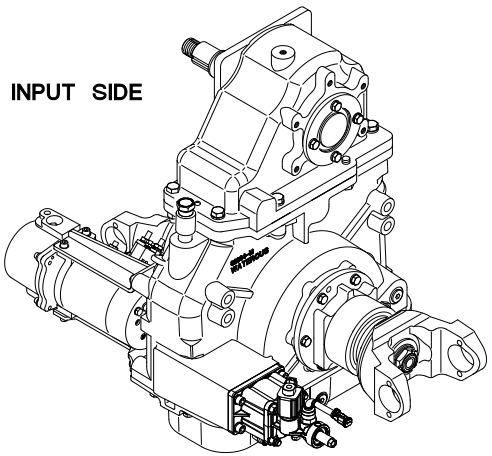
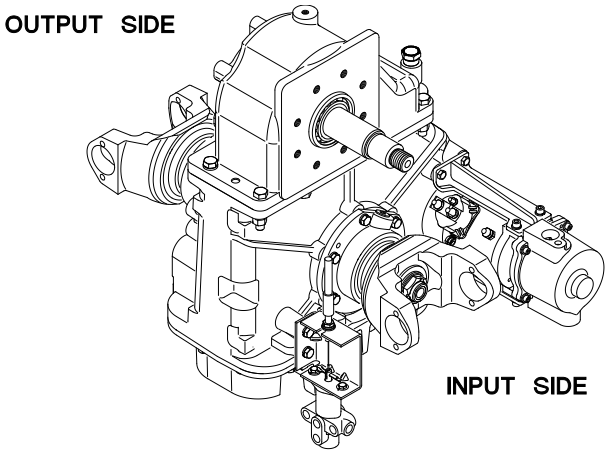
Document Number	Issue Date	Rev. Date
SPL82996	**02/16/09**	**3/19/20**

C20 Series Transmission Service Parts List

As used with S100 Pump Models





Index:

Components				See Page
Driven Shaft	**Pump Mounting On Transmission**	**Output Connection Opposite Pump**		
	Front (Input Shaft Side)	Rear (Output Shaft Side)	None (Blank)	2, 3
			Hydraulic Pump (SAE Class B 2-Bolt Hydraulic Flange)	4, 5
			Eclipse™ ES CAFS	6, 7
	Rear (Output Shaft Side)	Front (Input Shaft Side)	None (Blank)	8, 9
			Hydraulic Pump (SAE Class B 2-Bolt Hydraulic Flange)	10, 11
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			Models C20C	32, 33
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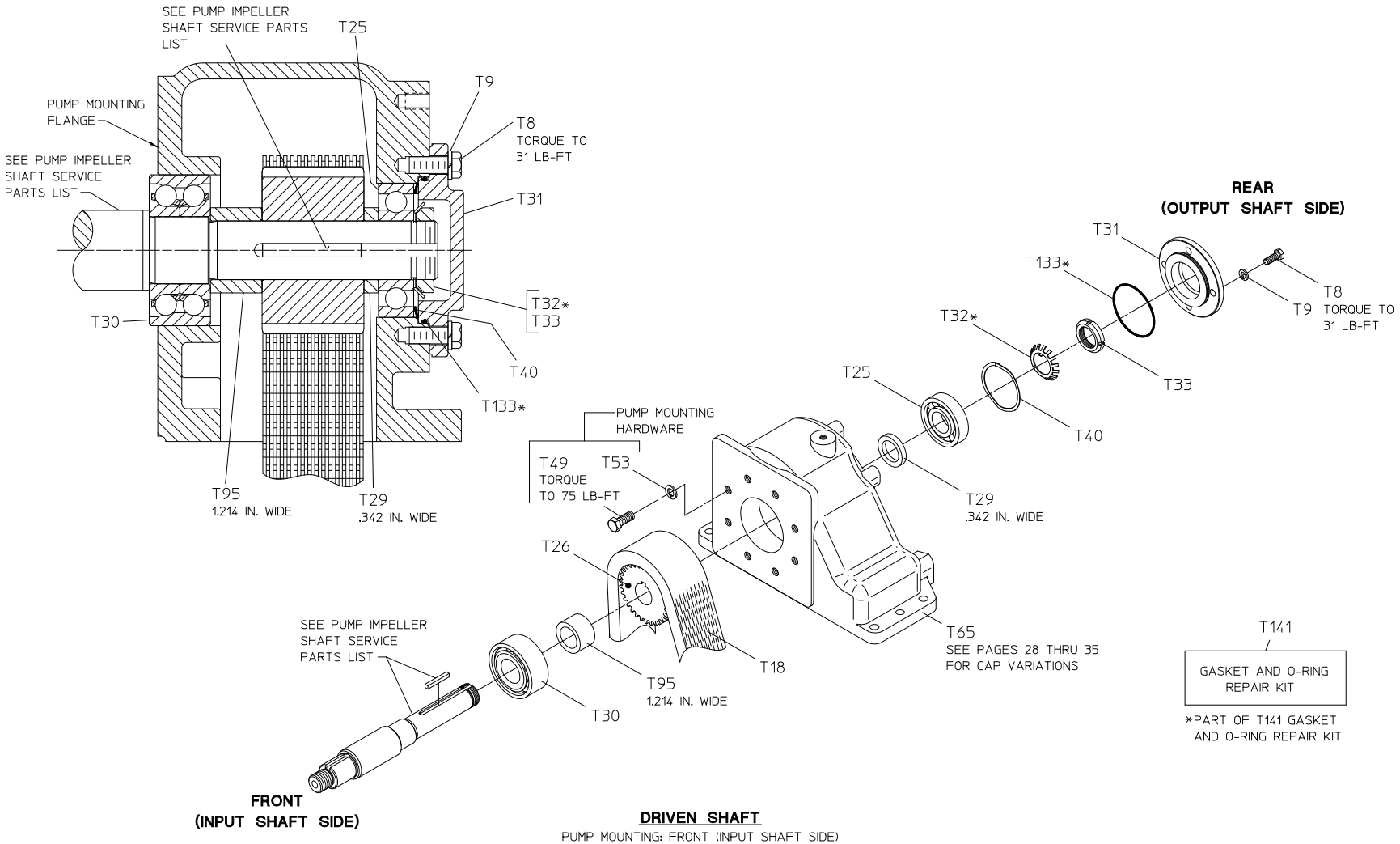
Driven Shaft - Pump Mounting: Front (Input Shaft Side)
Connection Opposite Pump: None (Blank)

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T18	Chain
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, .342 in. Wide
T30	Double Row Ball Bearing
T31	Bearing Cover
T32	Bearing Lock Nut Washer (W07)
T33	Bearing Lock Nut (N07)

REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T65	Case Cap
T95	Bearing Spacer, 1.214 Wide
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

PUMP MOUNTING: FRONT (INPUT SHAFT SIDE)
CONNECTION OPPOSITE PUMP: NONE

Driven Shaft - Pump Mounting: Front (Input Shaft Side)
Connection Opposite Pump: Hydraulic Pump

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T18	Chain
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, .342 in. Wide
T30	Double Row Ball Bearing

REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T65	Case Cap
T95	Bearing Spacer, 1.214 Wide
T122	Hydraulic Adapter, SAE Class B 2-Bolt
T128	Oil Seal, 1-3/8 x 2 x 5/16 in.
T129	Retaining Ring
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
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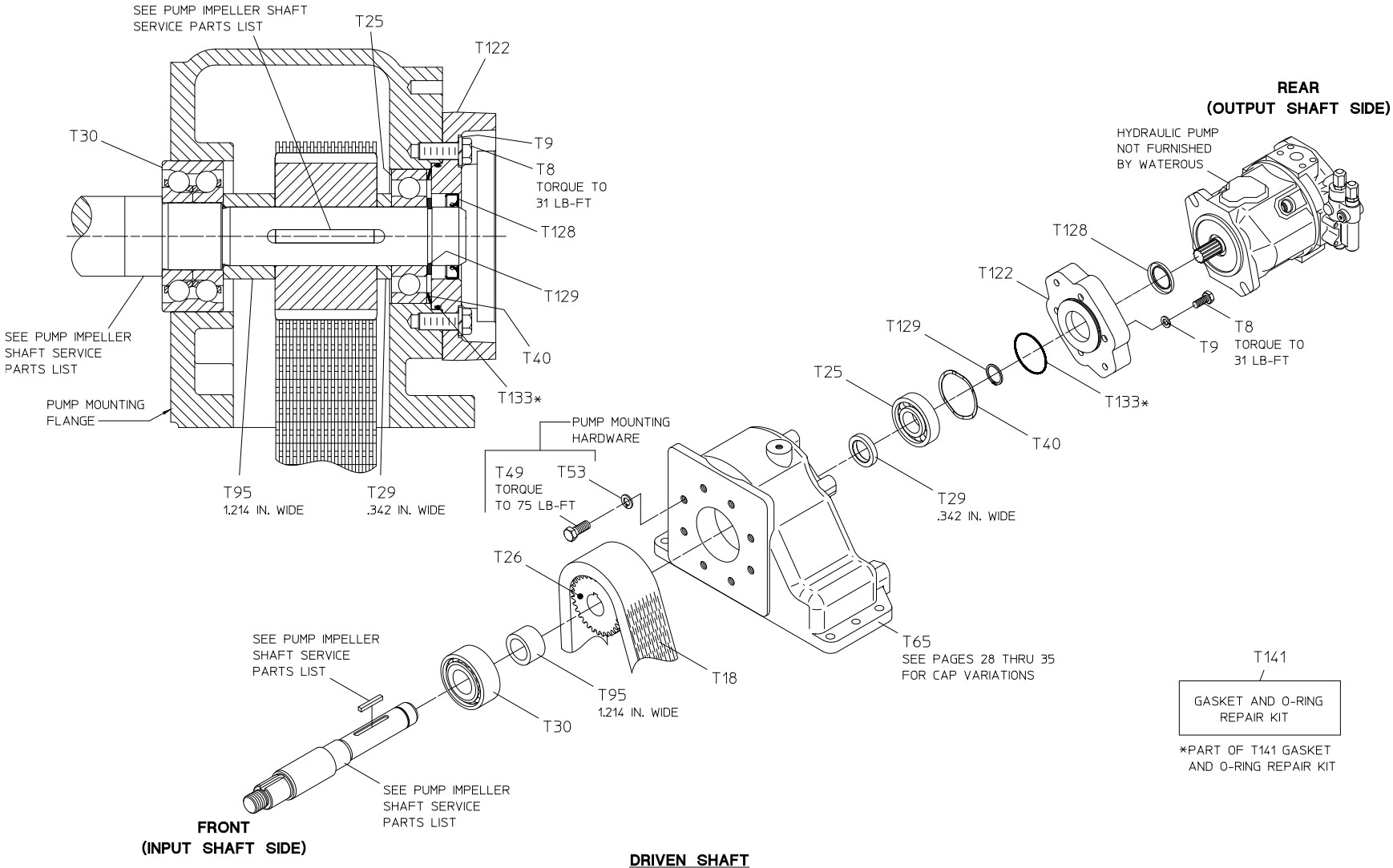
5/8-11 UNC	150 lb-ft



