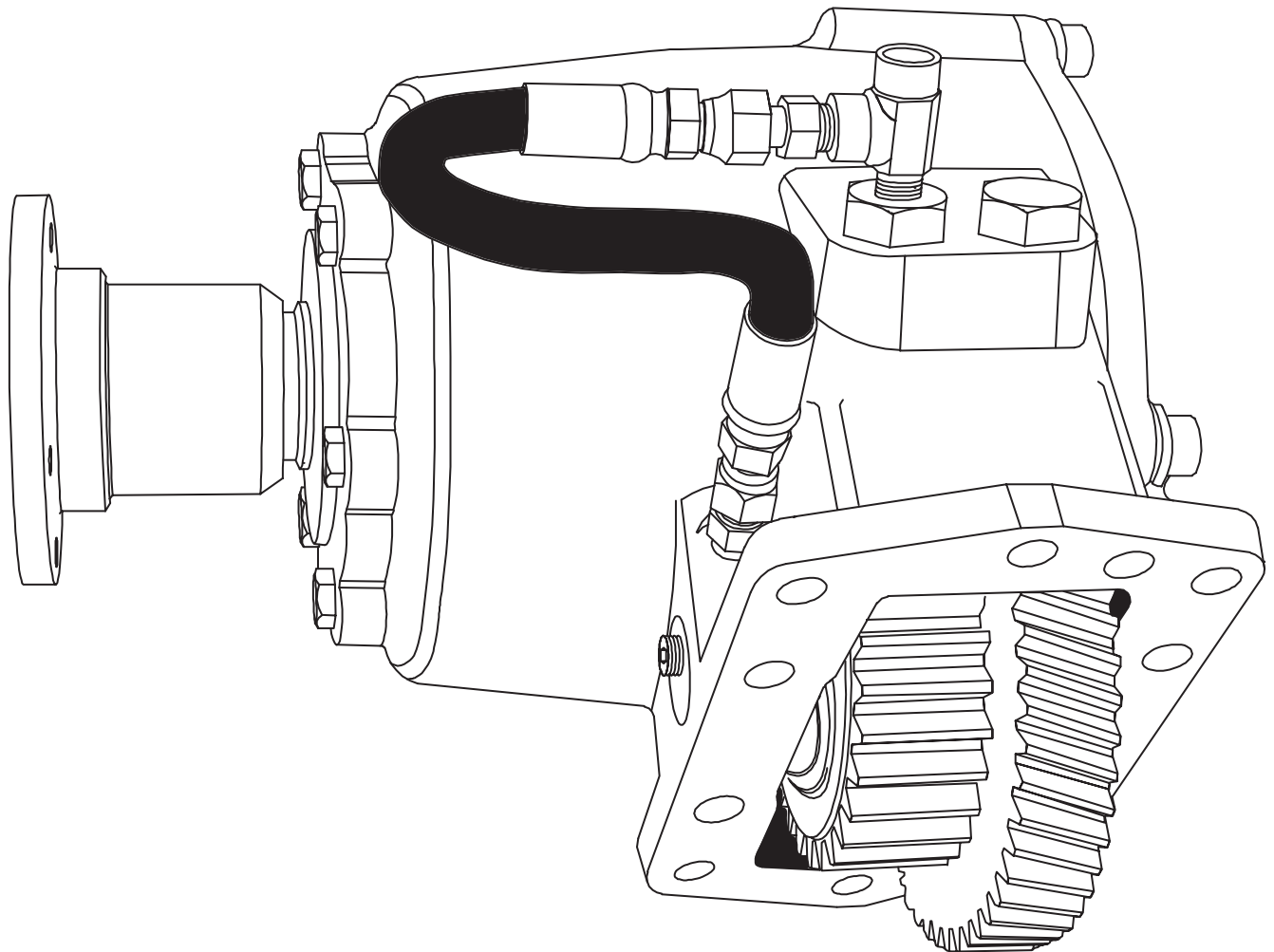




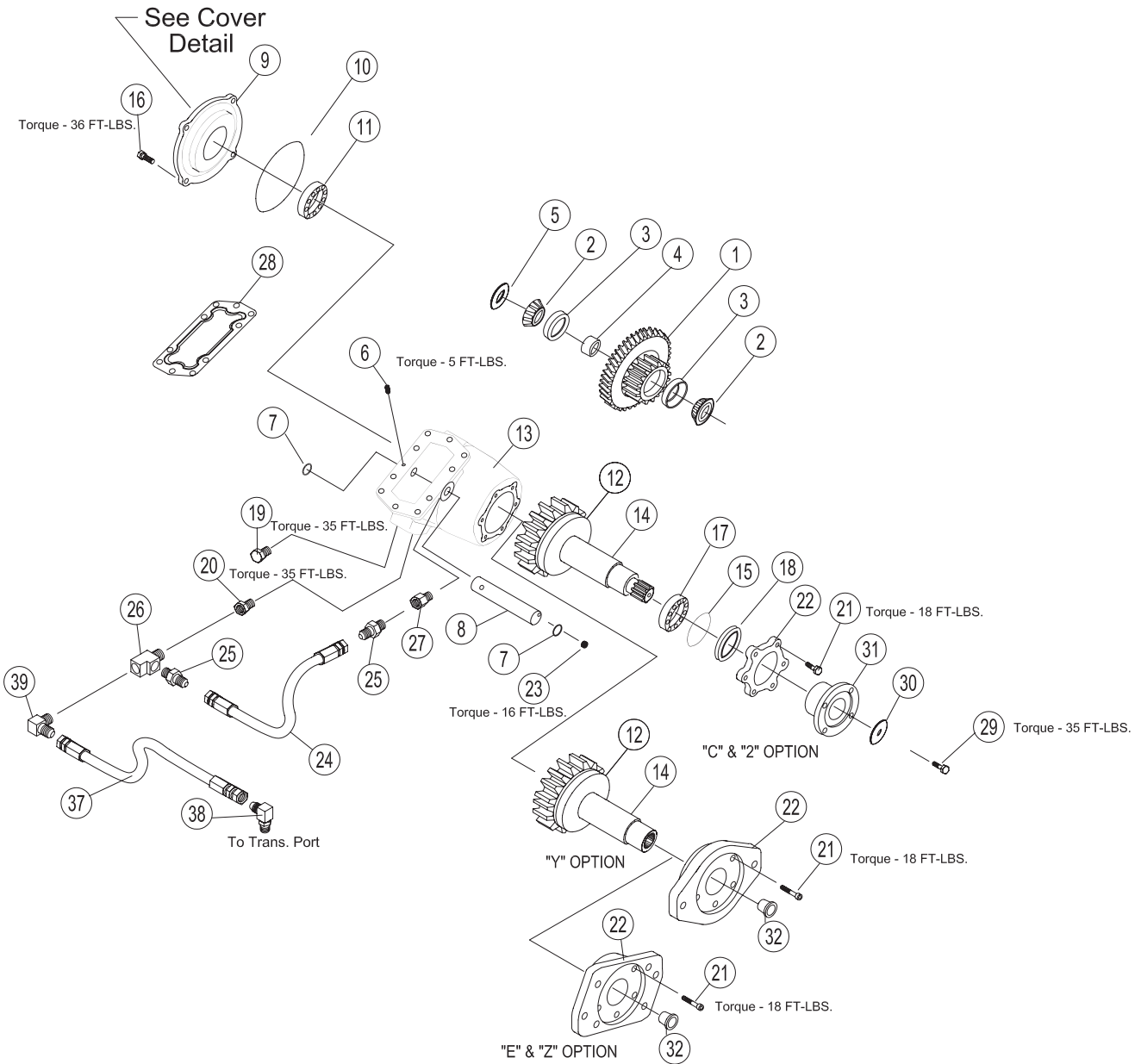
CD40 SERIES PTO

PARTS LIST AND SERVICE MANUAL

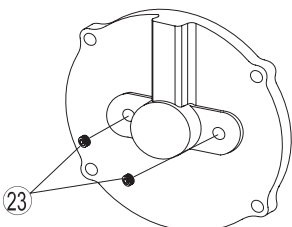


HEAVY DUTY, CONSTANT DRIVE PTO
FOR THE ALLISON WORLD TRANSMISSION

CD40 SERIES CONSTANT DRIVE PTO EXPLODED VIEW

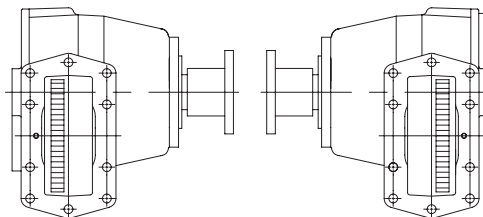


CD40 COVER DETAIL (Backside)



Torque - 16 FT-LBS.

