

CARCO®

INSTALLATION AND PARTS MANUAL MODEL 50B FOR KOMATSU D61

NOTE: This manual covers winch installation and parts, specific to the tractor or tractors listed above. For all other common winch parts, refer to Carco Winch Parts Manual LIT2115.

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MODEL NUMBER DESCRIPTION

50B	C	0	0	0	0	0
Basic Winch Model	Bevel Gear Ratio B-1.27:1 C-1.64:1 D-2.11:1 E-2.79:1	0-Overwind 1-Underwind	0-Standard Brake	0-Without Freespool 1-With Freespool	0-Four Shaft Winch 1-Three Shaft Winch	0-No Fairlead 3-3 Roller Fairlead 4-4 Roller Fairlead

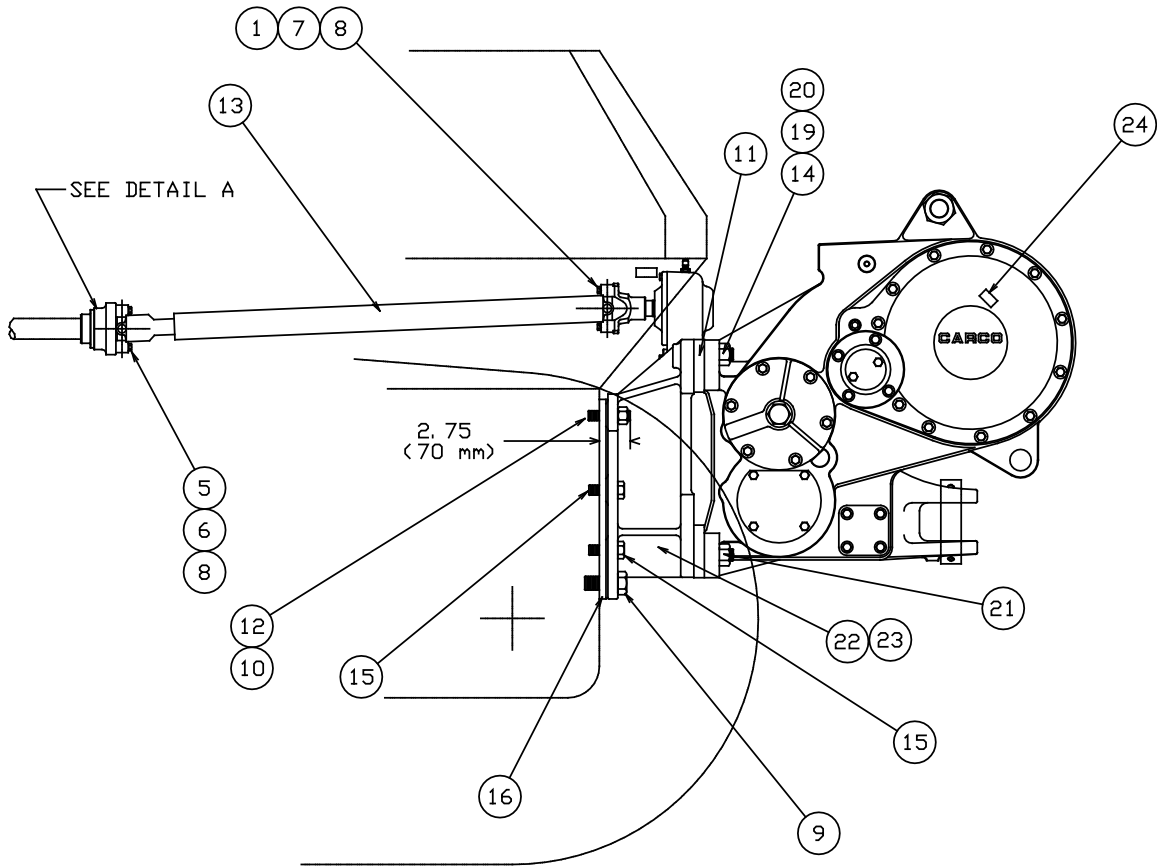
PACCAR WINCH

P.O. Box 547 Broken Arrow, OK 74013

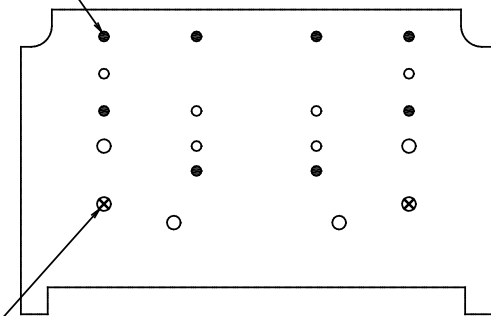
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**MODEL 50B
MOUNTING GROUP
KOMATSU D61**

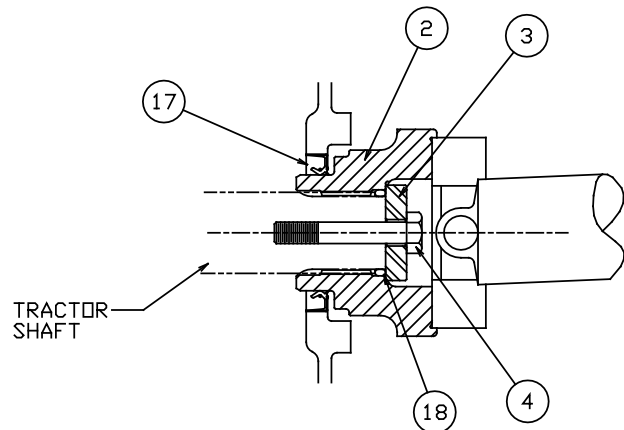


8X WINCH MOUNTING HOLES
M24 x 3.0 x 33mm DP



2X WINCH MOUNTING HOLES
M33 x 3.0 x 45mm DP

VIEW OF TRACTOR REAR MOUNTING FACE



DETAIL A

MOUNTING INSTRUCTIONS

1. Remove all paint, dirt and oil from the mounting surfaces of the winch case, tractor, adapter brackets and spacers. The mounting surfaces must be clean and dry to provide a secure mount and resist movement while in use.
2. Remove the transmission cover from the rear of the tractor. The cover may be modified for clearance with the winch and reinstalled after the winch installation is completed.
3. If the tractor is equipped with a ripper circuit, remove the ripper supply tubes and cap the ports at the control valve. Remove the ripper joystick control valve from the console and cap the lines as directed in the tractor service manual.
