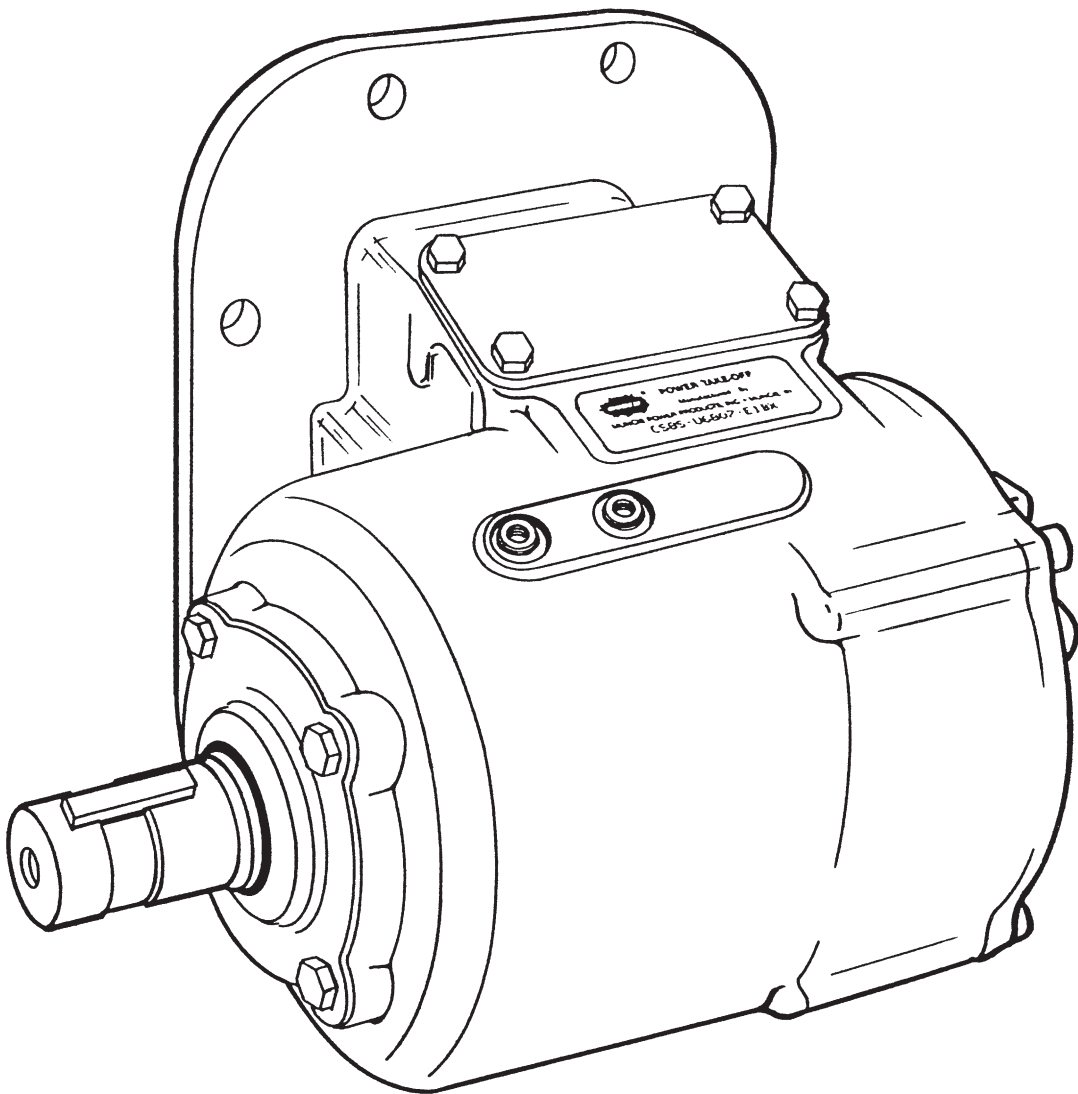




# CS6 & CS8 SERIES CLUTCH SHIFT PTO

## PARTS LIST AND SERVICE MANUAL

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U.S. Pat. 5,542,306



# PARTS LIST AND DESCRIPTION

ITEM	QTY	PART NO.	DESCRIPTION
1	1		See Gear Data Chart Page 4
2	2	10T34006	Input Bearing (03-04)
2a	2	10T35776	Input Bearing (05-14)
3	1	18T34622	Spacer (03-04)
4	4	21T34621	Thrust Race (03-04)
4a	1		See Chart Page 8
5	2	10T34620	Thrust Bearing (03-04)
6	4	19T35237	Capscrew
7	1	15T36717	Bearing Cover, Closed
		15T36860	Closed Cover (CS6G)
8	1	11T36124	Seal
8a	1	24T36894	Snap Ring
9	1	12T34003	O-Ring
10	2	10T21017	Bearing (Only 1 req. for "I" & "Z")
	1	10T38248	Bearing ("I" & "Z")
11	4	26T36175	Roll Pin
12	1	21T36473	Plate
13	1	21T36511	Thrust Washer
14	1	21T36512	Plate
15	1	24T27240	Snap Ring
16	2	24T35480	Snap Ring
17	2	21T29017	Thrust Race
18	1	10T36285	Bearing
19	1		See Output Bell Gear Chart Page 4
20	1	02T35454	Clutch Hub
	1	02T38792	Clutch Hub (I84)
20b	1	24T37951	Snap Ring ("I" & "Z")
21	8	49T33564	Friction Disc
22	7	49T33563	Spacer Disc
23	1	27T36112	Spring
		27T38791	Spring (I84)
24	1	49T36560	Piston
		49T38878	Piston (I84)
		49T38387	Piston ("I" & "Z")
		49T38758	Piston (2 & 4 Assy)
25	1	12T36054	O-Ring
		12T36472	O-Ring (I84)
26	2	12T36471	O-Ring
	1	12T36053	O-Ring ("I" & "Z")
27	1	49T36561	Piston Cup
		49T36464	Piston Cup (I84)
		49T36115	Piston Cup ("I" & "Z")
		49T38757	Piston Cup (2 & 4 Assy)
28	1	24T36470	Snap Ring
29	2	12T35949	O-Ring (03-04)
		12T35774	O-Ring (05-14)
30	1	19T35785	Setscrew
31	1	07T35947	Idle Shaft (03-04)
		07T37071	Idle Shaft (05-14)
32	1	01T36713	6 Bolt Housing (03-04) (1 Arrng)
		01T36706	6 Bolt Housing (03-04) (3 Arrng)
		01T37073	6 Bolt Housing (05-14) (1 Arrng)
		01T37072	6 Bolt Housing (05-14) (3 Arrng)
		01T37107	6 Bolt "N" Housing (05-14) (1 Arrng)
		01T37106	6 Bolt "N" Housing (05-14) (3 Arrng)
		01T37966	6 Bolt "F" Housing "1" (F84 Only)
		01T37965	6 Bolt "F" Housing "3" (F84 Only)
		01T38337	6 Bolt Housing (05-14) (3 Arrng) ("I" & "Z")
		01T38338	6 Bolt Housing (05-14) (1 Arrng) ("I" & "Z")
		01T39411	6 Bolt Housing Special (39409)
		01T36715	8 Bolt Housing (03-04) (1 Arrng)
		01T36711	8 Bolt Housing (03-04) (3 Arrng)
		01T37075	8 Bolt Housing (05-14) (1 Arrng)
		01T37074	8 Bolt Housing (05-14) (3 Arrng)
		01T38350	8 Bolt Housing (05-14) (3 Arrng) ("I" & "Z")
		01T38351	8 Bolt Housing (05-14) (1 Arrng) ("I" & "Z")
33	1	06T36892	Output Shaft "B" 1-1/4 Rd
		06T37088	Output Shaft "G" Dana Special
		06T36893	Output Shaft "K" & "V" 7/8 - 13 Spl
		06T37090	Output Shaft "Q" & "S" 7/8-13 Spl
		06T37089	Output Shaft "P" 1"-15 Spl
		06T38964	Output Shaft "R" 5/8"-9T Spl
		06T37336	Output Shaft "T" 3/4"-11 Spl

