



RJD<sup>®</sup>  
MANUFACTURING

# RJD10

## Shear Pin Replacement



**WARNING**

To reduce the risk of injury, everyone using, installing, repairing, maintaining changing accessories on, or working near this tool **MUST** read and understand these instructions before performing any such task.

**DO NOT DISCARD – GIVE TO USER**



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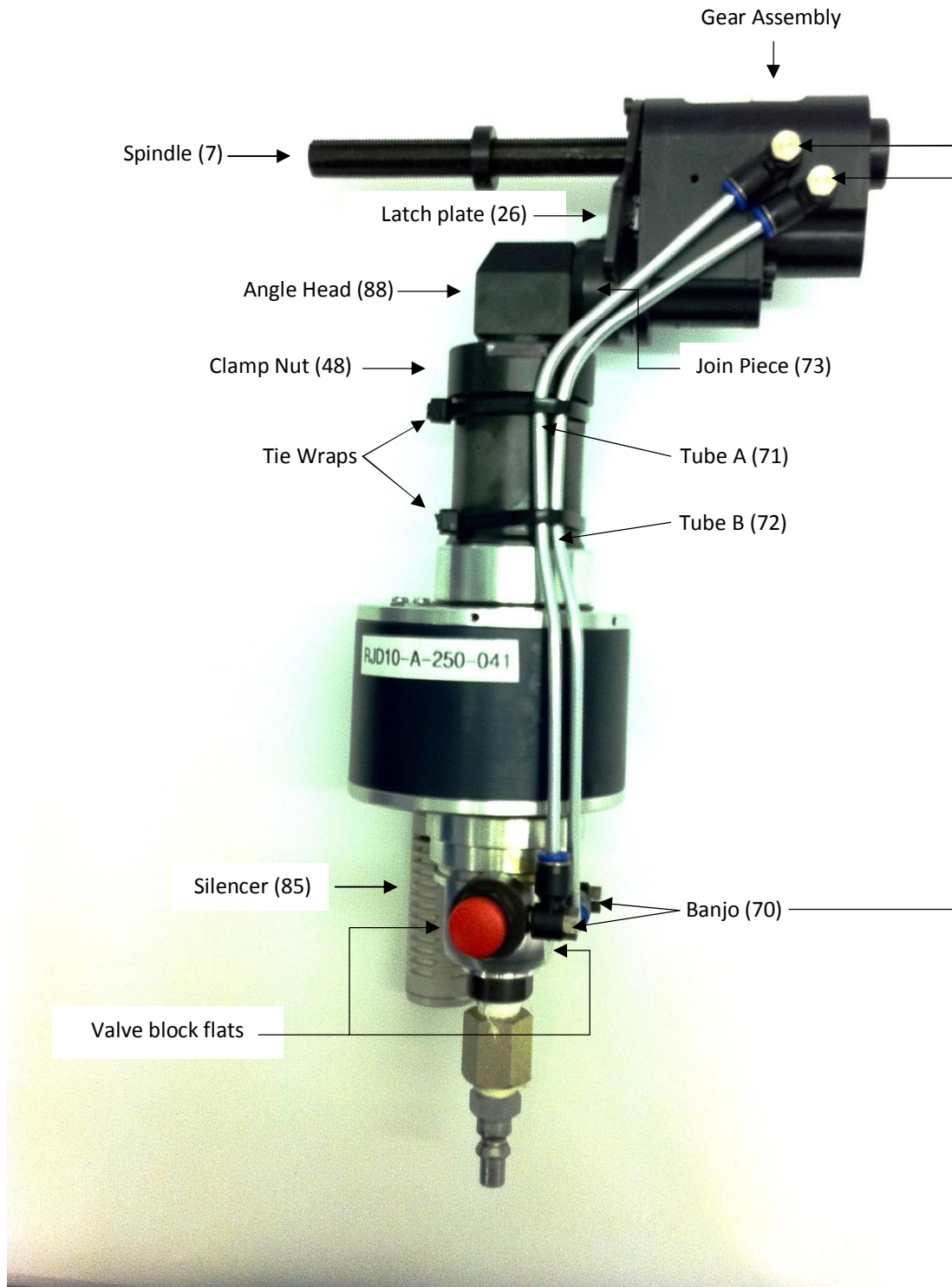
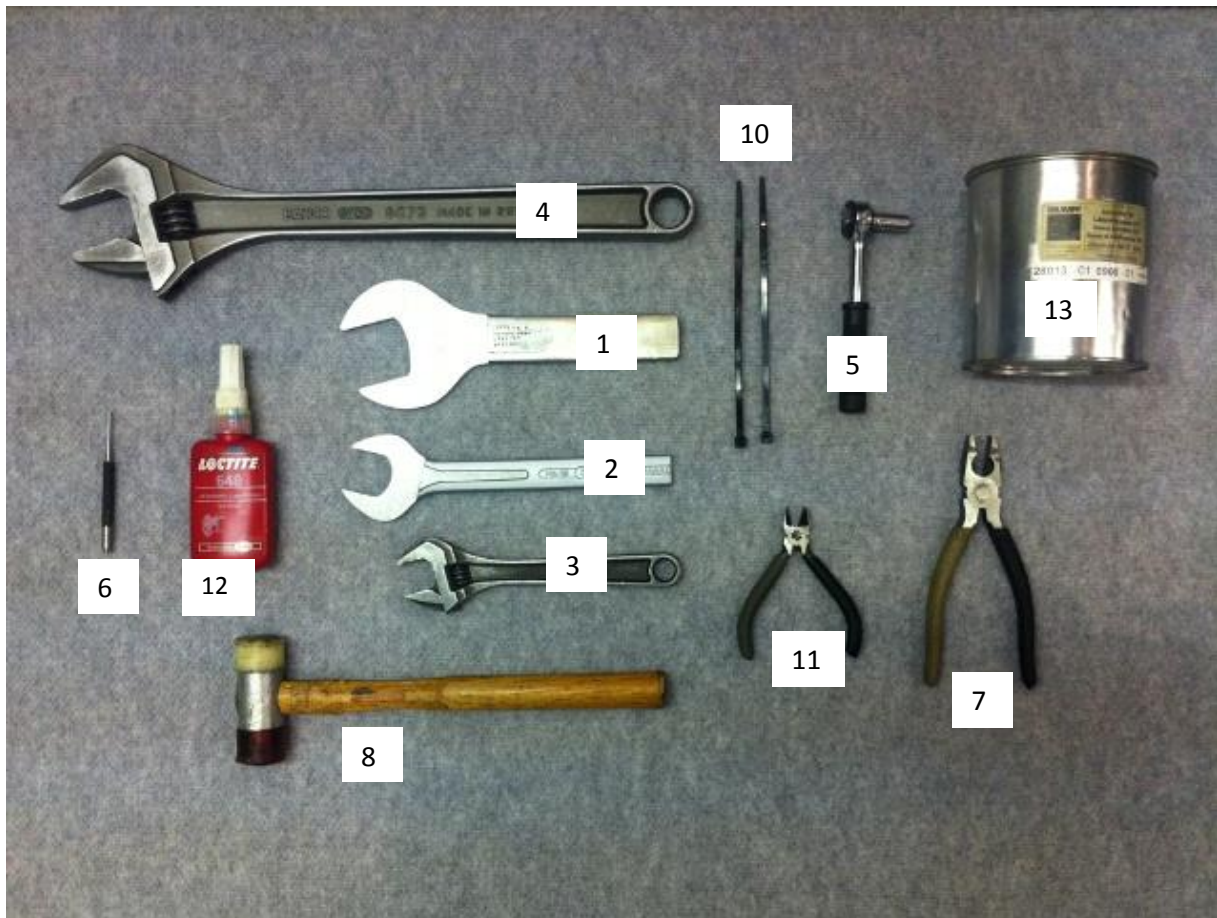