DRIVEN SHAFT

PUMP MOUNTING: FRONT (INPUT SHAFT SIDE)
CONNECTION OPPOSITE PUMP: HYDRAULIC PUMP (SAE CLASS B 2-BOLT HYDRAULIC FLANGE)

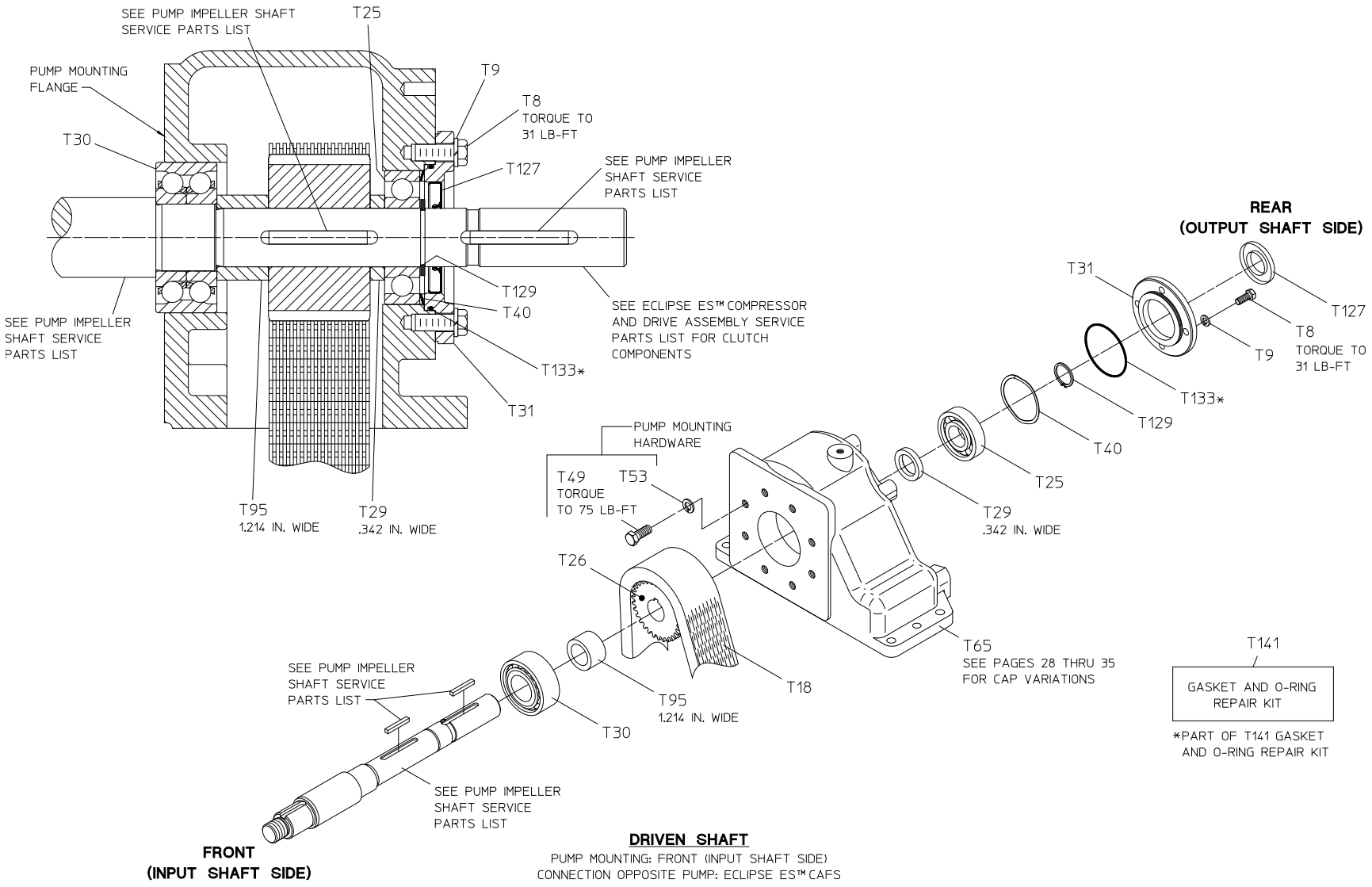
Driven Shaft - Pump Mounting: Front (Input Shaft Side)
Configuration Opposite Pump: Eclipse™ ES CAFS

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T18	Chain
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, .342 in. Wide
T30	Double Row Ball Bearing
T31	Oil Seal Housing

REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T65	Case Cap
T95	Bearing Spacer, 1.214 Wide
T127	Oil Seal, 1-3/8 x 2-5/8 x 5/16 in.
T129	Retaining Ring
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


SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T25
PUMP MOUNTING FLANGE
T9
T8
TORQUE TO 31 LB-FT
T30
T127
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T129
T40
SEE ECLIPSE ES™ COMPRESSOR AND DRIVE ASSEMBLY SERVICE PARTS LIST FOR CLUTCH COMPONENTS
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T133*
T31
T95
1.214 IN. WIDE
T29
.342 IN. WIDE
REAR
(OUTPUT SHAFT SIDE)
T31
T127
T8
TORQUE TO 31 LB-FT
T9
T133*
T129
T40
T25
T29
.342 IN. WIDE
PUMP MOUNTING HARDWARE
T49
TORQUE TO 75 LB-FT
T53
T26
T65
SEE PAGES 28 THRU 35 FOR CAP VARIATIONS
T18
T95
1.214 IN. WIDE
T30
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
FRONT
(INPUT SHAFT SIDE)
DRIVEN SHAFT
PUMP MOUNTING: FRONT (INPUT SHAFT SIDE)
CONNECTION OPPOSITE PUMP: ECLIPSE ES™ CAFS
T141
GASKET AND O-RING REPAIR KIT
*PART OF T141 GASKET AND O-RING REPAIR KIT

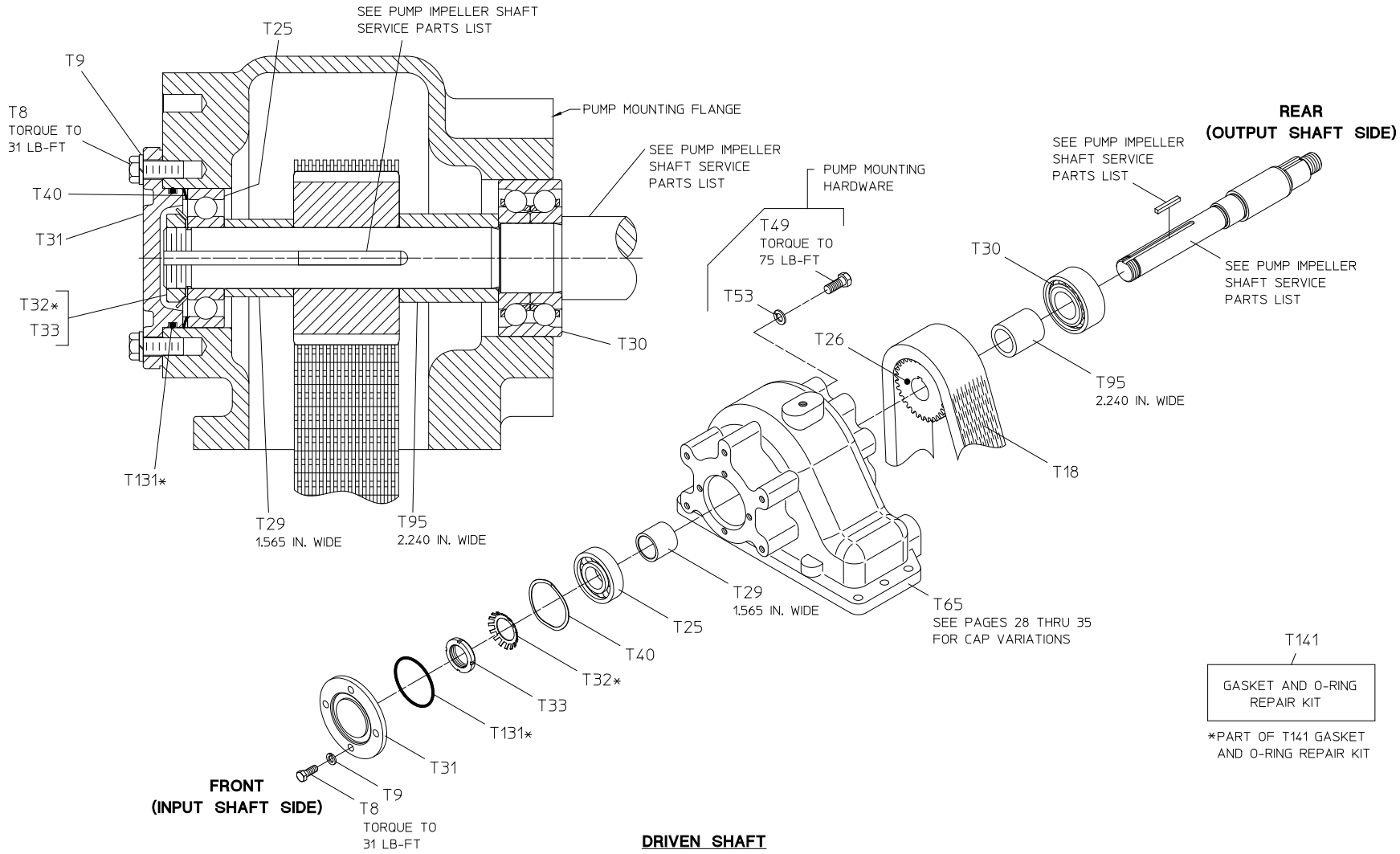
Driven Shaft - Pump Mounting: Rear (Output Shaft Side)
Connection Opposite Pump: None (Blank)