ITEM	QTY	PART NO.	DESCRIPTION
33	continued	06T37372	"2" "C" "X" Rd. 21-Spline
		06T37167	Output Shaft "B" CS6G
		06T37168	Output Shaft "K" "V" CS6G
		06T39526	Output Shaft "I" CS6G
		06T36996	Output Shaft "I"
		06T38908	Output Shaft "Z"
		06T38767	Output Shaft "B" Only (2 & 4 Assy)
		06T39533	Output Shaft "K" Only (2 & 4 Assy)
34	1	26T01627	Woodruff Key
35	1	12T36751	O Ring
		12T38344	O Ring ("I" & "Z")
36	1	11T37790	Seal
		11T37795	Seal ("I" & "Z")
37	1	15T34576	Bearing Cover, Open ("B" "2" "C" "X")
		14T35537	Hyd Flange ("K" "P" "Z" Only)
		14T39137	Hyd Flange ("G" Only)
		14T38354	Hyd Flange ("I" Only)
		14T39141	Hyd Flange ("Q" "R" "T" Only)
		14T35464	Hyd Flange ("S" Only)
		14T37779	Hyd Flange ("V" Only)
		14T38343	Hyd Flange ("Z" Only)
		14T37378	"2" Companion Flange
		14T37357	"C" Companion Flange
37c	1	19T38266	Capscrew ("2" "C" "X")
37d	1	21T20092	Flat Washer ("2" "C" "X")
38	4	19T33233	Capscrew ("B")
39	4	19T34462	Socket Capscrew "K" "P" "V" "Z" Hyd
		19T39257	Socket Capscrew "G" "Q" "S" "T" Hyd
		19M84478	Socket Capscrew "I"
40	1	28T36546	Spacer
40b	1	24T38347	Snap Ring
41	1	16T33999	Cover
42	4	19T34028	Capscrew
43	1	13T34022	Gasket
44	4	25T21684	Pipe Plug
45	4	19T36174	Setscrew
46	4	27T36173	Spring (2 Pcs Only) (U60, A68)
47	1	25T35724	Cap Plug "K" "S" "Q" "G" "Z" (Storage Only)
		25T35725	Cap Plug "P" (Storage Only)
		25T37387	Cap Plug "T"
		25T37767	Cap Plug "I"
48	1	13M13541	Allison Gasket .031 (U60, A68, A69)
	1	13M35091	Gasket .010 6-Bolt
	1	13M35092	Gasket .020 6-Bolt
	2	13M35151	Gasket .010 8-Bolt
	2	13M35152	Gasket .020 8-Bolt
	1	13T35198	Gasket .010 (I85)
	1	13T35199	Gasket .020 (I85)
49	1	43T37385	Orifice Fitting (P - Special Option)
50	2	26T37992	Dowel Pin (F84 Only)
N.S.	1	CS6-GSK	<b>Gasket Kit</b>
		CS6-GSK-IZ	Includes: (1)8, (1)9, (1)25, (2)26*, (2)29, (1)35*, (1)36*, (1)43, (1)13M35091, (1)13M35092
N.S.	1	CS8-GSK	<b>Gasket Kit</b>
		CS8-GSK-IZ	Includes: (1)8, (1)9, (1)25, (2)26*, (2)29, (1)35*, (1)36*, (1)43, (1)13M35151, (1)13M35152
N.S.	1	CS6-RBK-03	<b>Rebuild Kit (03 &amp; 04)</b>
		CS6-RBK-05	<b>Rebuild Kit (05 - 14)</b>
		CS6-RBK-03-IZ	Includes: (2)2*, (4)4*, (2)5*, (1)8, (1)8a, (1)9, (2)10*, (1)13, (1)15, (2)16, (2)17, (1)18, (1)20b*, (8)21, (7)22, (1)23, (1)25, (2)26, (1)28, (2)29*, (1)35*, (1)36*, (1)43, (2)46, (1)13M35091, (1)13M35092
N.S.	1	CS8-RBK-03	<b>Rebuild Kit (03 &amp; 04)</b>
		CS8-RBK-05	<b>Rebuild Kit (05 - 14)</b>
		CS8-RBK-03-IZ	Includes: (2)2*, (4)4*, (2)5*, (1)8, (1)9, (2)10*, (1)13, (1)15, (2)16, (2)17, (1)18, (1)20b*, (8)21, (7)22, (1)23, (1)25, (2)26, (1)28, (2)29*, (1)35*, (1)36*, (1)43, (4)46, (1)13M35151, (1)13M35152
		CS8-RBK-05-IZ	
			*Use part no. as required by ratio no. and/or output.

