SERVICE PARTS LIST

BULLETIN NO. 54-40-2620

SPECIFY CATALOG NO. AND SERIAL NO. WHEN ORDERING PARTS		REVISED BULLETIN	DATE
18 Volt Sawzall®			Aug. 2012
CATALOG NO. 2620-20	STARTING SERIAL NO. B58A	WIRING INSTRUCTION	SEE REVERSE SIDE

NOTE: Pull Brush Tubes (25) back before removing or installing the Armature (21) to protect commutator.

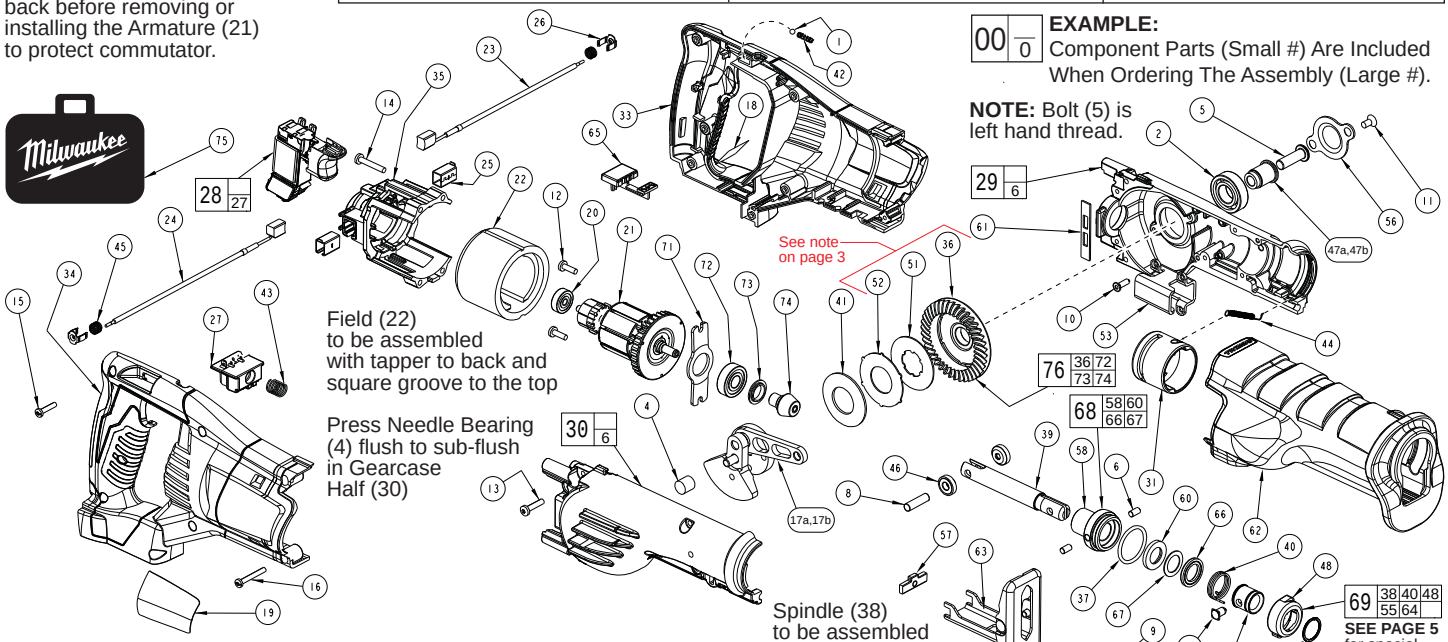


FIG.	PART NO.	DESCRIPTION OF PART	NO. REQ.
1	02-02-1100	4mm Ball	(1)
2	02-04-1516	Ball Bearing	(1)
4	02-50-1640	Needle Bearing	(1)
5	06-08-0015	3/16" Hex Drive Hub Bolt - LH Thread	(1)
6	----------	Pivot Pin	(2)
8	06-65-2995	Pin	(1)
9	06-81-0065	10-32 x 2" Bolt	(1)
10	06-82-3830	8-32 x 1/2" Csk Macine Screw	(3)
11	06-82-3900	3/8" DG50 Thread Form Screw	(2)
12	06-82-5316	8-32 x 1/2" Pan Hd. Taptite T-20 Screw	(2)
13	06-82-5346	8-32 x 3/4" Pan Hd. Taptite T-20 Screw	(5)
14	06-82-5362	8-32 x 1" Pan Hd. Taptite T-20 Screw	(4)
15	06-82-7261	6-19 x 11/16" Pan Hd. Slt. Plast. T-15	(6)
16	06-82-7290	6-19 x 1-1/8" Pan Hd. Slt. Plast. T-15	(2)
17a	----------	Crank Assembly with flat surface on Drive Hub - Left Hand Thread (Order Service Kit No. 14-09-0181)	(1)
17b	14-09-0182	Crank Assembly with counterbore in Drive Hub - Left Hand Thread	(1)
18	10-15-0955	Warning Label	(1)
19	12-20-2620	Service Nameplate Kit	(1)
20	02-04-5130	Ball Bearing	(1)
21	16-01-0025	Service Armature with Fan	(1)
22	18-01-0070	Service Field	(1)
23	22-18-0110	Carbon Brush Assembly - Black	(1)
24	22-18-0135	Carbon Brush Assembly - Red	(1)
25	22-20-0860	Brush Tube	(2)
26	22-32-0400	Brush Spring Clip	(2)
27	22-56-0025	Terminal Block Assembly	(1)
28	23-66-0284	Switch	(1)
29	28-14-0035	Gearcase Assembly - Left	(1)
30	28-14-0060	Gearcase Assembly - Right	(1)
31	31-11-0105	Barrel Cam	(1)
33	31-44-2620	Handle - Left	(1)
34	31-44-2625	Handle - Right	(1)
35	31-50-0040	Motor Cage	(1)
36	----------	Spiral Bevel Gear	(1)
37	34-40-0035	O-Ring	(1)
38	34-60-3700	Retaining Ring	(1)
39	38-50-0260	Spindle	(1)
40	----------	Torsion Spring	(1)
41	40-50-0595	Disc Spring	(1)
42	40-50-0930	Compression Spring	(1)
43	40-50-1090	Compression Spring	(1)
44	40-50-8805	Extension Spring	(1)
45	40-50-8840	Brush Spring	(2)
46	42-40-0020	Spindle Pin Bushing	(2)
47a	----------	Spacer with flat surface (Order Service Kit No. 14-46-0186)	(1)
47b	42-40-0077	Spacer with shoulder	(1)
48	----------	Front Cam	(1)
51	43-06-0025	Metal Plate	(1)

