



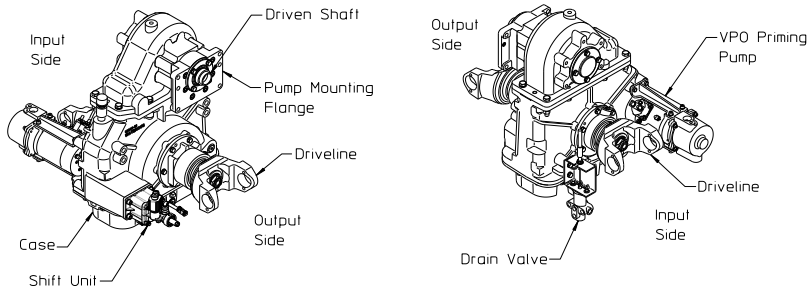
Document Number	Issue Date	Rev. Date
<b>SPL 83124</b>	<b>11/09/10</b>	<b>8/17/20</b>

## C20 Series Transmission Service Parts List

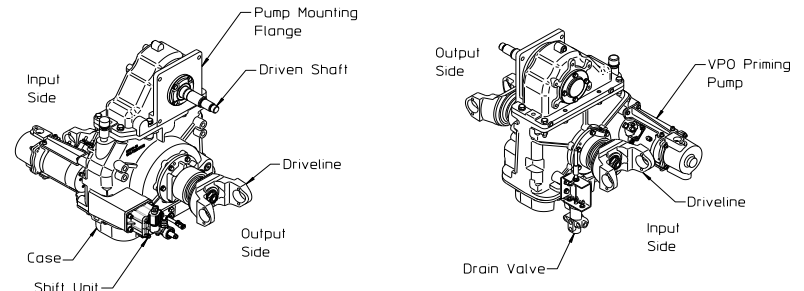
As used with CM, CMU, CS, CSU pump models: Transmission mounted on the front of the pump  
 As used with CXV, CXS pump models: Pump mounted on the rear (output shaft side) of transmission

Index:

		Components		See Page	
Driven Shaft	Pump Model	Type			
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	Model VPO Priming Pump		See Priming Pump Service Parts List		



**AS USED WITH CM, CMU, CS, CSU PUMP MODELS**



**AS USED WITH CXV, CXS PUMP MODELS**

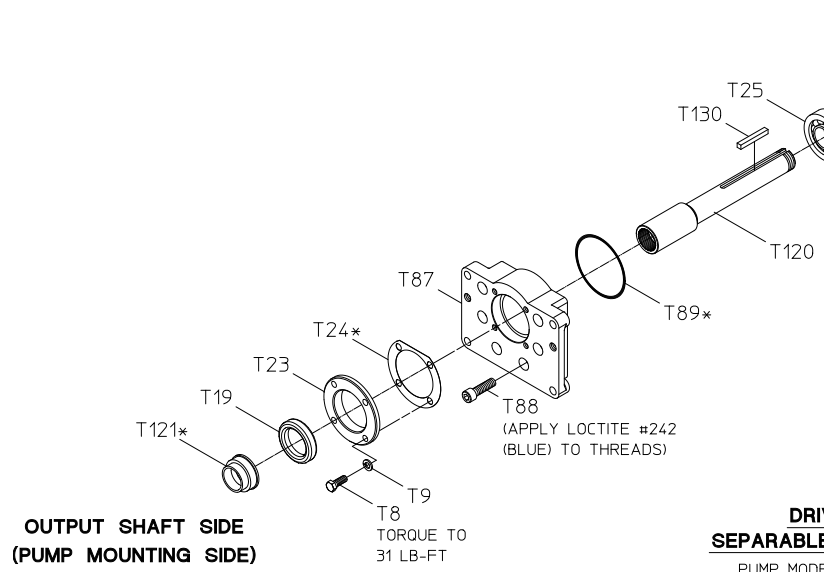
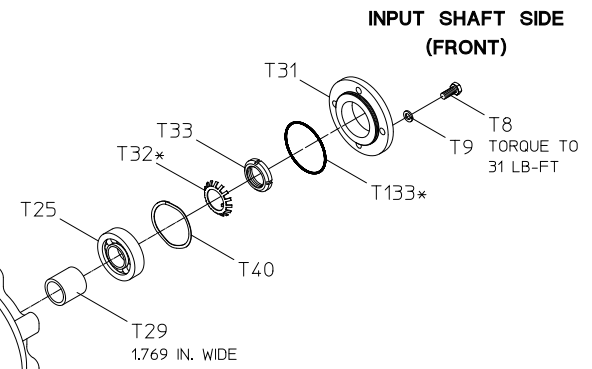
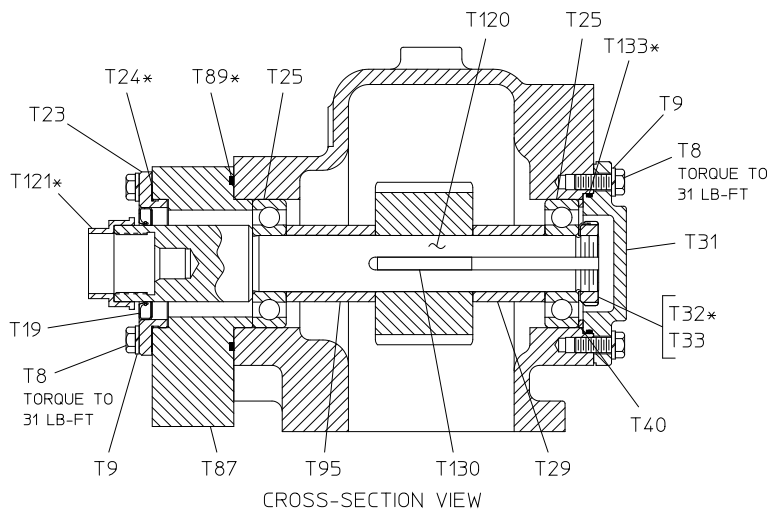
## Driven Shaft - Separable Impeller Shaft

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T19	Oil Seal, 1-7/8 x 2-3/4 x 5/16 in.
T23	Oil Seal Housing
T24	Oil Seal Housing Gasket
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, 1.769 in. Wide
T31	Bearing Cover
T32	Bearing Lock Nut Washer (W07)
T33	Bearing Lock Nut (N07)

REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T65	Case Cap
T87	Front Mount Adapter
T88	Socket Hd Screw, 1/2-13 x 2-1/4 in.
T89	O-ring, 4 x 4-1/4 in.
T95	Bearing Spacer, 2.187 Wide
T120	Driven Shaft
T121	Driven Shaft Boot
T130	Square Key, 5/16 x 2-5/16 in.
T133	O-ring, 3-1/4 x 3-7/16 in.
T141	Gasket and O-ring Repair Kit

### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**DRIVEN SHAFT  
SEPARABLE IMPELLER SHAFT**  
PUMP MODELS: CM, CMU, CS, CSU

T65  
SEE PAGES 22 THRU 29  
FOR CAP VARIATIONS

T141  
GASKET AND O-RING  
REPAIR KIT  
\*PART OF T141 GASKET  
AND O-RING REPAIR KIT

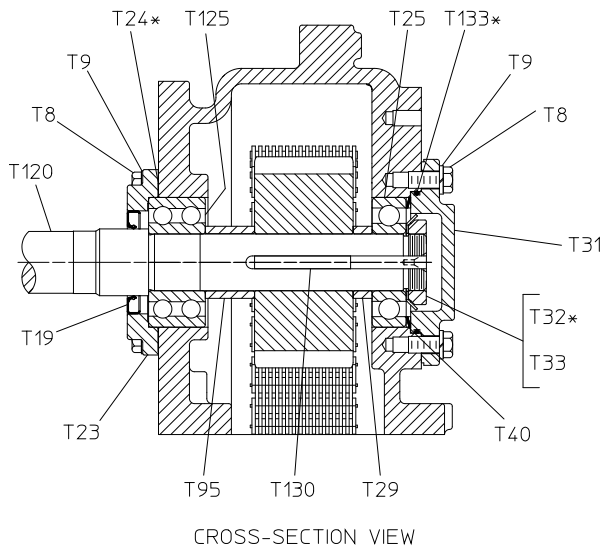
## Driven Shaft - Non-Separable Impeller Shaft

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T19	Oil Seal, 1-5/8 x 2-1/2 x 5/16 in.
T23	Oil Seal Housing
T24	Oil Seal Housing Gasket
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, .460 in. Wide
T31	Bearing Cover
T32	Bearing Lock Nut Washer (W07)
T33	Bearing Lock Nut (N07)

