

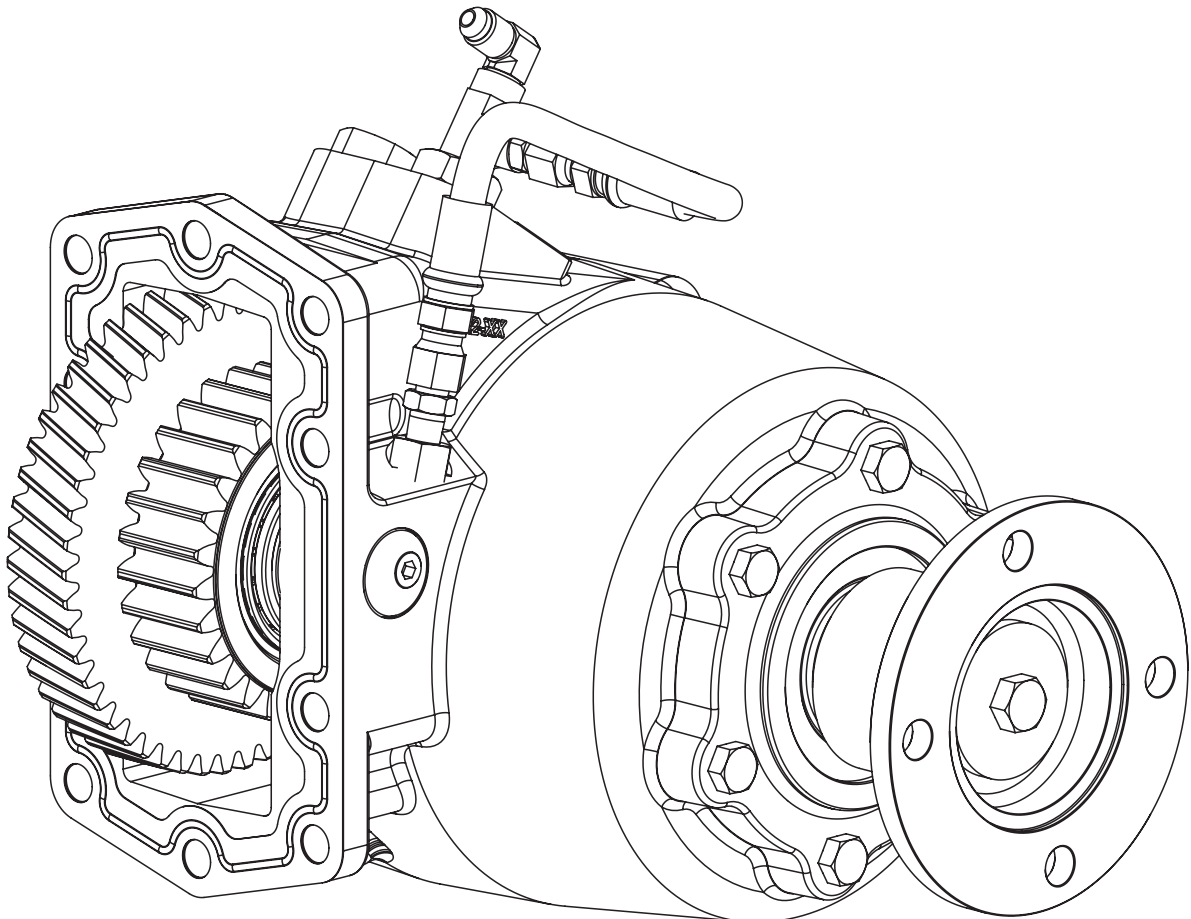


Muncie®
Power
Products

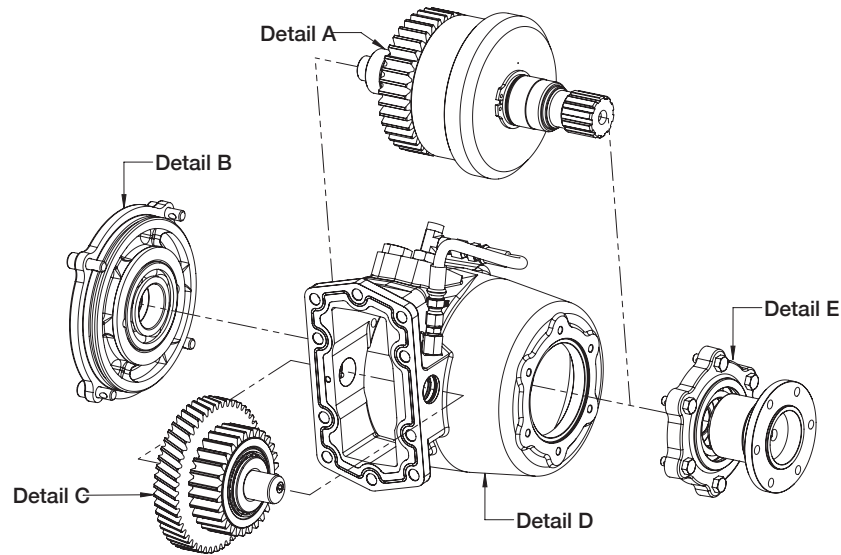
CS40/41 SERIES CLUTCH SHIFT PTO

PARTS LIST AND SERVICE MANUAL

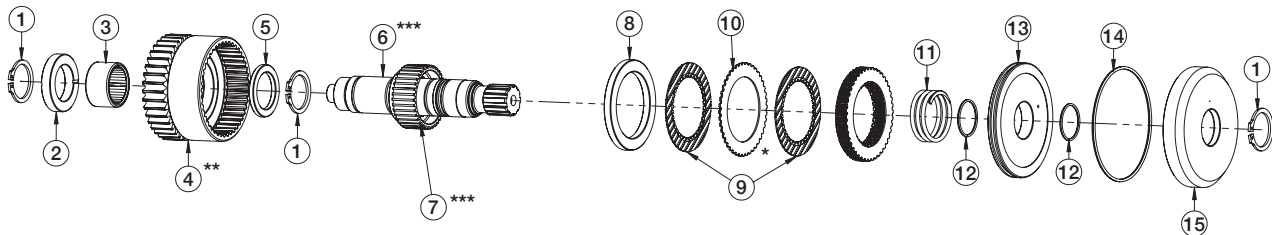
FOR UNITS BUILT FROM OCTOBER 2013 TO OCTOBER 2019



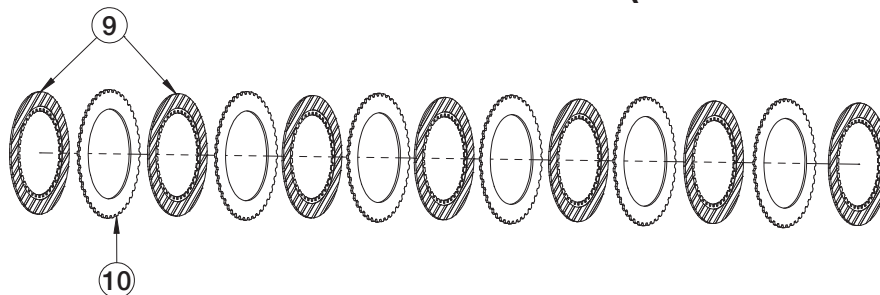
CS41 SERIES PTO - EXPLODED VIEWS



DETAIL A – OUTPUT SHAFT ASSEMBLY (FOR UNITS WITH DATE CODE 10/13 AND LATER)



DETAIL AA – CLUTCH PACK ASSEMBLY (DISC LOCATIONS)*



ITEM	QTY	PART NO	DESCRIPTION
1	3	24T36040	Snap Ring***
2	1	10T38691	Thrust Ring
3	1	10T62370	Needle Bearing
4**	1	02T42697	Output Ratio Gear – 07
		02T42700	Output Ratio Gear – 10
		02T42701	Output Ratio Gear – 12
5	1	10T38696	Thrust Ring
6***	1	06TA6094	Output Shaft "2" & "C"
		06TA6095	Output Shaft "E", "Y", & "Z"
		06TA6906	Output Shaft "P"
	1	06TA6097	Output Shaft "I"

ITEM	QTY	PART NO	DESCRIPTION
7***			Included with 06TA Assembly
8	1	28T38697	Spacer Ring
9	7	49T38231	Friction Disc
10	6	49T38230	Spacer Disc
13	1	49T38693	Piston
14	1	12T38665	O-Ring
15	1	49T38694	Piston Cup

