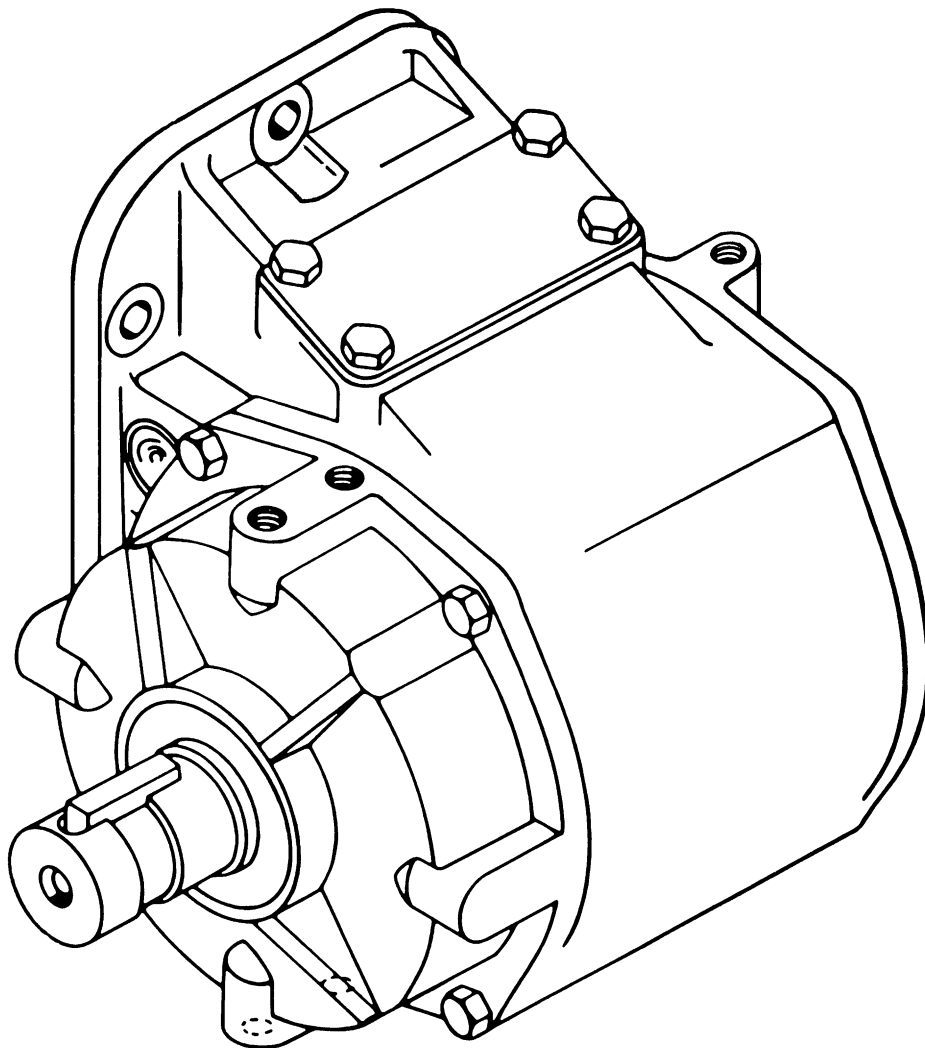




# POWERCLUTCH PTO

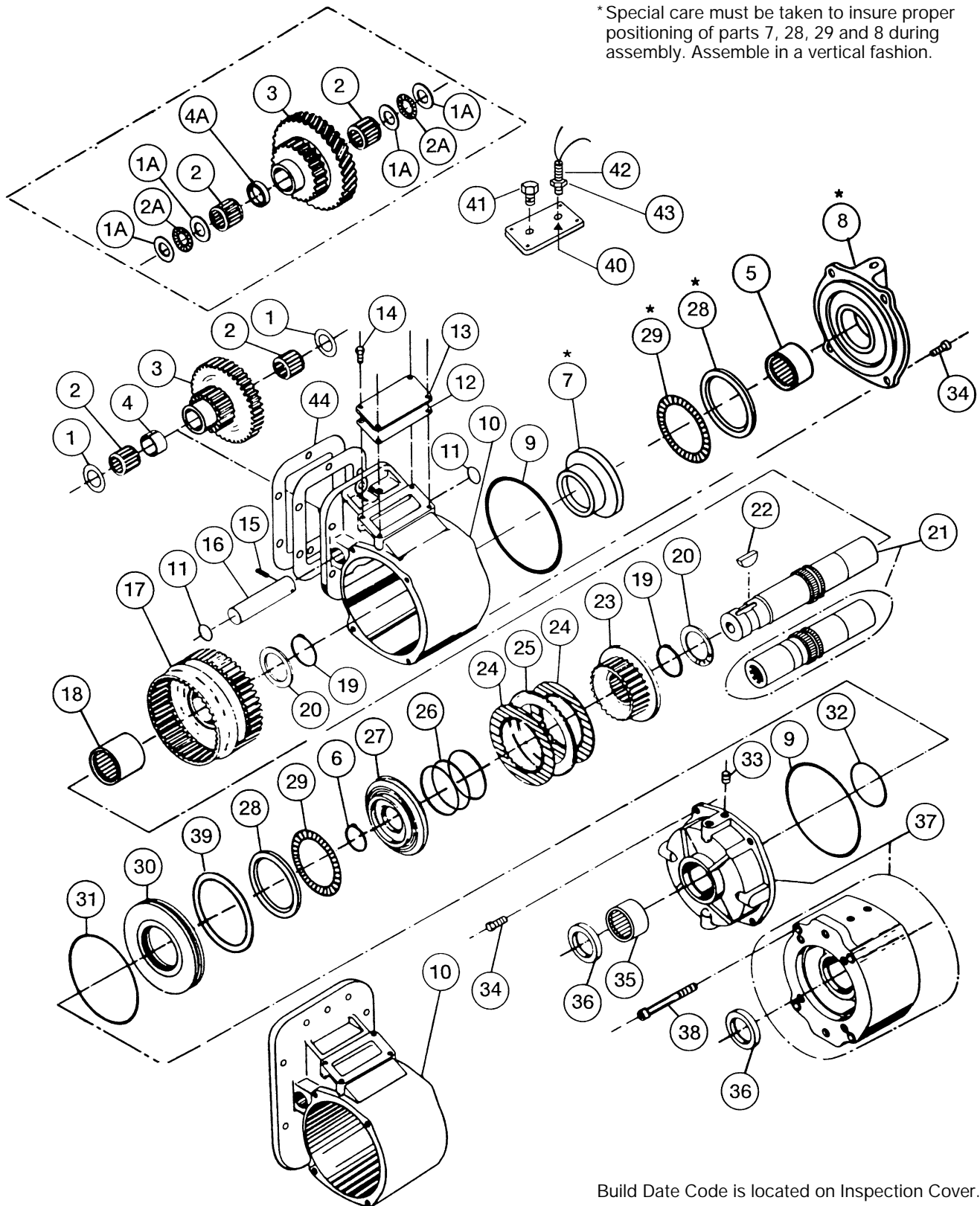
## PARTS LIST AND SERVICE MANUAL

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# POWERCLUTCH PTO EXPLODED VIEW

\*Special care must be taken to insure proper positioning of parts 7, 28, 29 and 8 during assembly. Assemble in a vertical fashion.



Build Date Code is located on Inspection Cover.

