13       | 17888       | 1/4" Plug        | 28       | 17798       | Safety Valve                | 43       | 20438       | Screw, Tapping      |
| 14       | 17908       | Pressure Switch  | 29       | 17873       | Coupler (2)                 | 44       | 20788       | Tube                |
| 15       | 20398       | Motor Cord       | 30       | 20453       | Plug, Handle (2)            | 45       | 17868       | Elbow               |

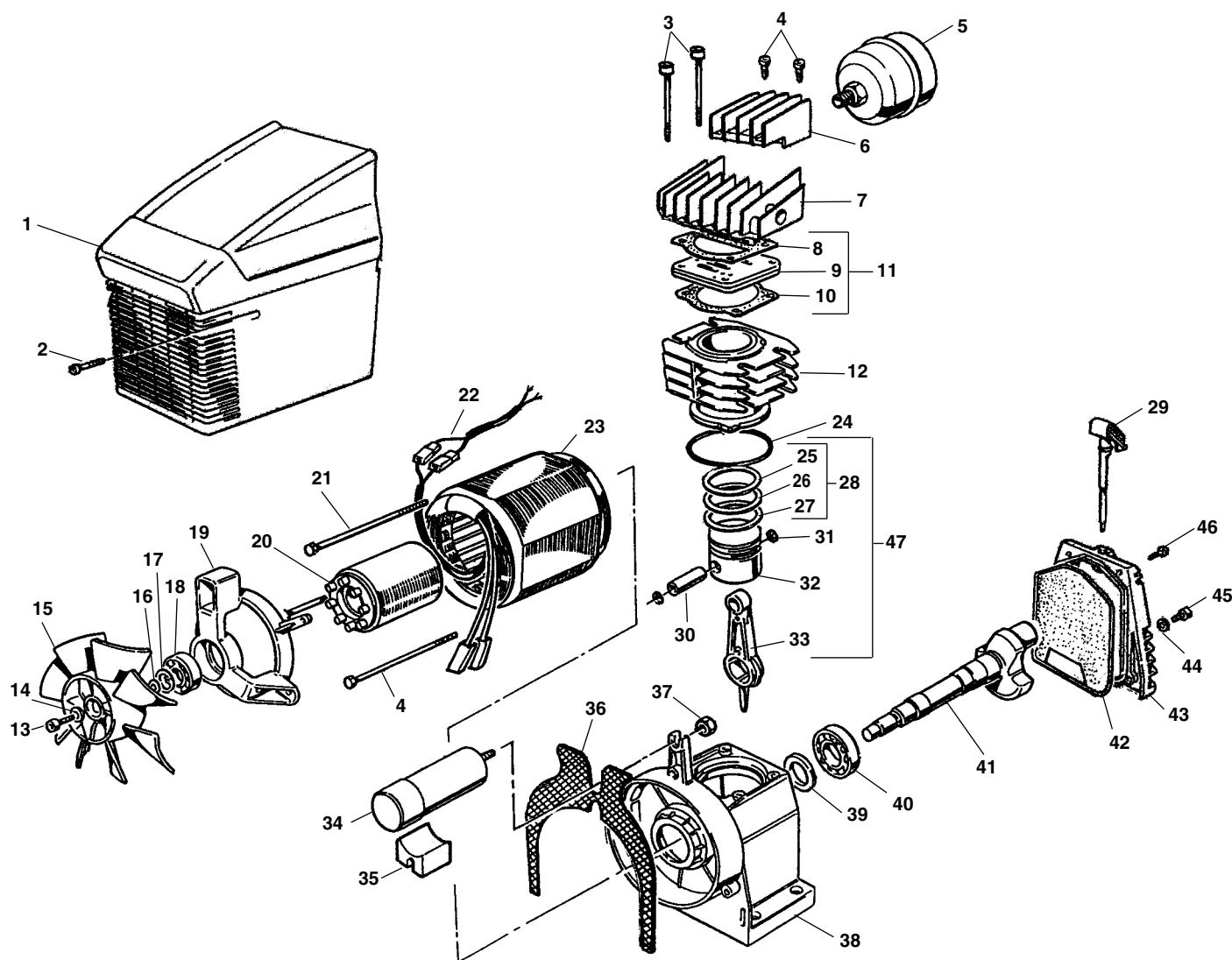


## Pump



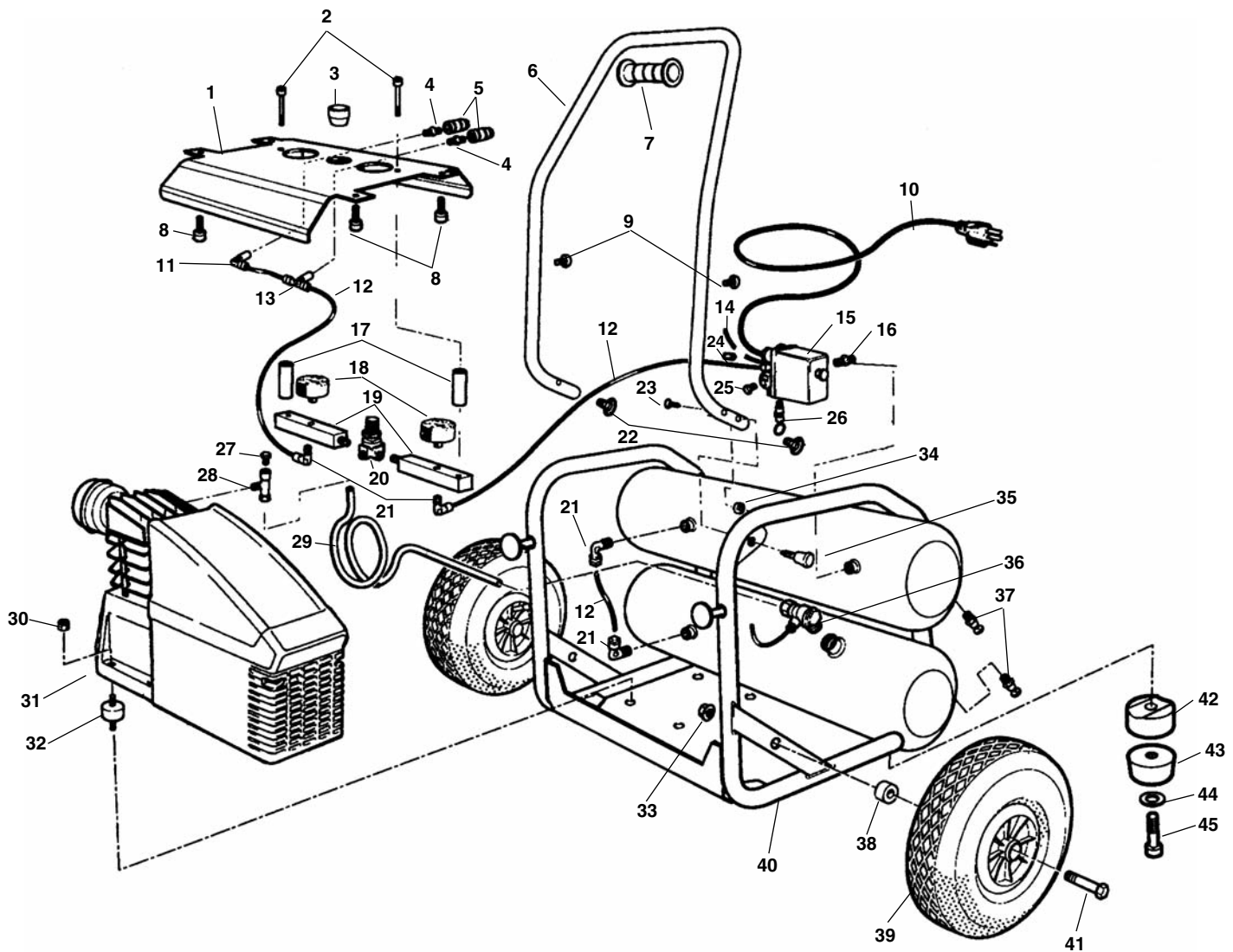
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| Ref. No. | Catalog No. | Description           | Ref. No. | Catalog No. | Description        |
|----------|-------------|-----------------------|----------|-------------|--------------------|
| 1        | 18193       | Cylinder Head w/Bolts | 10       | 18128       | Cylinder           |
| 2        | 20448       | Air Filter            | 11       | 18183       | Cap Screw          |
| 3        | 20488       | Filter Element        | 12       | 18178       | Oil Seal           |
| 4        | 18198       | Gasket Kit            | 13       | 18173       | Bearing Cap        |
| 5        | 18188       | Valve Plate           | 14       | 18153       | Crankshaft         |
| 6        | 18203       | Piston Ring Set       | 15       | 18148       | Ball Bearing       |
| 7        | 18158       | Connecting Rod        | 16       | 18143       | Crankcase          |
| 8        | 18168       | Piston                | 17       | 18138       | Oil Drain Plug     |
| 9        | 18163       | Piston Pin            | 18       | 18133       | Dip Stick Breather |



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|----------|-------------|-----------------------|----------|-------------|--------------------|----------|-------------|---------------------------|
| 1        | 17298       | Cover                 | 17       | 17268       | Cir Clip           | 33       | 17178       | Connecting Rod            |
| 2        | 17303       | Cover Screw (2)       | 18       | 17293       | Bearing            | 34       | 17258       | Capacitor                 |
