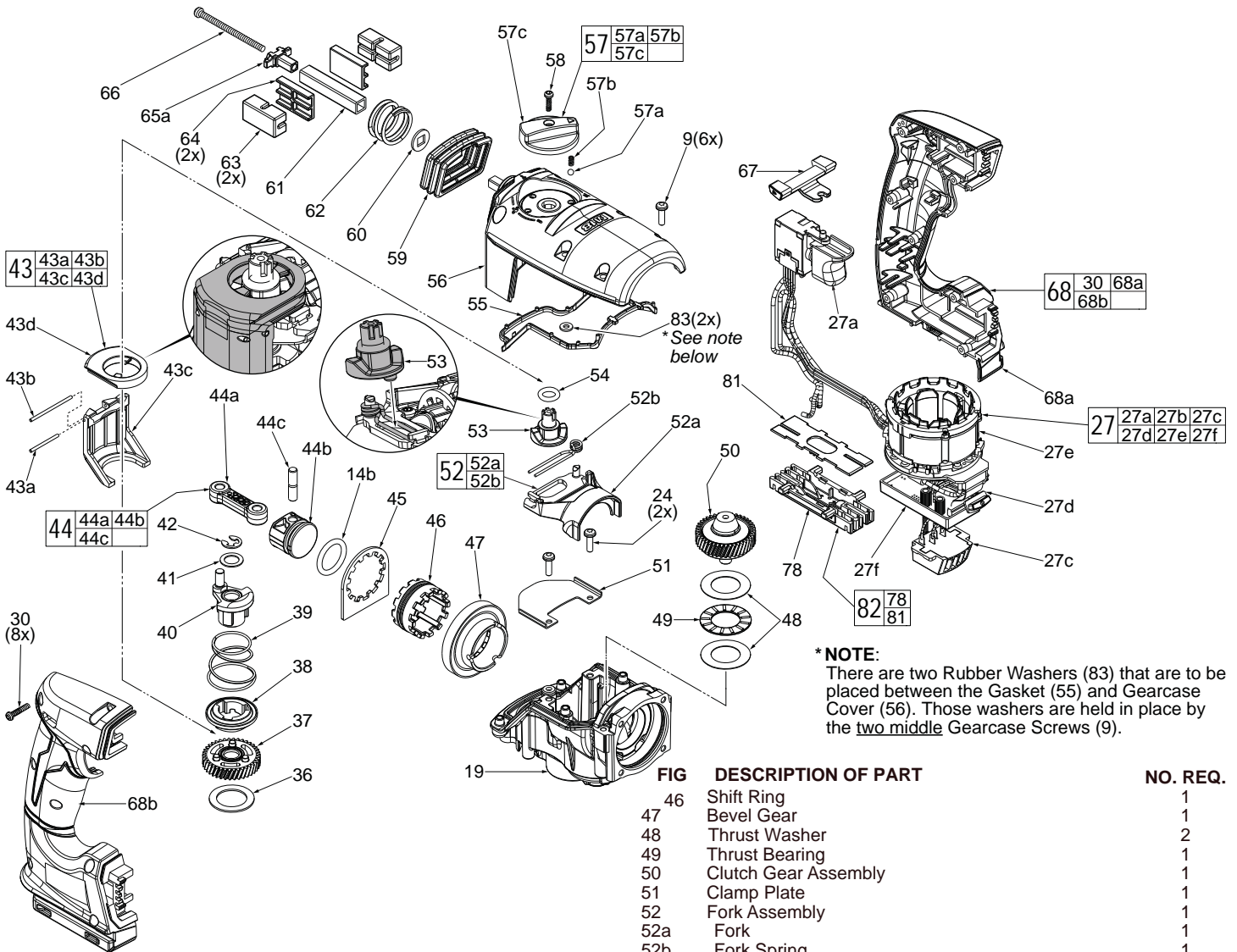


M28CHP(X) Repair Instruction



***NOTE:**
There are two Rubber Washers (83) that are to be placed between the Gasket (55) and Gearcase Cover (56). Those washers are held in place by the two middle Gearcase Screws (9).