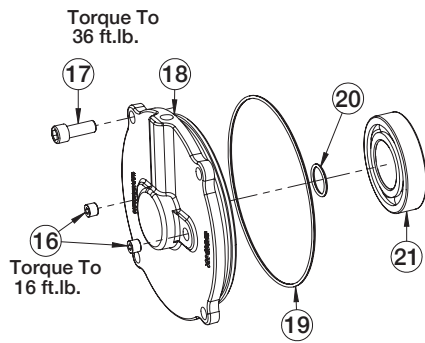
Notes:

* The clutch pack assembly contains a single stator plate stacked between each friction disc. The assembly should begin and end with a friction disc.

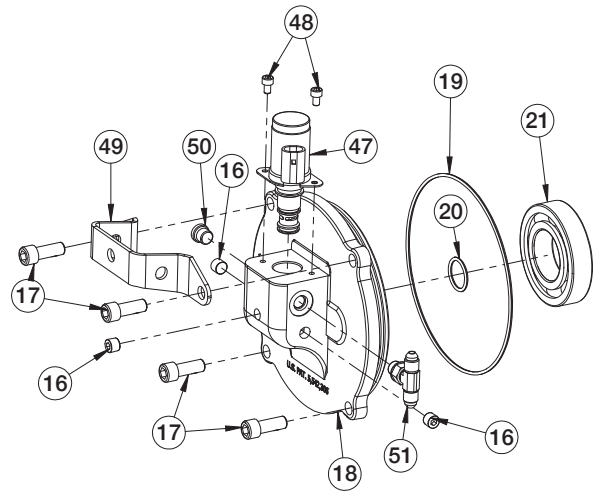
** Input and output gears should be sold as set. (PTO with build date code prior to 10/13 cannot interchange with individual components. Purchase input gear and output gear as a set.)

*** Items 6 and 7 are press fit together, and are ordered as a set. They cannot be ordered separately. (Includes quantity 1 of item #1)

DETAIL B - END COVER ASSEMBLY



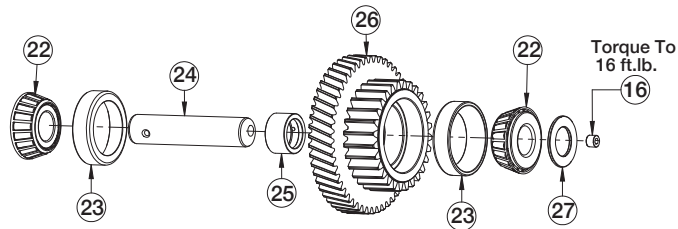
CS41 Rear Cover



CS40 Rear Cover

ITEM	QTY	PART NO	DESCRIPTION
16	3	25T21684	Plug
17	4	19T39418	Cap Screw
18	1	15T39288	End Cover (CS41)
		15T42546	End Cover (CS40)
19	1	12T36207	O-Ring
20	1	12T36081	O-Ring
21	1	10T35994	Bearing
47	1	35T40860	12 V Solenoid Valve
		35T40864	24 V Solenoid Valve
48	2	19T40859	Solenoid Cap Screws
49	1	49T36493	Solenoid Protection Bracket
50	1	25T41463	Plug
51	1	43T36231	Tee Fitting