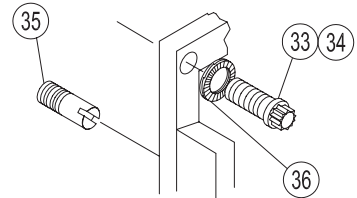
PTO ASSEMBLY ARRANGEMENTS



NO. 3 ASSEMBLY

NO. 1 ASSEMBLY

BOLT KIT 20MK1001



PARTS LIST AND DESCRIPTION

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	03T38674* 03T38671* 03T40056* 03T40058* 03T40199* 03T40200* See Table A	Input Gear - A1012 Input Gear - A1007 Input Gear - U6007 Input Gear - U6012 Input Gear - C9507 Input Gear - C9510
2	2	10T38684*	Bearing
3	2	10T38685*	Bearing Cup
4	1	See Table B*	Bearing Cone Spacer
5	1	See Table C*	Bearing Shim
* Part numbers for identification purposes only. Items sold as sub-assembly only.			
6	1	19T36082	Set Screw
7	2	12T35577	O-Ring
8	1	07T38689	Idler Shaft
9	1	15T39171	End Cover
10	1	12T36207	O-Ring
11	1	10T35994	Bearing
12	1	02T39170# 02T40725# 02T39206#	Output Gear – 07 (38T) Output Gear – 10 (32T) Output Gear – 12 (30T)
13	1	01T38681 01T38683 01T40201 01T40202	Housing “3” Arrangement (A10, U60) Housing “1” Arrangement (A10, U60) Housing “3” Arrangement (C95) Housing “1” Arrangement (C95)
14	1	06T37696# 06T39200#	Output Shaft C, 2 Output Shaft E, Y, Z
# Part numbers for identification purposes only. Output shaft and ratio gear sold as an assembly only.			
		06TA4526 06TA4939 06TA4548 06TA4547 06TA4940 06TA4679	Output Shaft Ass’y C, 2 (07 Ratio) Output Shaft Ass’y C, 2 (10 Ratio) Output Shaft Ass’y C, 2 (12 Ratio) Output Shaft Ass’y E, Y, Z (07 Ratio) Output Shaft Ass’y E, Y, Z (10 Ratio) Output Shaft Ass’y E, Y, Z (12 Ratio)
15	1	12T35773	O-Ring
16	4	19M38100	Capscrew
17	1	10T35775	Bearing
18	1	11T37795	Shaft Seal
19	1	25T35999	Plug
20	1	25T35784	Lube Plug

ITEM	QTY	PART NUMBER	DESCRIPTION
21	6	19T31577 19T39417	Capscrew E, Y, Z Flange Capscrew C, 2
22	1	15T36123 14T35769 14T36007 14T39188	Shaft End Cover C, 2 “E” Hydraulic Flange “Y” Hydraulic Flange “Z” Hydraulic Flange
23	3	25T21684	1/8” Pipe Plug
24	1	45T36308	Hose (10” Long)
25	2	43T37503	Fitting
26	1	43T39129	Tee Fitting
27	1	43M02203	Orifice Fitting
28	1	13T35777	Gasket
29	1	19T38266	Capscrew
30	1	21T20092	Flat Washer
31	1	14T31499 14T37498	Companion Flange “C” Companion Flange “2”
32	1	25T35936	Caplug “E”, “Y”, “Z” (Storage Only)
		20MK1001	Stud Kit
33	6	19T35778	Capscrew (30 mm)
34	2	19T37727	Capscrew (25 mm)
35	2	20T35779	Stud
36	6	21T40360	Washer
		43MK2810	Pressure Lube Kit (Option “X”)
37	1	45M4R528	Hose (28”)
38	1	43M68014	Adapter Fitting (Transmission)
39	1	43M05522	Adapter Fitting (PTO)
		43MK3620	Pressure Lube Kit (Option “B”)
37	1	45M4R548	Hose (48”)
38	1	43M68014	Adapter Fitting (Transmission)
39	1	43M05522	Adapter Fitting (PTO)
N.S.	1	48TK4891	Installation Kit (Includes stud kit, instruction / gasket kit, label kit and lube kit.)
N.S.	1	52MK1010	Instruction / Gasket Kit
N.S.	1	36MK3841	Label Kit
N.S.	1	CD40-RBK	Rebuild Kit Incl.: (1) 6, (2) 7, (1) 10, (1) 11, (1) 15, (1) 17, (1) 18, (1) 28
N.S.	1	CD40-GSK	Gasket Kit Incl.: (1) 7, (1) 10, (1) 15, (1) 18, (1) 28

CD40 MODEL NUMBER CONSTRUCTION

CD 40 — A10 07 — M 1 C X

PTO Type

Clutch Shift — CD

Series

40

Trans.