SPECIAL SERVICE NOTICE: When replacing Crank Assembly (17) and/or Spacer (47) be sure parts are compatible!

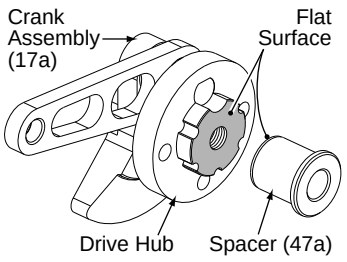
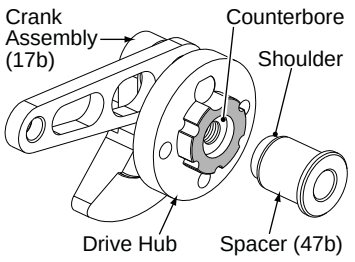
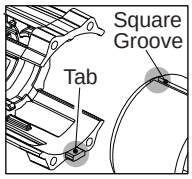
Crank Assembly Drive Hub and Spacer with FLAT SURFACE	Crank Assembly Drive Hub with COUNTERBORE and Spacer with shoulder to fit
	
Individual parts not available. Order Service Kit No. 14-46-0186.	Individual parts (17b and 47b) can be ordered separately.

FIG.	PART NO.	DESCRIPTION OF PART	NO. REQ.
52	43-06-0030	Metal Plate	(1)
53	43-56-0035	Orbit Slot	(1)
55	44-60-1750	Lock Pin	(1)
56	44-66-0280	Bearing Retaining Plate	(1)
57	44-66-0285	Retaining Plate	(1)
58	----------	Front Bushing Carrier	(1)
60	----------	Felt Seal	(1)
61	45-06-0790	Seal	(1)
62	45-12-0025	Gearcase Insulator	(1)
63	45-16-0025	Shoe Assembly	(1)
64	45-22-0175	Sleeve	(1)
65	45-24-0045	Shuttle Switch	(1)
66	----------	Bushing Cap	(1)
67	----------	Washer	(1)
68	38-50-6490	Front Bushing Carrier Assembly	(1)
69	42-68-1200	Blade Clamp Assembly (See Page 5)	(1)
71	44-66-5335	Bearing Retainer Plate	(1)
72	02-04-0999	Ball Bearing	(1)
73	45-28-0025	Grease Slinger	(1)
74	----------	Pinion Gear	(1)
75	42-55-2620	Accessory Carrying Case	(1)
76	14-29-0360	Gear Assembly	(1)

MILWAUKEE ELECTRIC TOOL CORPORATION
13135 W. Lisbon Road, Brookfield, WI 53005

Drwg. 10



IMPORTANT
Field (22) to be assembled with tapper to back and square groove to the top.

Motor Cage (35) must be oriented with tab to the bottom.

Caution: When removing Right Handle Half (34), not shown. The 4mm Steel Ball (1) may be dislodged from Switch Shuttle (65) by Spring (42).

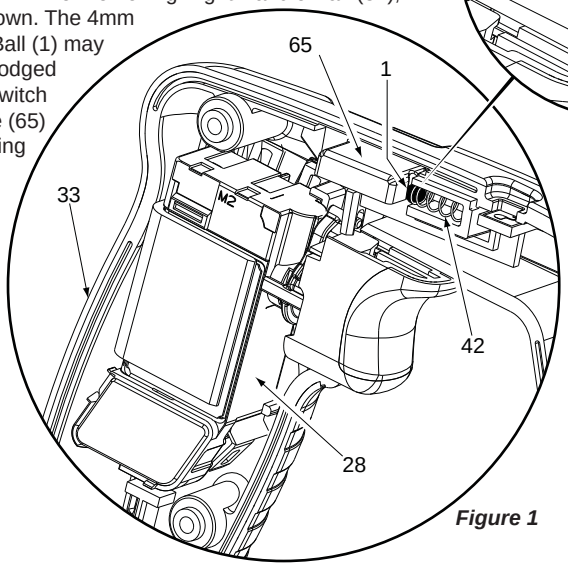
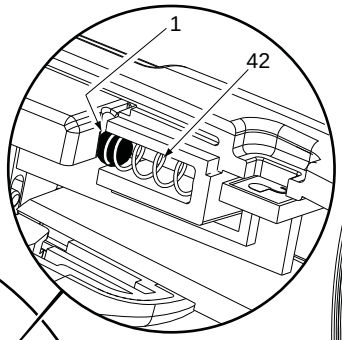