| 3        | 17143       | Bolt (4)              | 19       | 17308       | Motor Cover        | 35       | 17253       | Capacitor Support         |
| 4        | 22998       | Screw (2)             | 20       | 17313       | Rotor              | 36       | 17248       | Protector                 |
| 5        | 17348       | Filter                | 21       | 17273       | Motor Bolt (2)     | 37       | 17243       | Nut                       |
| 6        | 23013       | Filter Adapter        | 22       | 17318       | Motor Cable        | 38       | 17228       | Crankcase                 |
| 7        | 23008       | Pump Head             | 23       | 17238       | Stator             | 39       | 17223       | Oil Seal                  |
| 8        | 23003       | Head Gasket Plate     | 24       | 17223       | Oil Seal           | 40       | 17218       | Bearing                   |
| 9        | 17338       | Valve Plate           | 25       | 17153       | Upper Piston Ring  | 41       | 17213       | Crankshaft                |
| 10       | 17333       | Cylinder Plate Gasket | 26       | 17158       | Center Piston Ring | 42       | 17208       | Crankcase Cover Gasket    |
| 11       | 23158       | Valve Kit             | 27       | 17163       | Lower Piston Ring  | 43       | 17203       | Crankcase Cover           |
| 12       | 17328       | Cylinder              | 28       | 23163       | Piston Ring Kit    | 44       | 17198       | Washer                    |
| 13       | 17283       | Fan Bolt              | 29       | 17183       | Dipstick           | 45       | 17193       | Drain Plug                |
| 14       | 17278       | Fan Washer            | 30       | 17233       | Pin                | 46       | 17188       | Crankcase Cover Screw (4) |
| 15       | 17263       | Fan                   | 31       | 17168       | Cir Clip (2)       |          |             |                           |
| 16       | 17288       | Washer                | 32       | 17173       | Piston             |          |             |                           |



