

# **PACCAR** WINCH DIVISION

## **Model PA80**

### **PARTS AND INSTALLATION MANUAL**

#### **FOR CATERPILLAR D7G**

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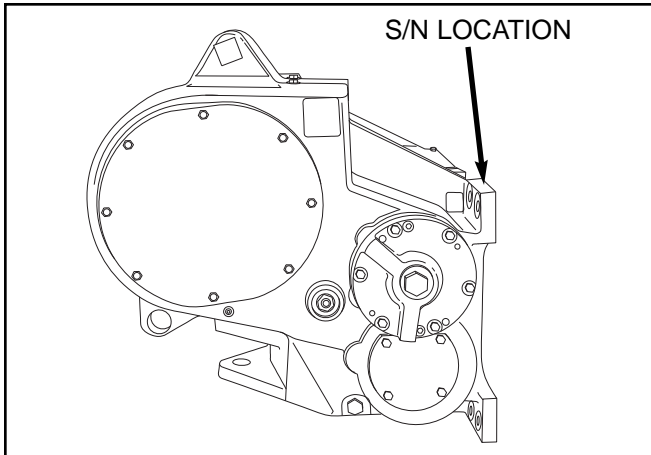
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## MODEL NUMBER DESCRIPTION

### COMPLETE WINCH MODEL NUMBER - PA80 / A 0 0 0 0 0 - D7G

- PA80 - BASIC WINCH MODEL (80,000 LBS RATED FIRST LAYER LINE PULL)
- A - BEVEL GEAR RATIO (1:1)
- 0 - OVERWIND (CABLE IS PULLED ONTO THE DRUM OVER THE TOP)
- 0 - STANDARD BRAKE
- 0 - WITHOUT FREESPOOL
- 0 - NO FAIRLEAD
- D7G - FACTORY BUILT FOR CATERPILLAR D7G TRACTOR



The winch model number is an important reference as to what optional components were used when the winch was manufactured. The model and serial numbers are stamped into the winch case as shown above.

Record the information below for future reference.  
Always include the model and serial numbers when inquiring or ordering parts.

**Model No.** \_\_\_\_\_

**Serial No.** \_\_\_\_\_

**In-Service Date** \_\_\_\_\_

**PA80  
MOUNTING GROUP  
CATERPILLAR D7G**

**Instructions:**

1. PTO rotation is counterclockwise (CCW) as viewed from the rear of the tractor.
2. Remove paint, rust, dirt, etc. from the winch mounting surfaces, winch mounting blocks and the tractor rear face.
3. Modify the tractor rear cover (Cat P/N 6P4241) as shown on the Mounting Group Drawing to provide clearance for the winch control cables.
4. Remove the PTO shipping cover from the front of the winch. Align the input shaft (8) to the winch bevel pinion and install the pin (9) and snap ring (10).
5. Install the mounting blocks (4, 5 & 6) to the tractor rear face, using fasteners (12, 13, 14 & 16). Apply Loctite 270, 271 or 277, or equivalent, to the clean, dry threads of the studs (12 & 16) and torque all fasteners to 1360 ft•lb (1845 N•m). Apply Loctite 270, 271 or 277, or equivalent, to studs (3) and install them into the upper mounting blocks.

**! WARNING !**

Winch weighs approximately 2100 lb (953 kg) without oil, cable or tractor mounting blocks. Make certain lifting equipment has adequate capacity to eliminate the possibility of damage or injury. Attempting to lift the winch with inadequate equipment may result in personal injury or property damage.

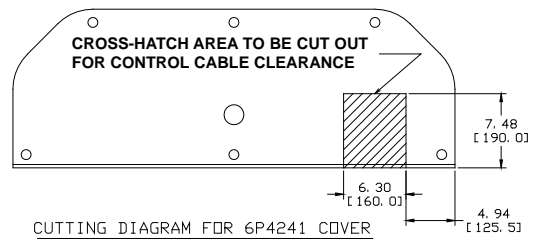
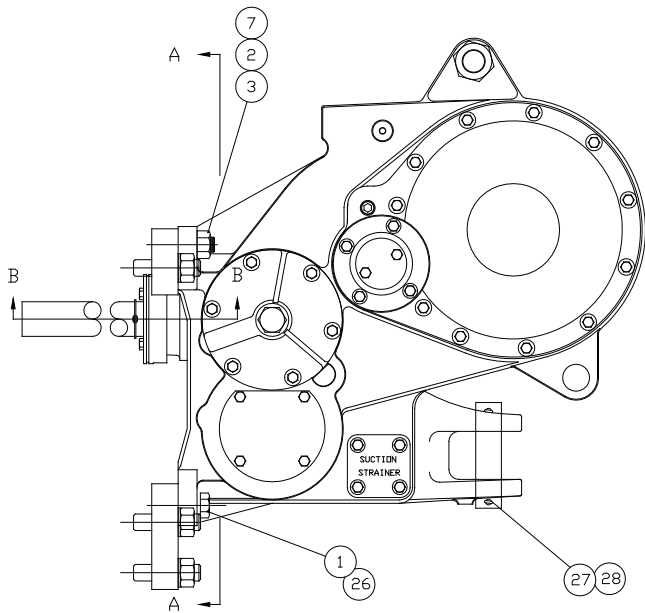
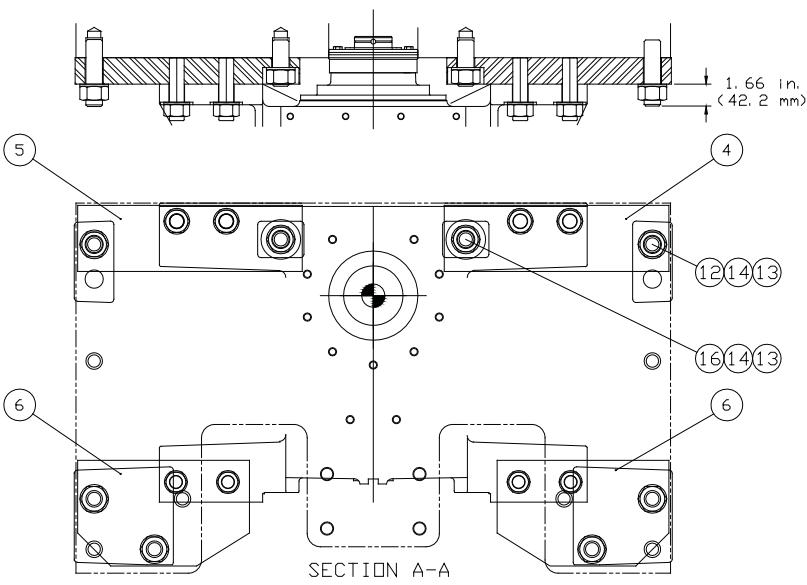
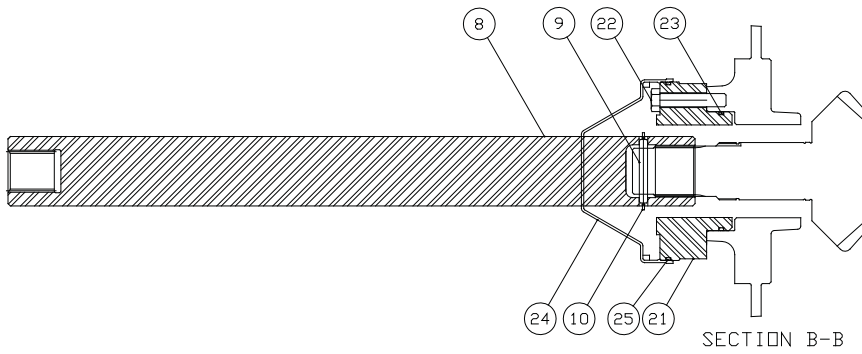
6. Carefully guide the winch into position on the tractor rear face while guiding the input shaft into alignment with the tractor PTO shaft. Ensure the winch is in proper alignment and free of any binding. Secure to mounting blocks with fasteners (1, 2 & 7). Apply Loctite 277, or equivalent, to the clean, dry threads of the capscrews (1) and studs (7). Torque as follows:
  - 1 – 8 UNC . . . . . 680 ft•lb (920 N•m)
  - 1 1/8 – 7 UNC . . . . . 960 ft•lb (1300 N•m)

**! WARNING !**

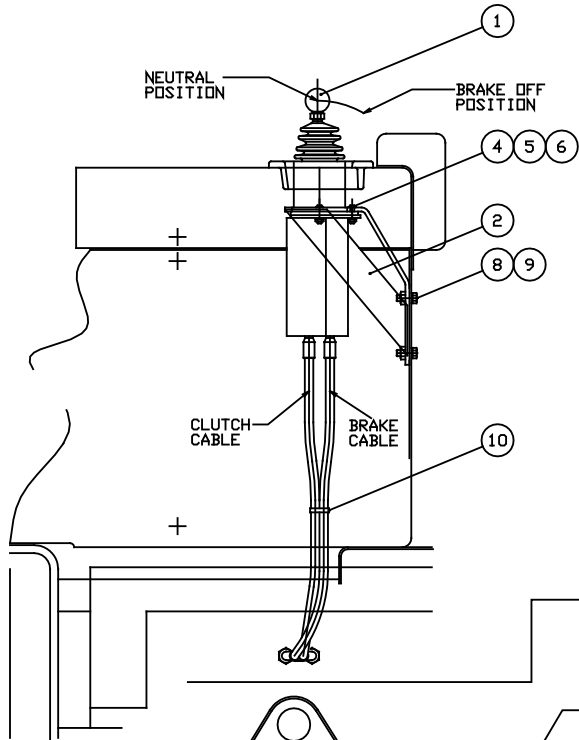
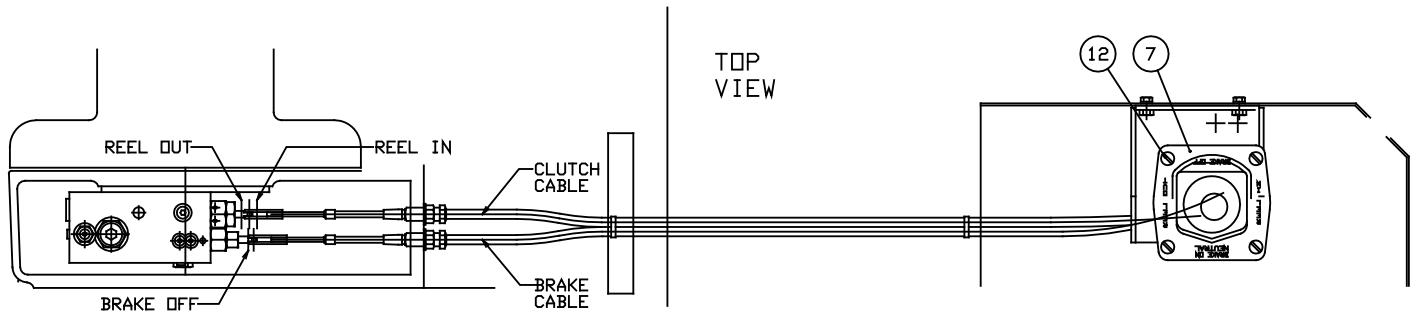
Fill the winch to the proper level with the recommended oil **BEFORE** starting the tractor engine. Bearing and gear damage may result if the tractor and winch is run without oil.

