SERVICE PARTS LIST

CORDLESS 28V 1/2" HAMMER-DRILL

CATALOG NO. 0724-20
STARTING SERIAL NO. A55A

EXAMPLE: Component Parts (Small #) Are Included When Ordering The Assembly (Large #).

FIG. PART NO. DESCRIPTION OF PART NO. REQ.
1 44-66-1090 Mounting Plate (1)
2 12-20-1540 Service Nameplate (1)
3 45-24-0600 Speed Selector Assembly (1)
4 06-82-7236 4-20 x 5/8" Pan Hd. Plastite T-10 (9)
5 23-66-1779 Switch Assembly (1)
6 45-24-0640 Reversing Shuttle (1)
7a 23-94-0279 Lead Wire Assembly - Black (1)
7b 23-94-0179 Lead Wire Assembly - Red (1)
8 14-29-0225 Gearbox Assembly (1)
9 42-76-0775 Clutch Ring Assembly (1)
10 23-30-0726 Service Motor Kit (1)
11 45-22-0340 Front Rubber Sleeve (1)
12 45-22-0710 Rear Motor Spacer (1)
13 22-56-0975 Connector Block Assembly (1)
14 48-66-1575 1/2" Keyless Chuck (1)
15 05-88-1500 M6 x 1.0 LH Chuck Screw w/ locking patch (1)
16 31-50-1950 Handle Kit (1)
17 22-56-0975 Connector Block Assembly (1)
18 40-50-1130 Detent Spring (1)
19 06-82-5275 6-32 x 5/16" Pan Hd. Tapt. T-15 Scr. (2)
20 43-72-0455 Bit Holder Assembly, Optional (1)
21 43-72-0300 Belt Clip Holder (1)
22 48-30-1520 #2 Phillips Bit, Optional (1)
23 48-30-1520 Connector Block Cover (1)
24 43-56-0820 Wire Harness (1)
25 45-24-0850 Speed Selector Slide (1)
26 43-56-0800 Speed Selector Guide (1)
27 40-50-1390 Speed Selector Spring (1)
28 40-50-1020 Speed Selector Detent Spring (1)
29 02-02-1300 5mm Ball (1)
30 23-50-0120 Rubber Spacer (1)
31 48-55-0935 Carrying Case, Optional (1)
32 42-70-5005 Clip-Lok (Not Shown) (1)
33 49-15-0400 Side Handle (Not Shown) (1)

SEE PAGES 3, 4 AND 5 FOR IMPORTANT INSTRUCTIONS TO PROPERLY ASSEMBLE THE GEARBOX AND THE CLUTCH RING.

FIG. NOTES:

1. When ordering the service brush assemblies (13) only, the wires (C and D) are not supplied (these wires may be yellow or black). The wires must be unsoldered from the old brush holders and resoldered to the new brush holders.

2. When ordering the service motor assembly (10), the brush assembly comes complete with the wires soldered in place, along with the front rubber sleeve (11), rear motor spacer (12) and the wire harness (24).

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Drwg. 8
**WARNING**

SWITCH POLARITY SENSITIVE

If wired incorrectly with connector block #17, switch #5 will be damaged and destroyed!

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**Route wires 'C' and 'D' through wire harness and traps in the bottom of the left handle half. Care must be taken not to pinch wires when re-assembling.**

**NOTE:**

Wire 'D' is soldered to the frontmost tab (closest to the trigger). Wire 'C' is soldered to the rear tab.

These views of the connector block assembly are shown without the connector block cover for clarity.

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**NOTE:**

When ordering the service brush assemblies (13) only, the wires (C and D) are not supplied (these wires may be yellow or black). The wires must be unsoldered from the old brush holders and resoldered to the new brush holders. Care must be taken to position and resolder the wires as in the old assembly.

If wires C or D are damaged, order No. 23-94-5061 (10' length of yellow 16 gauge wire). Cut and strip to the specifications listed below.

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**INSTRUCTIONS FOR SERVICING THE CLUTCH MECHANISM**

Yellow (or black) motor leads 'C' and 'D' are placed in a molded trap on the motor. Orient the motor (where the wires come together in the trap) at the 6:00 position and place in the left handle half.

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**WIRING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Wire No.</th>
<th>Wire Color</th>
<th>Origin or Gauge</th>
<th>Length</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7A</td>
<td>Black</td>
<td>----</td>
<td>------</td>
<td>Leadwire assembly - Black</td>
</tr>
<tr>
<td>7B</td>
<td>Red</td>
<td>----</td>
<td>------</td>
<td>Leadwire assembly - Red</td>
</tr>
<tr>
<td>13C</td>
<td>Yellow</td>
<td>5&quot;</td>
<td></td>
<td>Strip one end .25 and solder to switch / Strip the other end .18 and solder to brush assy.</td>
</tr>
<tr>
<td>13D</td>
<td>Yellow</td>
<td>4&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SETTING THE CLUTCH RETAINING COLLAR

- NOTE: Triangle ▲ of rear gearbox assembly housing is aligned with square ■ located on front housing.