Figure 1



Before installing or removing Armature, to prevent damage to the brush tubes or commutator, push / move Brush Tubes (25) flush to inside brush tube openings of Motor Cage (35) prior to removing the Armature from Motor Cage (25) / Field (22).

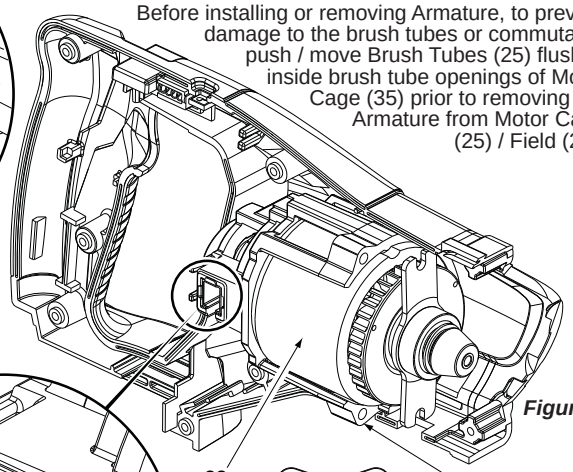
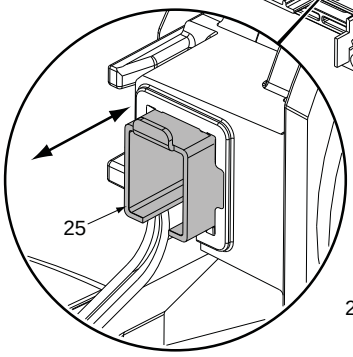
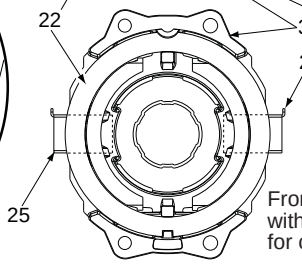


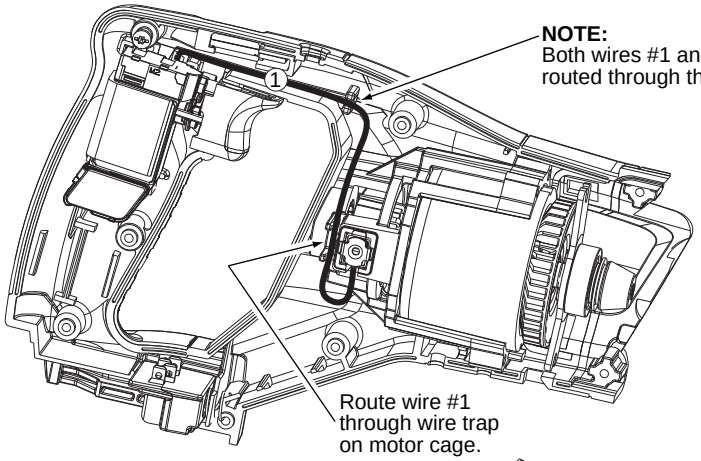
Figure 2





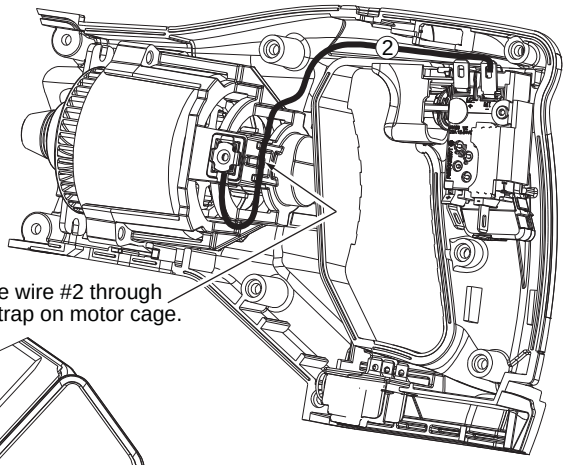
Front View shown without armature for clarity.