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	103332	CAPSCREW, HEX HD (1 - 8 x 2 3/4 G8)	4
2	70768	NUT HX (1-1/8 - 7 G8)	4
3	100654	STUD (1-1/8 - 7 X 4-3/4)	4
4	104410	MOUNTING BLOCK, RH	1
5	104411	MOUNTING BLOCK, LH	1
6	104412	MOUNTING BLOCK, LOWER	2
7	103484	WASHER, HARD (1-1/8)	4
8	104415	INPUT SHAFT	1
9	104420	PIN	1
10	13031	SNAP RING	1
12	33460	STUD (1-1/4 - 7 X 5)	6
13	70176	HEX NUT (1-1/4 - 7 G8)	8
14	PA4K0684	WASHER, HARD (1-1/4)	8
16	33455	STUD (1-1/4 - 7 X 3-1/2)	2
17	29426	FERRULE (1 in.) - NOT SHOWN	1
21	104414	PTO PILOT	1
22	104131	CAPSCREW, HEX HD (1/2 - 13 X 2-1/2 G8)	4
23	69850	O-RING	1
24	PA3P0804	SHIPPING COVER	--
25	22721	O-RING	1
26	101205	WASHER, HARD 1 INCH	4
27	36618	DRAWBAR PIN	1
28	70148	COTTER PIN	2

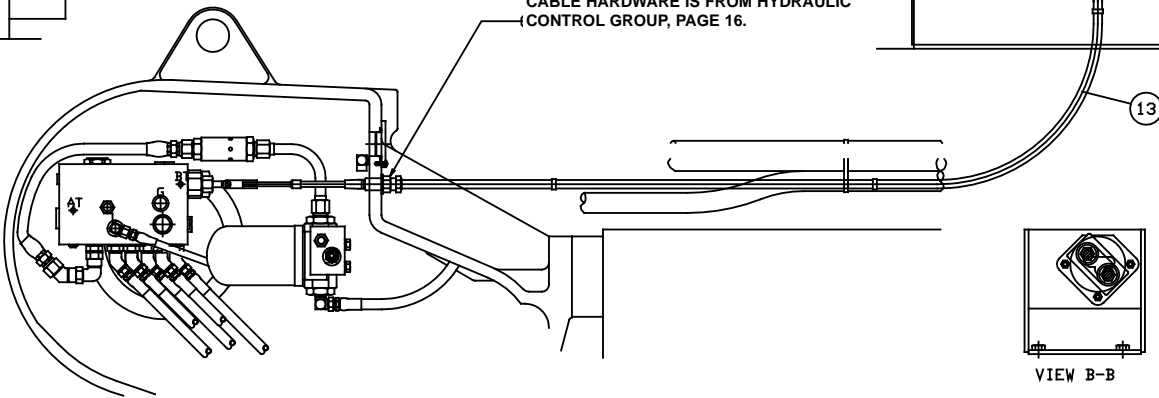
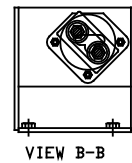
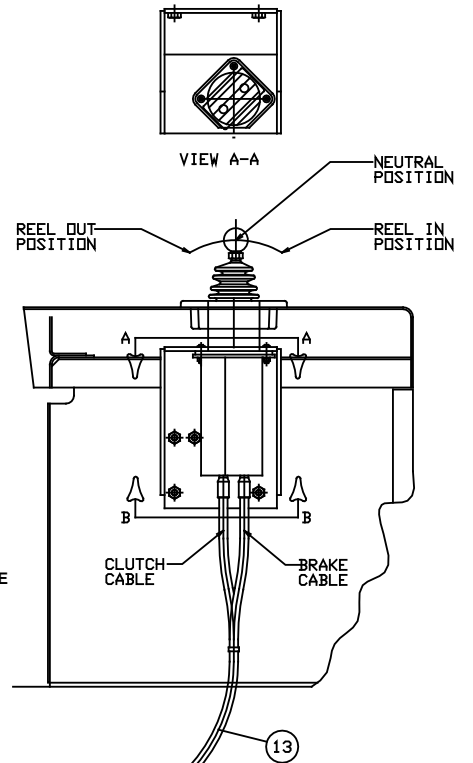
**PA80  
MOUNTING GROUP  
CATERPILLAR D7G**



**PA80  
CONTROL GROUP  
CATERPILLAR D7G**

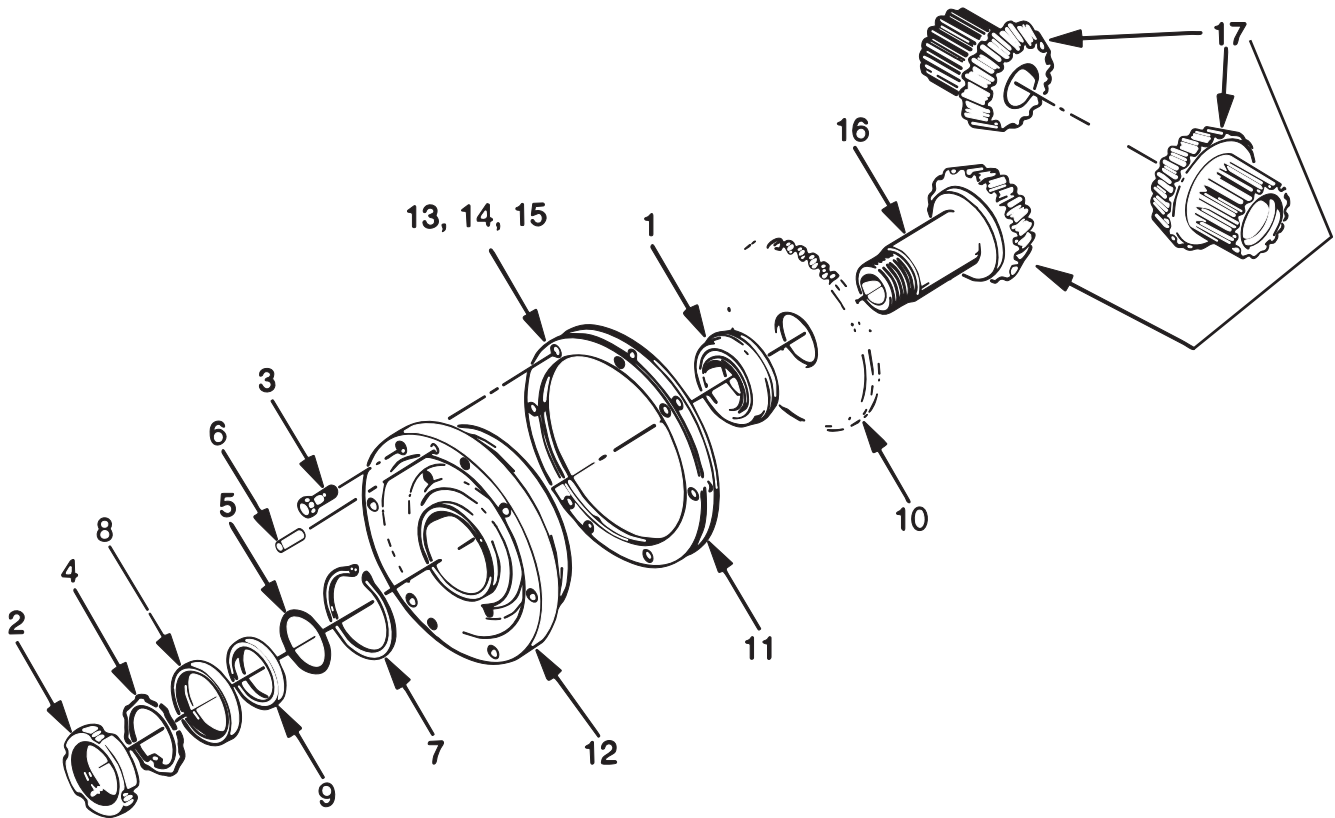


NOTE: FOR INSTALLATION OF CABLES  
TO CONTROL LEVER, SEE SERVICE  
MANUAL.  
SUB/UA SERVICE MANUAL  
CABLE HARDWARE IS FROM HYDRAULIC  
CONTROL GROUP, PAGE 16.



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	101850	DUAL AXIS CONTROLLER	1
2	104416	CONTROL BRACKET	1
4	40240	CAPSCREW, BUTTON HEAD (1/4 - 20 X 1)	3
5	69645	NUT, HEX (1/4 - 20)	3
6	11015	LOCKWASHER (1/4)	3
7	104609	GUIDE	1
8	104309	CAPSCREW, HEX HD (3/8 - 16 X 1 G8)	4
9	27152	LOCKWASHER (3/8)	4
10	PA8L8413	STRAP	3
12	22363	CAPSCREW, FLAT HD (3/8 - X 1 G8)	4
13	101203	CONTROL CABLE - 72 in. (1830 mm)	2