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T18	Chain
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, 1.565 in. Wide
T30	Double Row Ball Bearing
T31	Bearing Cover
T32	Bearing Lock Nut Washer (W07)
T33	Bearing Lock Nut (N07)

REF. NO.	DESCRIPTION
T40	Wave Spring, 80 mm
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T65	Case Cap
T95	Bearing Spacer, 2.240 Wide
T131	O-ring, 2-3/4 x 3 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

PUMP MOUNTING: REAR (OUTPUT SHAFT SIDE)
CONNECTION OPPOSITE PUMP: NONE

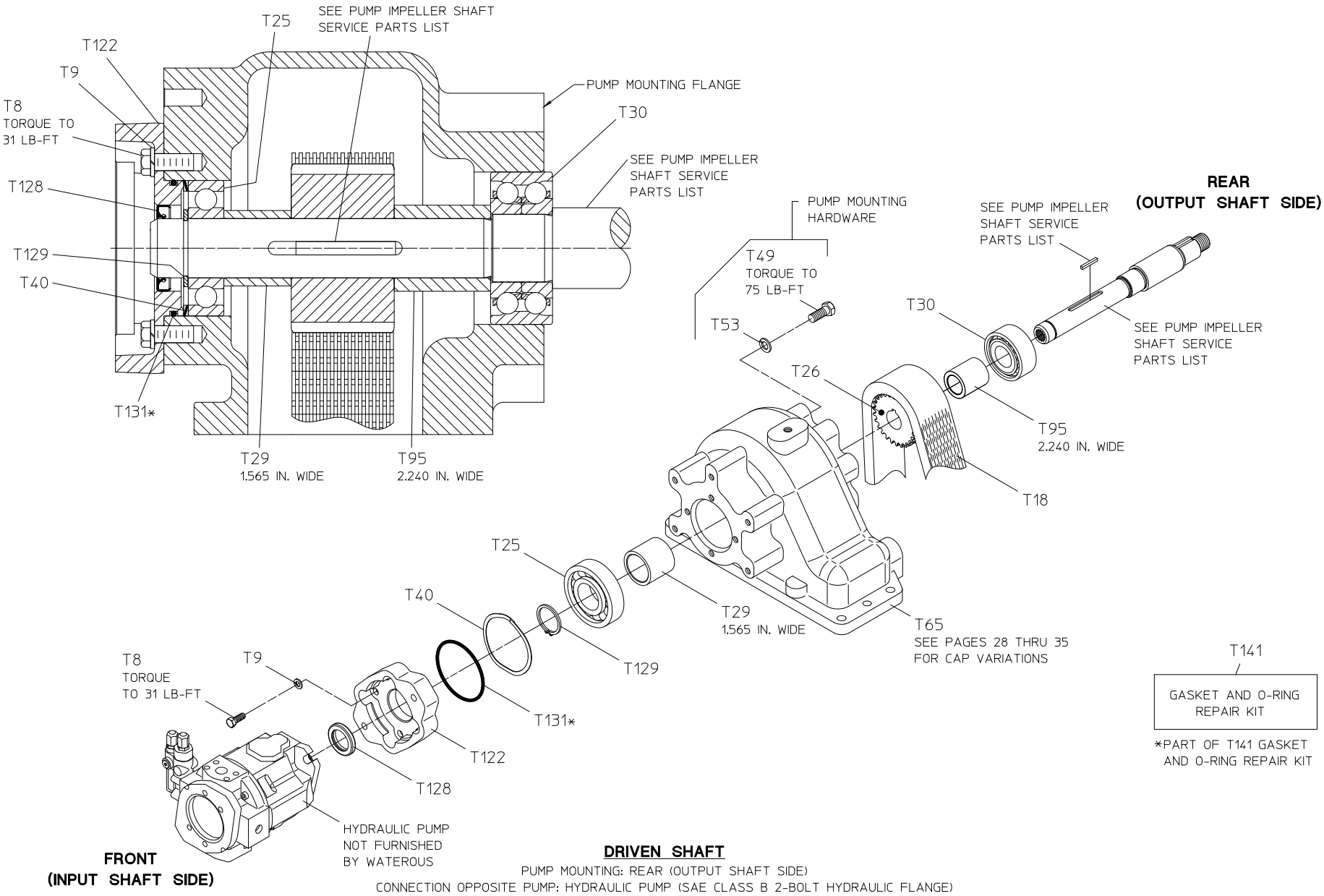
Driven Shaft - Pump Mounting: Rear (Output Shaft Side)
Connection Opposite Pump: Hydraulic Pump

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T18	Chain
T25	Single Row Ball Bearing
T26	Driven Sprocket
T29	Bearing Spacer, 1.565 in. Wide
T30	Double Row Ball Bearing
T40	Wave Spring, 80 mm

REF. NO.	DESCRIPTION
T49	Hex Hd Screw, 1/2-13 x 1-1/4 in.
T53	Lock Washer, 1/2 in.
T65	Case Cap
T95	Bearing Spacer, 2.240 Wide
T122	Hydraulic Adapter, SAE Class B 2-Bolt
T128	Oil Seal, 1-3/8 x 2 x 5/16 in.
T129	Retaining Ring
T131	O-ring, 2-3/4 x 3 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


T25
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T122
T9
T8
TORQUE TO 31 LB-FT
PUMP MOUNTING FLANGE
T30
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T128
T129
T40
T131*
T29
1.565 IN. WIDE
T95
2.240 IN. WIDE
REAR
(OUTPUT SHAFT SIDE)
PUMP MOUNTING HARDWARE
T49
TORQUE TO 75 LB-FT
T53
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T30
SEE PUMP IMPELLER SHAFT SERVICE PARTS LIST
T26
T95
2.240 IN. WIDE
T18
T25
T40
T29
1.565 IN. WIDE
T65
SEE PAGES 28 THRU 35 FOR CAP VARIATIONS
T129
T8
TORQUE TO 31 LB-FT
T9
T131*
T122
T128
HYDRAULIC PUMP NOT FURNISHED BY WATEROUS
FRONT
(INPUT SHAFT SIDE)
T141
GASKET AND O-RING REPAIR KIT
*PART OF T141 GASKET AND O-RING REPAIR KIT
DRIVEN SHAFT
PUMP MOUNTING: REAR (OUTPUT SHAFT SIDE)
CONNECTION OPPOSITE PUMP: HYDRAULIC PUMP (SAE CLASS B 2-BOLT HYDRAULIC FLANGE)

Drive Line - Input and Output Shafts

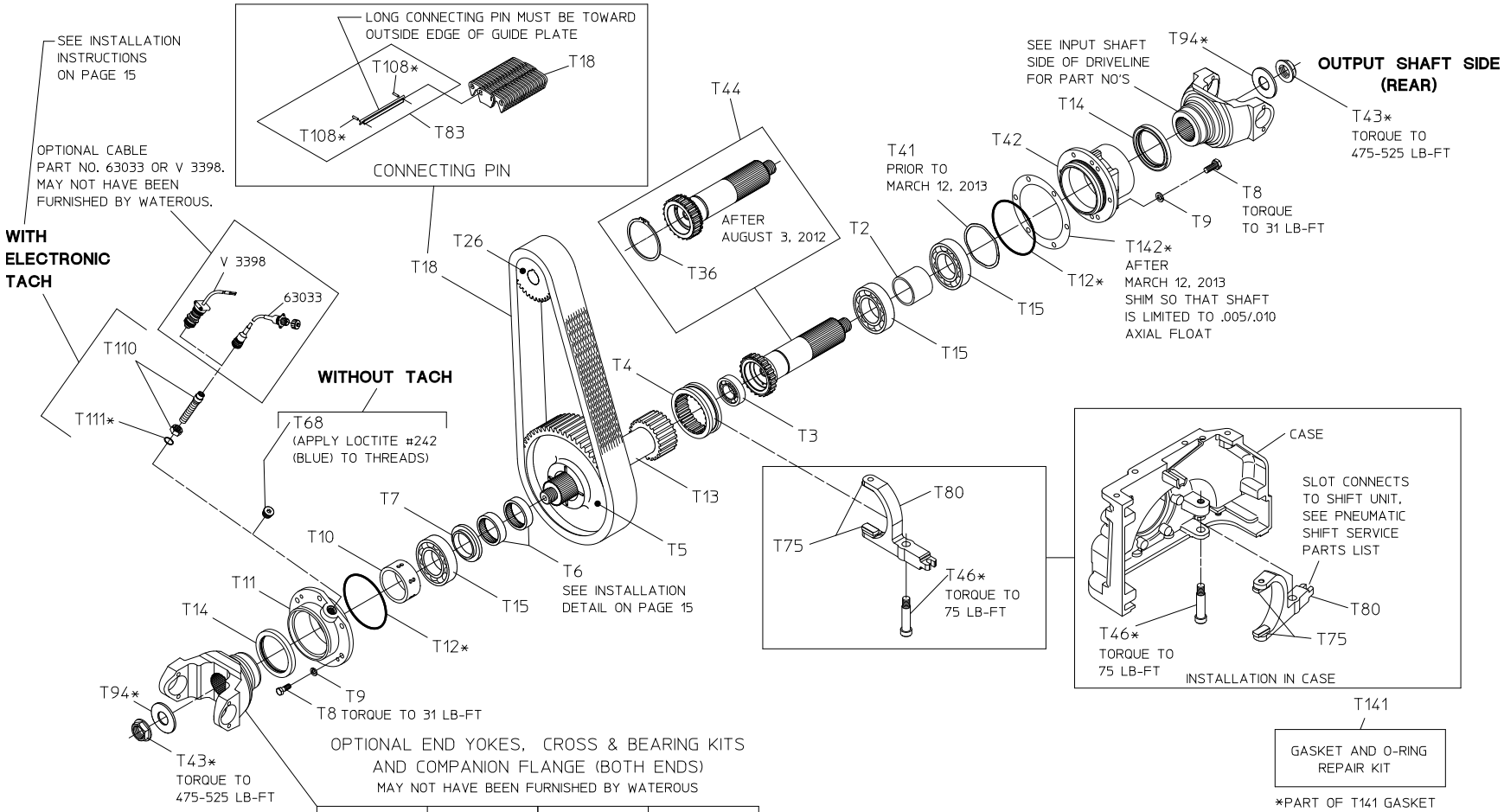
(Exploded View)