WIRING INSTRUCTIONS

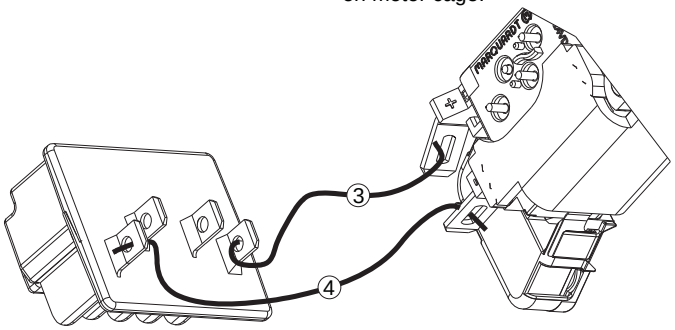


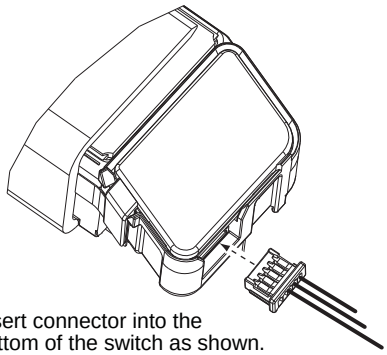
NOTE:
Both wires #1 and #2 are to be routed through this wire trap.

Route wire #1 through wire trap on motor cage.

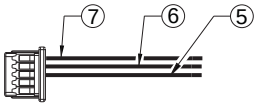


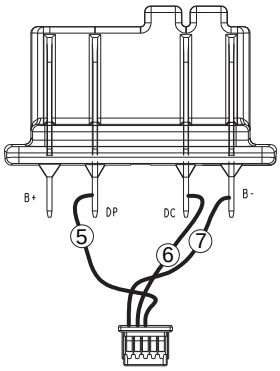
Route wire #2 through wire trap on motor cage.





Insert connector into the bottom of the switch as shown. Note, the connector must be fully seared.





WIRING SPECIFICATIONS				
Wire No.	Wire Color	Origin or Gauge	Length	Terminals, Connectors and 1 or 2 End Wire Preparation
1	Red	22-18-0135	-----	Carbon Brush Assembly - right side.
2	Black	22-18-0110	-----	Carbon Brush Assembly - left side.
3	Red	22-56-0025	-----	Component of the Terminal Block Assembly.
4	Black	22-56-0025	-----	Component of the Terminal Block Assembly.
5	White	22-56-0025	-----	Component of the Terminal Block Assembly.
6	Red	22-56-0025	-----	Component of the Terminal Block Assembly.
7	Black	22-56-0025	-----	Component of the Terminal Block Assembly.

AS AN AID TO REASSEMBLY, TAKE NOTICE OF WIRE ROUTING AND POSITION IN WIRE GUIDES AND TRAPS WHILE DISMANTLING TOOL.

BE CAREFUL AND AVOID PINCHING WIRES BETWEEN HANDLE HALVES WHEN ASSEMBLING.

NOTE:
Crank Assembly Pin (7) is sub flush to top of Counter Balance (50) in Crank Shaft Assembly (17).

Remove Crank Assembly (17) from Left Gearcase Assembly (29) by separating / removing Right Housing Half (30). Remove Bearing Retaining Plate Screws (11) and Bearing Plate (56) from Left Gearcase Assembly (29). Place a 3/16" diameter x 1-1/2" long steel rod down through the opening in the Counter Balance Assembly (50) until it bottoms out through the 3/16" hole in the Drive Hub (54).

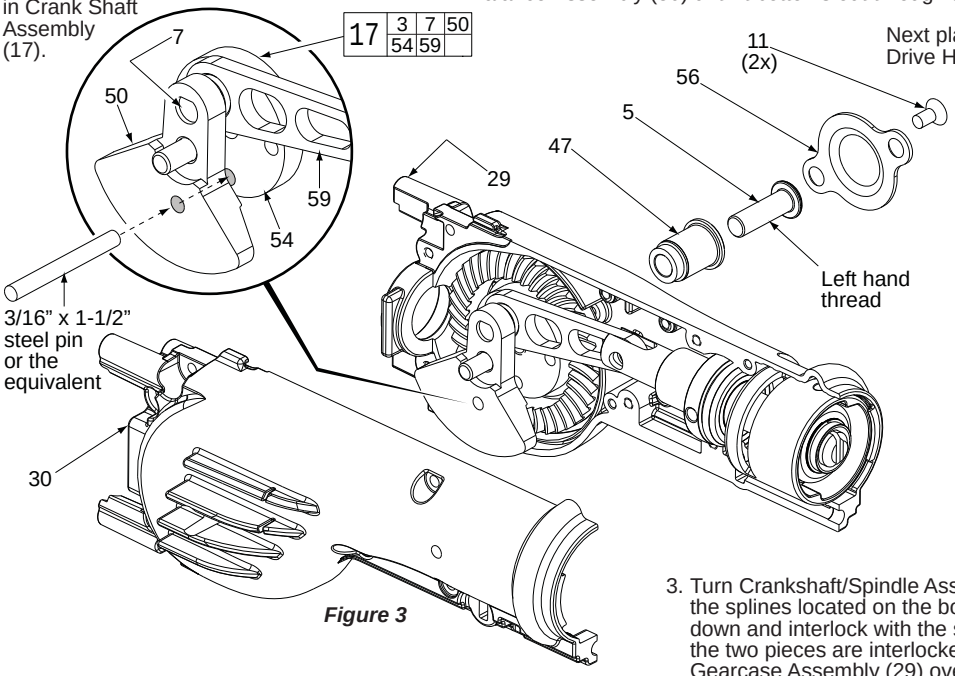


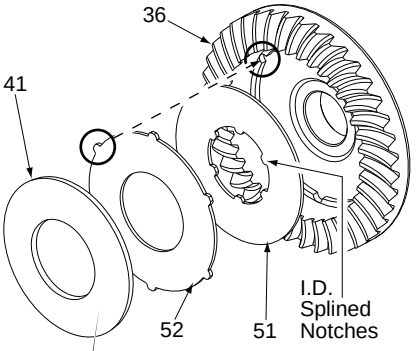
Figure 3

Next place a 3/16 hex key into Drive Hub Bolt (5) and turn Drive Hub Bolt slowly in a clockwise direction until 3/16" steel pin rest against Connecting Rod (59). 3/16" hex key can now be turned clockwise to loosen and remove Left Hand Drive Hub Bolt (5).

