

INSTALLATION AND PARTS MANUAL

MODEL PA56

FOR CATERPILLAR D6G PS TRACTORS

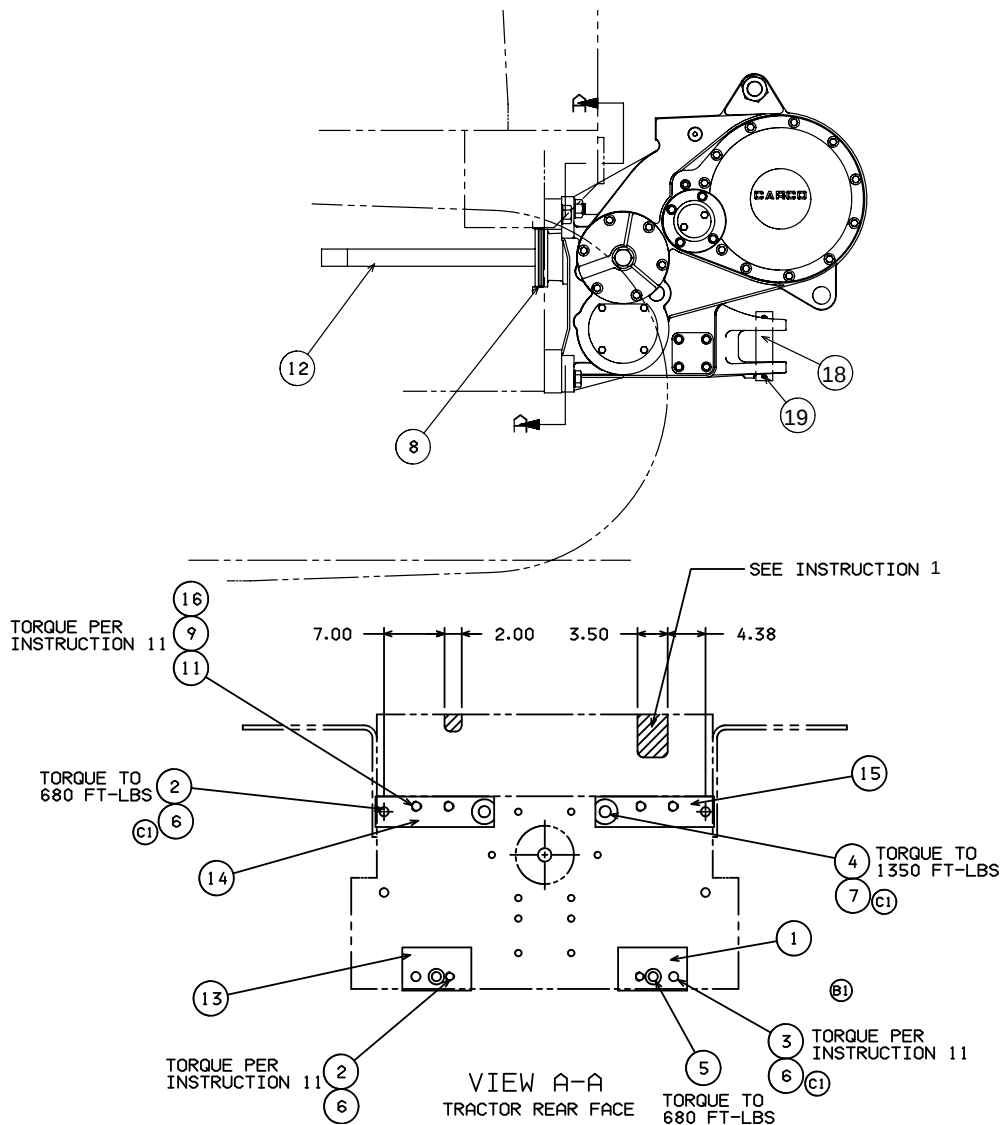
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MODEL NUMBER DESCRIPTION

PA56	B	0	0	1	0	0
Basic Winch Model	Bevel Gear Ratio B-1.27:1	0-Overwind	0-Standard Brake	0-Without Freespool 1-With Freespool	0-Four Shaft Winch	0-No Fairlead

MOUNTING GROUP



- A. Follow general service procedures and safety precautions given in tractor operator and service manuals.
 - B. PTO rotation is counterclockwise as viewed from the rear of the tractor.
 - C. Ensure that mating surfaces on tractor, winch, and spacer blocks are free of paint, clean, and smooth prior to mounting winch.
 - D. Cable ferrule (item 10) not shown.
 - E. Ensure that installation instructions 7 through 11 are completed while threadlocker compound applied in instruction 7 is still soft.
1. Modify tractor rear cover as shown by removing shaded areas. Install trim (item 17) to protect winch control cables.
 2. Remove tractor PTO cover.
 3. Install spacers (items 14 & 15) to tractor as shown using capscrews (items 2 & 4) and washers (items 6 & 7). Tighten fasteners to torque specifications shown.
 4. Install spacers (items 1 & 13) to tractor using socket head capscrews (item 5). Take care to align outboard holes in spacers with corresponding holes in tractor so that lower outboard winch mounting bolts will be able to pass through spacers and into tractor holes. After confirming hole alignment, tighten capscrews to torque specifications shown.
 5. Lubricate o-ring (item 8) with multi-purpose grease. Install o-ring into inboard groove in winch PTO pilot as shown.

MOUNTING GROUP

6. Generously lubricate splines at both ends of PTO shaft (item 12) with multi-purpose grease. Install PTO shaft into winch input pinion as shown.
7. Apply "Loctite 262 or 270" threadlocker (or equivalent) to threads of studs (item 11) and install into upper spacers as shown until the studs bottom in the holes.



Winch weighs approximately 2,000 LBS (910 kg). Ensure lifting equipment has sufficient capacity.

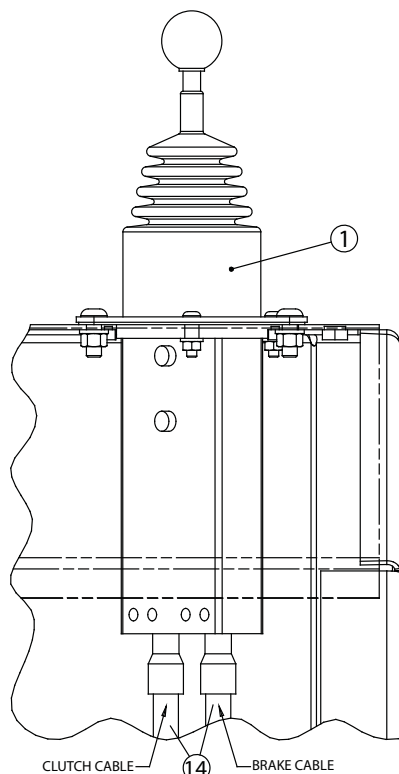
8. Raise winch and carefully guide into place on tractor. Ensure that PTO shaft splines are fully engaged. The winch PTO pilot forms a seal in the tractor PTO opening, and the winch mounting feet are in flush contact with the spacer blocks.
9. Secure winch to tractor with nuts, capscrews, and washers (items 9, 2, 3, 6, & 16). Apply "Loctite 242 or 243" threadlocker (or equivalent) to clean, dry threads. Leave fasteners finger tight.
10. Adjust position of winch within the slack of the winch mounting holes to minimize vertical and horizontal load(s) on PTO pilot.
11. Tighten nuts & capscrews (items 9, 2 & 3) by "snugging" to approximately 100 ft-lb., marking the position of the fasteners. Then tighten an additional one (1) flat of the nut.
12. Fill winch with oil before starting tractor. See winch operator manual for oil specifications and requirements.



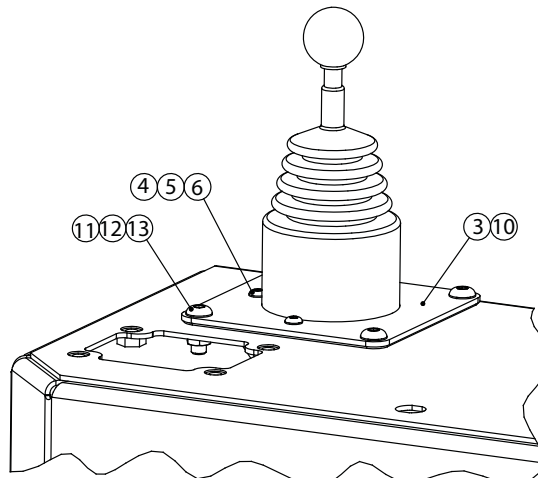
To prevent serious damage to the winch, DO NOT operate the tractor engine without oil in the winch.