Begin assembly by aligning the retaining collar triangle ▲ with front housing square ■ and rear gearbox triangle ▲ at the 12 o’clock ⊙ position.

- Turn retaining collar clockwise until clutch spring is fully collapsed. Retaining collar triangle ▲ should be at approximately the 12 o’clock ⊙ position to the front housing square ■ and the rear gearbox triangle ▲.

- If the front retaining collar triangle ▲ stops at approximately the 5 o’clock ⊙ position, the retaining collar will have been installed 180° off. This requires unthreading and rethreading of the collar. Initial position of collar for proper threading is with triangles ▲ aligned.

- When fully compressed, make sure the retaining collar triangle ▲ is in line with the front housing square ■ and rear gearbox triangle ▲.

Clutch collar triangles ▲ on a few gearboxes may be slightly to the left of the center 12 o’clock position when tightened, as shown below.

CHECKING / SETTING THE HAMMER SHIFT COLLAR

The following must be in place:

- Clutch collar triangle ▲ (tight) in-line, slightly to the left of gearbox 12 o’clock ⊙ position. (Set in step 1).
- Washer [A] visible above hammer shift collar, (fig. 2).
- Hammer Shift Collar [B] notch [1] with the .160 wide notch in-line or slightly left of gearbox 12 o’clock position (fig. 1).

If hammer Shift Collar [B] is out of position, it will look like example shown in (fig. 3).

Rotate shift collar left or right by hand until it drops into position shown in (fig. 2). The washer must be visible, and the .160 wide shift collar notch [1] must be in-line or slightly left of top 12 o’clock position, as viewed from the front of the gearbox.

LOCATING RAISED GEARBOX NOTCHES FOR CLUTCH RING SPRING ASSEMBLY

Locate clutch ring spring notches by first identifying...

- The triangle ▲ on top of retaining collar [4].
- Raised gearbox notch [1] located at approx. 9 o’clock position.
- Raised gearbox notch [3]. (Will not contact clutch ring spring).

Proceed to STEP 4.
INSTALLING CLUTCH RING SPRING ONTO GEARBOX

- Position clutch ring spring [3] above gearbox [5]. (Cup of spring to face up).
- Position clutch ring spring notches [1,2] over raised gearbox notches [1,2]. (Make sure spring is seated flat and fits firmly over both raised gearbox notches).

Proceed to RECAPPING STEPS 1,2,3,4.

RECAPPING STEPS 1,2,3,4

- Retaining collar [4] should be tightened completely (clockwise) with triangle ▲ in-line or slightly to the left of top 12 o'clock position.
- Shift collar notch [1] with a .160 wide opening must be in-line or slightly to the left of the 12 o'clock position of front gearbox. (Widest of the three openings in the shift collar).
- Raised spring lobes will be in-line with the 12 and 6 o'clock position of front gearbox.

Proceed to STEP 5.

INSTALLING CLUTCH RING SPRING ONTO GEARBOX

Before installing clutch ring assembly [A,B] onto gearbox...

- Locate and identify post [E] on the inside of clutch ring [A], fig. 1.
- Align hammer icon ▷ on clutch collar [A] with drill bit icon ◆ on collar [B], fig. 2.

This alignment will position internal post [E] slightly to the right of the hammer icon ▷ stamped into outside cover [A] when clutch is viewed from the backside, as illustrated in step 6.

Proceed to STEP 6.

INSTALLING CLUTCH RING SPRING ONTO GEARBOX

- Align two piece clutch assembly [A,B], as shown in fig. 1.
- Turn clutch ring assembly to position shown in fig. 2 to view internal clutch ring posts [C,D,E] for correct position prior to assembling clutch ring to gearbox.

Proceed to STEP 7.
**INSTALLING CLUTCH RING ONTO GEARBOX**

- Hold gearbox assembly, fig. 3 in one hand with the 12 o’clock position facing up.

- Install clutch ring assembly [A,B], figs. 1,2 over gearbox assembly, fig. 3 in direction of arrows.

- Make sure drill symbol ⦿ and hammer symbol ♂ stay in-line with the top 12 o’clock position of the gearbox when installing clutch ring.

- Failure to hold clutch ring symbols together, as shown in figs. 1,2, when installing clutch ring assembly, will result in a misalignment of the internal clutch ring post, shown / illustrated in step 5.

  Proceed to STEP 8.

**TOP VIEW OF GEARBOX WITH CLUTCH RING INSTALLED**

- Triangle ▲ and square ■ located on gearbox [C], should be in-line with drill symbol ⦿ and hammer symbol ♂ on clutch ring assembly [A,B].

  Proceed to STEP 9.

  Gearbox square ■ and triangle ▲ are highlighted for reference only.

**RIGHT SIDE OF GEARBOX WITH CLUTCH RING INSTALLED**

- Clutch ring [A,B], when properly installed, will have the number 18 and raised white stationary notch [D] (as viewed from the front of the gearbox) on the right side of gearbox [C] in-line with gearbox steel ball [E].