



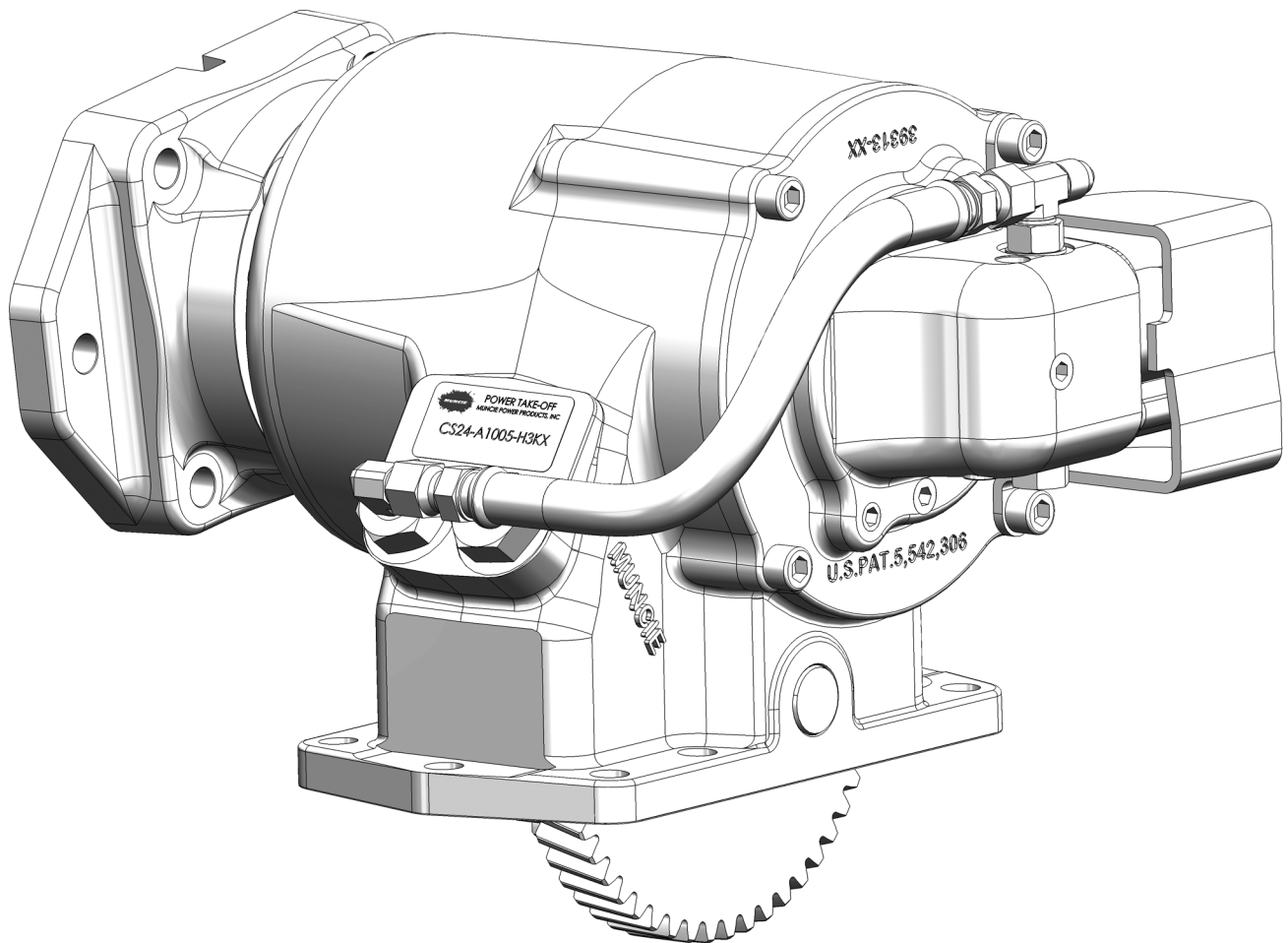
Muncie®  
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Products

# CS24/25 SERIES CLUTCH SHIFT PTO

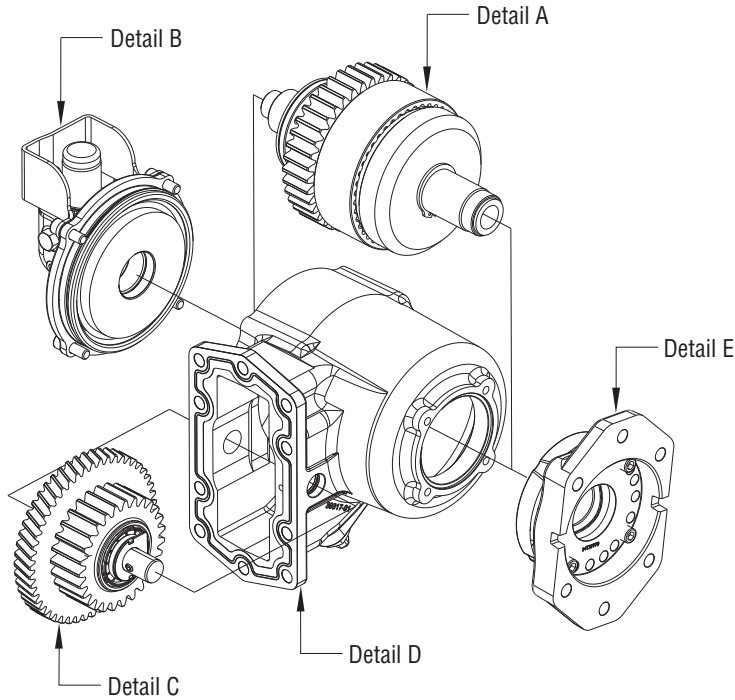
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PARTS LIST AND SERVICE MANUAL

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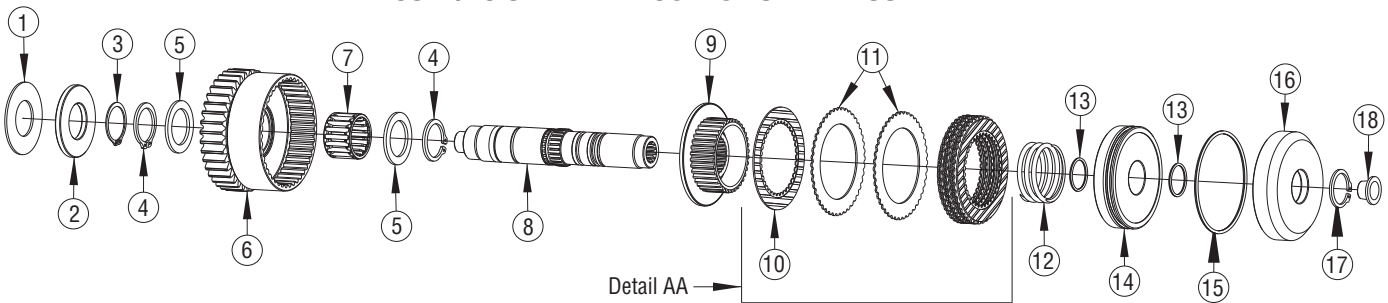


# CS24/25 PTO EXPLODED VIEWS

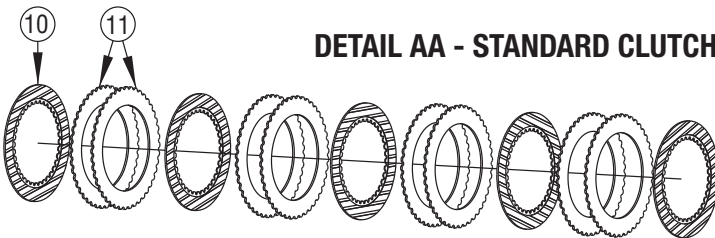


## DETAIL A – OUTPUT SHAFT ASSEMBLY

### CS24/25 STANDARD OUTPUT SHAFT ASSEMBLY

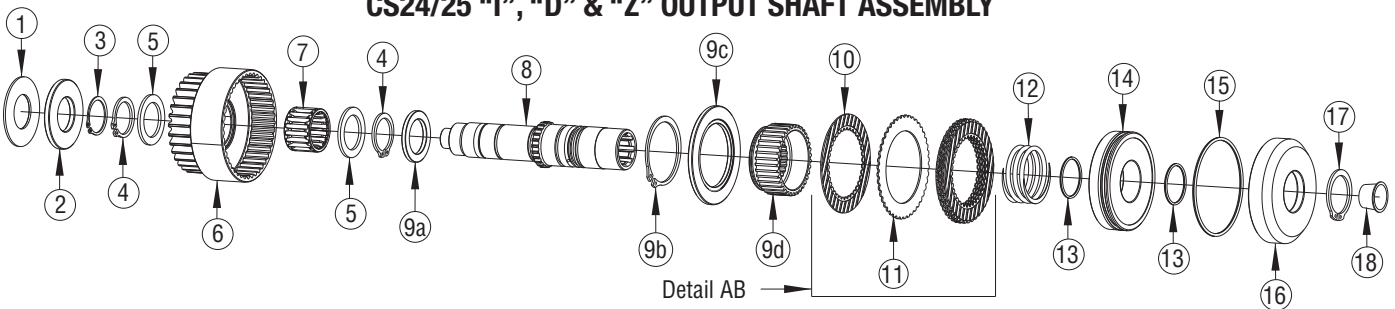


### DETAIL AA - STANDARD CLUTCH PACK - DISC LOCATIONS\*



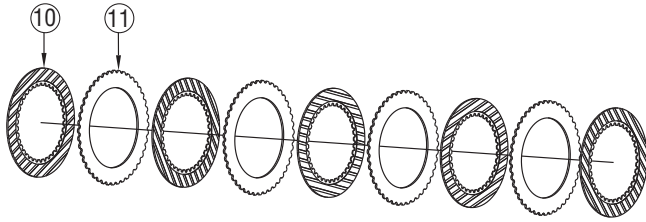
\*The standard clutch pack assembly contains a pair of stator plates stacked between each friction disc. The assembly should begin and end with a friction disc.

### CS24/25 "I", "D" & "Z" OUTPUT SHAFT ASSEMBLY

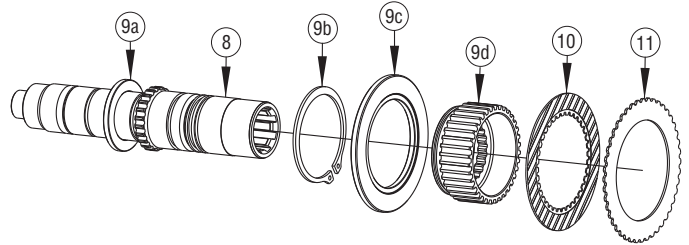


# CS24/25 PTO EXPLODED VIEWS

## DETAIL AB - "I", "D" & "Z" CLUTCH PACK – DISC LOCATIONS\*\*



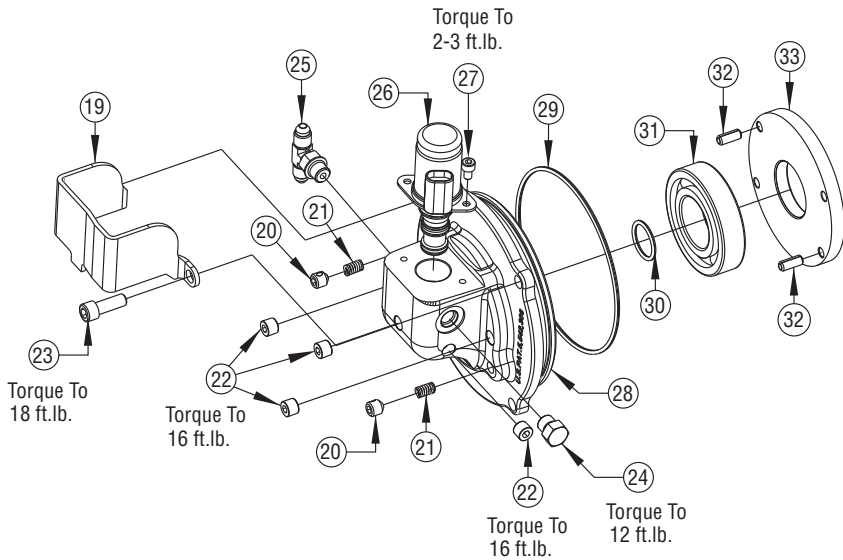
\*\* The "I", "D" & "Z" clutch pack assembly contains a single stator plate stacked between each friction disc. The assembly should begin and end with a friction disc.