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
T42	Coupling Shaft Housing

REF. NO.	DESCRIPTION
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 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



OPTIONAL END YOKES, 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	V 2837	V 2839
	1810	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

Drive Line - Input and Output Shafts

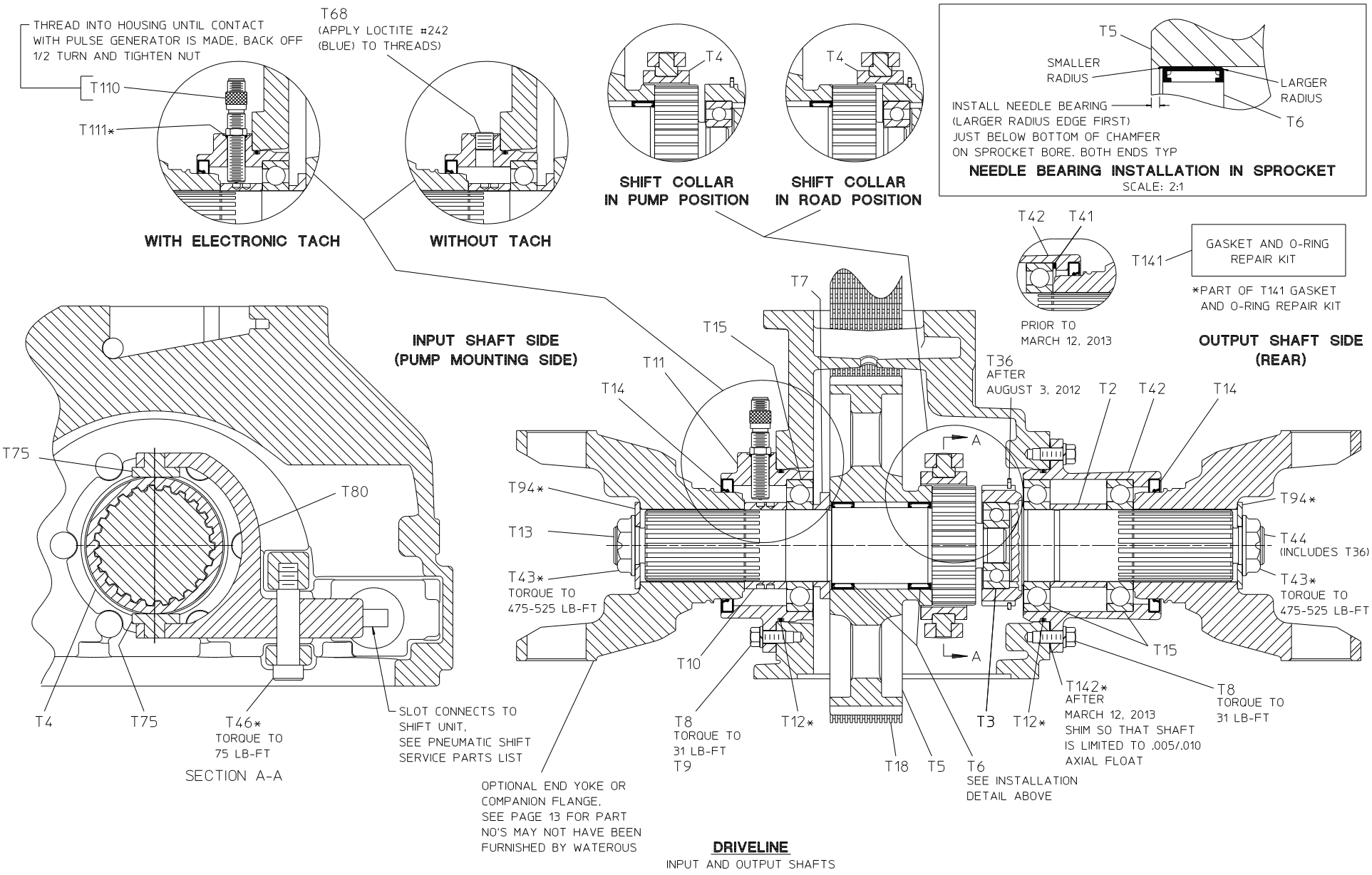
(Cross-Section View)

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
T36	Retaining Rin (Used Starting August 3, 2012)

REF. NO.	DESCRIPTION
T41	Wave Spring, 110 mm
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 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


THREAD INTO HOUSING UNTIL CONTACT WITH PULSE GENERATOR IS MADE, BACK OFF 1/2 TURN AND TIGHTEN NUT
T110
T111*
T68
(APPLY LOCTITE #242 (BLUE) TO THREADS)
WITH ELECTRONIC TACH
WITHOUT TACH
T4
SHIFT COLLAR IN PUMP POSITION
T4
SHIFT COLLAR IN ROAD POSITION
T5
SMALLER RADIUS
LARGER RADIUS
INSTALL NEEDLE BEARING (LARGER RADIUS EDGE FIRST) JUST BELOW BOTTOM OF CHAMFER ON SPROCKET BORE. BOTH ENDS TYP
T6
NEEDLE BEARING INSTALLATION IN SPROCKET
SCALE: 2:1
T42
T41
T141
GASKET AND O-RING REPAIR KIT
*PART OF T141 GASKET AND O-RING REPAIR KIT
PRIOR TO MARCH 12, 2013
INPUT SHAFT SIDE (PUMP MOUNTING SIDE)
OUTPUT SHAFT SIDE (REAR)
T7
T15
T11
T14
T36
AFTER AUGUST 3, 2012
T2
T42
T14
T75
T80
T94*
T13
T43*
TORQUE TO 475-525 LB-FT
T44
(INCLUDES T36)
T94*
T43*
TORQUE TO 475-525 LB-FT
T4
T75
T46*
TORQUE TO 75 LB-FT
SECTION A-A
SLOT CONNECTS TO SHIFT UNIT, SEE PNEUMATIC SHIFT SERVICE PARTS LIST
OPTIONAL END YOKE OR COMPANION FLANGE, SEE PAGE 13 FOR PART NO'S MAY NOT HAVE BEEN FURNISHED BY WATEROUS
T10
T8
TORQUE TO 31 LB-FT
T9
T12*
T18
T5
T6
SEE INSTALLATION DETAIL ABOVE
T3
T12*
T142*
AFTER MARCH 12, 2013 SHIM SO THAT SHAFT IS LIMITED TO .005/.010 AXIAL FLOAT
T15
T8
TORQUE TO 31 LB-FT
A
A
DRIVELINE
INPUT AND OUTPUT SHAFTS

Drive Line - 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.

REF. NO.	DESCRIPTION
T15	Single Row Ball Bearing
T18	Chain
T26	Driven Sprocket
T36	Retaining Ring
T41	Wave Spring, 72 mm
T42	Bearing Housing
T43	Self-Locking Nut, 1-1/4-18 in.
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 Tahcometer 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
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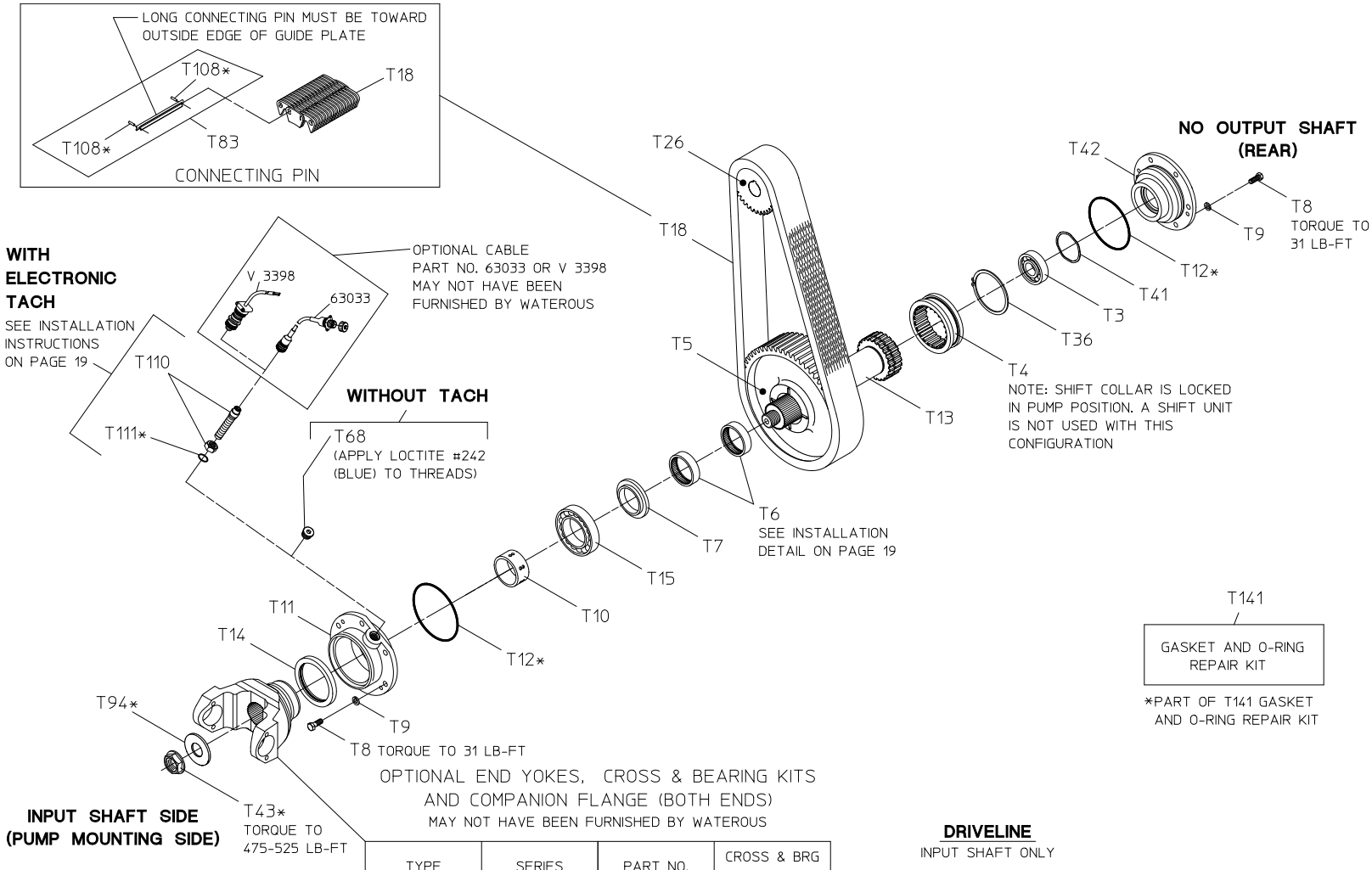

OPTIONAL END YOKES, CROSS & BEARING KITS AND COMPANION FLANGE (BOTH ENDS)
MAY NOT HAVE BEEN FURNISHED BY WATEROUS

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	-
	SPL140	V 3388	V 3389
COMPANION FLANGE	1650/1710	V 3619	-
	1480/1610	V 3719	-
	ISO 8667	63714	-

Drive Line - Input Shaft Only

(Cross-Section 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.

