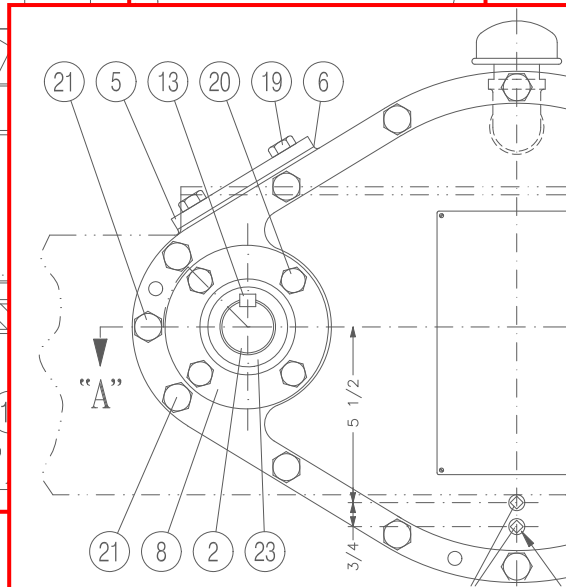
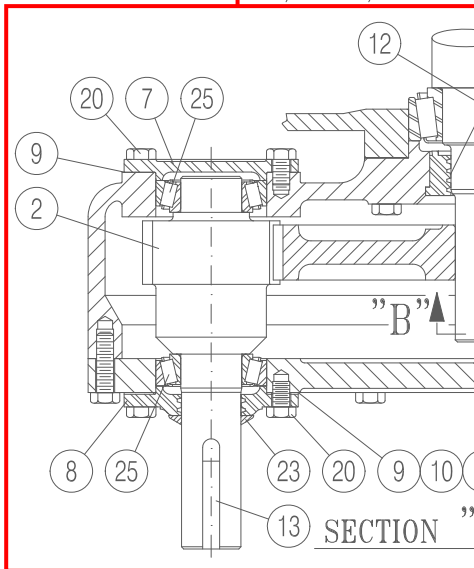
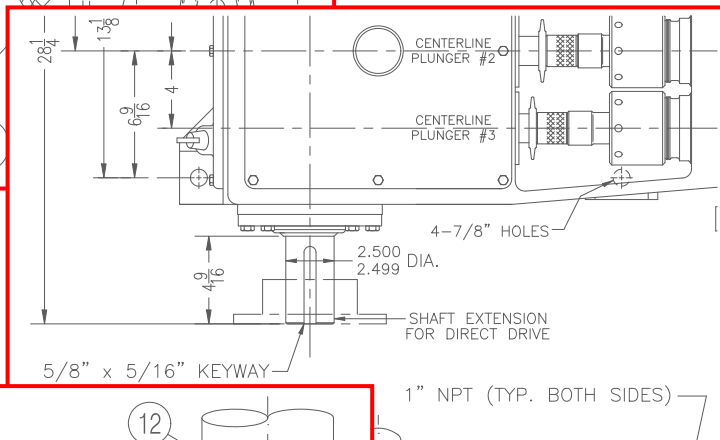
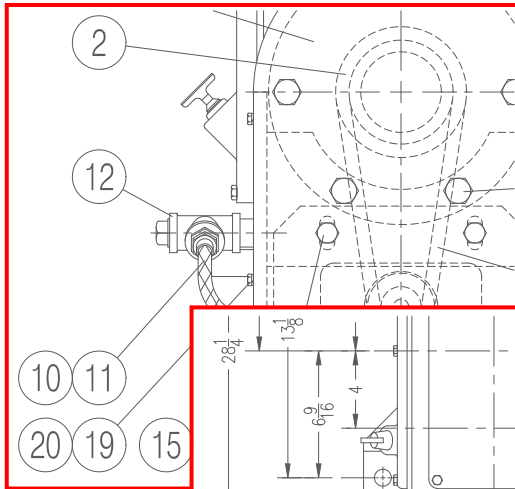
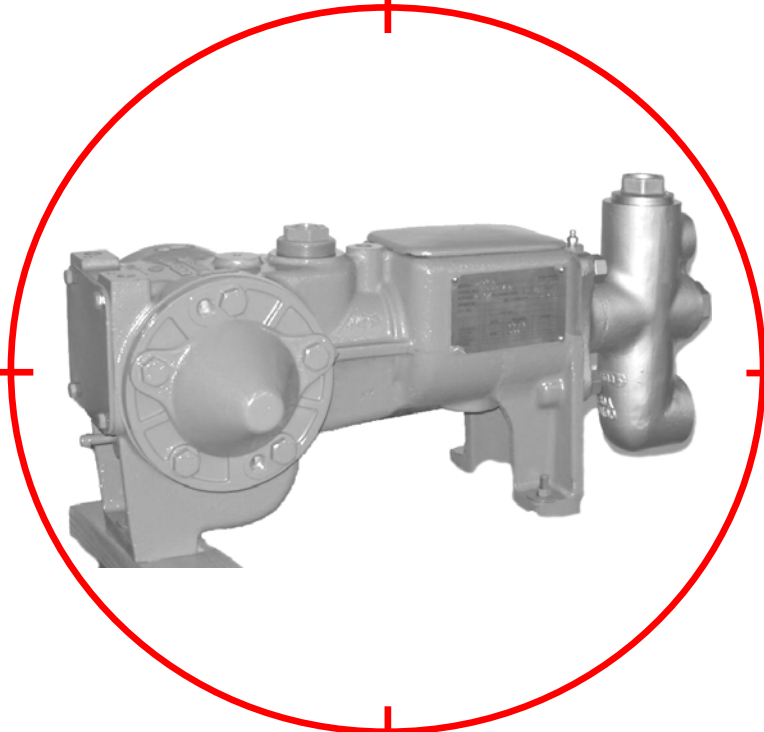


2S-1 and 5S-2 Multiplex Plunger Pumps Parts List



Types:
2S-1
5S-2

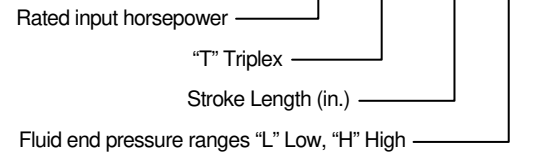
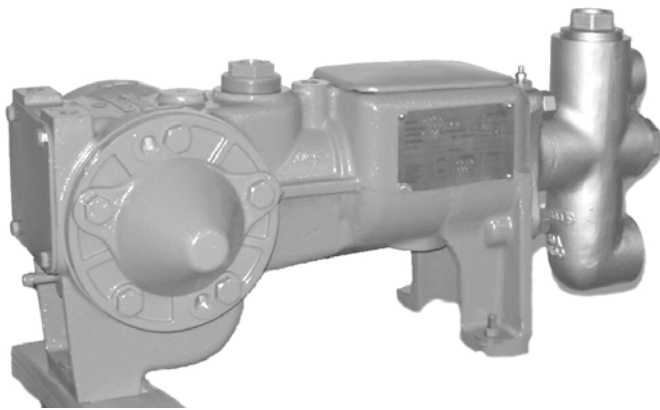
Sales / Technical Information

USA Tollfree: 1 (800) 324-4706
Phone: 1 (918) 447-4600
Fax: 1 (918) 447-4677
Internet: <http://www.nov.com>

REVISED: April 2, 2007
ISSUE: August 27, 2004

Parts List

Multiplex Plunger Pump 2S-1



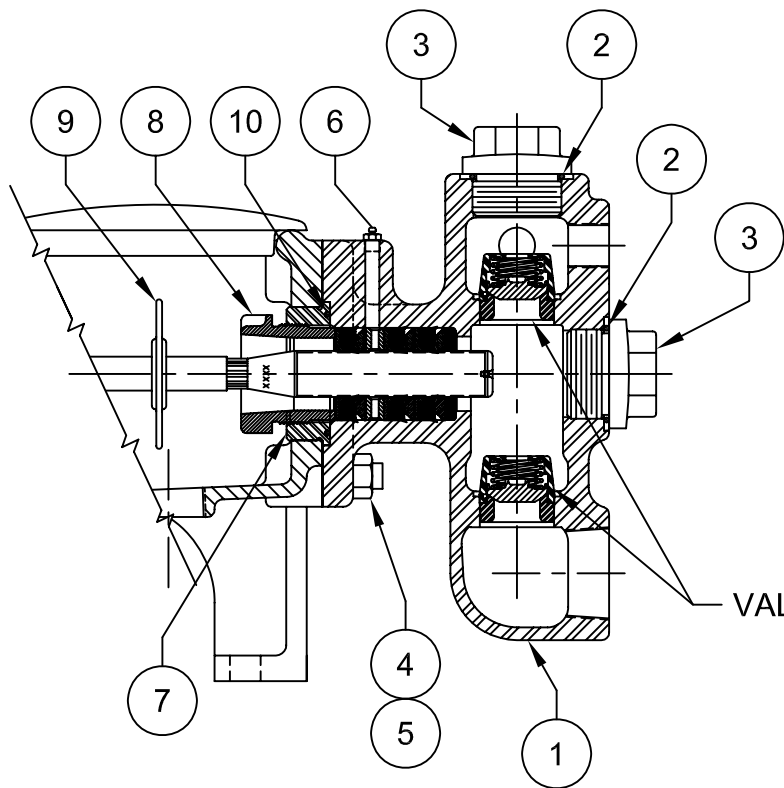
Index and Check List:

PAGE	DWG. NUMBER	DESCRIPTION	SERIES OF ISSUE	DATE OF ISSUE
1	118722	ASSY, CAST FLUID END, BRONZE (L)	FIRST	3-20-07
2	118723	ASSY, CAST FLUID END, DUCTILE IRON (L)	FIRST	3-20-07
3	118724	ASSY, BILLET FLUID END, STEEL (L)	FIRST	3-20-07
4	117577	ASSY, CAST FLUID END, BRONZE (M)	SECOND	3-20-07
5	117576	ASSY, CAST FLUID END, STAINLESS STEEL (M)	SECOND	3-20-07
6	117578	ASSY, CAST FLUID END, DUCTILE IRON (M)	SECOND	3-20-07
7	117580	ASSY, BILLET FLUID END, STEEL (M)	SECOND	3-20-07
8	117579	ASSY, BILLET FLUID END, STEEL & STAINLESS STEEL (H)	FIRST	8-27-04
9	117581	ASSEMBLY, POWER END	FIRST	8-27-04
10	117582	ASSEMBLY, CRANKSHAFT POWER END	FIRST	8-27-04
11	117594	ASSEMBLY, SPHERICAL VALVE (L & M)	FIRST	8-27-04
12	118730	ASSEMBLY, SPHERICAL VALVE, SEVERE DUTY (L & M)	FIRST	3-20-07
13	117593	ASSEMBLY, DISC VALVE (L & M)	FIRST	8-27-04
14	117675	ASSEMBLY, SEVERE DUTY (L & M)	FIRST	8-27-04
15	117606	ASSEMBLY, SEVERE DUTY (H)	FIRST	8-27-04
16	117568	TOOL KIT	SECOND	3-20-07
17	118725	ASSY, PLUNGER KIT 1-1/2" THRU 2" J-STYLE PKG (L)	FIRST	3-20-07
22	118726	ASSY, PLUNGER KIT 1-1/2" THRU 2" BRAID STYLE PKG (L)	FIRST	3-20-07
27	118727	ASSY, PLUNGER KIT 1-1/2" THRU 2" 1068-4 STYLE PKG (L)	FIRST	3-20-07
32	117607	ASSY, PLUNGER KIT 1-1/8" THRU 1-3/4" J-STYLE PKG (M)	SECOND	3-20-07
38	117608	ASSY, PLUNGER KIT 1-1/8" THRU 1-3/4" BRAID STYLE PKG (M)	FIRST	8-27-04
44	117609	ASSY, PLUNGER KIT 1-1/8" THRU 1-3/4" 1068-4 STYLE PKG (M)	FIRST	8-27-04
50	117610	ASSY, PLUNGER KIT 3/4" THRU 1" 805-4 STYLE PKG (H)	FIRST	8-27-04
53	118728	PLUNGERS, 1-1/2" THRU 2" HARD SURFACE (L)	FIRST	3-20-07
54	118729	PLUNGERS, 1-1/2" THRU 2" CERAMIC (L)	FIRST	3-20-07
55	117611	PLUNGERS, 1-1/8" THRU 1-3/4" HARD SURFACE (M)	SECOND	3-20-07

***Index and Check List
Multiplex Plunger Pump (Continued)***




PAGE	DWG. NUMBER	DESCRIPTION	SERIES OF ISSUE	DATE OF ISSUE
56	117612	PLUNGERS, 1-1/8" THRU 1-3/4" CERAMIC (M)	SECOND	3-20-07
57	117617	PLUNGERS, 3/4" THRU 1" HARD SURFACE (H)	SECOND	3-20-07
58	117591	ASSEMBLY, PACKING LUBRICATOR	SECOND	3-20-07
59	117603	ASSEMBLY, D.O.H. LUBRICATOR	SECOND	3-20-07
60	117589	GENERAL DIMENSION, RHD, CAST FLUID END (L & M)	FIRST	8-27-04
61	117590	GENERAL DIMENSION, RHD, BILLET FLUID END (L & M)	FIRST	8-27-04
62	117592	GENERAL DIMENSION, RHD, BILLET FLUID END (H)	FIRST	8-27-04