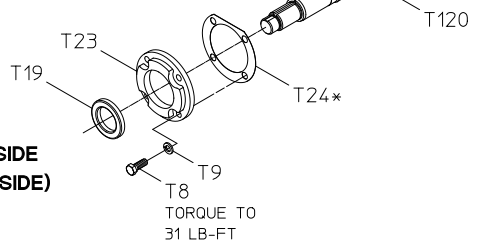
REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T65	Case Cap
T95	Bearing Spacer, 1.196 in. Wide
T120	Driven Shaft
T125	Double Row Ball Bearing
T130	Square Key, 5/16 x 2-5/16 in.
T133	O-ring, 3-1/4 x 3-7/16 in.
T141	Gasket and O-ring Repair Kit

### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



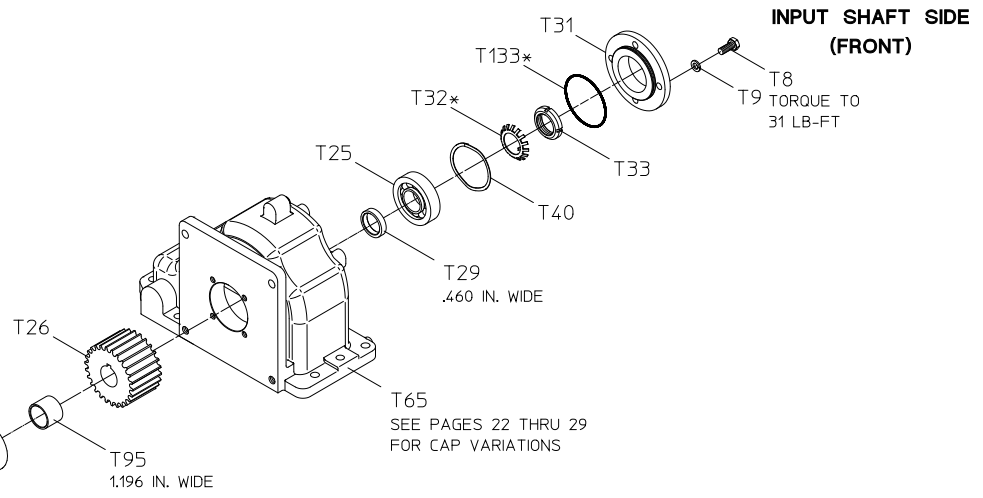
**OUTPUT SHAFT SIDE  
(PUMP MOUNTING SIDE)**



T8  
TORQUE TO  
31 LB-FT

**DRIVEN SHAFT  
NON-SEPARABLE IMPELLER SHAFT**

PUMP MODELS: CXV, CXS



**INPUT SHAFT SIDE  
(FRONT)**

T8  
TORQUE TO  
31 LB-FT

T29  
.460 IN. WIDE

T65  
SEE PAGES 22 THRU 29  
FOR CAP VARIATIONS

T141  
GASKET AND O-RING  
REPAIR KIT  
\* PART OF T141 GASKET  
AND O-RING REPAIR KIT

# Driveline - Input and Output Shafts

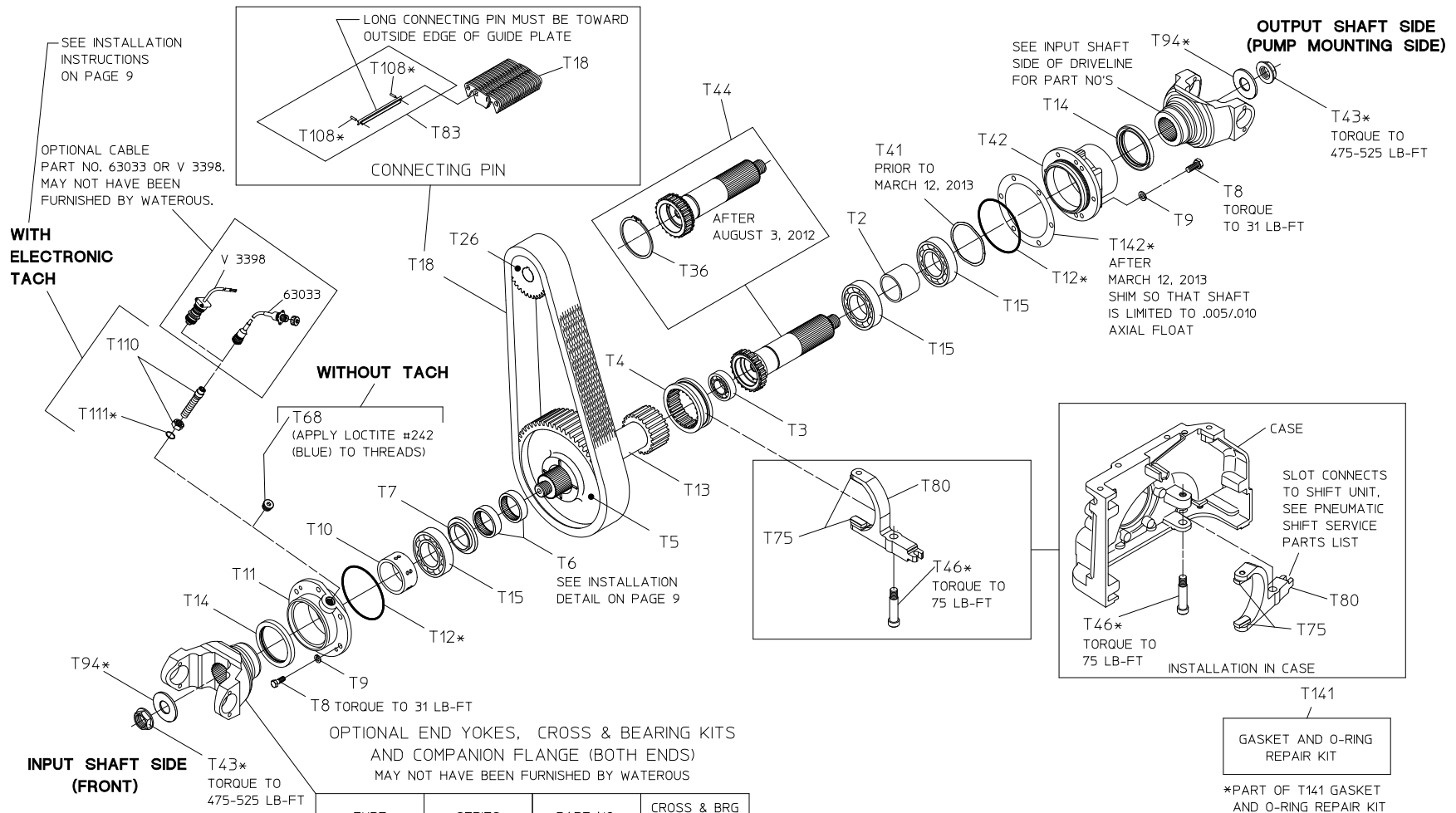
## Exploded View

REF. NO.	DESCRIPTION
T2	Coupling Shaft Spacer
T3	Single Row Ball Bearing
T4	Shift Collar
T5	Drive Sprocket
T6	Needle Bearing
T7	Thrust Washer
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T10	Tachometer Pulse Generator
T11	Drive Shaft Housing
T12	O-ring, 4-3/4 x 5 in.
T13	Drive Shaft
T14	Oil Seal, 3-1/2 x 4-3/8 in.
T15	Single Row Ball Bearing
T18	Chain
T26	Driven Sprocket
T36	Retaining Ring (Used Starting August 3, 2012)
T41	Wave Spring, 110 mm

REF. NO.	DESCRIPTION
T42	Coupling Shaft Housing
T43	Self-Locking Nut, 1-1/4-18 in.
T44	Coupling Shaft (Includes T36)
T46	Shoulder Screw, 5.8-11 x 2-1/2 in. (Self-Locking)
T68	Set Screw, 5/8-18 x 5/8 in.
T75	Shift Shoe
T80	Shift Fork
T83	Chain Connecting Pin Set
T94	Plain Washer, 1-1/4 in.
T108	Spirol Pin, 1/16 x 1/4 or 1/16 x 5/16 in.
T110	Magnetic Tachometer Pick-up
T111	O-ring, 5/8 x 3/4 in.
T141	Gasket and O-ring Repair Kit
T142	Aluminum Shim

### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



TYPE	SERIES	PART NO.	CROSS & BRG KIT NO.
END YOKE	1710 BP	V 2837	V 2839
	1810 BP	V 2838	V 2840
	1710 HR	V 4101	-
	1810 HR	V 4102	-
	SPL140	V 3388	V 3389
COMPANION FLANGE	1650/1710	V 3619	-
	1480/1610	V 3719	-
	ISO 8667	63714	-