ITEM	PART NO.	DESCRIPTION	QTY
1	69693	SPACER, RH LOWER	1
2	105130	CAPSCREW, HEX HD (1 - 8 X 3-1/4, G8)	4
3	69664	CAPSCREW, HEX HD (1 - 8 X 4-1/2, G8)	2
4	105131	CAPSCREW, HEX HD (1-1/4 - 7 X 2-3/4, G8)	2
5	69580	CAPSCREW, HEX SOCKET HD (1 - 8 X 2 in, G8)	2
6	101205	WASHER, HARD (1 in)	6
7	101206	WASHER, HARD (1-1/4)	2
8	22721	O-RING	1
9	104143	NUT, HEX (1-1/8 - 7)	4
10	29425	FERRULE	1
11	27802	STUD	4
12	69661	SHAFT, PTO	1
13	69694	SPACER, LH LOWER	1
14	27774	SPACER, LH UPPER	1
15	27775	SPACER, RH UPPER	1
16	103484	WASHER, HARD (1-1/8)	4
17	70198	TRIM	24 in
18	36618	DRAWBAR PIN	1
19	70148	COTTER PIN	2

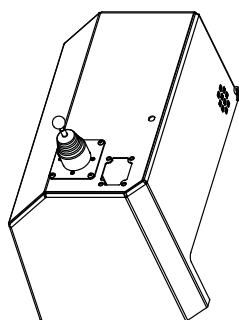
CONTROL GROUP



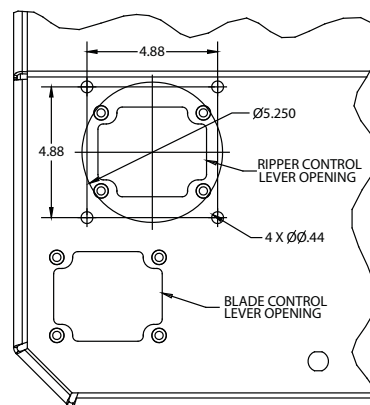
WINCH CONTROL INSTALLATION
VIEWED FROM OUTSIDE TRACTOR
(OUTER CONSOLE SKIN PHANTOM)



WINCH CONTROL INSTALLATION
VIEWED FROM OPERATOR'S SEAT



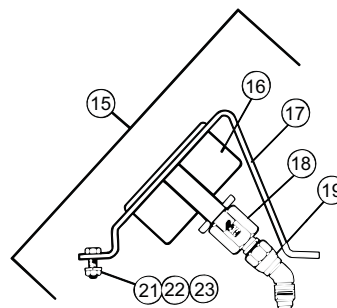
RIGHT OPERATOR CONSOLE
VIEWED FROM FRONT OF OPERATOR PLATFORM



TRACTOR CONSOLE MODIFICATIONS
TOP VIEW
CUT AND DRILL TOP PLATE OF RIGHT OPERATOR CONSOLE AS SHOWN

NOTES:

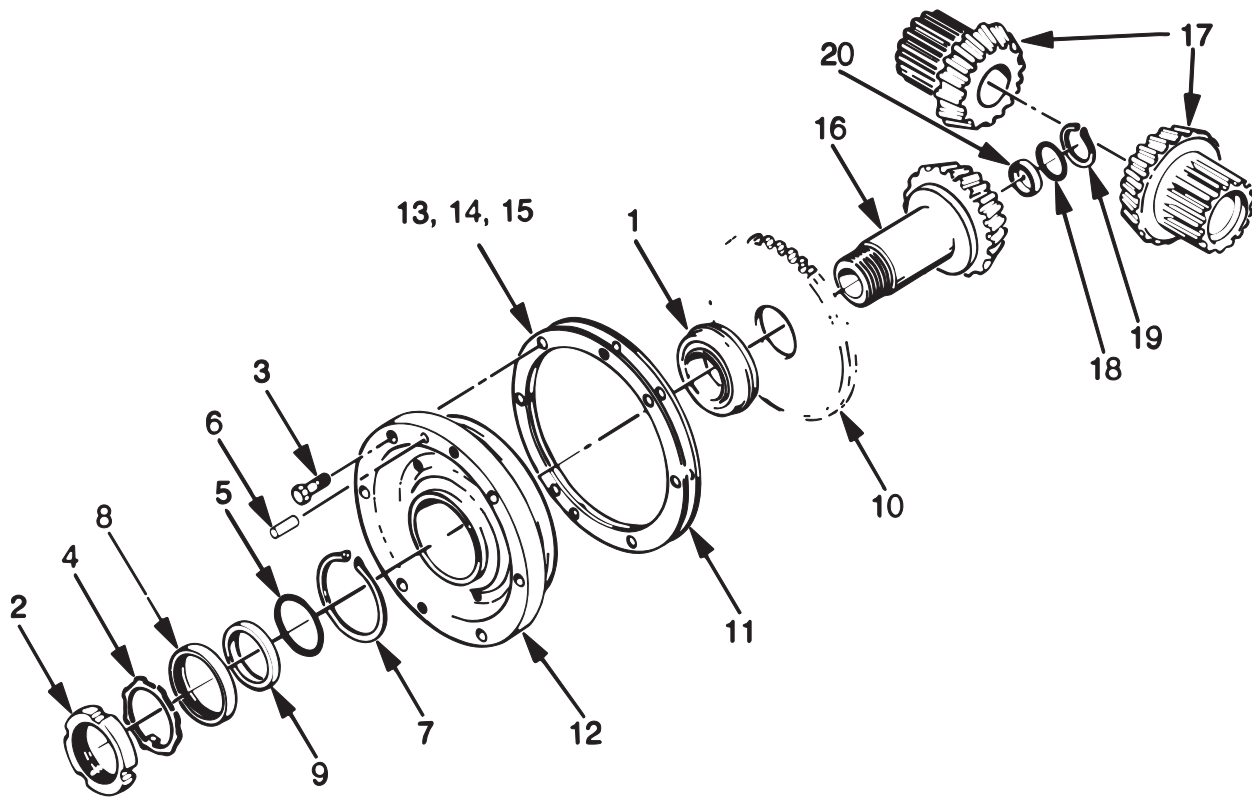
1. Modify right tractor operator console as shown. New holes are centered on existing ripper control opening.
2. Affix gasket with adhesive (item 10) to bottom of mounting plate (item 3).
3. Pull winch control cables up through modified hole in console.
4. Install control lever assembly (item 1)) to winch control cables as directed in winch service manual.
5. Attach mounting plate (item 3) to control lever assembly (item 1) as shown using capscrews, washer and nuts (items 4, 5 & 6).
6. Lower control lever, cable and plate assembly into modified hole in tractor console as shown and secure with capscrews, washers and nuts (items 11, 12 & 13). Take care to ensure correct orientation of control lever assembly relative to tractor console and operator.
7. Affix winch operation instruction decal (item 8, not shown) to tractor operator console as desired near winch control lever.
8. Mount the pressure gauge in clear view of the operator.



ITEM	PART NO	DESCRIPTION	QTY
1	101850	CONTROL DUAL AXIS	1
3	105587	PLATE, CONTROL MOUNT	1
4	40240	CAPSCREW, BUTTON HD (1/4 - 20 X 1 G8)	3
5	69645	NUT, HEX (1/4 - 20)	3
6	100857	WASHER, HARD (1/4)	3
8	100107	DECAL, CONTROL	1
10	105588	GASKET	1
11	23630	CAPSCREW, BUTTON HD (3/8 - 16 X 1 G8)	4
12	PA6V8801	NUT, HEX (3/8 - 16)	4
13	101440	WASHER, HARD (3/8)	4
14	101203	CONTROL CABLE	2