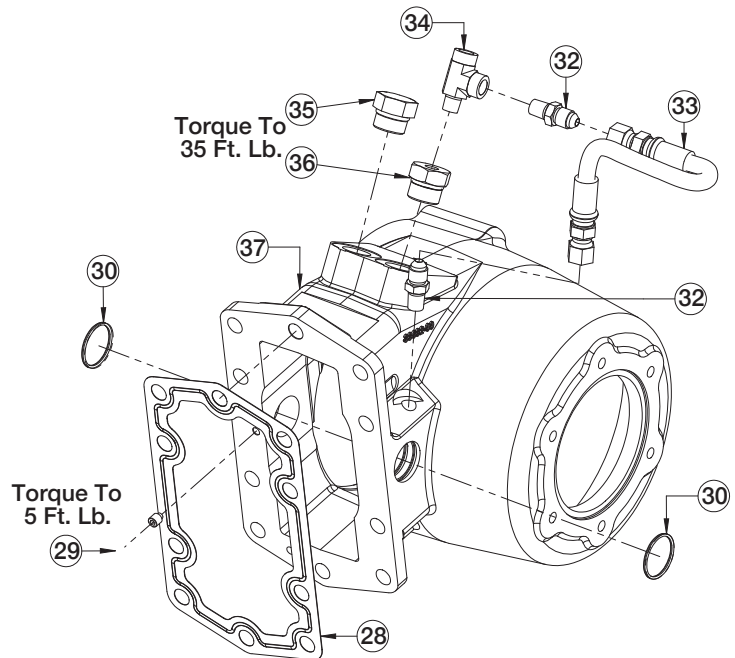
DETAIL C - IDLER SHAFT ASSEMBLY



ITEM	QTY	PART NO	DESCRIPTION
16	1	25T21684	Plug
22	2	10T38684	Tapered Roller Bearing
23	2	10T38685	Bearing Cup
24	1	07T38689	Idler Shaft
25	1	See Table A	Bearing Cone Spacer
26	1	See Table B	Input Gear
27	1	See Table C	Shim

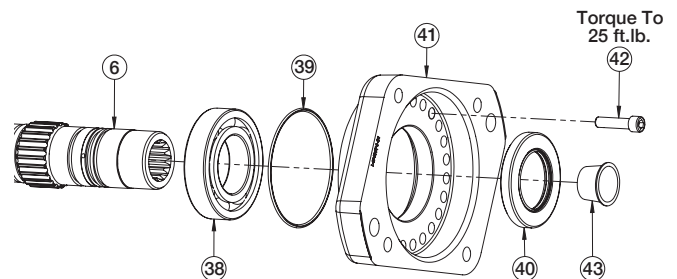
DETAIL D - PTO HOUSING ASSEMBLY

ITEM	QTY	PART NO	DESCRIPTION
28	1	13T35777	Gasket
29	1	19T36082	Set Screw
30	2	12T35577	O-Ring
31	1	43M02203	Orifice Fitting
32	2	43T37503	Fitting
33	1	45T36308	Hose 10"
34	1	43T39129	Tee Fitting
35	1	25T35999	Plug
36	1	25T35784	Orifice Fitting
37	1	01T42634	Housing – 3 Arr. - A10
		01T42635	Housing – 1 Arr. - A10

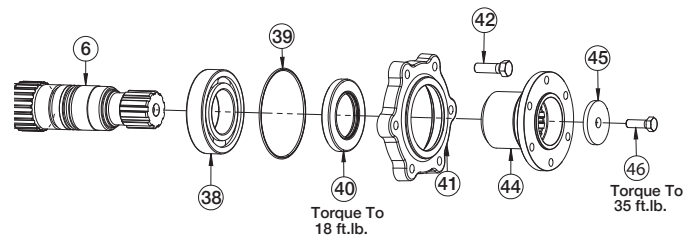


DETAIL E - OUTPUT OPTIONS

ITEM	QTY	PART NO	DESCRIPTION
6*	1		Output Shaft – See page 2, Detail A
38	1	10T35775	Bearing
39	2	12T35773	O-Ring
40	1	11T64141	Shaft Seal
41	1	15T39226	Cover "2" & "C"
		14T36834	Hydraulic Flange "I"
		14T40576	Hydraulic Flange "E"
		14T43198	Hydraulic Flange "V"*
		14T35767	Hydraulic Flange "P"
		14T36007	Hydraulic Flange "Y"
		14T39188	Hydraulic Flange "Z"
42	6	19T32740	Cap Screw "2" & "C"
		19T35386	Cap Screw "I" Flange
		19T31577	Cap Screw "E", "Y", & "Z"
43	1	14T37498	Flange "2"
		14T31499	Flange "C"
44	1	21T20092	Washer "2" & "C"
45	1	19T38266	Cap Screw "2" & "C"
46	1	25T37767	Cap Plug "I" (Storage Only)
		25T35936	Cap Plug "E", "Y", & "Z" (Storage Only)



Standard Output Option – "E", "I", "P", "V", "Y", & "Z"



"2" & "C" Output Option

Note: *Shaft sold as a sub-assembly only, see page 3, Detail C.

TABLES A, B, AND C

Table A – Bearing Cone Spacer (Item 25)

PART NO	DESCRIPTION	DIMENSION
18T39242	Cone Spacer	(0.789 / 0.796)
18T39243	Cone Spacer	(0.795 / 0.793)
18T39243	Cone Spacer	(0.792 / 0.790)
18T39245	Cone Spacer	(0.789 / 0.787)
18T39246	Cone Spacer	(0.786 / 0.784)
18T39247	Cone Spacer	(0.783 / 0.781)
18T39248	Cone Spacer	(0.780 / 0.778)
18T39249	Cone Spacer	(0.777 / 0.775)
18T39250	Cone Spacer	(0.774 / 0.772)
18T39970	Cone Spacer	(0.801 / 0.799)
18T39971	Cone Spacer	(0.804 / 0.802)
18T39972	Cone Spacer	(0.807 / 0.805)
18T39973	Cone Spacer	(0.810 / 0.808)
18T39974	Cone Spacer	(0.813 / 0.811)
18T39975	Cone Spacer	(0.816 / 0.814)

Note: Only one spacer is used in input sub-assembly.

Table B – Input Gear (Item 26) – For PTO date codes 10/13 and later

SUB-ASS'Y	INPUT GEAR	DESCRIPTION (# OF TEETH)
03TA4718	03T42692	Input Gear - A1007
03TA4719	03T42693	Input Gear - A1008
03TA4720	03T42694	Input Gear - A1009
03TA4721	03T42695	Input Gear - A1010
03TA4722	03T42696	Input Gear - A1012

Note: Input sub-assembly includes – Input Gear, Cone Bearings,
Bearing Cups & Cone Spacer.