# PARTS LIST AND DESCRIPTION

ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	21T31159	Thrust Washer (Spur Gear)			<b>16TK3833</b>	<b>Optional Pulse Generator</b>
1A	4	21T34621	Thrust Washer (S60, S70)				<b>Includes:</b>
2	2	10T34006	Bearing (All)	40	1	16T35523	Cover, Mag Pickup
2A	2	10T34620	Thrust Bearing (S60, S70)	41	1	25T35999	Plug
3	Input Gear – See Gear Listing Table 1 Next Page			42	1	31T35108	Mag Pickup
4	1	18T34007	Spacer (Spur Gear)	43	1	21T35109	Seal Nut
4A	1	18T34622	Spacer (S60, S70)	N.S.	1	34MA1415	Wire Harness
5	1	10T35552	Bearing	N.S.			<b>Installation Kits</b>
6	1	24T24315	Snap Ring		1	48M81200	12 Volt Elect/Air Shift
7	1	49T35524	Thrust Plate		1	48M82400	24 Volt Elect/Air Shift
8	1	15T35954	End Cover (assy 8/93 & later)		1	48M81210	12 Volt Elect/Hyd Shift
9	2	12T34003	O-Ring		1	48M82410	24 Volt Elect/Hyd Shift
10			<b>Housing</b>		1	48M61251	12 Volt Manual Air Shift
	1	01T35956	6-Bolt Mounting		1	48M62451	24 Volt Manual Air Shift
	1	01T35958	8-Bolt Mounting	44			<b>Mounting Gaskets</b>
11	2	12T35949	O-Ring		1	13M13541	Allison Gasket .031 (U60)
12	1	13T34022	Gasket		1	13M35091	.010 6-Bolt
13	1	16T33999	Cover, Inspection		1	13M35092	.020 6-Bolt
14	4	19T34028	Hexhead Capscrew		2	13M35151	.010 8-Bolt
15	1	19T35785	Set Screw – Half Dog Point		2	13M35152	.020 8-Bolt
16	1	07T35947	Shaft, Input Idler	N.S.			<b>Gasket and Seal Kits</b>
17	Output Gear – See Gear Listing Table 1 Next Page					PC-GSK-13 <small>(all old &amp; new units)</small>	Items: 9(2), 11(2), 12(1), 31(1), 32(1), 36(1), and 25T34522(2)
18	1	10T35551	Bearing	N.S.		PC-RBK-13	<b>Rebuild Kits</b>
19	2	24T35480	Snap Ring				Spur Gear PC (w/Build Date Code Before 12/90) Items:
20	2	21T29017	Thrust Washer				1(2), 2(2), 4(1), 6(1), 9(2), 11(2), 12(1), 15(1), 20(2), 22(1), 24(8), 25(7), 29(2), 31(1), 32(1), 35(1), 36(1), & 10T96421(1), 10T34004(2), 24T27240(2), 10T34031(4)
21			<b>Shaft, Output</b>			PC-RBK-13-1	Spur Gear PC (w/Build Date Code 12/90 and After) Items:
	1	06T35445	1.25 Round				1(2), 2(2), 4(1), 5(1), 6(1), 7(1), 9(2), 11(2), 12(1), 15(1), 18(1), 19(2), 20(2), 22(1), 24(8), 25(7), 27(1), 28(2), 29(2), 31(1), 32(1), 35(1), 36(1), 39(1), and 25T34522(2), 26T24616(1), 19T35564(1)
	1	06T35549	7/8-13 Spline ('D' Hyd.)				
	1	06T35385	7/8-13 Spline (F85-'D', 'G' Hyd)				
22	1	26T01627	Woodruff Key				
23	1	02T35454	Gear, Inner Clutch				
24	8	49T33564	Friction Disc				
25	7	49T33563	Spacer Disc				
26	1	27T34005	Spring				
27	1	49T35547	Thrust Plate				
28	2	10T35553	Thrust Race				
29	2	10T28908	Thrust Bearing				
30	1	49T35548	Piston				
31	1	12T34002	O-Ring				
32	1	12T34030	O-Ring				
33	4	25T21684	Pipe Plug 1/8–27 (as req.)				
34	8	19T32740	Hexhead Capscrew				
35	1	10T27485	Bearing	N.S.			<b>Output Shaft and Clutch Pack Assemblies</b> (w/Build Date Code 12/90 & After):
36	1	11T37790	Oil Seal			CCPK-4B-1	04 Ratio Standard Rd. Shaft
37			<b>End Cover, Output</b>			CCPK-4D-1	04 Ratio 7/8-13 Spl Shaft 'D' Hyd
	1	15T35452	Standard for Rd Shaft			CCPK-5B-1	05 Ratio Standard Rd. Shaft
	1	14T35550	'D' Hyd. Option			CCPK-5D-1	05 Ratio 7/8-13 Spl Shaft 'D' Hyd
	1	14T35384	'D' Hyd. Option (F85)			CCPK-7B-1	07 Ratio Standard Rd. Shaft
	1	14T35642	'G' Hyd. Op. (Req. 14T35550)			CCPK-7D-1	07 Ratio 7/8-13 Spl Shaft 'D' Hyd
38			<b>Capscrews Hyd. Flange</b>				Above Assy. include Items: 6(1), 7(1), 17(1), 18(1), 19(2), 20(2), 21(1), 23(1), 24(8), 25(7), 26(1), 27(1)
	4	19T34174	Socket Capscrew ('D', 'G')				
	4	19T35657	Socket Capscrew ('G' Hyd)				
	2	19T34174	Socket Capscrew (F85-'D')				
	2	19T35386	Socket Capscrew (F85-'D')				
39	1	24T35481	Spiral Snap Ring				
N.S.	1	19MK4717	Mounting Kit 'G' Hyd. Only	N.S.		20MK7700	For PC6S 6-Bolt
						20MK8800	For PC8S 8-Bolt
						20MK6605	For PC6S-F85 6-Bolt

## GEAR DATA

TABLE 1	INPUT GEAR ITEM 3			OUTPUT GEAR ITEM 17	
DESIGNATOR	PART NO.	TEETH	GEAR DATA	PART NO.	TEETH
C6112	03T36008	20/28	6.1P 25°PA 32°16'48" LH	02T36004	23
C7012	03T36003	23/28	7P 25°PA 30°46'48" LH	02T36004	23
F8505	03T35702	34/18	8.55P 21°PA Spur	02T35556	34
F8506	03T35321	34/20	8.55P 21°PA Spur	02T35557	31
M6504	03T35159	26/14	6.48P 17.65°PA Spur	02T35554	37
M6507	03T39165	26/22	6.48P 17.65°PA Spur	02T35558	30
S7007	03T96455	25/22	7P 17.5°PA 28°4'23" LH	02T35558	30
S6007	03T35002	20/22	6P 17.5°PA 26°10'37" LH	02T35558	30
U6004	03T34019	24/14	6P 20°PA Spur	02T35554	37
U6042	03T35324	24/15	6P 20°PA Spur	02T35555	36
U6005	03T39289	24/18	6P 20°PA Spur	02T35556	34
U6807	03T34102	24/22	6/8P 20° Spur	02T35558	30
U6812	03T36095	24/28	6/8P 20° Spur	02T36004	23