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|----------|-------------|------------------------|----------|-------------|--------------------------|----------|-------------|--------------------------|
| 1        | 23113       | Control Panel          | 16       | 23023       | Screw Double             | 31       | 23153       | Pump, Complete           |
| 2        | 17503       | Screw M6 x 60 (2)      | 17       | 23033       | Control Panel Spacer (2) | 32       | 17523       | Anti Vibration Mount (4) |
| 3        | 17488       | Regulator Knob         | 18       | 23103       | Pressure Gauge (2)       | 33       | 23073       | Nut M12 (2)              |
| 4        | 17493       | Reducer 3/8" (2)       | 19       | 17473       | Gauge Manifold (2)       | 34       | 23088       | Spacer (2)               |
| 5        | 17498       | Coupling (2)           | 20       | 17468       | Regulator                | 35       | 23093       | Piston f/Handle          |
| 6        | 23108       | Handle                 | 21       | 17413       | Elbow (4)                | 36       | 17418       | Non-Return Valve         |
| 7        | 23018       | Hand Grip              | 22       | 23098       | Plug (2)                 | 37       | 23028       | Drain Tap (2)            |
| 8        | 23058       | Screw M6 x 16 (2)      | 23       | 23063       | Screw (2)                | 38       | 23138       | Wheel Spacer (2)         |
| 9        | 23143       | Anti Vibration Pad (2) | 24       | 23133       | Connector                | 39       | 23118       | Wheel (2)                |
| 10       | 23053       | Power Cord             | 25       | 23043       | Plug, 1/4"               | 40       | 23148       | Air Tank                 |
| 11       | 17453       | Elbow                  | 26       | 17378       | Safety Valve             | 41       | 23123       | Wheel Pin (2)            |
| 12       | 17368       | Tube, Outlet           | 27       | 17353       | Relief Valve             | 42       | 23083       | Spacer (2)               |
| 13       | 23038       | Connection T           | 28       | 17358       | Discharge T              | 43       | 17438       | Anti Vibration Pad (2)   |
| 14       | 17388       | Tube, Discharge        | 29       | 23128       | Discharge Tube           | 44       | 35055       | Washer (2)               |
| 15       | 23048       | Pressure Switch        | 30       | 17528       | Nut M8 (4)               | 45       | 23078       | Screw (2)                |

**ALABAMA**

- BIRMINGHAM**, Alabama Jack  
1140 5th Ave. N., **35203**  
(205) 251-8156
- Ⓢ **BIRMINGHAM**, Electronic Repair Co.  
8518 First Ave. N., **35206**  
(205) 836-0454
- † **CALERA**, Quality Tool Repair  
6180 Hwy 31, **35040**  
(205) 668-3131

**ALASKA**

- WASSILLA**, Mat-Su Tool Repair  
522 McKinley St., **99654**  
(907) 357-0647

**ARIZONA**

- † **PHOENIX**, Boerner Company  
2435 E. Indian School Rd., **85016**  
(602) 957-9710
- † **PHOENIX**, Glenn's Tool Service  
2149 E. Indian School Rd., **85016**  
(602) 264-6203
- PHOENIX**, Unicoa Industrial  
2224 N. 23rd Ave., **85009**  
(602) 254-4666
- TEMPE**, Fisher Tool  
1990 East 3rd St., **85281**  
(480) 968-0123
- TUCSON**, Precision Tool & Construction  
4857 East 29th St., **85711**  
(520) 745-1100
- TUCSON**, Western Tool, Inc.  
702 S. Campbell Ave., **85719**  
(520) 884-0504

**ARKANSAS**

- LITTLE ROCK**, Clark Hydraulic Service  
2901 Confederate Blvd., **72206**  
(501) 375-1252 (800) 264-1252

**CALIFORNIA**

- † **ANAHEIM**, Drain Cleaner Service  
J. M. McKinney Co.  
2911 East Miraloma Ave. Unit 4, **92806**  
(800) 821-7275
- ANAHEIM**, Westside Building Material  
1111 East Howell Ave., **92815**  
(714) 385-1644
- BAKERSFIELD**, Bakersfield Tool Repair  
210 Sumner St. Suit B, **93301**  
(661) 327-2820
- CORONA**, We-do Equipment Repair  
299 East Harrison, **92879**  
(951) 808-9167
- † **HAYWARD**, California Service Tool  
26250-F Corporate Ave., **94545**  
(510) 782-1000
- LOS ANGELES**, Minit Tool Repair  
4170 E. Washington Blvd., **90023**  
(323) 264-7006
- † **(LOS ANGELES) HAWTHORNE**,  
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12710 Yukon Ave., **90250**  
(800) 821-7275
- † **(LOS ANGELES) N. HOLLYWOOD**,  
Bucknall Power Tool Service  
11910 Vose St., **91605**  
(818) 765-0228
- MONTEBELLO**, Logan Supply  
7515 Telegraph Rd., **90640**  
(323) 724-4330
- † **PANORAMA CITY**, Drain Cleaner Service,  
J.M. McKinney Co.  
14624 Titus St., **91402**  
(818) 786-2527
- SACRAMENTO**, Valley Tool Repair  
4131-B Power Inn Road, **95826**  
(916) 737-6300
- SAN DIEGO**, South Coast Tool Repair  
9660 Chesapeake Dr., **92123**  
(858) 569-0929
- † **SAN DIEGO**, Tool Depot of San Diego  
3799 Gaines Street, **92110**  
(619) 220-7111
- SIGNAL HILL**, Tool Works  
1431 East 28th St., **90755**  
(562) 988-9150
- † **SO. SAN FRANCISCO**, C. H. Bull Company  
229 Utah Ave., **94080**  
(650) 871-8440