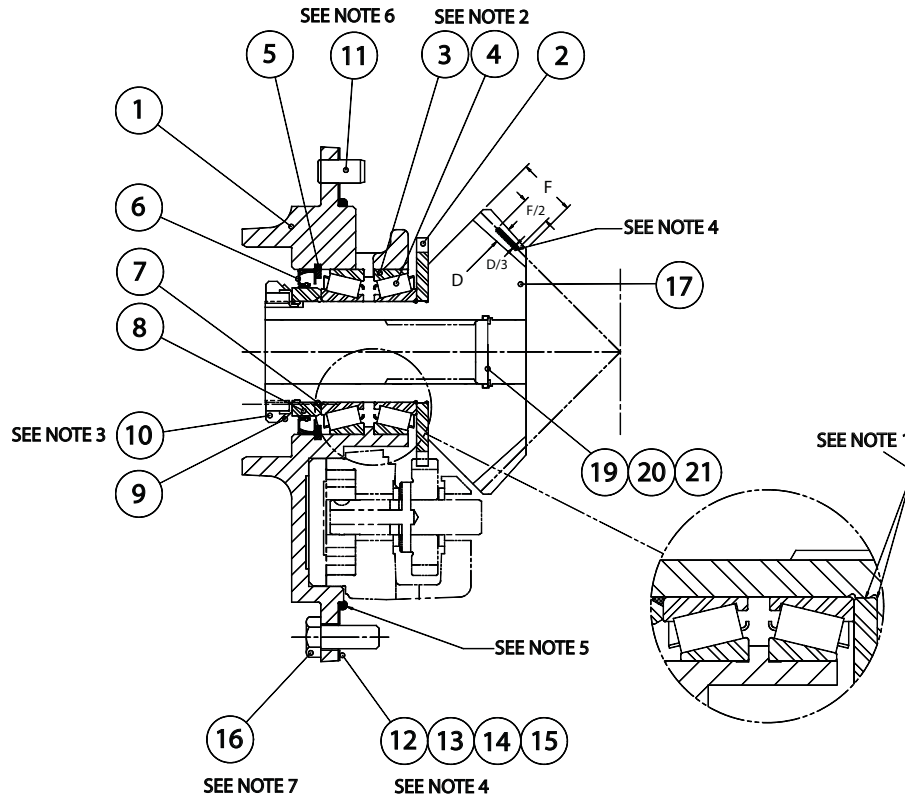
**PA80  
BEVEL GEAR GROUP  
CATERPILLAR D7G  
(S/N 0704589 AND BELOW)**



ITEM	PART NO.	DESCRIPTION	QTY.
1	70077	BEARING ASSEMBLY	1
2	24816	BEARING LOCKNUT	1
3	104320	CAPSCREW, HEX HEAD (1/2 - 13 X 1)	6
4	11418	BEARING LOCKWASHER	1
5	74992	O-RING	1
6	10318	DOWEL PIN	1
7	70163	RETAINING RING	1
8	107298	OIL SEAL	1
9	70382	SEAL SPACER SLEEVE	1
10	69947	PUMP DRIVE PINION	1
11	69946	SHIM GASKET	1
12	69961	BEVEL PINION CARRIER	1
13	69945	SHIM .005 in. (.13 mm)	2-AR
14	69827	SHIM .007 in. (.18 mm)	2-AR
15	69826	SHIM .020 in. (.51 mm)	2-AR
16	104409	BEVEL PINION - 30T	1
17	63451	BEVEL GEAR SET - 30/30T - 2 BEVEL GEARS, 1 BEVEL PINION	1

AR - AS REQUIRED

**PA80  
BEVEL GEAR GROUP  
CATERPILLAR D7G  
(S/N 0704590 AND UP)**



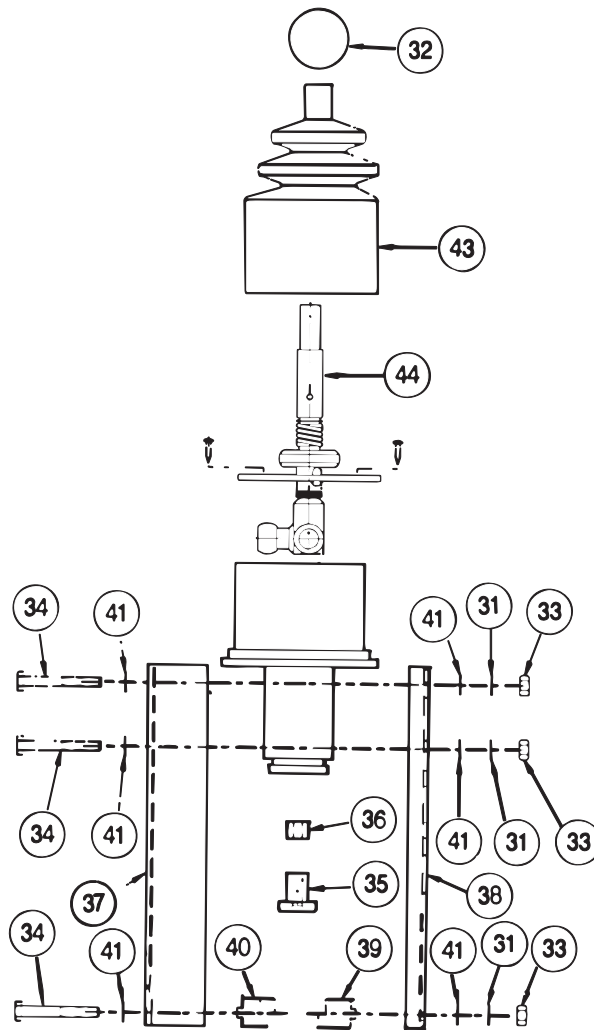
**NOTES:**

1. Clean bevel and pump pinions with Loctite solvent. Verify press fit before assembly. Apply Loctite 609 or equal to surfaces indicated in Detail A. Press pump drive pinion, item 2, onto bevel pinion and seat securely against shoulder. Allow proper cure time for Loctite before usage.
2. Apply a thin coat of multi-purpose grease to rollers. Do not pack solid.
3. Tighten nut to ensure parts are fully seated. Loosen nut to set the rolling torque of 10 lb-in (1.1 N-m). Pinion must turn smoothly by hand.
4. Shim as required for tooth contact pattern as shown. The pattern height should be about 1/3 the whole depth, located midway between tip and root. It should be about 1/2 the face width shifted toward the toe. Set the backlash to .004 to .012 in. (.10 - .30 mm).
5. Apply approximately 3/16" (5 mm) bead of silastic sealant (RTV 732) to pilot diameter as indicated.
6. Clean with Loctite solvent and apply Loctite 242 to dowel pin and insert into winch case.
7. Clean with Loctite solvent and apply Loctite 242 to threads. Torque to 75 to 83 ft-lb (102 - 113 N-m).

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	106864	BEVEL PINION CARRIER	1
2	69947	PUMP PINION	1
3	70080	BEARING CUP	2
4	70081	BEARING CONE	2
5	70163	RETAINING RING	1
6	107298	OIL SEAL	1
7	74992	O-RING	1
8	70382	SEAL SPACER	1
9	11418	BEARING LOCKWASHER	1
10	24816	BEARING LOCKNUT	1
11	10318	DOWEL PIN	1
12	69946	SHIM GASKET	1
13	69945	SHIM, .005 in. (.13 mm)	2-AR
14	69827	SHIM, .007 in. (.18 mm)	2-AR
15	69826	SHIM, .020 in. (.51 mm)	2-AR
16	104174	CAPSCREW, HEX HD ( 1/2 - 13 X 1 1/4 in. G8, Z)	6
17	104409	BEVEL PINION - 30T	1
18	63451	BEVEL GEAR SET - 30/30T * (NOT SHOWN)	1
19	70133	O-RING	1
20	70161	RETAINING RING	1
21	70357	BEVEL PINION PLUG	1

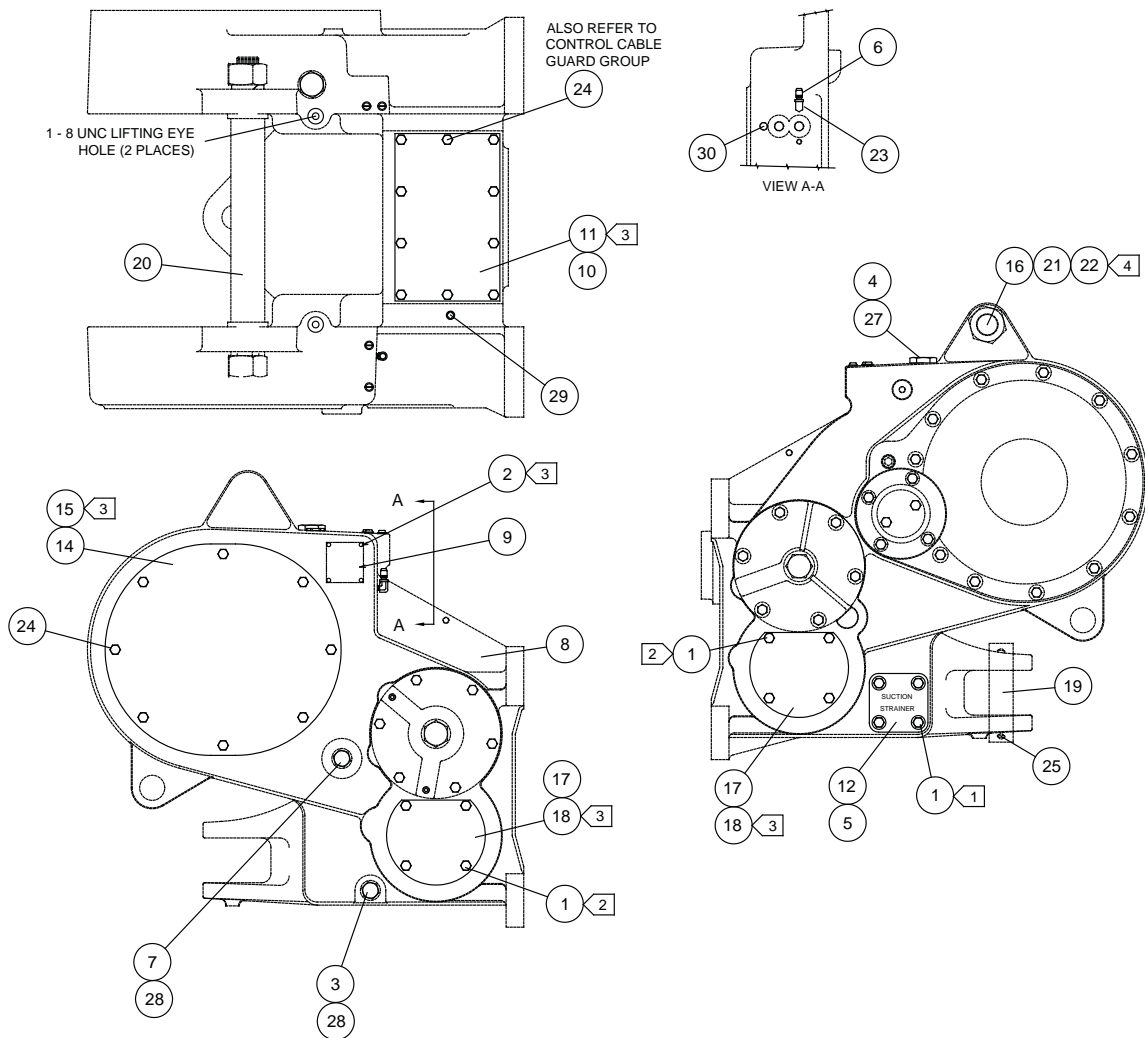
\* Bevel Gear Set includes one Bevel Pinion and two Bevel Gears

**PA80  
DUAL AXIS CONTROLLER  
CATERPILLAR D7G**



ITEM	PART NO.	DESCRIPTION	QTY.
	101850	CONTROL, DUAL AXIS (COMPLETE)	1
31	12780	WASHER, SHAKEPROOF	1
32	100240	KNOB	1
33	69645	NUT 1/4 - 20)	6
34	21462	CAPSCREW (1/4 - 20 UNC X 2 in, HX HD, G5)	6
35	100234	SLIDING LOCKSCREW	2
36	100235	CABLE BUSHING	2
37	100238	CABLE SUPPORT HOUSING, OUTER	1
38	100239	CABLE SUPPORT HOUSING, INNER	1
39	100236	CABLE ANCHOR, OUTER	1
40	100237	CABLE ANCHOR, INNER	1
41	11072	WASHER, FLAT - THIN (1/4)	24
43	102261	BOOT, WINCH CONTROL LEVER	1
44	62997	BRAKE-OFF DETENT REPAIR KIT	1

**PA80  
WINCH CASE AND COVERS  
CATERPILLAR D7G**



**NOTES:**

- 1 APPLY "FEL-PRO C648F" TO BOLTS TO PREVENT THREAD CORROSION.
- 2 TIGHTEN FASTENERS TO 75 LB-FT (10.4 Kg-M) TORQUE.
- 3 APPLY "RTV 732" SILASTIC SEALANT TO BOTH SIDES OF GASKETS (11, 15 & 18) AND DRIVE SCREWS (2).
- 4 TIGHTEN HEX NUT (22) UNTIL LOCKWASHER (21) IS FLATTENED AND THEN TURN ONE FLAT.