Fig.1

**1. TOOL KIT**


Item	Contents
1	43mm Modified open ended spanner
2	30mm Modified pen ended spanner
3	8" Adjustable wrench
4	18" Adjustable wrench
5	8mm Socket
6	Pin punch
7	Pliers
8	Small plastic hammer
9	Soft or smooth jawed vice or cloth to protect tool from scratching (Not in picture)
10	Zip ties (tie wraps)
11	Snip cutters/scissors
12	Loctite 648 retaining compound or similar
13	Gear grease

## 2. DISASSEMBLE MAIN PARTS

- 2.1 Snip both tie wraps and remove.
- 2.2 Using an 8" adjustable wrench remove the silencer (#85).
- 2.3 Unscrew all four Banjo's (#70) with an 8mm socket releasing tubes A (#71) and B(#72).



Fig.2

- 2.4 Place the tool body upright into the vice by clamping the two valve block flats (Fig.3), orientate with the gearbox head nearest the engineer and spindle to the rear.



Fig.3

- 2.5 Separate the gearbox from the motor housing, by engaging the 43mm modified spanner onto the flats of the joining piece/nut (#73) and 18" adjustable spanner across the gearbox head. Hold the join piece/nut (#73) still while turning the gearbox head clockwise ¼ turn to loosen. Continue to unscrew the gearbox head by hand until it lifts from the motor body, (Fig.4)



*Note: When separating the gearbox/head from the motor housing ensure the join piece (#73) is held firmly with the modified 43mm spanner and not allowed to move as this may undo the setup of the motor assembly. The only part that should turn when unscrewing is the gearbox / angle head assembly using the 18" adjustable spanner across the head.*



Fig.4

- 2.6 Remove the motor/gearbox assembly from the vice. (Fig.5)



Fig.5

### 3. GEARBOX PINION SHEAR PIN

- 3.1 Place the gearbox assembly into the vice with spindle facing upwards and angle head facing to the side. (Fig.6)



Fig.6

- 3.2 Separate the angle head by placing the 30mm modified spanner onto clamp nut (#48) turning anti-clockwise until the two units pull apart. (Fig.7)



Fig.7

- 3.3 Remove spacer (#52) to reveal shear pin (#51). (Fig.8)



Fig.8

- 3.4 Place the shear pin end of the pinion (#50) into the vice and gently tap the angle body with a plastic hammer until the body becomes free. (Fig.9)



Fig.9



*Note: Check gear and bearing for wear and replace if necessary.*

3.5 Remove the broken shear pin by tapping with a 2mm pin punch if required. (Fig.10)



Fig.10

3.6 Apply a small amount (2 drops) of Loctite 648 retaining compound, or similar, onto the new shear pin (#51) or follow manufacturers product instructions and insert into pinion gear. (Fig.11)

3.7 Lightly coat the gear with grease and reinsert into the gearbox. It may need a tap with a plastic hammer to fully seat. (Fig.11)



Fig.11

3.8 Reinstall spacer (#52). (Fig.11)

#### 4. ANGLE HEAD SHEAR PIN

4.1 Place angle head gear stub (#89) into the vice. (Fig12)

4.2 Gently tap body with plastic hammer to separate gear from body. (Fig.12)



*Note: Check gear and bearing for wear and replace if necessary.*

4.3 Remove the broken shear pin from pinion by tapping with the 2mm punch pin if required.



Fig.12

4.4 Apply a small amount (2 drops) of Loctite 648 retaining compound, or similar, onto the new shear pin (#51) or follow manufacturers product instructions.

4.5 Lightly coat the gear with grease.

4.6 Reinstall pinion gear (#87) into the angle head and lightly coat with grease (Fig.13)



Fig.13

4.7 Bring the angle head and gearbox together by placing the gearbox into the vice with the female lug locators facing the gearbox. (Fig.14)

4.8 Place the clamp nut (#48) onto the angle head (#88) with the male lug locators facing the gearbox and hand tighten approximately two turns. (Fig.14)



Fig.14

4.9 Place the angle head onto the gearbox housing and hand tighten the clamp nut bringing the two units together locating the male and female lugs in place whilst tightening the clamp nut.



Fig.15

4.10 Finish tightening with the 30mm modified spanner ensuring there is a 5mm gap as indicated. This is to allow free movement of the latch plate. (Fig15)

## 5. REASSEMBLE MAIN PARTS

5.1 Place the valve gearbox assembly into the vice and reinstall the pinion gear (#89) ensuring that the shear pin is correctly into the slot. (Fig.16)

5.2 Reinstall join piece (#73).



Fig.16



5.3 Coat pinion gear teeth with grease. (Fig.17)



Fig.17

5.4 Lower assembled angle head/gearbox onto motor assembly. (Fig.18)



Fig.18

5.5 Hand tighten the motor body nut. Then using a 43mm modified spanner on the join piece (#73) and 18" adjustable spanner on the head, (Fig.19), tighten up so that the spindle and head lines up in the correct orientation the tool is configured to. The head needs to be reasonably tight in its finished position. (Fig.20))



Fig.19



*Note: When tightening the head up make sure the join piece (#73) is held firmly with the modified 43mm spanner and not allowed to move as this may undo the setup of the motor assembly. The only part that should turn when tightening up is the gearbox/angle head assembly using the 18" adjustable spanner across the head.*



Fig.20

- 5.6 Turn spindle head by hand to ensure gears have engaged. (Fig.21)



Fig.21

- 5.7 Remove tool from vice and reinstall tubes A & B by tightening banjo's with 8mm socket. (Fig.22)



Fig.22

- 5.8 Replace two tie wraps to secure pipes. (Fig.22)

- 5.9 Reinstall the silencer and tighten using an adjustable spanner. (Fig.23)

- 5.10 Connect the tool to an airline. Run 5 cycles to fully test.

Repair complete.