FIG.	DESCRIPTION OF PART	NO. REQ.
9	M4 x 14mm Pan Hd. Taptite T-20 (6 of 10)	10
4b	O-Ring (1 on Piston #42b, 1 on Ram #14a)	2
19	Gearbox Assembly	1
24	M4 x 10mm Pan Hd. Taptite Screw (2 of 4)	2
27	Electronics Assembly	1
27a	On-Off Switch	1
27b	Battery Terminal connector	1
27c	Connector Assembly	1
27d	LED Assembly	1
27e	Stator Assembly	1
27f	PCB Assembly	1
30	M3.5 x 10mm Pan Hd. Plast. T-10 (8 of 23)	30
36	Washer	1
37	Crank Gear Assembly with Needle Bearing	1
38	Crank Shift Ring	1
39	Crank Spring	1
40	Crank Assembly	1
41	Crank Shim	1
42	Retaining E-Ring	1
43	Chisel Shifter Assembly	1
43a	M2 x 27mm Dowel Pin	1
43b	M2 x 40mm Dowel Pin	1
43c	Chisel Bracket	1
43d	Chisel Shift Driver	1
44	Connecting Rod/Piston Assy.	1
44a	Connecting rodting Rod	1
44b	Piston	1
44c	Wrist Pin	1
45	Locking Plate	1

FIG	DESCRIPTION OF PART	NO. REQ.
46	Shift Ring	1
47	Bevel Gear	1
48	Thrust Washer	2
49	Thrust Bearing	1
50	Clutch Gear Assembly	1
51	Clamp Plate	1
52	Fork Assembly	1
52a	Fork	1
52b	Fork Spring	1
53	Shifting Coupler	1
54	O-Ring	1
55	Gearcase Gasket	1
56	Gearcase Cover	1
57	Selector	1
57a	Selector Ball	1
57b	Selector Spring	1
57c	Selector Knob	1
58	M3.5 x 10mm Pan Hd. Plastite T-10 Screw	1
59	Top Bellow	1
60	Vibration Washer (1 each for top & bottom AVS)	2
61	Top AVS Square Guide Pipe	1
62	Top AVS Spring	1
63	Vibration Bump (1 each for top & bottom AVS)	4
64	Bumper Holder (2 each for top & bottom AVS)	4
65a	Retaining Plate	1
66	M4 x 52mm Scr. (1 each for top & bottom AVS)	2
67	Forward/Reverse Button	1
68	Handle Assembly	1
68a	Left Handle Half	1
68b	Righ Handle Half	1
78	Connector block	1
80	Blow Molded Carrying Case	1
81	Connector Block Cover	1
82	Connector Block Assembly	1
83	Rubber Washer	2