**PA80  
WINCH CASE AND COVERS  
CATERPILLAR D7G**

<b>ITEM</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1	104320	CAPSCREW, HEX HEAD (1/2-13 X 1)	12
2	70053	DRIVE SCREW	4
3	70118	PLUG, DRAIN (MAY BE SUBSTITUTED FOR ITEM 7)	1
4	29825	PLUG, OIL FILL (INCLUDES ITEM 27)	1
5	22586	O-RING	2
6	11106	VENT PLUG	1
7	70193	SIGHT GAUGE (INCLUDES ITEM 28)	1
8	27752	WINCH CASE - STANDARD PTO	1
9	100128	SERIAL NUMBER DATA PLATE	NSS
10	27805	COVER, TOP ACCESS	1
11	27806	GASKET	1
12	70305	STRAINER COVER	1
14	69951	COVER, SIDE ACCESS	1
15	69950	GASKET	1
16	28772	TIE BOLT	1
17	27807	COVER, LOWER ACCESS	2
18	27808	GASKET	2
19	36618	DRAW BAR PIN	1
20	27804	SPACER TUBE	1
21	27666	LOCKWASHER (1 3/4)	1
22	27655	NUT, HEX HEAD (1 3/4 NC)	2
23	13708	ELBOW	2
24	27745	CAPSCREW, HEX HEAD (1/2-13 X 1) SS*	18
25	70148	COTTER PIN (3/8 X 3 IN.)	2
27	31608	O-RING - FOR OIL FILL PLUG	1
28	31607	O-RING - FOR OIL DRAIN & LEVEL PLUG	2
29	23377	PLUG (3/8 NPT SQ HD)	1
30	18009	PLUG (1/4 NPT SQ HD)	1

\*SS = SELF-SEALING MATERIAL PREAPPLIED TO THREADS

NSS= NOT SOLD SEPARATELY

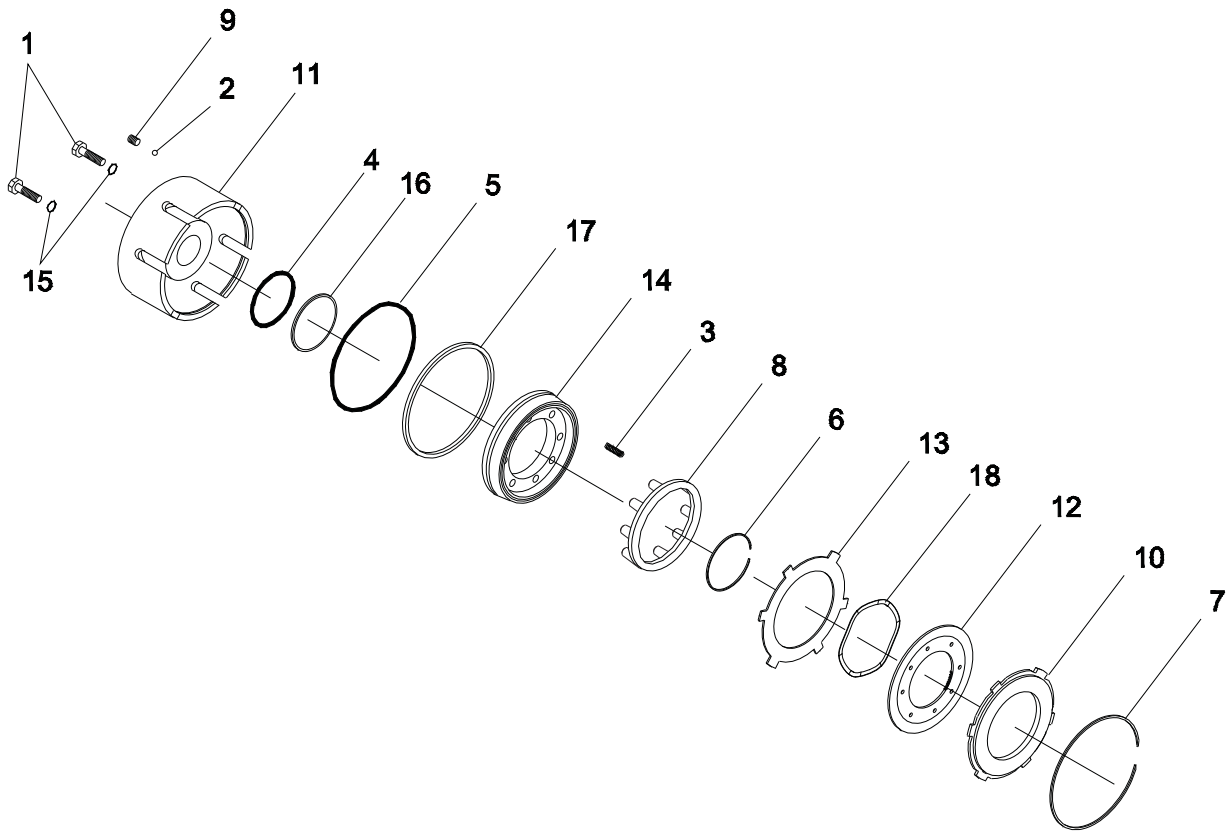


**PA80  
CLUTCH SHAFT GROUP  
CATERPILLAR D7G**

<b>ITEM</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1	31608	O-RING (PART OF ITEM 14)	2
2	18049	BEARING CUP (REF. BRAKE ASSEMBLY)	1
3	70073	BALL BEARING - STD PTO	2
4	70075	BEARING CUP	1
5	70076	BEARING CONE	1
6	70083	NEEDLE BEARING - INNER RACE	4
7	11891	THRUST BEARING	2
8	70084	NEEDLE BEARING	4
9	18048	BEARING CONE	1
10	104320	CAPSCREW, HEX HEAD (1/2 - 13 X 1)	6
11	102347	CAPSCREW, HEX HEAD (1/2 - 13 X 3)	6
12	69997	CLUTCH SHAFT - 4 SHAFT	1
13	11892	THRUST BEARING RACE	4
14	29825	PLUG (CONTAINS ITEM 1)	2
15	26686	PLUG, -6 ORB HEX (CURRENT)	1
16	72097	O-RING	8
17	18170	O-RING	2
18	21833	O-RING	2
19	25023	O-RING	4
20	70158	RETAINING RING	2
21	70160	RETAINING RING	2
22	70361	BEARING RETAINER	2
23	25024	BACK-UP RING	4
24	101198	ROTARY SEAL SHAFT	2
25	103329	THRUST BEARING SPACER	2
26	70333	BACK-UP WASHER	2
27	70334	ROTARY SEAL	2
28	69991	PINION GEAR - 18 TEETH - 4 SHAFT	1
29	106197	BRAKE HUB	1
30	69690	BEVEL GEAR SPACER	2
31	70376	BEARING CARRIER	2
33	70247	SHIM SET	1
34	27844	SHIM, .005 in. (.13 mm)	2-AR
	27845	SHIM, .007 in. (.18 mm)	2-AR
	27846	SHIM, .020 in. (.51 mm)	2-AR
35	100971	CLUTCH SHAFT BEARING CARRIER - 4 SHAFT	1
36	103328	BRAKE HUB SPACER	4
38	75267	ROLLPIN	2
39	70358	SLEEVE	4
40	100851	ORIFICE PLUG	2

AR = AS REQUIRED

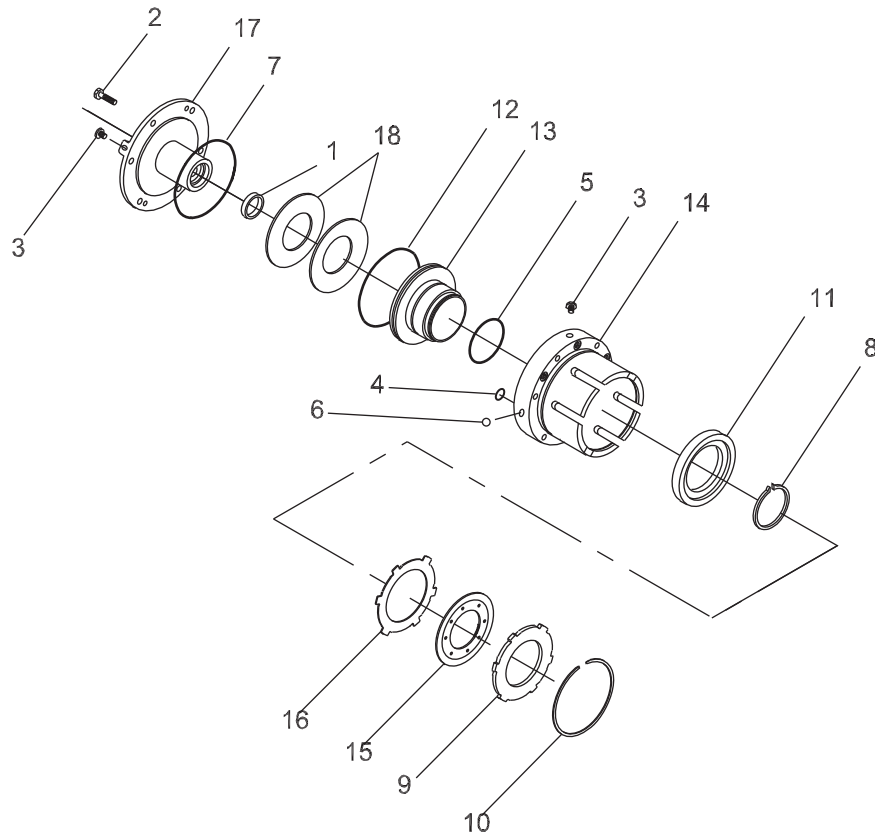
**PA80  
CLUTCH ASSEMBLY  
CATERPILLAR D7G**



ITEM	PART NO.	DESCRIPTION	QTY.
-	82897	CLUTCH ASSEMBLY - INCLUDES 1 - 18	
1	69325	PLUG (-4 ORB)	2
2	70126	STEEL CHECK BALL (.25 in.)	1
3	103043	SPRING	8
4	21063	O-RING	1
5	24484	O-RING	1
6	70170	RETAINING RING	1
7	103111	RETAINING RING	1
8	106035	SPRING RETAINER	1
9	70241	CHECK VALVE SEAT	1
10	103109	PRESSURE PLATE	1
11	103424	CLUTCH HOUSING *	1
12	101378	DISC - FRICTION	5
13	101377	DISC - STEEL .104 in. (2.64 mm)	5
14	107265	CLUTCH PISTON	1
15	72117	O-RING	2
16	101400	BACKUP RING	1
17	100033	BACKUP RING	1
18	103182	WAVE SPRING	4