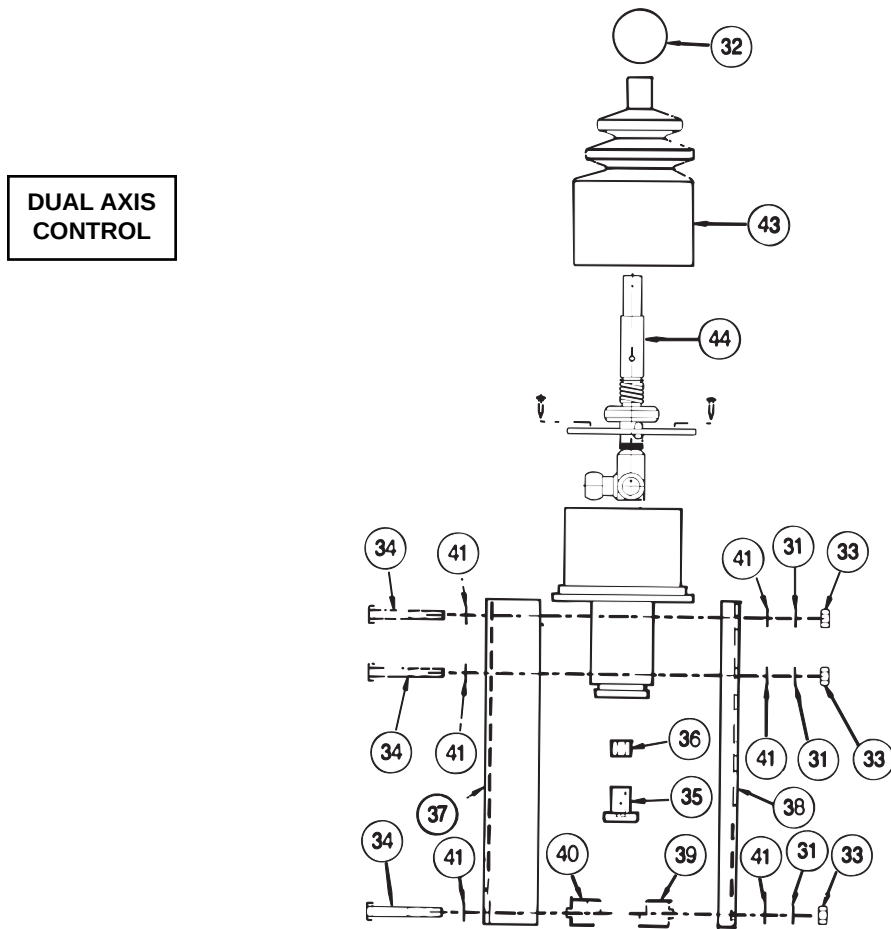
ITEM	PART NO	DESCRIPTION	QTY
15	62058	PRESSURE GAUGE KIT (INCLUDES ITEMS 16-23)	1
16	27673	PRESSURE GAUGE	1
17	27651	BRACKET	1
18	27652	ADAPTER, STRAIGHT	1
19	70122	UNION 45° (-4)	1
20	34196	HOSE ASSY (not shown)	1
21	27683	CAPSCREW (5/16 - 18 X 1-1/4 G8 Z)	2
22	11024	LOCKWASHER (5/16)	2
23	69644	NUT, HEX	2
00	25864	ADAPTER (not shown)	1

BEVEL GEAR GROUP



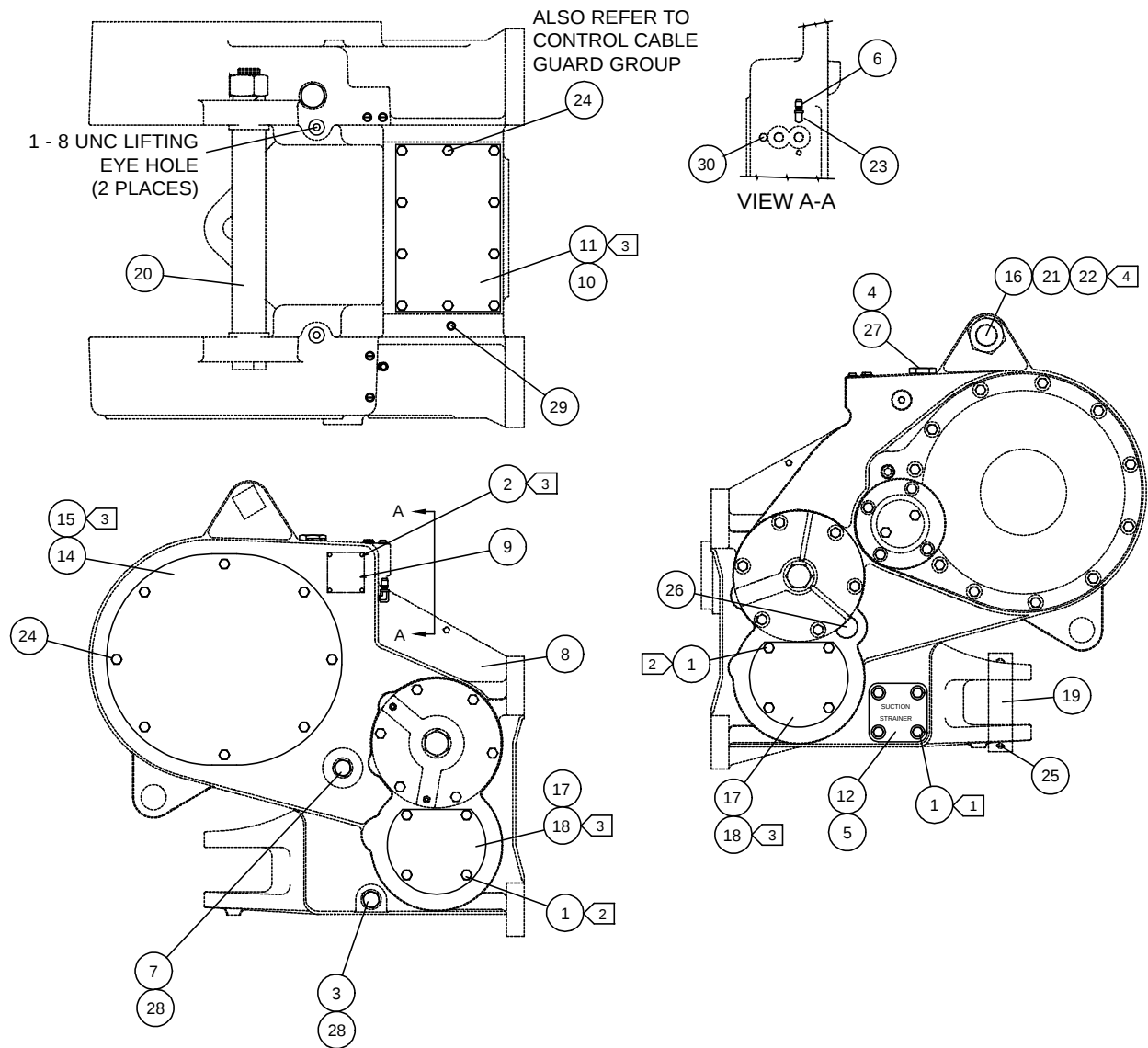
ITEM	PART NO.	DESCRIPTION	QTY
1	70077	BEARING ASSY	1
2	24816	BEARING LOCKNUT	1
3	104320	CAPSCREW, HEX HD (1/2 - 13 X 1 in, G8)	6
4	11418	BEARING LOCKWASHER	1
5	74992	O-RING	1
6	10318	DOWEL PIN	1
7	70163	RETAINING RING	1
8	70168	OIL SEAL	1
9	70382	SEAL SPACER	1
10	69947	PUMP PINION	1
11	69946	SHIM, GASKET	1
12	69962	BEVEL GEAR CARRIER	1
13	69945	SHIM (.005)	2-AR
14	69827	SHIM (.007)	2-AR
15	69826	SHIM (.020)	2-AR
16	29075	BEVEL GEAR SET (33/26 - STD SPEED)	1
	69834	BEVEL GEAR SET (39/14 - SLOW SPEED)	1
17	69824	BEVEL PINION (26T - STD SPEED)	1
	69635	BEVEL PINION (14T - SLOW SPEED)	1
18	69813	O-RING	1
19	70162	RETAINING RING	1
20	70626	PLUG, BEVEL PINION	1

CONTROL STAND - QUADRATAT



ITEM	PART NO.	DESCRIPTION	QTY.
	101850	CONTROL, DUAL AXIS (COMPLETE)	1
31	12780	LOCKWASHER, EXT. TOOTH (1/4)	7
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)	20
43	102261	BOOT, WINCH CONTROL LEVER	1
44	62997	BRAKE-OFF DETENT REPAIR KIT	1

WINCH CASE AND COVERS



NOTES:

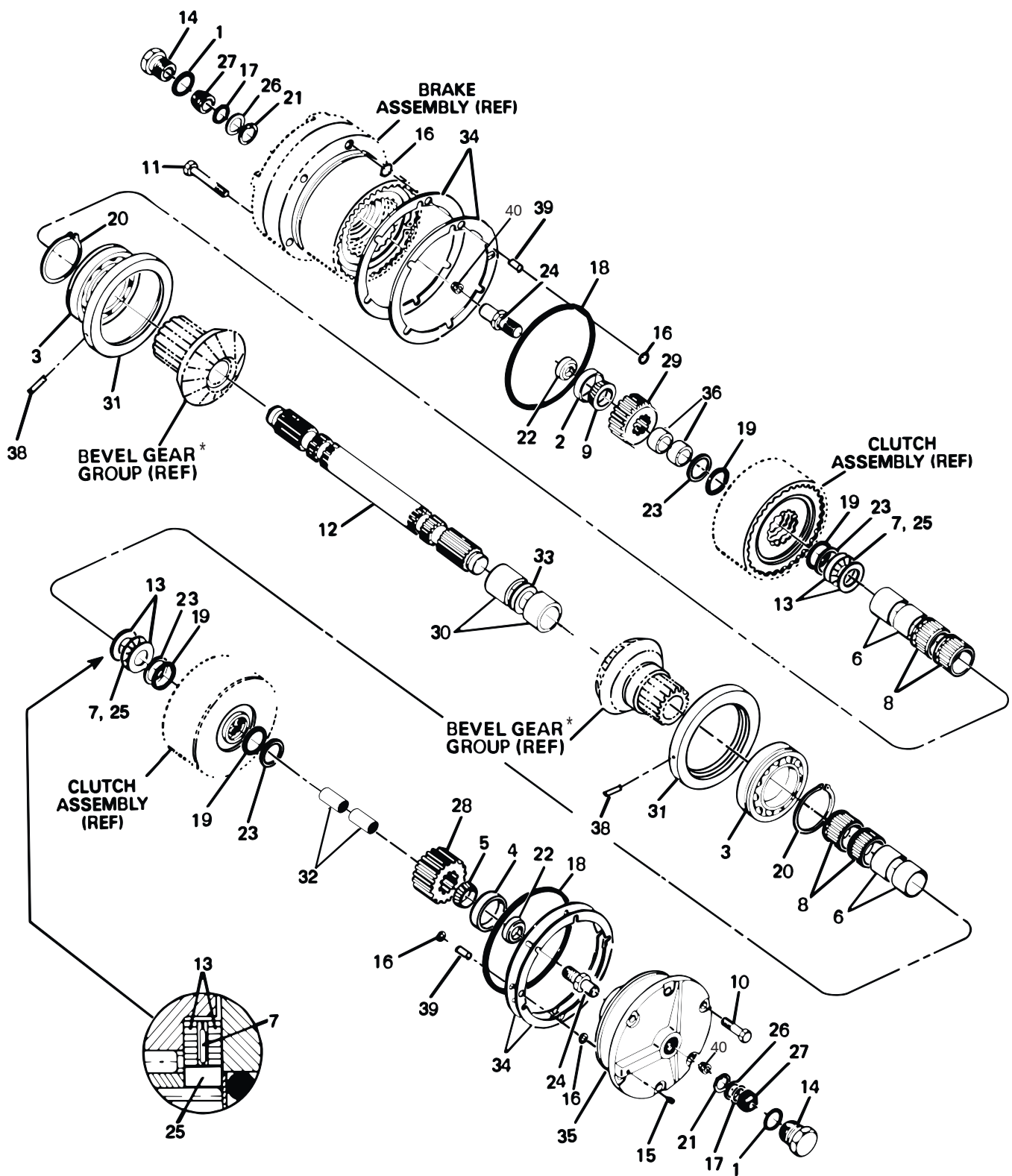
- 1 APPLY "FEL-PRO C648F" TO BOLTS TO PREVENT
THREAD CORROSION.
- 2 TIGHTEN FASTENERS TO 75 LB•FT (10.4 Kg•M)
TORQUE.
- 3 APPLY "RTV 732" SILASTIC SEALANT TO BOTH
SIDES OF GASKETS (11, 15 & 18) AND DRIVE
SCREWS (2).
- 4 TIGHTEN HEX NUT (22) UNTIL LOCKWASHER (21)
IS FLATTENED AND THEN TURN ONE FLAT.

WINCH CASE AND COVERS

ITEM	PART NO.	DESCRIPTION	QTY.
1	22697	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	1
9	100268	SERIAL NUMBER DATA PLATE	1
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)	1
23	13708	ELBOW	2
24	27745	CAPSCREW, HEX HEAD (1/2-13 X 1) SS*	15
25	70148	COTTER PIN (3/8 X 3 IN.)	2
26	70191	EXPANSION PLUG - 3 SHAFT ONLY	1
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

CLUTCH SHAFT GROUP

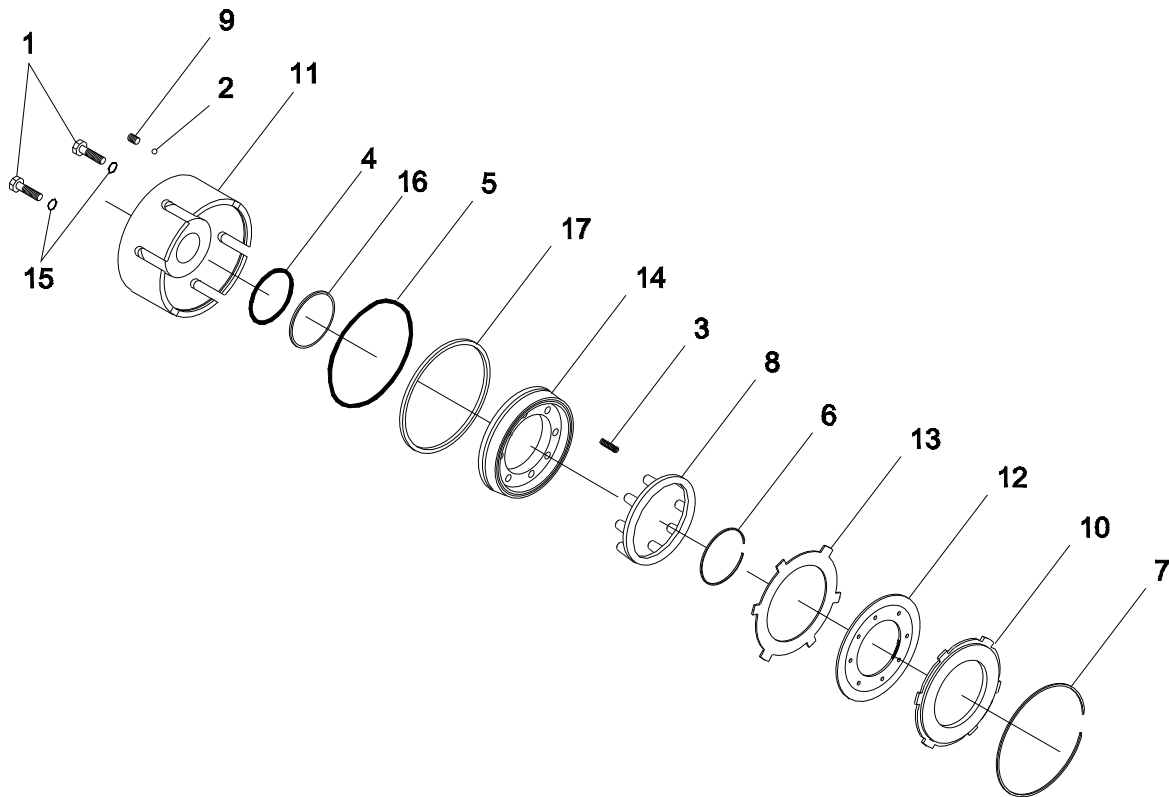


CLUTCH SHAFT GROUP

ITEM	PART NO.	DESCRIPTION	QTY.
1	31608	O-RING (PART OF ITEM 14)	2
2	18049	BEARING CUP	1
3	70073	BALL BEARING	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	22697	CAPSCREW, HEX HEAD (1/2 - 13 X 1)	6
11	24710	CAPSCREW, HEX HEAD (1/2 - 13 X 3)	6
12	69997	CLUTCH SHAFT	1
13	11892	THRUST BEARING RACE	4
14	29825	PLUG (CONTAINS ITEM 1)	2
15	26686	PLUG, -6 ORB HEX	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	1
29	70292	BRAKE HUB	1
30	69690	BEVEL GEAR SPACER	2
31	70376	BEARING CARRIER	2
32	69983	PINION SPACER	1
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	1
36	69045	BRAKE HUB SPACER	1
38	75267	ROLLPIN	2
39	70358	SLEEVE	4