4. Install the coupling, item 2, onto the tractor accessory drive shaft as directed in the tractor service manual. Refer to detail A.
5. Install the driveline assembly, item 13, onto the drive coupling, item 2. Be certain to remove all paint, oil or rust from the mating surfaces of the u-joint and yoke that may lead to loosening of the connection. Apply Loctite 242 to capscrews, item 5, and install with washers, item 6. Tighten the capscrews, item 5 to 44 lb•ft (60 N•m) torque.
6. Inspect the tapped holes in the rear face of the tractor. Make certain the threads are clean of rust and paint and that the thread depth will accommodate full engagement of the mounting fasteners.
7. Apply Loctite 271 to the clean, dry threads of studs, item 12. Install the studs into the tractor to a height of 2.75 in. (70 mm) as shown.
8. Apply Loctite 271 to the clean, dry threads of studs, item 14, and capscrews, item 21. Install the studs into the adapters, items 22 & 23, fully until the threads bottom out in the adapters.
9. Install spacers, item 11, between the adapters, items 22 & 23, and the winch. Tighten the nuts, item 20, and capscrews, item

21 only snug at this time. Some slight movement of the adapters may be necessary when installing the winch with adapters onto the tractor.

▲ WARNING ▲

Winch and mounting adapters weights approximately 2800 lb (1270 kg) without wire rope (cable) or oil. Make certain lifting equipment has adequate capacity. Attempting to lift the winch with inadequate equipment may result in personal injury or property damage.