	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	
1	110-000234-201	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-000497-310	GLAND NUT 2"	
1	001-011242-310	GLAND NUT 1-7/8"	
1	001-011241-310	GLAND NUT 1-3/4"	
1	001-011240-310	GLAND NUT 1-5/8"	
1	001-011239-310	GLAND NUT 1-1/2"	8
1	001-028512-313	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058214-286	STUD	4
2	002-028954-316	CYLINDER HEAD / VALVE COVER	3
2	110-000036-201	SEAL	2
1	AAD-117995-316	FLUID END, BRONZE CAST	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

1

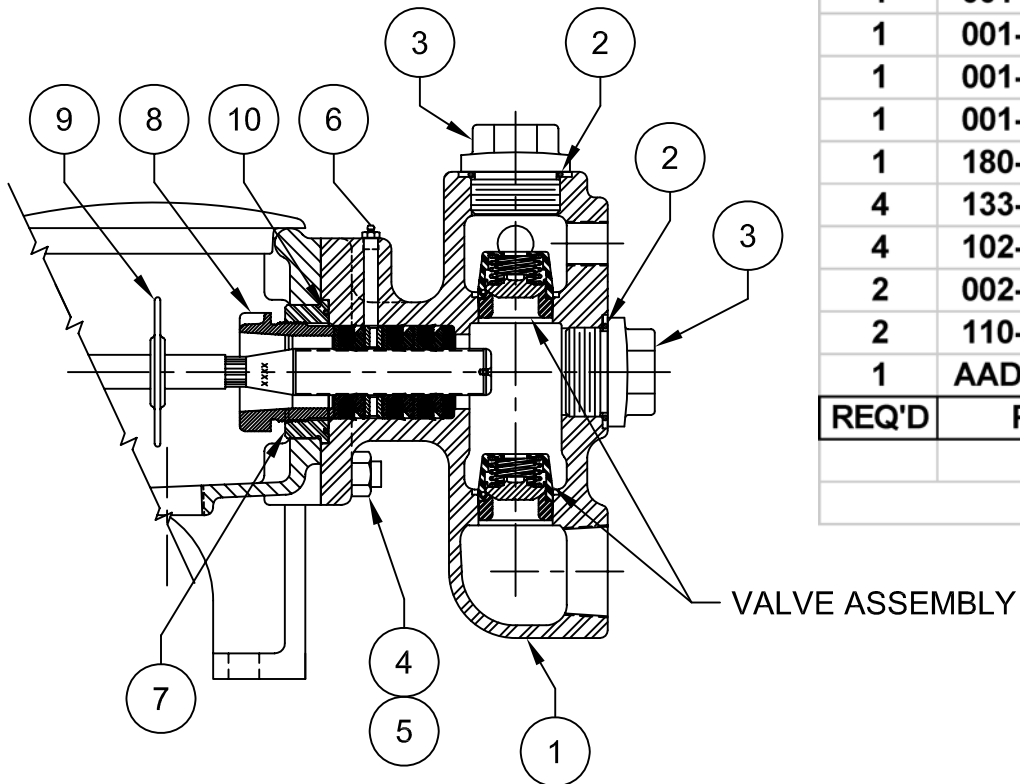
 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, CAST FLUID END BRONZE 2S-1L / 5S-2L			
DWG No.:	118722	SCALE:	NONE
REV	A	SHT.:	1 OF 1

	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	

1	110-000234-201	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-000497-351	GLAND NUT 2"	
1	001-011242-351	GLAND NUT 1-7/8"	
1	001-011241-351	GLAND NUT 1-3/4"	
1	001-011240-351	GLAND NUT 1-5/8"	
1	001-011239-351	GLAND NUT 1-1/2"	8
1	001-028512-236	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058214-286	STUD	4
2	002-028954-351	CYLINDER HEAD / VALVE COVER	3
2	110-000036-201	SEAL	2
1	AAD-117995-351	FLUID END, DUCTILE IRON CAST	1

REQ'D	Part No.	DESCRIPTION	ITEM
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BILL OF MATERIAL



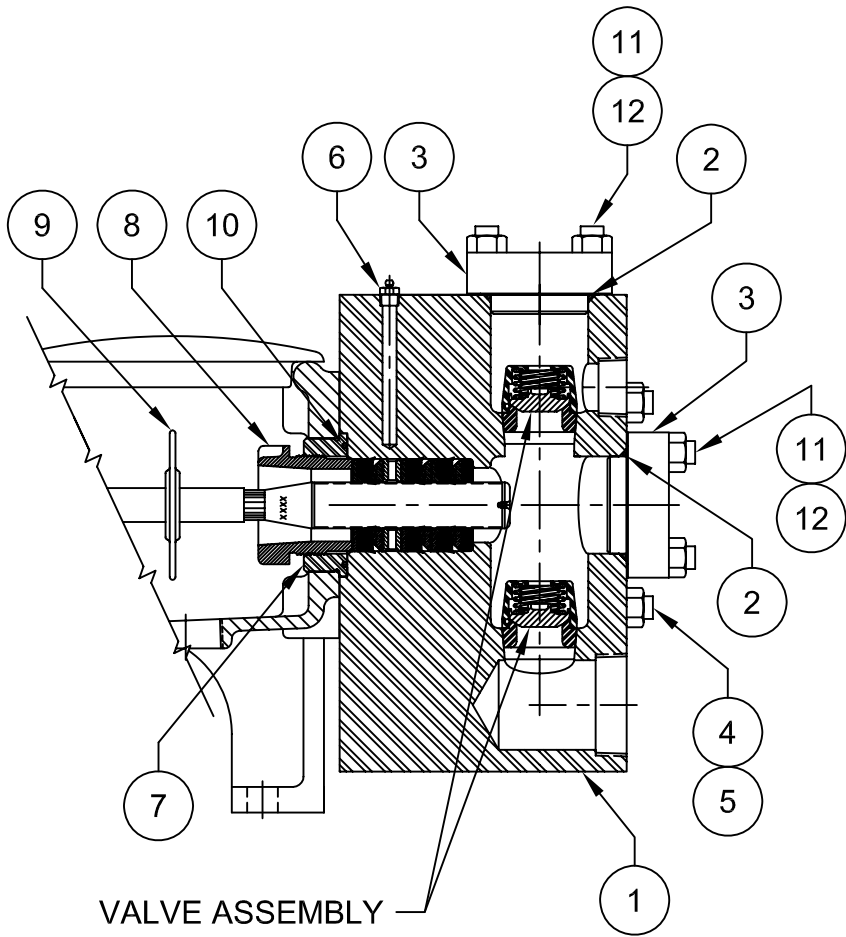
2



HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE:
**ASSEMBLY, CAST FLUID END
 DUCTILE IRON
 2S-1L / 5S-2L**

DWG No.:	118723	SCALE:	NONE	REV	A	SHT.:	1 OF 1
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VALVE ASSEMBLY

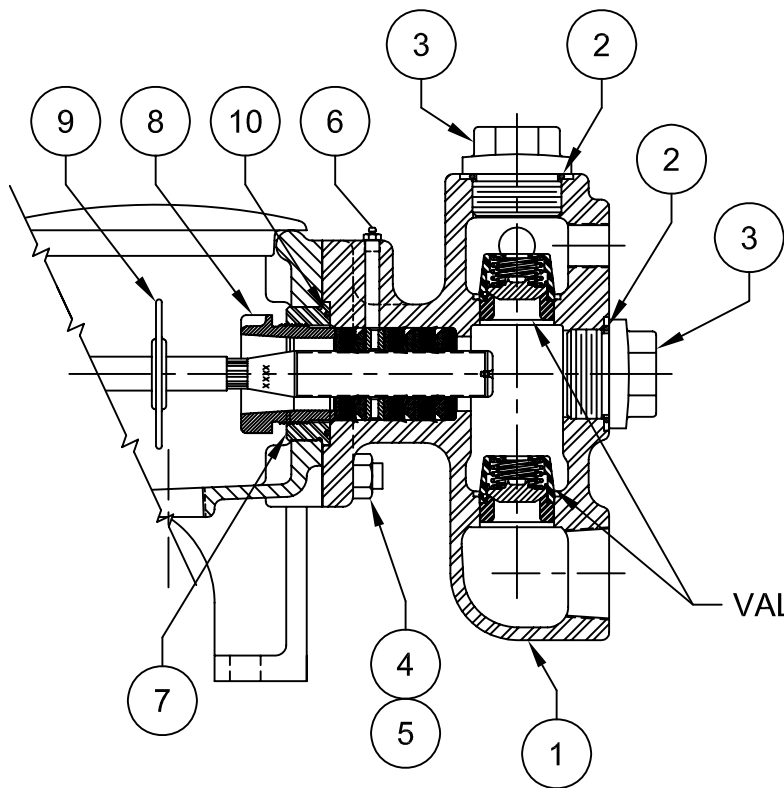
	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	
8	133-058011-286	NUT	12
8	102-058212-286	STUD	11
1	110-000234-201	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-000497-310	GLAND NUT 2"	
1	001-011242-310	GLAND NUT 1-7/8"	
1	001-011241-310	GLAND NUT 1-3/4"	
1	001-011240-310	GLAND NUT 1-5/8"	
1	001-011239-310	GLAND NUT 1-1/2"	8
1	001-028512-236	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058812-286	STUD	4
2	AAB-030923-231	CYLINDER HEAD / VALVE COVER	3
2	110-000229-201	SEAL	2
1	AAD-117996-C06	FLUID END	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

3

NO NATIONAL OILWELL
 HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE: **ASSEMBLY, BILLET FLUID END STEEL**
2S-1L / 5S-2L

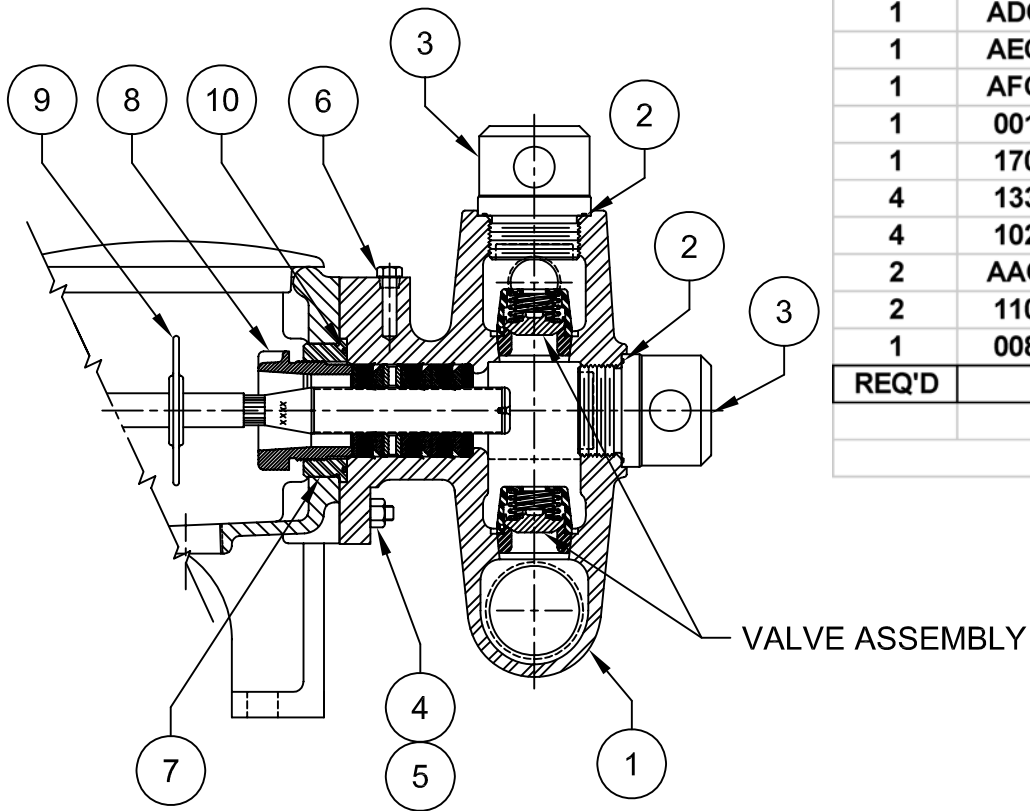
DWG No.: 118724 SCALE: NONE REV A SHT.: 1 OF 1



	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	
1	110-000232-200	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-008909-304	GLAND NUT 1-3/4"	
1	001-011231-304	GLAND NUT 1-5/8"	
1	001-011230-304	GLAND NUT 1-1/2"	
1	001-011229-304	GLAND NUT 1-3/8"	
1	001-011228-304	GLAND NUT 1-1/4"	
1	001-011227-304	GLAND NUT 1-1/8"	8
1	001-003948-313	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058214-286	STUD	4
2	002-028954-316	CYLINDER HEAD / VALVE COVER	3
2	110-000036-201	SEAL	2
1	004-010190-316	FLUID END, BRONZE CAST	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