# GEAR DATA

## INPUT GEAR - ITEM 1

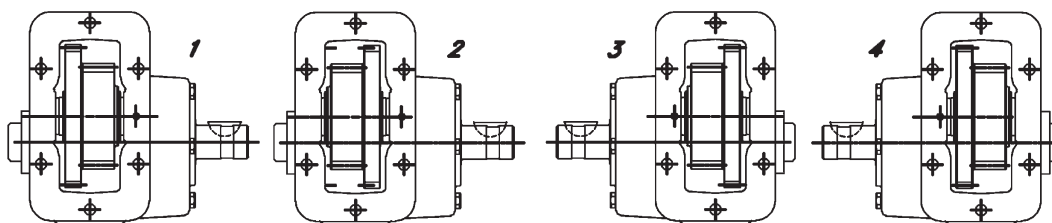
DESIG.	PART NO.	TEETH	GEAR DATA	DESIG.	PART NO.	TEETH	GEAR DATA
A6803	03T37028	26/14	6.86P 20° PA SPUR	I8507	03T37092	38/23	8.46P 20° SPUR
A6804	03T37910	26/17	6.86P 20° PA SPUR	M6504	03T36775	26/17	6.48P 17.65° PA SPUR
A6805	03T37911	26/18	6.86P 20° PA SPUR	M6505	03T37070	26/18	6.48P 17.65° PA SPUR
A6907*	03T37980	30/23	6.86P 20° PA SPUR	M6507	03T37058	26/23	6.48P 17.65° PA SPUR
C6112	03T37067	20/30	6.1P 25° PA 32° 16'48" LH	M6509	03T37059	26/26	6.48P 17.65° PA SPUR
C7009	03T37652	23/26	7P 25° PA 30° 46'48" LH	M6512	03T37060	26/30	6P 17.5° PA SPUR
C7012	03T37068	23/30	7P 25° PA 30° 46'48" LH	M8306	03T38760	30/20	8.38P 19.16° PA 24°58' LH
F1012	03T37984	42/30	10.1P 20° PA SPUR	M8309	03T38762	30/26	8.38P 19.16° PA 24°58' LH
F1107	03T37156	42/23	10.1P 21.5° PA SPUR	S6007	03T37061	21/23	6.48P 17.65° PA 26°10'37" LH
F6107	03T37147	21/23	6.1P 20.5° PA 29° LH	S6807	03T37062	26/23	6/8P 20° SPUR
F6307	03T37086	24/23	6.35P 20° PA 22° LH	S6809	03T37063	26/26	6/8P 20° SPUR
F6309	03T38356	24/26	6.35P 20° PA 22° LH	S6812	03T37064	26/30	6/8P 20° SPUR
F6312	03T37087	24/30	6.35P 20° PA 22° LH	S6814(8-Bt)	03T37110	26/33	6/8P 20° SPUR
F6607	03T38502	24/23	6.65P 20° PA 21.5° LH	S7009	03T37065	24/26	7P 17.5° PA 28° 4'23" LH
F6609	03T38503	24/26	6.65P 20° PA 21.5° LH	S7107	03T37149	29/23	7P 17.5° PA 18° LH
F6612	03T38504	24/30	6.65P 20° PA 21.5° LH	S7109	03T37134	29/26	7P 17.5° PA 18° LH
F7005	03T38195	26/18	7P 23° 26° LH	S7307	03T37919	28/23	7P 22.5° PA 19° LH
F7007	03T38194	26/23	7P 23° PA 26° LH	S7309	03T38171	28/26	7P 22.5° PA 19° LH
F8405	03T37741	28/18	8.38P 18° PA 33.1° LH	S7312	03T38170	28/30	7P 22.5° PA 19° LH
F8407	03T37742	28/23	8.38P 18° PA 33.1° LH	U6003	03T36737	24/14	6P 20° PA SPUR
F8409	03T37743	28/26	8.38P 18° PA 33.1° LH	U6004	03T36738	24/17	6P 20° PA SPUR
F8507	03T37066	34/23	8.55P 21° PA SPUR	U6005	03T37069	24/18	6/8P 20° PA SPUR
F8607	03T39447	28/23	8.38P 18° PA 33.1° RH	U6806	03T38262	24/20	6/8P 20° SPUR
F8609	03T39448	28/26	8.38P 18° PA 33.1° RH	U6807	03T37038	24/23	6/8P 20° SPUR
I8403	03T37329	34/14	8.46P 20° PA SPUR	U6809	03T37039	24/26	6/8P 20° SPUR
I8404	03T37330	34/17	8.46P 20° PA SPUR	U6812	03T37040	24/30	6/8P 20° SPUR
I8405	03T37331	34/18	8.46P 20° PA SPUR	U6814(8-Bt)	03T37042	24/33	6/8P 20° SPUR
I8407	03T37332	34/23	8.46P 20° PA SPUR				
I8505	03T37091	38/18	8.46P 20° SPUR				

*\*Requires 23M60270 and 20TK4360 (pg 9) to mount, included in PTO.*

## OUTPUT BELL GEAR - ITEM 19

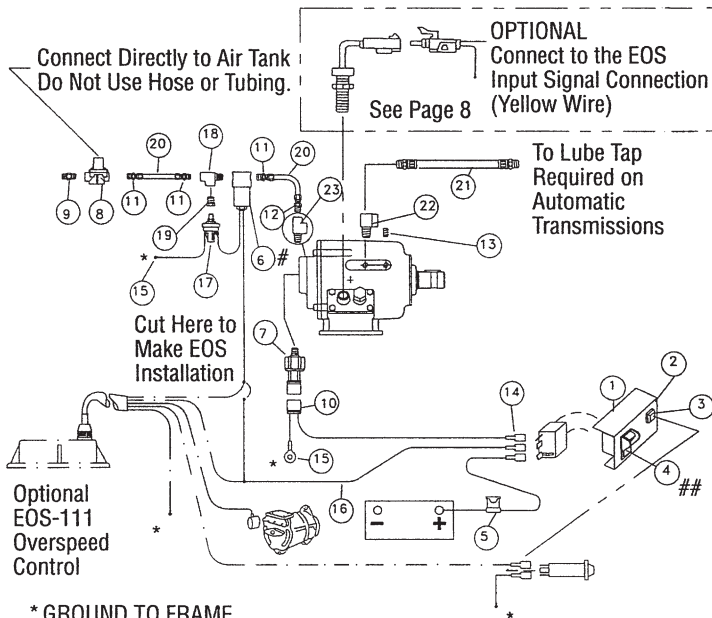
PART NO.	RATIO	TEETH	PART NO.	RATIO	TEETH
02T36744	03	42T	02T38988	03	42T (I & Z Output)
02T36745	04	39T	02T38989	04	39T (I & Z Output)
02T36746	05	38T	02T38990	05	38T (I & Z Output)
02T37913	06	36T	02T38991	06	36T (I & Z Output)
02T36747	07	33T	02T38817	07	33T (I & Z Output)
02T36748	09	30T	02T38992	09	30T (I & Z Output)
02T36749	12	26T	02T38994	12	26T (I & Z Output)
02T36750	14	23T	02T38995	14	23T (I & Z Output)
			02T38764	06	36T (2 & 4 Ass'y)
			02T38766	09	30T (2 & 4 Ass'y)