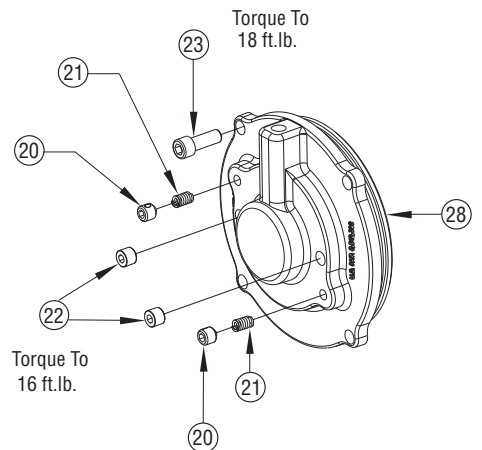
**Note:** The output shaft for the "I", "D" & "Z" output option is a larger diameter shaft and requires different clutch pack components. The 4-piece clutch hub is assembled by inserting the clutch hub (9d) into the flange (9c). These items are held together with a snap ring (9b) and the spacer (9a) is placed on the output shaft (8) **BEFORE** installing the clutch hub assembly.

## DETAIL B – END COVER ASSEMBLY

### CS24 COVER ASSEMBLY DIRECT SOLENOID

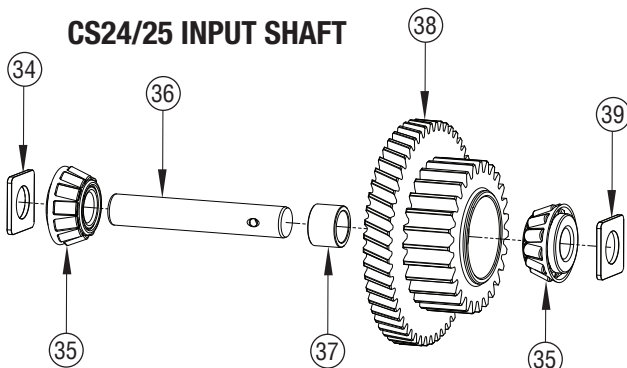


### CS25 COVER ASSEMBLY REMOTE SOLENOID



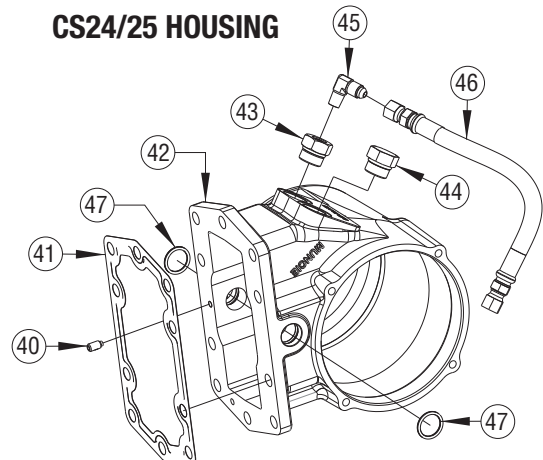
## DETAIL C INPUT SHAFT ASSEMBLY

### CS24/25 INPUT SHAFT



## DETAIL D PTO HOUSING ASSEMBLY

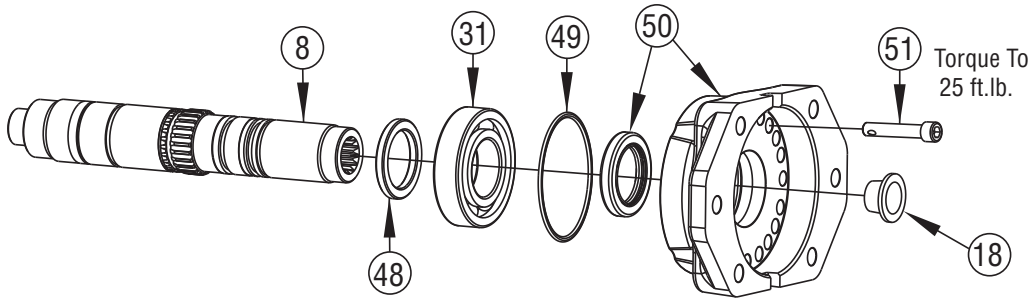
### CS24/25 HOUSING



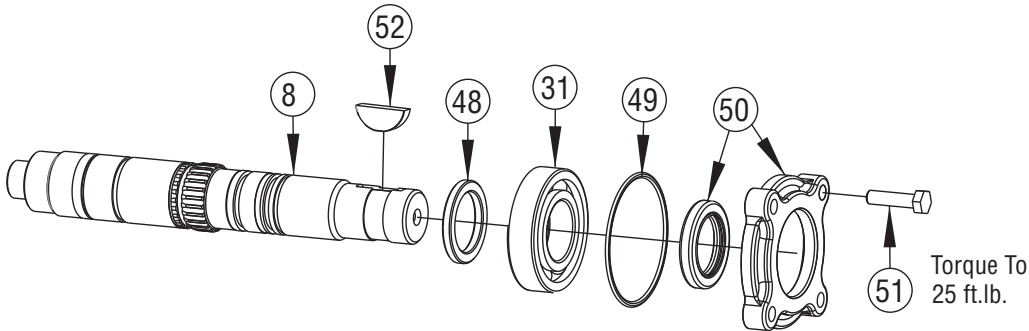
# CS24/25 PTO EXPLODED VIEWS

## DETAIL E – OUTPUT OPTIONS

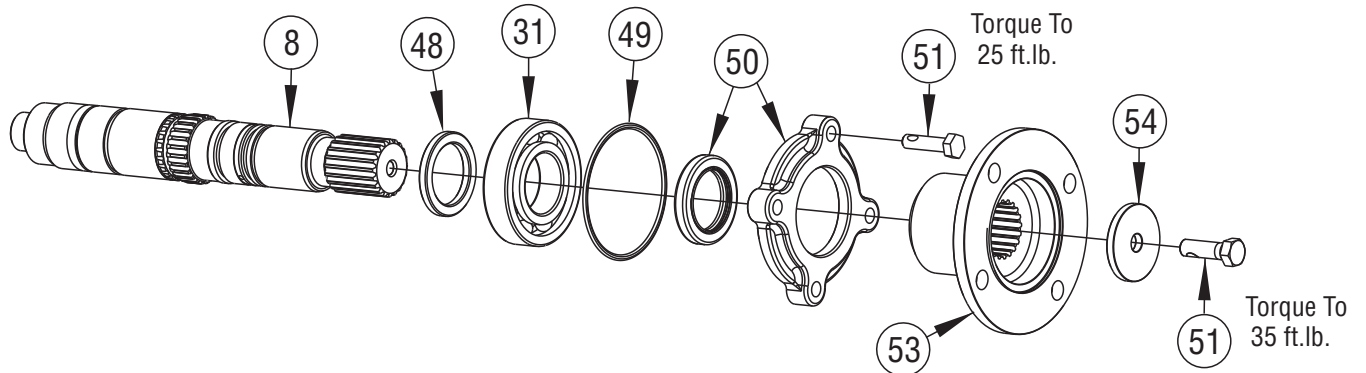
### STANDARD HYDRAULIC OUTPUT – “K”, “P” & “Z” SHOWN