AR = AS REQUIRED

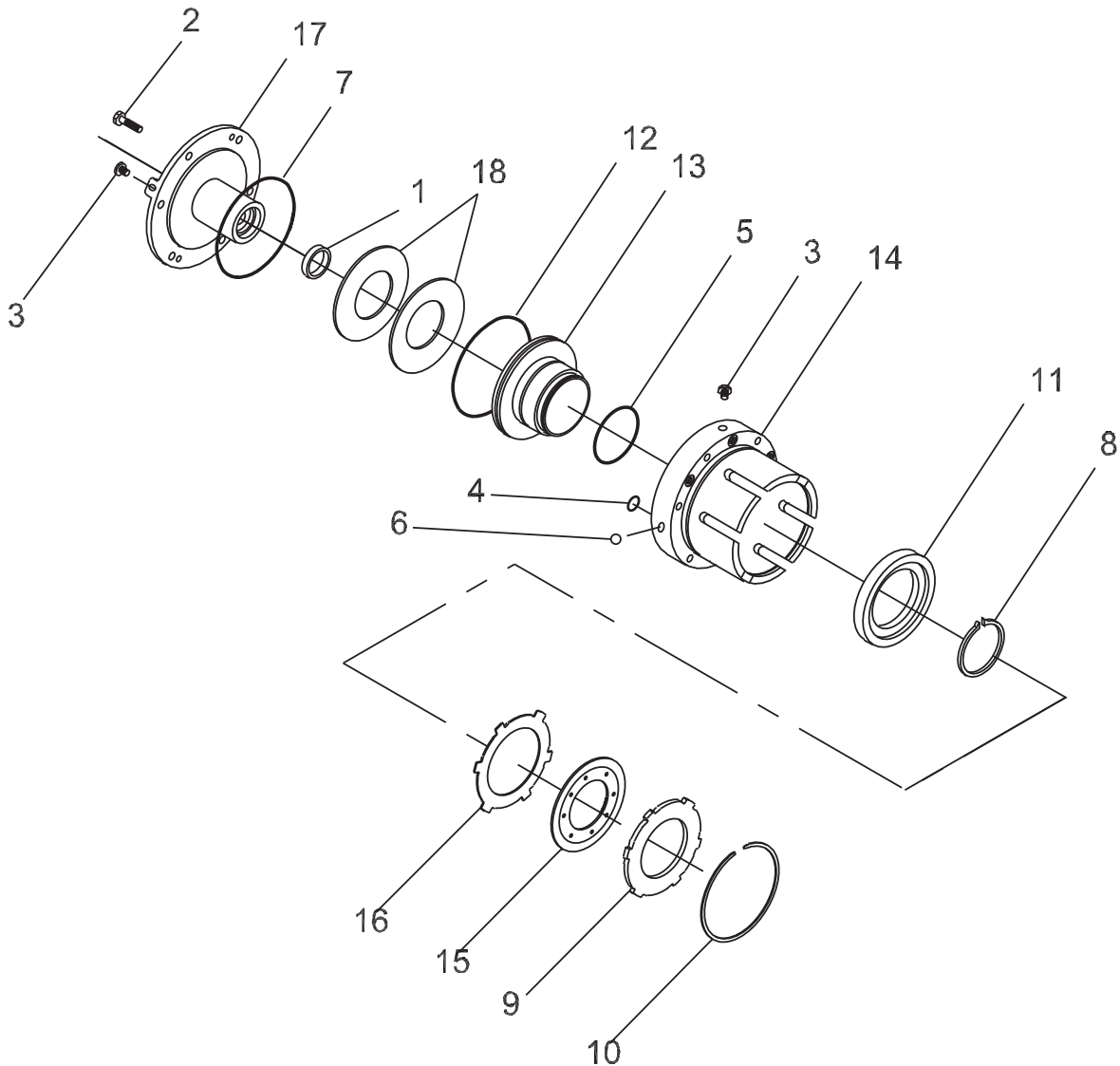
CLUTCH ASSEMBLY (SLOTTED HOUSING)



ITEM	PART NO.	DESCRIPTION	QTY.
-	82897	CLUTCH ASSEMBLY - INCLUDES 1 - 17	
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	70328	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	101399	CLUTCH PISTON	1
15	70724	O-RING	2
16	101400	BACKUP RING	1
17	100033	BACKUP RING	1

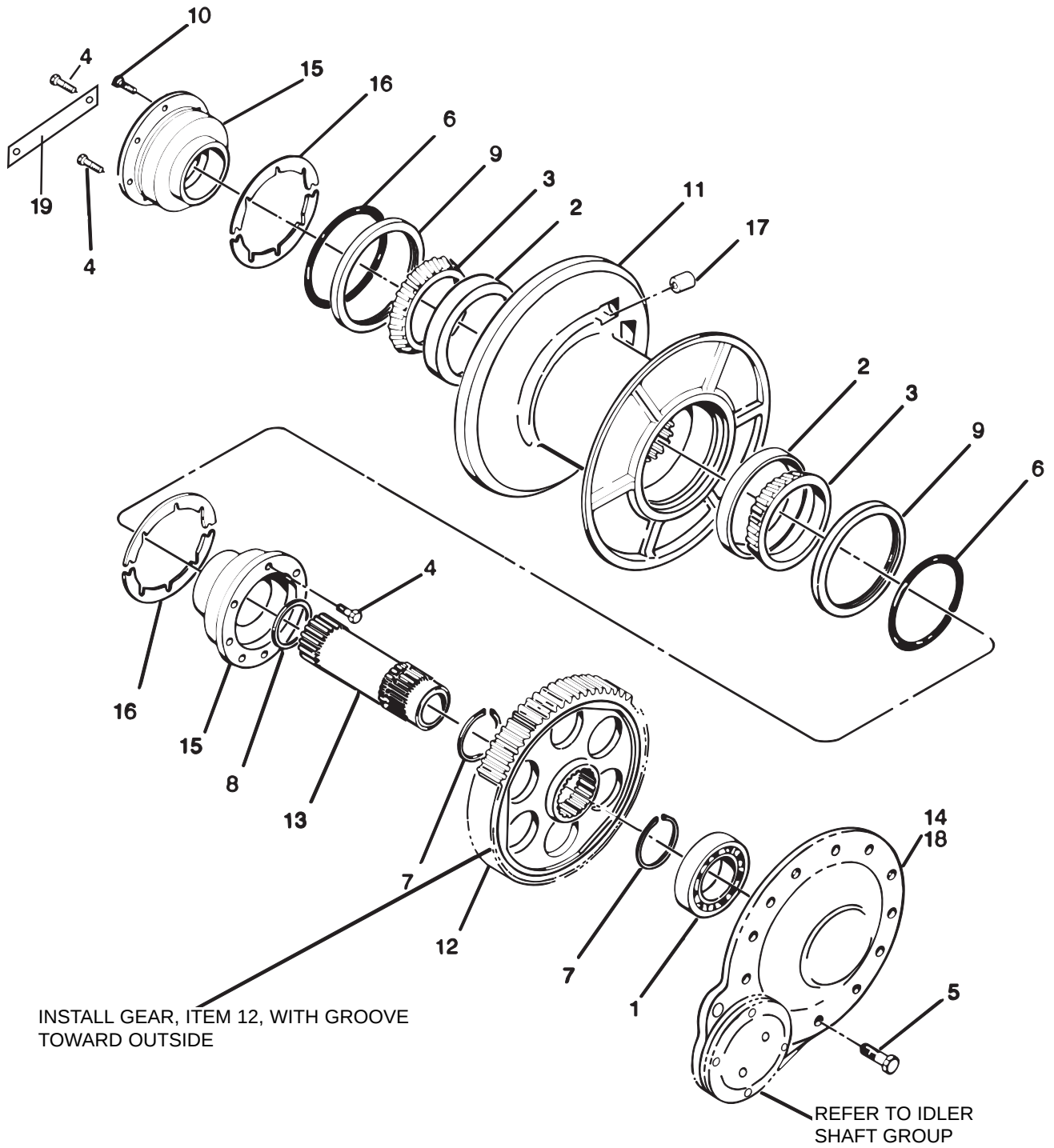
* 103424 includes a basic housing 102932 with two (2) steel balls 70126 driven into cross-drilled passages.

BRAKE ASSEMBLY (SLOTTED HOUSING)



ITEM	PART NO.	DESCRIPTION	QTY.
-	82896	BRAKE ASSEMBLY, STD - INCLUDES 1 - 20	
1	18049	BEARING CUP	1
2	21961	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