## PTO ASSEMBLY ARRANGEMENTS



# CS6 & CS8 INSTALLATION KITS

## CLUTCH SHIFT ELECTRIC/AIR SHIFT SYSTEM KIT NO. 48TK3928 12V ELECTRIC AIR SHIFT (For Use When Air Shifting CLUTCH SHIFT)



- \* GROUND TO FRAME
- # Solenoid to be mounted in engine compartment out of direct spray of road contaminants.
- ## Green light to turn "ON" when PTO switch is activated.

ITEM	QTY	PART NO.	DESCRIPTION
1	1	30T36270	Switch Assembly 12v (Incl 1,2,3,4)
2	1	36MA1005	Switch Bracket
		36M01006	Face Plate W/Overspeed Light Access
		36T36271	Face Plate W/O Light Access
3	1	32MSR12V	Light Assembly 12v
4	1	30T35687	Rocker Switch 12v
5	1	33T36299	Fuse Assembly
6	1	35M30692	Solenoid Valve 12v
7	1	30T37954	Pressure Switch
8	1	31M15759	Pressure Protection Valve
9	1	44MB2164	Pipe Nipple
10	1	34T36941	Wiring Pigtail
11	2	44MB6844	Male Connector
12	2	44MB6842	Male Connector
13	1	25T21684	Pipe Plug (Use As Req.)
14	3	34M18250	Female Spade Connector
15	2	34M18009	Ring Terminal
16	12	37M18000	Electric Wire 12ft
17	1	31M14732	Pressure Safety Switch (80 PSI)
18	1	44MB2254	Street Tee
19	1	44MB0942	Reducer Bushing
N.S.	1	48TA3953	Solenoid Mntg Kit

**Parts Included with PTO (Not with Kit No. 48TK3928) "P" Special Option:**

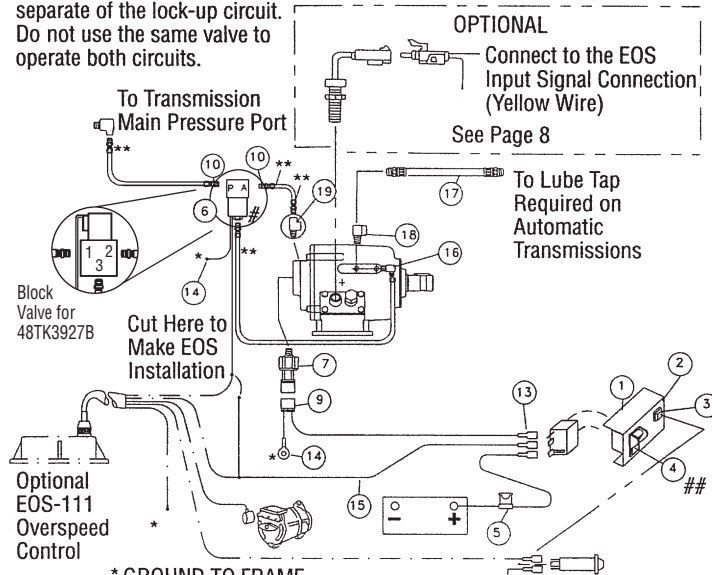
20	1	45M44430	Air Tubing 30ft
21	1	45M4R536	Lube Hose Assembly
22	1	43T37385	Orifice Fitting
23	1	44MB2252	Street Tee
N.S.	1	43M05522	Addl. Elbow (F85 Only)
N.S.	2	43T37429	Fitting (185 Only)

**For 24V Electric/Air Kit No. 48TK3931, Substitute:**

	1	30T36453	Switch Assembly 24v (Incl 1,2,3,4)
3	1	32MSR24V	Light Assembly 24v
4	1	30T35712	Rocker Switch 24v
6	1	35M31692	Solenoid Valve 24v

## CLUTCH SHIFT ELECTRIC/HYDRAULIC SYSTEM KIT NO. 48TK3927 12V ELECTRIC/HYDRAULIC SHIFT KIT NO. 48TK3927B 12V ELEC/HYD SHIFT (BLOCK VALVE)

On Automatic Transmissions with externally, controlled converter neutral lock-up, install the Clutch Shift activation 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.
- # Solenoid to be mounted in engine compartment out of direct spray of road contaminants.
- ## Green light to turn "ON" when PTO switch is activated.

ITEM	QTY	PART NO.	DESCRIPTION
1	1	30T36270	Switch Assembly 12v (Incl 1,2,3,4)
2	1	36MA1005	Switch Bracket
		36M01006	Face Plate w/Overspeed Light Access
		36T36271	Face Plate w/o Light Access
3	1	32MSR12V	Light Assembly 12v
4	1	30T35687	Rocker Switch 12v
5	1	33T36299	Fuse Assembly
6*	1	35M12340	Solenoid Valve 12v (48TK3927)
		35M12340A	Solenoid Valve 12v (48TK3927B)
7	1	30T37954	Pressure Switch
9	1	34T36941	Wiring Pigtail
10	2	43MX044S	Screen Adapter
13	3	34M18250	Female Spade Connector
14	2	34M18009	Ring Terminal
15	12	37M18000	Electric Wire 12ft
16	1	43T35867	Elbow, Pipe to JIC incl. w/parts bag
N.S.	1	48TA3953	Solenoid Mntg Kit (48TK3927)
N.S.	2	19T36623	Capscrew (48TK3927B)
N.S.	2	22T35140	Hex Nut (48TK3927B)
N.S.	2	21T37991	Lock Washer (48TK3927B)