### “B” OUTPUT OPTION



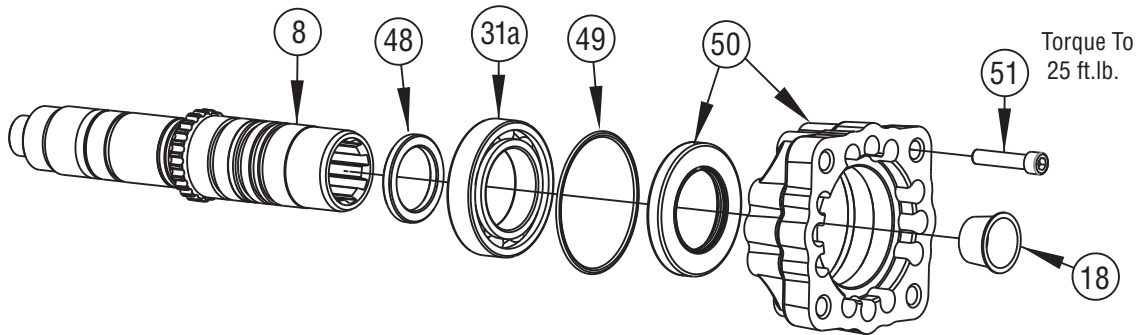
### DETAIL E - “C” & “2” OUTPUT OPTION



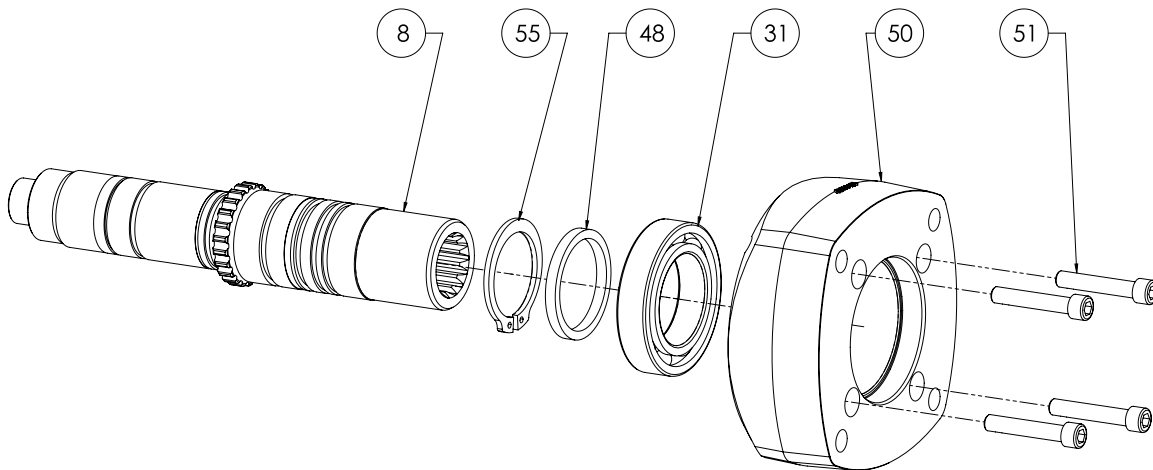
# CS24/25 PTO EXPLODED VIEWS

## DETAIL E – OUTPUT OPTIONS

### DETAIL E - "I", "D" OUTPUT OPTION



### DETAIL E - "V" OUTPUT OPTION



# PARTS LIST & DESCRIPTION

| ITEM | QTY | PART NO.            | DESCRIPTION                    |
|------|-----|---------------------|--------------------------------|
| 01   | 1   | 21T36511            | Washer (CS24, CS26)            |
| 02   | 1   | 21T36512            | Plate (CS24, CS26)             |
| 03   | 1   | 24T27240            | Snap Ring                      |
| 04   | 2   | 24T35480            | Snap Ring                      |
| 05   | 2   | 21T29017            | Thrust Washer                  |
| 06   | 1   | <b>See Table A*</b> | Bell Gear                      |
| 07   | 1   | 10T36285            | Needle Roller Bearing          |
| 08   | 1   | <b>See Table B*</b> | Output Shaft                   |
| 09   | 1   | 02T38792            | Clutch Hub                     |
| 09a  | 1   | 21T38907            | Washer ("I", "D" & "Z")        |
| 09b  | 1   | 24T37951            | Snap Ring ("I", "D" & "Z")     |
| 09c  | 1   | 49T38818            | Flange ("I", "D" & "Z")        |
| 09d  | 1   | 49T38819            | Clutch Hub ("I", "D" & "Z")    |
| 10   | 5   | 49T33564            | Friction Disc                  |
|      | 5   | 49T38231            | Friction Disc (CS26 Only)      |
| 11   | 8   | 49T40641            | Spacer Disc                    |
|      | 8   | 49T38230            | Spacer Disc (CS26 Only)        |
|      | 4   | 49T40641            | Spacer Disc ("I", "D" & "Z")   |
| 12   | 1   | 27T36112            | Spring                         |
| 13   | 2   | 12T36471            | O-Ring                         |
|      | 2   | 12T36053            | O-Ring ("I", "D" & "Z")        |
| 14   | 1   | 49T36463            | Piston                         |
|      | 1   | 49T38552            | Piston ("I", "D" & "Z")        |
| 15   | 1   | 12T36472            | O-Ring                         |
| 16   | 1   | 49T36464            | Piston Cup                     |
|      | 1   | 49T38553            | Piston Cup ("I", "D" & "Z")    |
| 17   | 1   | 24T36470            | Snap Ring                      |
|      | 1   | 24T36040            | Snap Ring ("I", "D" & "Z")     |
| 18   | 1   | 25T35724            | Cap Plug ("G", "K", "Q" & "S") |
|      | 1   | 25T35725            | Cap Plug ("P")                 |
|      | 1   | 25T37767            | Cap Plug ("I" & "D")           |
|      | 1   | 25T35936            | Cap Plug ("Z")                 |
|      | 1   | 25T37387            | Cap Plug ("T")                 |
| 19   | 1   | 49T39511            | Protector                      |
| 20   | 2   | 19T36174            | Setscrew                       |
| 21   | 2   | 27T36173            | Spring                         |
| 22   | 4   | 25T21684            | Pipe Plug                      |
| 23   | 4   | 19T36588            | Capscrew                       |
| 24   | 1   | 25T41463            | Plug                           |
| 25   | 1   | 43T36231            | Tee                            |
| 26   | 1   | 35T40860            | Solenoid 12V                   |
|      | 1   | 35T40864            | Solenoid 24V                   |
| 27   | 2   | 19T40859            | 5mm Capscrew                   |
| 28   | 1   | 15T40862            | Bearing Cover, Closed (CS24)   |
|      |     |                     | (w/ Drop in Solenoid)          |
|      | 1   | 15T40478            | Bearing Cover, Closed (CS25)   |
|      |     |                     | (w/o Drop in Solenoid)         |
| 29   | 1   | 12T36197            | O-Ring                         |
| 30   | 1   | 12T36081            | O-Ring                         |
| 31   | 2   | 10T21017            | Bearing                        |
|      | 1   | 10T21017            | Bearing ("I", "D" & "Z")       |
| 31a  | 1   | 10T38248            | Bearing ("I", "D" & "Z")       |
| 32   | 2   | 26T36175            | Roll Pin (CS24, CS26)          |
| 33   | 1   | 21T36473            | Plate (CS24, CS26)             |
| 34   | 1   | <b>See Table C*</b> | Bearing Shim                   |
| 35   | 2   | 10T35776            | Tapered Roller Bearing         |
|      |     |                     | (sold w/input gear only)       |
| 36   | 1   | 07T35780            | Idler Shaft                    |
| 37   | 1   | <b>See Table D*</b> | Cone Spacer                    |
| 38   | 1   | <b>See Table E*</b> | Input Gear                     |
| 39   | 1   | 18T41452            | Bearing Shim (.0620"/.0600")   |
| 40   | 1   | 19T35785            | Set Screw                      |

| ITEM | QTY | PART NO.            | DESCRIPTION  |
|------|-----|---------------------|--|
| 41   | 1   | 13T35777            | Gasket   |
| 42   | 1   | <b>See Table F*</b> | PTO Housing  |
| 43   | 1   | 25T35784            | Orifice  |
| 44   | 1   | 25T35999            | Plug   |
| 45   | 1   | 43T35867            | Elbow  |
| 46   | 1   | 45T36308            | Hose   |
| 47   | 2   | 12T35774            | O-Ring   |
| 48   | 1   | 28T62371            | Spacer ("B", "C", "G", "K", "P", "Q", "S", "T" & "6")  |
|      | 1   | 28T39404            | Spacer ("D", "I", "V" & "Z")   |
| 49   | 1   | 12T36751            | O-Ring   |
|      | 1   | 12T38344            | O-Ring ("I", "D" & "Z")  |
| 50   | 1   | <b>See Table G*</b> | Flange/Seal Assembly   |
| 51   | 4   | 19T41756            | Capscrew ("B", "C" & "2")  |
|      | 4   | 19T34462            | Socket Capscrew ("K" & "P" Hyd.)   |
|      | 4   | 19T39257            | Socket Capscrew ("G", "Q" & "S" Hyd)   |
|      | 4   | 19M84478            | Socket Capscrew ("I" & "D")  |
|      | 4   | 19T38249            | Socket Capscrew ("Z")  |
|      | 1   | 19T38266            | Capscrew ("C", "X" & "2")  |
|      | 1   | 19T38249            | Capscrew ("V")   |
| 52   | 1   | 26T01627            | Woodruff Key   |
| 53   | 1   | 14T37378            | "2" Companion Flange   |
|      | 1   | 14T37357            | "C" Companion Flange   |
| 54   | 1   | 21T20092            | Flat Washer ("C", "X" & "2")   |
| 55   | 1   | 24T36040            | Retaining Ring   |
| N.S. | 1   | 48TK5028            | <b>Installation Kit (12V) Includes:</b> Shift Kit, Gasket Pack, Stud Kit & Std. Hose Kit   |
| N.S. | 1   | 48TK5038            | <b>Installation Kit (24V) Includes:</b> Shift Kit, Gasket Pack, Stud Kit & Std. Hose Kit   |
| N.S. | 1   | 48TK5234            | <b>Installation Kit (12V) Includes:</b> Shift Kit, Gasket Pack, Stud Kit & Special Hose Kit (17")  |
| N.S. | 1   | 48TK4708            | <b>Installation Kit (12/24V) "P" Option Includes:</b> Shift Kit, Gasket Pack, Stud Kit, Std. Hose Kit, Pressure Switch & Pressure Switch Fittings  |
| N.S. | 1   | CS24-GSK            | <b>Gasket Kit Includes:</b> (2)13, (1)15, (1)29, (1)30, (1)41, (2)47, (1)49, (1)11T37790 & (1)12TK3902   |
| N.S. | 1   | CS24-GSK-IZ         | <b>Gasket Kit Includes:</b> (2)13, (1)15, (1)29, (1)30, (1)41, (2)47, (1)49, (1)11T37795 & (1)12TK3902   |
| N.S. | 1   | CS24-RBK            | <b>Rebuild Kit Includes:</b> (1)1, (1)3, (2)4, (2)5, (5)10, (8)11, (1)12, (2)13, (1)15, (1)17, (2)21, (1)29, (1)30, (2)31, (1)34, (1)39, (1)41, (2)47 (1)49, (1)11T37790 & (1)12TK3902   |
| N.S. | 1   | CS24-RBK-IZ         | <b>Rebuild Kit Includes:</b> (1)1, (1)3, (2)4, (2)5, (5)10, (8)11, (1)12, (2)13, (1)15, (1)17, (2)21, (1)29, (1)30, (1)31, (1)31a, (1)34, (1)41, (2)47, (1)49, (1)11T37795 & (1)12TK3902 |
| N.S. | 1   | CS26-RBK            | <b>Rebuild Kit Includes:</b> (1)1, (1)3, (2)4, (2)5, (5)10, (8)11, (1)12, (2)13, (1)15, (1)17, (2)21, (1)29, (1)30, (2)31, (1)34, (1)41, (2)47, (1)49, (1)11T37790 & (1)12TK3902         |
| N.S. | 1   | 48TK4054            | Conversion Kit to CS25 12V   |
| N.S. | 1   | 48TK4055            | Conversion Kit to CS25 24V   |

\* Tables A, B, C, D, E, F, & G are located on page 6.

# TABLES A, B, C, D, E, F & G

**Table A – Bell Gear (Item 6)**

| PART NO  | DESCRIPTION         |
|----------|---------------------|
| 02T39319 | Bell Gear 05 (38 T) |
| 02T36466 | Bell Gear 06 (36 T) |
| 02T36467 | Bell Gear 07 (34 T) |
| 02T36468 | Bell Gear 08 (32 T) |
| 02T36469 | Bell Gear 10 (30 T) |
| 02T42287 | Bell Gear 11 (28 T) |
| 02T36542 | Bell Gear 12 (27 T) |
| 02T38832 | Bell Gear 15 (24 T) |

**Table B – Output Shaft (Item 8)**

| PART NO  | DESCRIPTION                                  |
|----------|--|
| 06T36452 | Output Shaft "B" 1¼" Rd.                     |
| 06T37373 | Output Shaft "C" or "2" 1.3" SPL             |
| 06T39405 | Output Shaft "D" Euro DIN5462                |
| 06T36549 | Output Shaft "G" DANA SPECIAL                |
| 06T40728 | Output Shaft "I" DIN5462                     |
| 06T36547 | Output Shaft "K" 7/8 – 13 SPL, & "6"         |
| 06T36550 | Output Shaft "P" 1" – 15 SPL                 |
| 06T36548 | Output Shaft "Q" & "S" 7/8 – 13 SPL          |
| 06T37337 | Output Shaft "T" ¾" – T SPL                  |
| 06T38557 | Output Shaft "V" and "Z" Extended Shaft Type |

**Table C – Input Bearing Shim (Item 34)**

| PART NO  | DESCRIPTION      | DIMENSION             |
|----------|------------------|-----------------------|
| 18T41437 | Bearing Shim     | (.1150"/.1130")       |
| 18T41438 | Bearing Shim     | (.1175"/.1155")       |
| 18T41439 | Bearing Shim     | (.1200"/.1180")       |
| 18T41440 | Bearing Shim     | (.1225"/.1205")       |
| 18T41441 | Bearing Shim     | (.1250"/.1230")       |
| 18T41442 | Bearing Shim     | (.1275"/.1255")       |
| 18T41443 | Bearing Shim     | (.1300"/.1280")       |
| 18T41444 | Bearing Shim     | (.1325"/.1305")       |
| 18T41445 | Bearing Shim     | (.1350"/.1330")       |
| 18T41446 | Bearing Shim     | (.1375"/.1355")       |
| 18T41447 | Bearing Shim     | (.1400"/.1380")       |
| 18T41448 | Bearing Shim     | (.1425"/.1405")       |
| 18T41449 | Bearing Shim     | (.1450"/.1430")       |
| 18T41450 | Bearing Shim     | (.1475"/.1455")       |
| 18T41451 | Bearing Shim     | (.1500"/.1480")       |
| 18TK5233 | Bearing Shim Kit | Includes all bearings |

**Table D – Cone Spacer (Item 37)**

| PART NO  | DESCRIPTION | DIMENSION       |
|----------|-------------|-----------------|
| 18T38748 | Cone Spacer | (0.743"/0.741") |
| 18T38532 | Cone Spacer | (0.740"/0.738") |
| 18T38533 | Cone Spacer | (0.737"/0.735") |
| 18T38534 | Cone Spacer | (0.734"/0.732") |
| 18T38535 | Cone Spacer | (0.731"/0.729") |
| 18T38536 | Cone Spacer | (0.728"/0.726") |
| 18T38537 | Cone Spacer | (0.725"/0.723") |
| 18T38538 | Cone Spacer | (0.722"/0.720") |
| 18T38539 | Cone Spacer | (0.719"/0.717") |
| 18T38540 | Cone Spacer | (0.716"/0.714") |
| 18T38590 | Cone Spacer | (0.713"/0.711") |
| 18T38591 | Cone Spacer | (0.710"/0.708") |
| 18T38592 | Cone Spacer | (0.707"/0.704") |

*The cone spacer installs between the tapered input bearings to set the bearing preload at .002" - .006" loose. Critical dimension. See page 3/10 for visual detail. Purchase input gear assembly (Item 38 – 03TAXXXX) which includes the correct cone spacer.*