**COLORADO**

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3900 Ulster Street, **80207**  
(303) 355-2391
- † **DENVER**, Runge Tool Company  
1330 South Inca Street, **80223**  
(303) 744-1224
- CONNECTICUT**
- EAST HARTFORD**, Jossam Tool Repair  
411 Burnham St., **06108**  
(860) 289-4064
- HARTFORD**, Utility Electric Service  
53 Main St. (South End), **06106**  
(860) 246-7271
- NEW HAVEN**, Colony Hardware Supply  
15 Stiles Street, **06512**  
(203) 466-5252

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- † **CLEARWATER**, Atlas Constr. Equip. Services  
12001 49th Street North, Suite 201, **33762**  
(727) 299-0700
- HOLLYWOOD**, National Tool Supply  
5725 W. Hallandale Beach Blvd., **33023**  
(800) 432-5078
- † **(MIAMI) HIALEAH**, Creation Tool Co.  
3865 E. Fourth Ave., **33013**  
(305) 836-7488
- † **MIDDLEBURG**, A-1 Tool & Fastener  
1851 Blanding Blvd., **32068**  
(904) 282-3707
- † **ORLANDO**, Contractors Tool Service  
5409 Edgewater Drive, **32810**  
(407) 292-2808
- PENNSACOLA**,  
Escambia Electric Motor Service  
1101 W. Main, **32501**  
(850) 432-1577

**GEORGIA**

- † **ATLANTA**, Power Tool Service Co.  
1420 Collier Rd. NW, **30318-2814**  
(404) 605-0101

**HAWAII**

- † **HONOLULU**, Lynch Co., Inc.  
841 Pohukaina Street, B-1, **96813**  
(808) 596-8870

**IDAHO**

- BOISE**, K.C. Supply Company  
5103 Irving St., **83706**  
(208) 375-1313 (800) 446-9004

**ILLINOIS**

- ADDISON**, Hugo Equipment Repair  
415 W. Key Ave., **60101**  
(630) 628-7977
- † **CHICAGO**, Allan J. Coleman Co.  
5725 N. Ravenswood Ave., **60660**  
(773) 728-2400
- † **(CHICAGO) BERWYN**, Jack's Inc.  
6642 W. 26th St., **60402**  
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- (CHICAGO) McCOOK**, Recco Tool  
8805 Joliet, **60525**  
(708) 442-7850

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Calumet Contractors Supply Co, Inc.  
2120 E. Columbus Dr., **46312**  
(219) 398-0017
- EVANSVILLE**, Bailey Tool & Supply  
5716 East Morgan Ave., **47715**  
(877) 475-1618
- EVANSVILLE**, Tri State Repair Service  
1327 N. Fares Ave.  
(Bus., Hiway 41 N.), **47711**  
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- FORT WAYNE**, Mill Supplies, Inc.  
5105 Industrial Rd., **46825**  
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- FORT WAYNE**,  
Wagner Electric of Fort Wayne, Inc.  
3610 N. Clinton St., **46805**  
(260) 484-5532
- † **INDIANAPOLIS**, Anderson Brothers Tool Co.  
3531 Southeastern Ave., **46203**  
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- † **LOWEL**, Affordable Electrical Repair LLC.  
15544 Broadway, **46356**  
(219) 696-7792

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1631 Second Ave., **50314**  
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- DES MOINES**, Total Tool/Tool House  
622 SE 5th Street, **50309**  
(515) 244-1516

**KANSAS**

- KANSAS CITY**, Acme Hydraulics, Inc.  
815 Kansas Ave., **66105**  
(913) 321-6385
- KANSAS CITY**, KC Winfastener  
1232 Southwest Blvd., **66103**  
(913) 831-2000
- † **KANSAS CITY**, Total Tool  
275 Southwest Blvd., **66103**  
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631 Kennedy Rd., **40511**  
(859) 254-5581
- LEXINGTON**, Jiffy Tool Repair  
2433 Fortune Drive, **40509**  
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- LOUISVILLE**, Bailey Tools & Supply  
1338 S. Shelby, **40217**  
(502) 635-6348 (800) 999-4533
- Ⓢ **LOUISVILLE**, PipeEyes/Eye-Tronics  
145 Smith Lane, **40229**  
(502) 955-5288
- PADUCAH**, Warden Electric  
604 N. 7th St., **42002**  
(270) 443-4622

**LOUISIANA**

- BATON ROUGE**, Tool Shed, Inc.  
7835 Tom Dr., Suite A, **70806**  
(225) 926-6500
- Ⓢ **BATON ROUGE**,  
Central Plumb-It-Yourself Supply  
7000 Greenwell Springs Rd., **70805**  
(225) 924-9672
- NEW IBERIA**, Voorhies Supply Co.  
410 W. St. Peter Street, **70560**  
(337) 364-2431
- † **(NEW ORLEANS) HARVEY**,  
IWS Gas and Supply  
1452 Fourth Street, **70058**  
(504) 362-9395
- NEW ORLEANS**, Beerman Precision, Inc.  
4206 Howard Ave., **70125**  
(504) 486-9391
- WEST MONROE**, Tool Town  
704 North 7th Street, **71291**  
(318) 329-2929

**MAINE**

- BANGOR**, N.H. Bragg & Sons  
92 Perry Road, **04401**  
(207) 947-8611

**MARYLAND**

- † **BALTIMORE**, Ferguson  
4501 Hollins Ferry Rd, **21227**  
(443) 543-1300
- † **BALTIMORE**, Tool Hospital #211  
1200 66th St., **21237**  
(410) 483-4300 (800) 275-2379
- LANDOVER**, Colony Hardware  
1950 Stanford Ct., **20785**  
(301) 967-2844

**MASSACHUSETTS**

- EVERETT**, Panda Electrical Service, Inc.  
165 Main St., **02149**  
(617) 389-1442
- HOLYOKE**, Reliance Electric Service Co.,  
573 South Canal Street, **01040**  
(413) 533-3557
- Ⓢ **PLAINVILLE**, Utilitronics  
2 High Street, **02762**  
(800) 245-8850