4

NO NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, CAST FLUID END BRONZE 2S-1M / 5S-2M (P50A, P50B)	
DWG No.: 117577	SCALE: NONE
REV B	SHT.: 1 OF 1



	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	
1	110-000232-200	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	AAC-013800-E16	GLAND NUT 1-3/4"	
1	ABC-013800-E16	GLAND NUT 1-5/8"	
1	ACC-013800-E16	GLAND NUT 1-1/2"	
1	ADC-013800-E16	GLAND NUT 1-3/8"	
1	AEC-013800-E16	GLAND NUT 1-1/4"	
1	AFC-013800-E16	GLAND NUT 1-1/8"	8
1	001-003948-278	POWER END / FLUID END ADAPTER	7
1	170-018002-278	PIPE PLUG	6
4	133-058011-286	NUT	5
4	102-058214-286	STUD	4
2	AAC-117697-E16	CYLINDER HEAD / VALVE COVER	3
2	110-000036-200	SEAL	2
1	008-028742-261	FLUID END, STAINLESS STEEL CAST	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

5

NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE: **ASSEMBLY, CAST FLUID END
STAINLESS STEEL
2S-1M / 5S-2M (P50A, P50B)**

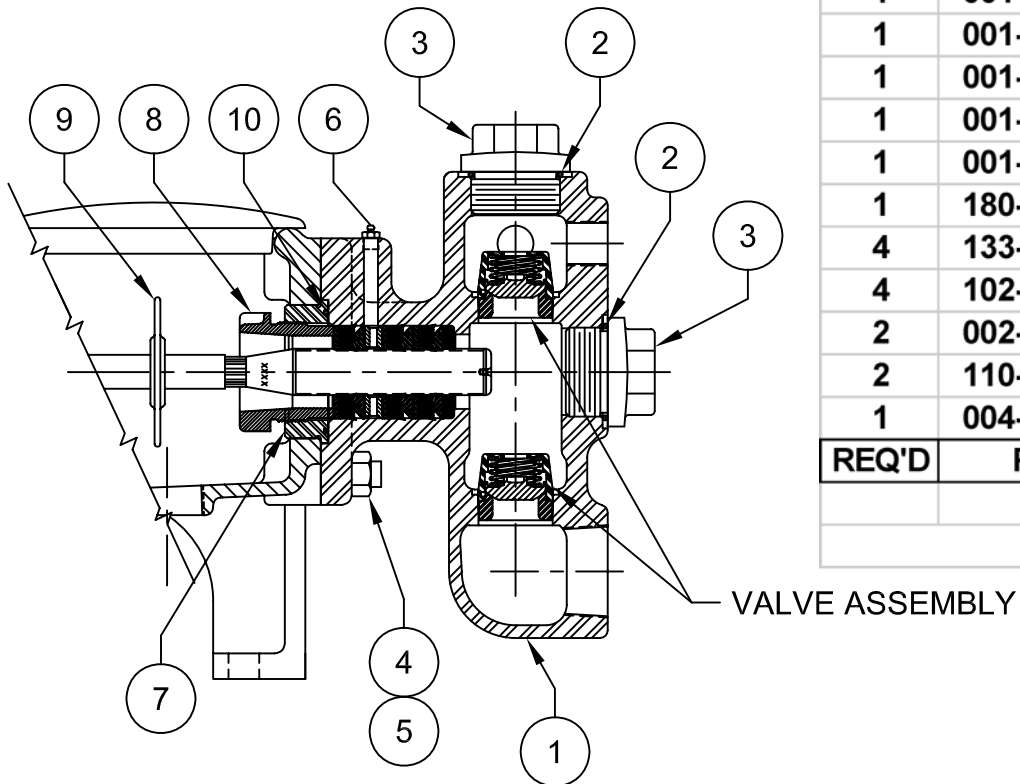
DWG No.:	SCALE:	REV	SHT.:
117576	NONE	B	1 OF 1

117675	SEVERE DUTY VALVE
117594	SPHERICAL VALVE
118730	SPHERICAL VALVE - SEVERE DUTY
117593	DISC VALVE
DRAWING No:	VALVE ASSEMBLY:

1	110-000232-200	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-008909-304	GLAND NUT 1-3/4"	
1	001-011231-304	GLAND NUT 1-5/8"	
1	001-011230-304	GLAND NUT 1-1/2"	
1	001-011229-304	GLAND NUT 1-3/8"	
1	001-011228-304	GLAND NUT 1-1/4"	
1	001-011227-304	GLAND NUT 1-1/8"	8
1	001-003948-236	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058214-286	STUD	4
2	002-028954-351	CYLINDER HEAD / VALVE COVER	3
2	110-000036-201	SEAL	2
1	004-010190-351	FLUID END, DUCTILE IRON CAST	1

REQ'D	Part No.	DESCRIPTION	ITEM
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BILL OF MATERIAL

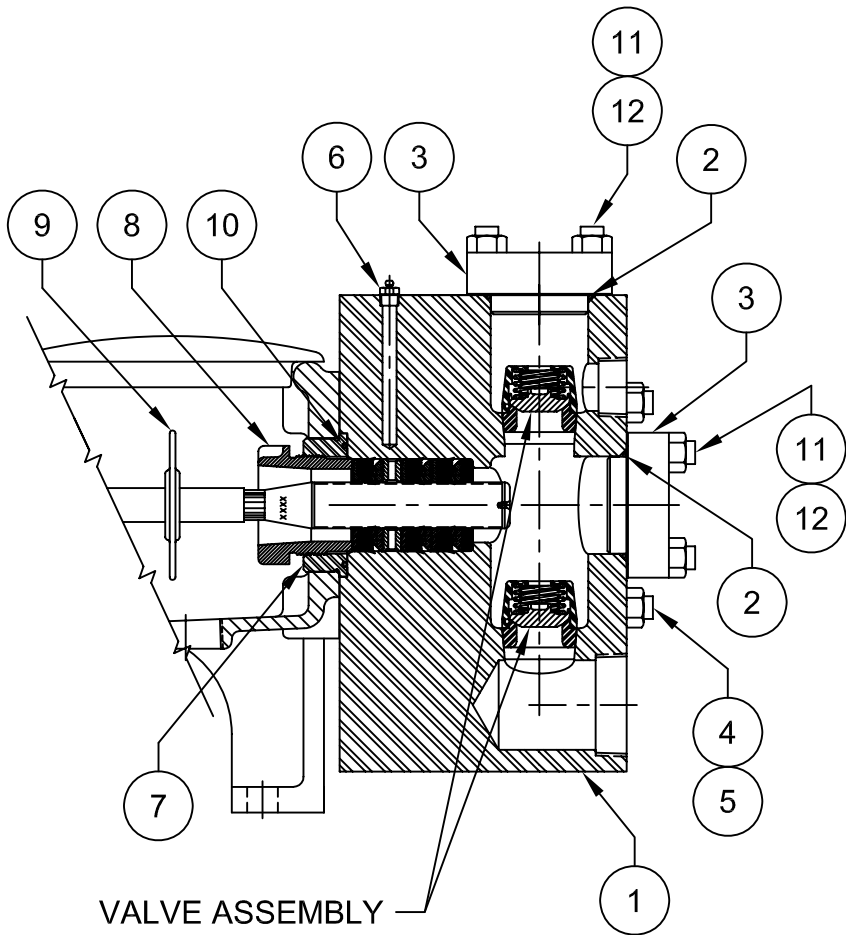


6

NO NATIONAL OILWELL
 HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE: ASSEMBLY, CAST FLUID END DUCTILE IRON 2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117578	SCALE: NONE	REV B	SHT.: 1 OF 1
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	117675	SEVERE DUTY VALVE	
	117594	SPHERICAL VALVE	
	118730	SPHERICAL VALVE - SEVERE DUTY	
	117593	DISC VALVE	
	DRAWING No:	VALVE ASSEMBLY:	
8	133-058011-286	NUT	12
8	102-058212-286	STUD	11
1	110-000232-200	O-RING	10
1	001-008910-201	BAFFLE DISC	9
1	001-008909-304	GLAND NUT 1-3/4"	
1	001-011231-304	GLAND NUT 1-5/8"	
1	001-011230-304	GLAND NUT 1-1/2"	
1	001-011229-304	GLAND NUT 1-3/8"	
1	001-011228-304	GLAND NUT 1-1/4"	
1	001-011227-304	GLAND NUT 1-1/8"	8
1	001-003948-236	POWER END / FLUID END ADAPTER	7
1	180-165000-220	LUBRICATION FITTING	6
4	133-058011-286	NUT	5
4	102-058812-286	STUD	4
2	AAB-030923-231	CYLINDER HEAD / VALVE COVER	3
2	110-000229-201	SEAL	2
1	AAC-030924-C06	FLUID END	1
REQ'D	Part No.	DESCRIPTION	ITEM

BILL OF MATERIAL

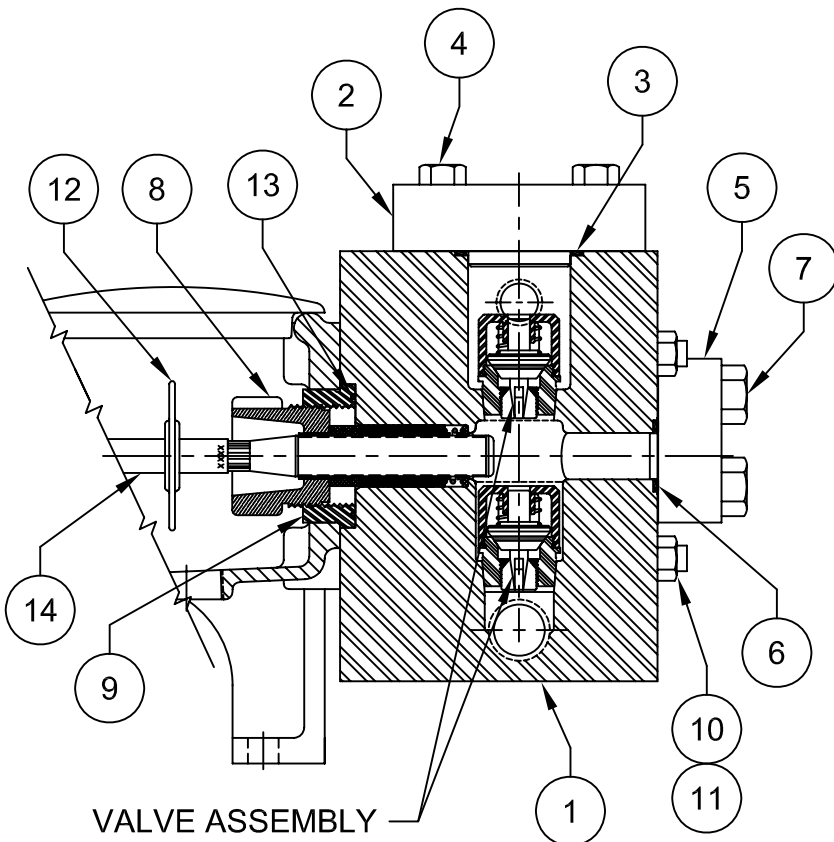


HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE:
**ASSEMBLY, BILLET FLUID END
 STEEL
 2S-1M / 5S-2M (P50A. P50B)**

DWG No.: 117580 SCALE: NONE REV B SHT: 1 OF 1


7



VALVE ASSEMBLY

117606		POLYURETHANE SEAL VALVE	
DRAWING No:		VALVE ASSEMBLY:	
1	001-014266-402	PONY ROD	14
1	110-000232-200	O-RING	13
1	001-008910-201	BAFFLE DISC	12
4	133-058011-243	NUT	11
4	102-058934-286	STUD	10
1	001-019879-310	POWER END / FLUID END ADAPTER	9
	001-014278-351	GLAND NUT (DI)	
1	001-014278-304	GLAND NUT (BRZ)	8
3	100-100234-290	CAP SCREW	7
1	001-010354-200	GASKET (CYLINDER HEAD)	6
	001-010351-278	CYLINDER HEAD (SS)	
1	001-010351-231	CYLINDER HEAD (STL)	5
4	100-118300-290	CAP SCREW	4
1	001-010355-200	GASKET (VALVE COVER)	3
	AAC-010350-278	VALVE COVER (SS)	
1	001-010350-231	VALVE COVER (STL)	2
	004-019777-276	FLUID END (SS)	
1	004-019777-250	FLUID END (STL)	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