10. Place one spacer bar, item 16, onto each stud on the rear face of the tractor. Install the winch onto the studs while guiding control cables into position under the right hand console. Apply Loctite 271 to the clean, dry threads of nuts, item 10, and capscrews, items 9 & 15. Tighten the 24 mm fasteners to 650 lb•ft (880 N•m); 33 mm fasteners to 1200 lb•ft (1630 N•m) torque.
11. Tighten nuts, item 20, to 980 lb•ft (1300 N•m) torque. Tighten capscrews, item 21, to 680 lb•ft (900 N•m) torque.
12. Install the driveline assembly onto the winch gearbox yoke. Align driveline ends to assure bearing crosses are in phase. Be certain to remove all paint, oil and rust from the mating surfaces of the u-joint and yoke that may lead to loosening of the connection. Apply Loctite 242 to capscrews, item 7, and install with washers, item 1. Tighten the capscrews, item 7, to 38 lb•ft (52 N•m) torque.
13. Check oil level in adapter gearbox and fill to level plug with SAE 90, GL5 gear oil. Oil capacity of gearbox is 1.8 qt. (1.7 l).
14. Fill winch to sight glass level plug with recommended oil. Oil capacity of winch case is 78 qt. (74 l).

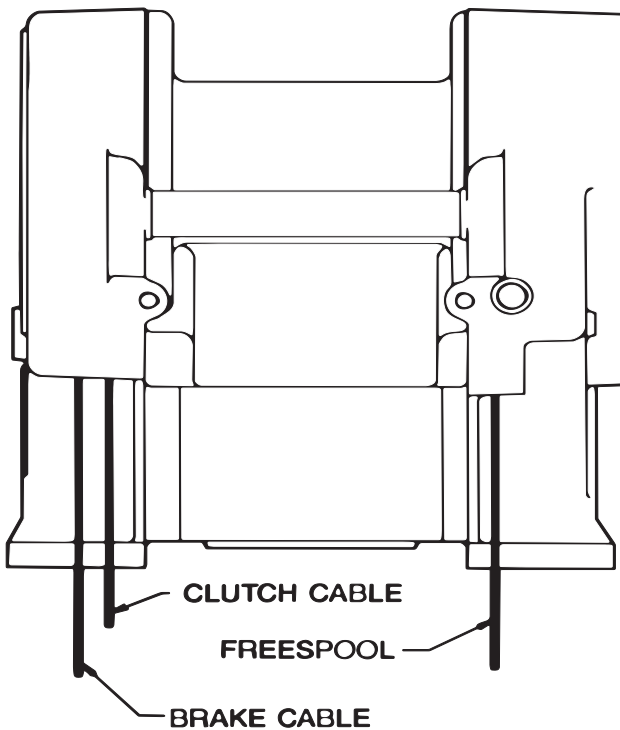
ITEM	PART NO.	DESCRIPTION	QTY.
1	18003	LOCKWASHER (3/8)	4
2	29667	COUPLING	1
3	29671	HOLDER	1
4	29670	CAPSCREW, HEX METRIC-SPL.	1
5	69773	CAPSCREW, HEX (HM10-1.5 X 50 mm)	4
6	70953	WASHER, SPL.	4
7	32268	CAPSCREW, HEX (3/8-24 X 1 3/4)	4
8	101947	U-JOINT ASSEMBLY	2
9	31822	CAPSCREW, HEX METRIC-SPL.	2
10	70184	NUT, HEX (M24-3)	4
11	69053	SPACER	4
12	69788	STUD (M24-3)	4
13	102523	DRIVELINE ASSEMBLY	1
14	29912	STUD (1-1/8 - 7 X 5 G8)	4
15	70181	CAPSCREW (M24-3 X 80 mm)	4
16	29666	SPACER	4
17	29668	SEAL	1
18	29669	O-RING	1
19	27803	WASHER (1-1/8 HARDENED)	4
20	70768	NUT, HEX (1-1/8 - 7)	4
21	31037	CAPSCREW, HEX (1-8 X 3 1/2 G8)	4
22	27772	ADAPTER, LH	1
23	27773	ADAPTER, RH	1
24	----	WIRE ROPE FERRULE - REFER TO WINCH OPERATORS MANUAL	

CONTROL INSTALLATION INSTRUCTION

Note: These instructions are provided as a general guide. Tractor options, application requirements or local regulations may require deviation from these recommendations.