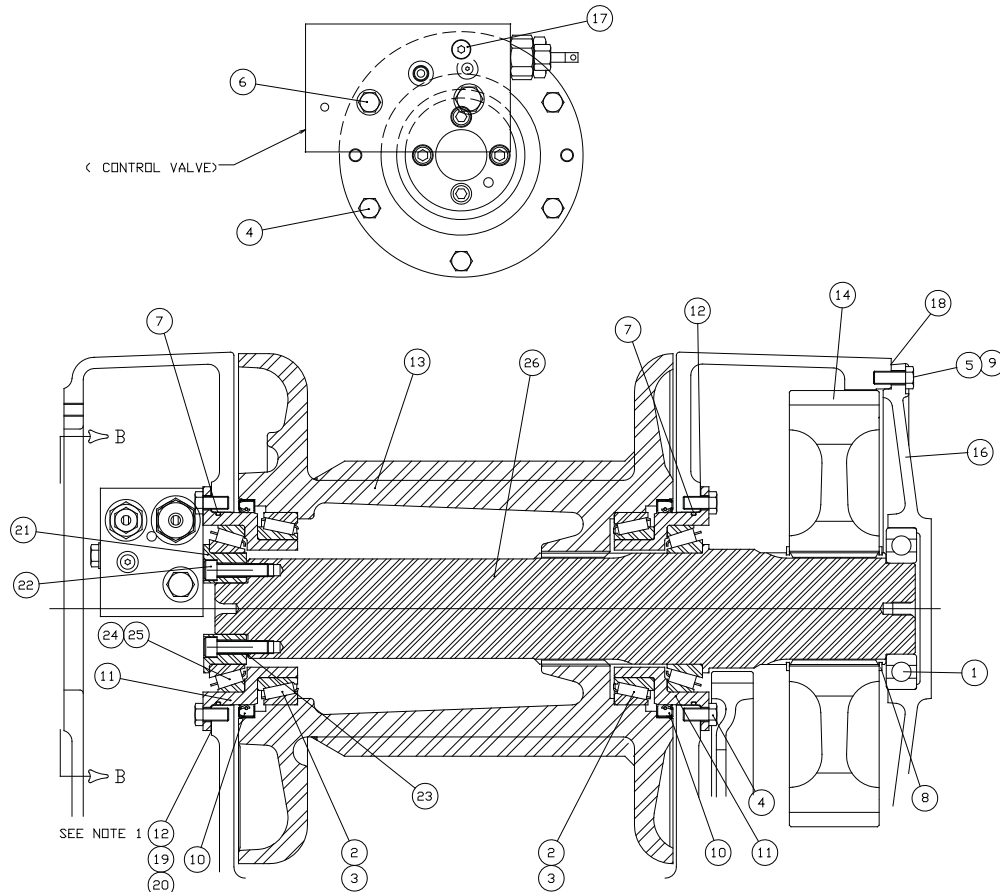
\* 103424 includes a basic housing 102932 with two (2) steel balls 70126 driven into cross-drilled passages.

**PA80  
BRAKE ASSEMBLY  
CATERPILLAR D7G**



ITEM	PART NO.	DESCRIPTION	QTY.
-	82896	BRAKE ASSEMBLY, STD - INCLUDES 1 - 20	
1	18049	BEARING CUP	1
2	104309	CAPSCREW, HEX HEAD (3/8 - 16 X 1)	2
3	26686	PLUG, HEX SOCKET (-6 ORB)	3
4	22454	O-RING	3
5	31579	O-RING	1
6	70126	STEEL BALL (PRESSED INTO HOUSING)	1
7	22358	O-RING	1
8	69807	RETAINING RING	1
9	103108	PRESSURE PLATE	1
10	103111	RETAINING RING	1
11	103000	PRESSURE PLATE	1
12	70140	O-RING	1
13	102999	BRAKE PISTON	1
14	102931	BRAKE HOUSING - (REQUIRES 1 OF ITEM 6)	1
15	101378	DISC - FRICTION - BRONZE	8
16	101377	DISC - STEEL - .104 in. (2.64 mm)	8
17	103414	BRAKE CARRIER	1
18	70255	BRAKE SPRING	2

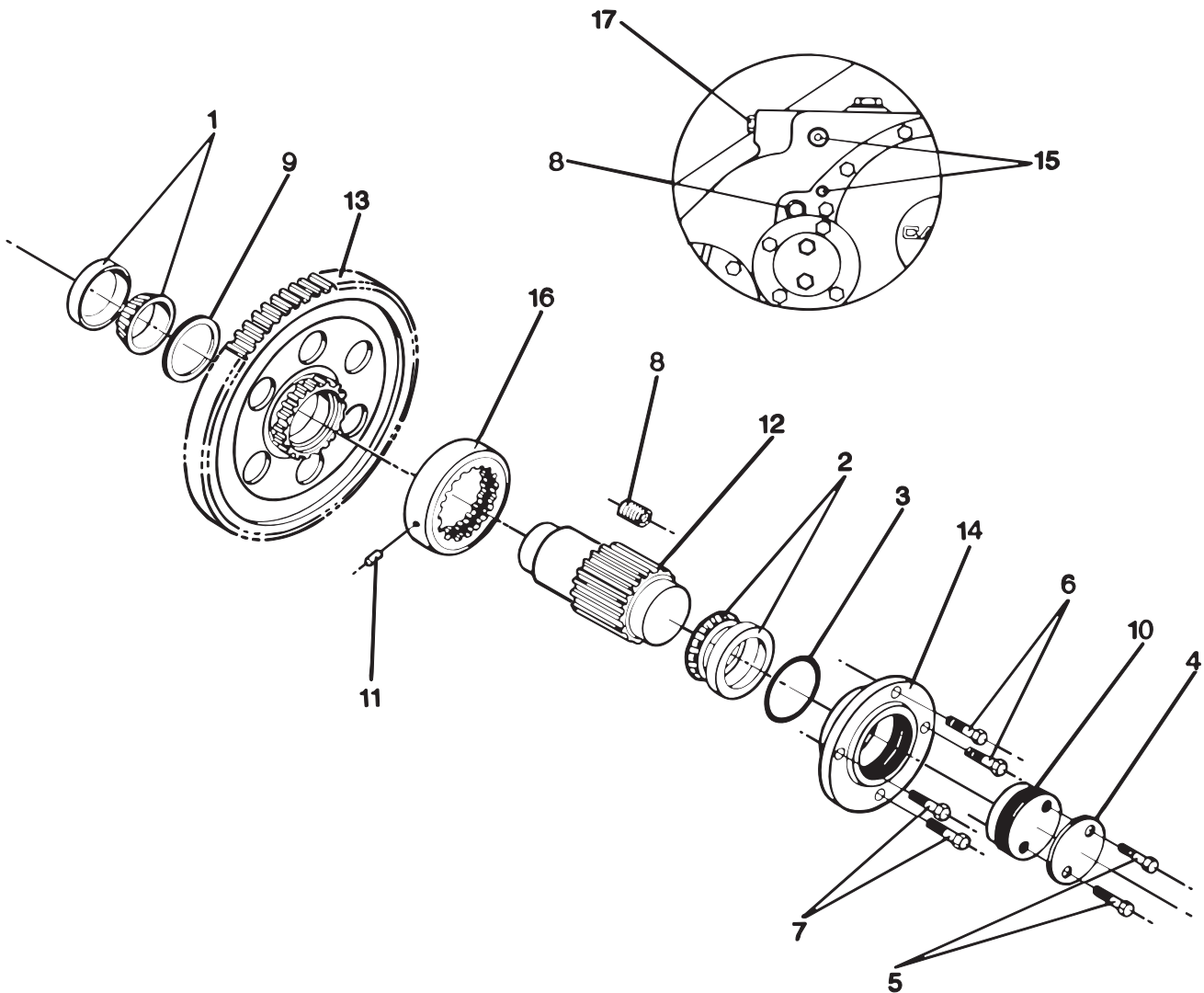
**PA80  
CABLE DRUM GROUP  
CATERPILLAR D7G**



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	70070	BALL BEARING	1
2	70078	BEARING CUP	2
3	70079	BEARING CONE	2
4	27745	CAPSCREW, HEX HD (1/2 - 13 X 1, G5 SS)	10
5	104322	CAPSCREW, HEX HD (1/2 - 13 X 1 1/4, G8)	11
6	27744	CAPSCREW, HEX HD (1/2 - 13 X 5, G5 SS)	1
7	70140	O-RING	2
8	70513	RETAINING RING	2
9	100859	WASHER, HARDENED 1/2-INCH	11
10	70167	OIL SEAL	2
11	105098	BEARING CARRIER	2
12	70265	SHIM (.005 in.)	A/R
13	105421	CABLE DRUM	1
14	68863	SECOND REDUCTION GEAR	1
16	28954	BEARING CARRIER	1
17	27743	CAPSCREW	1
18	----	NO GASKET - USE DOW RTV 732 OR EQUIVALENT	---
19	70266	SHIM (.007 in.)	A/R
20	70267	SHIM (.020 in.)	A/R
21	105096	BEARING RETAINER	1
22	22573	CAPSCREW, SOCKET HD (1/2 - 13 X 2, G8)	4
23	105097	SHIM SET (INCLUDES 1 EACH: .005, .007, .020 in. (.13, .18, .5	A/R
24	PA8S9075	BEARING CONE	2
25	PA8S9076	BEARING CUP	2
26	105095	DRUM SHAFT	1
---	70264	SHIM SET (INCLUDES 2 EACH ITEMS 12, 19 & 20)	A/R