**Table E – Input Gear (Item 38)**

| ASSY NO  | DESCRIPTION                | BASE GEAR |
|----------|----------------------------|-----------|
| 03TA4624 | A1005 Input Gear (50T/21T) | 03T35752  |
| 03TA4625 | A1006 Input Gear (50T/23T) | 03T35919  |
| 03TA4626 | A1007 Input Gear (50T/25T) | 03T35755  |
| 03TA4627 | A1008 Input Gear (50T/27T) | 03T35758  |
| 03TA4628 | A1010 Input Gear (50T/29T) | 03T35761  |
| 03TA4715 | A1011 Input Gear (50T/31T) | 03T42286  |
| 03TA4629 | A1012 Input Gear (50T/32T) | 03T36545  |
| 03TA4630 | A1015 Input Gear (50T/35T) | 03T38830  |
| 03TA4978 | C9505 Input Gear (45T/21T) | 03T40237  |
| 03TA4979 | C9506 Input Gear (45T/23T) | 03T40217  |
| 03TA4980 | C9507 Input Gear (45T/25T) | 03T40218  |
| 03TA4981 | C9508 Input Gear (45T/27T) | 03T40219  |
| 03TA4982 | C9510 Input Gear (45T/29T) | 03T40220  |
| 03TA4983 | C9512 Input Gear (45T/32T) | 03T40221  |
| 03TA4984 | C9515 Input Gear (45T/35T) | 03T40222  |

**Table F – PTO Housing (Item 42)**

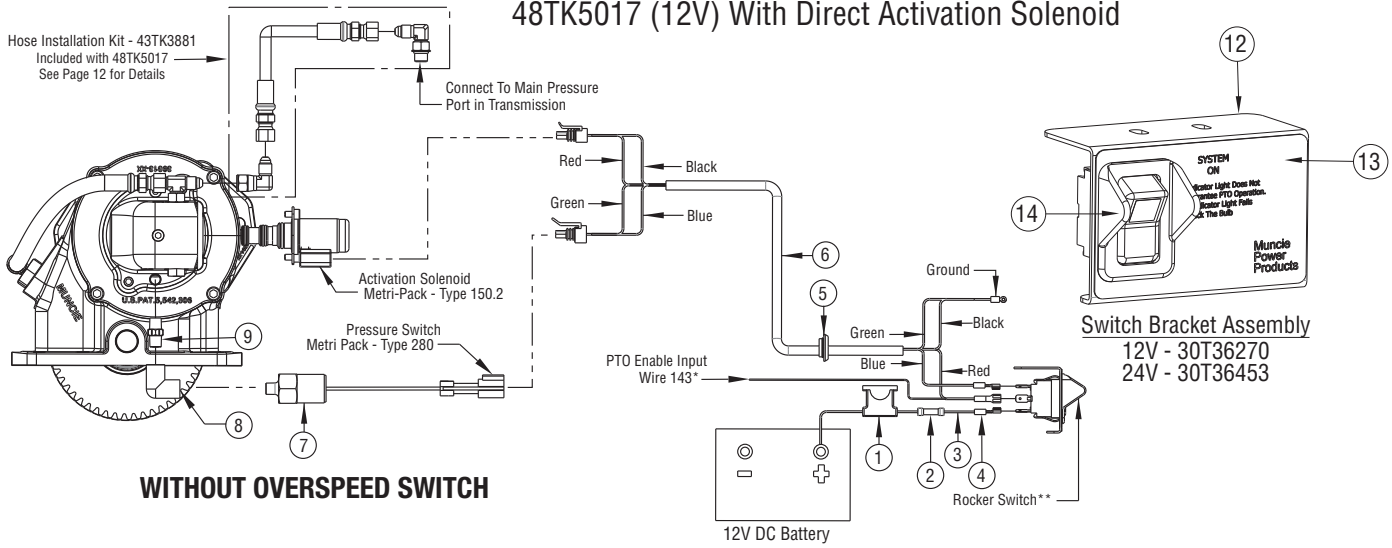
| PART NO  | DESCRIPTION                                  |
|----------|--|
| 01T41453 | Housing (Std 1 Arrangement)                  |
| 01T41454 | Housing (Std 3 Arrangement)                  |
| 01T41509 | Housing (Std 1 Arrangement) ("I", "D" & "Z") |
| 01T41510 | Housing (Std 3 Arrangement) ("I", "D" & "Z") |
| 01T41511 | Housing (Std 1 Arrangement) (C95 Cat)        |
| 01T41512 | Housing (Std 3 Arrangement) (C95 Cat)        |

**Table G – Output Cover/Flange (Item 50)**

| PART NO  | DESCRIPTION                      | COMPONENTS   |
|----------|----------------------------------|--|
| 15TA5220 | "B", "C" & "2" Flange/Seal Assy. | Includes: 15T41683 Bearing Cap & 11T37790 Output Shaft Seal      |
| 14TA4817 | "D" & "I" Flange/Seal Assembly   | Includes: 14T39406 Hydraulic Flange & 11T64141 Output Shaft Seal |
| 14TA3998 | "G" Flange/Seal Assembly         | Includes: 14T39137 Hydraulic Flange & 11T37790 Output Shaft Seal |
| 14TA3996 | "K" & "P" Flange/Seal Assembly   | Includes: 14T37779 Hydraulic Flange & 11T37790 Output Shaft Seal |
| 14TA3997 | "Q" & "T" Flange/Seal Assembly   | Includes: 14T39141 Hydraulic Flange & 11T37790 Output Shaft Seal |
| 14TA3999 | "S" Flange/Seal Assembly         | Includes: 14T35464 Hydraulic Flange & 11T37790 Output Shaft Seal |
| 14TA4818 | "Z" Flange/Seal Assembly         | Includes: 14T38343 Hydraulic Flange & 11T37795 Output Shaft Seal |
| 14TA4819 | "6" & "7" Flange/Seal Assembly   | Includes: 14T38981 Hydraulic Flange & 11T37790 Output Shaft Seal |
| 14T43197 | "V" Flange                       | Includes: 14T43197 Hydraulic Flange (No Shaft Seal)              |

# INSTALLATION KITS

## CS24 INSTALLATION KIT 48TK5017 (12V) With Direct Activation Solenoid



### Installation Kit – 48TK5017 (12V)

| ITEM | QTY  | PART NO  | DESCRIPTION                       |
|------|------|----------|-----------------------------------|
| 1    | 1    | 33T36299 | Fuse Assembly                     |
| 2    | 1    | 34M18002 | Butt Splice                       |
| 3    | 6ft. | 37M18000 | Wire                              |
| 4    | 1    | 34M18250 | Female Spade Connector            |
| 5    | 1    | 37T35674 | Grommet                           |
| 6    | 1    | 34T40902 | Wire Harness                      |
| 7    | 1    | 30T60228 | Pressure Switch                   |
| 8    | 1    | 43T37959 | Pipe Elbow                        |
| 9    | 1    | 43T37958 | Pipe Nipple                       |
| 10   | 2    | 34M18009 | Ring Terminal                     |
| 11   | 3    | 34M18187 | Female Spade Connector            |
| 12   | 1    | 36MA1005 | Switch Bracket                    |
| 13   | 1    | 36T36271 | Face Plate (without Light Access) |
| 14   | 1    | 30T35687 | Rocker Switch (12V)               |
| N.S. | 1    | 36MK1007 | Bolt Kit                          |

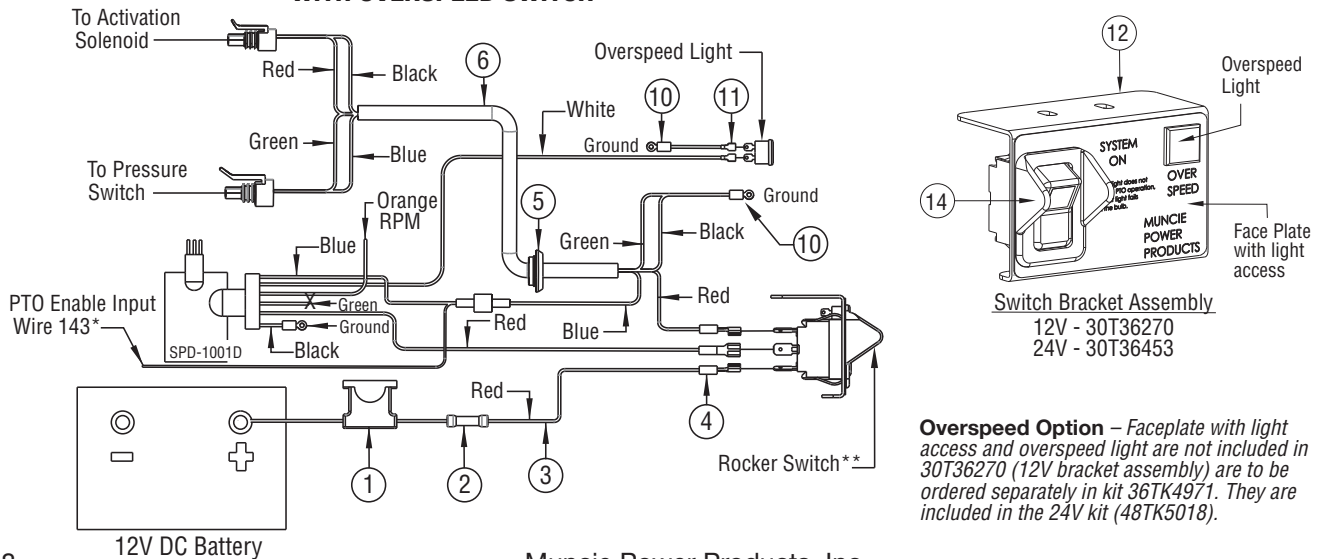
\* Allison TCM (Pin 43) — Clutchshift PTO's require a connection to the Allison "PTO Enable Input" circuits. Check the vehicle dealer or body builder's information for this location.)

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

### For 24V Option (48TK5018)

Include items 12 & 13 and substitute item 14 with the 24V rocker switch (30T35712). This kit also comes with the 24V light assembly (32MSR24V) and the faceplate with light access (36M01006).

### WITH OVERSPEED SWITCH



**Overspeed Option** – Faceplate with light access and overspeed light are not included in 30T36270 (12V bracket assembly) to be ordered separately in kit 36TK4971. They are included in the 24V kit (48TK5018).



# INSTALLATION KITS

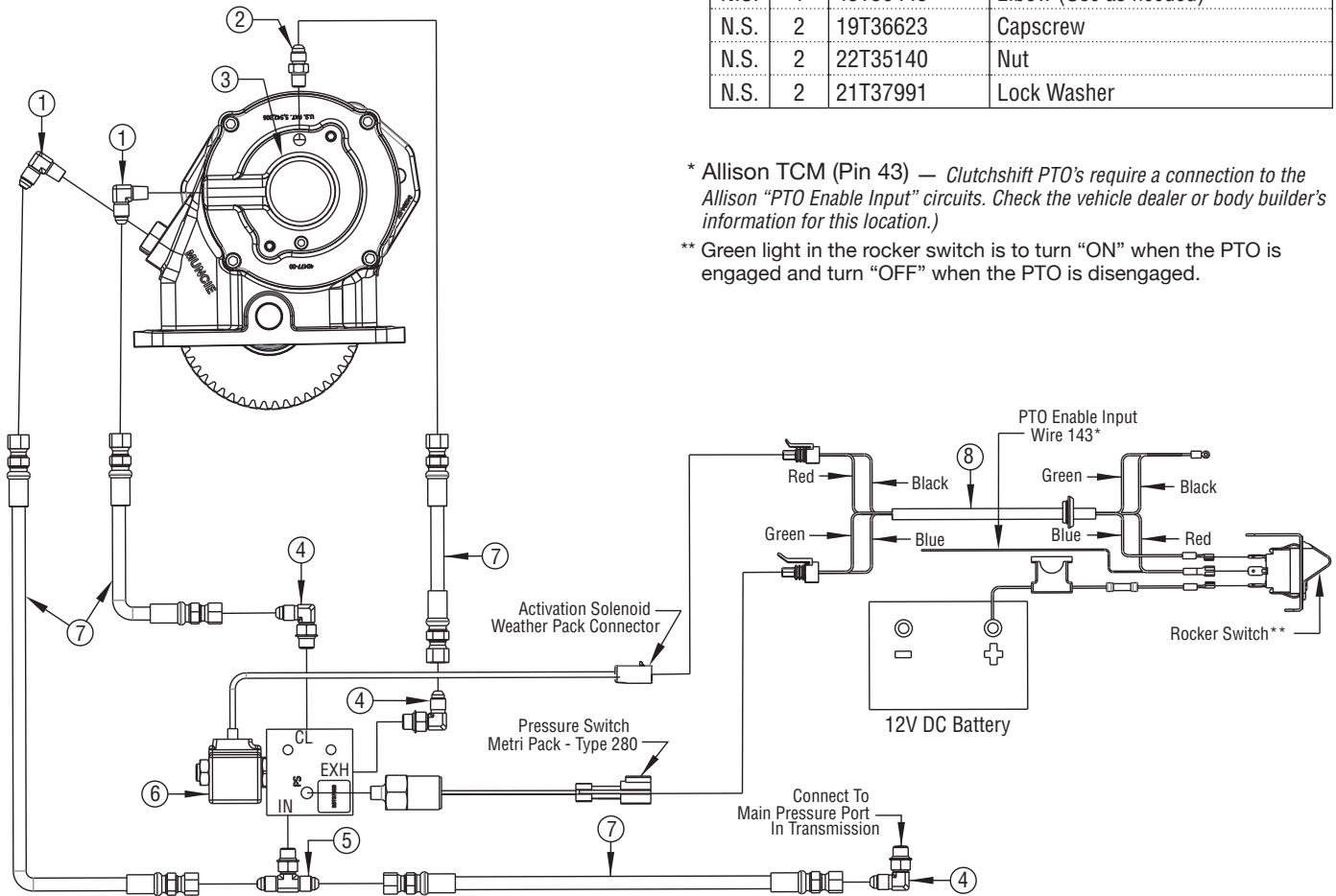
## CS25 Conversion Kit

48TK5076 (12V) With Remote Activation Solenoid. Use With installation Kit 48TK3882. Hose Kit 43TK4036 included with conversion kit (see page 11).