**DRIVELINE**  
INPUT AND OUTPUT SHAFTS

# Driveline - Input and Output Shafts

## Cross-Section View

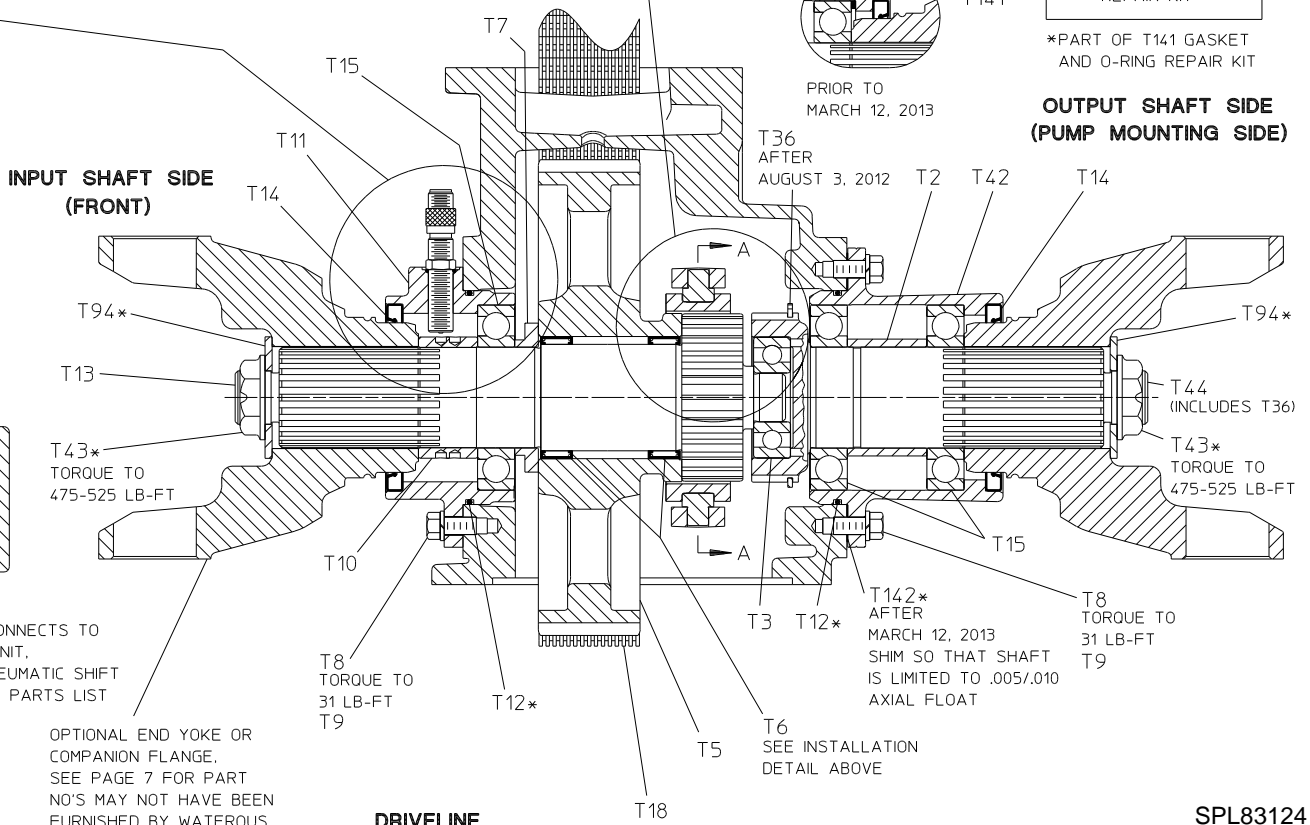
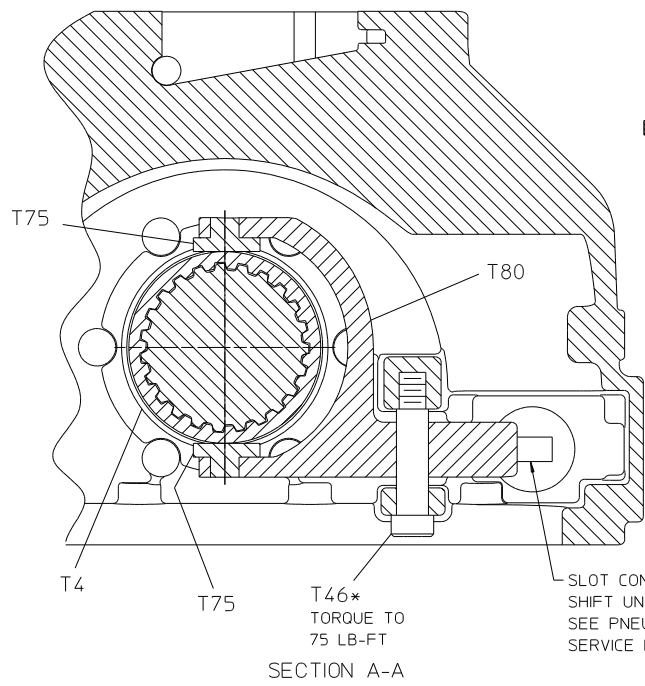
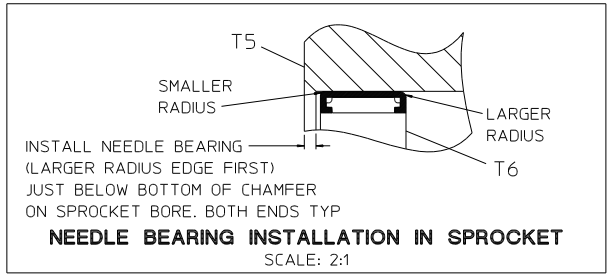
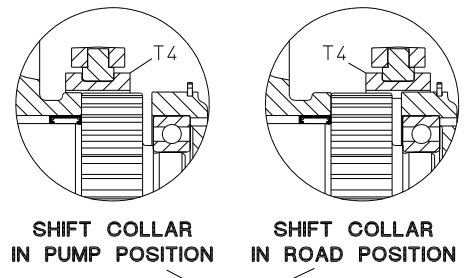
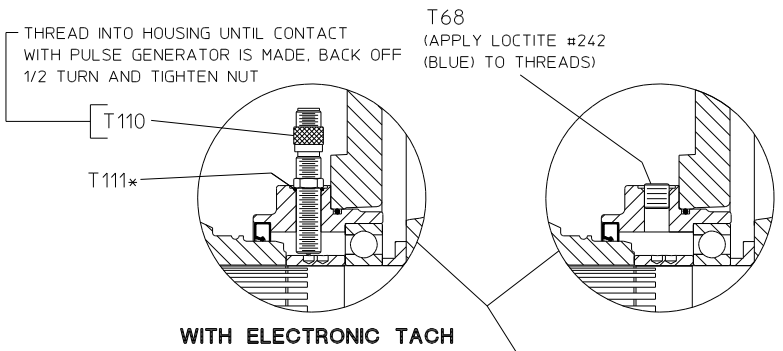
REF. NO.	DESCRIPTION
T2	Coupling Shaft Spacer
T3	Single Row Ball Bearing
T4	Shift Collar
T5	Drive Sprocket
T6	Needle Bearing
T7	Thrust Washer
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T10	Tachometer Pulse Generator
T11	Drive Shaft Housing
T12	O-ring, 4-3/4 x 5 in.
T13	Drive Shaft
T14	Oil Seal, 3-1/2 x 4-3/8 in.
T15	Single Row Ball Bearing
T18	Chain
T26	Driven Sprocket
T36	Retaining Ring (Used Starting August 3, 2012)
T41	Wave Spring, 110 mm

REF. NO.	DESCRIPTION
T42	Coupling Shaft Housing
T43	Self-Locking Nut, 1-1/4-18 in.
T44	Coupling Shaft (Includes T36)
T46	Shoulder Screw, 5.8-11 x 2-1/2 in. (Self-Locking)
T68	Set Screw, 5/8-18 x 5/8 in.
T75	Shift Shoe
T80	Shift Fork
T94	Plain Washer, 1-1/4 in.
T110	Magnetic Tachometer Pick-up
T111	O-ring, 5/8 x 3/4 in.
T141	Gasket and O-ring Repair Kit
T142	Aluminum Shim

### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft





# Driveline - Input Shaft Only

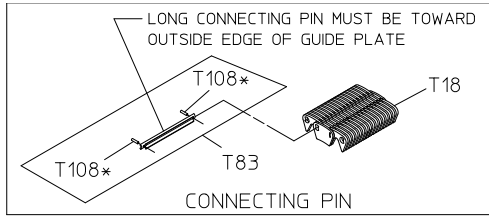
## Exploded View

REF. NO.	DESCRIPTION
T3	Single Row Ball Bearing
T4	Shift Collar
T5	Drive Sprocket
T6	Needle Bearing
T7	Thrust Washer
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T10	Tachometer Pulse Generator
T11	Drive Shaft Housing
T12	O-ring, 4-3/4 x 5 in.
T13	Drive Shaft
T14	Oil Seal, 3-1/2 x 4-3/8 in.
T15	Single Row Ball Bearing
T18	Chain
T26	Driven Sprocket
T36	Retaining Ring
T41	Wave Spring, 72 mm