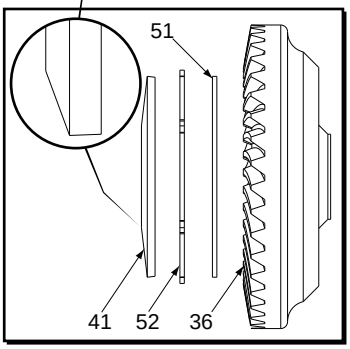
When reinstalling / tightening <u>Left Hand</u> Drive Hub Bolt (5):

1. Place lubricated Gear Assembly (36, 41, 51 & 52) into Left Gearcase Assembly (29). See Figure 2 on page 2 for assembly instructions with correct Disc/Plate orientation).
2. Position assembled Spindle/Crank Assembly (17, 39, 8, 46, 53, 68, 37 & 69) into Left Gearcase. (Spindle components should be pre-lubricated with a light coating of grease prior to reassembly). *It is also beneficial to have the Barrel Cam (31) and Extension Spring (44) installed in Left Gearcase (29).* Once the Spindle/Crank Assembly is in the Left Gearcase, position/seat the Front Bushing Carrier (58) over Pivot Pin (6) that's pressed into Left Gearcase Assembly. Secure Orbit Slot (53) to the Left Gearcase Assembly using the three Screws (10) removed in disassembly.
3. Turn Crankshaft/Spindle Assembly <u>by hand, applying a downward pressure</u> until the splines located on the bottom of the Crank Assembly Drive Hub (54) drop down and interlock with the splined notches in the I.D. of Metal Plate (51). Once the two pieces are interlocked together, hold the assembly down tight and turn Gearcase Assembly (29) over to enable the Left Handed Drive Bolt (5) and Spacer (47) to be slid through Ball Bearing (2). *(Before installing Drive Hub Bolt (5) be sure to apply Blue Loctite® to bolt threads).* Place the 3/16" x 1-1/2" long steel rod used in disassembly, back through the Counter Balance of Crankshaft Assembly (17) and slowly turn Left Handed Drive Bolt (5) in a <u>counter-clockwise</u> direction until 3/16" long steel rod rests against Connecting Rod (59). Before tightening Drive Hub Bolt (5), make sure the raised notches located on the O.D. of Metal Plate (52) are engaged with corresponding recess in Spiral Bevel Gear (36), see Figure 4. Using an inch pound torque wrench and a 3/16" hex key, torque Drive Hub Bolt (5) to 190 in./lbs. or bolt can be tightened using a foot pound torque wrench to 15-16 ft./lbs.

Figure 4



NOTE:
Optium orientation of Clutch Mechanism Metal Plates fig. 51 & 52 into fig. 36 Spiral Bevel Gear is as shown. However, placement in either position (51, 52 or 52, 51) in Spiral Bevel Gear is acceptable.



IMPORTANT:
Concave side of Disc Spring (41) must face toward Metal Plates (51,52) and Gear (36).

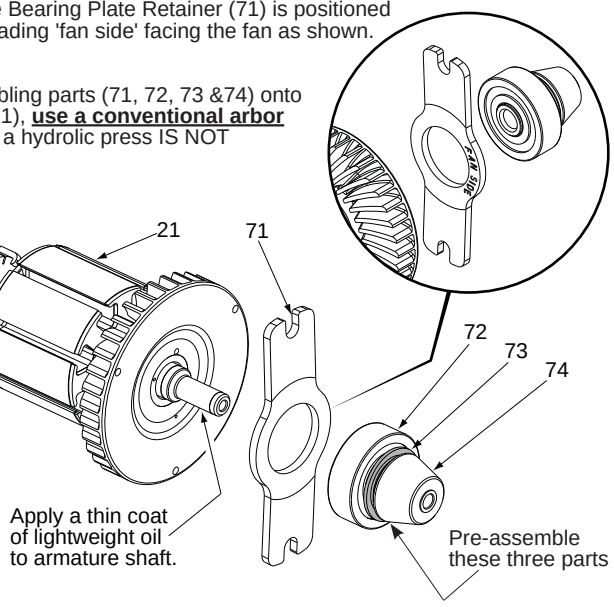
Be sure that notches on Metal Plate (52) engage with corresponding recesses in Spiral Gear (36).