## Conversion Kit – 48TK5076

| ITEM | QTY | PART NO  | DESCRIPTION                      |
|------|-----|----------|----------------------------------|
| 1    | 2   | 43T35867 | 1/8" NPT/JIC Elbow               |
| 2    | 1   | 43T37503 | 1/8" NPT/JIC Fitting             |
| 3    | 1   | 15TA5075 | Cover Assembly                   |
| 4    | 3   | 43M68014 | 7/16" - 20 Straight Thread Elbow |
| 5    | 1   | 43T36231 | Straight Branch Tree             |
| 6    | 1   | 35T37928 | Valve 12VDC                      |
| 7    | 4   | 45T36274 | Hose Assembly                    |
| 8    | 1   | 34T35872 | Wire Harness                     |
| N.S. | 1   | 43T36445 | Elbow (Use as needed)            |
| N.S. | 2   | 19T36623 | Capscrew                         |
| N.S. | 2   | 22T35140 | Nut                              |
| N.S. | 2   | 21T37991 | Lock Washer                      |

### WITHOUT OVERSPEED SWITCH SHOWN



\* Allison TCM (Pin 43) — Clutchshift PTO's require a connection to the Allison "PTO Enable Input" circuits. Check the vehicle dealer or body builder's information for this location.)

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

Refer to Page 7 to Install the CS25 Conversion Kit with an Overspeed Switch.

## Activation Kit – CS25

| ITEM | QTY | PART NO  | DESCRIPTION                   |
|------|-----|----------|-------------------------------|
| 1    | 1   | 48TK4037 | 12v Includes 48TK2883 12V kit |
| 2    | 1   | 48TK5302 | 24v Includes 48TK3891 24V kit |

# MODEL NUMBER CONSTRUCTION

**CS 24 - A10 05 - H 3 K X**

**PTO Type**

Clutch Shift - CS

**Mounting**

10-Bolt Mount, Design 2 - 24

10-Bolt Mount, Design 2 - 25  
(w/Remote Solenoid)

10-Bolt Mount, Special - 26

**Transmission CS Gear Data**

Allison 10.16P RH - A10

Caterpillar 9.55P RH - C95

**Speed Ratio**

05 - .55:1

06 - .64:1

07 - .74:1

08 - .84:1

10 - .97:1

12 - 1.19:1

15 - 1.46:1

**Shifter Type**

Electric/Hydraulic (12 Volt) - H

Electric/Hydraulic (24 Volt) - J

Less Activation Kit - P

**Assembly Arrangement**

1 or 3

**Special Feature**

X - None

A - Special SAE 2-Bolt

B - Hose Kit (HD Trans. R.S.)

D - Pulse Generator & SPD-1001D

U - Pulse Generator

2 - Hose Kit Special 36"

3 - Hose Kit Special 17"

**Output Type**

B - 1-1/4" Rd; 5/16" KW

C - 1.3" 20 Spline (1410 Flange)

D - 36mm - 8T (DIN 5462)

G - Special

I - 36mm - 8T (DIN 5462)

K - SAE "B" 2- & 4-Bolt 7/8" - 13T

P - SAE "BB" 2- & 4-Bolt 1.0" - 15T

Q - SAE "A" 2-Bolt 7/8" - 13T

S - SAE "B" 2-Bolt 7/8" - 13T

T - SAE "B" 2-Bolt 3/4" - 11T

X - 1.3" - 20T Spl.

V - For Extended Shaft

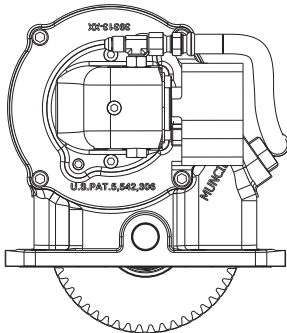
Z - SAE "B" 2- & 4-Bolt; 1.3" - 14T

2 - 1.3" - 20T (DIN 100 Flange)

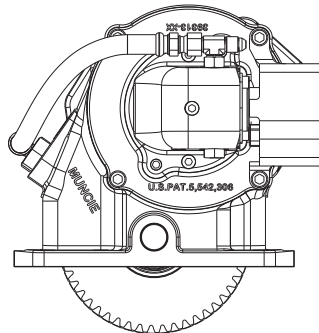
6 - SAE "B" 2-Bolt; 7/8" - 13T

7 - SAE "BB" 2-Bolt; 1" - 15T

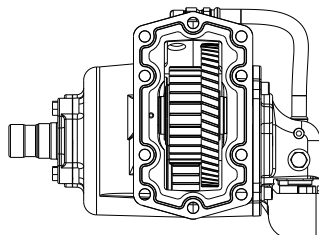
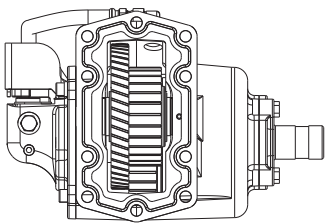
**CS24 ARRANGEMENT**



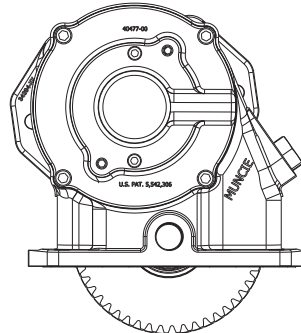
1 Assembly\*



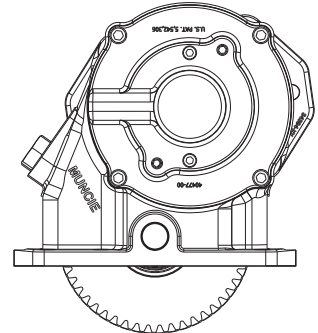
3 Assembly



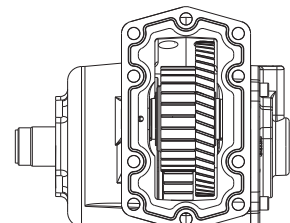
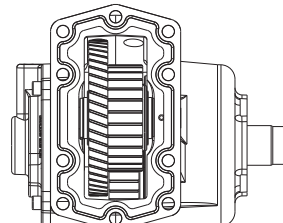
**CS25 ARRANGEMENT**



1 Assembly



3 Assembly



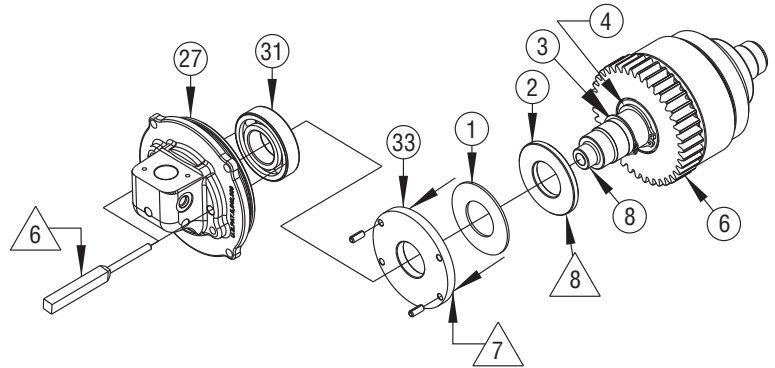
\*The CS24 hose arrangement (items 42, 43 & 44) should be centered over the ratio gear as shown.

# CS24 DISASSEMBLY AND REASSEMBLY

(REFERENCE EXPLODED VIEWS ON PAGES 2, 3 & 4)

## DISASSEMBLY PROCEDURE

1. Remove the CS24 input gear (38) by removing the set screw (40) in the mounting pad and driving the idler shaft (35) from the housing (42).
2. Remove the set screws (20) from the bearing cover (28) which hold the drag brake springs (21). Position the housing so the springs can fall from the housing.
3. Remove the four large socket capscrews (23) from the bearing cover (28).
4. Position the housing against a bench block and hit the end of the output shaft (8) with a soft face hammer to remove the entire output shaft assembly with the bearing cover (28).
5. Remove the two pipe plugs (22) from the bearing cover (28) to expose the ball bearing assembly within the cover.
6. Using a 1/4" punch and alternating between the two holes drive the bearing and output shaft assembly from the bearing cover (28).
7. Using a bearing puller, remove the rear bearing (31) by grabbing the drag brake plate (33) and removing both pieces. The bronze disk (1) can be removed.
8. Remove the brake rotor using a bearing puller.
9. The piston and clutch pack may be serviced without removal of the drag brake. Using snap ring pliers, remove the snap ring (17) located on the output shaft end while gently pushing on the piston cup (16).
10. Pull the piston cup (16) from the shaft and the piston (14) will go with it.
11. Tap the piston cup on a wood surface to remove the piston.
12. Remove the spring (12). The clutch friction discs (10), spacer discs (11) and clutch hub (9) can be removed by pointing the shaft end down.
13. With the drag brake removed, the snap rings (3 & 4) on this end of the bell gear can be removed with snap ring pliers. This allows the bell gear (6) to be removed towards the closed end. The internal bearing (7) of the bell gear can be removed.

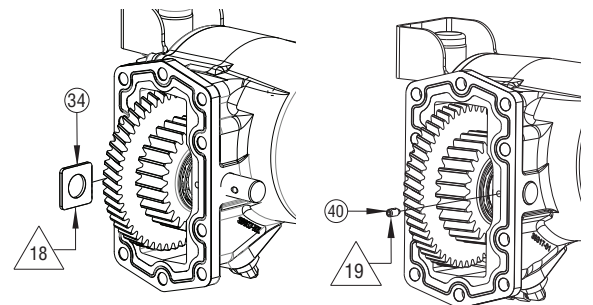
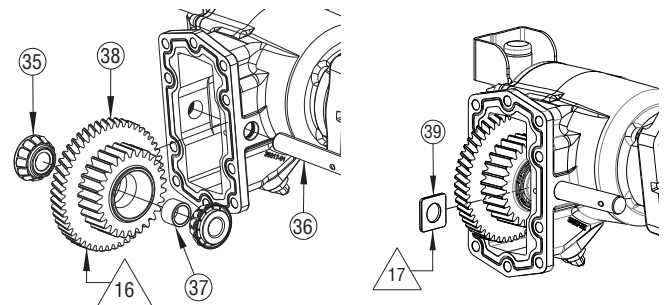


## REASSEMBLY PROCEDURE

14. 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 (5) for gasket and rebuild kits.