⚠ CAUTION ⚠

Avoid routing cables near moving shaft or linkage which may cause damage to cables or restrict free movement of tractor components.



TOP VIEW OF WINCH

Power Shift Control – Dual Axis

1. Remove the six through-bolts, item 34, from the control stand and separate the two cable support housings, items 37 & 38. From each plunger, remove 35 & 36.
2. Install the sliding lock screw, item 35, onto the control cables. Apply two drops of Loctite 242 to the cable threads and install the threaded bushing, item 36, onto the cable core until the end of the cable core is level with the end of the bushing.
3. Hold the controller in your left hand with the knob end up and the mounting bolts located at 6, 9 and 12 o'clock position. Mark the plunger closest to the 6 o'clock position as the "clutch" control. Mark the plunger closest to the 12 o'clock position as the "brake" control. The "clipped" corner of the control will be installed toward the rear of the tractor.
4. Install the brake cable to the "brake" control plunger and the clutch cable into "clutch" control plunger. Move the control lever to extend the plungers far enough to expose the wrench flats. With a wrench, hold the plunger as you tighten the sliding lock screw to 50 lb•ft (68 N•m) torque.
5. Install the cable support housings, items 37 & 38, onto the controller. Place the groove of the control cable housings into the saddle of the cable anchors, items 39 & 40. Install the six through-bolts, washers, lockwashers and nuts, items 4, 31, 34 & 41. Evenly tighten the bolts to 85 lb•in (10 N•m) torque.

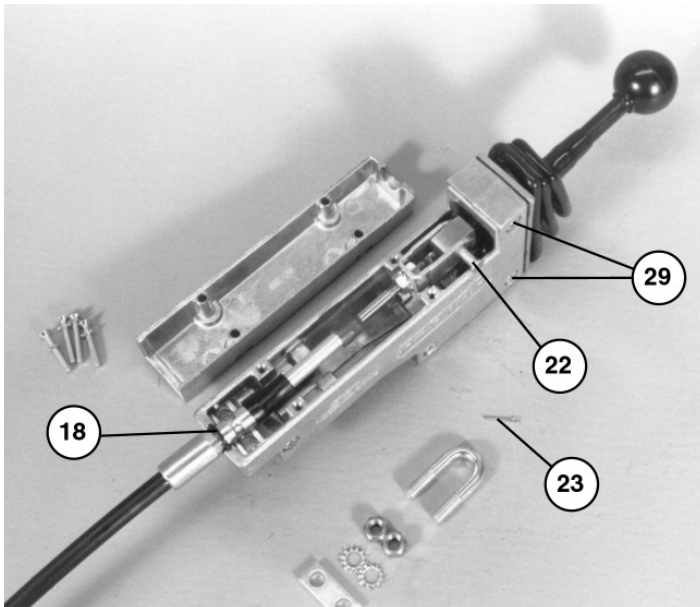
⚠ CAUTION ⚠

Tightening the sliding lock screw without holding the plunger with a wrench will result in damage to the control assembly.