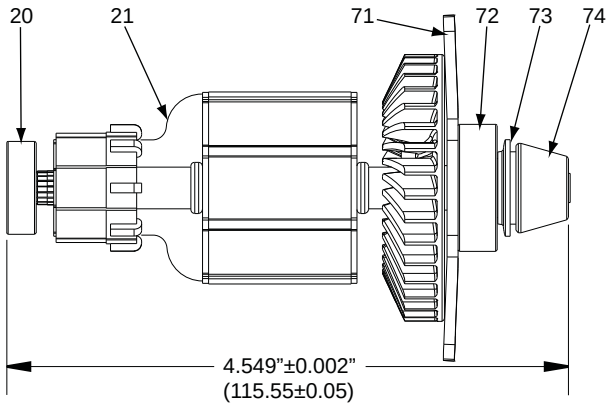
NOTE:
Do not wash Crank Assembly (17) in solvent solutions; wipe off only using a clean, dry lint free Cloth.

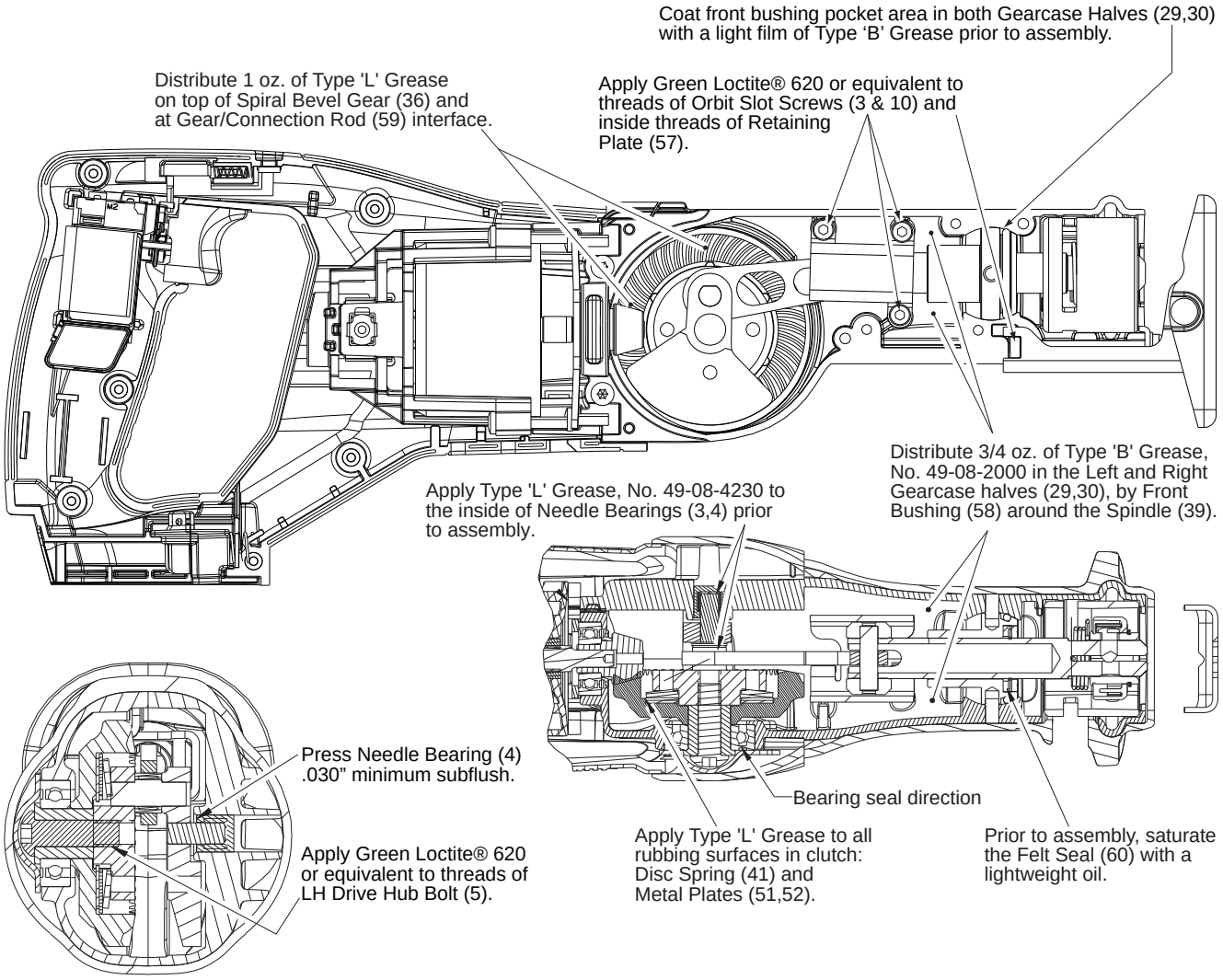
NOTE:
To achieve the proper press dimension shown below, pre-assemble / press together Ball Bearing (72), Grease Slinger (73) and Pinion Gear (74) prior to assembly onto the Armature (21).

Place a thin coat of lightweight oil onto the fan end of the armature shaft to aid in the pressing of the pre-assembled parts. Prior to assembly with the Armature, be sure that the Bearing Plate Retainer (71) is positioned with the side reading 'fan side' facing the fan as shown.