Be sure to lubricate all O-Rings and bearings upon installation. Torque all the capscrews to the appropriate values or to the following values: 5/16" Capscrews – 18 ft.lb.; 3/8" Capscrews – 36 ft.lb.; 1/4" Set Screw 9 ft.lb.

15. The input gear (38) is replaced as a set which includes the Base gear (36), cone spacer (37) and bearings (35). Slide this sub assembly into the housing to line up the idler shaft (36).
16. Insert the shim (39) between the bearing and the housing (on the set screw side of the mounting pad). Tap the idler shaft into the housing and through the bearing races.
17. Tap the idler shaft in the reverse direction so that it is flush with the bearing in this assembly. Insert the thickest shim (34) that can be installed by hand in the gap between the bearing and housing. Remove the shim (34) and select the next thickest shim and drive into the gap. 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).
18. Tap the idler shaft (36) into position and install the set screw (40).

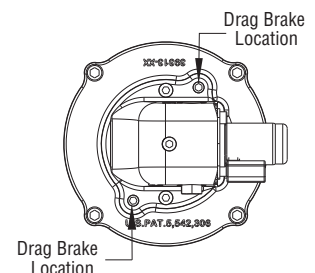


## DROP-IN SOLENOID VALVE INSTALLATION

19. Valve is pushed into the housing cavity.
20. Use two 5mm capscrews (27) to mount the solenoid. Torque the capscrews to 2-3 ft.lb.

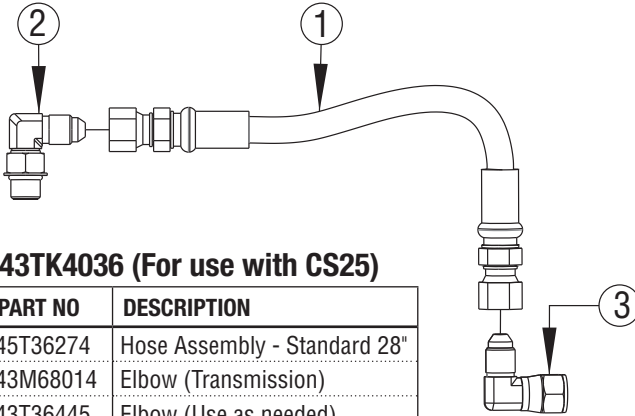
## DRAG BRAKE ADJUSTMENT

21. When installing the rear cover, be sure to align the roll pins in the drag brake plate with holes in the rear cover.
22. After the cover has been attached to the housing, insert the springs (21) into the holes.
23. Insert the set screw (40) over the spring and turn the screw seven (7) full turns.
24. Follow the test and adjustment procedures in the CS24 operator's manual.



# ACCESSORY KITS

## INSTALLATION HOSE KITS



### Hose Kit – 43TK4036 (For use with CS25)

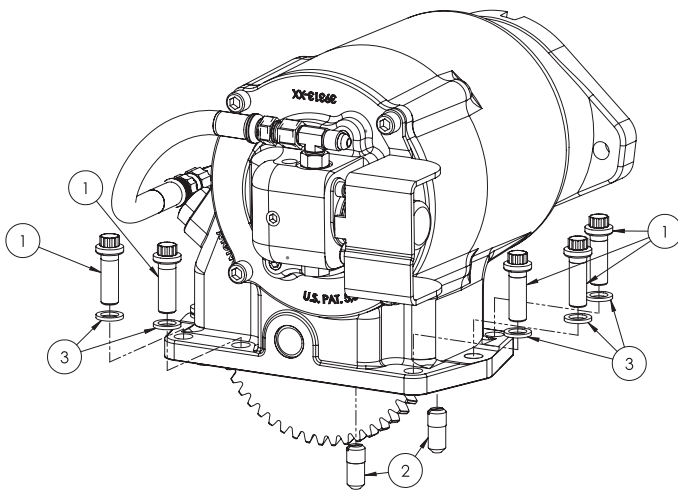
| ITEM | QTY | PART NO  | DESCRIPTION                  |
|------|-----|----------|------------------------------|
| 1    | 4   | 45T36274 | Hose Assembly - Standard 28" |
| 2    | 3   | 43M68014 | Elbow (Transmission)         |
| 3    | 1   | 43T36445 | Elbow (Use as needed)        |
| N.S. | 2   | 43T35867 | Elbow                        |
| N.S. | 1   | 43T36231 | Tee Fitting                  |

### HOSE KITS

43TK3881-Standard 28"; 43TK3885-Top R.S. 4000 Series 57" (Optional); 43TK4545-Special 17" (optional); 43TK5163-Top R.S. 3000 Series 36" (optional)

| ITEM | QTY | PART NO  | DESCRIPTION                                      |
|------|-----|----------|--|
| 1    | 1   | 45T36274 | Hose Assembly - Standard 28"                     |
|      |     | 45T36273 | Hose Assembly - HD Top 57"                       |
|      |     | 45T39186 | Hose Assembly - Special 17"                      |
|      |     | 45T38840 | Hose Assembly - HD Top 36"                       |
| 2    | 1   | 43M68014 | Elbow (Transmission)                             |
| 3    | 1   | 43T36445 | Elbow - Use as needed (43TK3881 & 43TK4545 only) |

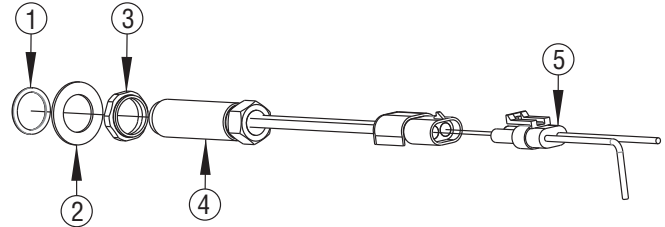
### BOLT KIT



### CS24/25 Bolt Kit – 20TK6353

| ITEM | QTY | PART NO  | DESCRIPTION            |
|------|-----|----------|------------------------|
| 1    | 8   | 19T64314 | 12 Pt. Capscrew - 30mm |
| 2    | 2   | 20T35779 | Alignment Stud         |
| 3    | 8   | 21T64303 | Flat Washer            |

### SPEED SENSOR KIT – OPTION “U”



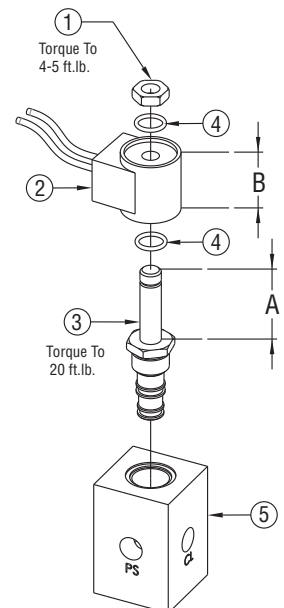
### Speed Sensor Kit – 31TK3873

| ITEM | QTY | PART NO  | DESCRIPTION    |
|------|-----|----------|----------------|
| 1    | 1   | 21T41900 | Seal Washer    |
| 2    | 1   | 21T35603 | Flat Washer    |
| 3    | 1   | 21T35109 | Jam Nut        |
| 4    | 1   | 31T35108 | Mag Pickup     |
| 5    | 1   | 34MA1415 | Wiring Harness |

### SOLENOID – CS25

#### 12V Solenoid Assembly – 35T36092 24V Solenoid Assembly – 35T36447A

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



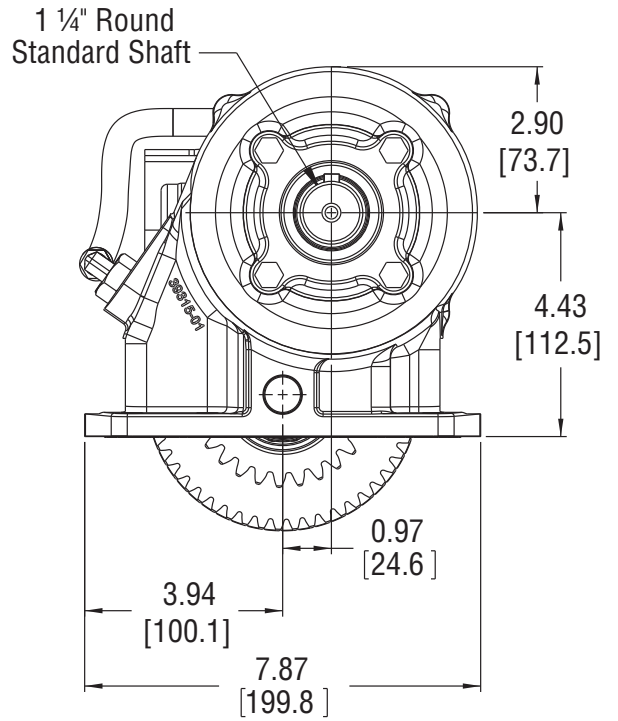
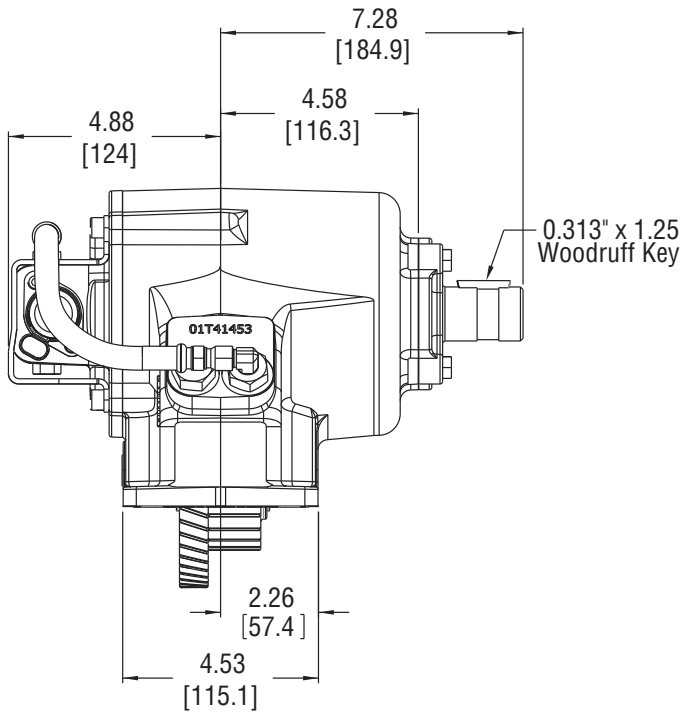
Dim A = 1.84" Dim B = 1.77"

\*Item 3 is NOT sold separately

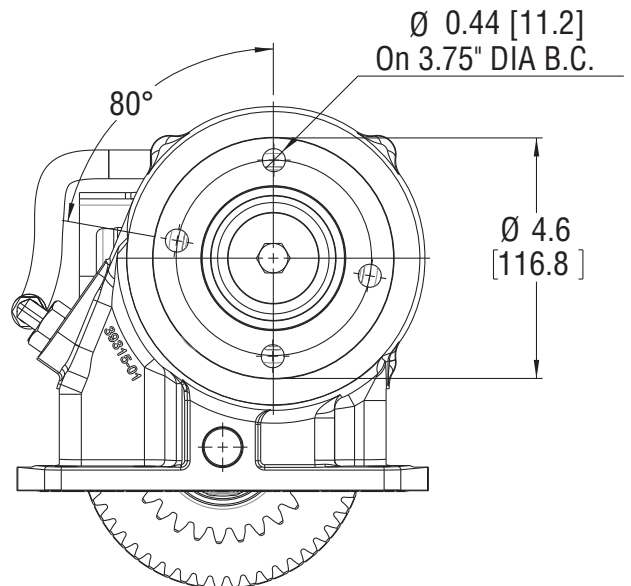
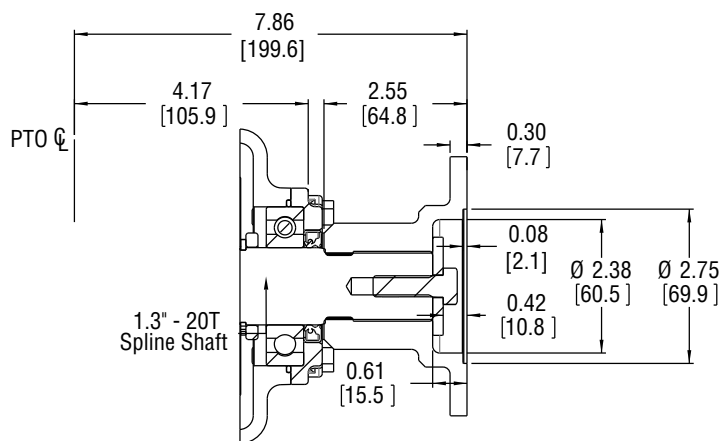
**IMPORTANT:** The CS24 includes the mounting kit, special shim/gasket, high pressure hose hookup kit, wiring harness, dash bracket kit and the installation instructions. The PTO is available with a pulse generator (pick-up) for use with the Muncie Digital Tachometer – 38MK2000 (request MP92-04) or use with the Muncie digital switch SPD-1001D to control the engagement or overspeed protection of the PTO. Contact your Muncie Application Specialist for assistance with these options.