REF. NO.	DESCRIPTION
T15	Single Row Ball Bearing
T18	Chain
T36	Retaining Ring
T41	Wave Spring, 72 mm
T42	Bearing Housing
T43	Self-Locking Nut, 1-1/4-18 in.
T68	Set Screw, 5/8-18 x 5/8 in.
T94	Plain Washer, 1-1/4 in.
T110	Magnetic Tahcometer 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
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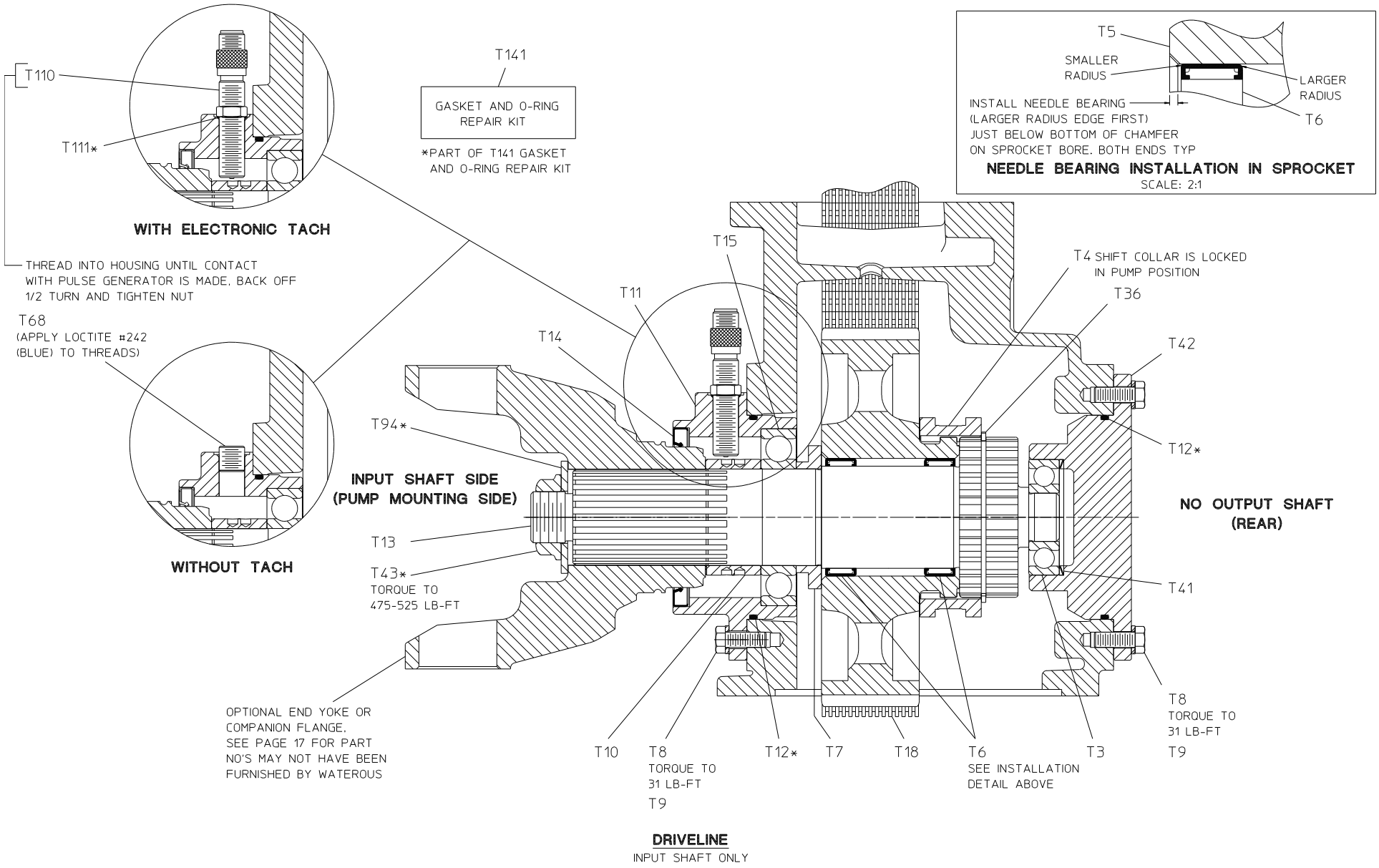
5/8-11 UNC	150 lb-ft


T110
T111*
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
INSTALL NEEDLE BEARING (LARGER RADIUS EDGE FIRST) JUST BELOW BOTTOM OF CHAMFER ON SPROCKET BORE. BOTH ENDS TYP
T6
NEEDLE BEARING INSTALLATION IN SPROCKET
SCALE: 2:1
T15
T4 SHIFT COLLAR IS LOCKED IN PUMP POSITION
T36
T11
T14
T42
T94*
T12*
INPUT SHAFT SIDE (PUMP MOUNTING SIDE)
NO OUTPUT SHAFT (REAR)
T13
T43*
TORQUE TO 475-525 LB-FT
T41
T8
TORQUE TO 31 LB-FT
T9
OPTIONAL END YOKE OR COMPANION FLANGE. SEE PAGE 17 FOR PART NO'S MAY NOT HAVE BEEN FURNISHED BY WATEROUS
T10
T8
TORQUE TO 31 LB-FT
T9
T12*
T7
T18
T6
SEE INSTALLATION DETAIL ABOVE
T3
DRIVELINE
INPUT SHAFT ONLY

Case

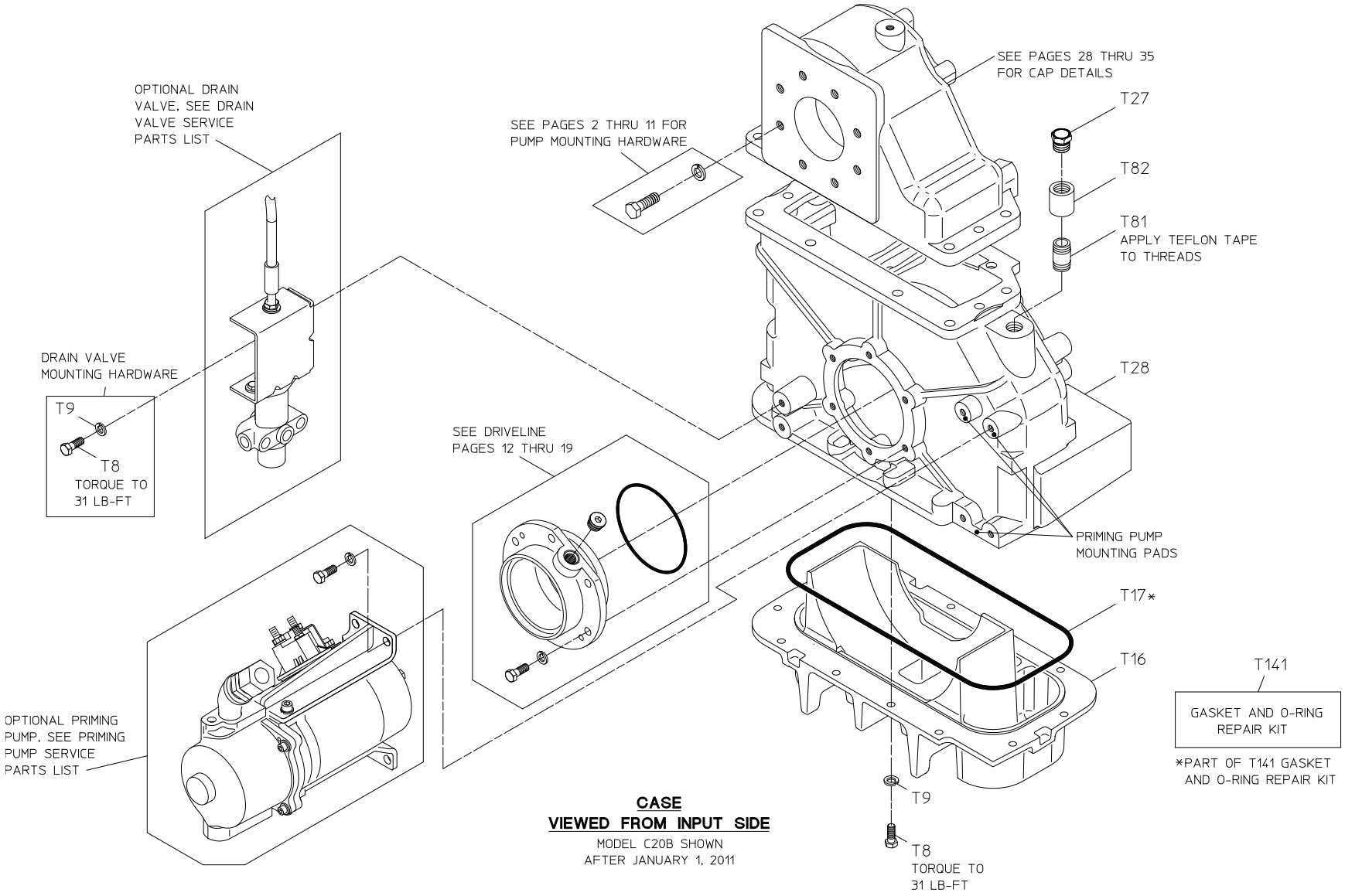
Viewed From Input Side

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

REF. NO.	DESCRIPTION
T27	Breather, 1/2 NPT
T28	Case
T81	Pipe Nipple, 1/2 NPT x 1-1/2 in.
T82	Pipe 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 INPUT SIDE
MODEL C20B SHOWN
AFTER JANUARY 1, 2011

