TX LIFT CYLINDER, P/N 104-6269

Dingo TX420/425 240000001 & higher
TX525 270000001 & higher

Lift Cylinder Assembly Rebuild

1. Clean away all dirt or other foreign substance from openings, particularly at the head (ram) end of the hydraulic cylinder.

2. Extend the ram of the tilt cylinder out approximately 6” to 12” (15 to 30cm).

3. Clamp the tilt cylinder in a vise so that the locking ring slot is facing up.

4. Clean out all material from the locking slot (Fig. 001).

Fig 001 PICT-3034

Note: If excessive wear due to side-loads or binding is a possibility, mark or note the piston and head relationship to the rod and tube. This condition will usually show up as a highly polished surface on the piston and head 90° to the pin rotation axis (Fig. 002).

Fig 002 PICT-3035

5. Install a spanner wrench in the holes provided. Rotate the head counterclockwise until the edge of the retaining ring appears in the milled slot of the tube. Insert a flat blade screwdriver between the beveled edge of the retaining ring and the cylinder barrel to guide the retaining ring out through the opening (Fig. 003).

Fig 003 PICT-3036

TX LIFT CYLINDER, P/N 104-6269

6. Continue to rotate the head counter-clockwise until the retaining ring is completely removed (Fig. 004).

Fig 004 PICT-3037

7. Pull out on the rod to remove the piston and head assembly from the barrel (Fig. 005).

Fig 005 PICT-3038

8. Remove the barrel from the vise.

INSPECT ROD: There should be no scratches or pits deep enough to catch the fingernail. Pits that go to the base metal are unacceptable. Scratches that catch the fingernail but are not to the base metal, less than 0.5 inch long (1.27cm) and primarily in the circumferential direction are acceptable provided they cannot cut the rod seal. Chrome should be present over the entire surface of the rod and the lack thereof is unacceptable. Replace the cylinder if an unacceptable condition is found.

INSPECT HEAD: Visually inspect the inside bore for scratches or polishing. Deep scratches are unacceptable. Polishing indicates uneven loading and when this occurs, the bore should be checked for out-of-round. If out-of-round exceeds 0.007” (.18mm), this is unacceptable. Check the condition of the dynamic seals, looking particularly for metallic particles embedded in the piston seal surface. Remove the seals. Damage to the seal grooves, particularly on the sealing surfaces, is unacceptable. Replace the cylinder if an unacceptable condition is found.

INSPECT TUBE ASSEMBLY: Visually inspect the inside bore for scratches and pits. There should be no scratches or pits deep enough to catch the fingernail. Scratches that catch the fingernail but are less the 0.5 inch long (1.27cm) and primarily in the circumferential direction are acceptable provided they cannot cut the piston seal. Replace the cylinder if an unacceptable condition is found (Fig. 006).