CABLE DRUM GROUP



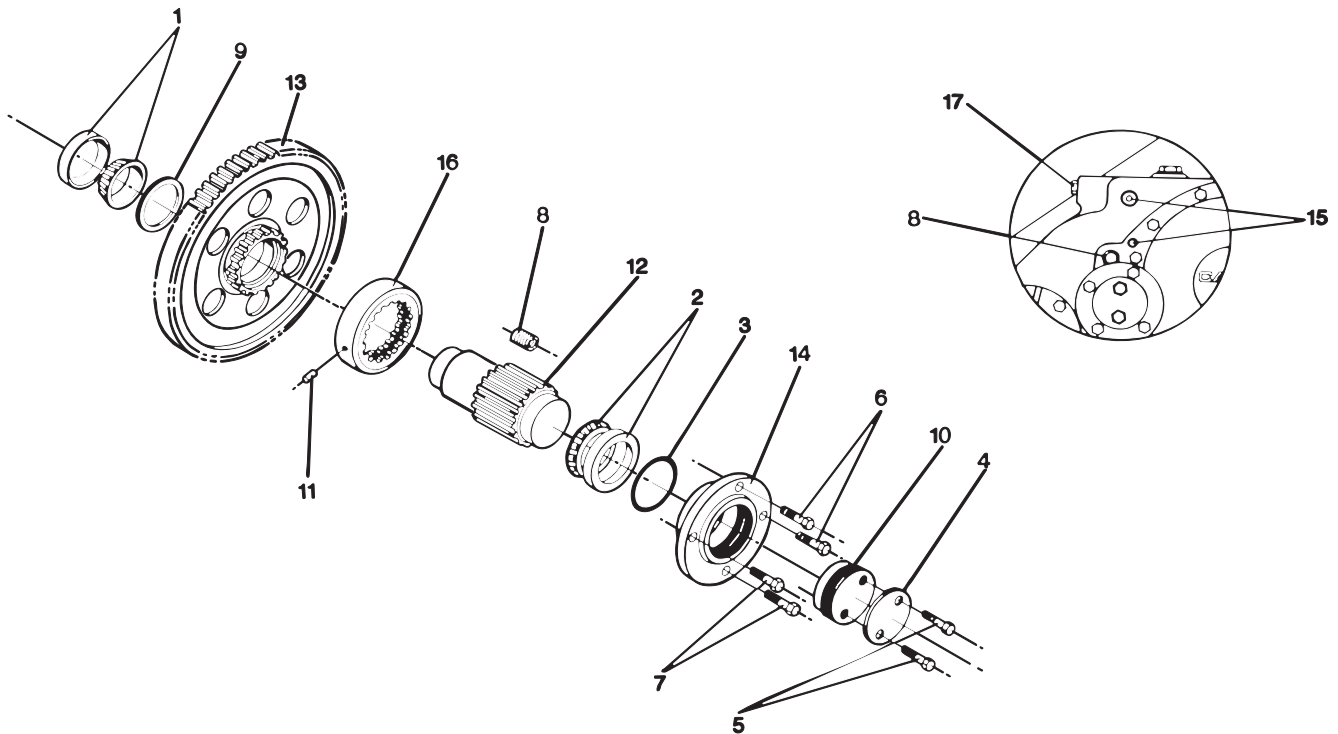
CABLE DRUM GROUP

ITEM	PART NO.	DESCRIPTION	QTY.
1	70070	BALL BEARING	1
2	70078	BEARING CUP	2
3	70079	BEARING CONE	2
4	27745	CAPSCREW, HEX HEAD (1/2 - 13 x 1 G5 SS)	10
5	13938	CAPSCREW, HEX HEAD (1/2 - 13 X 1 1/4 G5)	11
6	70140	O-RING	2
7	70513	RETAINING RING, EXTERNAL	2
8	70164	RETAINING RING, INTERNAL	1
9	70167	OIL SEAL	2
10	27743	CAPSCREW, SOCKET HEAD (1/2 - 13 X 1 G8 SS)	1
11	29019	CABLE DRUM - STEEL	1
12	68863	SECOND REDUCTION GEAR	1
13	69988	SECOND REDUCTION GEAR SHAFT	1
14	28954	BEARING CARRIER, COVER	1
15	27311	BEARING CARRIER, DRUM	1
16	70264	SHIM SET (1 pair each, .005, .007, .020 in. (.13, .18, .51 mm))	1-2 AR
17	29424	FERRULE - 3/4 IN. (19 mm) WIRE ROPE	1
	29425	FERRULE - 7/8 IN. (22 mm) WIRE ROPE	1
	29426	FERRULE - 1 in. (25 mm) WIRE ROPE	1
18	----	NO GASKET, USE DOW®RTV 732 OR EQUIVALENT	----
19	100799	VALVE MOUNTING PLATE	----
	27744	CAPSCREW, HEX HEAD (1/2 - 13 X 5 G5 - SS)	1

AR - AS REQUIRED

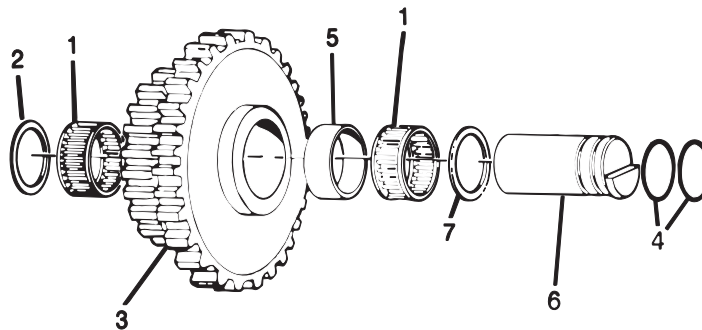
SS - SELF SEALING

IDLER SHAFT GROUP WITHOUT FREESPOOL



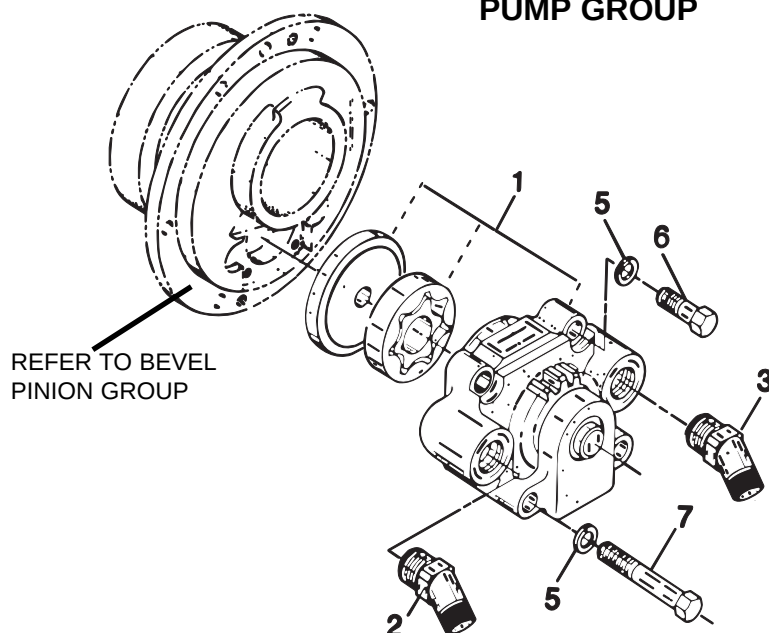
ITEM	PART NO.	DESCRIPTION	QTY.
1	69013	BEARING ASSEMBLY - INNER	1
2	69014	BEARING ASSEMBLY - OUTER	1
3	25580	O-RING	1
4	69655	LOCK PLATE	1
5	22729	CAPSCREW (1/2 -13 X 3/4 G5)	2
6	13938	CAPSCREW (1/2 - 13 X 1-1/4 G5)	2
7	13421	CAPSCREW (1/2 -13 X 2 G5)	2
8	27216	PLUG, SOCKET HEAD	1
9	11892	THRUST WASHER	1
10	69592	ADJUSTER	1
11	11836	ROLLPIN	1
12	69984	PINION, SECOND REDUCTION	1
13	27320	GEAR, FIRST REDUCTION	1
14	69974	CARRIER, IDLER 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

FOURTH SHAFT GROUP



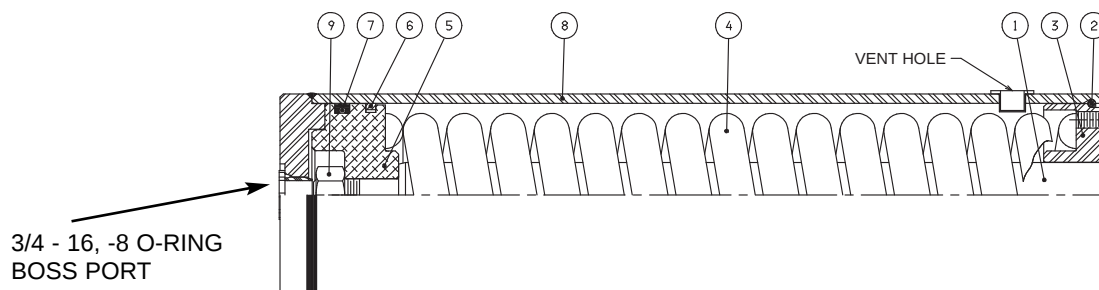
ITEM	PART NO.	DESCRIPTION	QTY.
1	70648	ROLLER BEARING	2
2	24581	THRUST WASHER - .062 in. (1.58 mm)	1
3	28925	CLUSTER GEAR 37/17 TEETH	1
4	13838	O-RING	2
5	28926	SPACER	1
6	69673	COUNTERSHAFT PIN	1
7	28924	THRUST WASHER - .217 in. (5.5 mm)	1

PUMP GROUP



ITEM	PART NO.	DESCRIPTION	QTY.
1	68772	PUMP ASSEMBLY	1
2	26752	ELBOW, 45°, PRESSURE SIDE, 1/2 NPT -8 JIC	1
3	27991	ELBOW, 45° SUCTION, 1/2 NPT -12 JIC	1
5	11015	LOCKWASHER (1/4)	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