Case

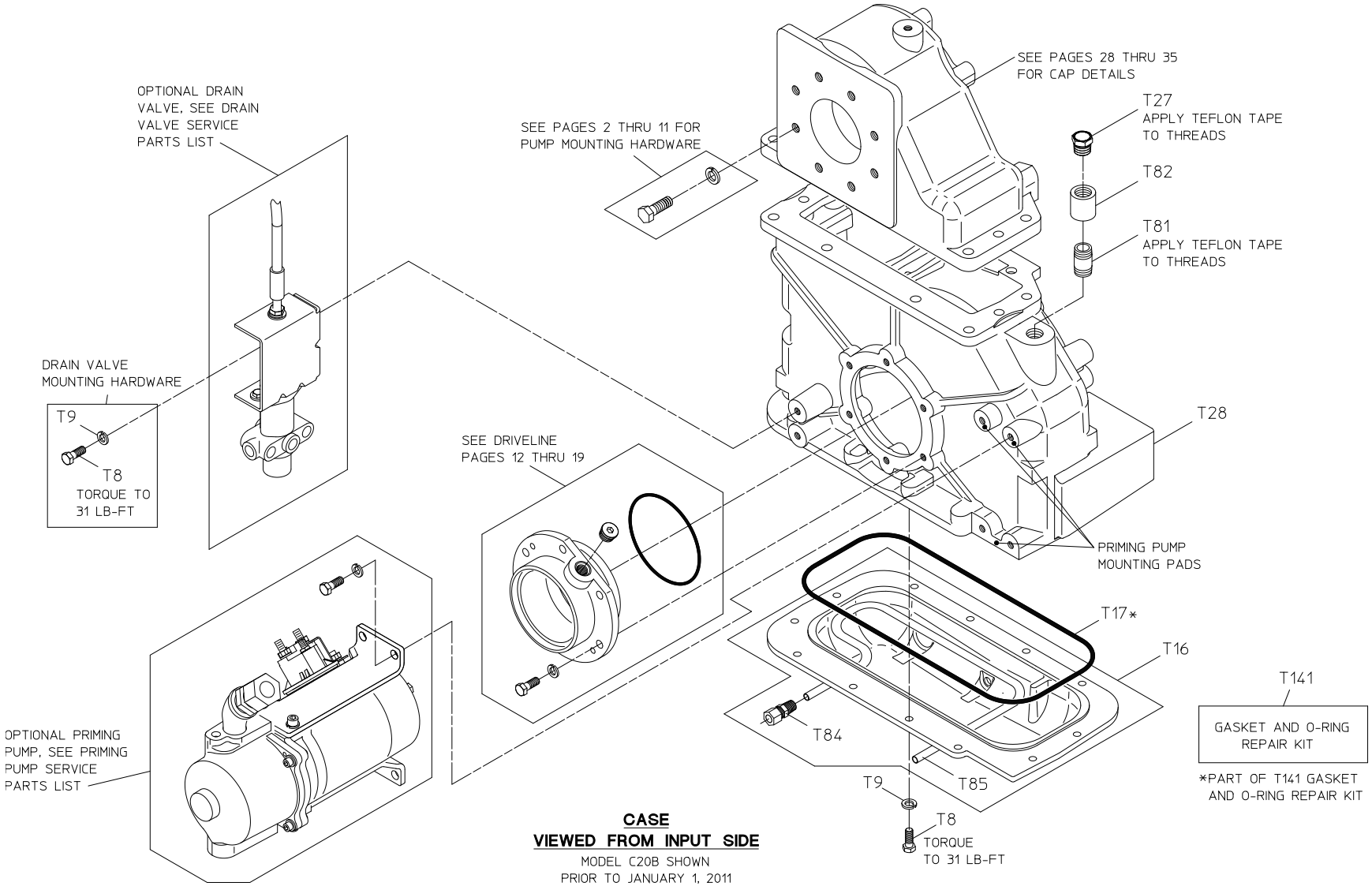
Viewed from Input Side

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan (Includes T84 and T85)
T17	Transmission Pan Gasket

REF. NO.	DESCRIPTION
T27	Breather, 1/2 NPT
T28	Case
T81	Pipe Nipple, 1/2 NPT x 1-1/2 in.
T82	Pipe Coupling, 1/2 NPT
T84	Tube Connector
T85	Cooling Tube, 3/8 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
MODEL C20B SHOWN
PRIOR TO JANUARY 1, 2011

Case

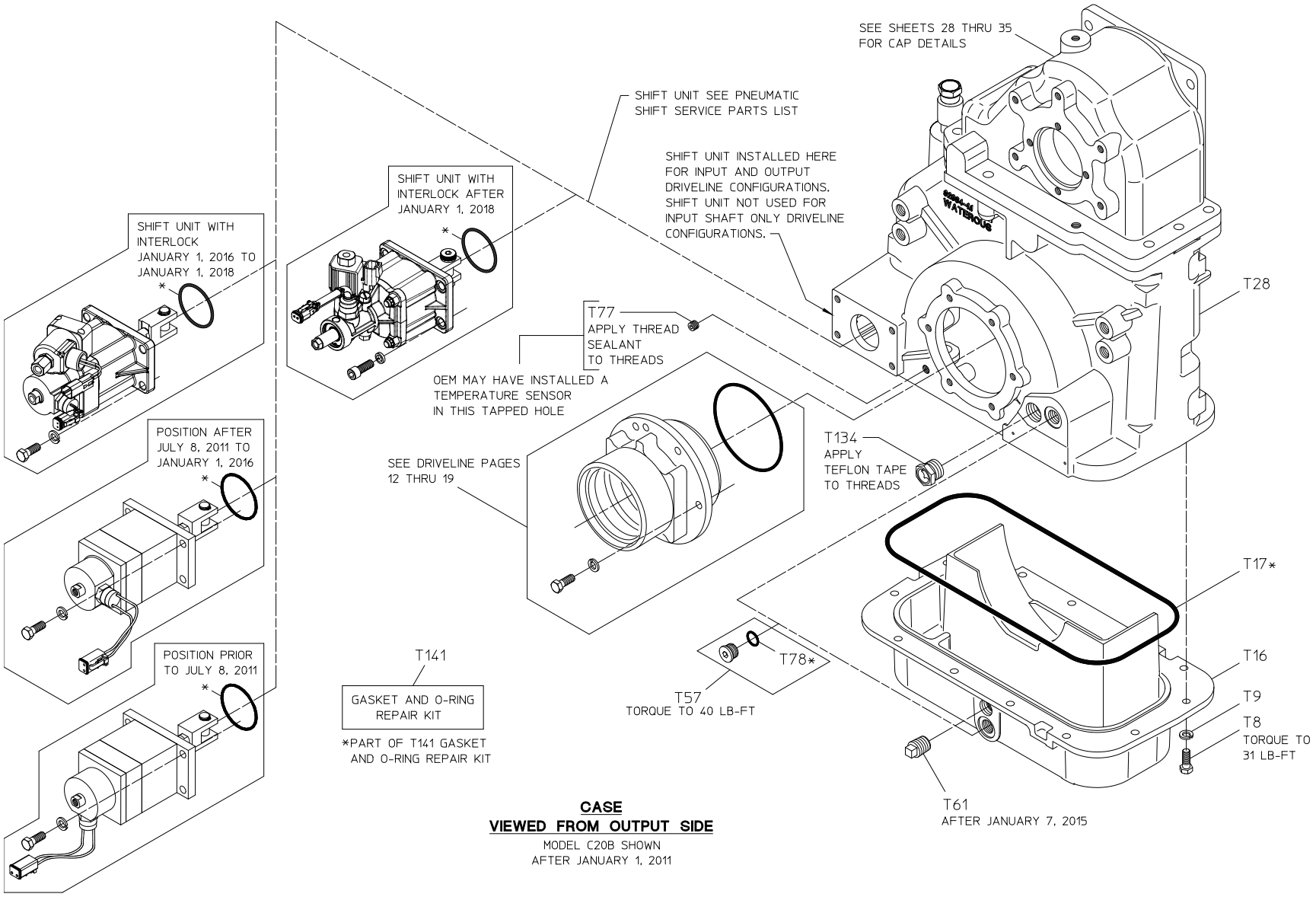
Viewed from Output Side

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
T57	Magnetic Drain Plug, 3/4-16 (Includes T78)

REF. NO.	DESCRIPTION
T61	Pipe Plug, 1/2 NPT
T77	Headless Pipe Plug, 1/8 NPT
T78	O-ring, 16.4 mm x 20.8 mm
T134	Sight Plug, 3/4 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