REF. NO.	DESCRIPTION
T42	Bearing Housing
T43	Self-Locking Nut, 1-1/4-18 in.
T57	Magnetic Drain Plug, 3/4-16
T68	Set Screw, 5/8-18 x 5/8 in.
T83	Chain Connecting Pin Set
T94	Plain Washer, 1-1/4 in.
T108	Spirol Pin, 1/16 x 1/4 or 1/16 x 5/16 in.
T110	Magnetic Tachometer Pick-up
T111	O-ring, 5/8 x 3/4 in.
T141	Gasket and O-ring Repair Kit

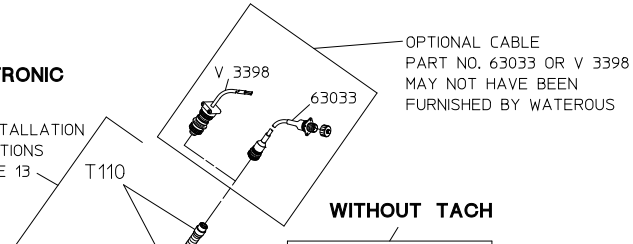
### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**WITH ELECTRONIC TACH**

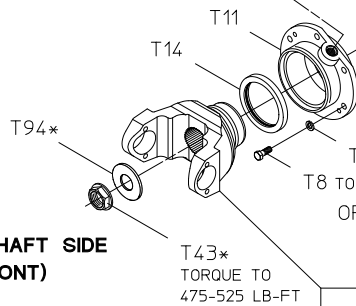
SEE INSTALLATION INSTRUCTIONS ON PAGE 13



**WITHOUT TACH**

T68 (APPLY LOCTITE #242 (BLUE) TO THREADS)

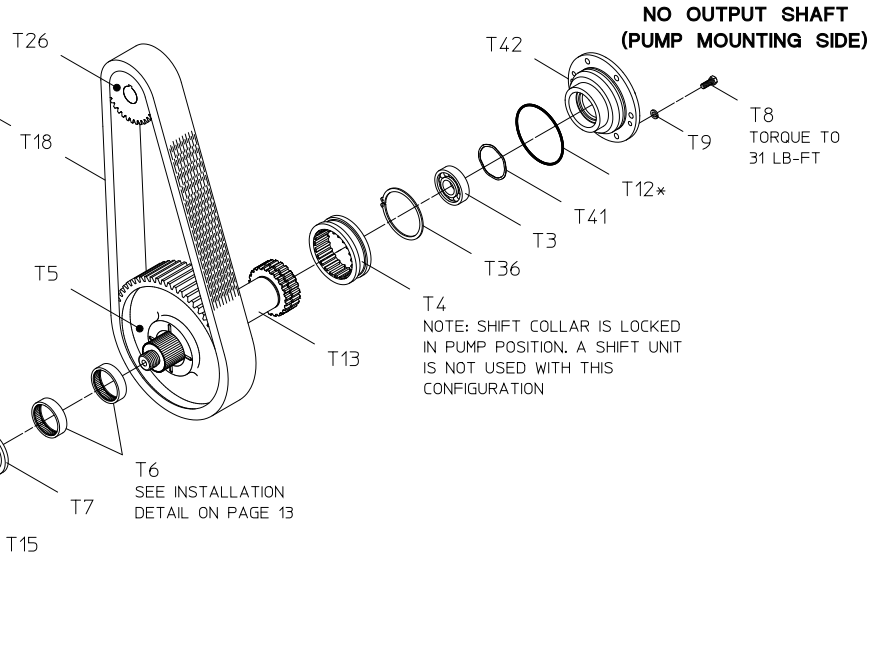
**INPUT SHAFT SIDE (FRONT)**



T43\* TORQUE TO 475-525 LB-FT

OPTIONAL END YOKE, CROSS & BEARING KITS AND COMPANION FLANGE (BOTH ENDS) MAY NOT HAVE BEEN FURNISHED BY WATEROUS

TYPE	SERIES	PART NO.	CROSS & BRG KIT NO.
END YOKE	1710 BP	V 2837	V 2839
	1810 BP	V 2838	V 2840
	1710 HR	V 4101	-
	1810 HR	V 4102	-
	SPL-140	V 3388	V 3389
COMPANION FLANGE	1650/1710	V 3619	-
	1480/1610	V 3719	-
	ISO 8667	63714	-



**DRIVELINE**  
INPUT SHAFT ONLY

T141  
GASKET AND O-RING REPAIR KIT  
\*PART OF T141 GASKET AND O-RING REPAIR KIT

# Driveline - Input Shaft Only

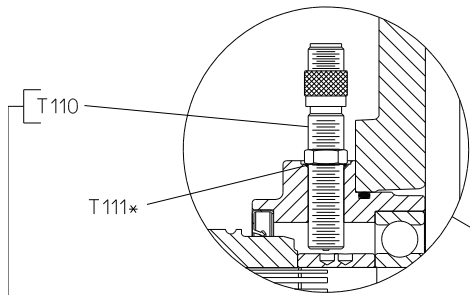
## Cross-Section View

REF. NO.	DESCRIPTION
T3	Double Row Ball Bearing
T4	Shift Collar
T5	Drive Sprocket
T6	Needle Bearing
T7	Thrust Washer
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T10	Tachometer Pulse Generator
T11	Drive Shaft Housing
T12	O-ring, 4-3/4 x 5 in.
T13	Drive Shaft
T14	Oil Seal, 3-1/2 x 4-3/8 in.
T15	Single Row Ball Bearing
T18	Chain
T36	Retaining Ring
T41	Wave Spring, 72 mm

REF. NO.	DESCRIPTION
T42	Bearing Housing
T43	Self-Locking Nut, 1-1/4-18 in.
T57	Magnentic Drain Plug
T68	Set Screw, 5/8-18 x 5/8 in.
T94	Plain Washer, 1-1/4 in.
T110	Magnetic Tachometer Pick-up
T111	O-ring, 5/8 x 3/4 in.
T141	Gasket and O-ring Repair Kit

### Hardware Torque Specifications

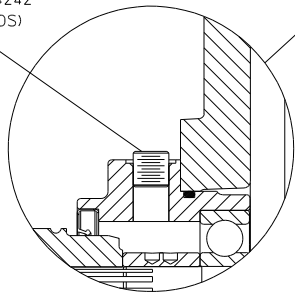
Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**WITH ELECTRONIC TACH**

THREAD INTO HOUSING UNTIL CONTACT WITH PULSE GENERATOR IS MADE. BACK OFF 1/2 TURN AND TIGHTEN NUT

T68  
(APPLY LOCTITE #242 (BLUE) TO THREADS)