8

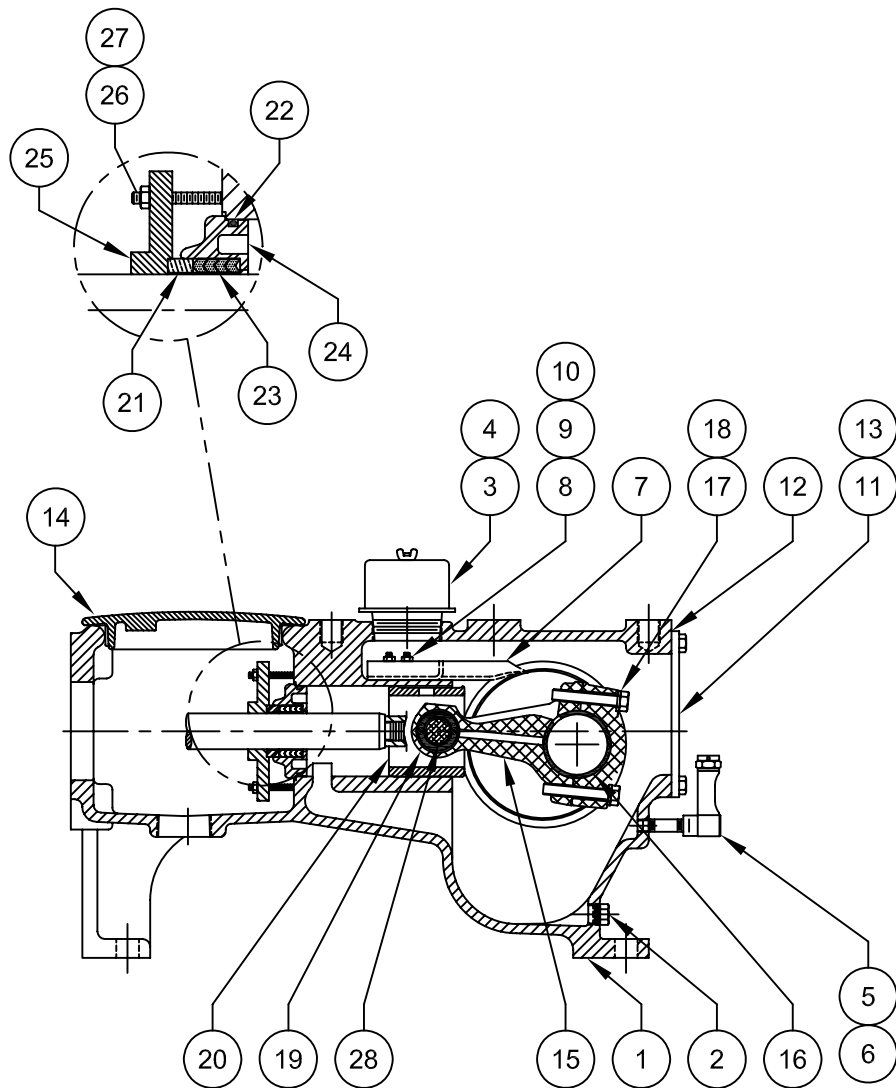


NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE: **ASSEMBLY, BILLET FLUID END
STEEL & STAINLESS, 3/4" THRU 1" PLGR.
2S-1H / 5S-2H (P50H)**

DWG No.: 117579	SCALE: NONE	REV A	SHT.: 1 OF 1
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1	001-008920-236	WRIST PIN	28
2	150-038016-306	NUT	27
2	102-038214-286	STUD	26
1	001-008906-283	GLAND	25
1	001-008916-302	FOLLOWER	24
1	001-011616-381	PACKING	23
1	110-000232-201	O-RING	22
1	002-008907-283	WIPER BOX	21
1	002-008905-350	CROSSHEAD	20
1	001-008921-302	BUSHING, WRIST PIN	19
2	100-038214-290	CAP SCREW	18
2	154-038068-220	LOCK WASHER	17
1	001-001699-999	SHELL BEARING	16
1	004-026866-350	CONN. ROD & CAP	15
1	004-003656-350	BARREL COVER	14
4	100-038012-290	CAP SCREW	13
1	001-003672-204	GASKET	12
1	001-003676-231	CRANKCASE COVER	11
2	152-014050-220	LOCK WASHER	10
2	155-014034-220	WASHER, FLAT	9
2	113-014038-220	MACHINE SCREW	8
1	004-006068-280	OIL TROUGH	7
1	157-018112-220	PIPE NIPPLE	6
1	001-011409-999	OIL GAUGE	5
1	AAA-030436-999	AIR BREATHER	4
1	161-200034-353	BUSHING	3
1	170-038005-353	DRAIN PLUG	2
1	004-022535-350	POWER FRAME	1
REQ'D	Part No.	DESCRIPTION	ITEM

BILL OF MATERIAL

9



HOUSTON, TEXAS, U.S.A.

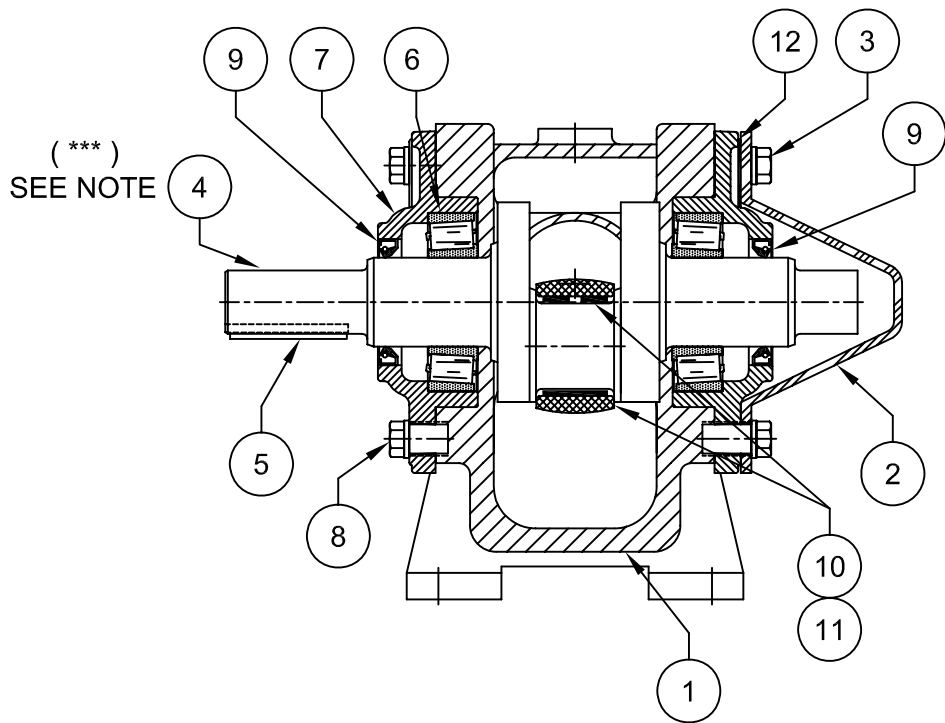
ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, POWER END
2S-1 / 5S-1 (P50A, P50B)

(SEE DWG. No: 117582 FOR OPTIONAL KITS & PARTS)

DWG No.:	117581	SCALE:	NONE	REV	A	SHT.:	1	OF	1
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(***)
SEE NOTE

REQ'D	Part No.	DESCRIPTION	OPTION
		(INCLUDES WRIST PIN BUSHING)	
1	998-016200-012	CONNECTING ROD KIT (*)	CC
1	998-016200-013	WIPER BOX GLAND NUT KIT (*)	BB
1	998-001650-012	POWER END GASKET KIT (*)	AA
REQ'D	Part No.	DESCRIPTION	OPTION
1	998-016200-014	SHIM/GASKET KIT	12
1	001-01699-999	SHELL BEARING	11
1	004-026866-350	CONN. ROD & CAP	10
2	145-218300-999	OIL SEAL	9
8	100-058114-290	CAP SCREW	8
2	004-000085-571	BEARING HOUSING	7
2	120-218042-999	END BEARING	6
1	146-038200-236	KEY	5
1	004-012554-351	CRANKSHAFT, 2S-1 (***)	
1	008-003677-351	CRANKSHAFT, 5S-2 (***)	4
2	100-058112-290	CAP SCREW (**)	3
1	001-001982-350	EXTENSION GUARD (**)	2
1	004-022535-350	POWER FRAME	1
REQ'D	Part No.	DESCRIPTION	ITEM

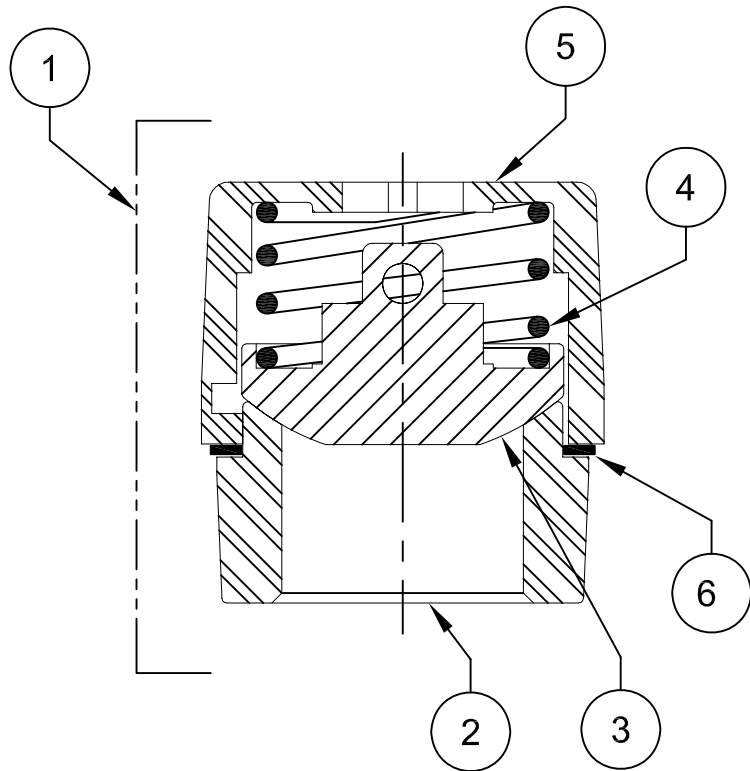
BILL OF MATERIAL

- * NOT SHOWN ON PARTS DRAWING.
- ** OMIT WHEN LUBRICATOR IS USED.
- *** NOTE DIFFERENT PART NUMBERS FOR 2S-1 AND 5S-1 CRANKSHAFT.


10

 NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, CRANKSHAFT POWER END 2S-1 / 5S-2 (P50A, P50B)	
DWG No.: 117582	SCALE: NONE
REV: A	SHT.: 1 OF 1

1	9707074	WAVE RING	6
1	17915036W	RETAINER	5
1	1791504	SPRING	4
1	179150225	BODY (VALVE)	3
1	179150125	SEAT	2
1	179150025W	ASSEMBLY, SPHERICAL VALVE	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

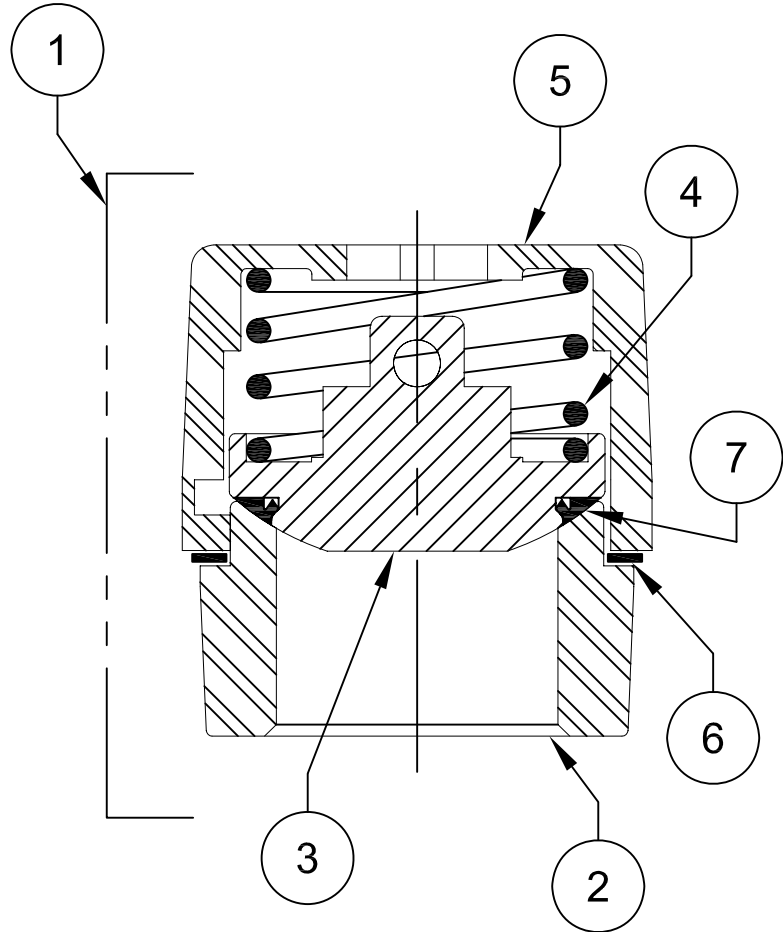


11

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, SPHERICAL VALVE 2S-1L & M / 5S-2L & M (P-50A, P50B)			
DWG No.:	SCALE:	REV	SHT.:
117594	NONE	A	1 OF 1