**Parts Included with PTO (Not with Kit No. 48TK3927) "P" Special Option:**

17	1	45M4R536	Lube Hose Assembly
18	1	43T37385	Orifice Fitting

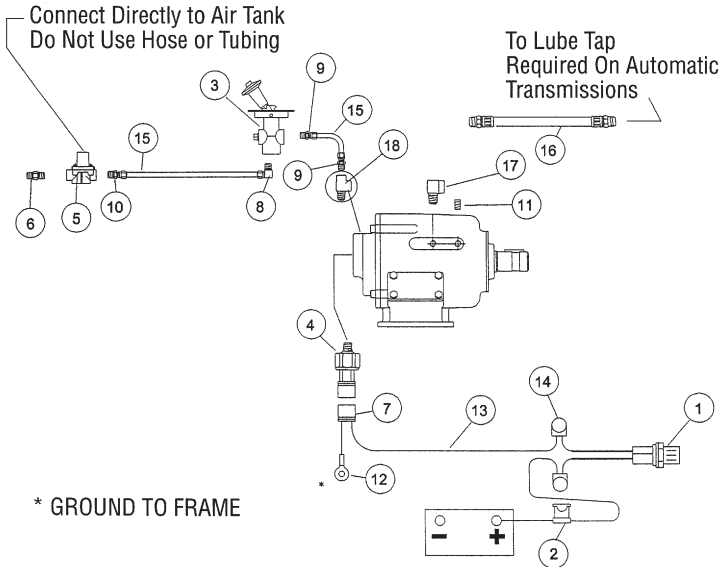
**For 24V Electric/Hydraulic Kit No. 48TK3930, Substitute:**

19	1	44MB2252	Street Tee
N.S.	1	43M05522	Addl. Elbow (F85 Only)
N.S.	2	43T37429	Fitting (185 Only)
		30T36453	Switch Assembly 24v (Incl 1,2,3,4)
3	1	32MSR24V	Light Assembly 24v
4	1	30T35712	Rocker Switch 24v
6*	1	35M24340	Solenoid Valve 24v (48TK3930)
		35M24340A	Solenoid Valve 24v (48TK3930B)

\* Solenoid Valve Block Type is used for new kits with "B" suffix.

# CS6 & CS8 INSTALLATION KITS

## CLUTCH SHIFT MANUAL AIR SHIFT SYSTEM KIT NO. 48TK4508 MANUAL AIR SHIFT - 12V LIGHT



ITEM	QTY	PART NO.	DESCRIPTION
1	1	32M12001	Light Assembly 12v
2	1	33T36299	Fuse Assembly
3	1	35M18653	Air Valve
4	1	30T37954	Pressure Switch
5	1	31M15759	Pressure Protection Valve
6	1	44MB2164	Pipe Nipple
7	1	34T36941	Wiring Pigtail
8	1	44MB6942	Fitting - Elbow
9	2	44MB6842	Male Connector
10	1	44MB6844	Male Connector
11	1	25T21684	Pipe Plug
12	2	34M18009	Ring Terminal
13	12	37M18000	Electric Wire 12ft
14	3	34T36362	Closed End Crimp
N.S.	1	36MA1004	Dash Bracket
N.S.	1	36T38978	Face Plate
N.S.	1	36MK1007	Bolt Kit
<b>Parts Included with PTO (Not with Kit No. 48TK3926) "P" Special Option:</b>			
15	1	45M44430	Air Tubing 30ft
16	1	45M4R536	Lube Hose Assembly
17	1	43T37385	Orifice Fitting
18	1	44MB2252	Street Tee
N.S.	1	43M05522	Elbow
N.S.	2	43T37429	Fitting (185 Only)
<b>For 24V Manual Air Kit No. 48TK4509, Substitute:</b>			
1	1	32M24001	Light Assembly 24v

## MODEL NUMBER CONSTRUCTION

**CS 6S — M65 07 — E 1 B X**

### PTO Type

Clutch Shift — CS

### Mounting

SAE 6 Bolt Std. Mtg. — 6S  
 SAE 6 Bolt Non-Std. Mtg. — 6D  
 SAE 6 Bolt Non-Std. Mtg. (Isuzu) — 6N  
 SAE 6 Bolt Std. Mtg., Metric Stud Kit — 6B  
 SAE 6 Bolt Deep Mtg., Metric Stud Kit — 6C  
 SAE 6 Bolt Std., Less Drag Brake (CS6 Only) — 6G  
 SAE/ISO 6 Bolt Std., w/Dowel Holes — 6F  
 SAE 8 Bolt Std., Less Drag Brake (CS8 Only) — 8G  
 SAE 8 Bolt Std. Mtg. — 8S  
 SAE 8 Bolt Deep Mtg. — 8D  
 SAE 8 Bolt Std. Mtg., Metric Stud Kit — 8B  
 SAE 8 Bolt Deep Mtg., Metric Stud Kit — 8C

### Trans.

### CS Gear Data

Aisin	8.46P 20°PA Spur	— I84
Allison	6.86P 20°PA Spur	— A68, A69
Clark	6.1P 25°PA 32.28° LH	— C61
Clark	7P 25°PA 30.78° LH	— C70
Fuller	1.01P 20°PA Spur	— F10
Fuller	1.01P 21.5°PA Spur	— F11
Fuller	6.1P 20.5°PA 29° LH	— F61
Fuller	6.35P 20°PA 22° LH	— F63
Fuller	6.65P 20°PA 21.5° LH	— F66
Fuller	6.1P 23°PA 26° LH	— F70
Fuller	8.38P 18°PA 33.1° LH	— F84
Fuller	8.55P 21°PA Spur	— F85
Fuller	8.38P 18°PA 33.1° RH	— F86
Isuzu	8.46P 20°PA Spur	— I85
Mack	6.48P 17.65°PA Spur	— M65
Mercedes	8.38P 19.16°PA 24°58' LH	— M83
Spicer	6P 17.5°PA 28.7° LH	— S60
Spicer	6 or 6/8P 20°PA Spur Deep Dish	— S68
Spicer	7P or 17.5°PA 28.07° LH	— S70
Spicer	7P 17.5°PA 18° LH	— S71
Spicer	7P 22.5°PA 19° LH	— S73
Universal	6P 20°PA Spur	— U60
Universal	6 or 6/8P 20°PA Spur	— U68