For PTO with build date code prior to 10/13, this input assembly and
output gear (#4) must be purchased as a set

Table C – Bearing Shim (Item 27)

PART NO	DESCRIPTION	DIMENSION
18T42638	Bearing Shim	(0.0630 / 0.0630)
18T42639	Bearing Shim	(0.0655 / 0.0635)
18T42640	Bearing Shim	(0.0680 / 0.0660)
18T42641	Bearing Shim	(0.0705 / 0.0685)
18T42642	Bearing Shim	(0.0730 / 0.0710)
18T42643	Bearing Shim	(0.0755 / 0.0735)
18T42644	Bearing Shim	(0.0780 / 0.0760)
18T42645	Bearing Shim	(0.0805 / 0.0785)
18T42646	Bearing Shim	(0.0830 / 0.0810)
18T42647	Bearing Shim	(0.0855 / 0.0835)
18T42648	Bearing Shim	(0.0880 / 0.0860)
18T42649	Bearing Shim	(0.0905 / 0.0885)
18T42650	Bearing Shim	(0.0930 / 0.0910)
18T42551	Bearing Shim	(0.0955 / 0.0935)
18T42652	Bearing Shim	(0.0980 / 0.0960)
18T42653	Bearing Shim	(0.1005 / 0.0985)
18T42654	Bearing Shim	(0.1030 / 0.1010)

Note: Only one shim is used in input sub-assembly.

MODEL NUMBER CONSTRUCTION

CS 41 - A10 07 - H 1 C X

PTO Type

CS — Clutch Shift

Series

40 — Integrated Solenoid

41 — Remote Mount Solenoid

Transmission Input Gear Data

A10 — Allison 10.16P RH

Speed Ratios

07 — 0.74:1

10 — 1.06:1

12 — 1.20:1

Special Features

X — None

B — Hose Kit for Top Opening

D — Pulse Generator & SPD-2000

U — Pulse Generator

6 — **Muncie Start®** Stationary **OR** Mobile

Output Types

C — 1410 Companion Flange

E — SAE "C" 1¼" -14T, SAE "C" 2- & 4-Bolt

I — DIN 5462

P — SAE "BB" 1" -15T, SAE "B" 2- & 4-Bolt

V — Muncie Extended Shaft*

Y — SAE "C" 1¼" -14T, SAE "C" 2-Bolt

Z — SAE "B" 1¼" -14T, SAE "B" 2- & 4-Bolt

2 — DIN 100 Companion Flange

Assembly Arrangements

1 — Right Side Shaft Low

3 — Left Side Shaft Low

Shift Types

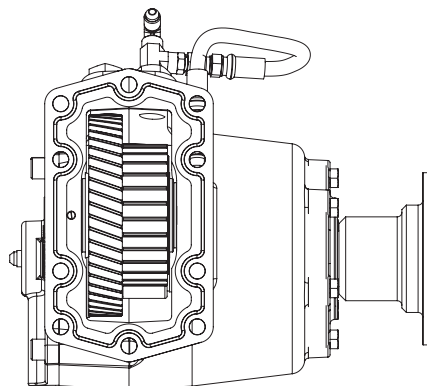
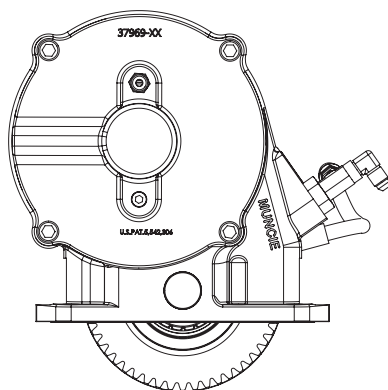
H — 12 V Electric/Hydraulic

J — 24 V Electric/Hydraulic

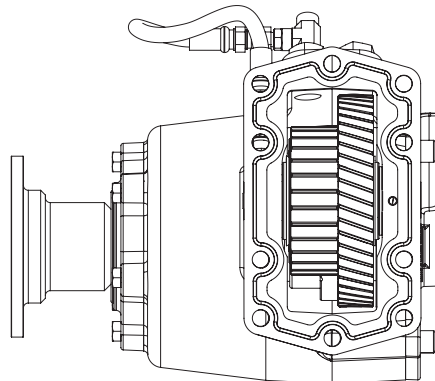
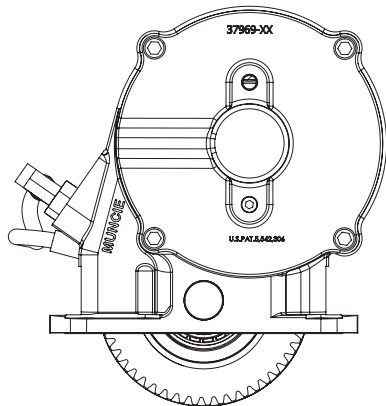
Note:

*Extended Shaft not included

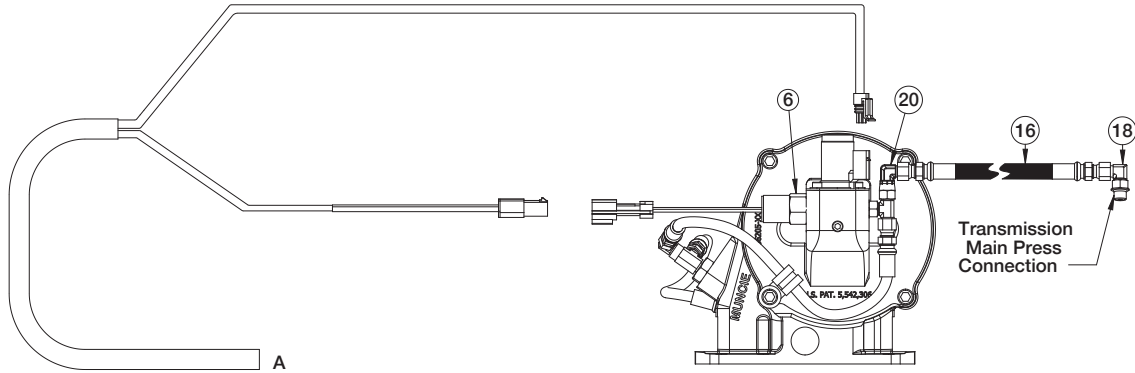
No. 1 Assembly



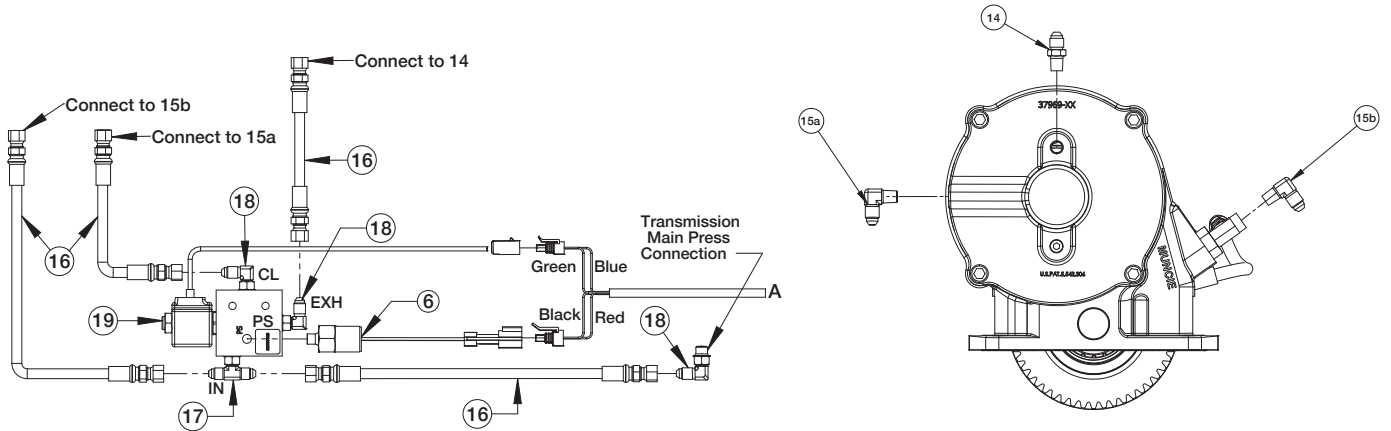
No. 3 Assembly



CS40 ACTIVATION KITS



CS41 ACTIVATION KITS

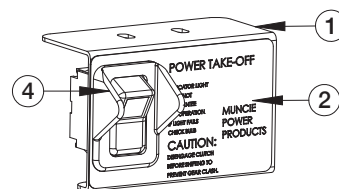
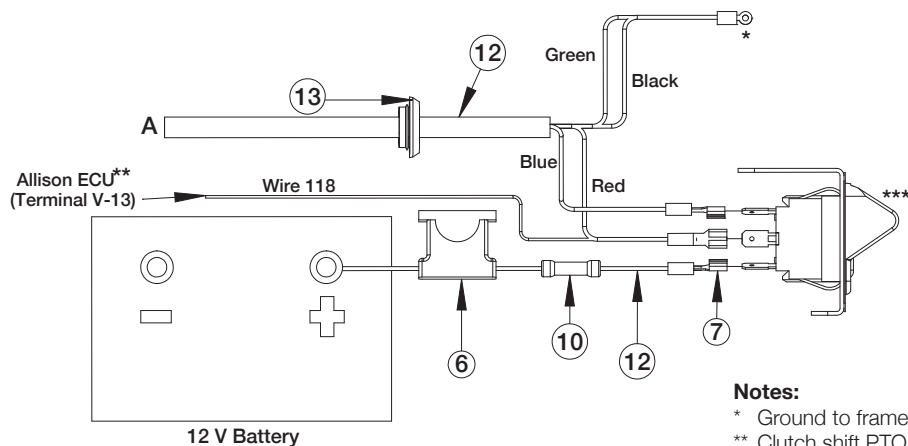


CS41 Electrical System – 48TK3882 (12 V), 48TK3891 (24 V)

ITEM	QTY	PART NO	DESCRIPTION
1	1	36MA1005	Switch Bracket
2	1	36M01006	Face Plate for Overspeed Light
	1	36T36271	Face Plate Without Overspeed Light
3	1	32MSR12V	12 V Light Assembly
3a	1	32MSR24V	24 V Light Assembly
4	1	30T35687	12 V Rocker Switch
4a	1	30T35712	24 V Rocker Switch
5	1	33T36299	Fuse Assembly
6	1	30T60228	Pressure Switch
7	3	34M18250	Female Spade Connector
8	1	34M18009	Ring Terminal
9	2	34M18187	Female Spade Connector
10	1	34M18002	Butt Splice
11	1	34T35872	Wire Harness
12	1	37T42506	Wire Harness
13	1	37T35674	Grommet
N.S.	1	36MK1007	Bolt Kit
N.S.	1	43M05522	Elbow

For 24 V option – 48TK3891:
Include items 1 & 2 and substitute items 3 & 4 with 3a & 4a.