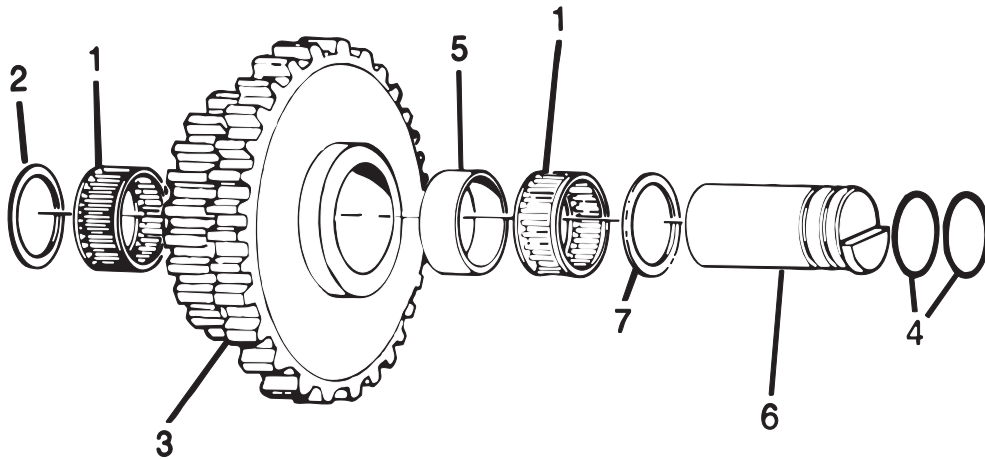
AR - AS REQUIRED  
SS - SELF SEALING

**PA80  
IDLER SHAFT GROUP  
CATERPILLAR D7G**



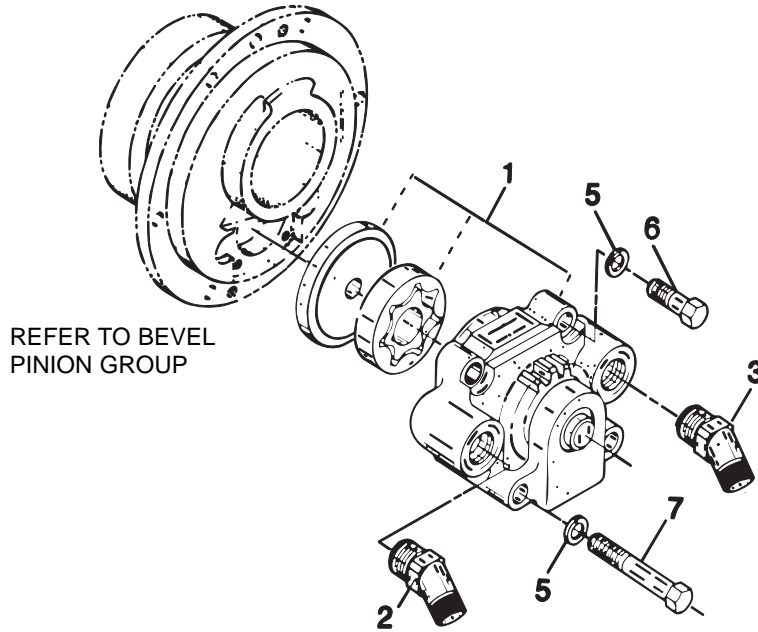
ITEM	PART	DESCRIPTION	QTY
1	69013	BEARING ASSEMBLY- INNER	1
2	69014	BEARING ASSEMBLY- OUTER	1
3	25880	O-RING	1
4	69655	LOCK PLATE	1
5	103250	CAPSCREW, 1/2-13 X 3/4 G5	2
6	104174	CAPSCREW, 1/2-13 X 1 1/4 G5	2
7	29855	CAPSCREW, 1/2-13 X 2 G5	2
8	27216	PLUG, SOCKET HEAD	1
9	11892	THRUST WASHER	1
10	69592	ADJUSTER	1
11	11836	ROLLPIN	1
12	69984	PINION, SECOND REDUCTION	1
13	27320	GEAR, FIRST REDUCTION	1
14	69974	CARRIER, IDELR SHAFT	1
15	25915	SET SCREW, SOC. HEAD 1/2-20 X 1	2
16	69977	COLLAR	1
17	69782	CAPSCREW, HEX HEAD 3/4-16 X 1 1/4 G5	1

**PA80  
FOURTH SHAFT GROUP  
CATERPILLAR D7G**



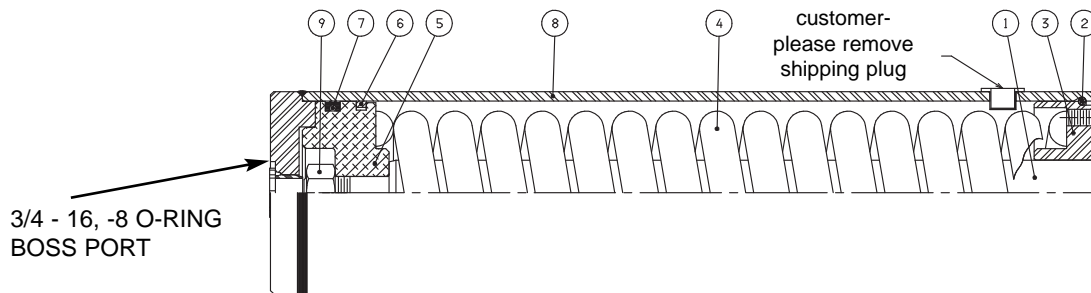
ITEM	PART NO.	DESCRIPTION	QTY.
1	70648	ROLLER BEARING	2
2	24581	THRUST WASHER - .062 in. (1.58 mm)	1
3	28925	CLUSTER GEAR 37/17 TEETH	1
4	13838	O-RING	2
5	28926	SPACER	1
6	69673	COUNTERSHAFT PIN	1
7	28924	THRUST WASHER - .217 in. (5.5 mm)	1

**PA80  
PUMP GROUP  
CATERPILLAR D7G**



ITEM	PART	DESCRIPTION	QTY
1	68772	PUMP ASSEMBLY	1
2	26752	ELBOW, 45° -8, PRESSURE SIDE	1
3	27991	ELBOW, 45° SUCTION	1
5	11015	LOCKWASHER (1/4 INCH)	4
6	27996	CAPSCREW, HEX HEAD 1/4-20 X 1 1/2 G8	2
7	27997	CAPSCREW, HEX HEAD 1/4-20 X 3 G8	2

**ACCUMULATOR ASSEMBLY**



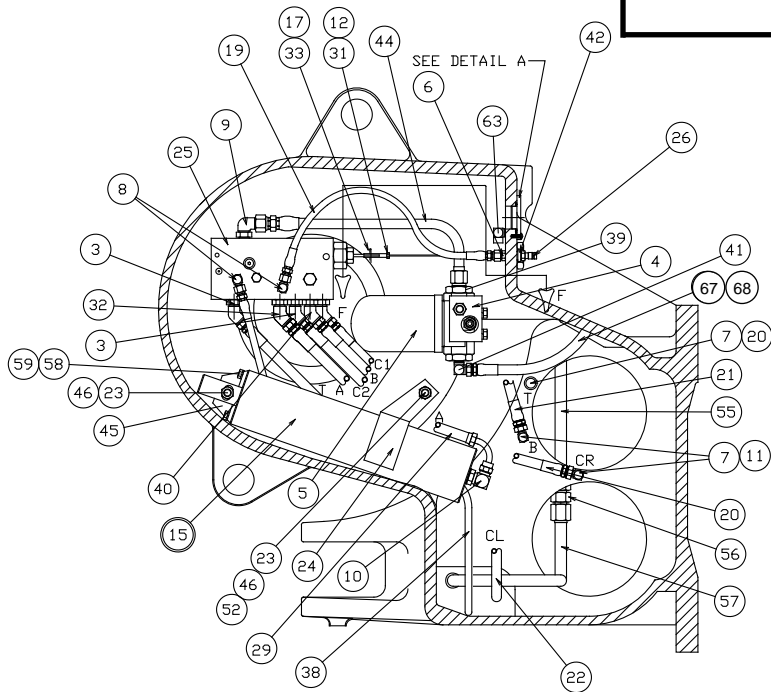
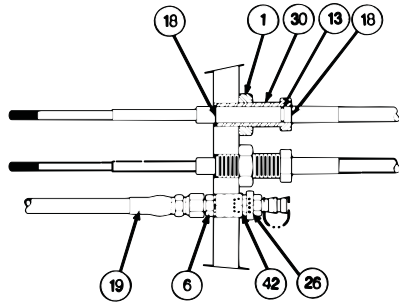
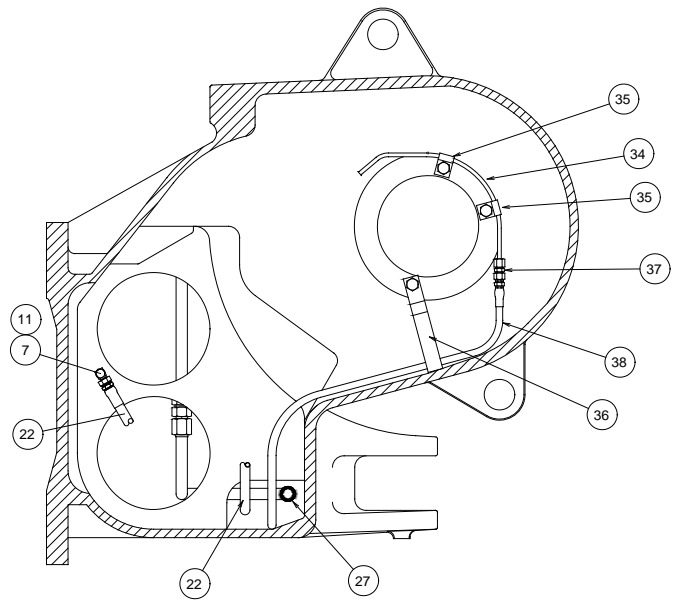
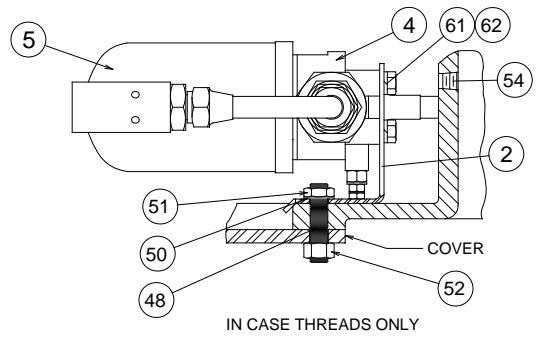
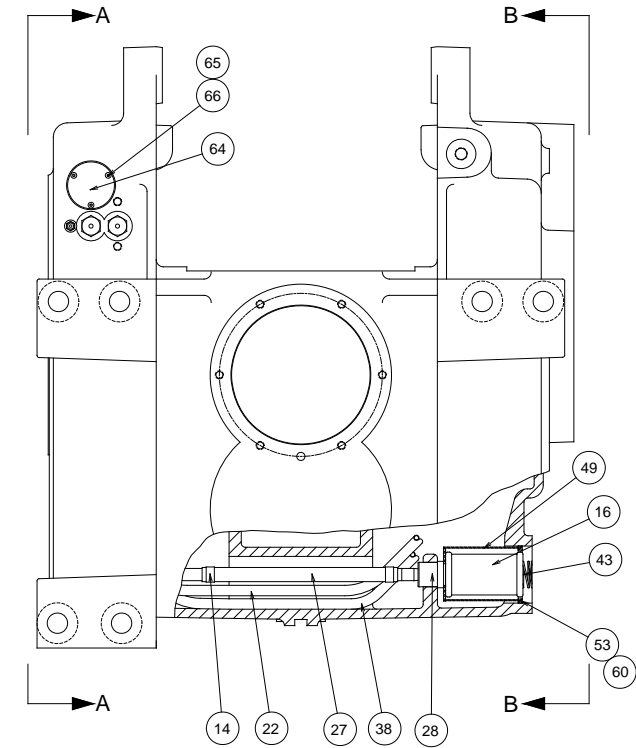
**⚠ WARNING ⚠**