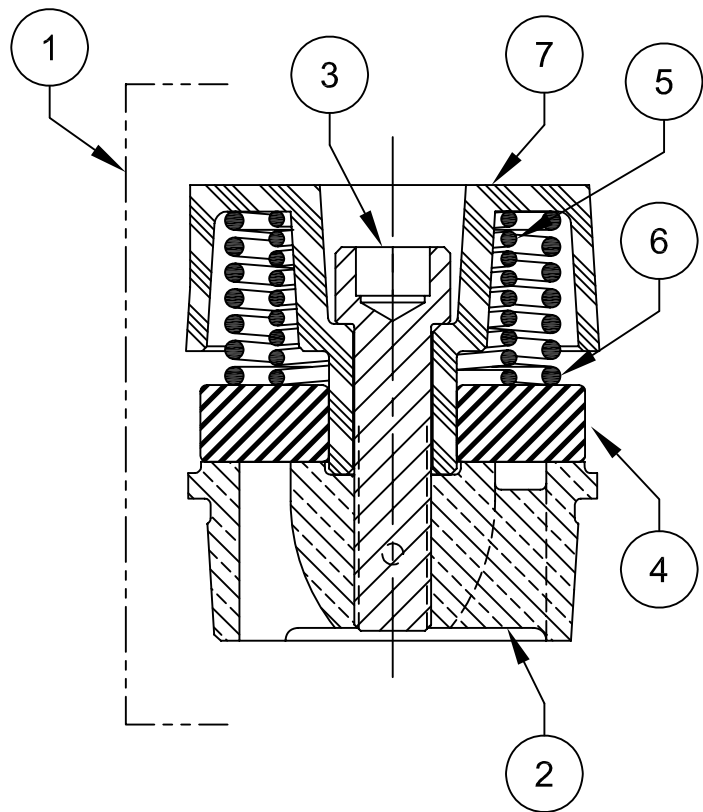
1	9707073	VALVE INSERT	7
1	9707074	WAVE RING	6
1	17915036W	RETAINER	5
1	1791504	SPRING, OUTER	4
1	179150225SD	BODY (VALVE)	3
1	179150125	SEAT	2
1	179150025SD	ASSEMBLY, SPHERICAL, SEVERE DUTY	1
REQ'D	Part No.	DESCRIPTION	ITEM

BILL OF MATERIAL



12

NOV NATIONAL OILWELL VARCO			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, SPHERICAL VALVE SEVERE DUTY 2S-1L & M/5S-2L & M (P50A, P50B)			
DWG No.:	118730	SCALE:	NONE
REV	A	SHT.:	1 OF 1



1	SR015	RETAINER	7
1	IS011	SPRING, OUTER	6
1	IS022	SPRING, INNER	5
1	TP03	DISC - TITANIUM	4
1	38178M	FASTENER	3
1	0010304	SEAT	2
		(TITANIUM)	
1	00ITP0304	ASSEMBLY, TI/CF8M DISC VALVE	1
REQ'D	Part No.	DESCRIPTION	ITEM
1	SR015	RETAINER	7
1	IS011	SPRING, OUTER	6
1	IS022	SPRING, INNER	5
1	DP03	DISC - DELRIN	4
1	38178M	FASTENER	3
1	0010304	SEAT	2
		(DELRIN)	
1	001DP0304	ASSEMBLY, DEL/CF8M DISC VALVE	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

13

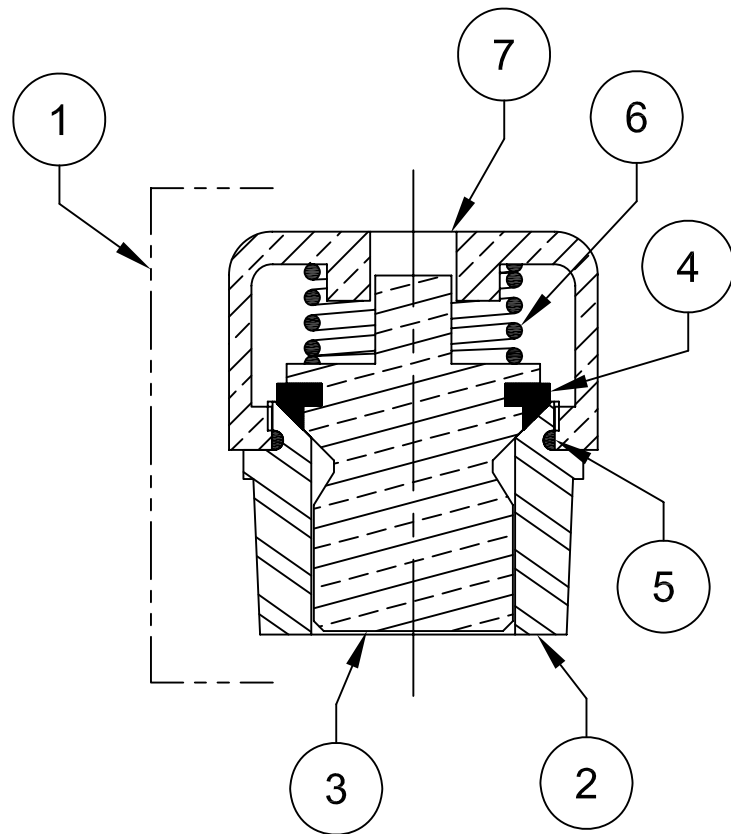
NO NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

TITLE:
ASSEMBLY, DISC VALVE
2S-1L & M / 5S-2L & M (P50A, P50B)

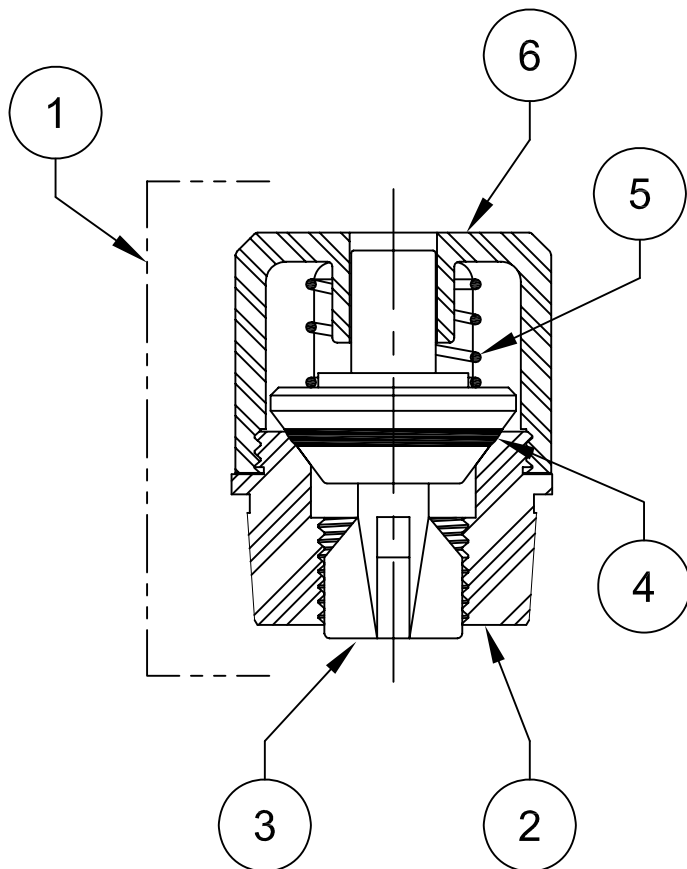
DWG No.: 117593	SCALE: NONE	REV A	SHT.: 1 OF 1
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1	SDR03	RETAINER	7
1	SDS031	SPRING	6
1	SDL03	THREAD LOCK	5
1	SDI03	INSERT	4
1	SD03	VALVE L/INSERT	3
1	1000304	SEAT	2
1	100SD0304	ASSEMBLY, SEVERE DUTY	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			



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NO NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, SEVERE DUTY 2S-1L & M / 5S-2L & M (P50A, P50B)			
DWG No.:	SCALE:	REV	SHT.:
117675	NONE	A	1 OF 1



1	001-021273-402	RETAINER	6
1	001-006389-362	SPRING	5
1	110-000214-503	O-RING	4
1	002-021274-402	BODY	3
1	001-011747-402	SEAT	2
1	998-016313-028	ASSEMBLY, VALVE	1

(DISCHARGE)

REQ'D	Part No.	DESCRIPTION	ITEM
1	001-021273-402	RETAINER	6
1	001-006389-362	SPRING	5
1	110-000214-503	O-RING	4
1	002-021274-402	BODY	3
1	001-011744-402	SEAT	2
1	998-016313-027	ASSEMBLY, VALVE	1

(SUCTION)

REQ'D	Part No.	DESCRIPTION	ITEM

BILL OF MATERIAL

15



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

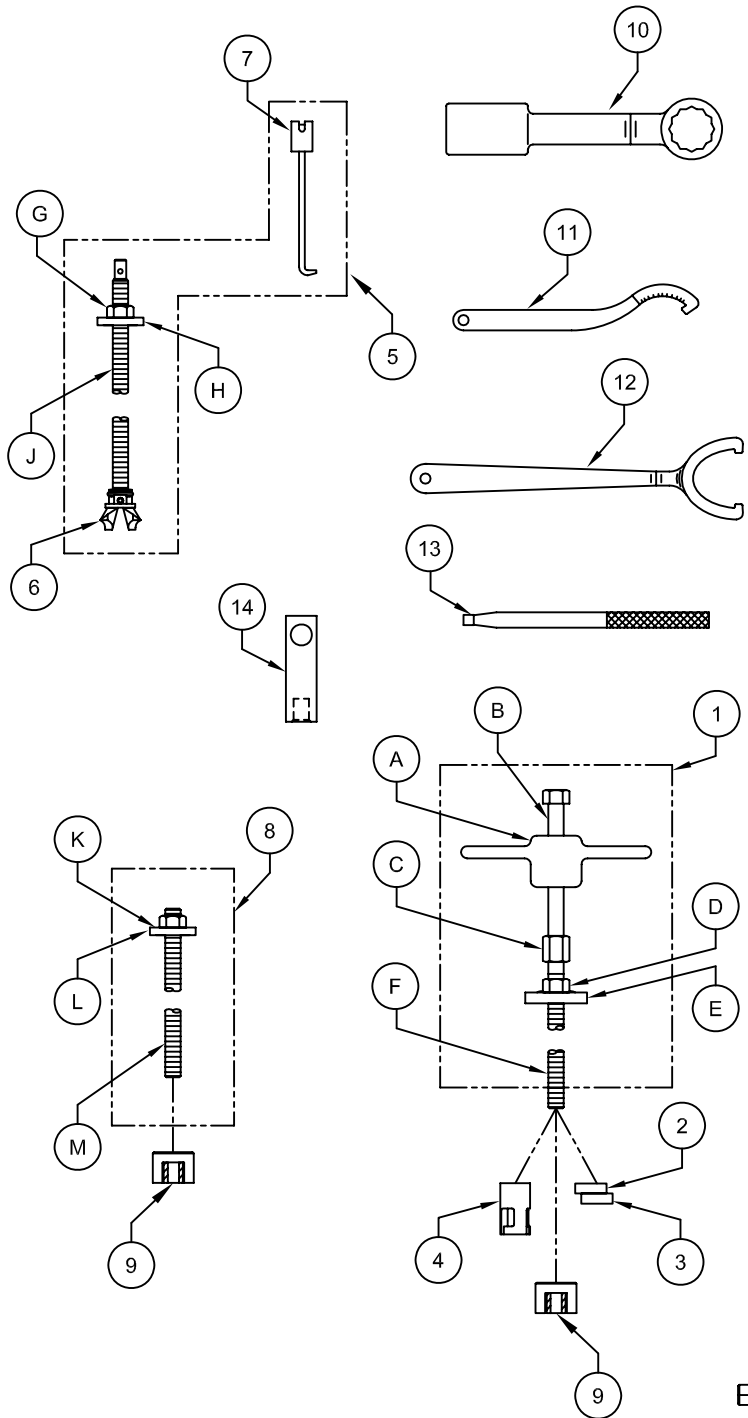
ASSEMBLY, VALVE
(POLYURETHANE SEAL)
2S-1H / 5S-2H (P50H)

