

# CARCO®

## INSTALLATION AND PARTS MANUAL

### MODEL 70A

### FOR

### CATERPILLAR D6H PS TRACTOR

**NOTE:** This manual covers mounting and control group installation, and parts specific to this winch on the specified tractor. For all other winch parts, refer to Winch Parts Manual, Publication LIT2115.

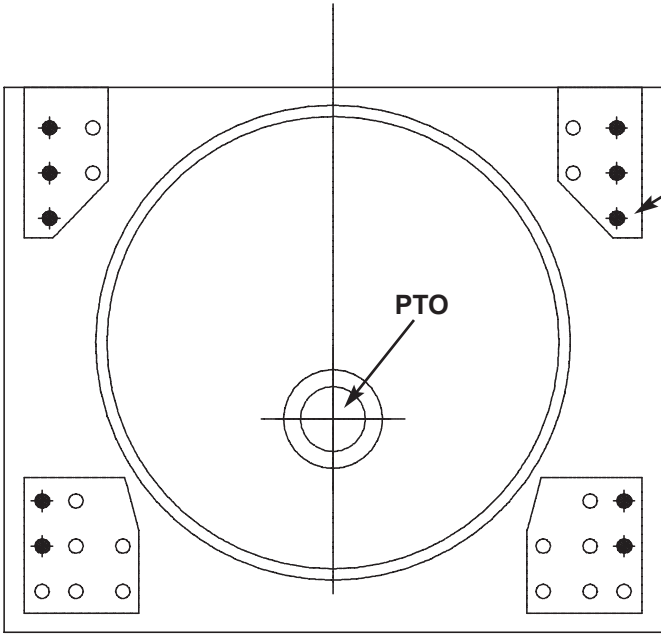
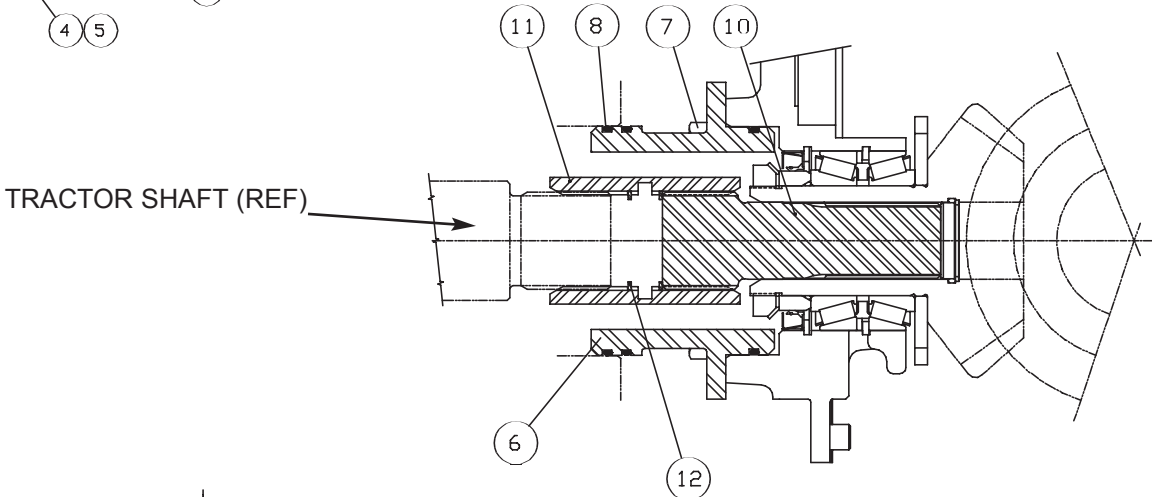
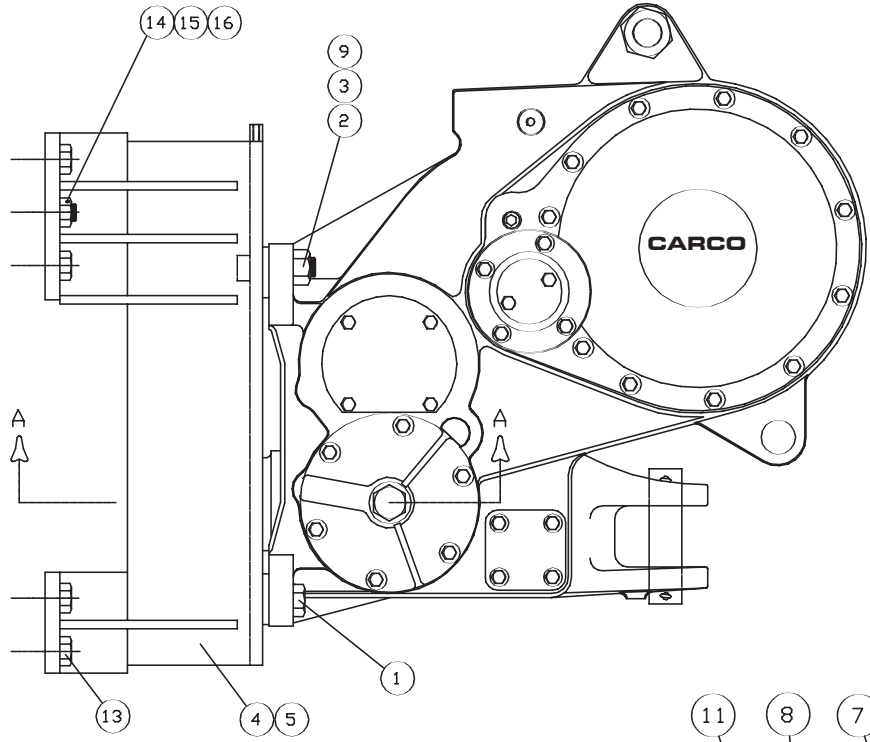
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#### MODEL NUMBER DESCRIPTION