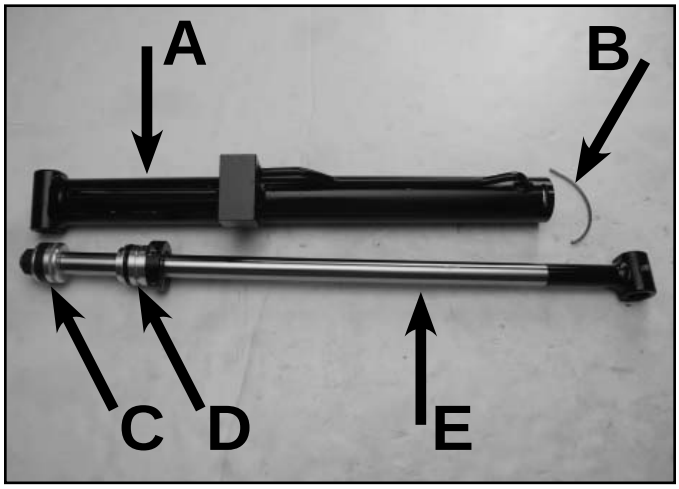

Fig 006 PICT-3039a

A. Barrel
B. Retaining Ring
C. Piston
D. Head
E. Ram

Lift Cylinder Disassembly

1. Remove the wear ring from the piston (Fig. 007).

Fig 007 PICT-3040

2. Remove the piston seal from the piston assembly (Fig. 008).

Fig 008 PICT-3041

TX LIFT CYLINDER, P/N 104-6269

3. Remove the back-up piston seal from the piston assembly (Fig. 009).

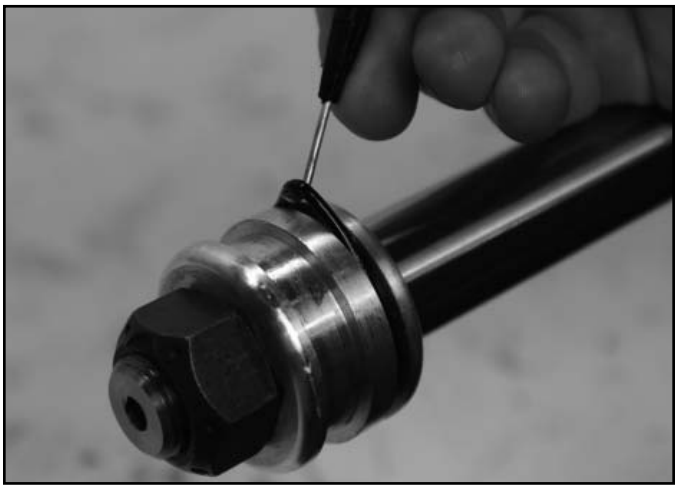

Fig 009 PICT-3042

4. Using a 1-1/8” socket, remove the nut from the ram assembly (Fig. 010).

Fig 010 PICT-3043

5. Slide the piston off the end of the ram (Fig. 011).

Fig 011 PICT-3045

6. Remove the piston inner o-ring from the ram (Fig. 012).

Fig 012 PICT-3046

7. Remove the o-ring from the head on the ram assembly (Fig. 013).

Fig 013 PICT-3047

8. Remove the flat back-up ring from the head on the ram assembly (Fig. 014).

Fig 014 PICT-3048

9. Slide the head off the end of the ram (Fig. 015).

Fig 015 PICT-3049

10. Remove the wiper seal from inside the head (Fig. 016).

Fig 016 PICT-3050

TX LIFT CYLINDER, P/N 104-6269

11. Remove the wear seal from inside the head (Fig. 017).

Fig 017 PICT-3051

12. Thoroughly rinse the inside of the tube with a clean solvent. Rinse and clean all internal components of any foreign material with a lint-free rag.

13. Visually inspect for material defects and contamination. All seals and o-rings must be replaced with new parts (Head Assembly, Fig. 018, and Piston Assembly, Fig. 019).

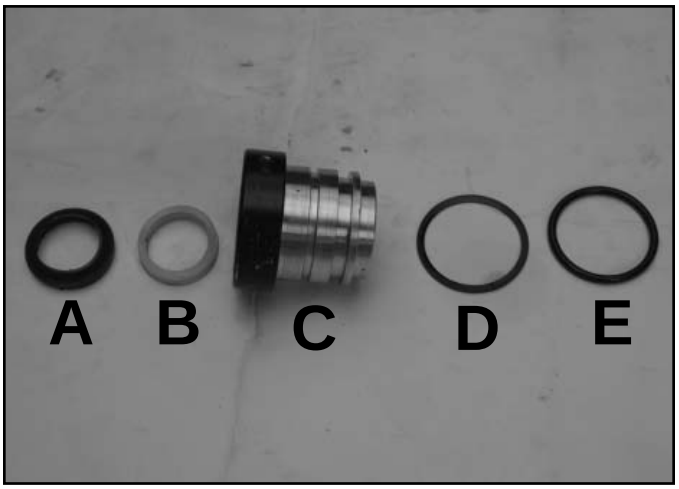

Fig 018 PICT-3052a

A. Wiper
B. Wear Seal
C. Head
D. Static Back-up
E. Static O-Ring

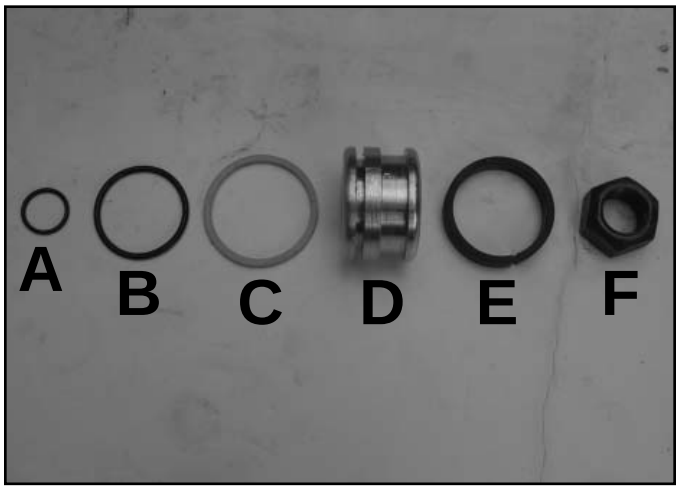

Fig 019 PICT-3056a

A. Piston Inner O-ring
B. Backup Piston Seal
C. Piston Seal
D. Piston
E. Wear Ring
F. Locknut

14. Lubricate the head and all seals with 10W-30 oil prior to installation. Twist the wear seal into a “C” shape and allow it to snap into the groove (Fig. 020).

Note: The groove of the seal faces toward the barrel side of the head.