MODEL C20B SHOWN
AFTER JANUARY 1, 2011

Case

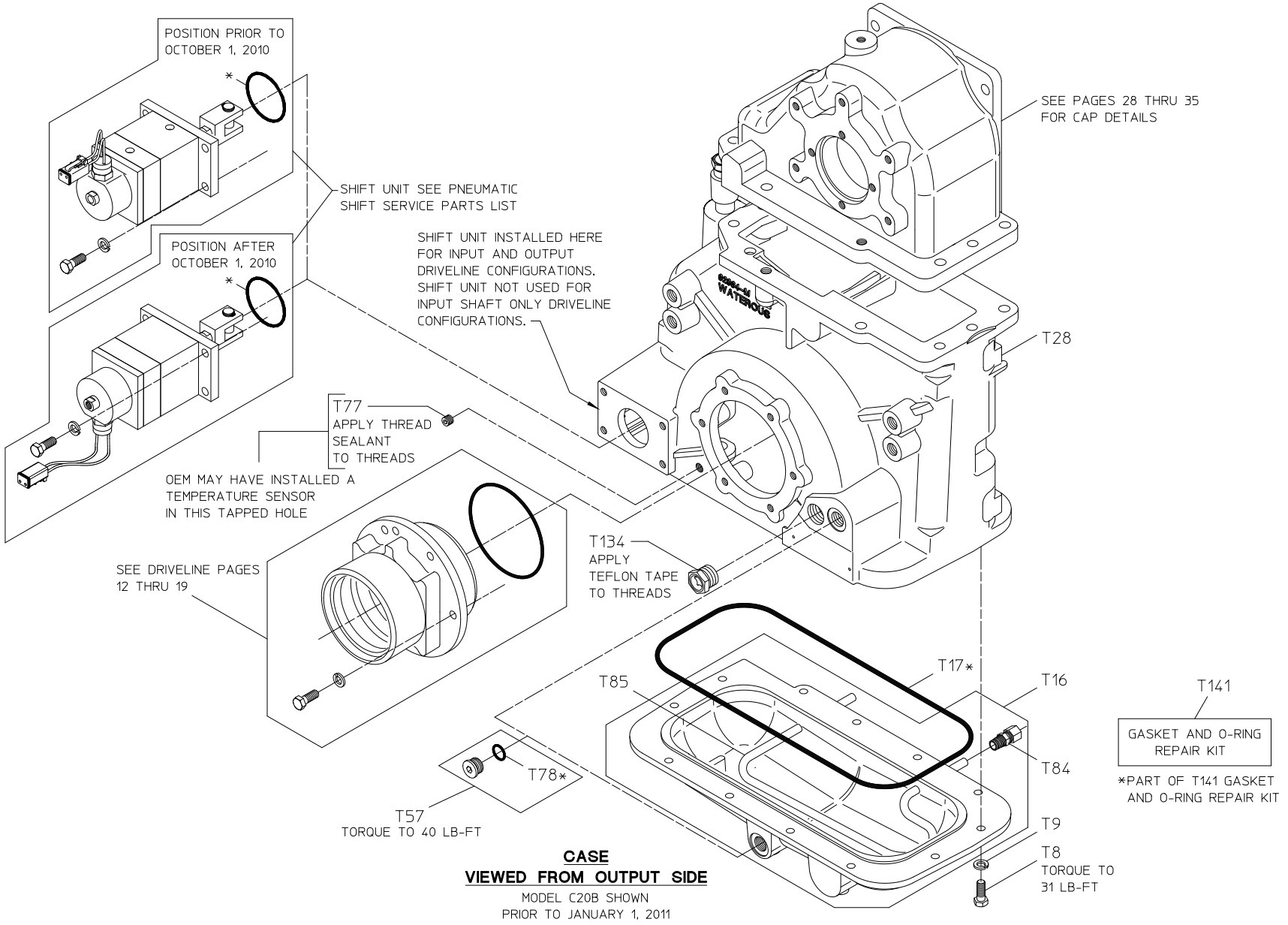
Viewed from Output Side

REF. NO.	DESCRIPTION
T8	Hex Hd Screw, 3/8-16 x 1 in.
T9	Lock Washer, 3/8 in.
T16	Transmission Pan (Includes T84 and T85)
T17	Transmission Pan Gasket
T28	Case

REF. NO.	DESCRIPTION
T57	Magnetic Drain Plug, 3/4-16 (Includes T78)
T77	Headless Pipe Plug, 1/8 NPT
T78	O-ring, 16.4 mm x 20.8 mm
T84	Tube Connector
T85	Cooling Tube, 3/8 in.
T134	Sight Plug, 3/4 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

MODEL C20B SHOWN
PRIOR TO JANUARY 1, 2011

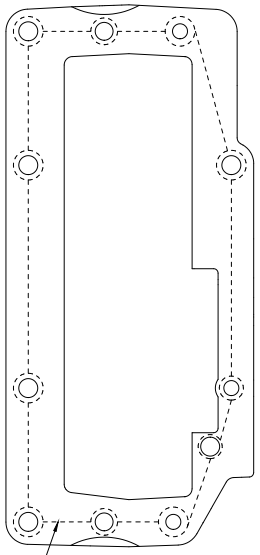
Case Cap Variations - Spacers, Shims and Sealant Application

Models C20B, C20C, C20D, C20E and C20F

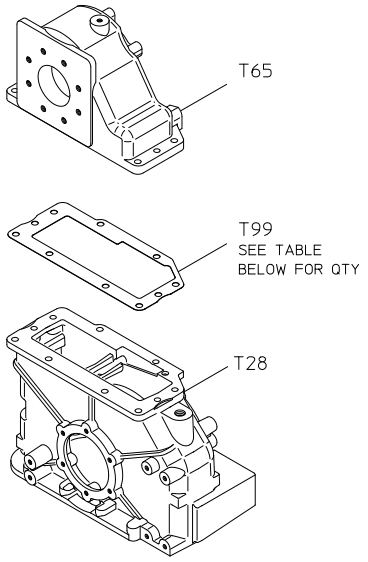
REF. NO.	DESCRIPTION
T28	Case
T64	Oil Return Tube
T65	Case Cap

REF. NO.	DESCRIPTION
T99	Shim
T100	Case Spacer

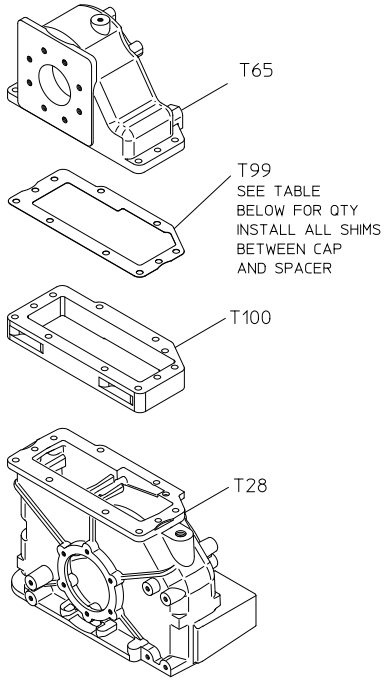
APPLY LOCTITE® 518 SEALANT OR EQUIVALENT TO MATING FLANGES AND BETWEEN SHIMS



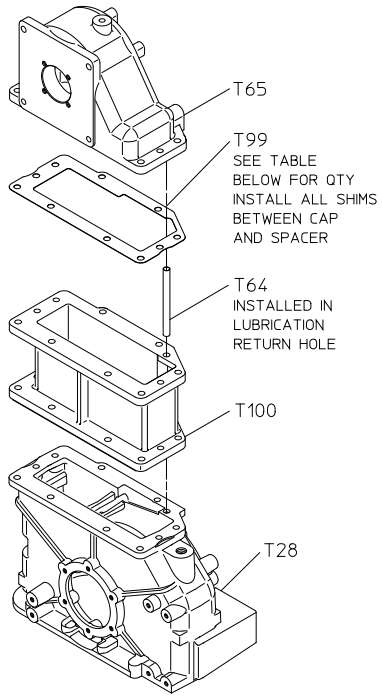
APPLY A THIN BEAD OF SEALANT
AS SHOWN BY DASHED LINE
(CASE FLANGE SHOWN)



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	N/A	N/A	N/A	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	2	0	4	1	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 Variations - Hardware

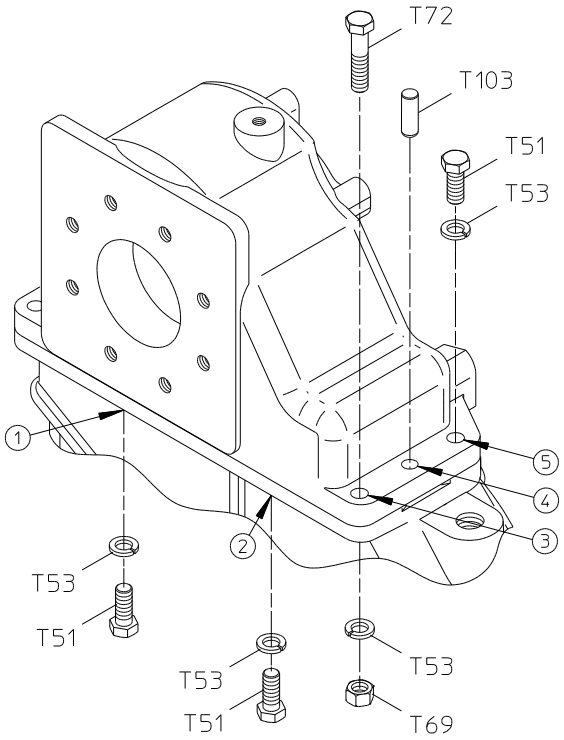
Model C20B

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

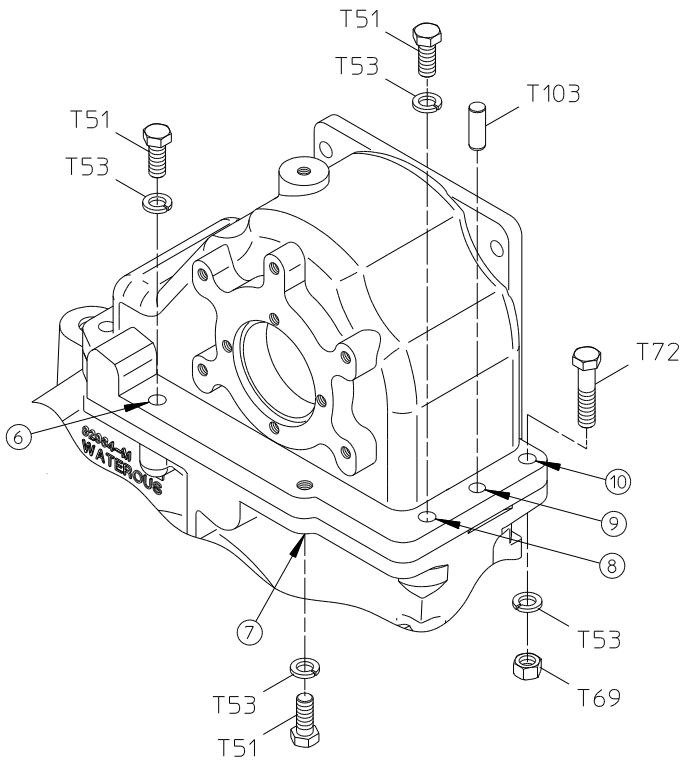
REF. NO.	DESCRIPTION
T72	Hex Hd Screw, 1/2-20 x 2-1/4 in.
T103	Dowel Pin, 1/2 x 1-1/2 in.

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



VIEWED FROM INPUT SIDE OF CASE



VIEWED FROM OUTPUT SIDE OF CASE

FLANGE HARDWARE BETWEEN CAP (T65) AND CASE (T28)

REF NO.	HARDWARE DESCRIPTION	HOLE NUMBER										QTY	TORQUE SPECIFICATION
		1	2	3	4	5	6	7	8	9	10		
T51	SCREW-HEX HD, 1/2-13 X 1.50	1	1			1	1	1	1			6	75 LB-FT
T53	WASHER-LOCK, 1/2	1	1	1		1	1	1	1		1	8	-
T69	NUT-HEX, 1/2-20			1							1	2	-
T72	SCREW-HEX HD, 1/2-20 X 2.25			1							1	2	85 LB-FT
T103	PIN-DOWEL, 1/2 X 1-1/2				1					1		2	-

NOTE:
1. HOLES 1 AND 2 ARE BLIND HOLES THAT ARE TAPPED INTO THE CAP AND ARE NOT SHOWN.