### Special Feature

X — None  
 C — Pulse Generator/Pres Lube/EOS-111  
 D — Pulse Generator/EOS-111  
 P — Pressure Lube  
 R — Pulse Generator/No Pressure Lube  
 S — Pulse Generator/Pressure Lube

### Output Type

B — 1-1/4 Round 5/16 KW  
 C — 1410 Companion Flange  
 G — Special  
 I — DIN 5462  
 K — SAE "B" 2 & 4 Bolt  
 P — SAE "BB" 2 & 4 Bolt  
 Q — SAE "A" 7/8" 13 Spl.  
 R — SAE "A" 2 Bolt 5/8" 9 Spl.  
 S — SAE "B" 2 Bolt  
 T — SAE "A" 3/4" 11 Spl. 2 Bolt  
 V — SAE "B" 2 & 4 Bolt  
 X — 1.3-21 Spline  
 Z — DIN Companion Flange  
 Z — SAE "C" 14 Spl. Shaft, SAE "B" Flange

### Assembly Arrangement

1 2 3 4

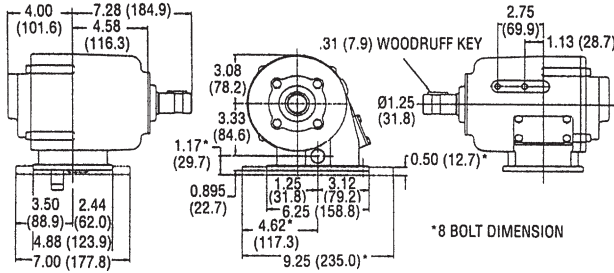
### Shifter Type

A — Manual Air (12V)  
 E — Elect/Air (12V)  
 F — Elect/Air (24V)  
 H — Elect/Hyd (12V)  
 K — Manual Air (24V)  
 J — Elect/Hyd (24V)  
 P — Air, Less Activation Kit

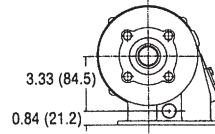
### Speed Ratio

03 — .33:1    09 — .87:1  
 04 — .44:1    12 — 1.15:1  
 05 — .47:1    14 — 1.44:1 (8 Bolt Only)  
 06 — .55:1  
 07 — .70:1

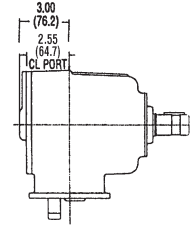
# CS6 & CS8 DIMENSIONS IN INCHES (MM)



CS6/8S HOUSING DIMENSION

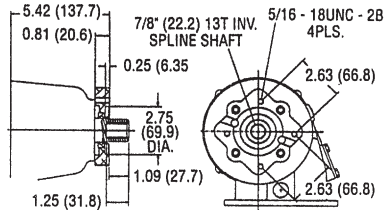


CS6N HOUSING DIMENSION

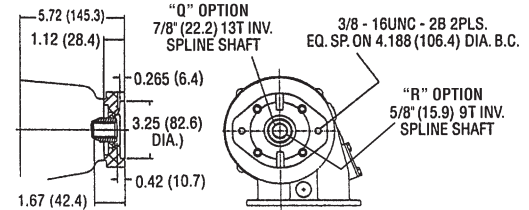


CS6G HOUSING OPTION  
"B" OR "K" SHAFT ONLY.  
NO DRAG BRAKE.

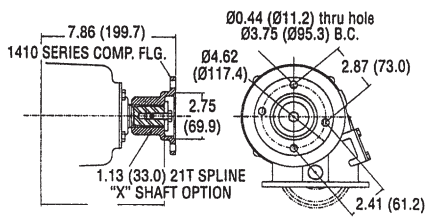
## STANDARD 1-1/4" ROUND KEYED SHAFT ("B" OPTION)



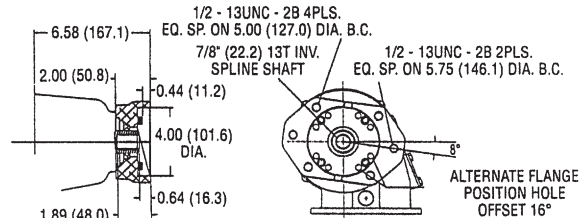
Optional Pump Bolt Kit 19MK4717 Sold Separately.  
SPECIAL 7/8" - 13 SPLINE ("G" OPTION)



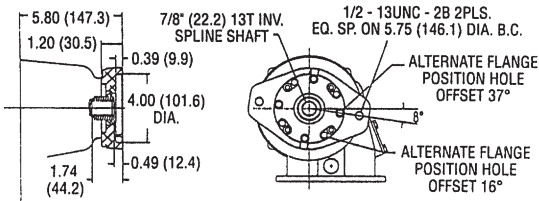
SAE "A" 2-BOLT 7/8" - 13 SPLINE ("Q" OPTION)  
SAE "A" 2-BOLT 5/8" - 9 SPLINE ("R" OPTION)



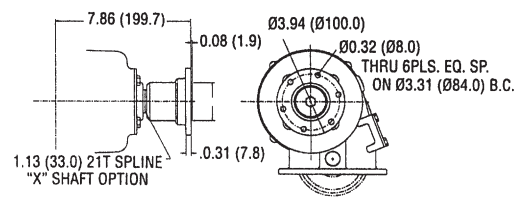
1410 SERIES COMPANION FLANGE ("C" OPTION)



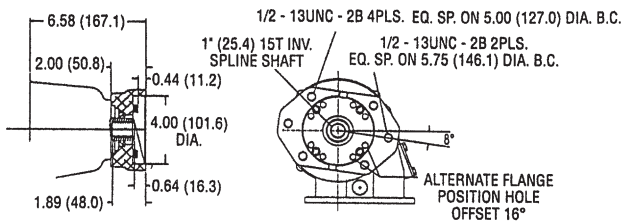
SAE "B" 2 & 4 BOLT 7/8" - 13 SPLINE ("K" OPTION)