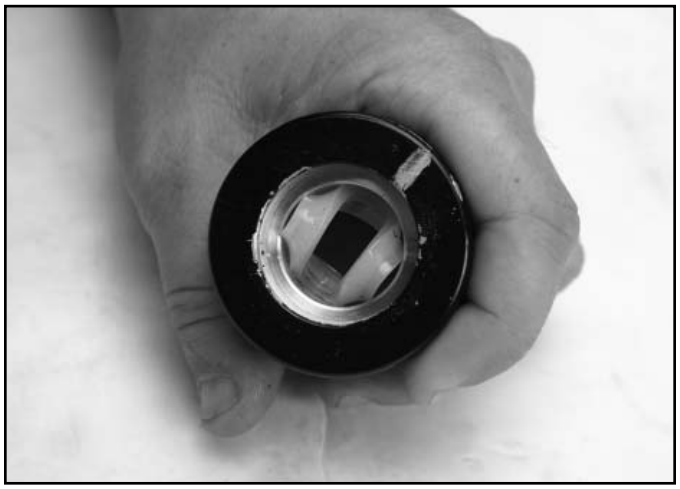

Fig 020 PICT-3057

15. Install the wiper seal so that the lip of the seal is installed in the groove inside the head (Fig. 021).

Fig 021 PICT-3058

16. Install the flat back-up ring into the head. The flat back-up seal is installed up against the ram side of the groove (Fig. 022).

Fig 022 PICT-3059a

17. Install the o-ring into the groove next to the flat back-up ring. The o-ring is installed on the barrel side of the groove (Fig. 023).

Note: If possible, the head/seal assembly should sit for at least one hour to allow the seals to normalize.

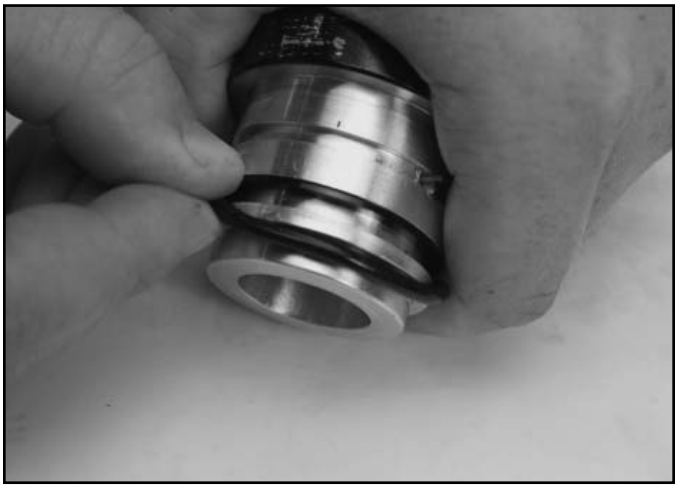

Fig 023 PICT-3060a

18. Install the back-up ring into the piston (Fig. 024).

Fig 024 PICT-3061a

19. Install the piston seal on top of the back-up ring (Fig. 025).

Fig 025 PICT-3062a

20. Install the wear ring onto the piston (Fig. 026).

Fig 026 PICT-3063a

Lift Cylinder Assembly

Note: Lubricate all parts prior to assembly.

1. Secure the cylinder ram into a vise.

2. Cover the threads of the ram and then slide the o-ring onto the ram shaft and into the groove (Fig. 027).

Fig 027 PICT-3064a

3. Remove the thread protection material.

4. Slide the head onto the cylinder ram (Fig. 028).

Fig 028 PICT-3065a

5. Slide the piston onto the cylinder ram (Fig. 029).

Fig 029 PICT-3066

6. Install the nut onto the end of the ram. Using a 1-1/8” socket, torque the nut to 100 - 120 ft-lbs. (135.6 - 162.7 Nm) (Fig. 030).

Fig 030 PICT-3067

7. Remove the ram from the vise and secure the cylinder barrel into the vise.

8. Install the ram assembly into the cylinder barrel by rotating the piston assembly while pushing the piston into the barrel (Fig. 031).

Fig 031 PICT-3068

9. Rotate the head in the barrel until the ring hole in the ring groove is within the slot on the barrel (Fig. 032).

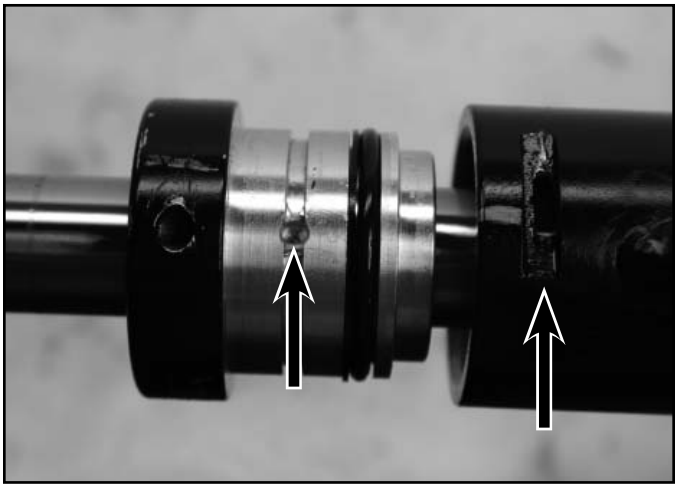

Fig 032 PICT-3070

10. Insert the end of the ring through the notch in the barrel and into the hole in the groove. Place the spanner wrench onto the head assembly (Fig. 033).

Fig 033 PICT-3071

11. Begin rotating the spanner wrench so that the head pulls the ring inside the barrel. Continue rotating until the ring is completely installed inside the barrel on the head assembly (Fig. 034).

Fig 034 PICT-3073