CIRCUIT INSTALLATION *WITHOUT* OVERSPEED SWITCH



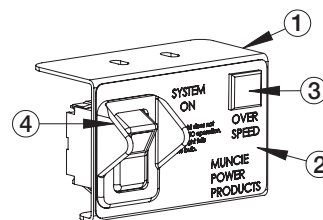
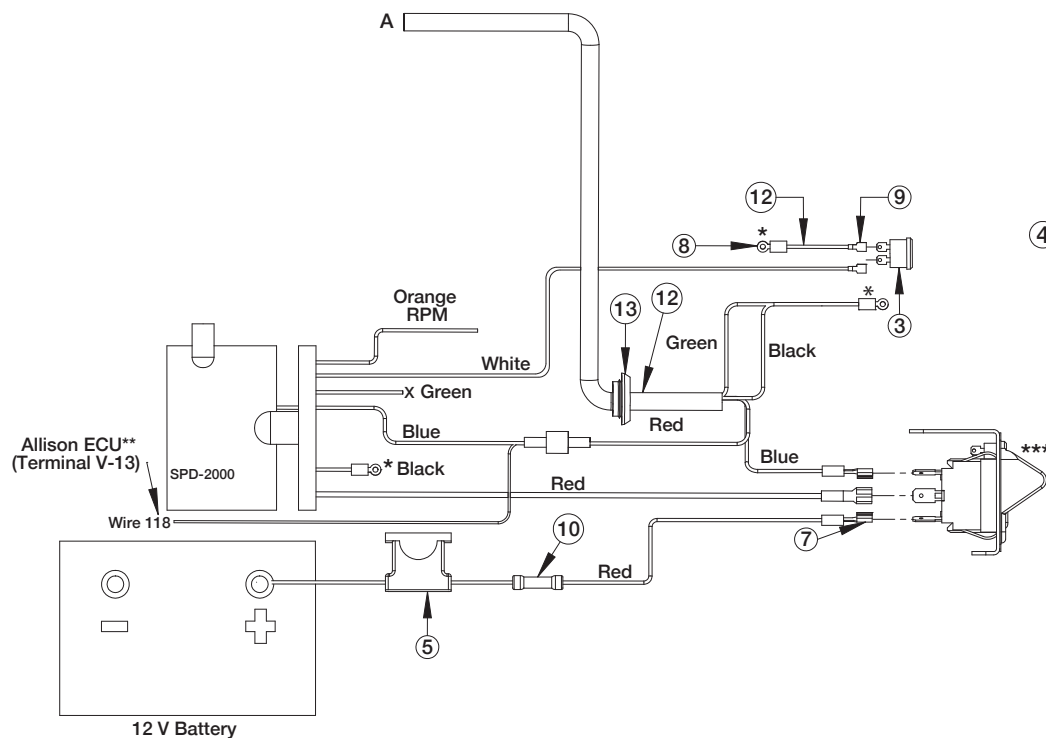
Notes:

* Ground to frame

** Clutch shift PTO's require connection to Allison "PTO Enable Input" circuits. Check with the vehicle dealer or body builder's information for location.

***Green light in the rocker switch is to turn "ON" when the PTO is engaged and turn "OFF" when the PTO is disengaged.

CIRCUIT INSTALLATION *WITH* OVERSPEED SWITCH



CS41 Electric/Hydraulic System – 48TK4894 (12 V)

CS40 Electric/Hydraulic System – 48TK4892 (12 V)

(Both Kits Include 48TK3882)

CS41 - For 24 V Option – 48TK4893 (Includes 48TK3891):

ITEM	QTY	PART NO	DESCRIPTION
14	1	43T37503	1/8" NPT/JIC Fitting
15A	1	43T35867	1/8" NPT/JIC Elbow
15B			
16A	4	45T36274	Hose Assembly
17	1	43T36231	Straight Branch Tee
18	3	43M68014	7/16-20 Straight Thread Elbow
19A	1	35T37928	12 V Valve
19B		35T37967	24 V Valve

CS41 DISASSEMBLY AND REASSEMBLY

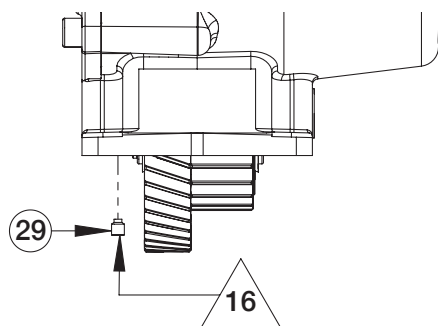
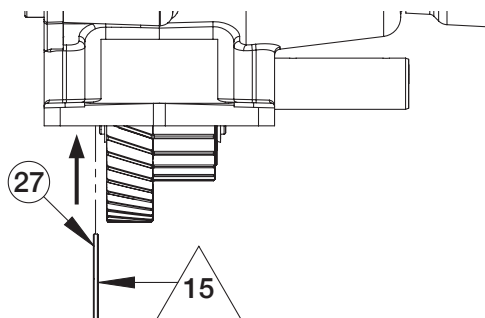
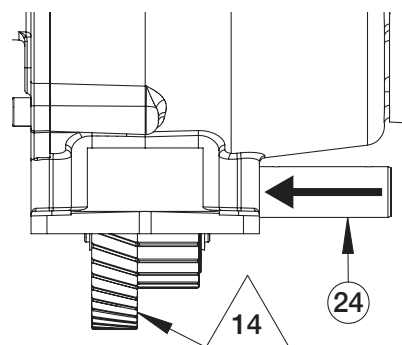
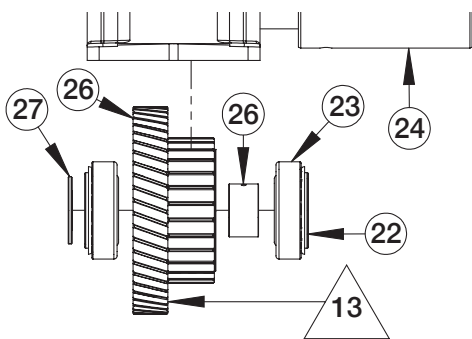
(Reference Exploded Views on Pages 2, 3, 4, and 10)

Disassembly Procedure

1. Remove the CS41 input gear (26) by removing the set screw (29) in the mounting pad and driving the idler shaft (24) from the PTO housing (37).
2. Remove the four large socket cap screws (17) from the end cover (18).
3. Position the housing against a bench block and hit the end of the output shaft (6) with a soft face hammer to remove the entire output shaft assembly with the end cover (18).
4. Remove the two pipe plugs (16) from the end cover (18) to expose the ball bearing assembly within the cover.
5. Using a 1/4" punch and alternating between the two holes drive the bearing and output shaft assembly from the end cover (18).
6. Using snap ring pliers, remove the snap ring (1) located on the output shaft end while gently pushing on the piston cup (15).
7. Pull the piston cup (15) from the shaft and the piston (13) will go with it.
8. Tap the piston cup on a wood surface to remove the piston.
9. Remove the spring (11). The clutch friction discs (9), spacer discs (10), and spacer ring (8) can be removed by pointing the shaft end down.
10. The snap ring (1) on the opposite end of the bell gear can be removed with snap ring pliers. This allows the thrust ring (2) and the bell gear (4) to be removed towards the closed end. The needle bearing (3) of the bell gear can then be removed.