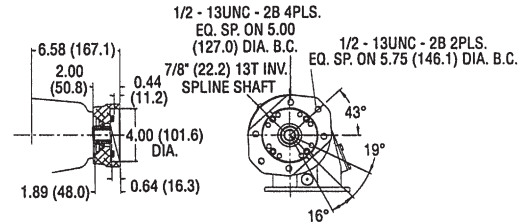
SAE "B" 2-BOLT 7/8" - 13 SPLINE ("S" OPTION)



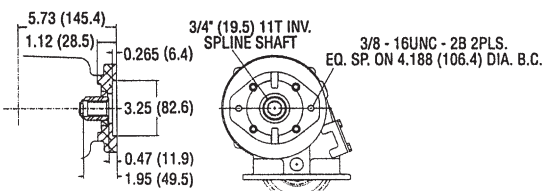
DIN 100 COMPANION FLANGE ("2" OPTION)



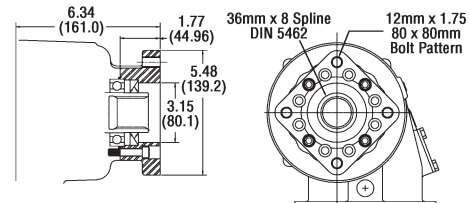
SAE "B-B" 2 & 4 BOLT 1" - 15 SPLINE ("P" OPTION)



SAE "B" 2 & 4 BOLT 7/8" - 13 SPLINE ("V" OPTION)



SAE "A" 2-BOLT 3/4" - 11 SPLINE ("T" OPTION)



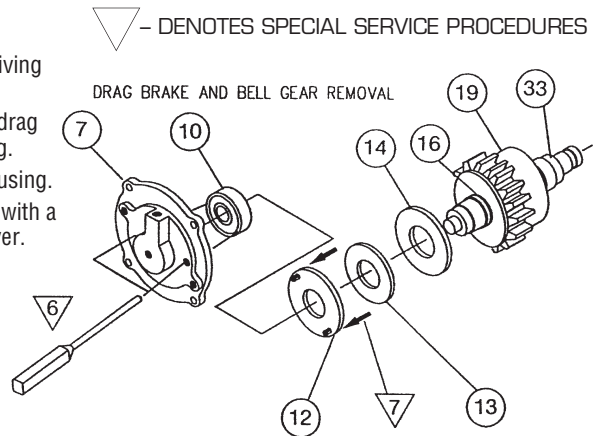
DIN 5462 36MM X 8 SPLINE ("I" OPTION)

# CS6 & CS8 DISASSEMBLY AND REASSEMBLY

(REFERENCE EXPLODED VIEW ON PAGE 2)

## DISASSEMBLY PROCEDURE

- Remove the CS6S input gear, by removing the set screw in the pad and driving the idler shaft from the housing (*Items 30, 32*).
- Remove the set screws (*Item 45*) from bearing cover (*Item 7*) which hold drag brake springs (*Item 46*). Position housing so that springs fall from housing.
- Remove the four (4) capscrews (*Item 6*) which hold back cover to PTO housing.
- Position housing against a bench block and hit the end of the output shaft with a soft face hammer to remove entire output shaft assembly with bearing cover.
- Remove the two (2) pipe plugs (*Item 44*) from the bearing cover. This exposes the ball bearing assembly within the cover.
- Using a 1/4" punch and alternating between the two holes, drive the bearing and shaft assembly from the bearing cover.
- Using a bearing puller remove the rear bearing (*Item 10*) by grabbing the drag brake plate (*Item 12*) and removing both pieces. The bronze brake disk (*Item 13*) can be removed.
- Using a bearing puller remove the drag brake rotor (*Item 14*).
- The piston and clutch pack may be serviced without removal of the drag brake. Using snap ring pliers, remove the snap ring (*Item 28*) located on the output shaft end while gently pushing on the piston cup (*Item 27*).
- Pull the piston cup (*Item 27*) from the shaft and the piston (*Item 24*) will go with it.
- Tap the piston cup on a wood surface to remove the piston.
- Remove the spring (*Item 23*). The clutch friction discs (*Item 21*) and spacer discs (*Item 22*) and inner clutch hub (*Item 20*) can be removed by pointing the shaft end down.
- With the drag brake removed, the snap rings (*Item 15 & 16*) on this end of the bell gear can be removed with snap ring pliers. This allows the bell gear to be removed towards the closed end. The internal bearing (*Item 18*) of the bell gear can easily be removed.

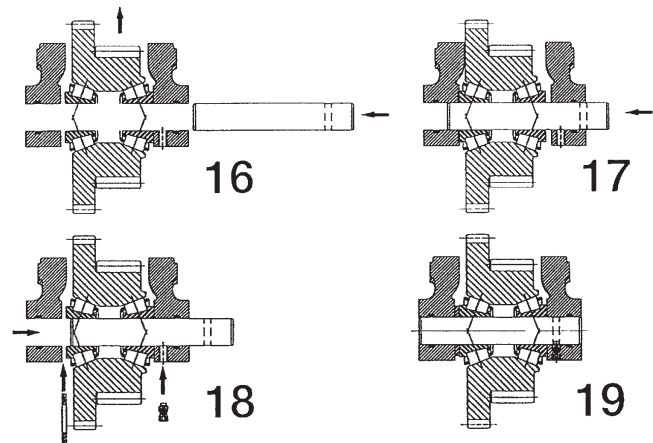


## REASSEMBLY PROCEDURE

- The reassembly of the unit is made in reverse of the disassembly.
- Be sure to lubricate the o-rings and all bearings upon installation. Torque capscrews to values shown or to the following values.  
 5/16" Capscrews - 18 ft.lb.  
 5/16" Hydraulic Flange Capscrews - 25 ft.lb.  
 3/8" Capscrews - 36 ft.lb.  
 1/4" Set screw - 5 ft.lb.
- Place the input bearing into the input gear and slide this group into the housing to line up the idler shaft.
- Tap idler shaft into housing and through both bearing races.
- To seat the bearings, tap the idler shaft in the reverse direction while rotating the gear back and forth. Move the shaft so that it is flush with the bearing in this assembly. Position the PTO so that the idler shaft is pointed down and perpendicular to the table. Insert the thickest shim that can be installed by hand in the gap between the bearing and the housing. Rotate the input gear to ensure it is not excessively tight or loose. Using a feeler gauge, measure the clearance between the shim and the bearing race. Recommended bearing clearance is .002" loose to .006" loose. If measurement is less than .002" then remove the shim and replace with the next thinner shim. If the measurement is greater than .006" then remove shim and replace with the next thicker shim.
- Tap the idler shaft into position and install the set screw.