## MODEL NUMBER CONSTRUCTION

**PC 6S — U68 12 — H 1 B P**

### Design

Powerclutch — PC

### Mounting

S.A.E. 6 Bolt — 6S

S.A.E. 8 Bolt — 8S

### PC Gear Data

6.10P 25° PA 32° 16' 48" LH -C61

7P 25° PA 30° 46' 48" LH -C70

8.5P 21° PA Spur -F85

6.48P 17.65° PA Spur -M65

6P 17.5° PA 26° 10' 37" LH -S60

7P 17.5° 28° 4' 23" LH -S70

6 Pitch 20° PA -U60

6/8 Pitch 20° -U68

### Speed Ratio

04 — .38:1      06 — .65:1

4.2 — .42:1      07 — .73:1

05 — .53:1      12 — 1.20:1

### Special Feature

X — None

P — Pressure Line

R — Pulse Generator/  
No Pressure Lube

S — Pulse Generator/  
Pressure Lube

### Output Type

B — 1.25 Round

D — S.A.E. — B

G — Special

### Assy. Arrangement

1

3

### Shifter Type

A — Manual Air

E — 12V Elec. Air

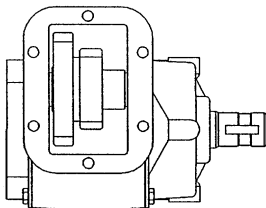
F — 24V Elec. Air

H — 12V Elec. Hyd.

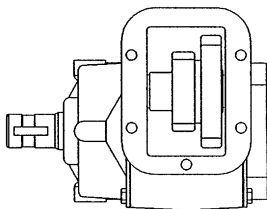
J — 24V Elec. Hyd.

## ASSEMBLY ARRANGEMENTS

1



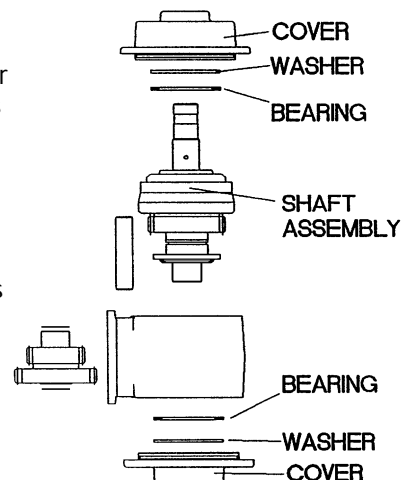
3



## NOTICE:

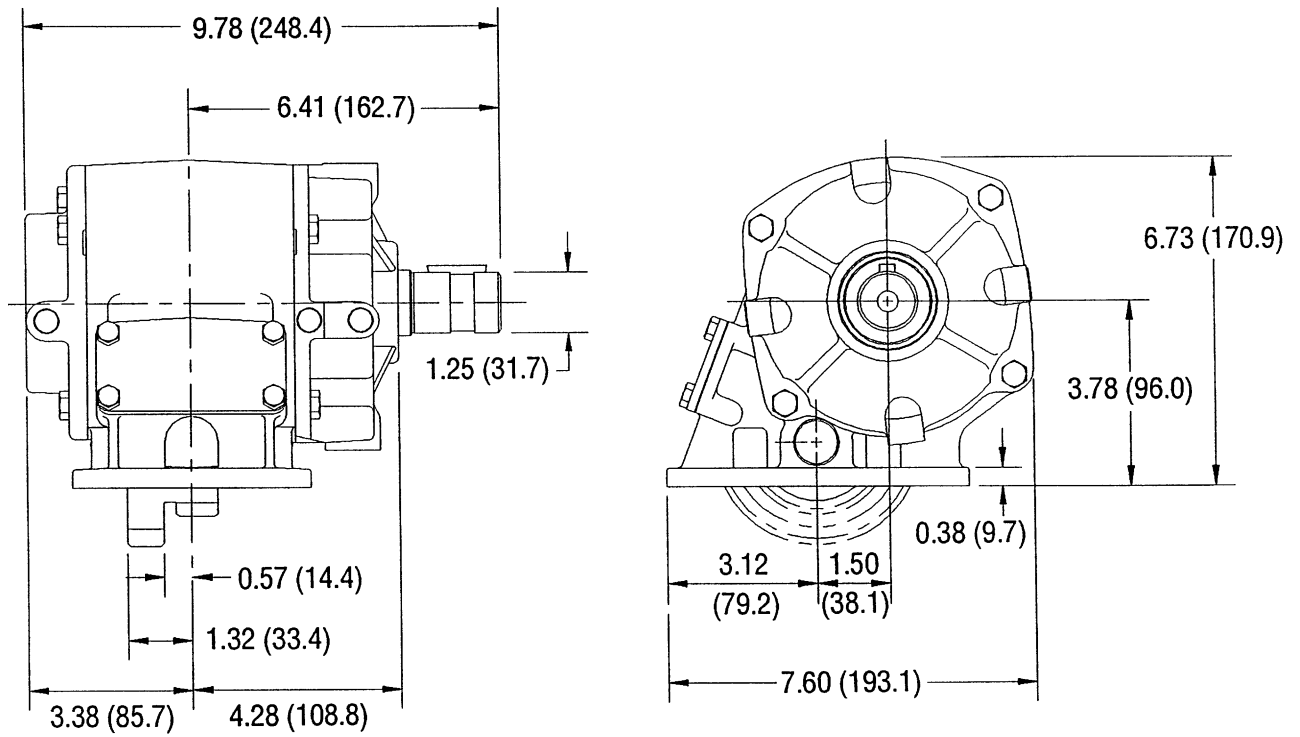
When changing the arrangement or reassembling the power clutch it is important to have the thrust bearings and the thrust washers in the proper order. The shaft should be installed with the PTO held in the vertical position shown here to avoid misalignment of the bearings and washers within the unit.