**! DANGER - 2,000 LB (900 KG) SPRING PRELOAD !**  
 USE PRESS FOR DISASSEMBLY PER SERVICE INSTRUCTIONS.  
 SEVERE PERSONAL INJURY OR DEATH MAY RESULT IF ROD  
 GUIDE REMOVAL IS ATTEMPTED WITHOUT A PRESS

ITEM	PART	DESCRIPTION	QTY
1	NSS	ROD	1
2	27836	RETAINING RING	1
3	NSS	ROD GUIDE	1
4	NSS	SPRING	1
5	NSS	PISTON	1
6	27833	CAST IRON PISTON RING	1
7	27832	SEAL	1
8	NSS	BARREL ASSEMBLY	1
9	22702	NUT	1
-	62131	SEAL KIT (CONATINS 2, 6, & 7)	1
-	81959	ACCUMULATOR ASSEMBLY	1

NSS= NOT SOLD SEPARATELY

**PA80  
HYDRAULIC CONTROL GROUP  
CATERPILLAR D7G**



**VIEW AA**

**PA80  
HYDRAULIC CONTROL GROUP  
CATERPILLAR D7G**

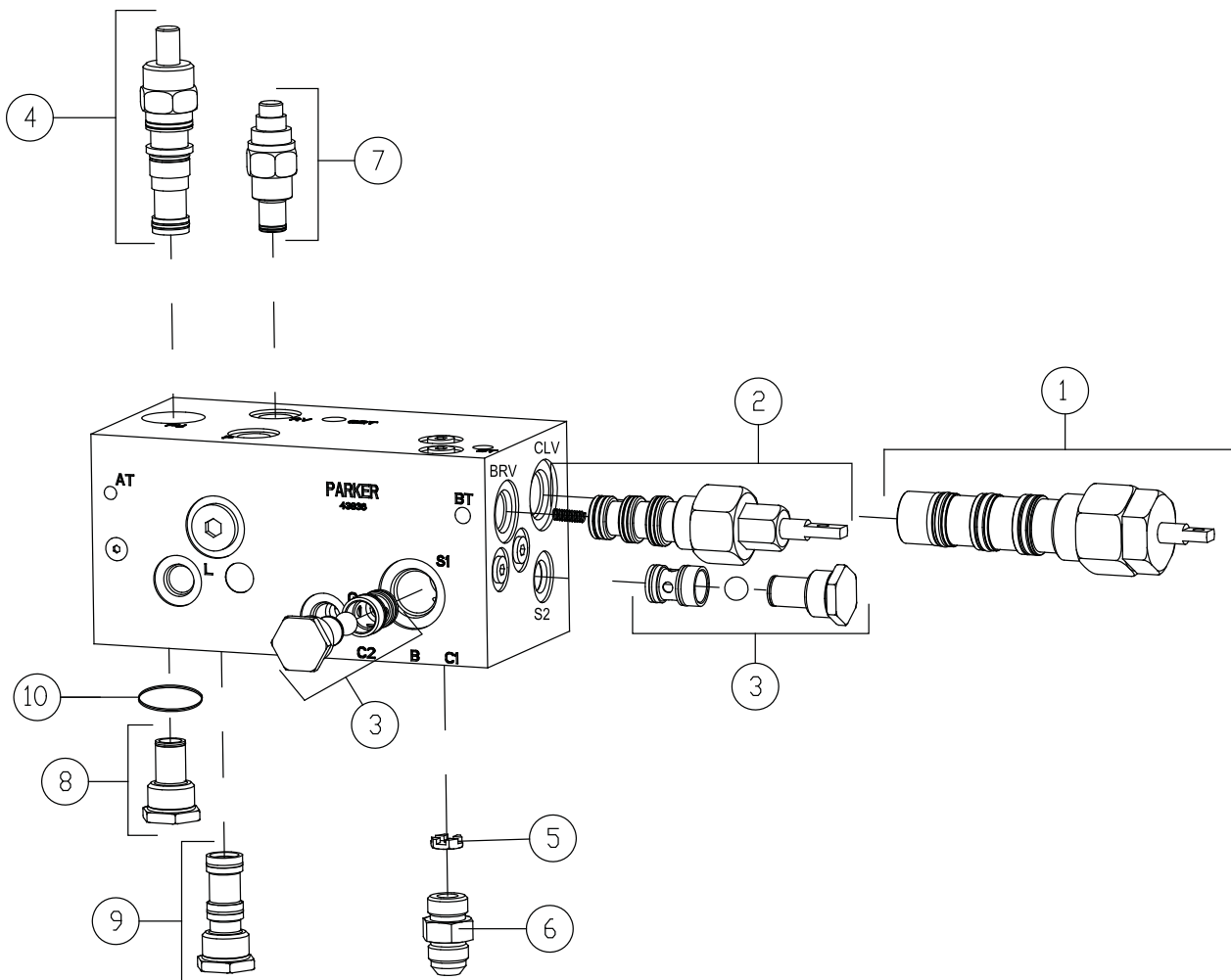
ITEM	PART NO.	DESCRIPTION	QTY.
1	11059	NUT, JAM (3/4 - 10)	2
2	27741	FILTER BRACKET	1
3	69605	ELBOW - 45° - 8 ORB/-8JIC PORT C1,C2,T	3
4	27390	FILTER HEAD	1
5	27389	FILTER ELEMENT	1
6	21219	ADAPTER - 1/8 NPT / - 8	1
7	70106	ADAPTER - 1/4 NPT / -8	4
8	25131	ELBOW - 90° - 4 ORB/-4JIC PORT L,G	2
9	70109	ELBOW - 90° - 8 ORB/-8JIC, PORT P	1
10	105050	ELBOW - 90° - 8 ORB/-10JIC, ACCUMULATOR	1
11	29046	ELBOW - 90° - 8 JIC UNION	3
12	69771	YOKE	2
13	21119	O-RING	2
14	30997	CLAMP	1
15	81959	ACCUMULATOR	1
16	70189	STRAINER	1
17	69313	CLEVIS PIN	2
18	69653	RETAINING RING	4
19	25750	HOSE, 17 in. (432 mm) VALVE TO GAUGE PORT	1
20	70272	HOSE, 24 in. (610 mm) VALVE TO T, CR	2
21	27979	HOSE, 17 in. (432 mm) VALVE TO B	1
22	27989	HOSE, 50 in. (1,270 mm) VALVE TO CL	1
23	11026	LOCKWASHER (1/2)	2
24	27848	ACCUMULATOR CLAMP BRACKET	1
25	104003	CONTROL VALVE ASSEMBLY	1
26	100267	QUICK DISCONNECT, GAUGE PORT	1
27	27981	SUCTION HOSE	1
28	69051	CONNECTOR	1
29	105055	HOSE - VALVE TO ACCUMULATOR	1
30	69963	ADJUSTER	2
31	13468	NUT, HEX (1/4 - 28)	2
32	105054	ELBOW 45° - 10 ORB/-10 JIC PORT A	1
33	69312	HITCH PIN	2

ITEM	PART NO.	DESCRIPTION	QTY.
34	100803	LUBE TUBE	1
35	68994	CLAMP	2
36	68995	CLAMP	1
37	25891	UNION - 4	1
38	25893	HOSE, LUBE	1
39	100796	ADAPTER, -16 ORB /-8 JIC	1
40	69516	UNION - 45°, -8/-8	1
41	100798	ELBOW 90°, -16 ORB/-8 JIC	1
42	100266	SLEEVE, GAUGE PORT	1
43	26005	SPRING, SUCTION STRAINER	1
44	27979	HOSE - 17 in. (432 mm), FILTER TO VALVE	1
45	27847	ACCUMULATOR MOUNTING ANGLE	1
46	27849	STUD (1/2 - 13 X 2 3/4)	2
48	27081	STUD (1/2 - 13 X 2 1/4)	1
49	29020	STRAINER SHIELD	1
50	12781	LOCKWASHER (1/2 SHAKEPROOF)	1
51	23583	NUT, JAM (1/2)	1
52	101439	NUT (1/2)	5
53	29021	SEAL RING .25 in. (6.4 mm) THICK	1
54	18009	PLUG, 1/8 NPT	1
55	27977	UPPER SUCTION TUBE	1
56	27990	UNION	1
57	27978	LOWER SUCTION TUBE	1
58	11766	CAPSCREW, HEX HD (5/16 - 18 X 7/8 GD 8 Z)	2
59	11024	LOCKWASHER (5/16)	2
60	29023	SEAL RING .06 in. (1.5 mm) THICK	1-2
61	104135	CAPSCREW, HEX HD (3/8 - 16 X 3/4 GD 8 Z)	2
62	27152	LOCKWASHER (3/8)	2
63	13708	ELBOW, 90° 1/8 NPT	1
64	100843	COVER	1
65	100794	CAPSCREW, BUTTON HEAD (3/16 X 5/8 SS)	3
66	13838	O-RING	1
67	29676	HOSE, -8 X 14 in. (356 mm) PUMP TO FILTER	1
68	69516	UNION 45° -8/-8	1

+ SS - Self Sealing

**NOTE:** Effective April, 2006 hose (67) 106686 from the pump outlet to the filter head inlet has been replaced by hose 29676 -8 x 14 in. (356 mm) and 45° union 69516.