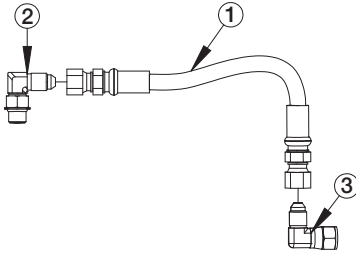
Reassembly Procedure

11. The reassembly of the unit is made in reverse of the disassembly. The re-use of seals, o-rings and snap rings are not recommended. See page 10 for gasket and rebuild kits.
12. Be sure to lubricate all o-rings and bearings upon installation. Torque all the cap screws to the appropriate values or to the following values: 5/16" cap screws 18 ft.lb.; 3/8" cap screws 36 ft.lb.; 1/4" set screw 9 ft.lb.
13. The input gear (26) is replaced as a set which includes the gear (26), cone spacer (25), bearings (22/23) and a shim (27). Slide this sub assembly into the housing to line up the idler shaft (24).
14. Insert the input gear assembly into the housing. Tap the idler shaft (24) into the housing and through each of the bearing races.
15. Tap the idler shaft in the reverse direction so that it is flush with the bearing in this assembly. Next, place the shim (27) between the bearing (22/23) and the housing (on the set screw side of the mounting pad). Rotating the gear to make sure it easily rotates. The recommended bearing pre-load is .002" to .006" loose (the cone spacer sets this pre-load and the measurement is not required).
16. Tap the idler shaft (24) into position and install the set screw (29).



ACCESSORY KITS

INSTALLATION HOSE KIT

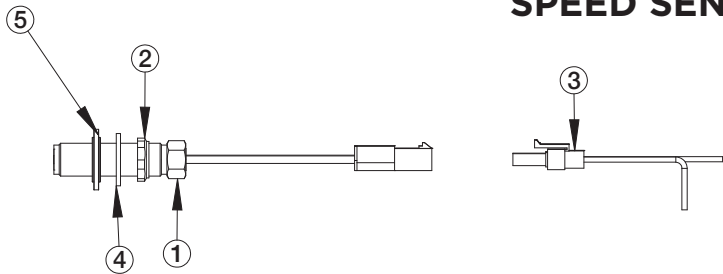


43TK4036 - Hose Kit for CS40 Series PTO

ITEM	QTY	PART NO	DESCRIPTION
1	4	45T36274	Hose Assembly Std. (28")
2	3	43M68014	Elbow (Transmission)
3	1	43T36445	Elbow (As Needed)
N.S.	2	43T35867	Elbow
N.S.	1	43T36231	Tee Fitting

SPEED SENSOR KIT

31TK3873 – Speed Sensor Kit for Special Option “U”



ITEM	QTY	PART NO	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

BOLT KIT

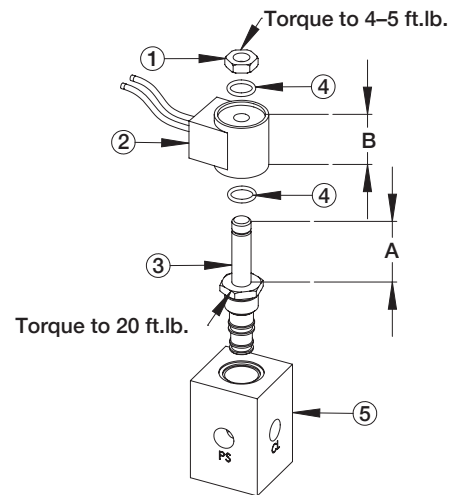
Torque cap screws and studs to 45 ft.lb.
20TK6353 – Bolt Kit for CS40/41 Series PTO

QTY	PART NO	DESCRIPTION
8	19T64314	Cap Screw
2	30T62753	Alignment Stud
8	21T64303	Flat Washer

REBUILD AND GASKET KITS

ITEM	QTY	PART NO	DESCRIPTION
1	1	CS41-RBK	Rebuild Kit Includes: [(3)1, (1)2, (1)3, (1)5, (1)8, (7)9, (6)10, (1)11, (2)12, (1)14, (1)19, (1)20, (1)21, (1)28, (1)29, (2)30, (1)38, (1)39, (1)40]
2	1	CS41-GSK	Gasket Kit Includes: [(2)12, (1)14, (1)19, (1)20, (1)28, (2)30, (1)39, (1)40]

CS41 SOLENOID

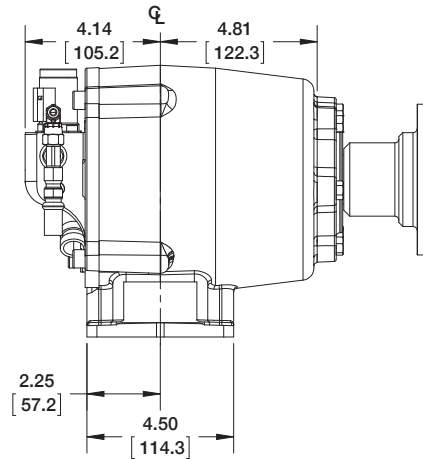


ITEM	QTY	PART NO	DESCRIPTION
1	1	22T39429	Nut
2	1	37T39088A	12 V Coil
	1	37T38997A	24 V Coil
3*	1	35T39577	Stem
4	2	12T39408	O-Ring
5	1	N/A	Manifold Block