If you are assembling an older unit with a roll pin holding the idler shaft, then use a new roll pin whenever assembling.

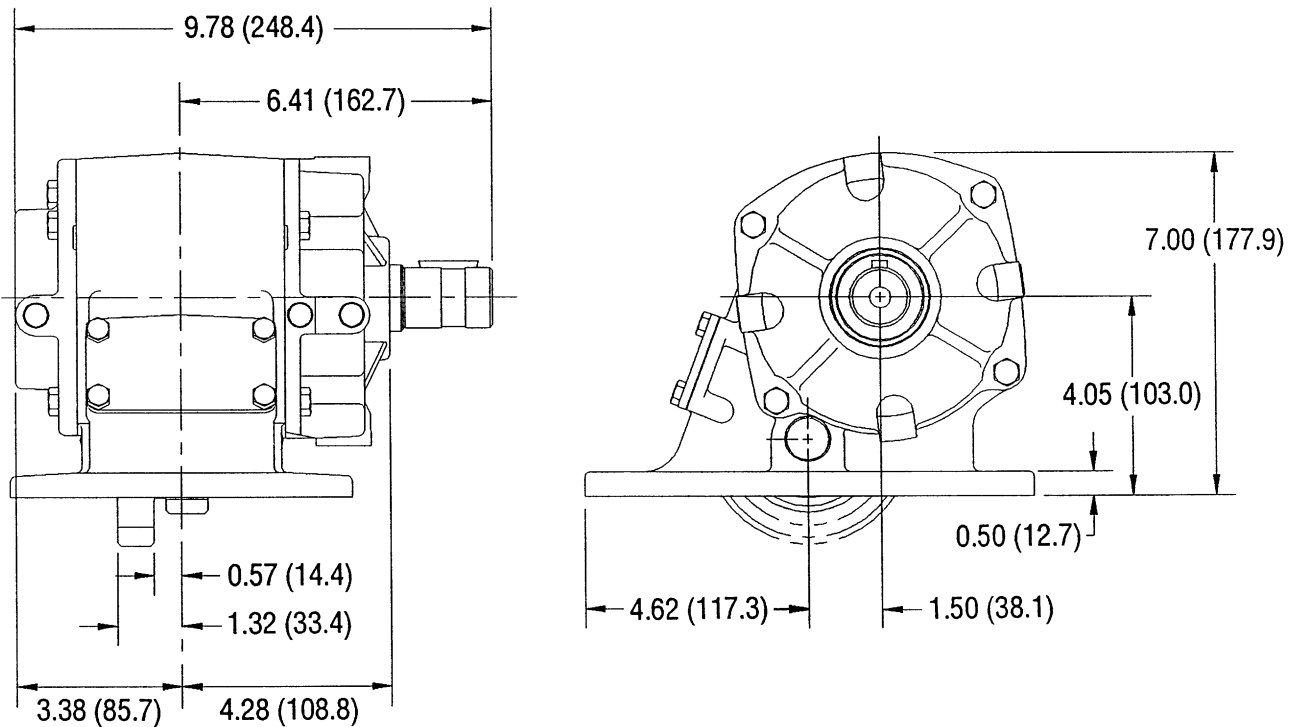


# MOUNTING DIMENSIONS IN INCHES (MM)

## PC6S 6-BOLT MOUNT



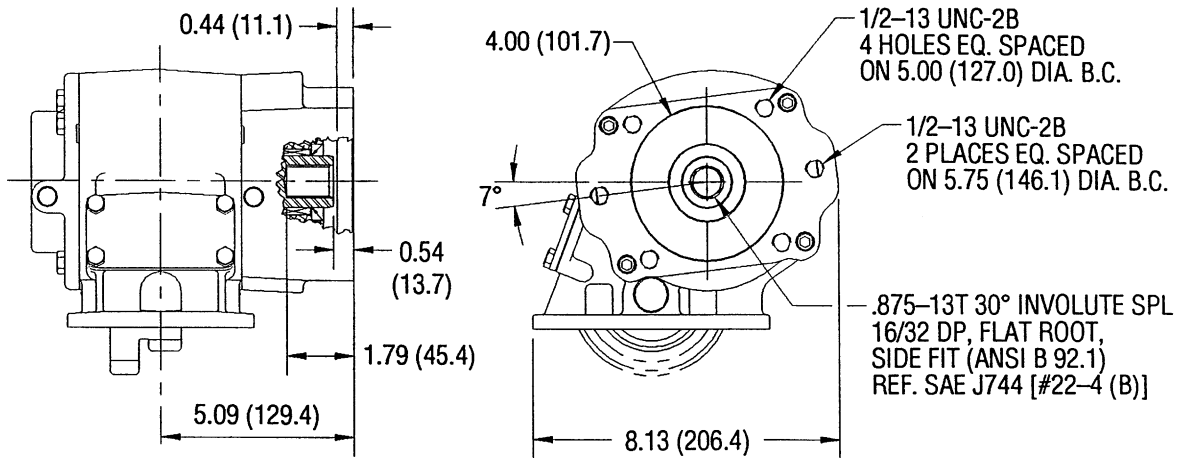
## PC8S 8-BOLT MOUNT



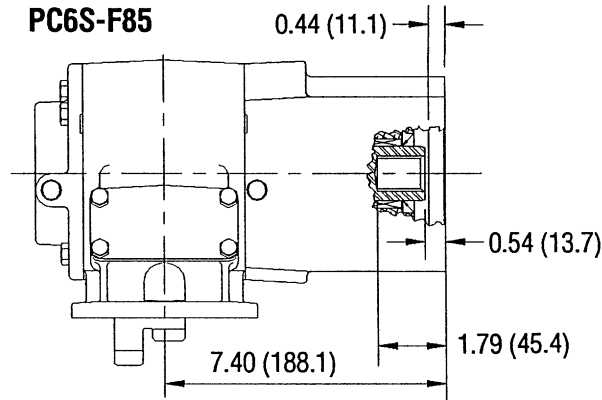
# MOUNTING DIMENSIONS

IN INCHES (MM)