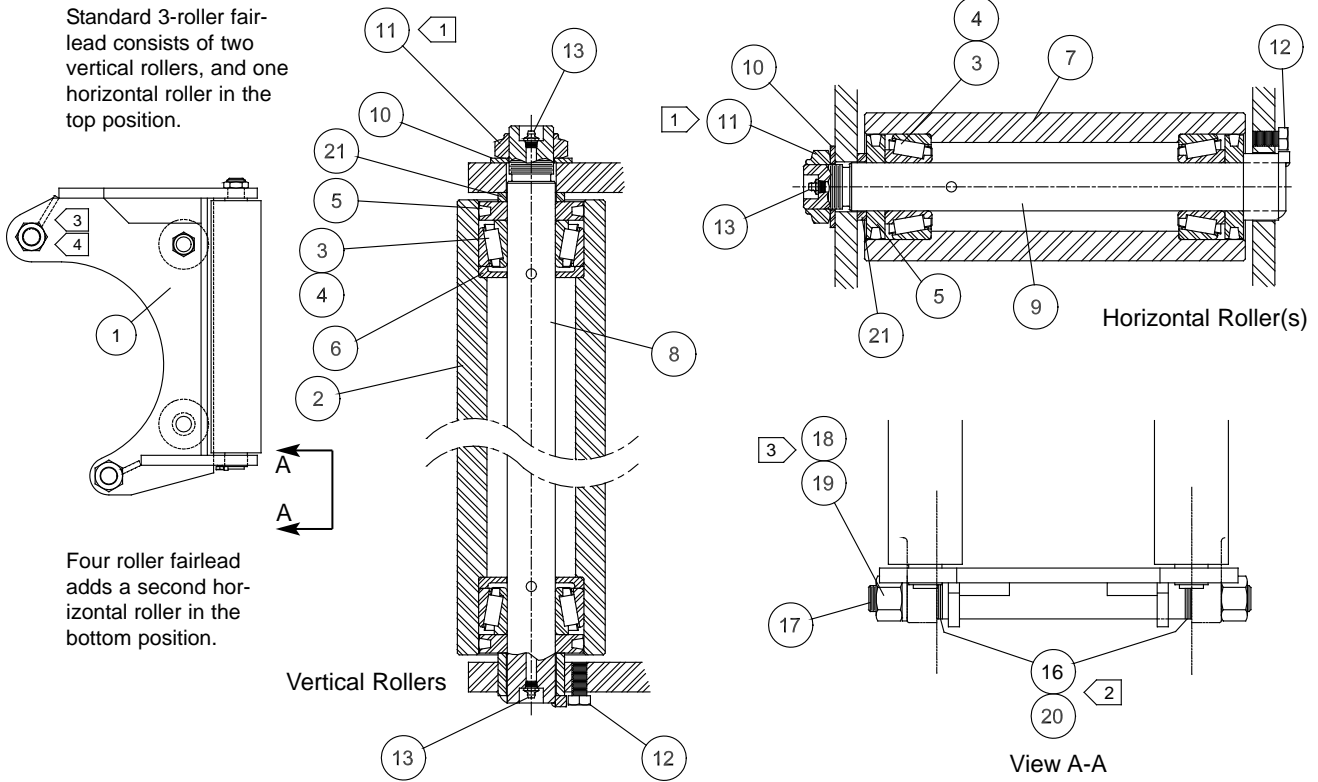
**PA80  
CONTROL VALVE ASSEMBLY  
CATERPILLAR D7G**



ITEM	PART	DESCRIPTION	QTY
1	26712	CLUTCH CONTROL VALVE CARTRIDGE (CLV)	1
*	61838	SEAL KIT FOR ITEM #1	1
2	26713	BRAKE CONTROL CARTRIDGE (BRV)	1
*	61839	SEAL KIT FOR ITEM #2	1
3	26715	SHUTTLE VALVE (S1, S2)	2
*	61841	SEAL KIT FOR ITEM #3	2
4	40166	DIFFERENTIAL PRESSURE UNLOADING CARTRIDGE	1
*	29874	SEAL KIT FOR ITEM #4	1
5	105094	ORIFICE DISC .095	1
6	70100	ADAPTER -8 ORB -8 JIC -BRAKE PORT	1
7	105629	RELIEF VALVE CARTRIDGE (RV)	1
*	63616	SEAL KIT FOR ITEM #7	1
8	105631	CHECK VALVE (CV)	1
*	63617	SEAL KIT FOR ITEM #8	1
9	105630	LOGIC CONTROL CARTRIDGE (LC)	1
*	63618	SEAL KIT FOR ITEM #9	1
10	106929	ORIFICE DISC	1

**PA80  
FAIRLEAD ASSEMBLY (OPTIONAL)  
CATERPILLAR D7G**

Standard 3-roller fairlead consists of two vertical rollers, and one horizontal roller in the top position.



Four roller fairlead adds a second horizontal roller in the bottom position.

**NOTES:**

- ⊠ 1 WHILE TURNING ROLLER, TIGHTEN NUT. WHEN ROLLER WILL NO LONGER TURN, BACK OFF NUT 1/8 TURN.
- ⊠ 2 SHIM BOTH SIDES AS REQUIRED TO REDUCE END PLAY TO approx. 0.010 inch.
- ⊠ 3 TIGHTEN NUT TO 200 - 300 LB•FT (271 - 407 N•m) TORQUE.
- ⊠ 4 WHEN INSTALLING FAIRLEAD ON WINCH IN FIELD, REMOVE ORIGINAL CABLE GUARD SPACER TUBE AND RE-USE UPPER TIE BOLT (28772), LOCKWASHER (27666) AND NUT (27655).

THOROUGHLY PACK ALL FAIRLEAD BEARINGS WITH MULTI-PURPOSE GREASE ON ASSEMBLY.

ITEM	PART NO.	DESCRIPTION	QUANTITY	
			3 ROLLER	4 ROLLER
	81970	3 ROLLER FAIRLEAD ASSEMBLY		
	81971	4 ROLLER FAIRLEAD ASSEMBLY		
1	27817	FAIRLEAD FRAME	1	1
2	36788	ROLLER - VERTICAL	2	2
3	70833	BEARING CONE	6	8
4	70834	BEARING CUP	6	8
5	70864	DUST GUARD ASSEMBLY	6	8
6	70865	GREASE RETAINER	4	4
7	27886	ROLLER - HORIZONTAL	1	2
8	36797	SHAFT - VERTICAL	2	2
9	27901	SHAFT - HORIZONTAL	1	2
10	70850	WASHER	3	4
11	70863	LOCK NUT	3	4
12	103250	CAPSCREW, HEX HEAD (1/2 - 13 X 3/4)	3	4
13	18047	GREASE FITTING	5	6
16	24912	WASHER - .030 in. (.8 mm)	5	6
17	28772	TIE BOLT	1	1
18	27666	LOCK WASHER (1 3/4)	1	1
19	27655	NUT, HEX (1 3/4 - 5)	1	1
20	25590	SHIM - .125 in. (3.18 mm)	6-AR	6-AR
21	70880	SPACER	3	4
	82751	4th ROLLER KIT , CONTAINS ONE EACH 7, 9, 10, 11, 12, 13, 21 AND TWO EACH 3, 4 & 5	1	-

AR - AS REQUIRED

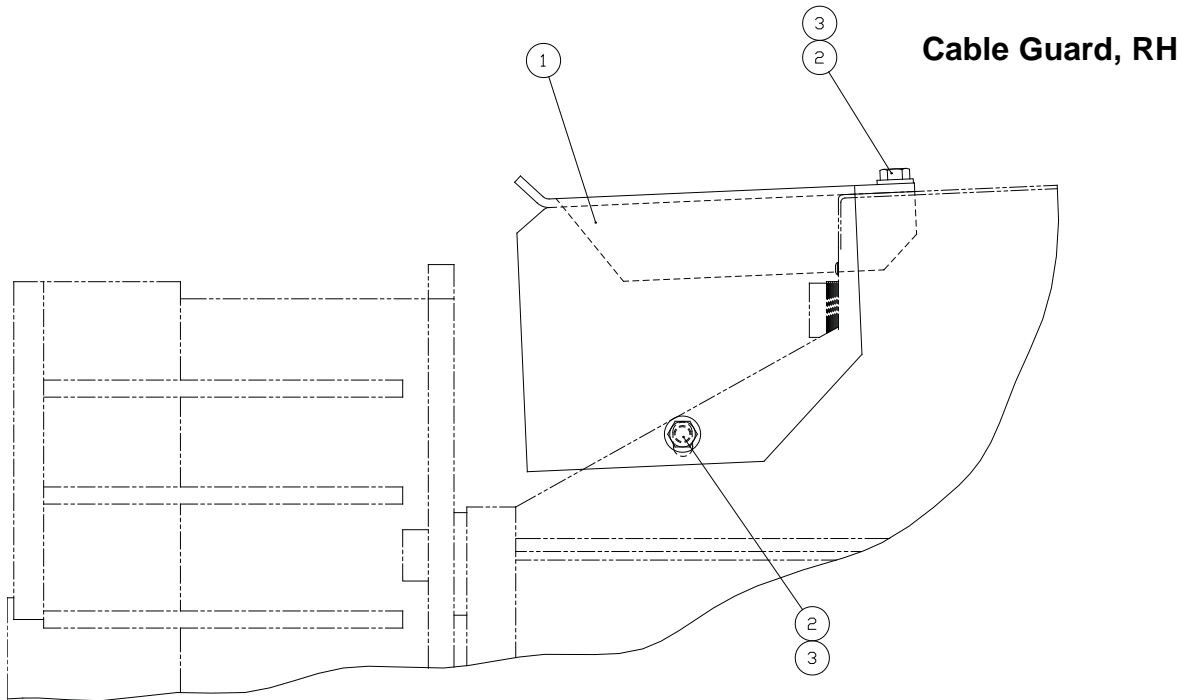
**PA80  
CONTROL CABLE GUARD GROUP (OPTIONAL)  
CATERPILLAR D7G**

**Material:**

0.25 in. (6 mm) thick, hot rolled, descaled plate. ASTM A36 or AISI 1015.

**Bend Radii:**

0.25 in. (6 mm) minimum, corner notches at bend lines to be 60° to 90°.



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	100173	CABLE, GUARD, RH	1
3	104320	CAPSCREW, HEX HEAD (1/2 - 13 X 1 G8)	3
4	11026	LOCKWASHER (1/2)	3
5	11073	WASHER (1/2)	3