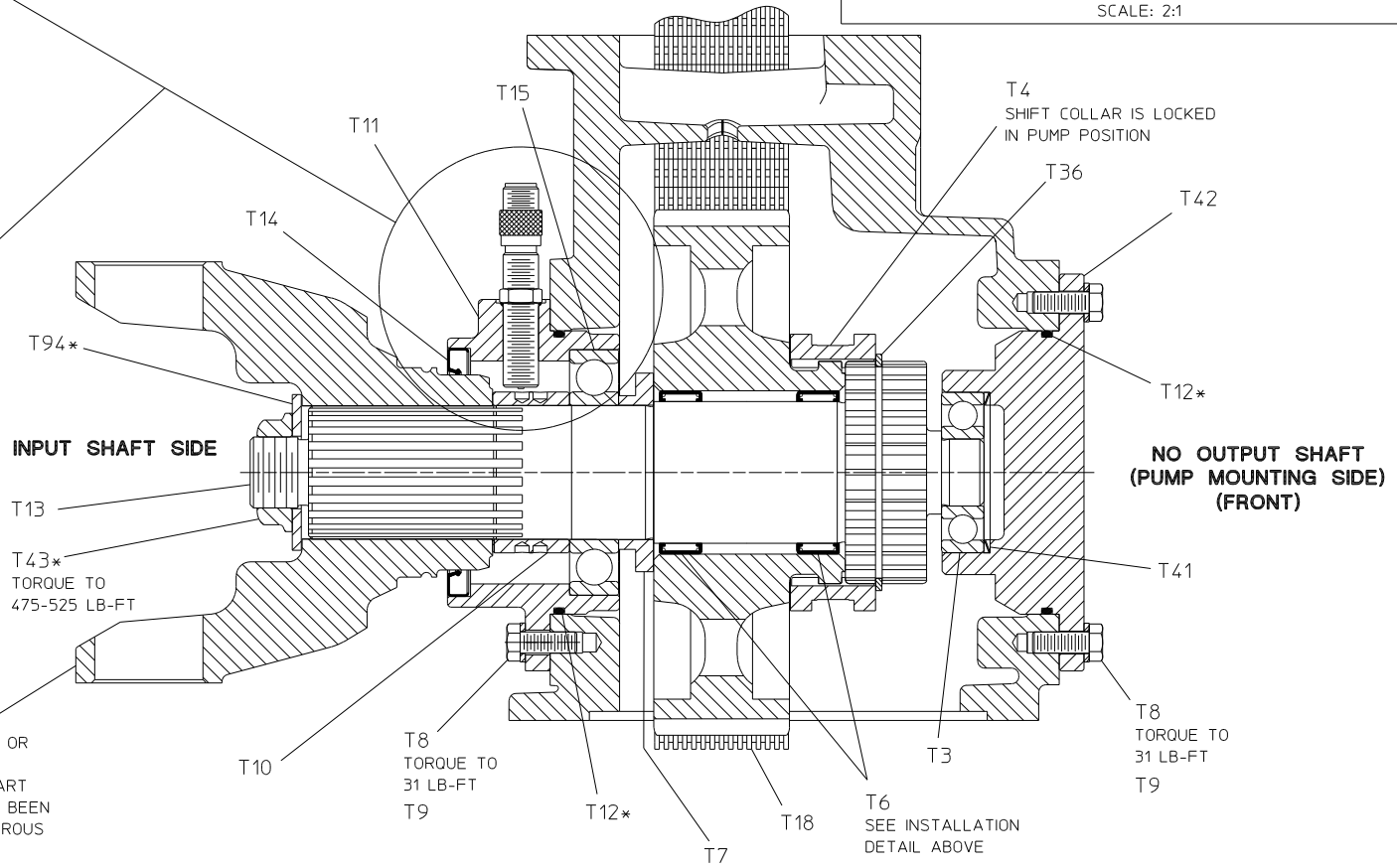


**WITHOUT TACH**

T141  
GASKET AND O-RING REPAIR KIT

\*PART OF T141 GASKET AND O-RING REPAIR KIT

T5  
SMALLER RADIUS  
LARGER RADIUS  
T6  
INSTALL NEEDLE BEARING (LARGER RADIUS EDGE FIRST) JUST BELOW BOTTOM OF CHAMFER ON SPROCKET BORE. BOTH ENDS TYP  
**NEEDLE BEARING INSTALLATION IN SPROCKET**  
SCALE: 2:1



INPUT SHAFT SIDE

NO OUTPUT SHAFT (PUMP MOUNTING SIDE) (FRONT)

OPTIONAL END YOKE OR COMPANION FLANGE. SEE PAGE 11 FOR PART NO'S MAY NOT HAVE BEEN FURNISHED BY WATEROUS

**DRIVELINE**  
INPUT SHAFT ONLY

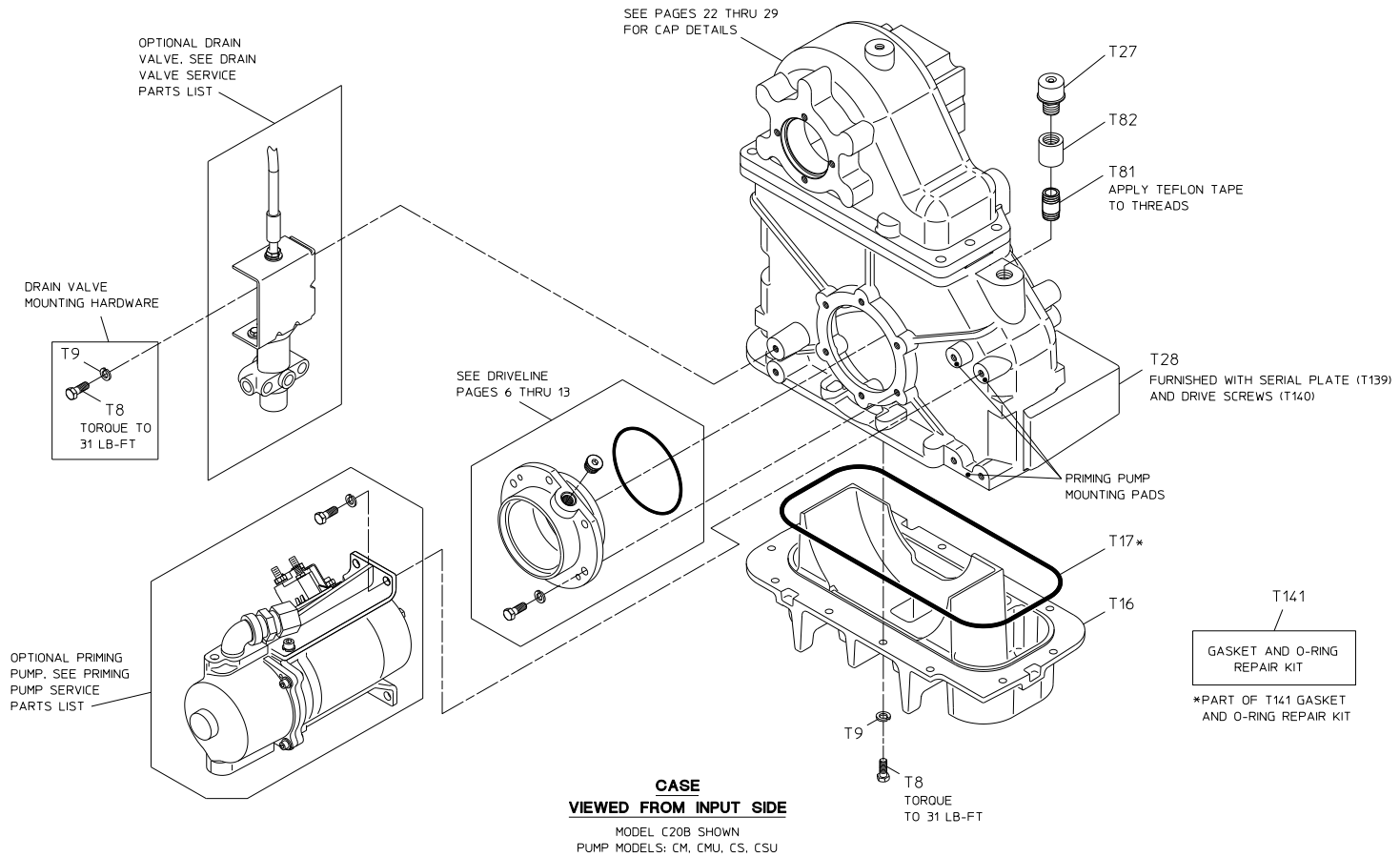
**Case**  
Viewed From Input Side  
Pump Models CM, CMU, CS, CSU

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan
T17	Transmission Pan O-ring, 13 x 13-3/8
T27	Breather, 1/2 NPT
T28	Case

REF. NO.	DESCRIPTION
T81	Pipe Nipple, 1/2 NPT x 1-1/2 in.
T82	Coupling, 1/2 NPT
T141	Gasket and O-ring Repair Kit

**Hardware Torque Specifications**

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**Case**  
Viewed from Output Side  
Pump Models CM, CMU, CS, CSU