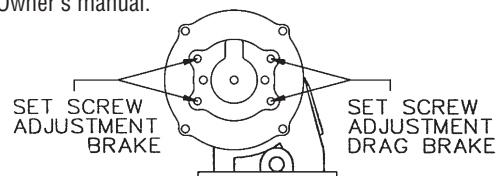
Item 4a	Dimension	Item 4a	Dimension
18T35783	Shim 0.1150 / 0.1130	18T38728	Shim 0.1325 / 0.1305
18T38725	Shim 0.1175 / 0.1155	18T36229	Shim 0.1350 / 0.1330
18T35782	Shim 0.1200 / 0.1180	18T38729	Shim 0.1375 / 0.1355
18T38726	Shim 0.1225 / 0.1205	18T37151	Shim 0.1400 / 0.1380
18T35781	Shim 0.1250 / 0.1230	18T38730	Shim 0.1425 / 0.1405
18T38727	Shim 0.1275 / 0.1255	18T37152	Shim 0.1450 / 0.1430
18T36230	Shim 0.1300 / 0.1280	18T38731	Shim 0.1475 / 0.1455
		18T37153	Shim 0.1500 / 0.1480

## TAPER ROLLER BEARINGS (RATIOS 05 THRU 14)



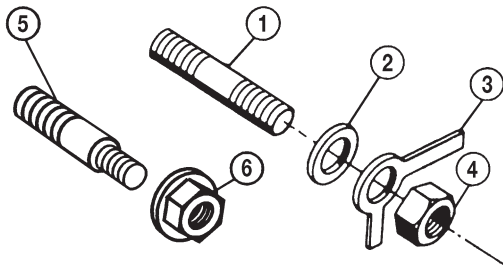
## DRAG BRAKE ADJUSTMENT

- When installing the rear cover be sure to align the roll pins in the drag brake plate with the holes in the rear cover.
- After the cover has been attached to the housing insert the springs into the holes.
- Insert the set screw over the spring and turn the screw four (4) full turns.
- Follow the test and adjustment procedures in the PTO Owner's manual.



# MOUNTING KITS

## 6-BOLT MOUNTING KIT



### 20TK4418 STD (CS6S, CS6D, CS6N-S71, S73)

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	20M38150	Stud
2	4	13M18018	Copper Gasket
3	4	21MX3802	Lock Tab
4	4	22MX3824	Nut
5	2	20T37032	Step-Stud
6	2	22T37605	Lock Nut
N.S.	1	MC00-02	Instruction Card

### 20TK4359 METRIC (CS6B, CS6C, CS6N-I85)

1	4	20M39040	Stud
2	4	13M18018	Copper Gasket
3	4	21MX3802	Lock Tab
4	4	22MX3824	Nut
5	2	20T37952	Step-Stud
6	2	22T37605	Lock Nut
N.S.	1	MC00-02	Instruction Card

### 20TK4360 METRIC (CS6B-A6907)

1	4	20M39045	Stud
2	4	13M18018	Copper Gasket
3	4	21MX3802	Lock Tab
4	4	22MX3824	Nut
5	2	20T38391	Step-Stud
6	2	22T37605	Lock Nut
N.S.	1	MC00-02	Instruction Card

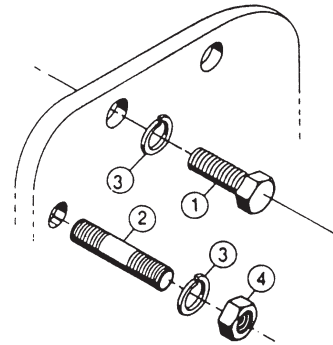
### 20TK4440 METRIC (CS6B, I84)

1	4	20T38143	Stud (1-1/4")
2	4	13M18018	Copper Gasket
3	4	21MX3802	Lock Tab
4	4	22MX3824	Nut
5	2	20T38582	Step-Stud
6	2	22T37605	Lock Nut
N.S.	1	MC00-02	Instruction Card

### 20TK4046 METRIC (CS6F-F84)

1	4	20M39040	Stud
2	4	13M18018	Copper Gasket
3	4	21MX3802	Lock Tab
4	4	22MX3824	Nut
5	2	20T37952	Step-Stud
6	2	22T37605	Lock Nut
N.S.	1	13M51717	Locktite GSK Elim
N.S.	1	MC99-06	Instruction Card

## 8-BOLT MOUNTING KIT



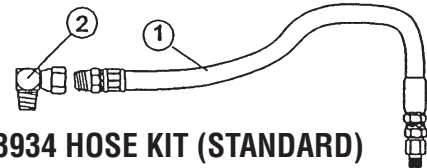
### 20MK8800 STANDARD (CS8S, CS8D)

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

### 20MKM801 METRIC (CS8B, CS8C)

2	8	20M47050	Stud
3	8	21ML4375	Lockwasher
4	8	22MX4420	Nut

## LUBE HOSE KIT

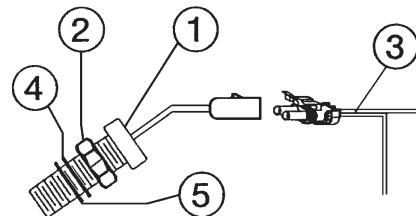


### 43TK3934 HOSE KIT (STANDARD)

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	45M4R536	Hose Assembly Std.
2	1	43M05522	Elbow

## SPEED SENSOR KIT

### 16TK3833 SPECIAL OPTION "C", "D", "R", & "S"



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	31T35108	Mag Pickup
2	1	21T35109	Jam Nut
3	1	34MA1415	Wiring Harness
4	1	21T36099	Flat Washer
5	1	12T35774	O-Ring
N.S.	1	16T35523	Cover, Mag Pickup
N.S.	1	25T35565	Plug

The CS6 & CS8 PTOs include mounting kit, special shim/gasket, wiring harness, dash bracket kit, and installation instructions. The installation does not require any special tools. The PTO is available with a pulse generator pick-up for use with the Muncie digital tachometer 38MK2000 (request MP92-04) or the EOS-111 Muncie overspeed switch. The EOS-111 is designed to control the engagement speed and provide overspeed protection of the PTO. Contact your Muncie Application Specialist for assistance with these options.



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Power  
Products**

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