Fig.23

## 6.0 PARTS BREAKDOWN

NO.	DESCRIPTION	UNIT QTY	PART NUMBER	NO.	DESCRIPTION	UNIT QTY	PART NUMBER
1	Torque Tube	1	on application	58	Rod	1	S252503-58
3	Spindle	1	on application	59	Spring	1	S8753-59
4	Castle Nut	1	M475009-4	60	O Ring	1	S203713-60
5	Locking Collar	1	M82613.2-5	61	Housing	1	M299843-61
6	Key	1	S250013-6	62	Washer	1	S43203-62
7	Spindle	1	SEE TABLE 1	63	Rod	1	M299603-63
8	Adaptor - Std	1	M299883-8	64	Body	1	M299913-64
9	Screw Set	2	S262423-9	65	Button	1	S202843-65
10	Guard	1	S300103-10	66	Adaptor	1	S472633-66
11	Cover	1	M300143-11	67	O Ring	1	S40533-67
12	O Ring	1	S177653-12	68	Top	1	M299903-68
13	Front Stop Nut	1	M299803-13	69a	Dome Screw	1	S265154
14	Screw	1	S236653-14	69b	Bonded Seal	1	S265155
15	O Ring	1	S64093-15	70	Banjo	4	S72102-70
16	Washer	1	M299523-16	71	Tube A	1	S304893-71
17	Bearing	1	S299183-17	72	Tube B	1	S304913-72
18	Gear	1	SEE TABLE 2	73	Join Piece - Angle Version	1	M475001-73
19	Washer	1	M299543-19		Join Piece - Straight Version	1	M475001-A-73
20	Gear	1	M299743-20	74	Motor Angle Spacer	1	M475003-74
21	Spacer	1	M299723-21	75	Gearbox	1	SEE TABLE 3
22	Bearing	1	S299183-22	76	Motor Kit (Vanes + 434631 & 434632)	1	S474933-76
22	Bush - Brass (2000rpm)	1	M299183-22	77	Bearing Housing Kit incl. 77A & 77B	1	S474943-77
23	Washer	1	M299523-23	77a	Rear Motor Plate	1	M2050472843
24	Body	1	M300153-24	77b	Front Motor Plate	1	M2050472853
25	Ball	2	S280313-25	78	Pinion	1	SEE TABLE 4
26	Latch Plate	1	M299893-26	79	Rotor	1	SEE TABLE 4
26a	Latch Plate Pin	1	M299593-26	80	Cylinder	1	S474963-80
27	Screw	2	S236233-27	80a	Cylinder Pin	1	S434634-80a
28	Screw	1	S236653-28	81	Gasket	1	S434635-81
29	Rear Stop Nut	1	M299513-29	82	Motor Sleeve	1	M475000-82
30	Screw	2	S273643-30	82a	O Ring - Motor Sleeve	4	S475000-a
31	Screw	2	S236273-31	83	Rear Motor Plate	1	M475002-83
32	O Ring	1	S64093-32	84	Silencer Assembly Plate Set (Paired)	1	M475004
33	Clutch Piston	1	M299823-33	84b	Silencer Assembly Body	1	M475004-b
34	O Ring	1	S203713-34	84c	O Ring - Silencer	2	S475004-c
35	Clutch Piston - Small	1	M299813-35	84d	Screw	2	S475004-d
36	Washer	1	S299533-36	84e	Grub Screw	2	S475004-e
37	Spring	1	S11272-37	85	Silencer	1	S11645-85
38	Ball	13	S175793-38	86	Bearing	1	S300243-86
38a	Ball	1	S175793-38a	87	Gear	1	M300013-87
39	Clutch Plate	1	M299793-39	88	Angle Head	1	M300003-88
40	Spindle	1	M299833-40	88a	Angle Spacer	1	M299653
41	Ball	3	S81243-41	89	Angle Gear	1	M300023-89
42	Gear Spindle	1	SEE TABLE 2	90	Pin	1	M299573-90
43	Circlip	1	M91013-43	91	Clamp Nut	1	S300243-91
44	Clutch	1	M299753-44				
45	Bearing	2	S300243-45				
46	Adaptor	1	M299703-46				
47	Support Bush	1	M299623-47				
48	Clamp Nut	1	M299643-48				
49	Bearing	1	S300243-49				
50	Pinion	1	M299763-50				
51	Pin	1	M299573-51				
52	Spacer	1	S299653				
53	Button	1	S157663-53				
54	Cap	1	M299853-54				
55	O Ring	3	S43463-55				
56	Collector	1	M299863-56				
57	O Ring	1	S261213-57				



7.0 BREAKDOWN DRAWING

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