Allison

CS Gear Data

10.16P RH — A10
9.55P20PA19.73LH — C95

Speed Ratio

07 — .74:1
10 — 1.00:1
12 — 1.20:1

Shifter Type

Constant Mesh — M

Special Feature

X — None (Pressure Lube Std. on all Units)
B — Lube Hose Optional Length-48”

Output Type

C — 1410 Companion Flange
E — SAE “C” 2 & 4 Bolt (1-1/4” 14 Spl)
Y — SAE “C” 2 Bolt
Z — SAE “B” 2 & 4 Bolt (1-1/4” 14 Spl)
2 — DIN Companion Flange

Assembly Arrangement

1 3

CD40 PARTS LIST TABLES

TABLE A – ITEM #1 INPUT GEAR

Service Parts Sold as Sub-Assembly Only

SUB-ASS'Y	INPUT GEAR	DESCRIPTION (#T)
03TA4826	03T38671	Input Gear - A1007 (50/28)
03TA4828	03T38674	Input Gear - A1012 (50/36)
03TA4829	03T40056	Input Gear - U6007 (30/28)
03TA4831	03T40058	Input Gear - U6012 (30/36)
03TA4937	03T40199	Input Gear - C9507 (45/28)
03TA4938	03T40200	Input Gear - C9510 (45/34)

Input sub-assembly includes: input gear, cone bearings, bearing cups and cone spacer.

TABLE B – ITEM #4 CONE SPACER

SPACER	DESCRIPTION	DIMENSION
18T39242	Cone Spacer	0.798 / 0.796
18T39243	Cone Spacer	0.795 / 0.793
18T39244	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

Only one spacer is used in input sub-assembly.

TABLE C – ITEM #5 BEARING SHIM

SHIM	DESCRIPTION	DIMENSION
18T39227	Bearing Shim	0.0650 / 0.0630
18T39228	Bearing Shim	0.0675 / 0.0655
18T39229	Bearing Shim	0.0700 / 0.0680
18T39230	Bearing Shim	0.0725 / 0.0705
18T39231	Bearing Shim	0.0750 / 0.0730
18T39232	Bearing Shim	0.0775 / 0.0755
18T39233	Bearing Shim	0.0800 / 0.0780
18T39234	Bearing Shim	0.0825 / 0.0805
18T39235	Bearing Shim	0.0850 / 0.0830
18T39236	Bearing Shim	0.0875 / 0.0855
18T39237	Bearing Shim	0.0900 / 0.0880
18T39238	Bearing Shim	0.0925 / 0.0905
18T39239	Bearing Shim	0.0950 / 0.0930
18T39240	Bearing Shim	0.0975 / 0.0955
18T39241	Bearing Shim	0.1000 / 0.0980

Only one shim is used in assembly of the PTO. Kit 18TK4832 includes one of each.

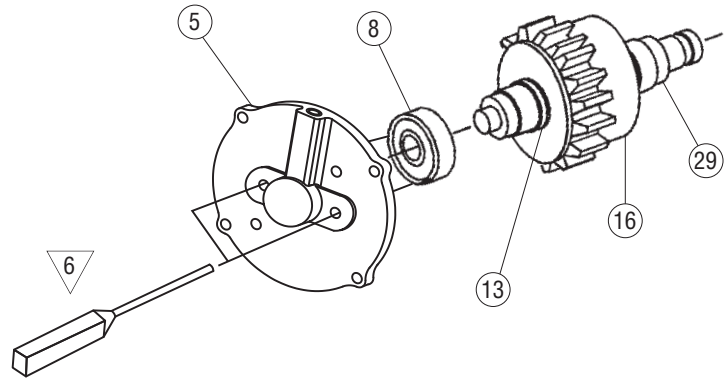
CD40 DISASSEMBLY & REASSEMBLY

(REFERENCE EXPLODED VIEW ON PAGE 2)