CASE CAP VARIATIONS
HARDWARE FOR MODEL C20B

Case Cap Variations - Hardware

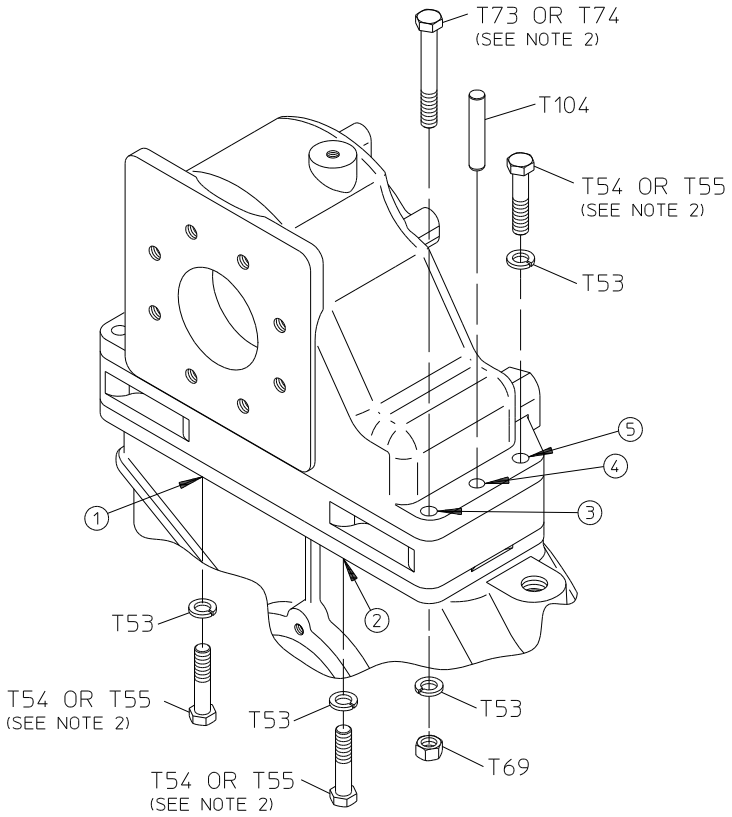
Model C20C

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

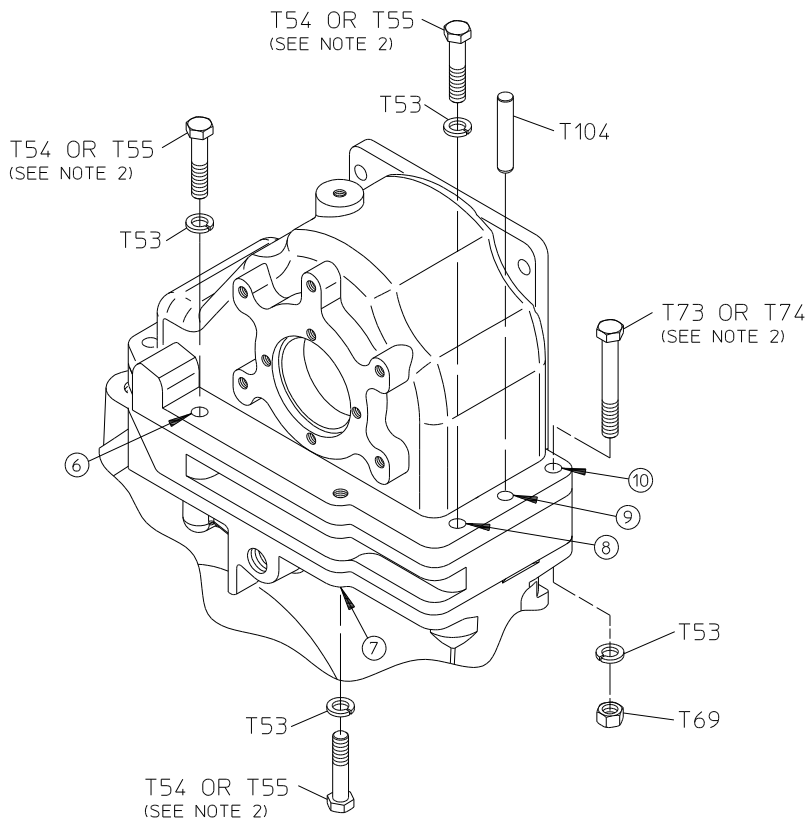
REF. NO.	DESCRIPTION
T73	Hex Hd Screw, 1/2-20 x 4 in.
T74	Hex Hd Screw, 1/2-20 x 4-1/4 in.
T104	Dowel Pin, 1/2 x 3 in.

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 AND 2 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 Variations - Hardware

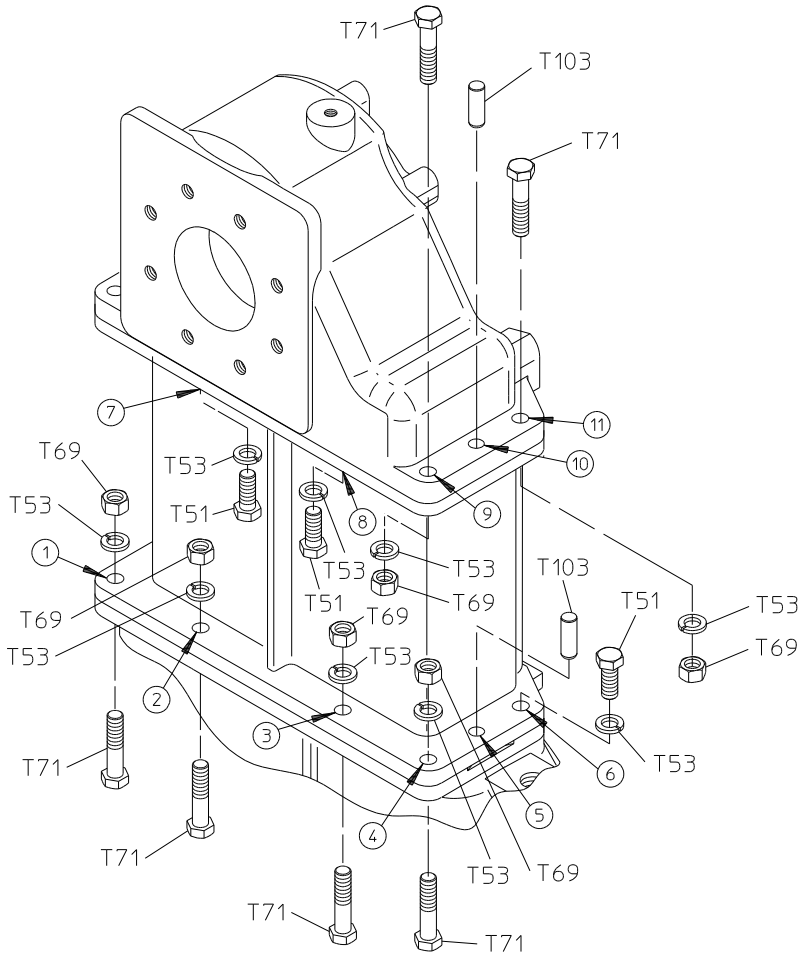
Model C20D, C20E and C20F

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

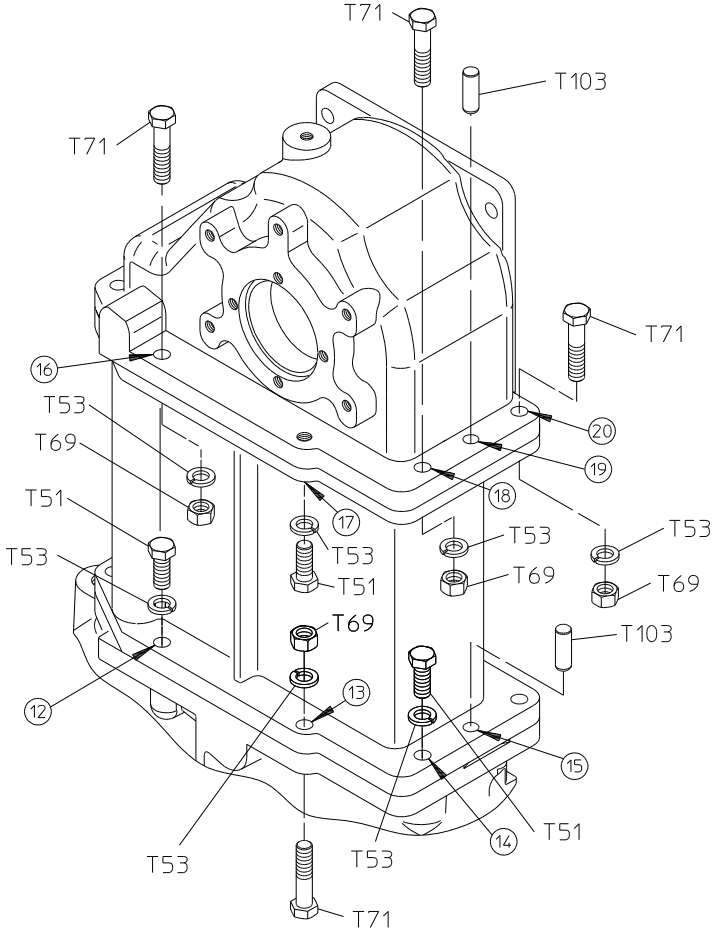
REF. NO.	DESCRIPTION
T71	Hex Hd Screw, 1/2-20 x 2 in.
T103	Dowel Pin, 1/2 x 1-1/2 in.

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				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	16	-
T69	NUT-HEX, 1/2-20	1	1	1	1					1		1		1			1		1		1	10	-
T71	SCREW-HEX HD, 1/2-20 X 2.00	1	1	1	1					1		1		1			1		1		1	10	85 LB-FT
T103	PIN-DOWEL, 1/2 X 1-1/2					1					1					1				1		4	-

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

CASE CAP VARIATIONS
HARDWARE FOR MODELS C20D, C20E & C20F