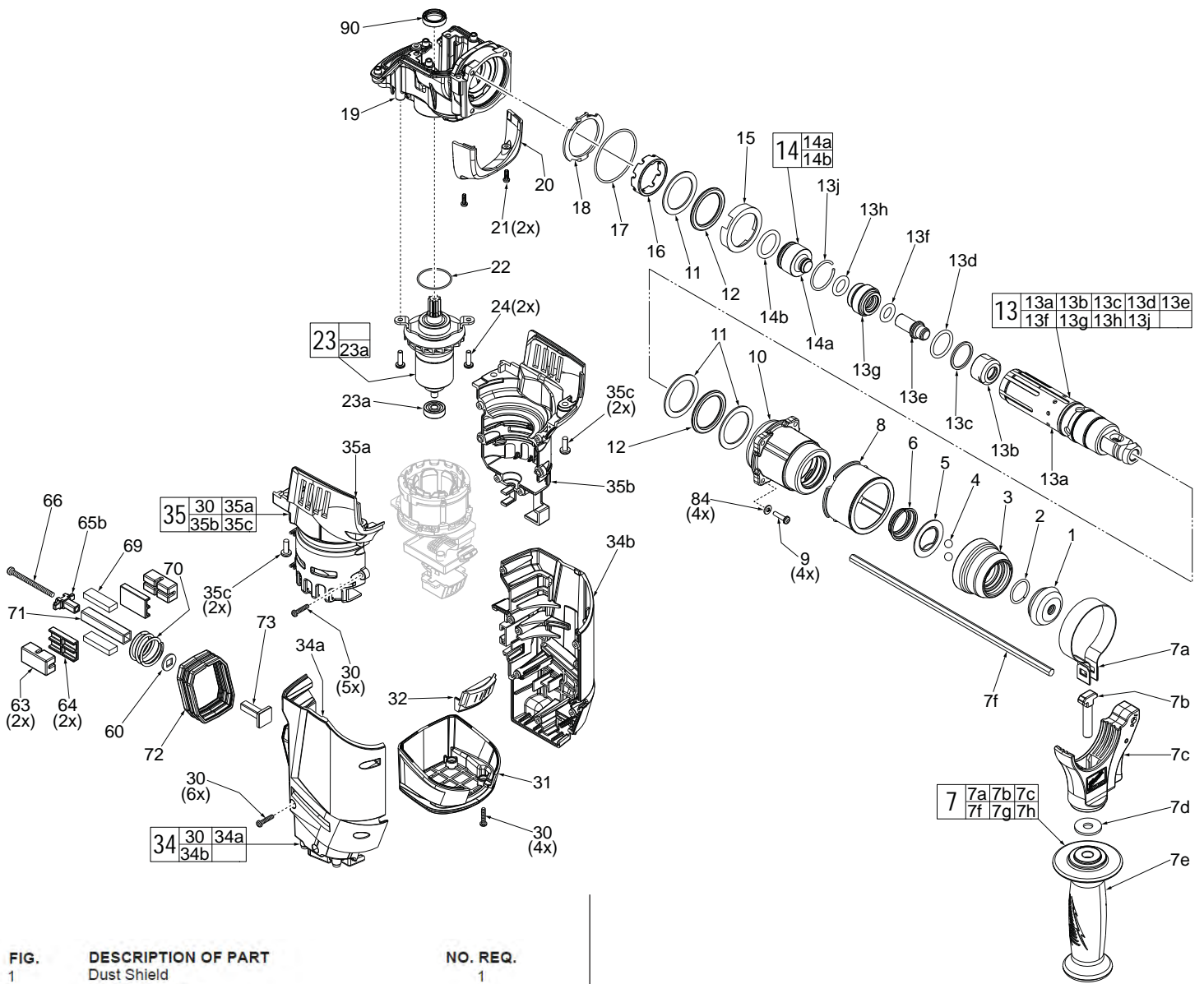


FIG.	DESCRIPTION OF PART	NO. REQ.
1	Dust Shield	1
2	Retaining Ring	1
3	Collar with Steel Insert	1
4	7mm Steel Ball	2
5	Ball Support Plate	1
6	Conical Spring	1
7	Side Handle Assembly	1
7a	Clamp Collar	1
7b	M8 x 53mm Screw	1
7c	Side Handle Carrier Assembly	1
7d	Washer	1
7e	Side Handle	1
7f	Depth Rod	1
8	Side Handle Sleeve	1
9	M4 x 14mm Pan Hd. Taptite T-20 (4 of 10)	10
10	Bushing Sleeve Assembly with Seals	1
11	Washer	3
12	Bumper	2
13	Spindle Assembly	1
13a	Spindle	1
13b	Brake Ring	1
13c	Anvil Ring	1
13d	Square O-Ring	1
13e	Anvil/Striker	1
13f	Anvil O-Ring	1
13g	Ram Catcher	1
13h	Back Pressure Ring	1
13j	Anvil Retaining Ring	1
14	Ram/Striker Assembly	1
14a	Ram	1
14b	O-Ring (1 on Ram #14a, 1 on Piston #44b)	2
15	Bumper/Washer Holder	1
16	Spindle Collar	1
17	O -Ring	1
18	Retaining Plate	1