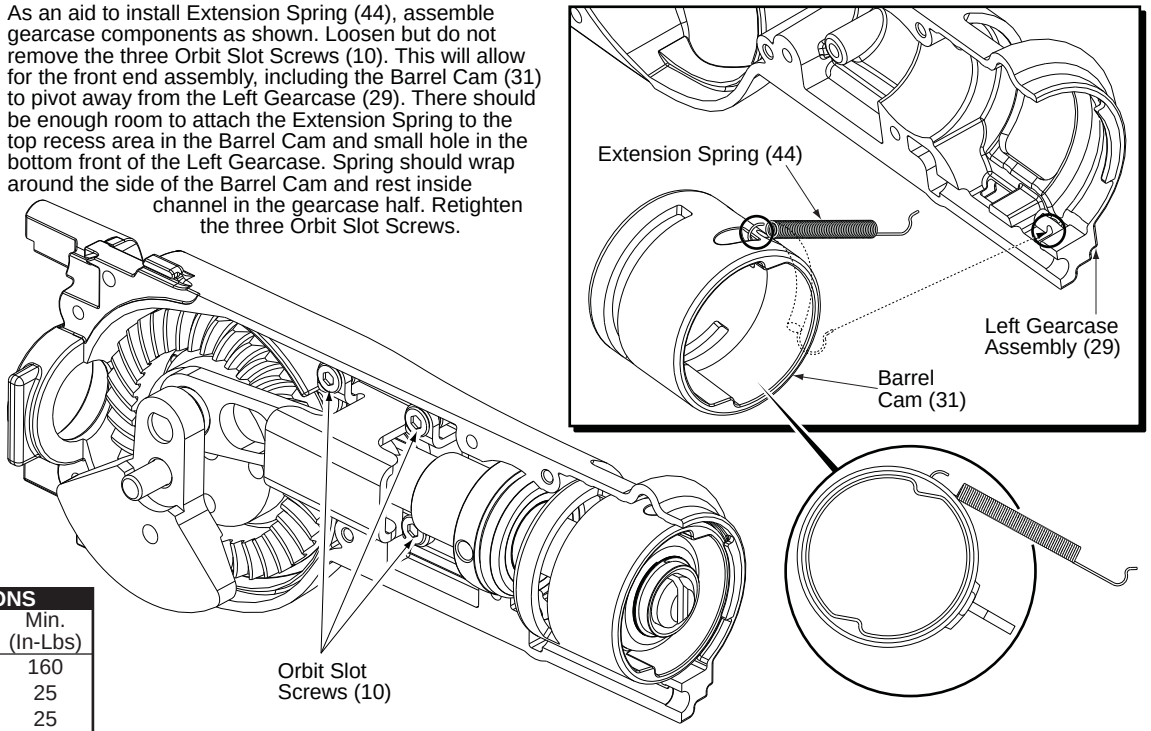
IMPORTANT:
When reassembling parts (71, 72, 73 &74) onto the Armature (21), **<u>use a conventional arbor press.</u>** Utilizing a hydrolic press IS NOT recommended!





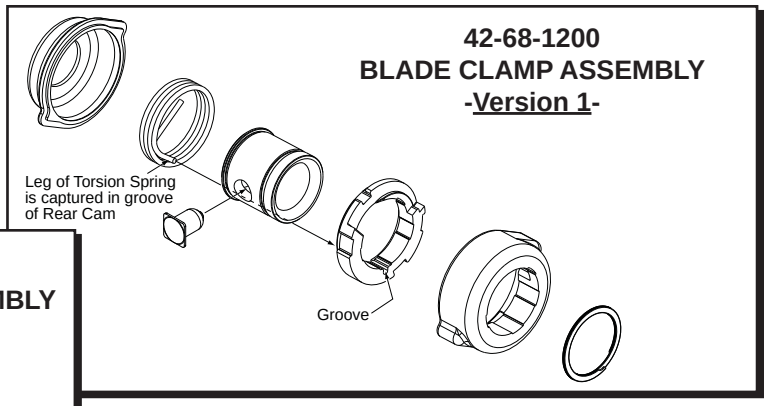


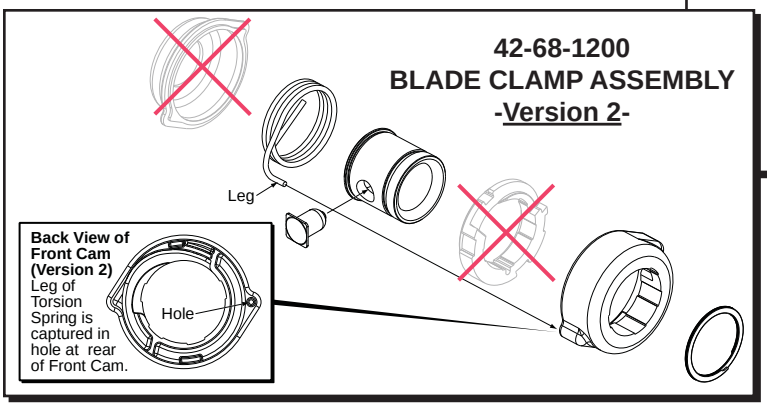
As an aid to install Extension Spring (44), assemble gearcase components as shown. Loosen but do not remove the three Orbit Slot Screws (10). This will allow for the front end assembly, including the Barrel Cam (31) to pivot away from the Left Gearcase (29). There should be enough room to attach the Extension Spring to the top recess area in the Barrel Cam and small hole in the bottom front of the Left Gearcase. Spring should wrap around the side of the Barrel Cam and rest inside channel in the gearcase half. Retighten the three Orbit Slot Screws.