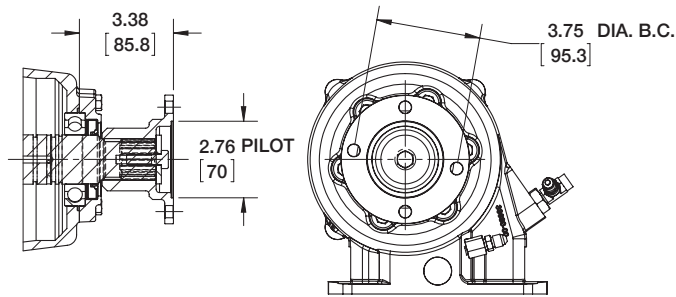
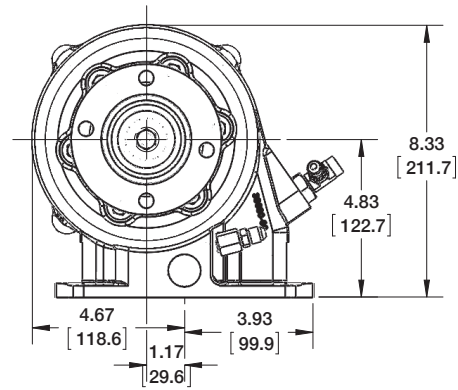
Dim A = 1.84 Dim B = 1.77
Note: *3 is NOT sold separately

IMPORTANT: The CS40/41 includes the mounting kit, special shim/gasket, high pressure hose hook-up kit, wiring harness, dash bracket kit and installation instructions. The PTO is available with a pulse generator pickup for use with the Muncie Power overspeed switch SPD-2000 to control the engagement or overspeed protection of the PTO. Contact your Muncie Power Application Specialist for assistance with this option.

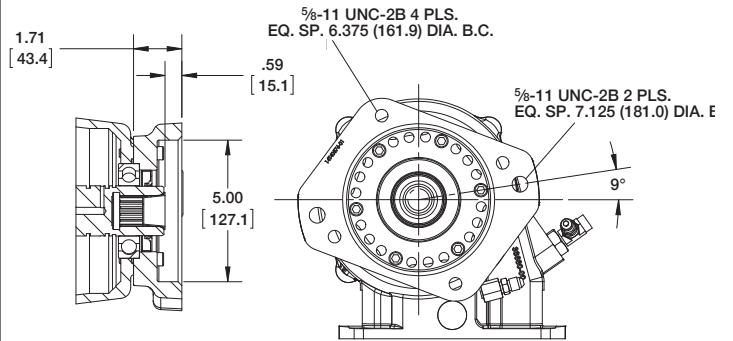
MOUNTING DIMENSIONS IN INCHES (MM)



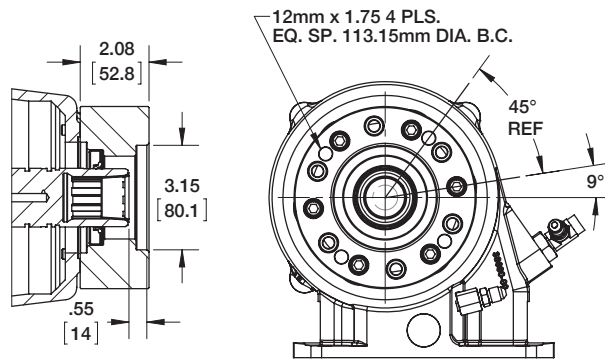
1 1/2"-10 SPLINE W/1410 SERIES FLANGE ("C"OPTION)



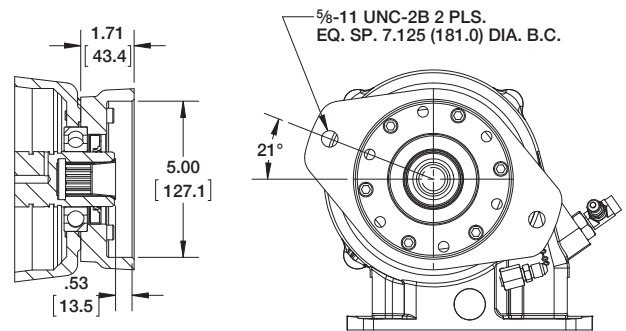
1 1/2"-10 SPLINE W/1410 SERIES FLANGE ("C")



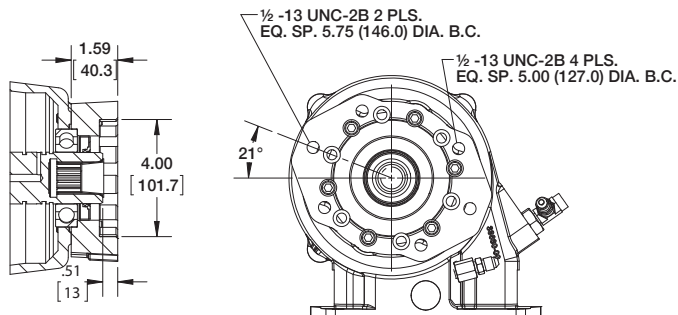
SAE "C" 2 & 4-BOLT 1 1/4"-14 SPLINE ("E")



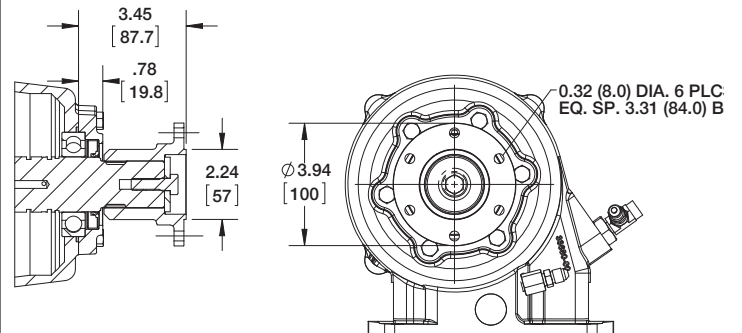
DIN 5462 36MM-8 SPLINE ("I")



SAE "C" 2-BOLT 1 1/4"-14 SPLINE ("Y")



SAE "B" 2 & 4-BOLT 1 1/4"-14 SPLINE ("Z")



1 1/2"-10 SPLINE W/DIN 100 FLANGE ("2")



**Muncie®
Power
Products**

A Member of the Interpump Group

SP14-03 (Rev. 08-23)

201 East Jackson Street, Muncie, Indiana 47305
800-367-7867 • Fax: 765-284-6991 • info@munciepower.com

Specifications are subject to change without notice. Visit www.munciepower.com
for warranties and literature. All rights reserved. © Muncie Power Products, Inc. (2014)