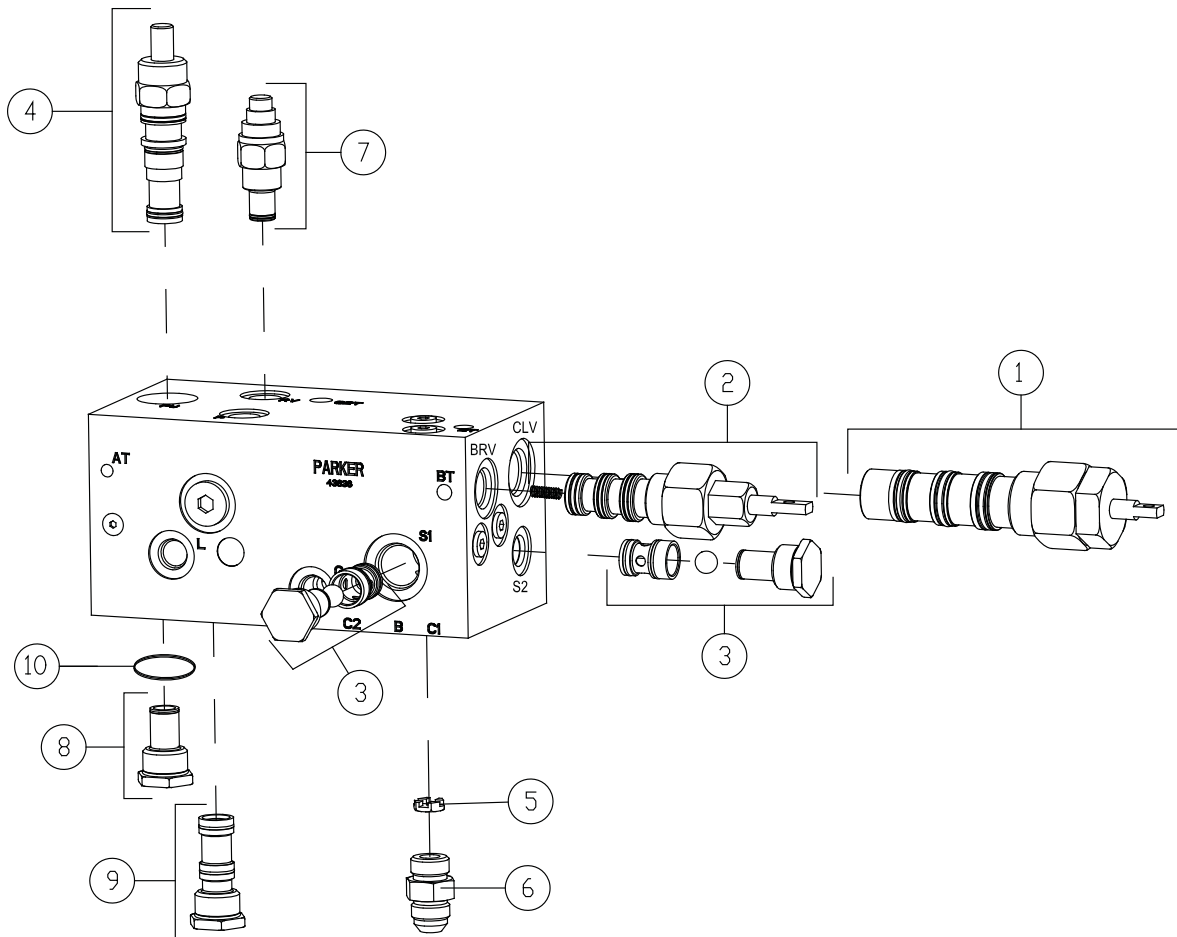


⚠ WARNING ⚠

! 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 NO.	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 (CONTAINS 2, 6 & 7)	

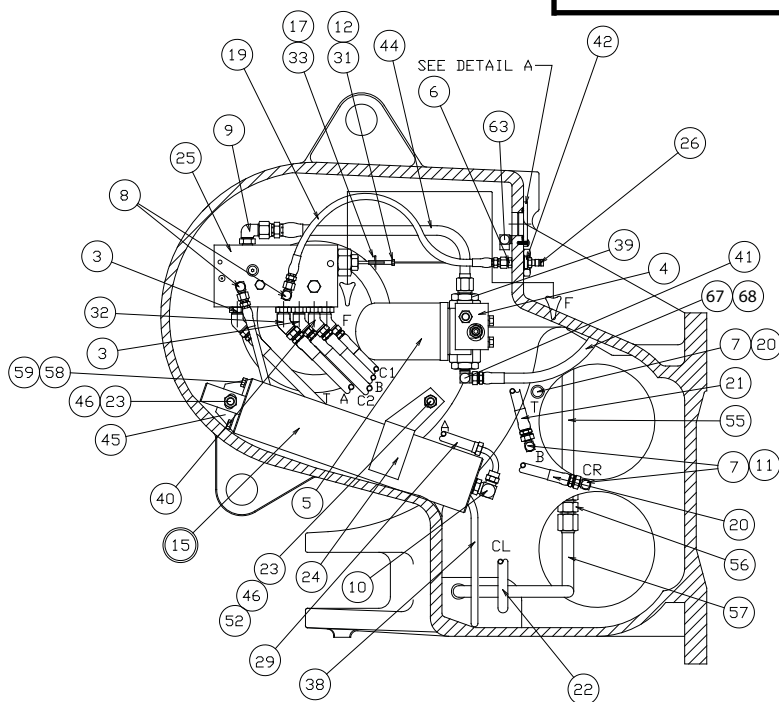
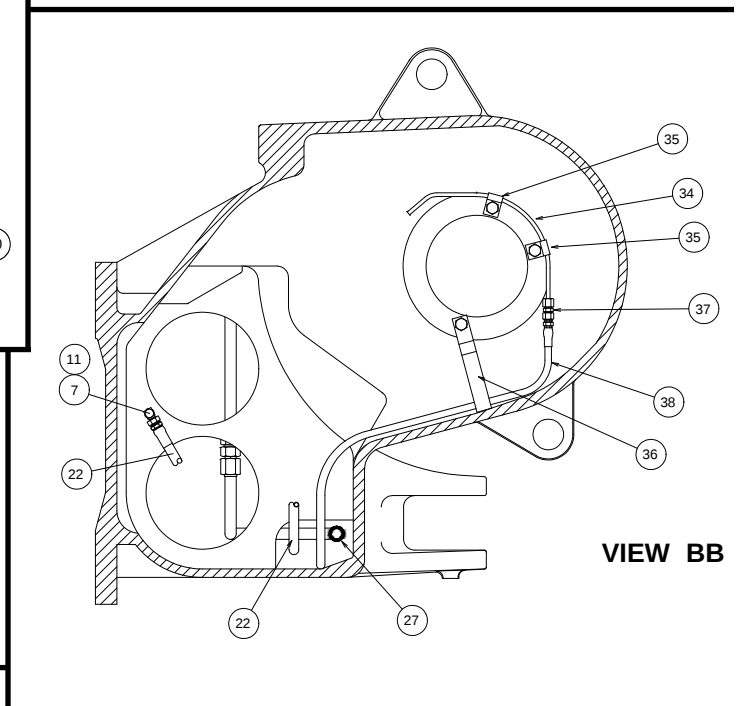
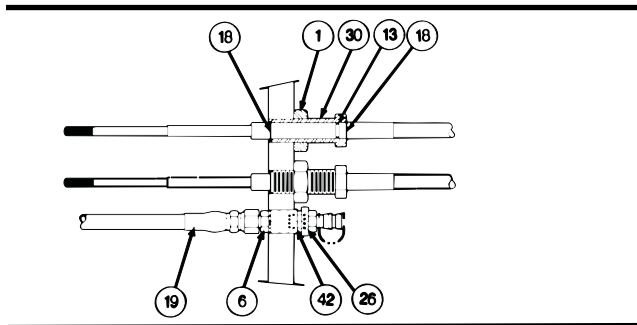
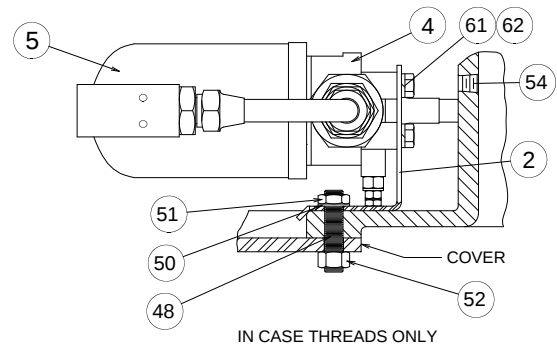
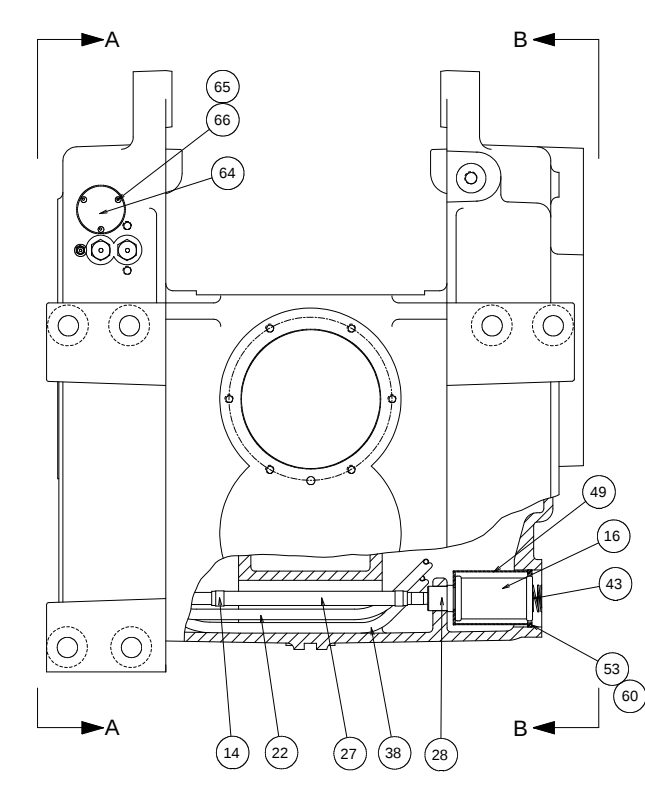
CONTROL VALVE ASSEMBLY