DWG No.: 117606

SCALE: NONE

REV A

SHT.: 1 OF 1



1	AAB-118105-263	SPHERICAL VALVE SEAT INSTALLATION TOOL	15
1	002-014417-400	PLUNGER WRENCH - (2S-1H / 5S-2H / P50H)	14
1	AAB-030420-274	WRENCH, GLAND NUT (STAINLESS STEEL)	13
1	002-009388-351	WRENCH, GLAND NUT (DUCTILE IRON NUT)	12
1	002-014098-352	WRENCH, GLAND NUT (BRONZE NUT)	11
1	001-027568-999	WRENCH, VALVE COVER (HAMMER WRENCH)	10
1	002-021268-400	CAGE WRENCH - (F/ 2S-1H / 5S-2H / P50H)	OPTIONAL 9
1	008-028546-043	CAGE WRENCH - (F/ SEVER DUTY)	OPTIONAL 9
1	001-022028-271	PULLER STEM	M
1	001-022029-231	STRONG BACK	L
1	133-100008-243	HOLD DOWN NUT	K
1	002-010359-220	ASSEMBLY, VALVE SEAT PULLER - (2S-1H / 5S-2H / P-50 H)	8
1	1790034	RETRIEVER	7
1	181259200	PULLER HEAD	6
1	20-220-329	PULLER STEM	J
1	20-220-330	STRONG BACK	H
1	75510308	HOLD DOWN NUT	G
1	181259201	ASSEMBLY, VALVE SEAT PULLER - (SPHERICAL)	5
1	001-011954-274	PULLER HEAD	4
1	008-028546-004	PULLER STEM	F
1	008-028546-034	STRONG BACK	E
1	008-028546-012	HOLD DOWN NUT	D
1	008-028546-015	ADAPTER NUT	C
1	008-028546-002	BUMPER STEM	B
1	008-028546-001	BUMPER	A
1	998-016202-092	ASSEMBLY, VALVE SEAT PULLER - (DISC VALVE)	1
1	008-028546-026	PULLER GUIDE	3
1	008-028546-018	ECCENTRIC, PULLER	2
1	008-028546-003	PULLER STEM	F
1	008-028546-034	STRONG BACK	E
1	008-028546-011	HOLD DOWN NUT	D
1	008-028546-014	ADAPTER NUT	C
1	008-028546-002	BUMPER STEM	B
1	008-028546-001	BUMPER	A
1	998-016202-091	ASSEMBLY, VALVE SEAT PULLER - (SEVERE DUTY)	1
REQ'D	Part No.	DESCRIPTION	ITEM

BILL OF MATERIAL



NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

TOOL KIT
2S-1 / 5S-2
(P50A, P50B, P50H)

DWG No.:

117568

SCALE:

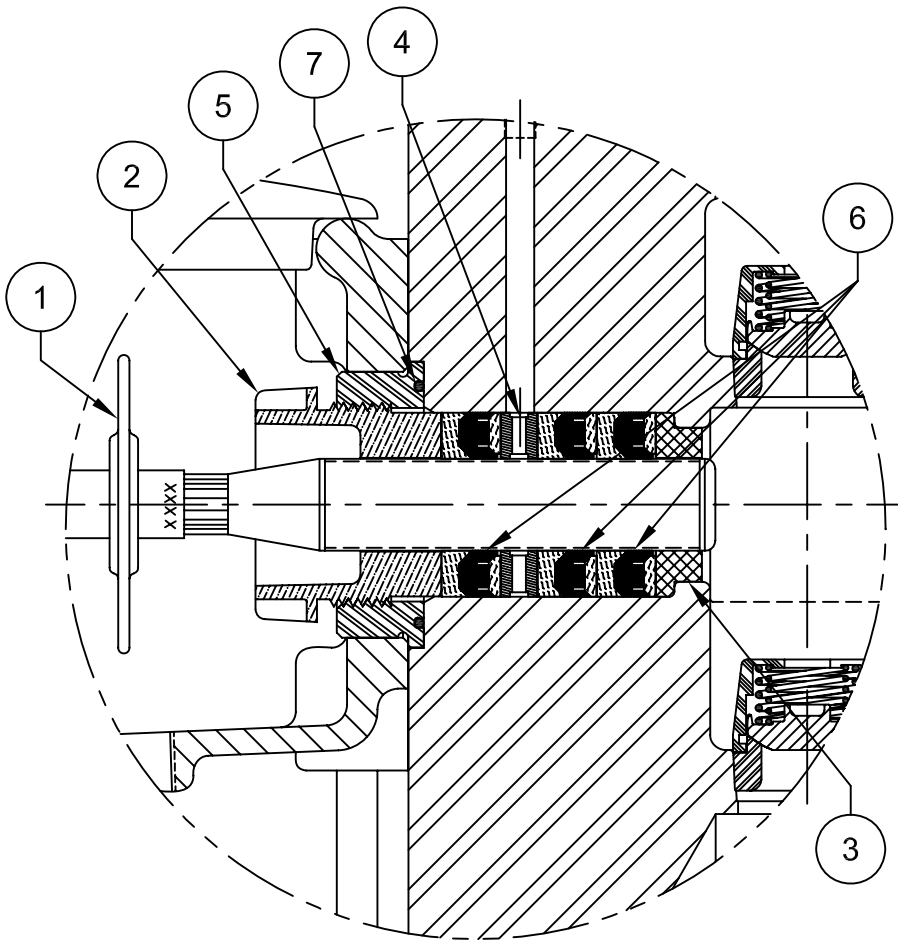
NONE

REV

B

SHT.:

1 OF 1



1	110-000234-201	O-RING		7
	223-112214-477		858	
	223-112214-374		845	
1	223-112214-370	PACKING	838	6
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	5
	001-011264-575		(SS)	
	001-011264-235		(STL)	
1	001-011264-302	LANTERN RING	(BRZ)	4
	001-011175-575		(SS)	
	001-011175-235		(STL)	
1	001-011175-302	THROAT BUSHING	(BRZ)	3
	AEC-115784-E16		(SS)	
	001-011239-351		(DI)	
1	001-011239-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 118725, SHEETS 1 THRU 5.



NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

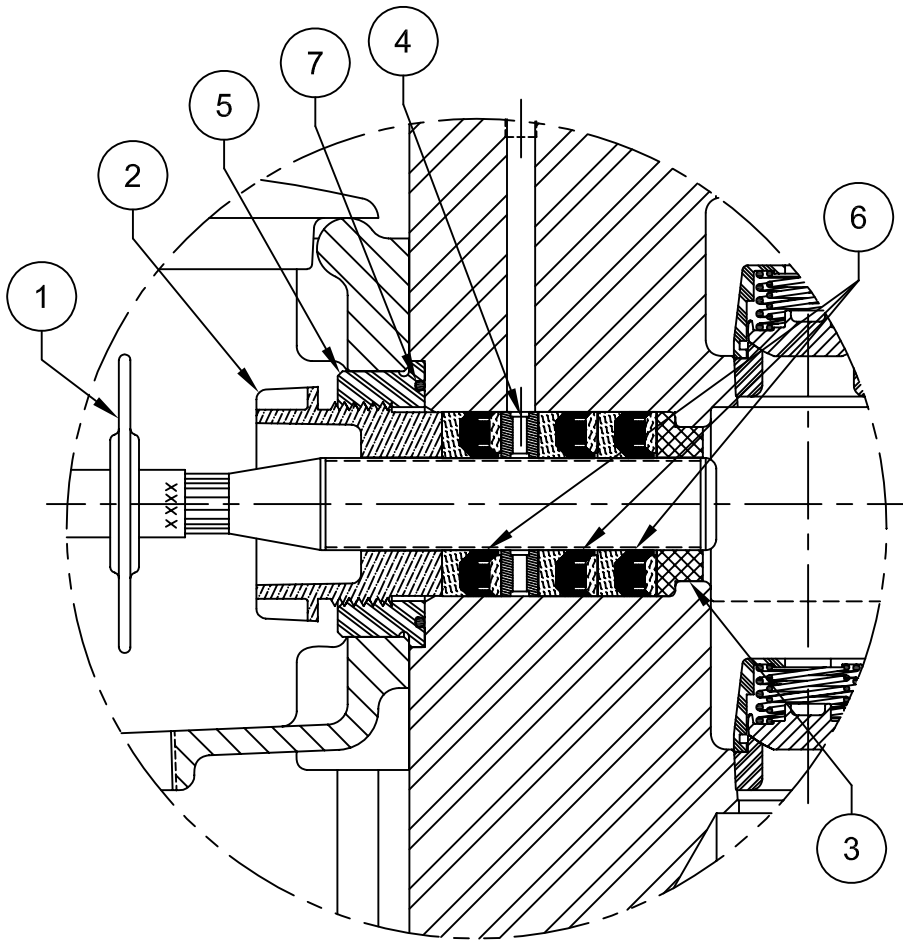
ASSEMBLY, PLUNGER KIT
"J"-STYLE PKG, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.: 118725

SCALE: NONE

REV A


SHT.: 1 OF 5

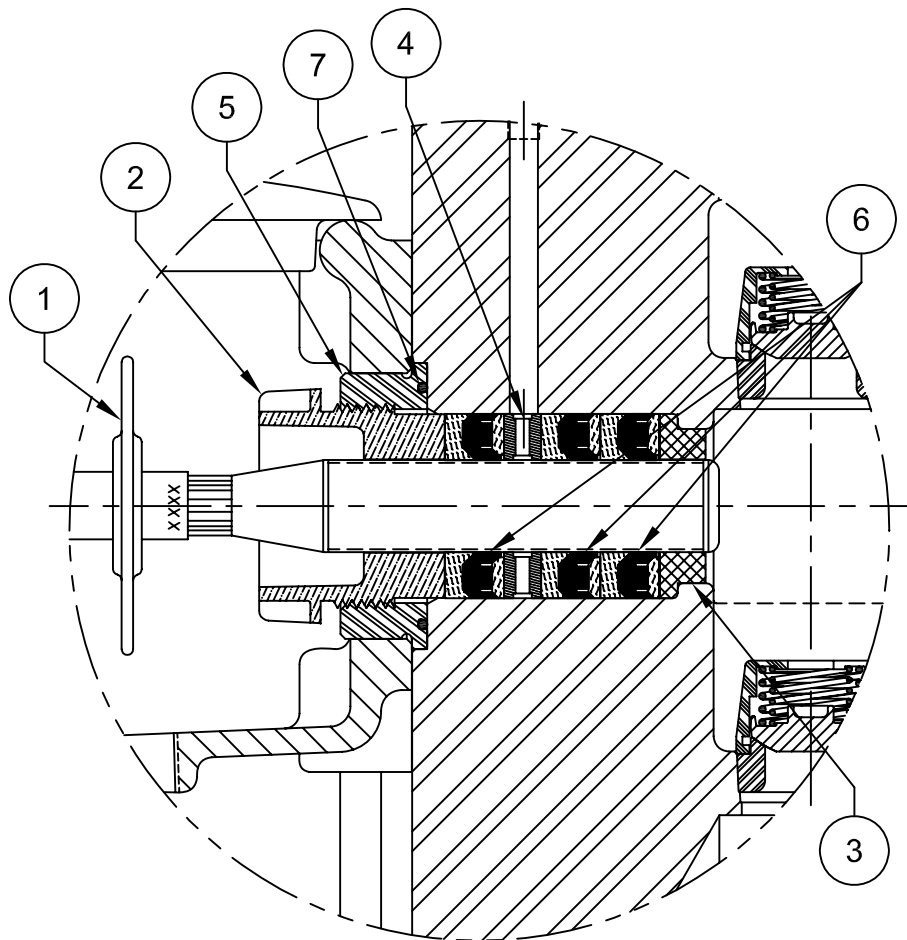


1	110-000234-201	O-RING		7
	223-158214-477		858	
	223-158214-374		845	
1	223-158214-370	PACKING	838	6
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	5
	001-011265-575		(SS)	
	001-011265-235		(STL)	
1	001-011265-302	LANTERN RING	(BRZ)	4
	001-011178-575		(SS)	
	001-011178-235		(STL)	
1	001-011178-302	THROAT BUSHING	(BRZ)	3
	ADC-115784-E16		(SS)	
	001-011240-351		(DI)	
1	001-011240-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 118725, SHEETS 1 THRU 5.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L			
DWG No.:	118725	SCALE:	NONE
REV	A	SHT.:	2 OF 5



1	110-000234-201	O-RING		7
	223-134178-477		858	
	223-134178-374		845	
1	223-134178-370	PACKING	838	6
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	5
	001-011266-575		(SS)	
	001-011266-235		(STL)	
1	001-011266-302	LANTERN RING	(BRZ)	4
	001-011180-575		(SS)	
	001-011180-235		(STL)	
1	001-011180-302	THROAT BUSHING	(BRZ)	3
	ACC-115784-E16		(SS)	
	001-011241-351		(DI)	
1	001-011241-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 118725, SHEETS 1 THRU 5.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