70A	C	0	0	0	0	0
Basic Winch Model	Bevel Gear Ratio B-1.27:1 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 4 - 4 ROLLER

# MOUNTING GROUP



1 - 8 UNC - 2B  
10 HOLES

● Indicates Adapter Mounting Holes

VIEW LOOKING AT TRACTOR REAR FACE

## MOUNTING INSTRUCTIONS

1. PTO rotation is counterclockwise (CCW) as viewed from rear of tractor.
2. Remove and discard tractor PTO cover.
3. Remove paint, rust, dirt and grease from mounting surfaces of tractor, winch and winch adapters.
4. Apply Loc-tite 271 to threads and install studs, Item 16, to a height of 2-1/8 in. (54 mm) from tractor mounting surface.
5. Apply Loc-tite 271 to threads and install studs, Item 3, into winch adapter.
6. Apply Loc-tite 242 to threads of studs, Items 3 & 16 and capscrews, items 1 & 13 and tighten as follows:
  - A) Nuts, Item 2, to be snugged up to approximately 100 lb-ft (136 Nm) then mark position of nut and tighten an additional 2-1/2 flats.
  - B) Capscrews, items 1 & 13 and nuts, item 15 to be tightened to 640 lb-ft (868 Nm) torque.
7. Coat splines of PTO shaft, Item 10, with multi-purpose grease and install into bevel pinion gear of winch.
8. Install retaining rings, Item 12, in coupling, Item 11. Place coupling over PTO shaft with beveled end away from winch.
9. Install o-rings, Item 8, onto PTO pilot Item 7. Note: As the same PTO pilot may be used on several adaptations, usually only one o-ring groove will engage and seal in the tractor PTO opening.
10. Remove winch top cover to gain access to the bevel gears.

### **WARNING**

**Winch weighs approximately 2,100 lbs (953 kg) without oil, cable and tractor adapters. Make certain lifting equipment has adequate capacity.**