# DIMENSIONS IN INCHES (MM)

## "B" OUTPUT OPTION – 1 ¼" ROUND KEYED SHAFT

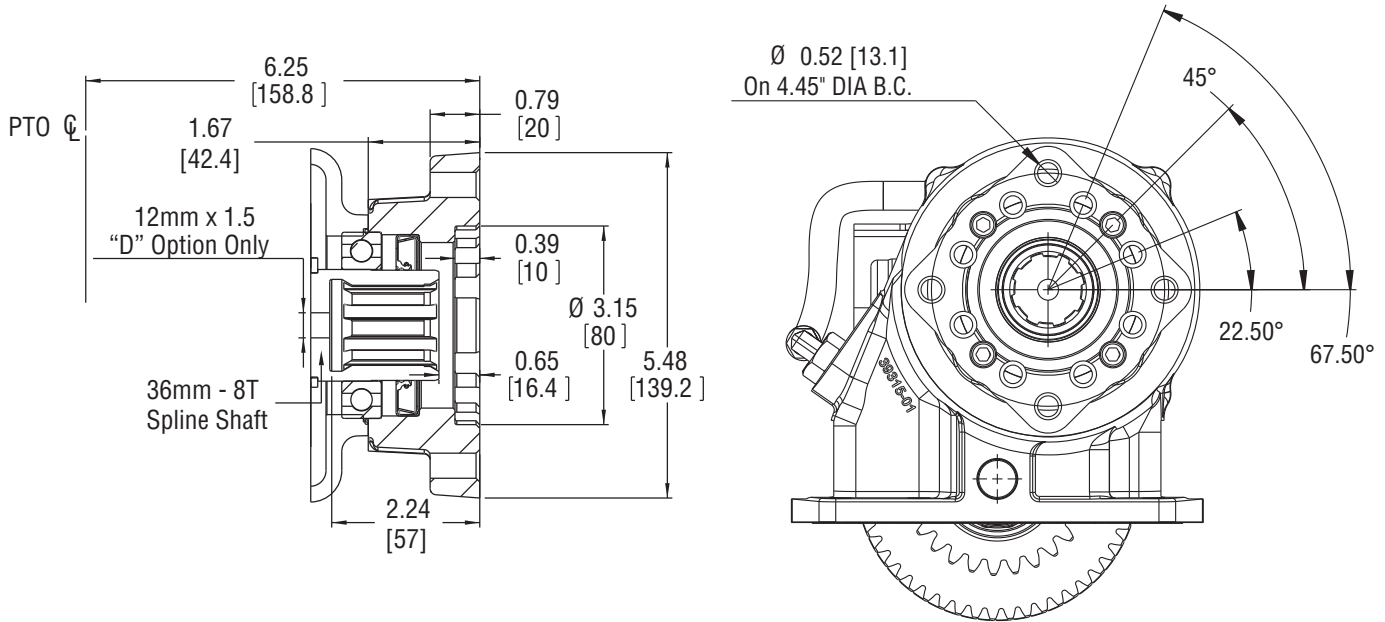


## "C" OUTPUT OPTION – 1.3" – 20T W/ 1410 SERIES FLANGE

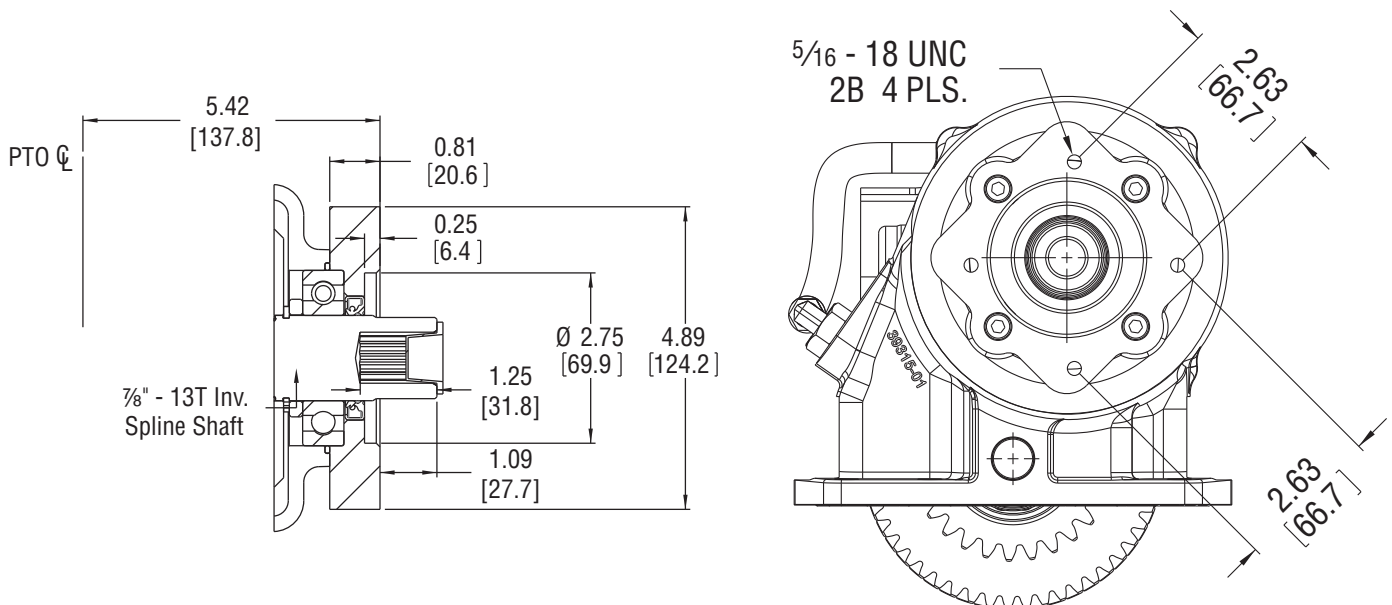


# DIMENSIONS IN INCHES (MM)

## “D” / “I” OUTPUT OPTION – DIN 5462 W/ 36MM – 8T

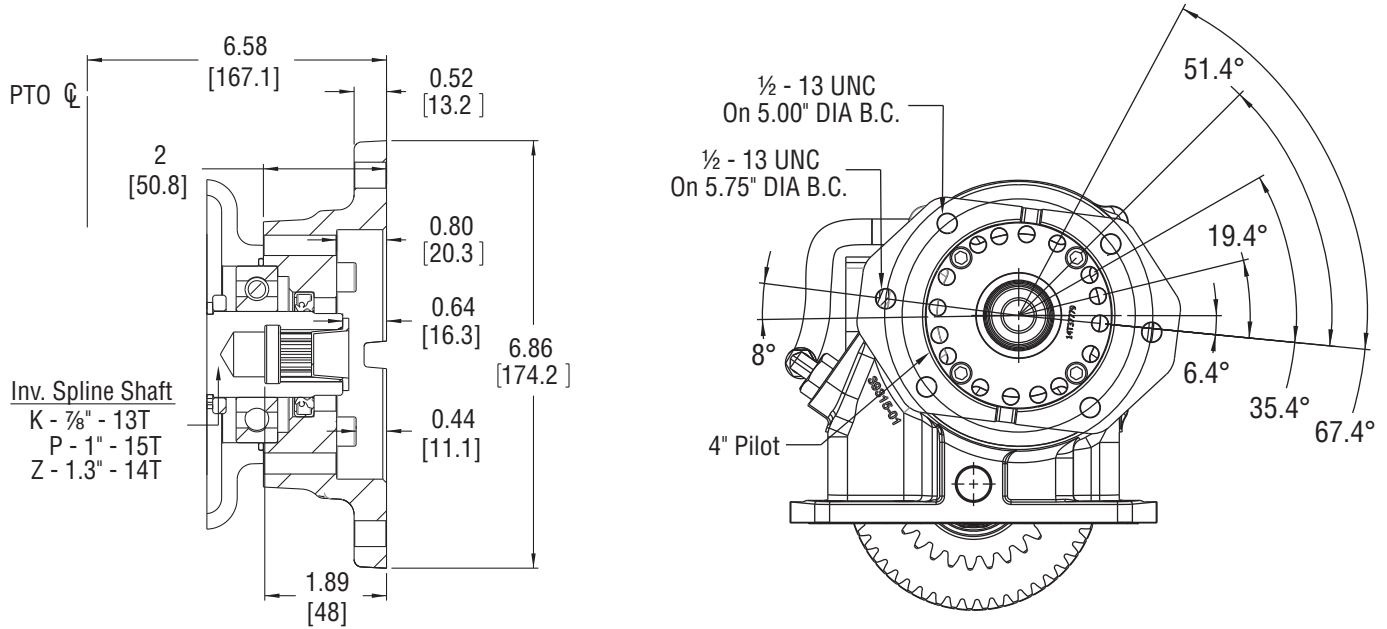


## “G” OPTION – SPECIAL W/ 7/8" – 13T

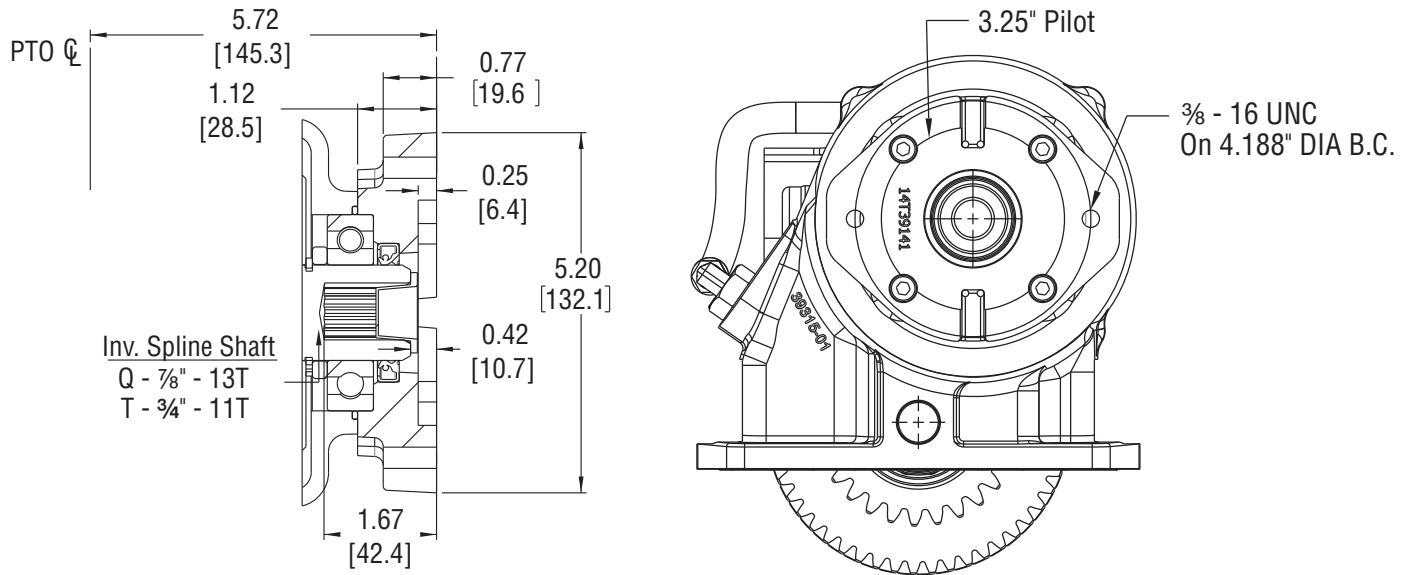


# DIMENSIONS IN INCHES (MM)

**“K” OPTION – SAE ‘B’ 2- & 4-BOLT W/ 7/8" – 13T**  
**“P” OPTION – SAE ‘B-B’ 2- & 4-BOLT W/ 1" – 15T**  
**“Z” OPTION – SAE ‘B’ 2- & 4-BOLT W/ 1.3" – 14T**