19	Gearbox Assembly	1
20	Shroud	1
21	M3 x 9.5mm Pan Hd. Taptite T-10 Screw	2
22	O-Ring	1
23	Rotor Assembly	1
23a	Ball Bearing	1
24	M4 x 10mm Pan Hd. Taptite Screw	2
30	M3.5 x 16mm Pan Hd. Plast. T-10 (15 of 23) 23	15
31	Bottom Cap	1
32	Bottom Cap/Connector Rubber	1
34	Housing Assembly	1
34a	Housing Cover (Right Housing)	1
34b	Housing Support (Left Housing)	1
35	Motor Housing Assembly	1
35a	Motor Housing Cover (Right Motor Housing)	1
35b	Motor Housing Support (Left Motor Housing)	1
35c	M5 x 15mm Taptite T-25 Screw	4
60	Vibration Washer (1 of 2)	2
63	Vibration Bumper (2 of 4)	4
64	Bumper Holder (2 of 4)	4
65b	Retaining Plate	1
66	M4 x 52mm Scr. (1 each for top & bottom AVS)	2
69	Foam Block	2
70	Bottom AVS Spring	1
71	Bottom AVS Square Guide Pipe	1
72	Bottom Bellow	1
73	T-Bracket	1
79	Service Nameplate (Not Shown)	1
84	Lock Washer	4
90	Motor Seal	1