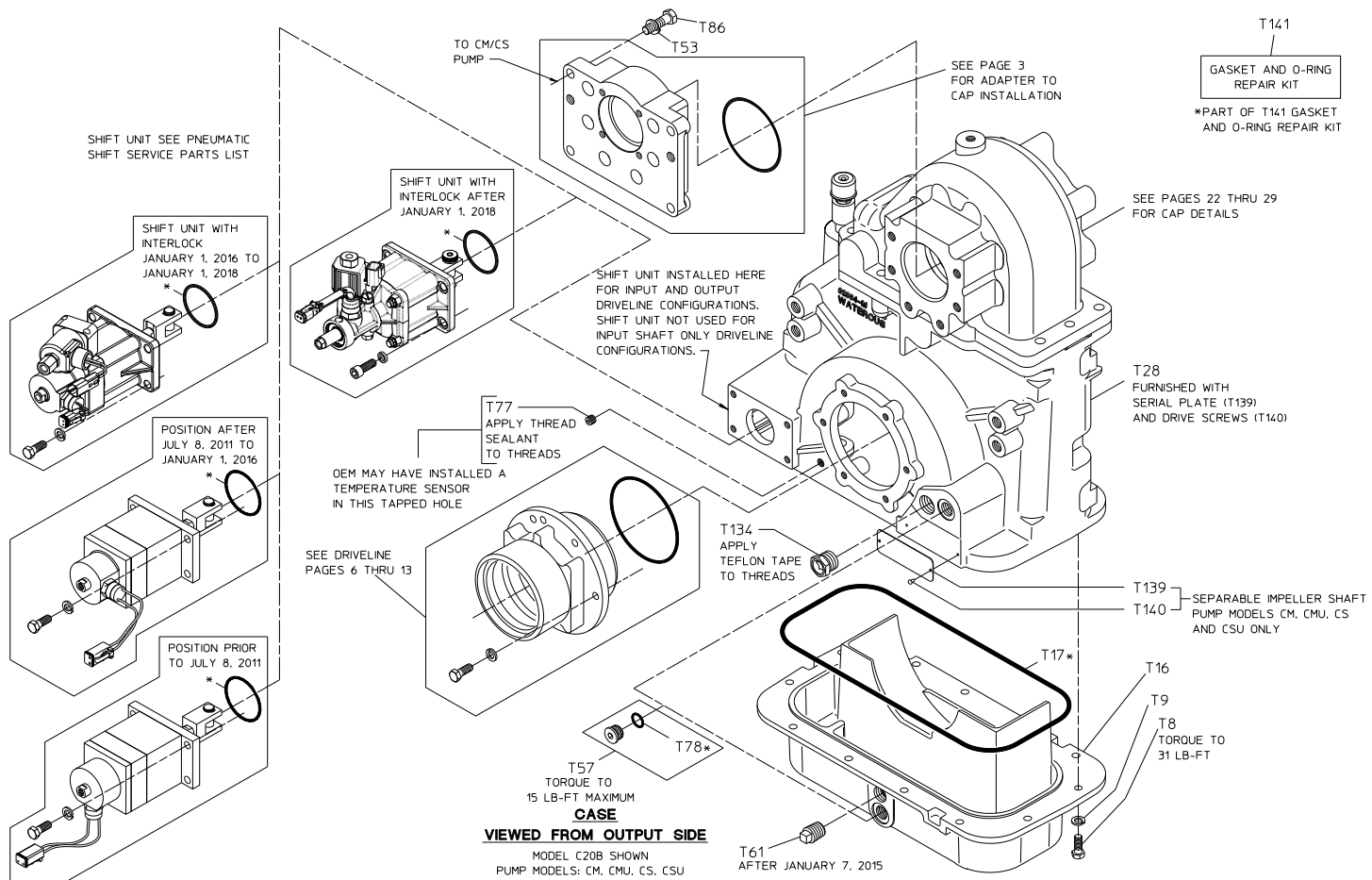
REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan
T17	Transmission Pan O-ring, 13 x 13-3/8
T28	Case
T53	Lock Washer, 1/2 in.
T57	Magnetic Drain Plug, 3/4-16 (Includes T78)
T61	Pipe Plug, 1/2 NPT
T77	Headless Pipe Plug, 1/8 NPT

REF. NO.	DESCRIPTION
T78	O-ring, 16.4mm x 20.8mm
T86	Hex Hd Screw, 1/2-13 x 1-3/4 in.
T134	Sight Plug, 3/4 NPT
T139	Serial Plate
T140	Drive Screw, No. 6 x 1/4 in.
T141	Gasket and O-ring Repair Kit

**Hardware Torque Specifications**

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft





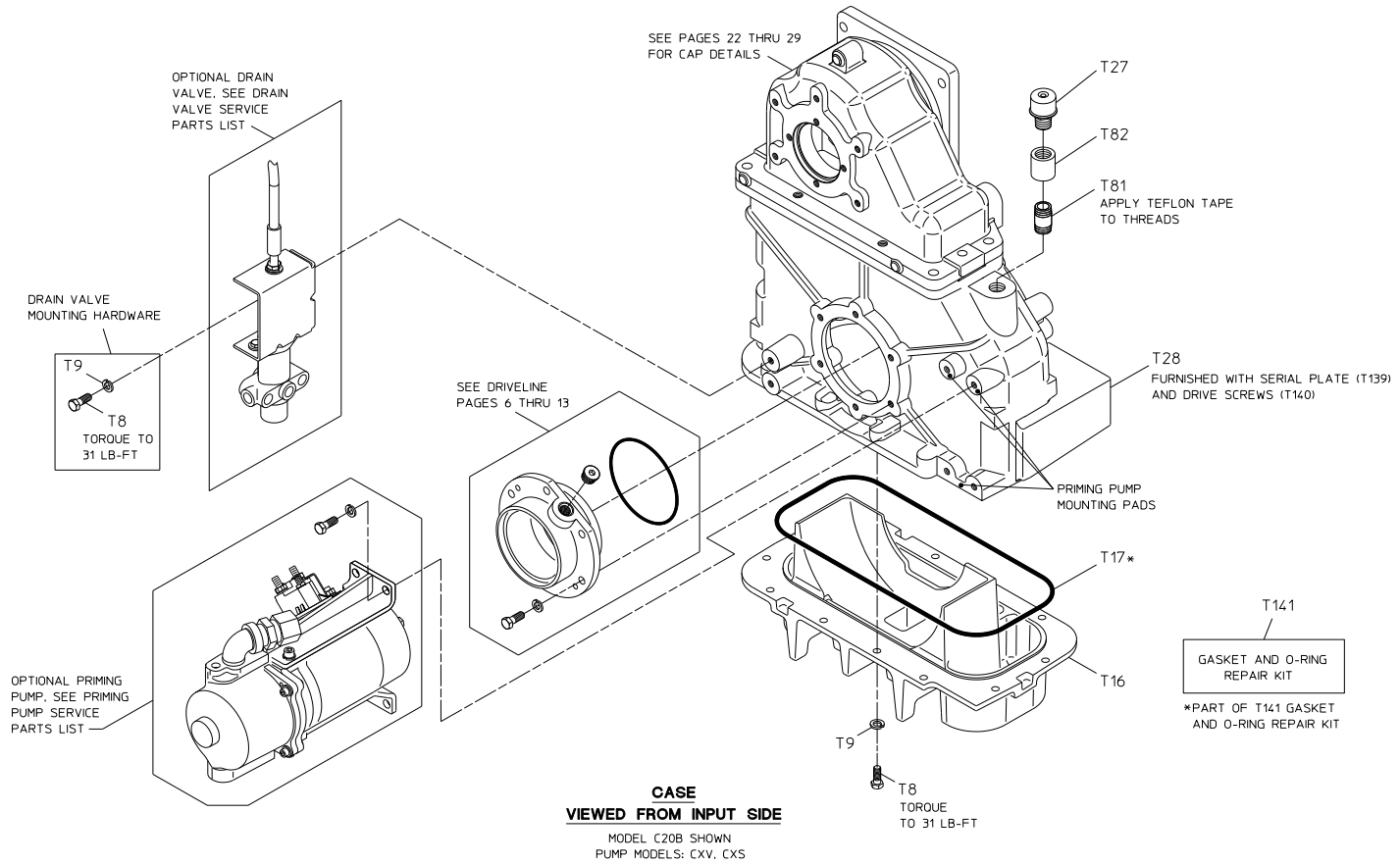
**Case**  
Viewed from Input Side  
Pump Models CXV, CXS

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan
T17	Transmission Pan O-ring, 13 x 13-3/8
T27	Breather, 1/2 NPT
T28	Case

REF. NO.	DESCRIPTION
T81	Pipe Nipple, 1/2 NPT x 1-1/2 in.
T82	Coupling, 1/2 NPT
T141	Gasket and O-ring Repair Kit