**MICHIGAN**

- ANN ARBOR**, McCally Tool & Supply  
2451 S. Industrial Pkwy., Suite B, **48104**  
(734) 747-8332 (800) 535-6434
- † **(DETROIT) LIVONIA**, Brock Tool  
31090 Industrial Rd., **48150**  
(734) 261-9333
- † **(DETROIT) LIVONIA**, Fasteners Inc.  
32713 Schoolcraft Rd., **48150**  
(734) 422-7390

**GRAND RAPIDS**

- Hoeksema Tool Service, Inc.  
2499 28th St., S.W., **49509**  
(616) 538-1870
- KALAMAZOO**,  
Kalamazoo Electric Motor Inc.  
414 Mills Street, **49001**  
(269) 345-7802
- KINGSFORD**, IDG  
1021 Pyle Drive, **49802**  
(906) 774-3991

**MINNESOTA**

- † **ST. PAUL**, Total Tool Supply Company  
315 N. Pierce St., **55104**  
(651) 646-4055 (800) 444-4899

**MISSISSIPPI**

- JACKSON**, Flannigan Electric Co., Inc.  
1820 South West St., **39201**  
(601) 354-2756 (800) 962-7638

**MISSOURI**

- O'FALLON**, Dlow Repairs  
115 Church Street, **63366**  
(636) 978-7513
- † **ST. CHARLES**, Tool Service Center  
2431 Raymond Drive, **63301**  
(636) 940-2525
- † **ST. LOUIS**,  
Cable Center, Drain Cleaner Service  
8318 Olive Blvd., **63132**  
(314) 993-3099 (800) 257-7209
- Ⓢ **WENTZVILLE**, All Star Sewer Equipment  
1324 Wilmer Rd., **63385**  
(636) 544-5429

**NEBRASKA**

- † **LINCOLN**,  
Total Tool/Tool House  
2611 Kimco Dr., **68521**  
(402) 476-6673
- OMAHA**, Thacker Electric  
8517 I St., **68127-1615**  
(402) 592-9433

**NEVADA**

- † **LAS VEGAS**, Sewer Cable Equipment Co.  
2834 Marco St., **89115**  
(702) 433-5401
- Drain Cleaning Only**
- LAS VEGAS**, Tool Service, Inc.  
2912 South Highland, Suites C&D, **89109**  
(702) 734-9161
- (RENO) SPARKS**, Industrial Equipment Co.  
310 Kresge Lane, **89431**  
(775) 331-1032

**NEW JERSEY**

- (NEWARK) CLIFTON**, The Tool Box  
119 Lakeview Ave., **07011**  
(973) 340-7652
- EAST ORANGE**, Von Rohr Equipment Corp.  
2 New Main St., **07019**  
(973) 748-9111

**LODI**, Dynamic Cable Repair

- 40 Arnot Street, **07644**  
(973) 478-0893
- LONG BRANCH**, Cougar Equipment  
622 Broadway, **07740**  
(732) 870-3302
- SPRINGFIELD**, Colonial Hardware Corp.  
33 Commerce St., **07081**  
(800) 237-7756

**NEW MEXICO**

- † **ALBUQUERQUE**, Power Tool & Saw Service  
2800 Richmond Drive, **87107**  
(505) 856-2158

**NEW YORK**

- (ALBANY) RENSSELAER**,  
Capital Hydraulic Inc.  
98A Columbia Turnpike, **12144**  
(518) 462-5425
- BUFFALO**, S.S. Electric Repair Shop, Inc.  
2470 Seneca St., **14210**  
(716) 823-1232
- GARDEN CITY PARK**, Eastern Industrial  
2231 Jericho Turnpike, **11040**  
(516) 741-3198
- (LONG ISLAND) HUNTINGTON STATION**,  
A&T Power Tools  
515 East Jericho Turnpike, **11746**  
(631) 271-2141
- (LONG ISLAND) WANTAGH**,  
Ace Tool Repair, Inc.  
2201 Wantagh Ave., **11793**  
(516) 783-8899

Ⓢ SeeSnake ONLY

† Authorized SeeSnake Repair Center

For further information, contact: RIDGE TOOL COMPANY, Technical Service Dept., 400 Clark St., Elyria, Ohio 44035-6001, U.S.A.  
Technical Service (800) 519-3456 FAX (440) 329-4551 E-mail: rttechservices@emerson.com



† **(N.Y.C.) BROOKLYN**, J & A Repair Shop  
6206 20th Ave., **11204**  
(718) 232-5746 / (718) 232-8409

**(N.Y.C.) BROOKLYN**,  
The White Tool & Supply, Inc.  
3047 Atlantic Ave., **11208**  
(718) 277-8844

**RIDGEWOOD**, RP Rental  
1855 Stanhope St., **11385**  
(718) 456-7397

† **ROCHESTER**, Hanes Supply Co.  
20 Jetview Drive, **14624**  
(585) 235-0160

**SYRACUSE**, Syracuse Armature  
1622 Burnet Ave., **13206**  
(315) 476-2576 / 476-2596

#### NORTH CAROLINA

† **BELMONT**, ENSCO  
2100 The Oaks Pkwy, **28012**  
(704) 398-5600

† **CONCORD**, Sunbelt Rentals, Inc.  
932 Concord Parkway, **28025**  
(704) 720-9597