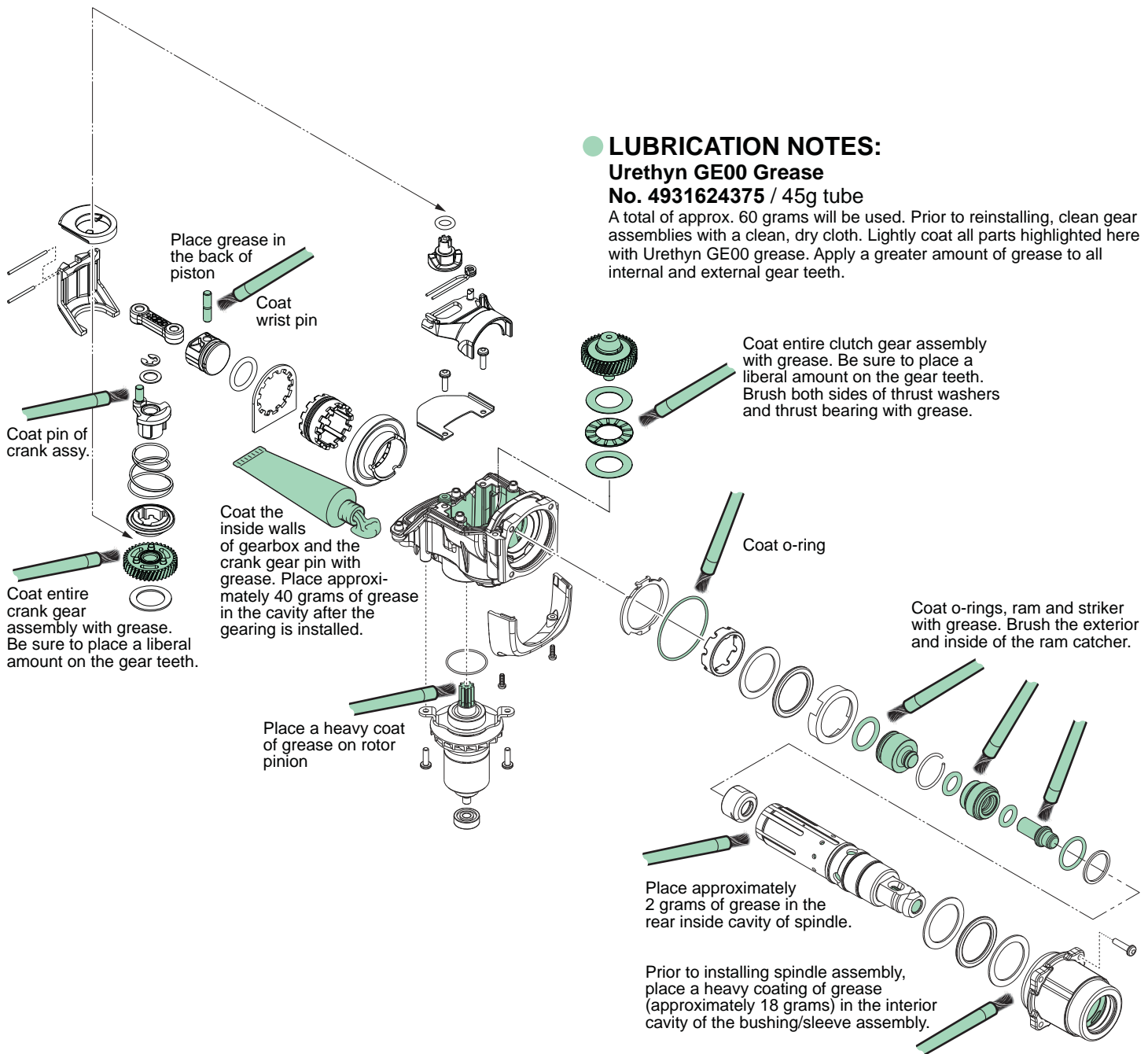
FIG.	DESCRIPTION	NO. REQ.
19	Gearbox Assembly	1
20	Shroud	1
21	M3 x 9.5mm Pan Hd. Taptite T-10 Screw	2
22	O-Ring	1
23	Rotor Assembly	1
23a	Ball Bearing	1
24	M4 x 10mm Pan Hd. Taptite Screw	2
30	M3.5 x 16mm Pan Hd. Plast. T-10 (15 of 23) 23	15
31	Bottom Cap	1
32	Bottom Cap/Connector Rubber	1
34	Housing Assembly	1
34a	Housing Cover (Right Housing)	1
34b	Housing Support (Left Housing)	1
35	Motor Housing Assembly	1
35a	Motor Housing Cover (Right Motor Housing)	1
35b	Motor Housing Support (Left Motor Housing)	1
35c	M5 x 15mm Taptite T-25 Screw	4
60	Vibration Washer (1 of 2)	2
63	Vibration Bumper (2 of 4)	4
64	Bumper Holder (2 of 4)	4
65b	Retaining Plate	1
66	M4 x 52mm Scr. (1 each for top & bottom AVS)	2
69	Foam Block	2
70	Bottom AVS Spring	1
71	Bottom AVS Square Guide Pipe	1
72	Bottom Bellow	1
73	T-Bracket	1
79	Service Nameplate (Not Shown)	1
84	Lock Washer	4
90	Motor Seal	1

LUBRICATION NOTES:

Urethyn GE00 Grease

No. 4931624375 / 45g tube

A total of approx. 60 grams will be used. Prior to reinstalling, clean gear assemblies with a clean, dry cloth. Lightly coat all parts highlighted here with Urethyn GE00 grease. Apply a greater amount of grease to all internal and external gear teeth.