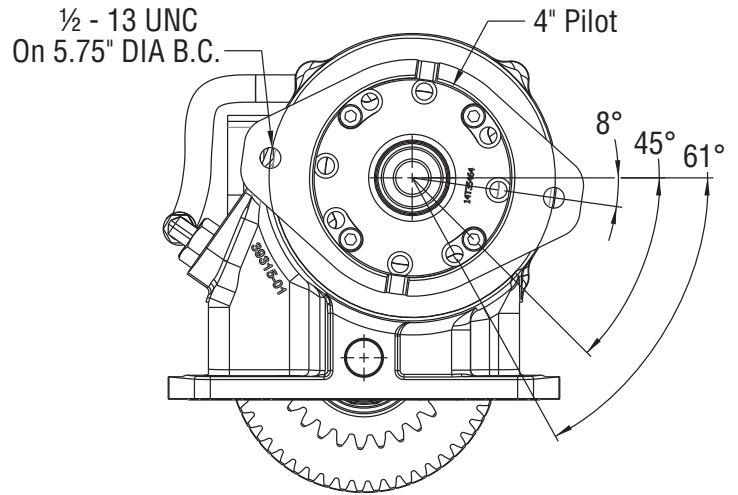
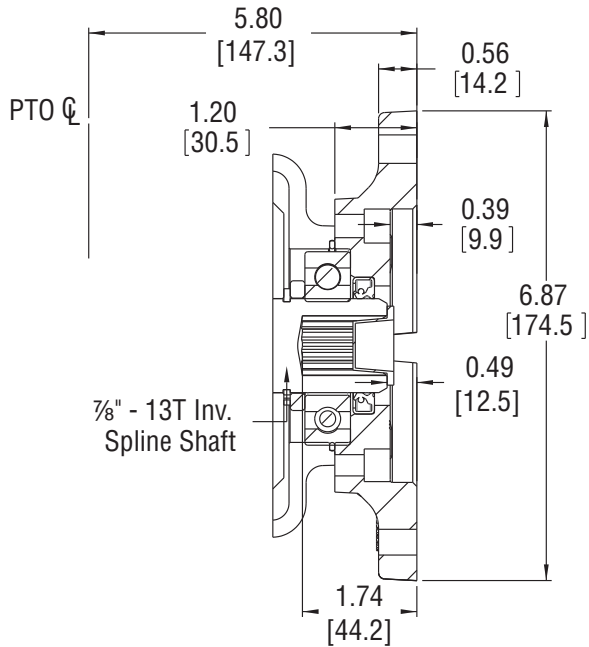


**“Q” OUTPUT OPTION – SAE ‘A’ 2-BOLT W/ 7/8" – 13T**  
**“T” OUTPUT OPTION – SAE ‘A’ 2-BOLT W/ 3/4" – 11T**

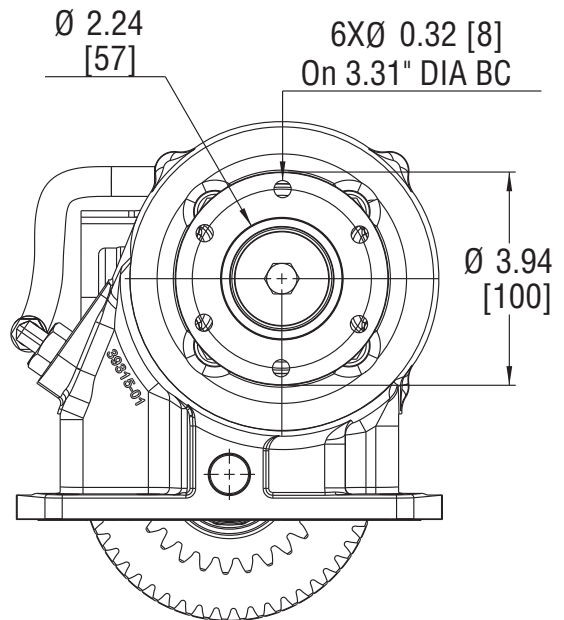
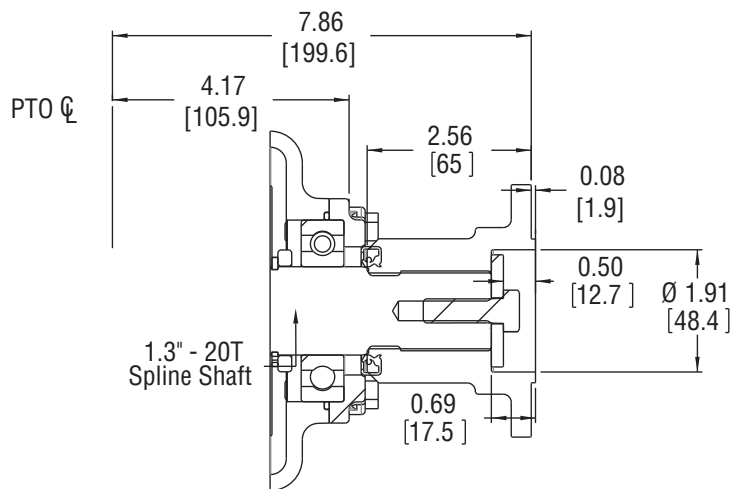


# DIMENSIONS IN INCHES (MM)

## “S” OUTPUT OPTION – SAE ‘B’ 2-BOLT W/ 7/8" – 13T



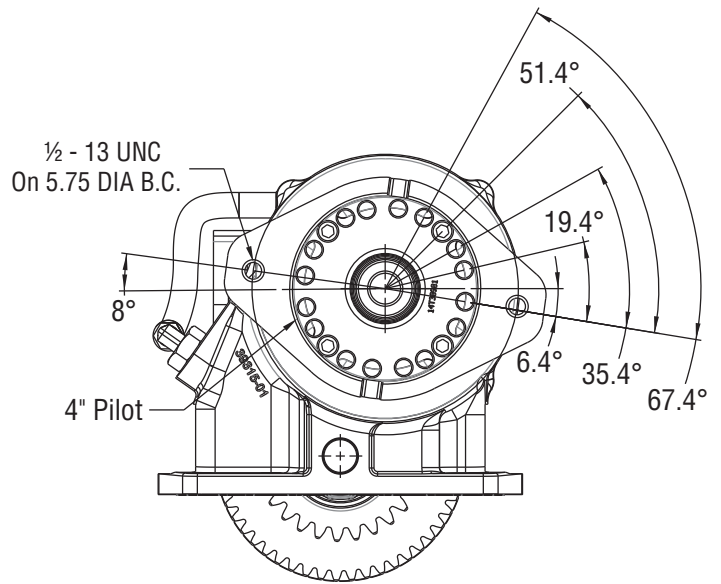
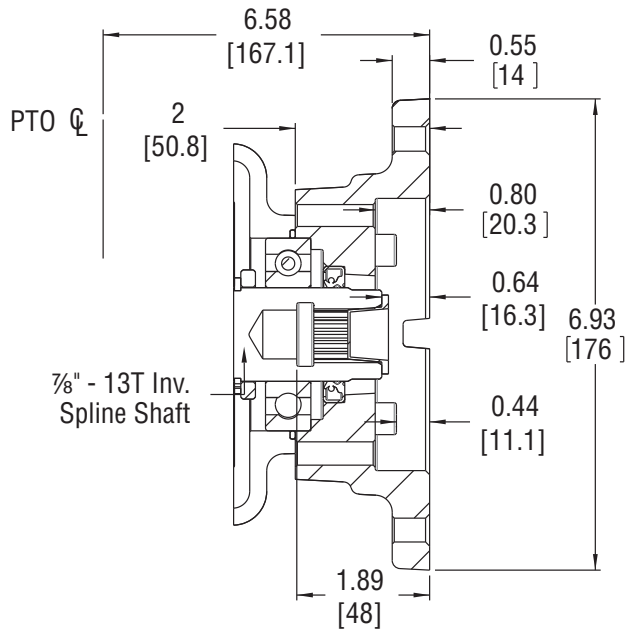
## “2” OUTPUT OPTION – 1.3" – 20T W/ DIN COMPANION FLANGE



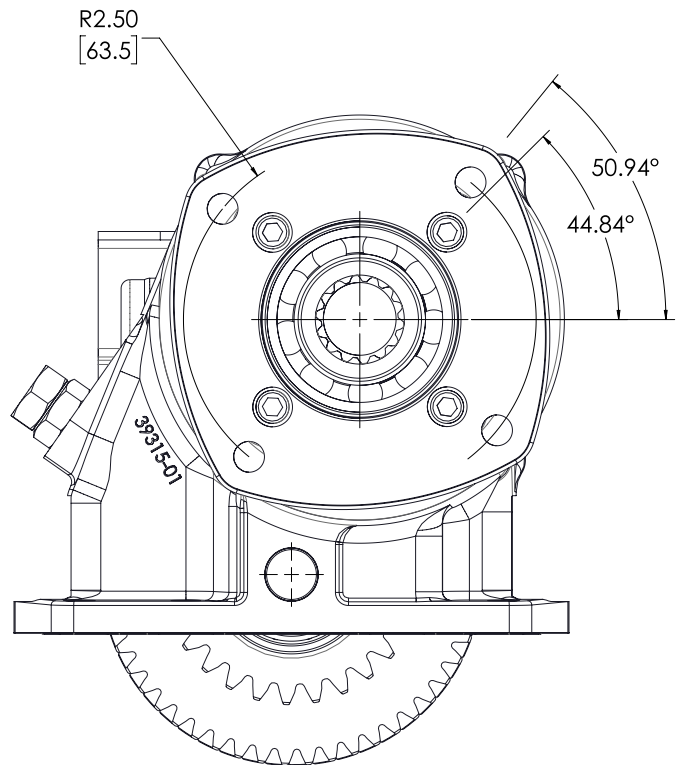
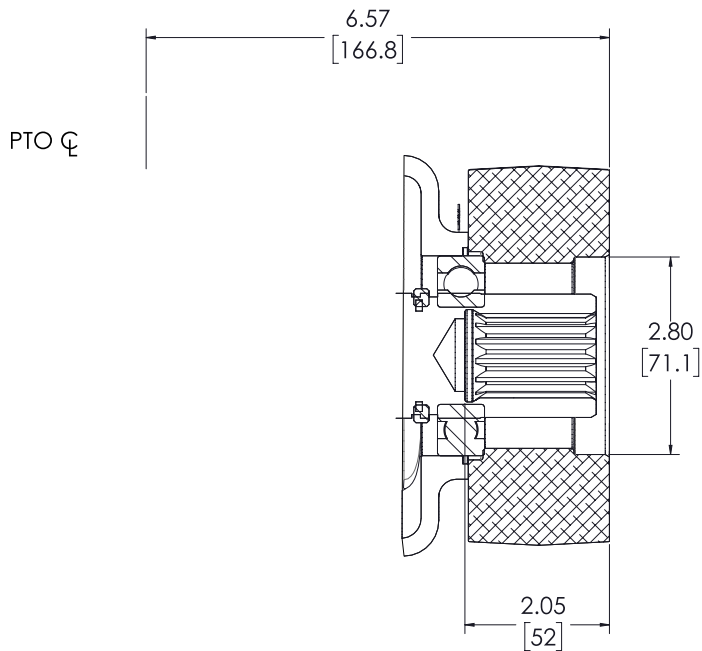


# DIMENSIONS IN INCHES (MM)

## "6" OUTPUT OPTION – SAE 'B' 2-BOLT W/ 7/8" – 13T



## "V" OUTPUT OPTION – SAE 'C' 4-BOLT W/ 1 1/4" – 14T



# NOTES

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# NOTES

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