DISASSEMBLY PROCEDURE

▽ - DENOTES SPECIAL SERVICE PROCEDURES

1. Remove CD40 input gear, by removing the set screw in the pad and driving idler shaft from housing (26, 27).
3. Remove the four large socket capscrews (4) which hold bearing cover to PTO housing.
4. Position housing against a bench block and hit end of output shaft with a soft face hammer to remove entire output shaft assembly with bearing cover.
5. Remove the two pipe plugs (45) from bearing cover. This exposes ball bearing assembly within the cover.
- 6 ▽ Using a 1/4" punch and alternating between the two holes, drive bearing and shaft assembly from bearing cover.
7. Using snap ring pliers, remove snap ring (11) located on output shaft end while gently pushing on piston cup (24).
8. Pull piston cup (24) from the shaft and piston (21) will go with it.
9. Tap piston cup on a wood surface to remove piston.
10. Remove spring (20). The clutch friction discs (18), spacer disc (19), spacer ring (16), and inner clutch hub (17) can be removed by pointing shaft end down.
11. The snap ring (11) on opp end of bell gear can be removed with snap ring pliers. This allows bell gear to be removed towards closed end. The internal bearing of bell gear can easily be removed.



REASSEMBLY PROCEDURE

12. The reassembly of the unit is made in reverse of the disassembly.
13. Be sure to lubricate o-rings and all bearings upon installation. Torque capscrews to values shown or to following values:

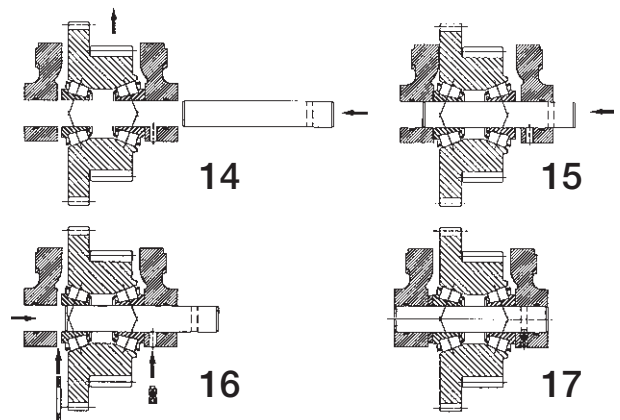
5/16 capscrews - 18 ft. lb.

3/8 capscrews - 36 ft. lb.

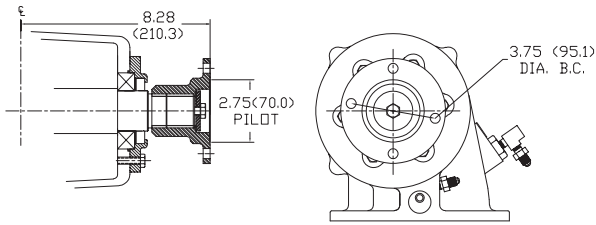
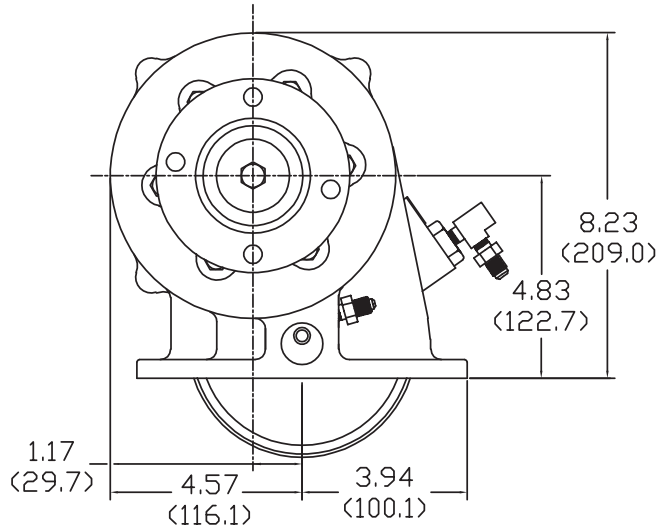
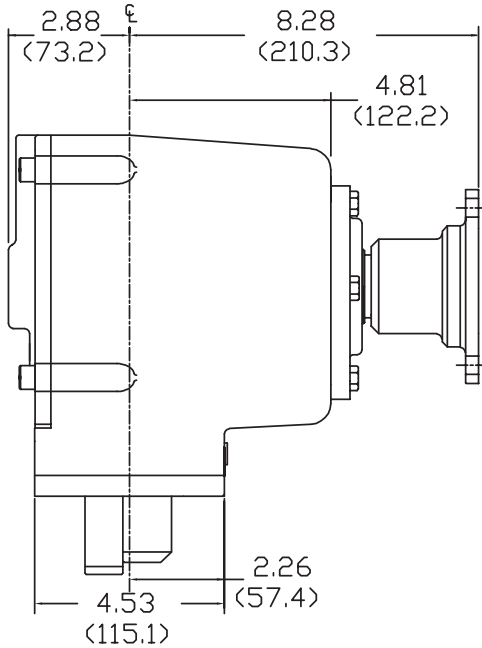
1/4 set screw - 9 ft. lb.