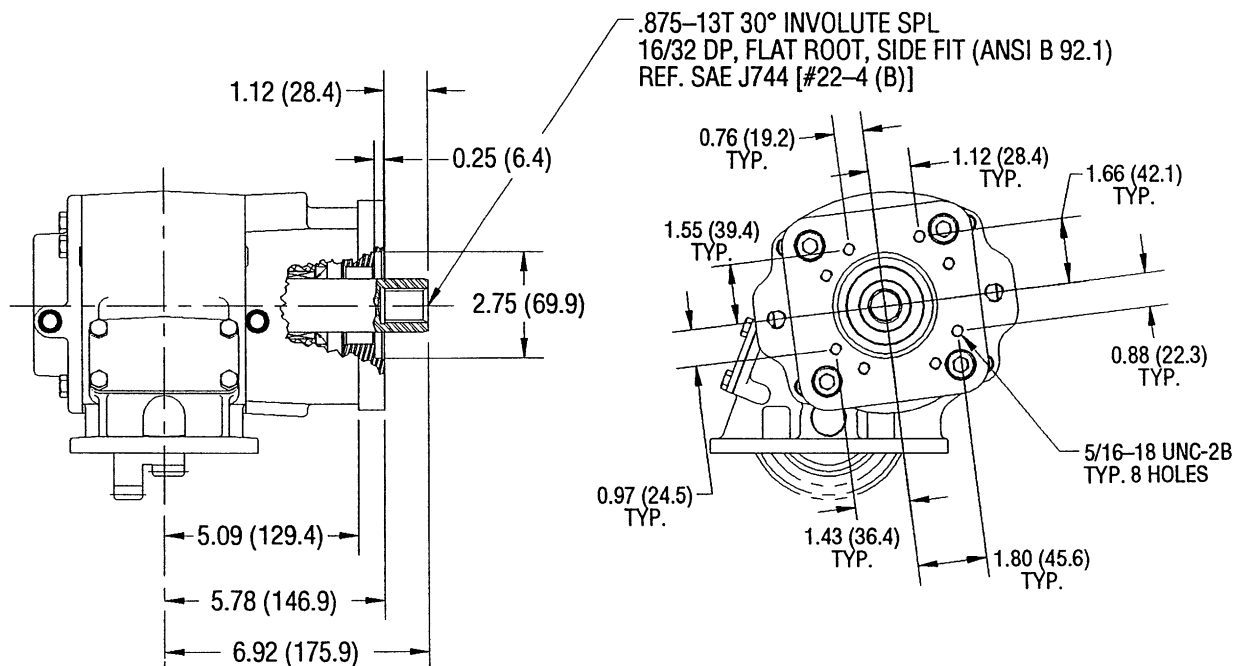
## D - OUTPUT (S.A.E. "B") DIRECT MOUNT



### PC6S-F85

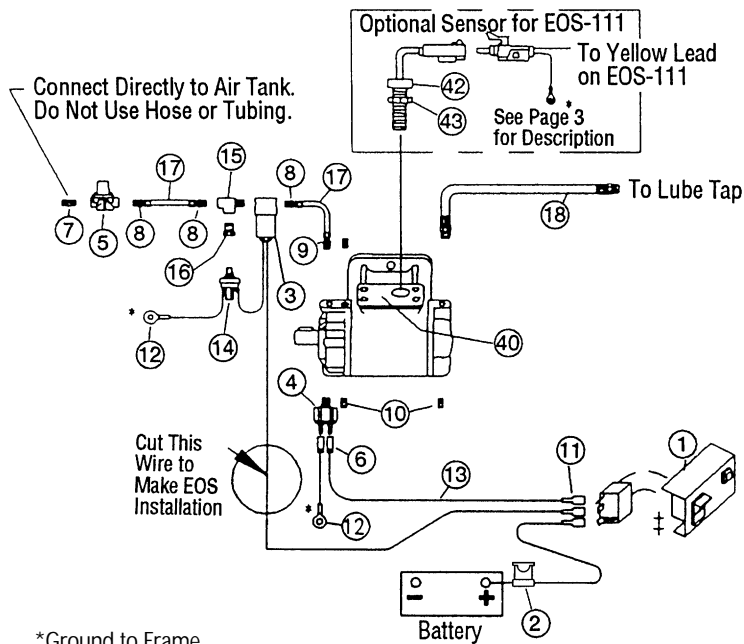


## G - OUTPUT (SPECIAL 4-BOLT) DIRECT MOUNT



# POWERCLUTCH INSTALLATION KITS

## POWERCLUTCH ELECTRIC-AIR SHIFT SYSTEM (For Use When Air Shifting POWERCLUTCH)

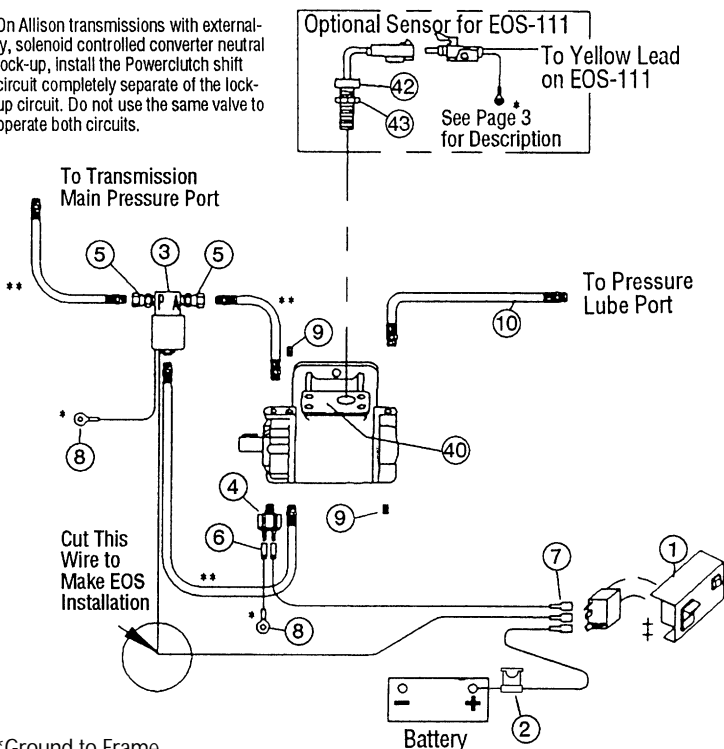


\*Ground to Frame  
See Footnotes 1, 2, 3, 4 Next Page.

KIT NO. 48M81200 12V ELECTRIC AIR SHIFT			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	30M12020	Switch Assembly
2	1	33T36299	Fuse Assembly
3	1	35M30692	12V Solenoid Valve
4	1	30T37954	Pressure Switch
5	1	31M15759	Press. Protection Valve
6	1	34T36941	Wiring Pigtail
7	1	44MB2164	Pipe Nipple
8	3	44MB6844	Male Connector
9	1	44MB6842	Male Connector
10	2	25T21684	Pipe Plug (as required)
11	3	34M18250	Female Spade Connector
12	2	34M18009	Ring Terminal
13	1	37M18144	Electric Wire 12 ft
14	1	31M14732	Pressure Safety Switch
15	1	44MB2254	Street Tee
16	1	44MB0942	Reducer Bushing
Parts Included with PTO (Not with Kit No. 48M81200)			
17	1	45M44430	Air Tubing 30 ft
18	1	45M4R536	Lube Hose Assembly
N.S.	1	43MS5644	Street Tee (F85 only)
For 24V Electric Air Shift Kit No. 48M82400, Substitute:			
1	1	30M24020	24V Switch Assembly
3	1	35M31692	24V Solenoid Valve

## POWERCLUTCH ELECTRIC/HYDRAULIC SYSTEM

On Allison transmissions with externally, solenoid controlled converter neutral lock-up, install the Powerclutch shift circuit completely separate of the lock-up circuit. Do not use the same valve to operate both circuits.