TORQUE SPECIFICATIONS			
Fig.	Part No.	Max. (In-Lbs)	Min. (In-Lbs)
5	06-08-0015	190	160
9	06-81-0065	30	25
10	06-82-3830	35	25
11	06-82-3900	40	30
12	06-82-5316	35	25
13	06-82-5346	35	25
14	06-82-5362	15	10
15	06-82-7261	20	10
16	06-82-7290	20	10

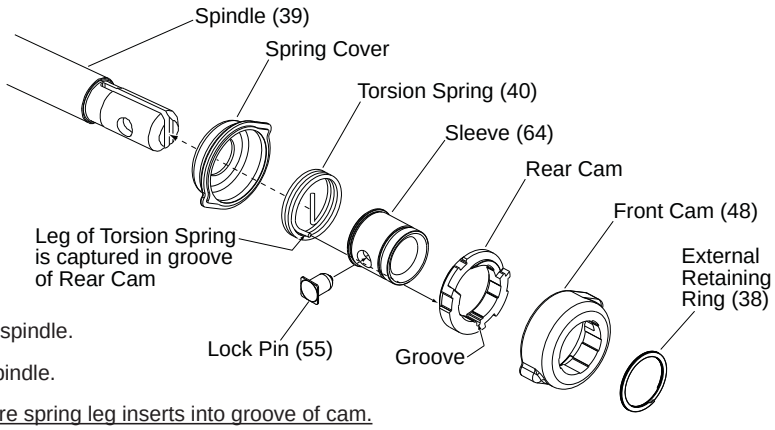
SERVICE NOTE:
There are two versions of the 42-68-1200 Blade Clamp Assembly. Although Version 2 has two fewer parts, Version 1 and Version 2 are completely interchangeable.





REMOVING THE STEEL QUIK-LOK® BLADE CLAMP - VERSION 1

- Remove external retaining ring (38) and pull front cam (48) off.
- Pull lock pin (55) out and remove remainder of parts and discard.

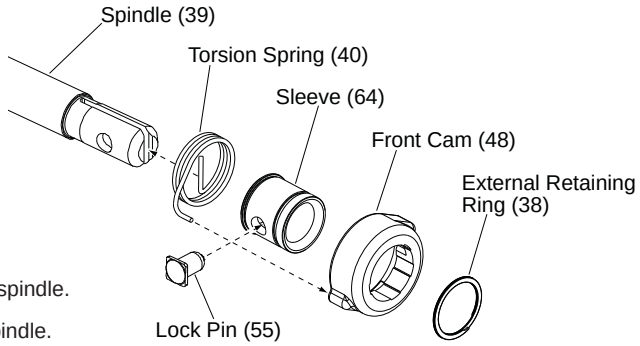


REASSEMBLY OF THE STEEL QUIK-LOK® BLADE CLAMP

- Coat new lock pin with powdered graphite.
- Hold tool in a vertical position.
- Place spring cover onto spindle.
- Slide torsion spring (40) onto spindle with spring leg on hole side of spindle.
- Slide sleeve (64) onto spindle aligning hole on sleeve with hole in spindle.
- Slide rear cam over sleeve until it bottoms on sleeve shoulder, ensure spring leg inserts into groove of cam.
- Rotate rear cam in the direction of the arrows located on spring cover until there is clearance for lock pin (55) to be inserted into sleeve/spindle holes. Insert lock pin.
- Align front cam (48) inner ribs with rear cam outer slots and slide front cam onto sleeve until it bottoms. Retaining ring groove should be completely visible.
- Attach retaining ring (38) by separating coils and inserting end of ring into groove, then wind remainder of ring into groove. Ensure ring is seated in groove.
- Blade clamp should rotate freely. During normal usage, debris may not allow blade clamp to rotate freely. The use of spray lubricant can help free blade clamp. In extreme conditions, follow these instructions to remove, clean and reassemble blade clamp.

REMOVING THE STEEL QUIK-LOK® BLADE CLAMP - VERSION 2

- Remove external retaining ring (38) and pull front cam (48) off.
- Pull lock pin (55) out and remove remainder of parts and discard.



REASSEMBLY OF THE STEEL QUIK-LOK® BLADE CLAMP

- Coat new lock pin with powdered graphite.
- Hold tool in a vertical position.
- Slide torsion spring (40) onto spindle with spring leg on hole side of spindle.
- Slide sleeve (64) onto spindle aligning hole on sleeve with hole in spindle.
- Insert lock pin.
- Slide front cam (48) onto sleeve and insert leg of spring (40) into small hole in the back of the cam (see detail above) until it bottoms. Retaining ring groove on the sleeve (64) should be completely visible.
- Attach retaining ring (38) by separating coils and inserting end of ring into groove, then wind remainder of ring into groove. Ensure ring is seated in groove.
- Blade clamp should rotate freely. During normal usage, debris may not allow blade clamp to rotate freely. The use of spray lubricant can help free blade clamp. In extreme conditions, follow these instructions to remove, clean and reassemble blade clamp.