- 14 ▽ Slide input gear sub-assembly into housing to line up idler shaft.
- 15 ▽ Tap idler shaft into housing and through both bearing races.
- 16 ▽ Tap idler shaft in reverse direction so that it is flush with bearing in this assembly. Insert thickest shim that can be **installed by hand** in gap between bearing and housing. Rotate input gear to ensure it is not excessively tight or loose. Remove this shim and insert the next thickest shim (this shim is usually driven into place.) Recommended bearing pre-load is .002" loose to .006" loose.
- 17 ▽ Tap idler shaft into position and install set screw.

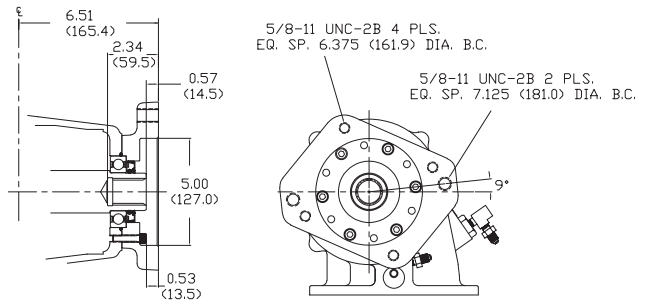
TAPER ROLLER BEARINGS



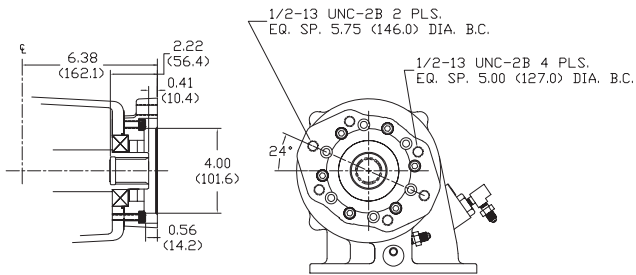
CD40 MOUNTING DIMENSIONS IN INCHES (MM)



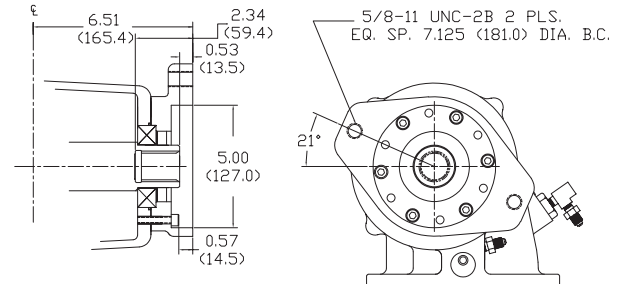
1-1/2"-10 SPLINE W/1410 SERIES FLANGE ("C" OPTION)



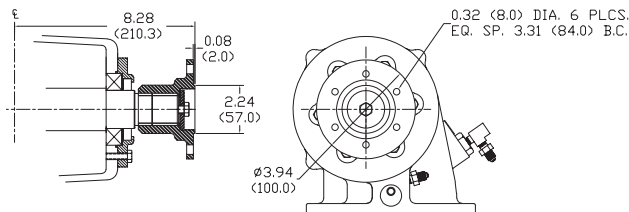
SAE "C" 2 & 4 BOLT 1-1/4"-14 SPLINE ("E" OPTION)