**DURHAM**, Paynes Tool & Supply  
5010 Hwy. 55, **27713**  
(919) 544-9134

#### NORTH DAKOTA

**MINOT**, Acme Electric Motors  
700 20th Ave. SE, **58701**  
(701) 839-2263

#### OHIO

**CINCINNATI**, C & S Solutions  
5319 Delhi Rd., **45238**  
(513) 922-7444

**(CINCINNATI) HARRISON**, F & M Mafco  
9149 Dry Fork Road, **45030**  
(513) 367-2151

**CLEVELAND**, A & A Hydraulic Repair Co.  
5301 W. 161 St., **44142**  
(216) 362-4000

Ⓢ **CLEVELAND**, M Tech Company  
7401 First Place, **44146**  
(440) 646-0996

† **(CLEVELAND) ELYRIA**,  
RIDGID Factory Service Center  
321 Sumner St., **44036-2023**  
(440) 323-5581

† **COLUMBUS**, Ohio Power Tool, Inc.  
1042 Dublin Rd., **43215**  
(614) 481-2111 (800) 242-4424

**DAYTON**, M&R Electric Motor Service  
1516 East Fifth St., **45403**  
(937) 222-6282 (800) 242-4424 (Ohio Only)

**TOLEDO**, West Equipment Company  
1545 East Broadway, **43605**  
(419) 698-1601

**YOUNGSTOWN**, Pennsylvania Tool Sales  
625 Bev Road, **44512**  
(330) 758-0845

Ⓢ **ZANESVILLE**, Flow Liner Systems  
4830 No. Pointe Dr., **43701**  
(740) 453-9835

#### OKLAHOMA

Ⓢ **OKLAHOMA CITY**,  
Central Oklahoma Winnelson  
5037 N. 10th Street, **73127**  
(405) 947-8761

**OKLAHOMA CITY**, Whitton Supply Co.  
1419 West Reno, **73106**  
(405) 236-5561

**WOODWARD**, Kay Electric Motors, Inc.  
810 48th Street, **73801**  
(580) 256-3254

#### OREGON

**BEAVERTON**, Karn Repair Service  
1800 NW 169th Place, **97006**  
(503) 228-8313

**EUGENE**, Eugene Power Tool  
101 North Seneca, **97402**  
(541) 232-5081

† **TUALATIN**, Trade Tool & Supply Co.  
11670 SW Waldo Way, **97140**  
(503) 221-8665

#### PENNSYLVANIA

† **(HARRISBURG) MECHANICSBURG**,  
Power Tool Service Company  
101 Westley Drive, **17055**  
(717) 766-7636 (800) 382-1311

† **PHILADELPHIA**,  
Regent Hydraulic & Machine Works, Inc.  
4051 Cresson Street, **19127**  
(215) 482-2050

**PITTSBURGH**, CTS Incorporated  
3500 Liberty Ave., **15201**  
(412) 681-6673

† **PITTSBURGH**, H K McJunkin Inc.  
7724 Edgewood Ave., **15218**  
(412) 271-5400  
(Kollmann Only)

**PITTSBURGH**, Scott Electric Co.  
39th & Butler Street, **15201**  
(412) 687-5005

**(PITTSBURGH) NEVILLE ISLAND**,  
Construction Rental & Supply  
5601 Grand Ave., **15225**  
(412) 269-9109

#### PUERTO RICO

**RIO PIEDRAS**, Isla Supply Corp.  
Carretera 181 KM1.8,  
Expreso Trujillo Alto, **00929**  
(787) 761-7355

**RIO PIEDRAS**, Ferretaria Abraham Inc.  
Calle 16 S.O. 1534  
Caparra Terrace, **00922**  
(787) 782-6033

#### RHODE ISLAND

**(PROVIDENCE) WARWICK**,  
Electric Motor Service, Inc.  
3070 Post Rd., **02886**  
(401) 737-2534

#### SOUTH CAROLINA

**COLUMBIA**, Richland Industrial  
919 Catawba Street, **29201**  
(803) 252-3360

**WEST COLUMBIA**, Mann Tool & Supply  
802 Chris Drive, **29169**  
(803) 252-7777 (800) 356-6266

**GREENVILLE**, Ameco  
2106 Anderson Road, **29611**  
(864) 295-7800

Ⓢ **SUMTER**, Jet Vac Sewer Equipment  
5746 Broad Street, **29154**  
(803) 494-4430

#### TENNESSEE

**MEMPHIS**, Jones Tool Service  
1314 Madison Ave., **38104**  
(901) 726-0191/0195

**NASHVILLE**, Hermitage Tool, Inc.  
1034 4th Ave., S., **37210**  
(615) 254-0820

**NASHVILLE**, Reeves Power Tools & Repair  
2193 Nolensville Pike, **37211**  
(615) 256-8817

#### TEXAS

† **AUSTIN**, Austin Tool, Inc.  
210 Industrial Blvd., **78745**  
(512) 447-4905

**CORPUS CHRISTI**, Corpus Christi Power  
Tool & Repair  
3701 Agnes Street, **78405**  
(361) 883-1117

**CORPUS CHRISTI**, Bush Hydraulics  
2012 N. Lexington Blvd., **78409**  
(362) 289-0441 (800) 580-2874

† **DALLAS**, Big D Tool Center, Inc.  
2535 Irving Blvd., **75207**  
(214) 631-3731

**HOUSTON**, Hydraulic Equipment Service Co.  
1021 N. San Jacinto St., **77002**  
(713) 228-9601

† **HOUSTON**, Tool Mart, Inc.  
2412 Texas Ave., **77003**  
(713) 222-8665

**LUBBOCK**, Lubbock Electric Company, Inc.  
1108 34th St., **79405**  
(806) 744-2336

**ODESSA**, Ace Specialties Inc.  
302 Industrial, **79763**  
(432) 332-0691

**ODESSA**, Engine Service & Supply Co.  
1902 N. Andrews Highway, **79761**  
(432) 337-2386 (800) 441-0636

Ⓢ **ROCKWALL**, Utility Equ. Tech. Inc.  
382 Stevens Road, **75032**  
(972) 771-8958