Freespool Control Lever

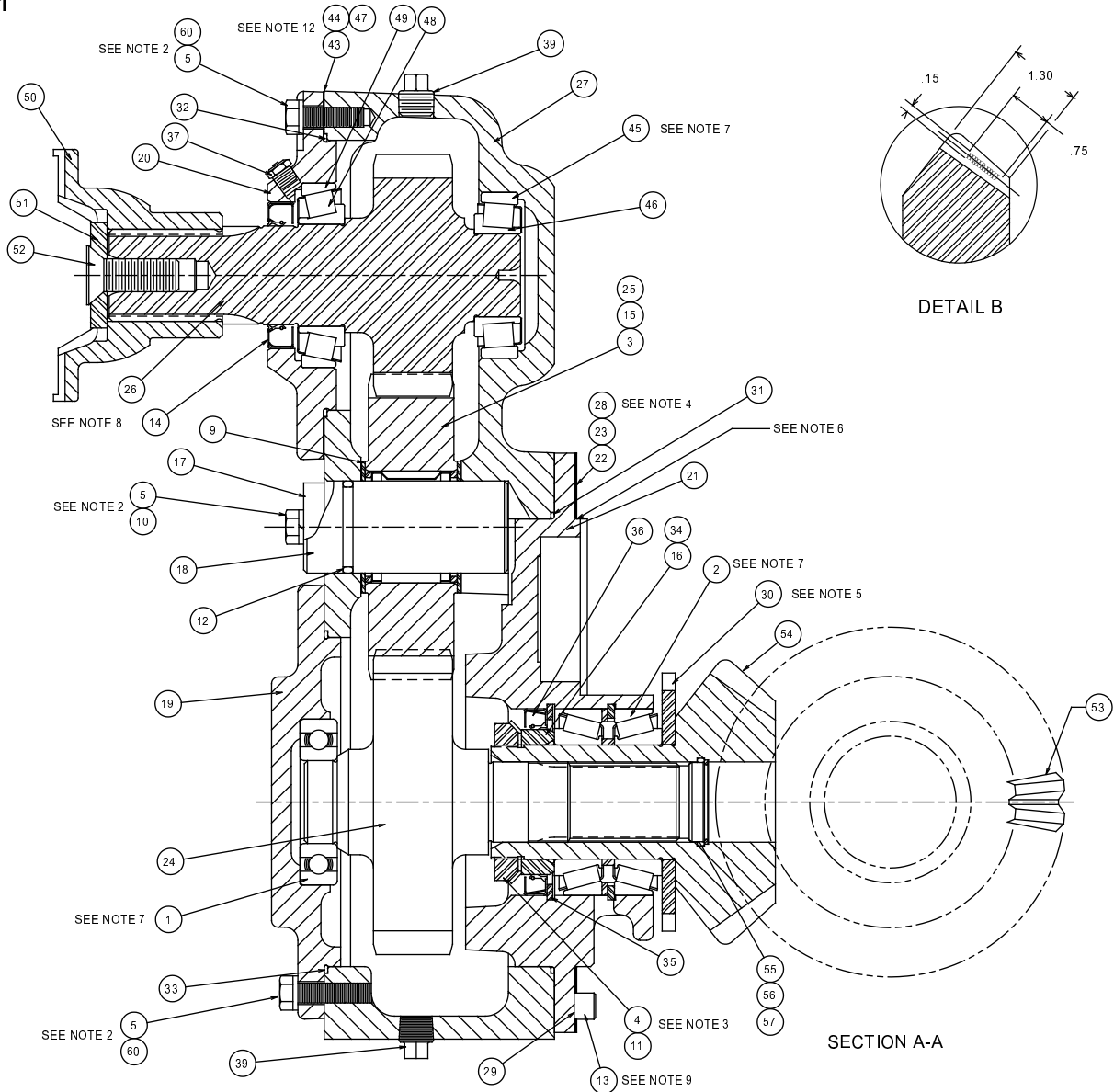
1. Remove the knob, item 32, and the four oval head machine screws and lockwashers, item 16 & 17, from the long lever housing cover and remove the cover.
2. Prepare the control cable for installation by installing the o-ring, item 18, over the control lever end of the cable. The control lever end is identified by the u-bolt groove in the cable housing.
3. Install one nut, item 19, onto the cable core followed by the lockwasher, item 31.
4. Install the clevis, item 21, and one more nut, item 19, onto the cable. The cable core end must extend beyond the nut by 7/32 in. (5.5 mm). Tighten the first nut to secure the clevis in this position.
5. Slip the clevis over the bellcrank of the lever and install the clevis pin, item 22, and secure in place with cotter pin, item 23.
6. Remove the u-bolt, item 24, from the housing.
7. Position the o-ring, item 18, on the control cable housing so that when the cable is lowered into place, the o-ring fits in the groove in the housing.
8. Install the u-bolt, item 24, over the cable and through the housing. Install the spacer, item 25, over the u-bolt followed by the lockwashers and nuts, items 20 & 26. Tighten the u-bolt nuts to 90 lb•in (10 N•m) torque.
9. Install the cover onto the housing with the four oval head machine screws and lockwashers, item 16 & 17.
10. Remove the two through-bolts and nuts, items 29 & 19, from the top two mounting holes of the lever housing.
11. Secure the lever to the control bracket with capscrews, washers and nuts, items 6, 7 and 41. The long cover of the lever housing must face toward the operator.
12. Install the control bracket cover/controller sub-assembly onto the control bracket base using three button, socket-head capscrews and washers, items 5 and 41. Install the knob, item 32, onto the lever.