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

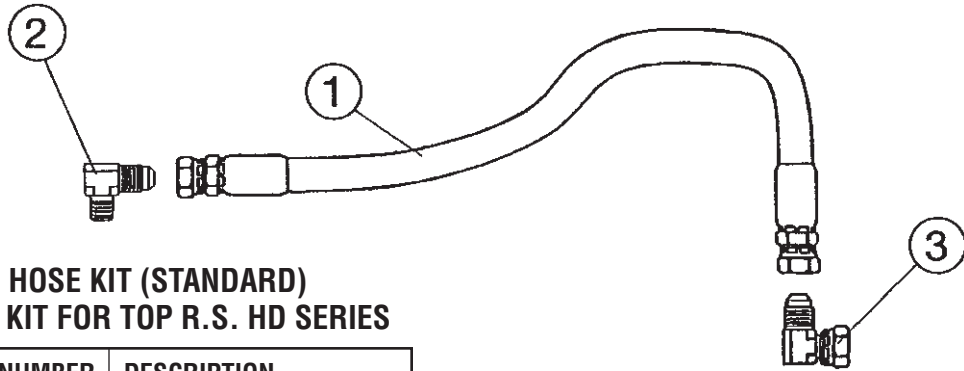


SAE "C" 2 BOLT 1-1/4"-14 SPLINE ("Y" OPTION)



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

INSTALLATION HOSE KITS

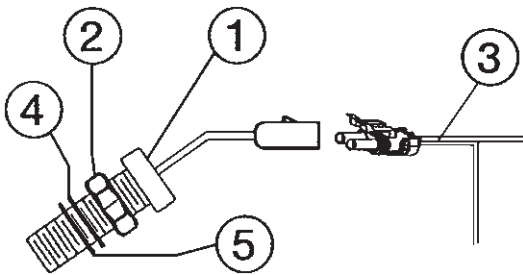


**43TK3881 HOSE KIT (STANDARD)
43TK3885 HOSE KIT FOR TOP R.S. HD SERIES**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	45T36274 45T36273	Hose Ass'y Std. (28") Hose Ass'y HD Top (57")
2	1	43M68014	Elbow (Transmission)
3	1	43T36445	Elbow (use as needed) (43TK3881 only)

SPEED SENSOR KIT

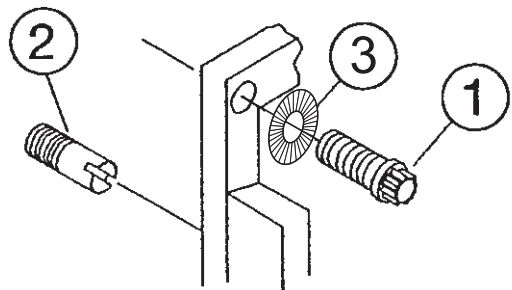
**31TK3873
SPECIAL OPTION "U"**



ITEM	QTY	PART NO.	DESCR.
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

20MK1001



ITEM	QTY	PART NO.	DESCR.
1	6	19T35778	12 Point Capscrew -
2	2	19T37727	
2	2	20T35779	Alignment Stud
3	8	21T40361	Washer

LUBE HOSE INSTALLATION

INSTALLATION TIPS:

Do not use Teflon tape on pipe threads. If sealant is to be used, it is recommended that paste style thread sealant or Loctite® pipe thread sealant be used. Allow the proper drying times before pressurizing.

SEE MANUFACTURERS INSTRUCTIONS.

CS41/CD40 with lube hose already installed into end of idler shaft (Fig. 1) Remove the hose from the fittings (Fig. 2). Remove both fittings at the idler shaft and discard the silver 90 degree fitting. Remove the pipe plug from the housing and install it in the end of the idler shaft (Fig. 3). Remove the street tee and hose fitting from the lube port below the model tag. Install PTO onto the transmission. Install the street tee, 43M02203 straight orifice fitting and hose fittings and tighten as shown in (Fig. 5). Install hose as shown in (Fig. 6) and tighten being careful not to twist the hose.

CS41/CD40 WITHOUT LUBE HOSE INSTALLED (FIG. 3)

If the 1/8" pipe plug is located in the housing port above the idler shaft, remove and install it in the end of the idler shaft (Fig. 3). Locate the lube hose, hose fittings, 43M02203 straight orifice fitting and street tee (Fig. 4). Install PTO onto the transmission. Install the street tee, 43M02203 straight orifice fitting and hose fittings and tighten as shown in (Fig. 5). Install hose as shown in (Fig. 6) and tighten being careful not to twist the hose.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



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