**SAN ANTONIO**,  
Electric Motor Service & Sales  
1514 E. Commerce, **78205**  
(210) 226-3462

† **SAN ANTONIO**, Tool Mart Inc.  
10568 Sentinal Street, **78217**  
(210) 655-6116

#### UTAH

† **SANDY**, A1 Industrial Tool and Service  
564 West 9320 South, **84070**  
(866) 802-6383

**SALT LAKE CITY**,  
Diamond Electric Motor Repair  
1465 South 300 West, **84115**  
(801) 484-4325 (888) 485-4325

#### VERMONT

**SOUTH BARRE**, Reynolds & Sons Inc.  
47 Bridge Street, **05670**  
(802) 479-0101

#### VIRGINIA

**NORFOLK**, Bryan Electric Company, Inc.  
424 W. 25th St., **23517**  
(757) 625-2525

† **RICHMOND**, Hajoca Corporation.  
3000 Cofer Rd., **23234**  
(804) 231-5790

**RICHMOND**, Roy's Electric Motor Service  
3201 Norfolk St., **23230**  
(804) 355-5713

#### Ⓢ VIRGINIA BEACH

Tidewater Valve & Fitting, Inc.  
2421 Bowland Pkwy. #106A, **23454**  
(757) 340-3181

#### WASHINGTON

† **AUBURN**,  
Delta Electric Motors Inc.  
2141 West Valley Hwy. N., **98001**  
(253) 833-1572

† **SEATTLE**,  
Ballard Hardware & Supply  
4760 Ballard Ave., NW, **98127**  
(206) 783-6626

**SPOKANE**, Edge Construction Repair  
1507 E. Riverside, **99220**  
(509) 535-9841 (800) 348-4808

**TACOMA**, Center Electric Co.  
1212 S. 30th St., **98409**  
(253) 383-4416

#### WEST VIRGINIA

**(CHARLESTON) POCA**,  
Ohio Tool Systems, Inc.  
305 Jacobson Drive, **25159**  
(304) 755-5030

**HUNTINGTON**, Lawter Electric Motor Co.  
202 Adams Ave, **25701**  
(304) 522-8297

#### WISCONSIN

**GREEN BAY**, Power Tool Service  
300 N. Webster Ave., **54301**  
(920) 437-2594

† **PEWAUKEE**, Jensen Equipment Co., Inc.  
N.27 W23015 Roundy Dr., **53072**  
(262) 547-5548 (800) 875-8875

## CANADA

#### ALBERTA

**CALGARY**, Power Tool Clinic LTD.  
#11 -2219, 35t Ave. N.E., **TZE 6W3**  
(403) 276-4633

**EDMONTON**, Century Vallen  
4810 - 92 Ave., **T6B 2X4**  
(780) 468-3366

† **EDMONTON**, Celtic Industrial Tools Ltd.  
5736 - 103A St., **T6H 2J5**  
(780) 431-0970

#### BRITISH COLUMBIA

Ⓢ **BURNABY**, Diversified Electronics of Canada  
Unit #102 6968 Russell Ave., **V5J 4R9**  
(604) 421-1234

**DELTA**, Rapid Tool Repair  
28-7621 Vantage Way, **V4G 1A6**  
(604) 940-8603

**LANGLEY**, AC Power Tool Clinic Ltd.  
105 19835 56th Ave., **V3A 3Y1**  
(604) 530-3550

† **VANCOUVER**, Armature Electric Ltd.  
275 West 4th Ave., **V5Y 1G8**  
(604) 879-6141

#### MANITOBA

† **WINNIPEG**, Wolseley Industrial Products  
1300 St. Matthews Ave., **R3G 3K4**  
(204) 786-7861

#### ONTARIO

**LONDON**, A. C. Jenkins Electric Repair Ltd.  
1188 Frances St., **N5W 2M1**  
(519) 451-4020

† **OTTAWA**, Mytek Power Tools  
1541 Star Top Rd., **K1B 3W5**  
(613) 749-7294

† **(HAMILTON) STONEY CREEK**,  
Charles Jones Industrial Ltd.,  
237 Arvin Ave., **L8E 5S6**  
(905) 664-8448

**SARNIA**, Serv-A-Tool & Repairs  
504 McGregor Rd., **N7T 7H5**  
(519) 344-8837

† **(TORONTO) WESTON**,  
Pipe Tools Repair & Service Centre Ltd.  
114 Rivalda Rd., **M9M 2M8**  
(416) 749-5830

#### QUEBEC

**QUEBEC CITY**, Clinique D'Outillage MP, Inc.  
3075 Boulevard Hamel, Apt. 107, **G1P 4C6**  
(418) 877-3371

Ⓢ **QUEBEC CITY**, DNR Electronique  
57 Marie Del'Incarnation, **G1N 3E9**  
(418) 681-5055

**MONTREAL**, Leger Hoist Equipment, Inc.  
7995 17th Ave., **H1Z 3R2**  
(514) 376-3050

† **(MONTREAL) LAVAL**,  
Centre de Reparations Hydrauliques  
Uptown Ltee

1213 Rue Tellier, **H7C 2H1**  
(450) 664-1111 or 1-800-363-7956

**SHERBROOKE**, Do-Mar Electric Inc.  
1136 Rue King Est, **J1G 1E4**  
(819) 563-2234

Ⓢ **ST. JEAN**, Alain Bonneau TV Inc.  
411 Boil D'Iberville, **J2X 563**  
(450) 347-0563

Ⓢ SeeSnake ONLY

† Authorized SeeSnake Repair Center







**What is covered**

RIDGID® tools are warranted to be free of defects in workmanship and material.