SCREW TORQUE SPECIFICATIONS

FIG.	WHERE USED	SEAT TORQUE	
		(Nm)	
9	Bushing Sleeve Assembly	2,5	
9	Gearcase Cover (4) Rear and Middle	2,2	
9	Gearcase Cover (2) Front	2,5	
21	Shroud	1,0	
24	Clamp Plate	2,4	
24	Rotor Bearing Plate	3,1	
30	Bottom Cap	1,1	
30	Housing Cover	1,1	
30	Motor Housing Cover	1,1	
30	Right Handle Halve	1,0	
35c	Motor Housing Assembly	4,2	
58	Selector Knob	0,6	
66	Retaining Plate (Top and Bottom)	1,9	

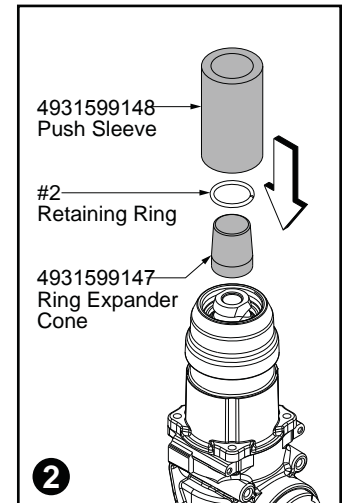
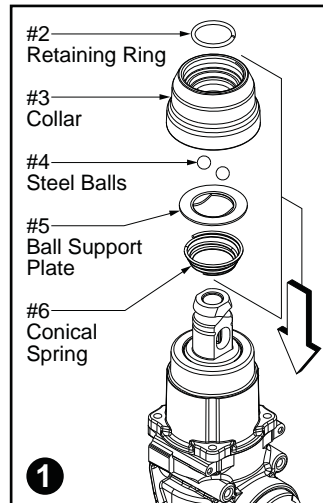
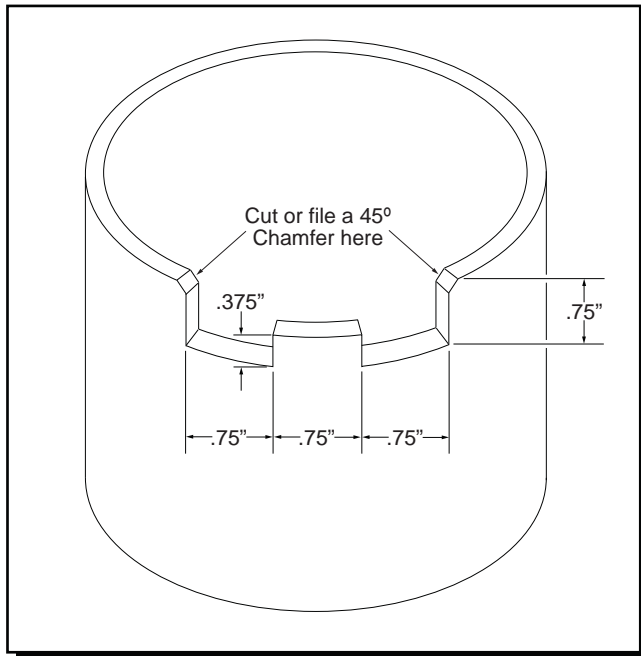
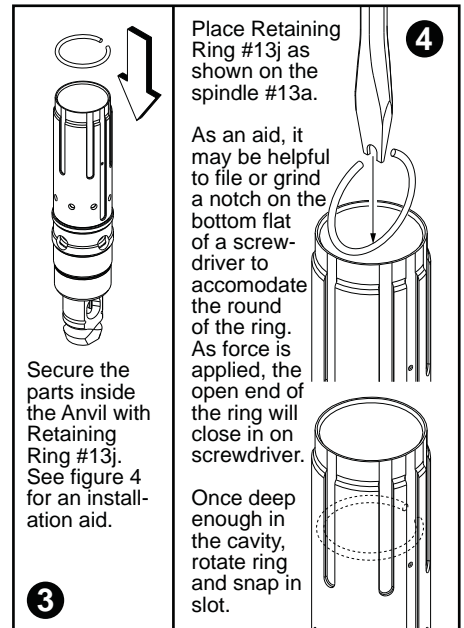
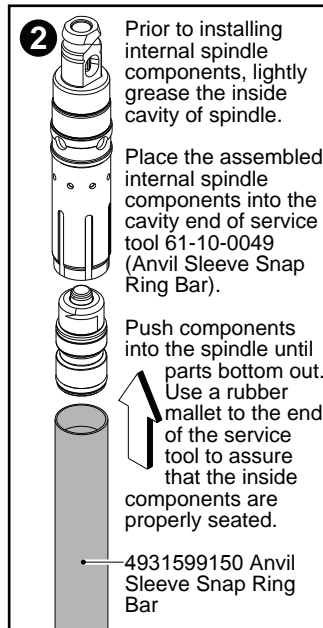
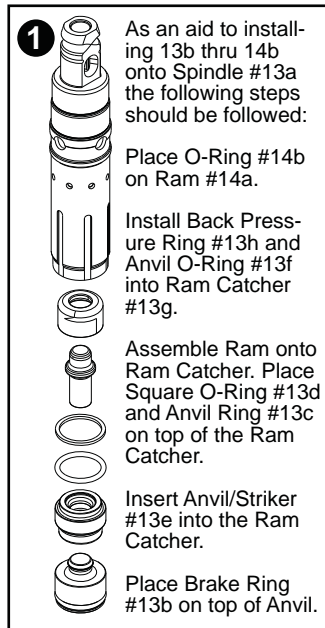
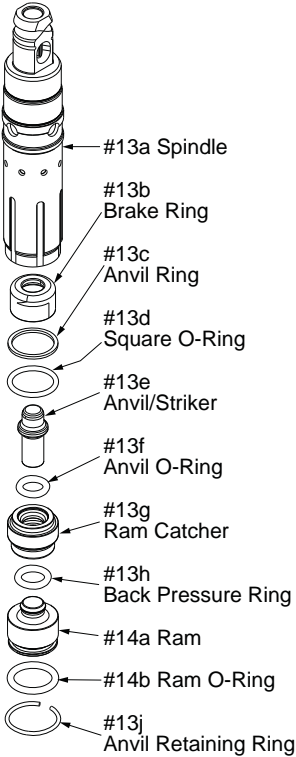
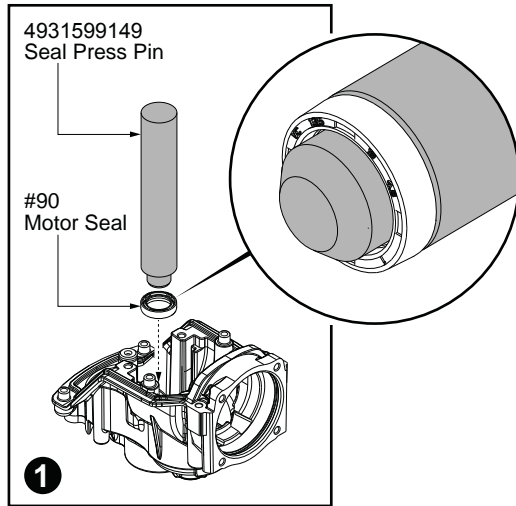
SERVICE TOOLS:

4931599147
Ring Expander Cone

4931599148
Push Sleeve

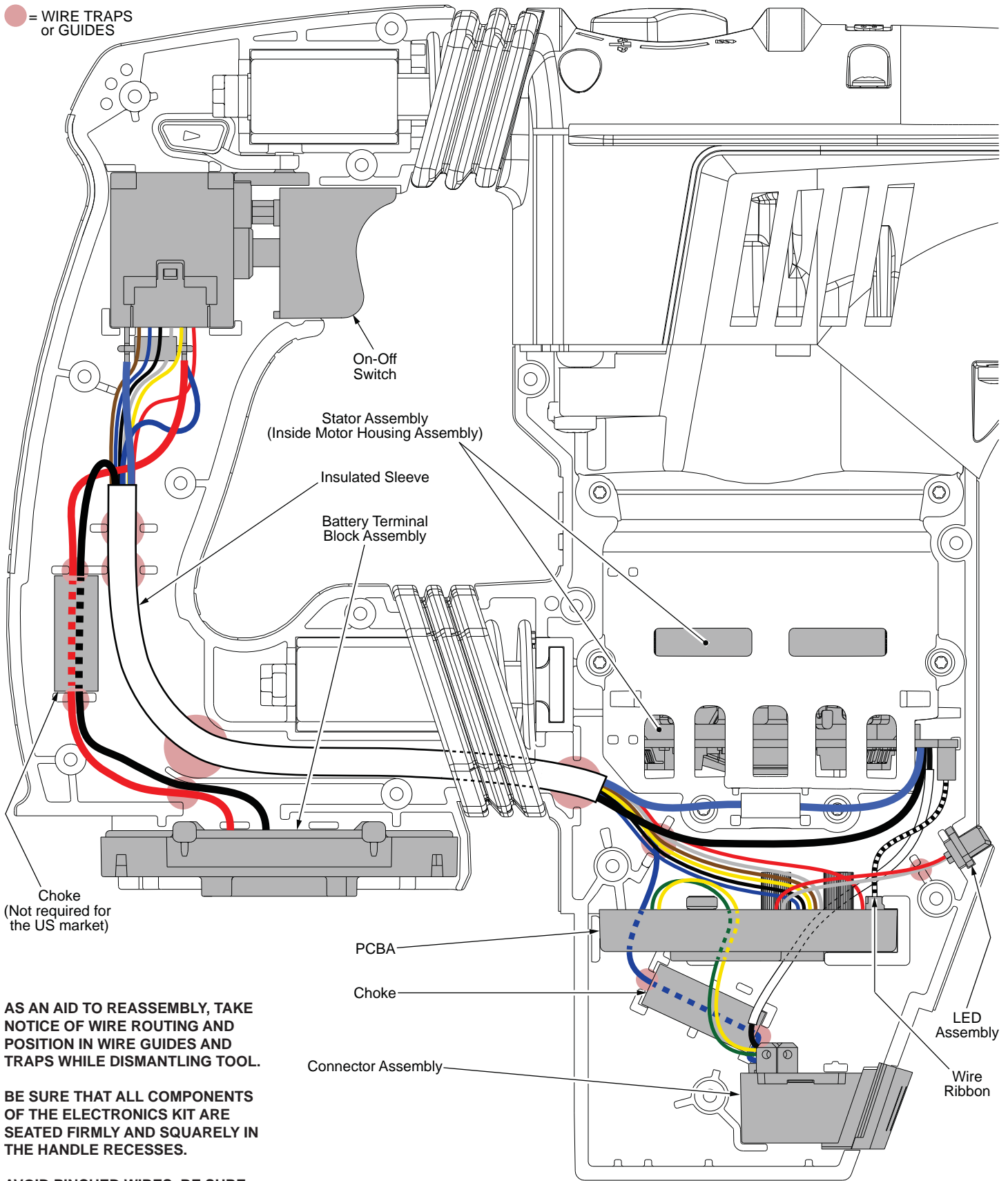
4931599149
Seal Press Pin

4931599150
Anvil Sleeve Snap Ring Bar



NOTE:
As an aid to working on the gearcase and spindle assemblies, a bench top fixture can be made from a 3.25" piece of 4" PVC pipe. The contour of the pipe can be cut according to the dimensions in the illustration.

● = WIRE TRAPS
or GUIDES



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

BE SURE THAT ALL COMPONENTS OF THE ELECTRONICS KIT ARE SEATED FIRMLY AND SQUARELY IN THE HANDLE RECESSES.

AVOID PINCHED WIRES, BE SURE THAT ALL WIRES AND SLEEVES ARE PRESSED COMPLETELY DOWN IN WIRE GUIDES AND TRAPS.

PRIOR TO INSTALLING THE HANDLE COVER ONTO THE HANDLE SUPPORT, BE SURE THAT THERE ARE NO INTERFERENCES.