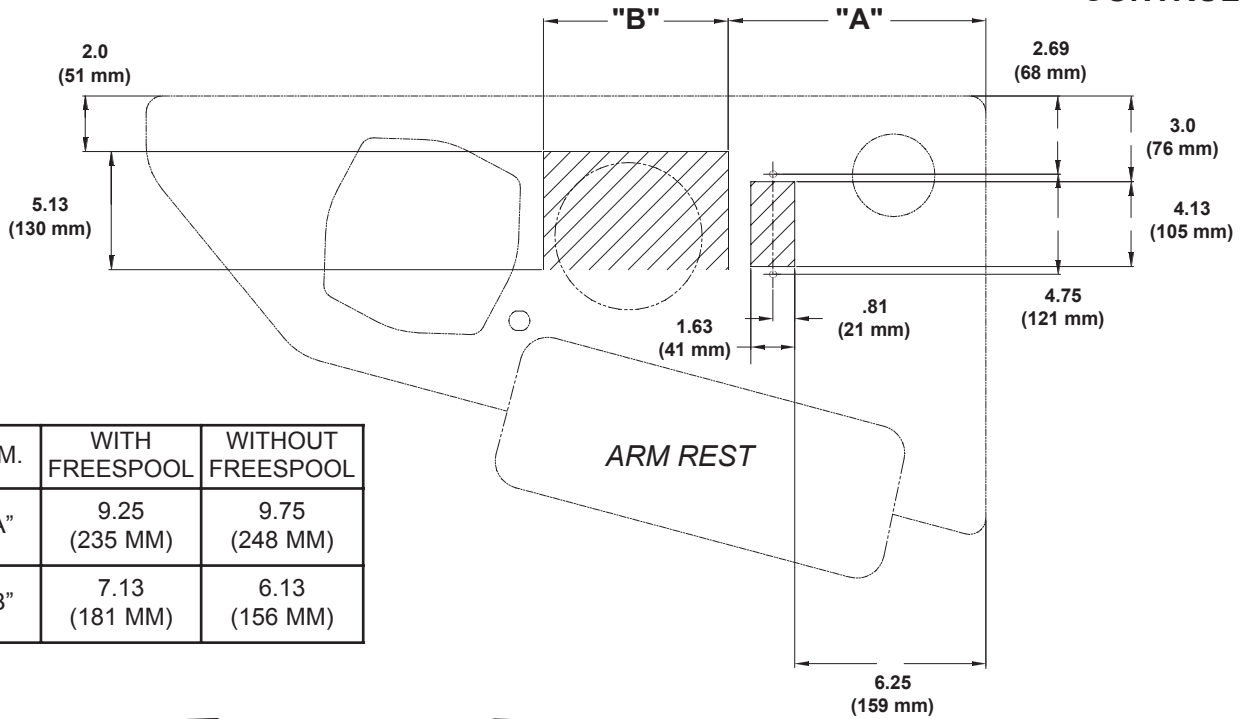
11. Coat PTO pilot o-rings and splines of tractor PTO with multi-purpose grease and install winch on tractor while moving winch bevel gears to align the splines.

### **CAUTION**

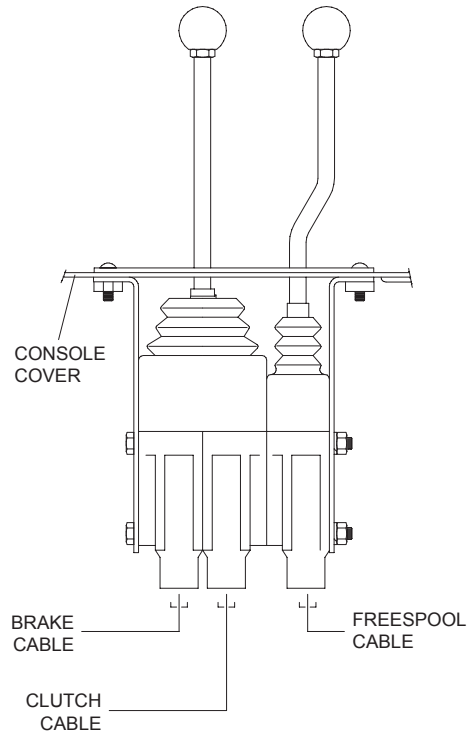
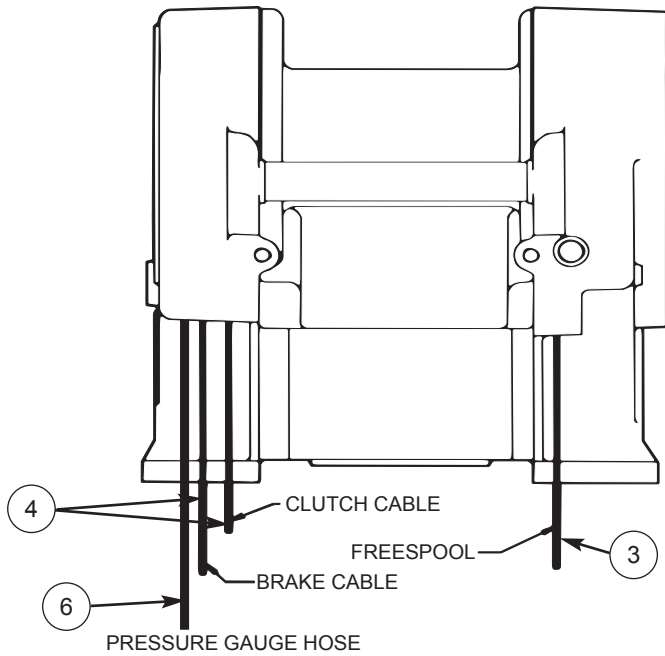
**Fill winch to proper level with recommended oil BEFORE starting tractor engine. Bearing and gear damage may result if tractor is run without oil in the winch.**