General Instructions

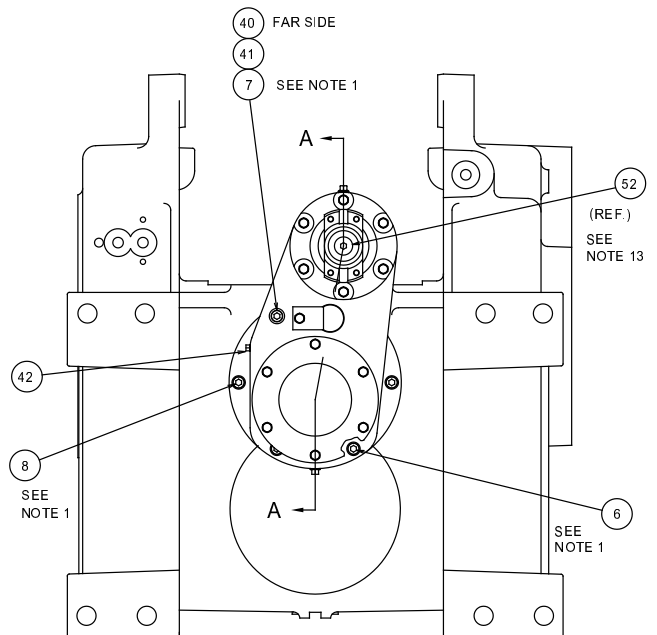
1. Install the control instruction self-adhesive decal(s), items 11 and 12, onto the console cover to the rear of the control bracket.
2. Fill winch to proper level with recommended oil. Refer to oil specifications found in the Operation and Preventive Maintenance Manual, publication PC-209.
3. Verify proper control cable and operating pressure adjustment by following the procedures found in the Operation and Preventive Maintenance Manual, publication PC-209 or the Service Manual, publication PC-210.

**MODEL 50B
BEVEL GEAR GROUP
KOMATSU D61**



NOTES:

1. Apply "Loctite 242" to clean dry threads and torque to 60 ft•lbs.
2. Apply "Loctite 242" to clean dry threads and torque fasteners to 25 ft•lbs.
3. Torque bearing locknut, item 4, to 150 ft•lbs, pinion to turn smooth by hand, 30 in/lbs max on new assembly.
4. Shim as required for tooth contact pattern per Detail B with .004 To .012 backlash with bevel pinion held axially toward carrier, item 21, to take up all axial clearance in bearing assembly, item 2.
5. Apply "Loctite 601" to bore of pump pinion, item 30, and bevel pinion shoulder, press pump pinion onto bevel pinion and seat securely against shoulder. Allow proper set-up time before useage.
6. Apply approx. 3/16" Bead of silastic sealant (RTV 732) to pilot.
7. Apply thin coating of multipurpose calcium or Lithium based medium grease. Do not pack solid.
8. Install seal, item 14, with closed side flush with outboard face of cap, item 20.
9. Apply "Loctite 242" to clean, dry dowel pin, item 13, and insert in case.
10. Apply pipe thread sealant to fittings, items 37, 38, 39 & 42.
11. Engineering approval required for sealant substitutions.
12. Use shims, items 43, 44 & 47, under gearing cap, item 20, as required to provide .004-.006 (.102-.152 Mm) bearing end play. Install cap without shims. Apply firm hand pressure against cap. Determine gap between cap and gearbox by averaging 3 measurements approximately equally spaced. Install shims to equal gap plus .010 (.254 Mm).
13. Apply "loctite 242" to clean dry threads and torque to 140 ft•lbs.



**MODEL 50B
BEVEL GEAR GROUP
KOMATSU D61**

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	78337	BALL BEARING	1
2	70077	ROLLER BEARING	1
3	70648	NEEDLE BEARING	1
4	24816	LOCKNUT, BEARING	1
5	27992	CAPSCREW, HEX HEAD (3/8 - 16 NC X 1 G5-SS)	13
6	73454	CAPSCREW, SOCKET HEAD (1/2 - 13 NC X 5 G8)	2
7	23445	CAPSCREW, SOCKET HEAD (1/2 - 13 NC X 5 1/2 G8)	1
8	72845	CAPSCREW, SOCKET HEAD (1/2 - 13 NC X 2 1/4 G8)	2
9	24581	THRUST WASHER	2
10	18003	LOCKWASHER (3/8)	1
11	11418	LOCKWASHER	1
12	13838	O-RING	1
13	22828	DOWEL PIN	1
14	29979	OIL SEAL	1
15	69582	BEARING SPACER	2
16	70382	SEAL SPACER	1
17	69583	PIN RETAINER	1
18	69584	IDLER PIN	1
19	27985	BEARING CAP, DRIVE PINION	1
20	29977	BEARING CAP	1
21	69961	CARRIER, BEVEL PINION	1
22	69826	SHIM, .020 in. (.51 mm)	2-AR
23	69827	SHIM, .007 in. (.18 mm)	2-AR
24	28820	PINION SHAFT	1
25	69938	IDLER PINION	1
26	29976	INPUT PINION	1
27	27976	GEAR BOX HOUSING	1
28	69945	SHIM, .005 in. (.13 mm)	2-AR
29	69946	SHIM GASKET	1
30	69947	PUMP DRIVE PINION	1
31	27988	O-RING	1
32	70138	O-RING	1
33	27987	O-RING	1
34	74992	O-RING	1
35	70163	RETAINING RING	1
36	28732	OIL SEAL	1
37	10074	RELIEF VALVE	1
39	23377	PLUG (3/8 - 18 NPTF)	2
40	22454	O-RING	1
41	72144	SEALING WASHER	1
42	18009	PIPE PLUG (1/8 - 27 NPTF)	1
43	28916	SHIM, .005 in. (.13 mm)	4-AR
44	28917	SHIM, .007 in. (.18 mm)	3-AR
45	28923	BEARING CUP	1
46	28922	BEARING CONE	1
47	28918	SHIM, .020 in. (.51 mm)	1
48	29981	BEARING CONE	1
49	29980	BEARING CUP	1
50	29978	YOKE	1
51	29991	RETAINER WASHER	1
52	100703	CAPSCREW, SOCKET FLAT HEAD (5/8 - 11 X 1 3/4 GD8)	1
53	29077	BEVEL GEAR SET, 38/18, INCLUDES PINION	1
54	69822	BEVEL PINION, 18T	1
55	69813	O-RING	1
56	70162	RETAINING RING	1
57	70626	PLUG, BEVEL PINION	1
60	72142	SEAL WASHER	12

SS = SELF SEALING AR = AS REQUIRED