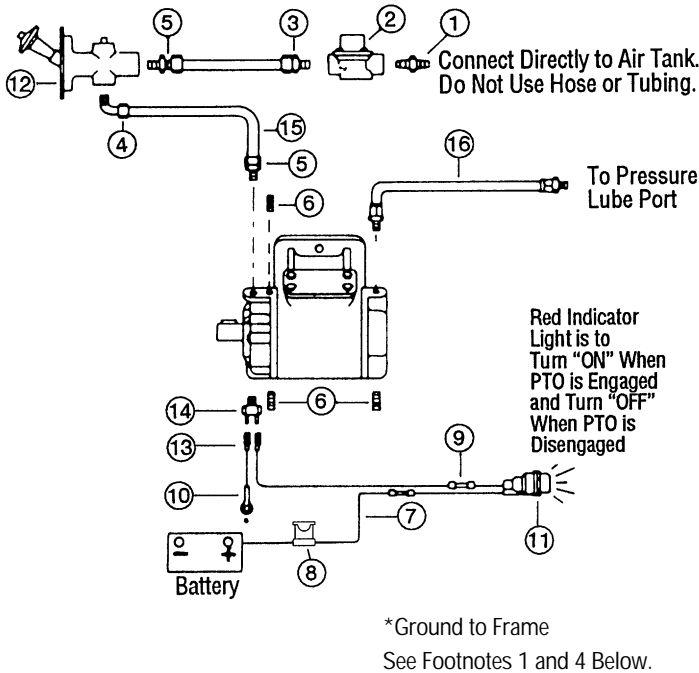


\*Ground to Frame  
\*\*Not supplied with standard installation kit. Order Muncie 131-2-0001 separately.  
See Footnotes 1, 2, 3 Next Page.

KIT NO. 48M81210 12V ELECTRIC/HYDRAULIC SHIFT			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	30M12020	Switch Assembly
2	1	33T36299	Fuse Assembly
3	1	35M12340	12V Solenoid Valve
4	1	30T37954	Pressure Switch
5	2	43MX044S	Screen Adapter
6	1	34T36941	Wiring Pigtail
7	3	34M18250	Female Spade Connector
8	2	34M18009	Ring Terminal
9	2	25T21684	Pipe Plug (as required)
Parts Included with PTO (Not with Kit No. 48M81210)			
10	1	45M4R536	Lube Hose Assembly
N.S.	1	43MS5644	Street Tee (F85 only)
For 24V Electric Hyd Shift Kit No. 48M82410, Substitute:			
1	1	30M24020	24V Switch Assembly
3	1	35M24340	24V Solenoid Valve

# POWERCLUTCH INSTALLATION KITS

## POWERCLUTCH MANUAL AIR SHIFT SYSTEM



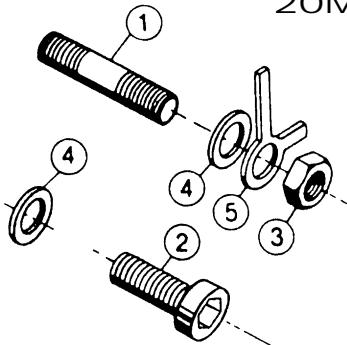
KIT NO. 48M61251 MANUAL AIR SHIFT - 12V LIGHT			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	44MB2164	Pipe Nipple
2	1	31M15759	Press. Protection Valve
3	1	44MB6844	Male Connector
4	1	44MB6942	Male Connector
5	2	44MB6842	Male Connector
6	4	25T21684	Pipe Plug (as required)
7	1	37M18144	Electric Wire 12 ft
8	1	33T36299	Fuse Assembly
9	3	34M18002	Butt Splice
10	1	34M18009	Ring Terminal
11	1	32M12001	Light (12V)
12	1	35M18653	Air Valve
13	1	34T36941	Wiring Pigtail
14	1	30T37954	Pressure Switch
N.S.	1	36MA1004	Dash Bracket
N.S.	1	36M01005	Face Plate
N.S.	1	36MK1007	Bolt Kit
Parts Included with PTO (Not with Kit No. 48M61251)			
15	1	45M44430	Air Tubing 30 ft
16	1	45M4R536	Lube Hose Assembly
N.S.	1	43MS5644	Street Tee (F85 only)

### FOOTNOTES:

1. WARNING: Powerclutch PTO's mounted on automatic transmissions must be lubricated from the lube tap in transmission.
2. Green light in rocker switch is to turn "ON" when PTO is engaged and to turn "OFF" when PTO is disengaged.
3. Solenoid Valve (Item 3) should be mounted on firewall to protect it from corrosive environment.
4. Air Sytem Users...You will not receive any air through the pressure protection valve to the PTO system until your main tank pressure exceeds 65 PSI. Some chassis have dual air sytems, be sure to connect to the main air supply tank or to the connection specified by the vehicle manufacturer.

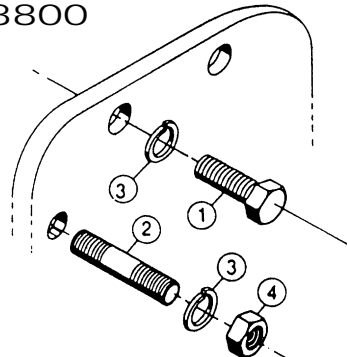
## MOUNTING KITS

### 6-BOLT MOUNTING KIT 20MK7700



ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	20M38144	Stud
2	3	19M38100	Socket Capscrew
3	3	22MX3824	Nut
4	6	13M18018	Copper Washer
5	3	21MX3802	Lock Tab

### 8-BOLT MOUNTING KIT 20MK8800



ITEM	QTY	PART NUMBER	DESCRIPTION
1	6	19M44138	Capscrew
2	2	20M44175	Stud
3	8	21ML4375	Lockwasher
4	2	22MX4420	Nut



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