ITEM	PART NO.	DESCRIPTION	QTY
1	70749	CAPSCREW, HEX HEAD (1 - 8 X 2-3/4 G8)	4
2	70768	NUT, HEX (1-1/8 - 7)	4
3	27802	STUD (1-1/8 - 7 X 4-1/4 G8)	4
4	27780	ADAPTER - RH	1
5	27781	ADAPTER - LH	1
6	69089	PILOT, PTO	1
7	22697	CAPSCREW, HEX HEAD (1/2 - 13 X 1 G5)	4
8	69850	O-RING	3
9	27803	WASHER (1-1/8 HARDENED)	4
10	26242	PTO SHAFT	1
11	69106	COUPLING	1
12	32101	RETAINING RING	2
13	70690	CAPSCREW	8
14	31251	WASHER (1)	2
15	22887	NUT (1 - 8)	2
16	33446	STUD (1 - 8 X 1-1/4 G8)	2

# CONTROL GROUP



DIM.	WITH FREESPOOL	WITHOUT FREESPOOL
"A"	9.25 (235 MM)	9.75 (248 MM)
"B"	7.13 (181 MM)	6.13 (156 MM)



ITEM	PART NO.	DESCRIPTION	QTY
1	25696	CONTROL FRAME - WITH FREESPOOL (NOT SHOWN)	1
	28833	CONTROL FRAME - WITHOUT FREESPOOL (NOT SHOWN)	
3	69799	CONTROL CABLE (96 IN. - 2,438 mm)	1
4	69800	CONTROL CABLE (90 IN. - 2,286 mm)	2
6	34196	HOSE, GAUGE, -4 (96 IN. - 2,438 mm)	1

## CONTROL INSTALLATION INSTRUCTIONS:

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

1. Modify tractor right hand console and ripper control cover plate as shown.
2. Remove 1.63 x 4.13 in. (41 x 105 mm) shaded area **ONLY** if equipped with manual override (MOR) brake option.
3. Carefully route control cables, filter light wire, and pressure gauge hose from winch to underside of right hand console.

### **WARNING**

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

4. Pass cables up through control frame to control stand. Install cables to control stand as shown.

**i** **NOTE:** *Move the control levers as necessary to extend the plungers so the cables can be installed. The sliding jam nut may become lodged in the control cable housing during shipment. Hold the cable housing with the open end downward and tap sharply against a hard surface to dislodge the sliding jam nut from the cable housing.*

Temporarily mount control stand in control frame. Position control frame in modified console such that the control cables will not interfere with any tractor control linkage, valves or tubes. Tack weld control frame to console.