**Hardware Torque Specifications**

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



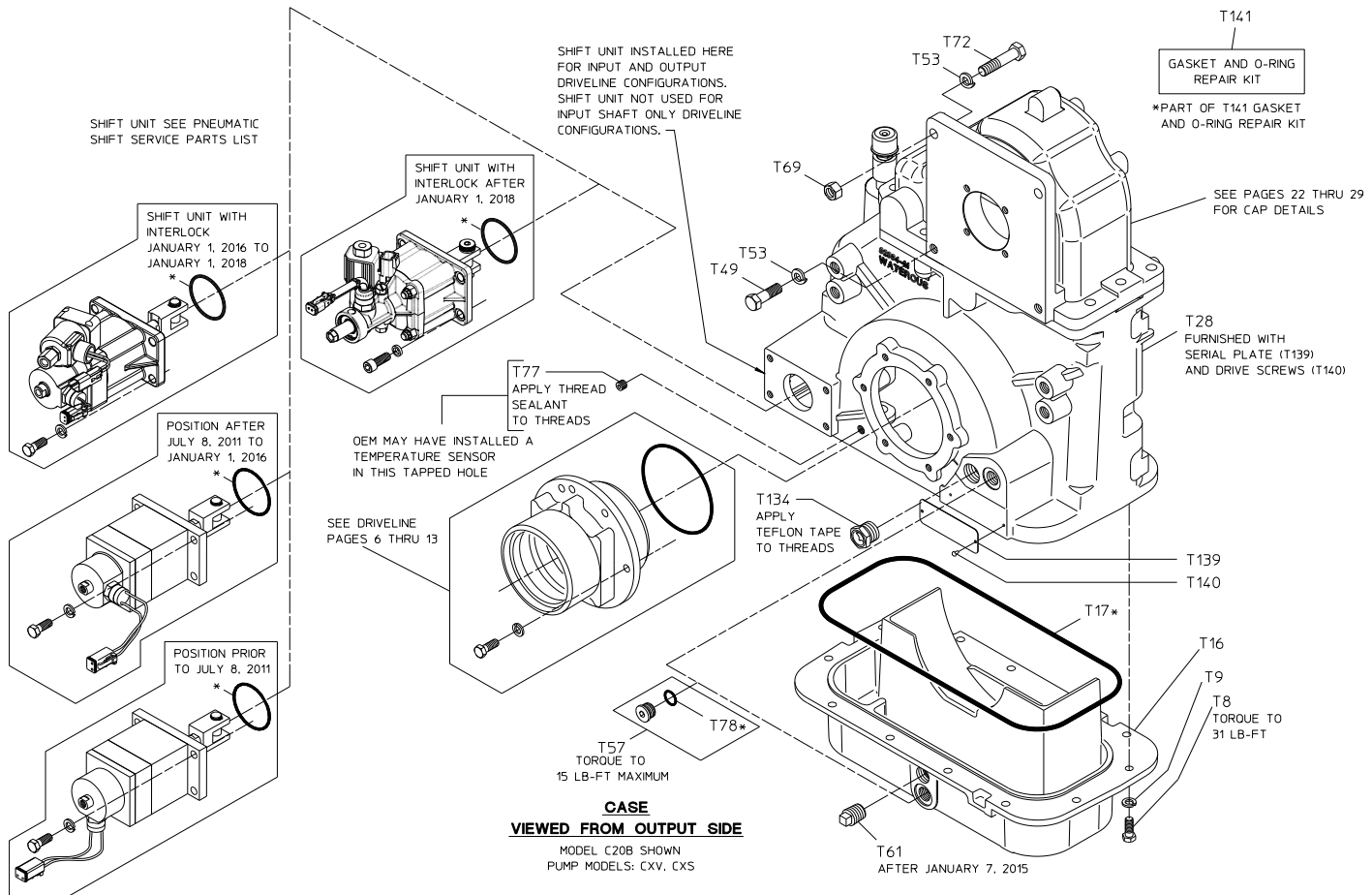
**Case**  
Viewed from Output Side  
Pump Models CXV, CXS

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan
T17	Transmission Pan O-ring, 13 x 13-3/8
T28	Case
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T57	Magnetic Drain Plug, 3/4-16 (Includes T78)

REF. NO.	DESCRIPTION
T69	Hex Nut, 1/2-20
T72	Hex Hd Screw, 1/2-20 x 2-1/4 in.
T77	Headless Pipe Plug, 1/8 NPT
T78	O-ring, 16.4mm x 20.8mm
T134	Sight Plug, 3/4 NPT
T139	Serial Plate
T140	Drive Screw, No. 6 x 1/4 in.
T141	Gasket and O-ring Repair Kit

**Hardware Torque Specifications**

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



## Case Cap Variations

Spacers, Shims and Sealant Application (Models C20B, C20C, C20D, C20E and C20F)

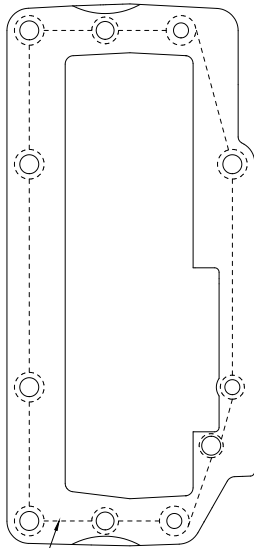
REF. NO.	DESCRIPTION
T28	Case
T63	Cap Seal Plug
T64	Oil Return Tube

REF. NO.	DESCRIPTION
T65	Case Cap
T99	Shim
T100	Case Spacer

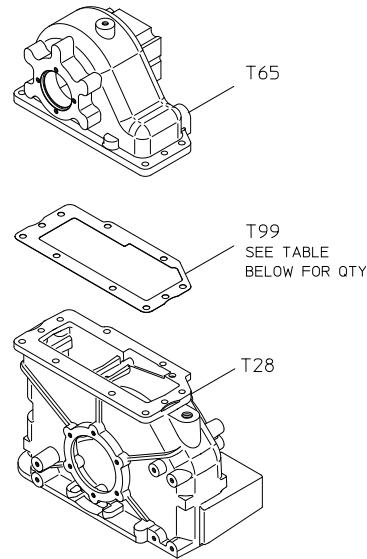
### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft

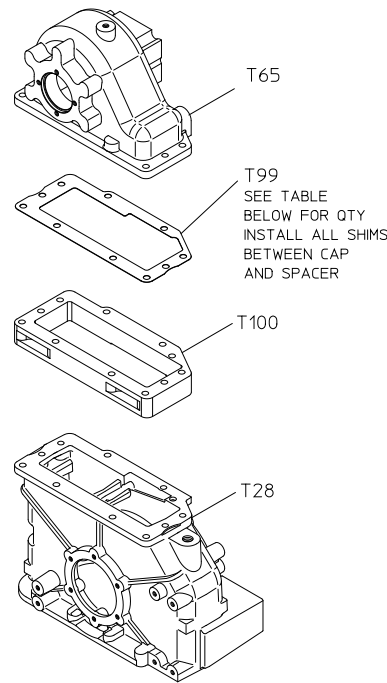
APPLY LOCTITE® 518 SEALANT OR EQUIVALENT TO MATING FLANGES AND BETWEEN SHIMS



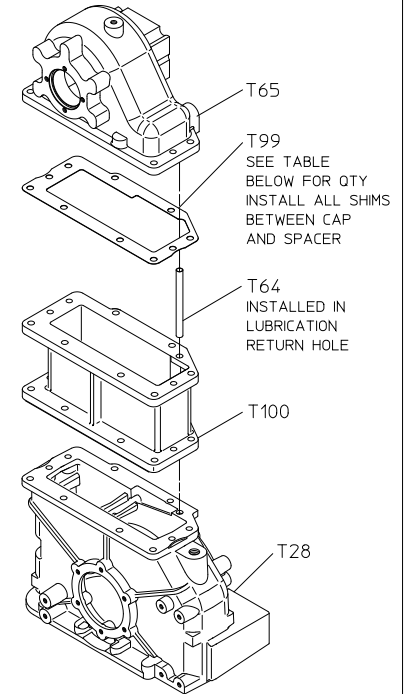
APPLY A THIN BEAD OF SEALANT AS SHOWN BY DASHED LINE (CASE FLANGE SHOWN)



**MODEL C20B**



**MODEL C20C**



**MODEL C20D, C20E & C20F**

RATIO	QTY OF T99 SHIMS														
	MODEL C20B			MODEL C20C			MODEL C20D			MODEL C20E			MODEL C20F		
	.010 BROWN	.025 WHITE	.031 ORANGE	.010 BROWN	.025 WHITE	.031 ORANGE	.010 BROWN	.025 WHITE	.031 ORANGE	.010 BROWN	.025 WHITE	.031 ORANGE	.010 BROWN	.025 WHITE	.031 ORANGE
1.27	2	1	0	3	7	2	1	0	2	2	0	1	0	0	1
1.41	0	0	0	1	2	0	0	3	0	2	0	1	0	0	1
1.48	4	2	1	3	2	2	2	0	1	0	0	1	1	0	0
1.58	0	0	0	2	0	0	1	1	0	2	0	0	0	0	0
1.69	1	3	0	0	0	0	2	0	0	2	0	3	0	4	0
1.79	0	0	2	0	0	0	1	0	0	3	2	1	2	2	1
1.88	2	0	0	1	0	0	2	0	0	1	1	1	2	0	1
1.97	2	2	1	0	0	1	0	1	1	0	2	0	1	0	1
2.03	0	0	0	1	1	0	0	0	2	2	0	4	1	0	0
2.27	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0
2.46	2	1	0	0	1	2	0	1	0	2	1	3	2	1	3
2.68	1	2	0	1	0	0	4	0	0	3	1	0	0	0	2

**CASE ASSEMBLY, SPACERS AND SHIMS**

(CASE CAP FOR PUMP MODELS CM, CMU, CS, CSU SHOWN)

## Case Cap Variations

### Hardware for Model C20B

REF. NO.	DESCRIPTION
T51	Hex Hd Screw, 1/2-13 x 1-1/2 in.
T53	Lock Washer, 1/2 in.
T69	Hex Nut, 1/2-20

REF. NO.	DESCRIPTION
T72	Hex Hd Screw, 1/2-20 x 2-1/4 in.
T103	Dowel Pin, 1/2 x 1-1/2 in.

#### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft





## Case Cap Variations

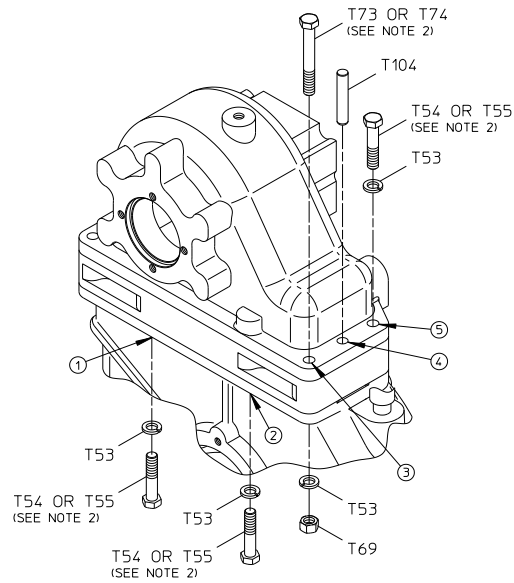
### Hardware for Models C20C

REF. NO.	DESCRIPTION
T53	Lock Washer, 1/2 in.
T54	Hex Hd Screw, 1/2-13 x 3-1/2 in.
T55	Hex Hd Screw, 1/2-13 x 3-3/4 in.
T69	Hex Nut, 1/2-20

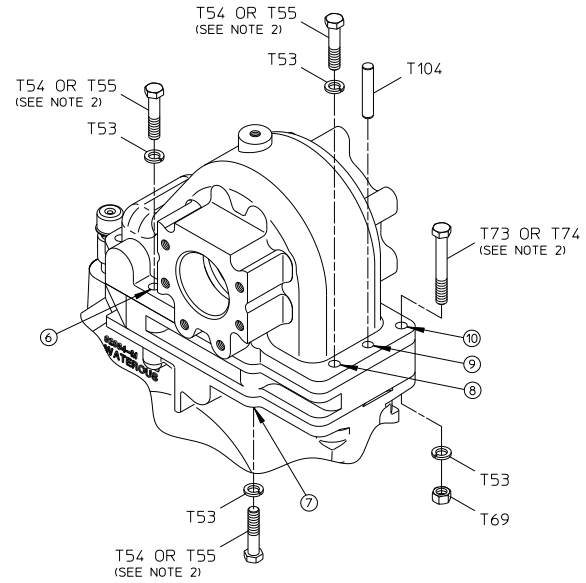
REF. NO.	DESCRIPTION
T73	Hex Hd Screw, 1/2-20 x 4 in.
T74	Hex Hd Screw, 1/2-20 x 4-1/4 in.
T104	Dowel Pin, 1/2 x 3 in.

#### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**VIEWED FROM INPUT SIDE OF CASE**



**VIEWED FROM OUTPUT SIDE OF CASE**

FLANGE HARDWARE BETWEEN CAP (T65), SPACER (T100) AND CASE (T28)

REF NO.	HARDWARE DESCRIPTION	HOLE NUMBER										QTY	TORQUE SPECIFICATION
		1	2	3	4	5	6	7	8	9	10		
T53	WASHER-LOCK. 1/2	1	1	1		1	1	1	1		1	8	-
T54	SCREW-HEX HD. 1/2-13 X 3.50	1	1			1	1	1	1			6	75 LB-FT
T55	SCREW-HEX HD. 1/2-13 X 3.75 (SEE NOTE 2)	1	1			1	1	1	1			6	75 LB-FT
T69	NUT-HEX. 1/2-20			1							1	2	-
T73	SCREW-HEX HD. 1/2-20 X 4.00			1							1	2	85 LB-FT
T74	SCREW-HEX HD. 1/2-20 X 4.25 (SEE NOTE 2)			1							1	2	85 LB-FT
T104	PIN-DOWEL. 1/2 X 3.00				1					1	2	-	

**NOTES:**

1. HOLES 1, 2 AND 7 ARE BLIND HOLES THAT ARE TAPPED INTO THE CAP AND ARE NOT SHOWN.
2. T55 & T74 USED ON 1.27 RATIO ONLY.  
T54 & T73 IS USED ON ALL OTHER RATIOS.

**CASE CAP VARIATIONS  
HARDWARE FOR MODEL C20C**

(CASE CAP FOR PUMP MODELS CM, CMJ, CS, CSU SHOWN)

## Case Cap Variations

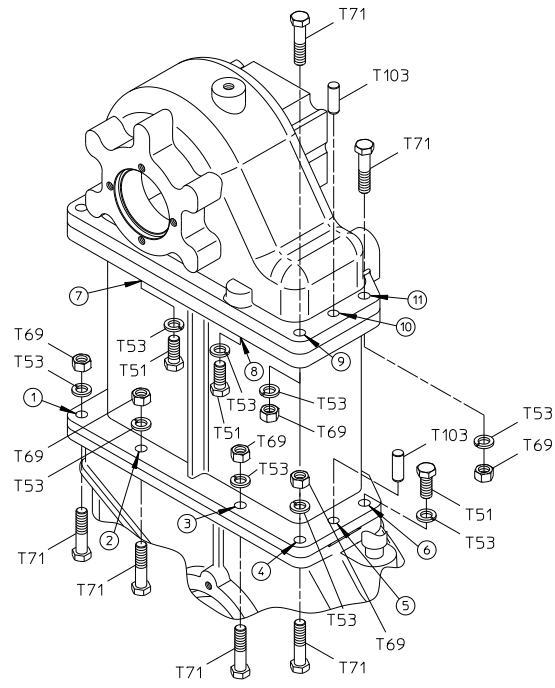
### Hardware for Models C20D, C20E and C20F

REF. NO.	DESCRIPTION
T51	Hex Hd Screw, 1/2-13 x 1-1/2 in.
T53	Lock Washer, 1/2 in.
T69	Hex Nut, 1/2-20

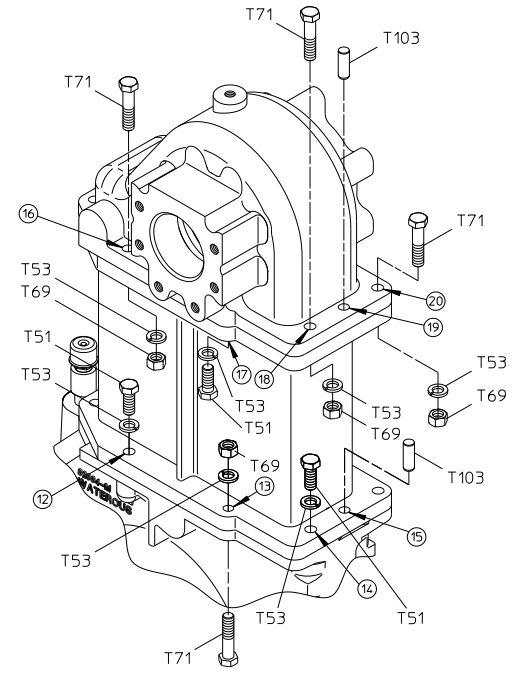
REF. NO.	DESCRIPTION
T71	Hex Hd Screw, 1/2-20 x 2 in.
T103	Dowel Pin, 1/2 x 1-1/2 in.

#### Hardware Torque Specifications

Screw Size	Torque Specification
5/16-18 UNC	17 lb-ft
3/8-16 UNC	31 lb-ft
1/2-13 UNC	75 lb-ft
1/2-20 UNF	85 lb-ft
5/8-11 UNC	150 lb-ft



**VIEWED FROM INPUT SIDE OF CASE**



**VIEWED FROM OUTPUT SIDE OF CASE**

FLANGE HARDWARE BETWEEN CAP (T65), SPACER (T100) AND CASE (T28)

REF NO.	HARDWARE DESCRIPTION	HOLE NUMBER																				QTY	TORQUE SPECIFICATION
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
T51	SCREW-HEX HD. 1/2-13 X 1.50						1	1	1			1	1	1		1	1	1	1	1	1	6	75 LB-FT
T53	WASHER-LOCK. 1/2	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	-
T69	NUT-HEX. 1/2-20	1	1	1	1					1	1	1				1	1	1	1	1	1	10	-
T71	SCREW-HEX HD. 1/2-20 X 2	1	1	1	1					1	1	1	1	1	1	1	1	1	1	1	1	10	85 LB-FT
T103	PIN-DOWEL. 1/2 X 1.50				1						1				1					1	1	4	-

**CASE CAP VARIATIONS**

**HARDWARE FOR MODELS C20D, C20E AND C20F**

(CASE CAP FOR PUMP MODELS CM, CMU, CS, CSU SHOWN)

NOTE:  
1. HOLES 7 AND 8 ARE BLIND HOLES THAT ARE TAPPED INTO THE CAP AND ARE NOT SHOWN.