ITEM	PART NO.	DESCRIPTION	QTY.
1	26712	CLUTCH CONTROL VALVE CARTRIDGE (CLV)	1
--	61838	SEAL KIT FOR ITEM 1	1
2	26713	BRAKE CONTROL VALVE 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 (PU)	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

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HYDRAULIC CONTROL GROUP - STANDARD PTO



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HYDRAULIC CONTROL GROUP - STANDARD PTO

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 (See Pg. 27)	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
34	100803	LUBE TUBE	1

ITEM	PART NO.	DESCRIPTION	QTY.
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-14 in. (356 mm) PUMP TO FILTER	1
68	69516	ELBOW, 45° -8 JIC	1

* SS - SELF SEALING

! NOTE !

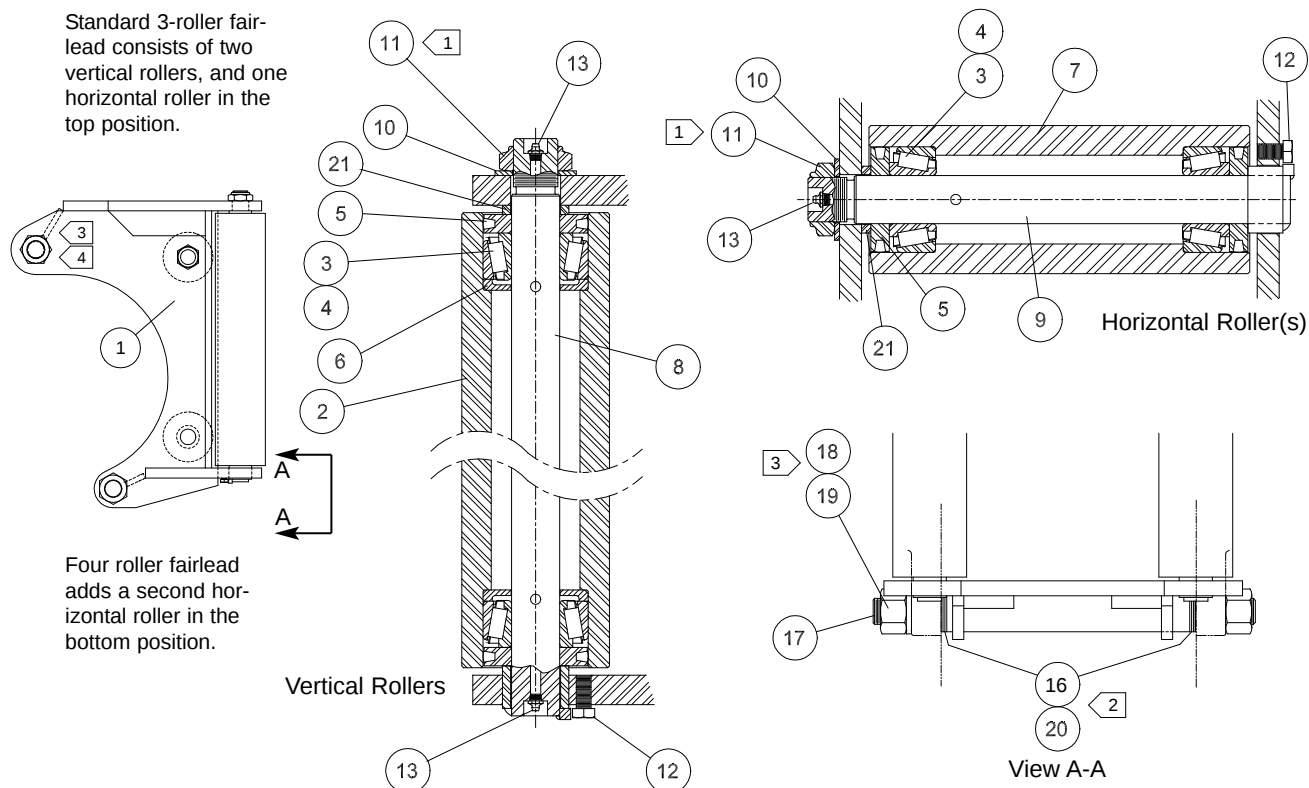
Effective mid-year 2005, the original pump-to-filter hose, one of item 44, part number 27979 (119-0118) was replaced with a shorter hose 29676 (8K-0973) and a long tube elbow 29817 (138-2429). These two parts were identified as items 67 and 68 in some manuals. It was found that the elbow may fail on some winches due to fatigue or vibration.

Beginning in April 2006, the short hose and long tube elbow mentioned above, have been replaced by hose, P/N 29676 (8K-0973), 14 in. (356 mm) long and 45 degree elbow, P/N 69516.

One of hose item 44, P/N 27979 (119-0118) will continue to be used between the filter outlet and the control valve inlet (P).

FAIRLEAD ASSEMBLY

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 LESS THAN 0.030 in. (0.8 mm).
- 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	22729	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

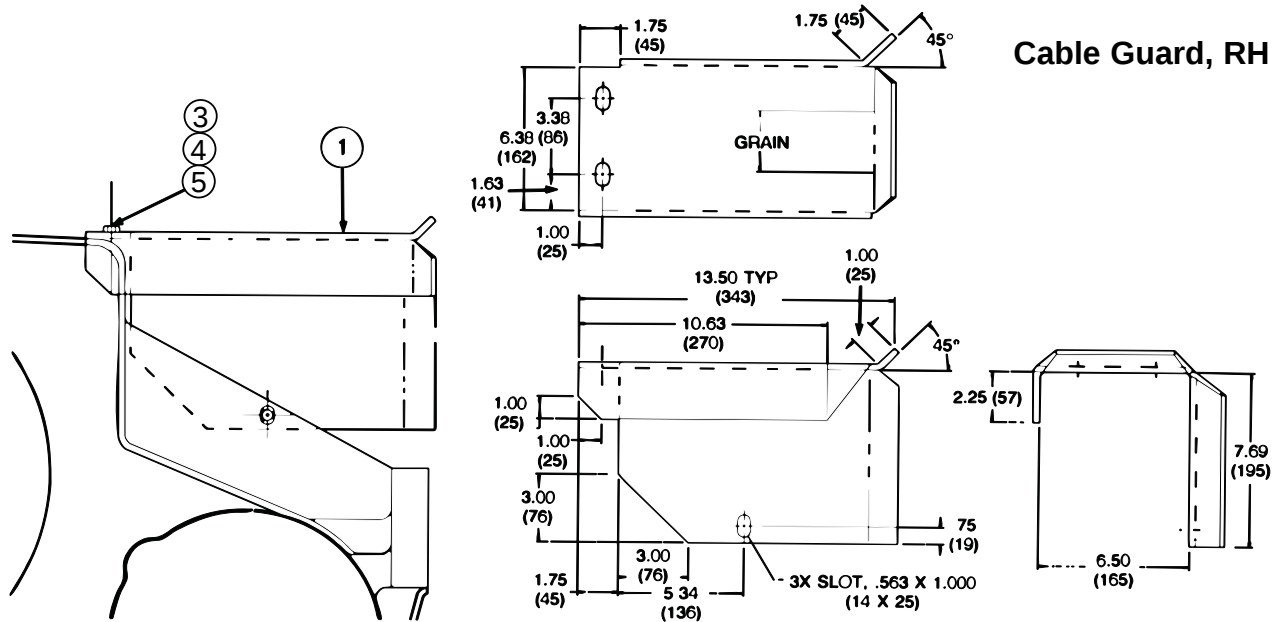
CONTROL CABLE GUARD GROUP (OPTIONAL)

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