**How long coverage lasts**

This warranty lasts for the lifetime of the RIDGID® tool. Warranty coverage ends when the product becomes unusable for reasons other than defects in workmanship or material.

**How you can get service**

To obtain the benefit of this warranty, deliver via prepaid transportation the complete product to RIDGE TOOL COMPANY, Elyria, Ohio, or any authorized RIDGID® INDEPENDENT SERVICE CENTER. Pipe wrenches and other hand tools should be returned to the place of purchase.

**What we will do to correct problems**

Warranted products will be repaired or replaced, at RIDGE TOOL'S option, and returned at no charge; or, if after three attempts to repair or replace during the warranty period the product is still defective, you can elect to receive a full refund of your purchase price.

**What is not covered**

Failures due to misuse, abuse or normal wear and tear are not covered by this warranty. RIDGE TOOL shall not be responsible for any incidental or consequential damages.

**How local law relates to the warranty**

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary, from state to state, province to province, or country to country.

**No other express warranty applies**

This FULL LIFETIME WARRANTY is the sole and exclusive warranty for RIDGID® products. No employee, agent, dealer, or other person is authorized to alter this warranty or make any other warranty on behalf of the RIDGE TOOL COMPANY.



Parts are available online at [RIDGIDParts.com](http://RIDGIDParts.com)



**Technical Service: 800-519-3456**  
(Product Application Assistance)

**Visit our web sites: [www.RIDGID.com](http://www.RIDGID.com)**  
**and [www.ridgidparts.com](http://www.ridgidparts.com)**

**Ridge Tool Company**  
400 Clark Street  
Elyria, Ohio 44035-6001  
U.S.A.

**We  
Build  
Reputations™**

**RIDGID®**

**Ce qui est couvert**

Les outils RIDGID® sont garantis contre tous vices de matériaux et de main d'œuvre.

**Durée de couverture**

Cette garantie est applicable durant la vie entière de l'outil RIDGID®. La couverture cesse dès lors que le produit devient inutilisable pour raisons autres que des vices de matériaux ou de main d'œuvre.

**Pour invoquer la garantie**

Pour toutes réparations au titre de la garantie, il convient d'expédier le produit complet en port payé à la RIDGE TOOL COMPANY, Elyria, Ohio, ou bien le remettre à un réparateur RIDGID® agréé. Les clés à pipe et autres outils à main doivent être ramenés au lieu d'achat.

**Ce que nous ferons pour résoudre le problème**

Les produits sous garantie seront à la discrétion de RIDGE TOOL, soit réparés ou remplacés, puis réexpédiés gratuitement ; ou si, après trois tentatives de réparation ou de remplacement durant la période de validité de la garantie le produit s'avère toujours défectueux, vous aurez l'option de demander le remboursement intégral de son prix d'achat.

**Ce qui n'est pas couvert**

Les défaillances dues au mauvais emploi, à l'abus ou à l'usure normale ne sont pas couvertes par cette garantie. RIDGE TOOL ne sera tenue responsable d'aucuns dommages directs ou indirects.

**L'influence de la législation locale sur la garantie**

Puisque certaines législations locales interdisent l'exclusion des dommages directs ou indirects, il se peut que la limitation ou exclusion ci-dessus ne vous soit pas applicable. Cette garantie vous donne des droits spécifiques qui peuvent être éventuellement complétés par d'autres droits prévus par votre législation locale.

**Il n'existe aucune autre garantie expresse**

Cette GARANTIE PERPETUELLE INTEGRALE est la seule et unique garantie couvrant les produits RIDGID®. Aucun employé, agent, distributeur ou tiers n'est autorisé à modifier cette garantie ou à offrir une garantie supplémentaire au nom de la RIDGE TOOL COMPANY.

**Qué cubre**

Las herramientas RIDGID® están garantizadas contra defectos de la mano de obra y de los materiales empleados en su fabricación.

**Duración de la cobertura**

Esta garantía cubre a la herramienta RIDGID® durante toda su vida útil. La cobertura de la garantía caduca cuando el producto se torna inservible por razones distintas a las de defectos en la mano de obra o en los materiales.

**Cómo obtener servicio**

Para obtener los beneficios de esta garantía, envíe mediante porte pagado, la totalidad del producto a RIDGE TOOL COMPANY, en Elyria, Ohio, o a cualquier Servicentro Independiente RIDGID®. Las llaves para tubos y demás herramientas de mano deben devolverse a la tienda donde se adquirieron.

**Lo que hacemos para corregir el problema**

El producto bajo garantía será reparado o reemplazado por otro, a discreción de RIDGE TOOL, y devuelto sin costo; o, si aún resulta defectuoso después de haber sido reparado o sustituido tres veces durante el período de su garantía, Ud. puede optar por recibir un reembolso por el valor total de su compra.

**Lo que no está cubierto**

Esta garantía no cubre fallas debido al mal uso, abuso o desgaste normal. RIDGE TOOL no se hace responsable de daño incidental o consiguiente alguno.

**Relación entre la garantía y las leyes locales**

Algunos estados de los EE.UU. no permiten la exclusión o restricción referente a daños incidentales o consiguientes. Por lo tanto, puede que la limitación o restricción mencionada anteriormente no rija para Ud. Esta garantía le otorga derechos específicos, y puede que, además, Ud tenga otros derechos, los cuales varían de estado a estado, provincia a provincia o país a país.

**No rige ninguna otra garantía expresa**

Esta GARANTIA VITALICIA es la única y exclusiva garantía para los productos RIDGID®. Ningún empleado, agente, distribuidor u otra persona está autorizado para modificar esta garantía u ofrecer cualquier otra garantía en nombre de RIDGE TOOL COMPANY.



**EMERSON**  
Commercial & Residential Solutions

**EMERSON. CONSIDER IT SOLVED.™**