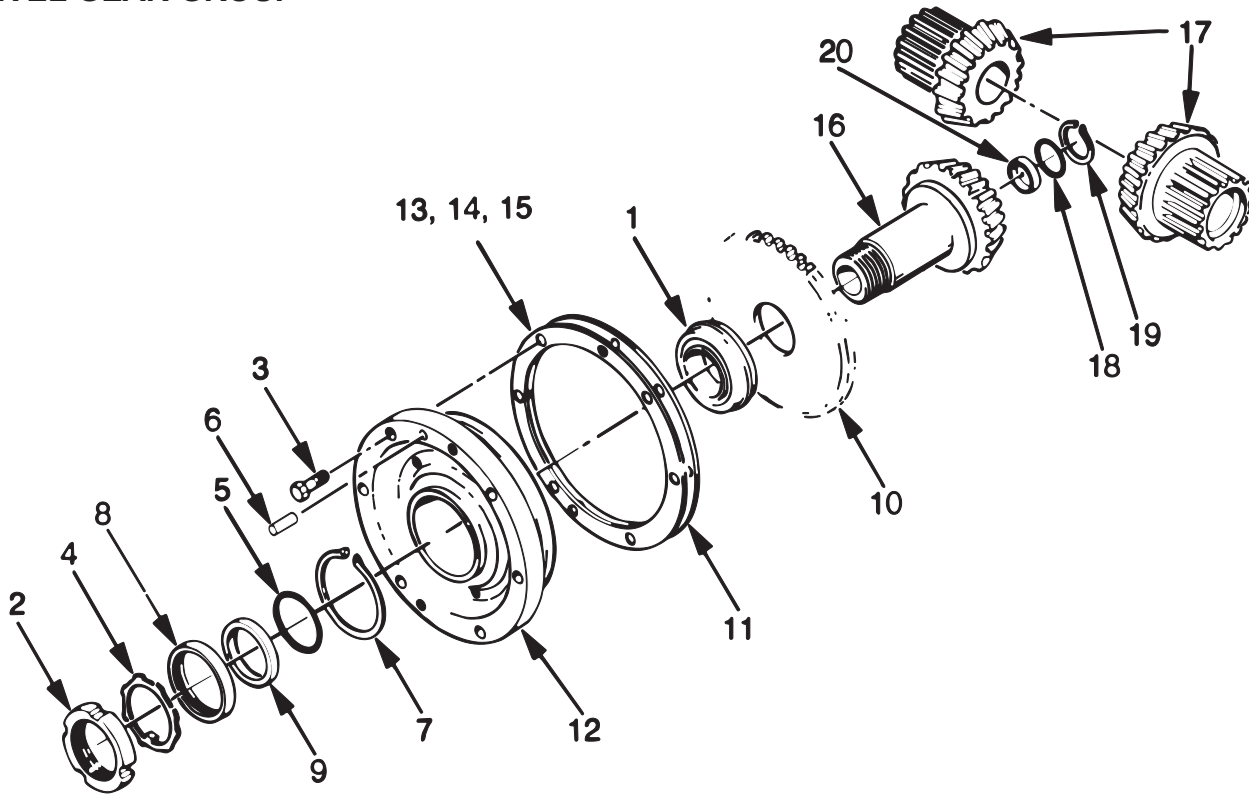
5. Remove control stand from control frame. Finish welding control frame to console. Paint over welds as required.
6. Install filter indicator light assembly into control stand gate plate. Free end of wiring harness must be supplied with 12 to 24 volt-dc. The circuit is grounded through the filter bypass sending unit in the winch.
7. If your winch is equipped with a manual override brake (MOR), refer to the MOR brake section in the winch parts manual for hose connections.
8. Securely install control stand into control frame. Secure cables, gauge hose and light wire with plastic tie straps as required to prevent chaffing.
9. Mount the pressure gauge in clear view of the operator.
10. Fill winch to proper level with recommended oil. Refer to oil specifications found in the Operators Manual.

### **CAUTION**

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

11. Verify proper control cable and pressure adjustment by following the procedures found in the Operators Manual.

# BEVEL GEAR GROUP



ITEM	PART NO.	DESCRIPTION	QTY
1	70077	BEARING ASSEMBLY	1
2	24816	BEARING, LOCK NUT	1
3	22697	CAPSCREW HEX HEAD	6
4	11418	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 DRIVE PINION	1
11	69946	SHIM GASKET	1
12	69961	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	69824	BEVEL PINION (Standard Speed, 26 Teeth, "B" Ratio)	1
	69635	BEVEL PINION (Slow Speed, 14 Teeth, "E" Ratio)	1
17	70350	BEVEL GEAR (Standard Speed, 33 Teeth, "B" Ratio)	2
	70353	BEVEL GEAR (Slow Speed, 39 Teeth, "E" Ratio)	2
18	69813	O-RING	1
19	70162	RETAINING RING	1
20	70626	PLUG, BEVEL PINION	1

## BEVEL GEAR SETS

(Includes 1 Bevel Pinion, 2 Bevel Gears, and 1 each of Items 18, 19 & 20)

NOTE: Bevel Gear Set 69834 does not require items 18, 19 & 20

BEVEL GEAR SET PART NO.	RATIO		
	CODE	GEAR SET	OVERALL
69837	B	1.27:1	51.4:1
69834	E	2.78:1	112.8:1