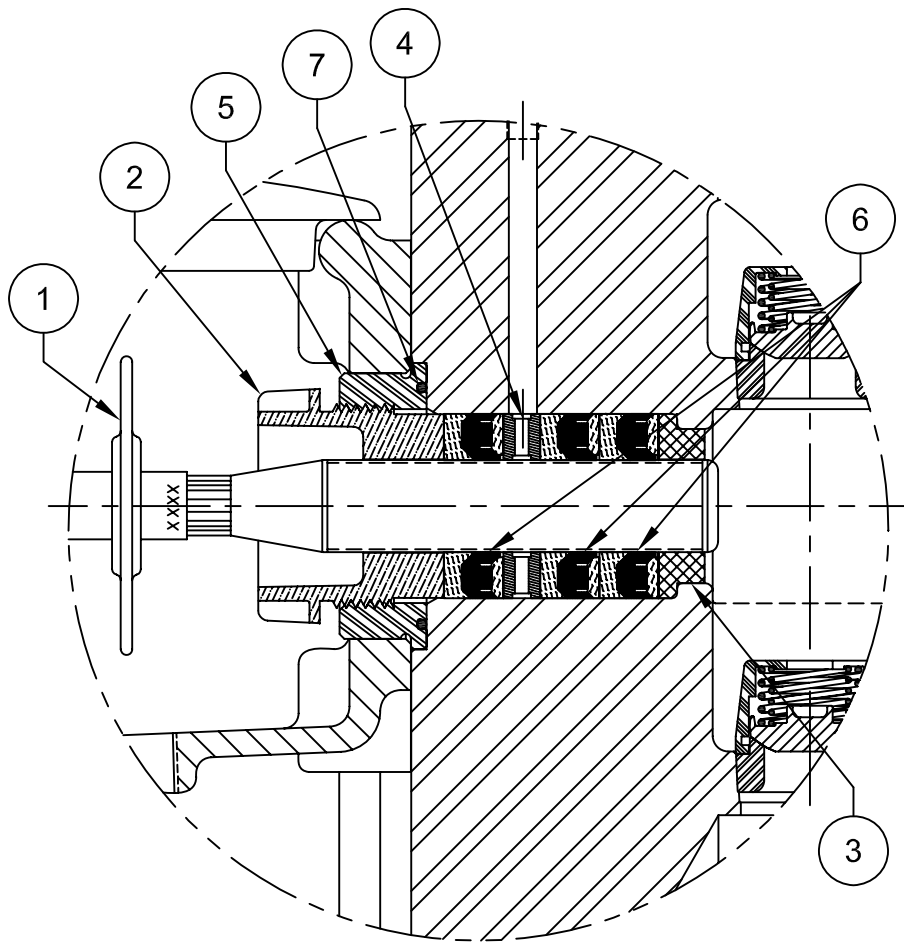
ASSEMBLY, PLUNGER KIT
"J"-STYLE PKG, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.: 118725

SCALE: NONE

REV A

SHT.: 3 OF 5

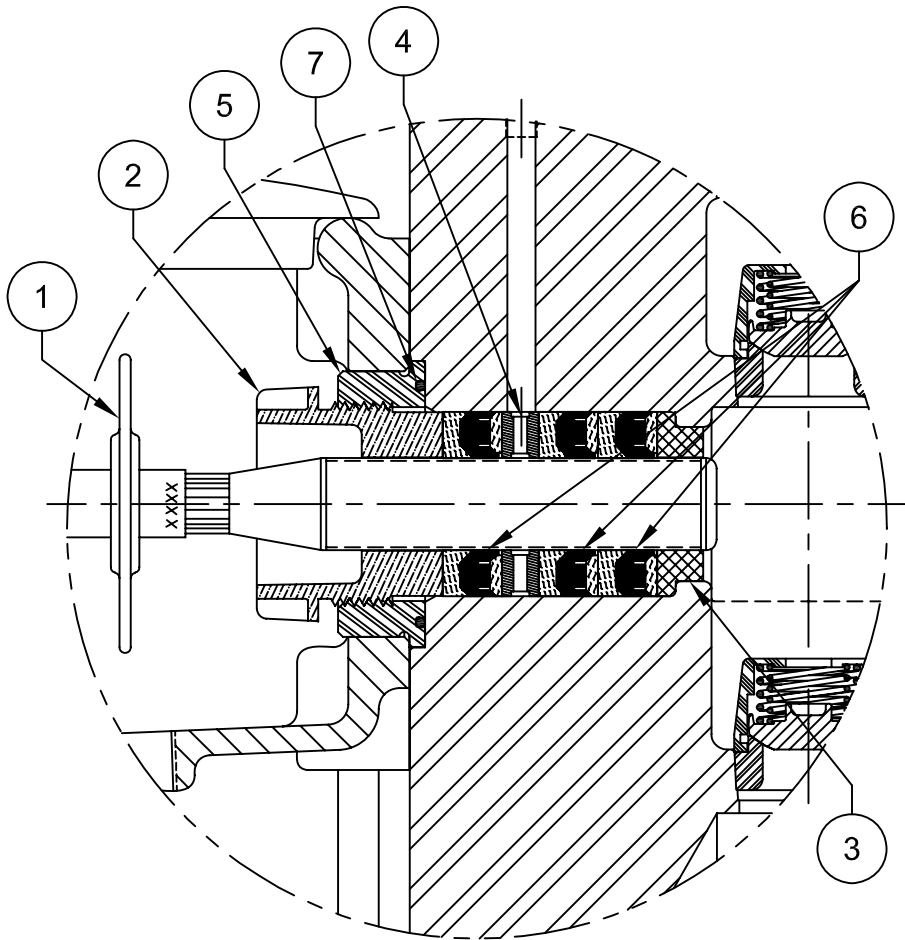


1	110-000234-201	O-RING		7
	223-178214-477		858	
	223-178214-374		845	
1	223-178214-370	PACKING	838	6
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	5
	001-011267-575		(SS)	
	001-011267-235		(STL)	
1	001-011267-302	LANTERN RING	(BRZ)	4
	001-011181-575		(SS)	
	001-011181-235		(STL)	
1	001-011181-302	THROAT BUSHING	(BRZ)	3
	ABC-115784-E16		(SS)	
	001-011242-351		(DI)	
1	001-011242-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-7/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 118725, SHEETS 1 THRU 5.


NO NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L	
DWG No.: 118725	SCALE: NONE
REV A	SHT.: 4 OF 5

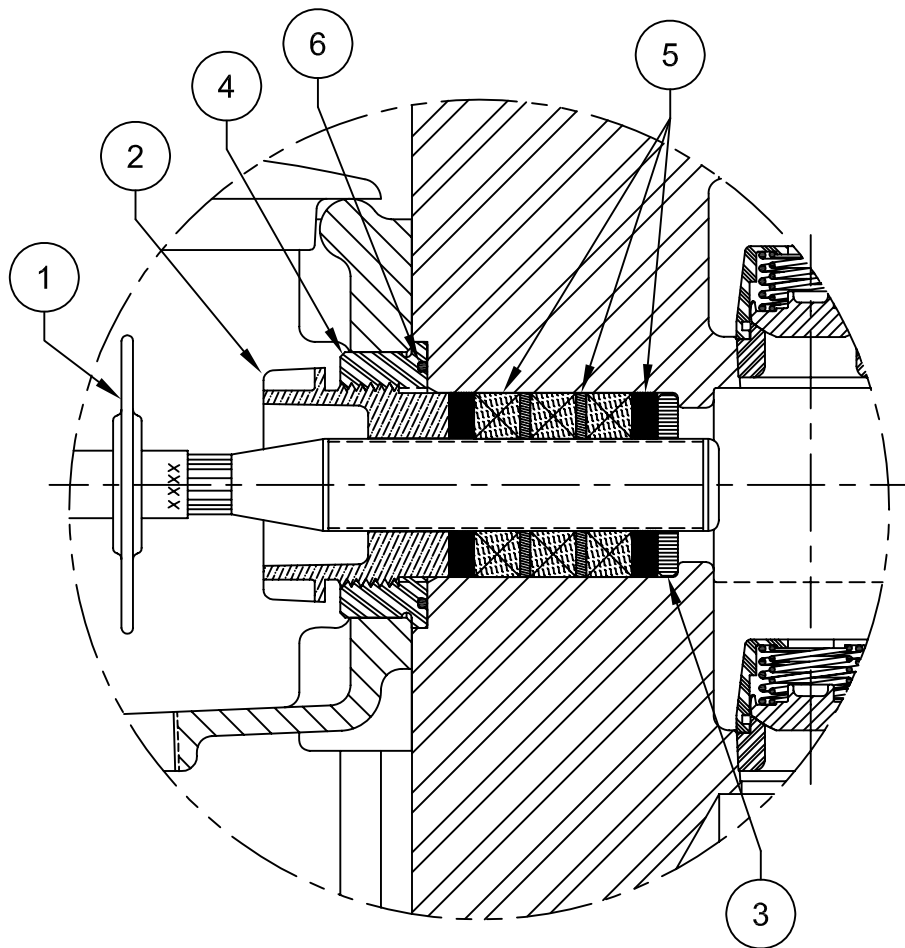


1	110-000234-201	O-RING		7
	223-200214-477		858	
	223-200214-374		845	
1	223-200214-370	PACKING	838	6
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	5
	001-028668-575		(SS)	
	001-028668-235		(STL)	
1	001-028668-302	LANTERN RING	(BRZ)	4
	001-028510-575		(SS)	
	001-028510-235		(STL)	
1	001-028510-302	THROAT BUSHING	(BRZ)	3
	AAC-115784-E16		(SS)	
	001-000497-351		(DI)	
1	001-000497-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 118725, SHEETS 1 THRU 5.


 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L			
DWG No.:	118725	SCALE:	NONE
REV	A	SHT.:	5 OF 5

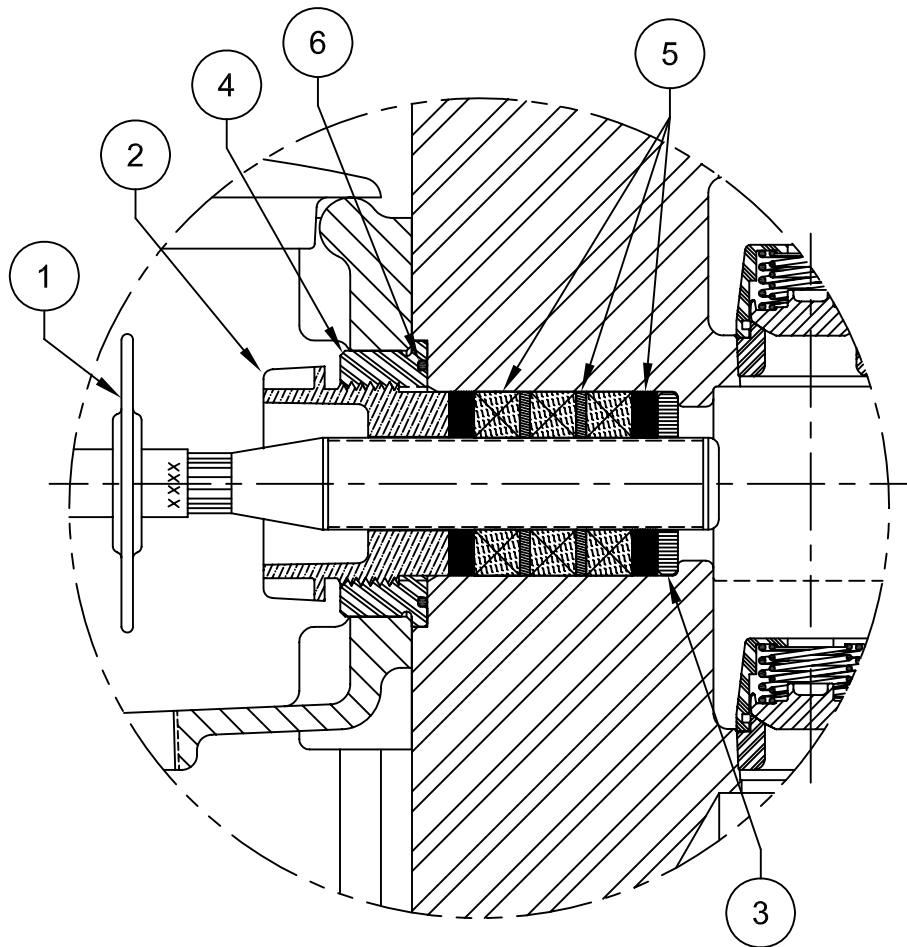


1	110-000234-201	O-RING		6
	453-112300-458		8921-K	
	453-112300-339		249	
	453-112300-337		241	
1	453-112300-395	PACKING	238	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011175-575		(SS)	
	001-011175-235		(STL)	
1	001-011175-302	THROAT BUSHING	(BRZ)	3
	AEC-115784-E16		(SS)	
	001-011239-351		(DI)	
1	001-011239-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
dda				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 118726, SHEETS 1 THRU 5.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L			
DWG No.:	118726	SCALE:	NONE
REV	A	SHT.:	1 OF 5



1	110-000234-201	O-RING		6
	453-158293-458		8921-K	
	453-158293-339		249	
	453-158293-337		241	
1	453-158293-395	PACKING	238	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011178-575		(SS)	
	001-011178-235		(STL)	
1	001-011178-302	THROAT BUSHING	(BRZ)	3
	ADC-115784-E16		(SS)	
	001-011240-351		(DI)	
1	001-011240-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 118726, SHEETS 1 THRU 5.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

**ASSEMBLY, PLUNGER KIT
BRAID STYLE PKG, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L**

DWG No.:

118726

SCALE:

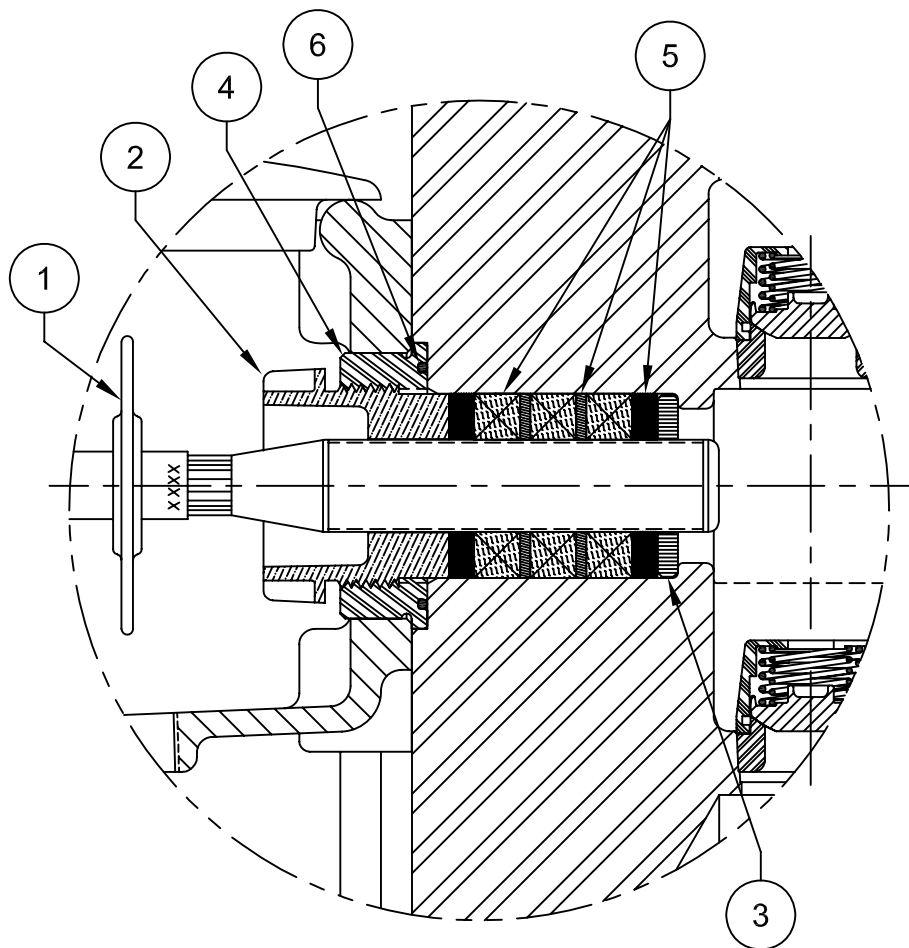
NONE

REV

A

SHT.:

2 OF 5

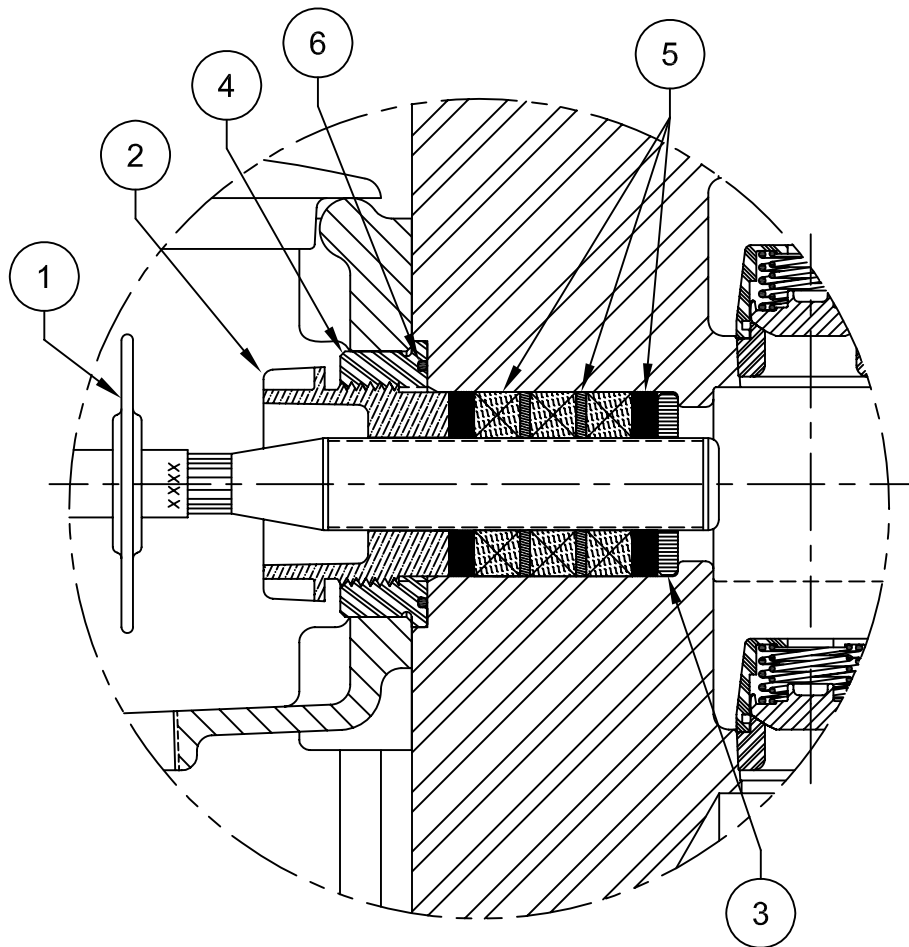


1	110-000234-201	O-RING		6
	453-134300-458		8921-K	
	453-134300-339		249	
	453-134300-337		241	
1	453-134300-395	PACKING	238	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011180-575		(SS)	
	001-011180-235		(STL)	
1	001-011180-302	THROAT BUSHING	(BRZ)	3
	ACC-115784-E16		(SS)	
	001-011241-351		(DI)	
1	001-011241-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 118726, SHEETS 1 THRU 5.


NO NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L	
DWG No.: 118726	SCALE: NONE
REV A	SHT.: 3 OF 5

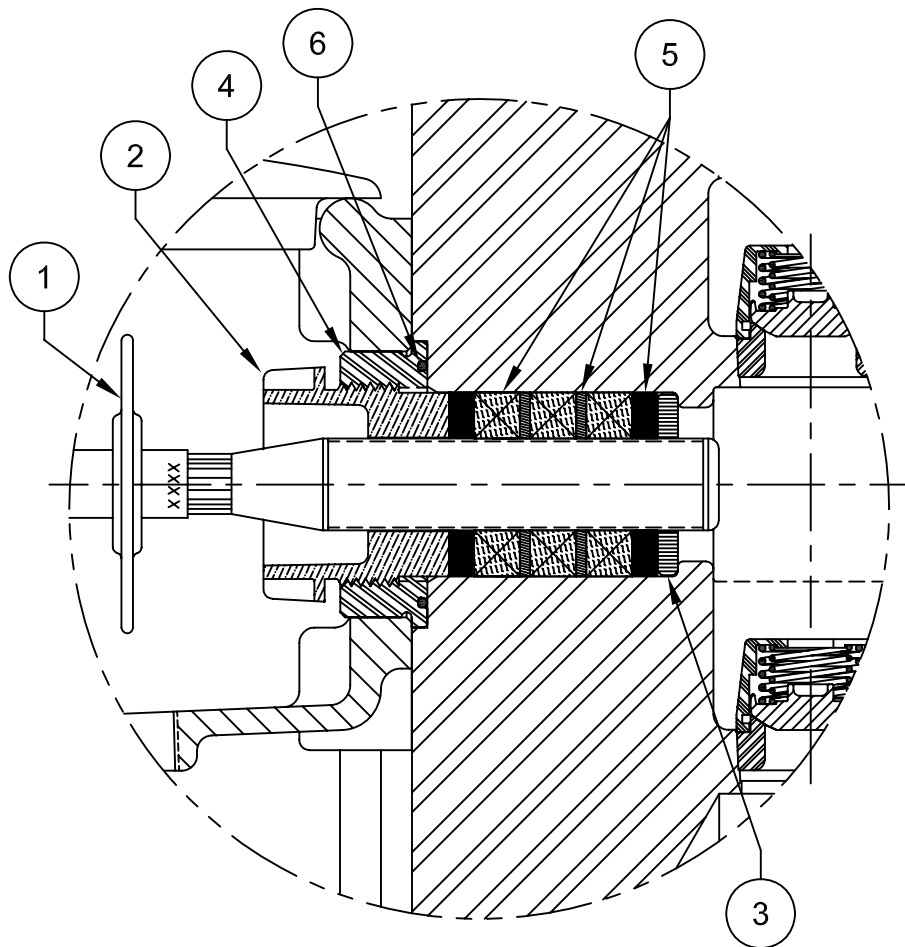


1	110-000234-201	O-RING		6
	453-178293-458		8921-K	
	453-178293-339		249	
	453-178293-337		241	
1	453-178293-395	PACKING	238	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011181-575		(SS)	
	001-011181-235		(STL)	
1	001-011181-302	THROAT BUSHING	(BRZ)	3
	ABC-115784-E16		(SS)	
	001-011242-351		(DI)	
1	001-011242-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-7/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 118726, SHEETS 1 THRU 5.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L			
DWG No.:	118726	SCALE:	NONE
REV	A	SHT.:	4 OF 5



1	110-000234-201	O-RING		6
	453-200258-458		8921-K	
	453-200258-339		249	
	453-200258-337		241	
1	453-200258-395	PACKING	238	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-028510-575		(SS)	
	001-028510-235		(STL)	
1	001-028510-302	THROAT BUSHING	(BRZ)	3
	AAC-115784-E16		(SS)	
	001-000497-351		(DI)	
1	001-000497-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 118726, SHEETS 1 THRU 5.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
BRAID STYLE PKG, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.:

118726

SCALE:

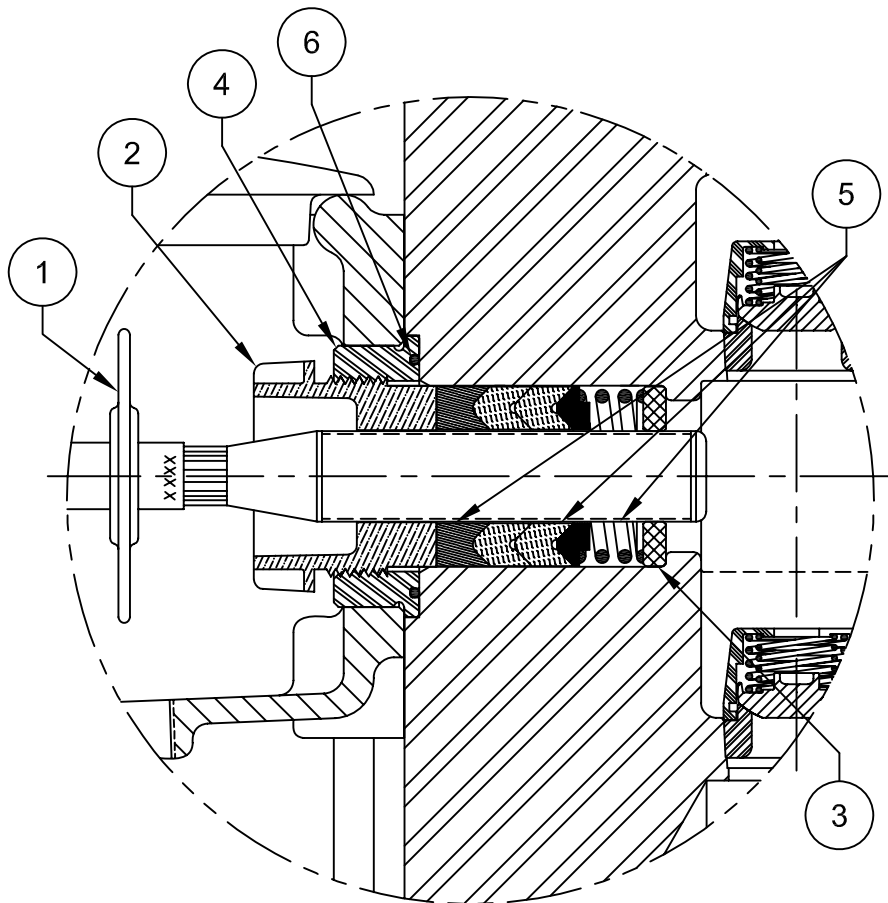
NONE

REV

A

SHT.:

5 OF 5



1	110-000234-201	O-RING		6
	222-112231-340	PACKING	1068-4	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011175-575		(SS)	
	001-011175-235		(STL)	
1	001-011175-302	THROAT BUSHING	(BRZ)	3
	AEC-115784-E16		(SS)	
	001-011239-351		(DI)	
1	001-011239-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
dda				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 118727, SHEETS 1 THRU 5.

27



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.:

118727

SCALE:

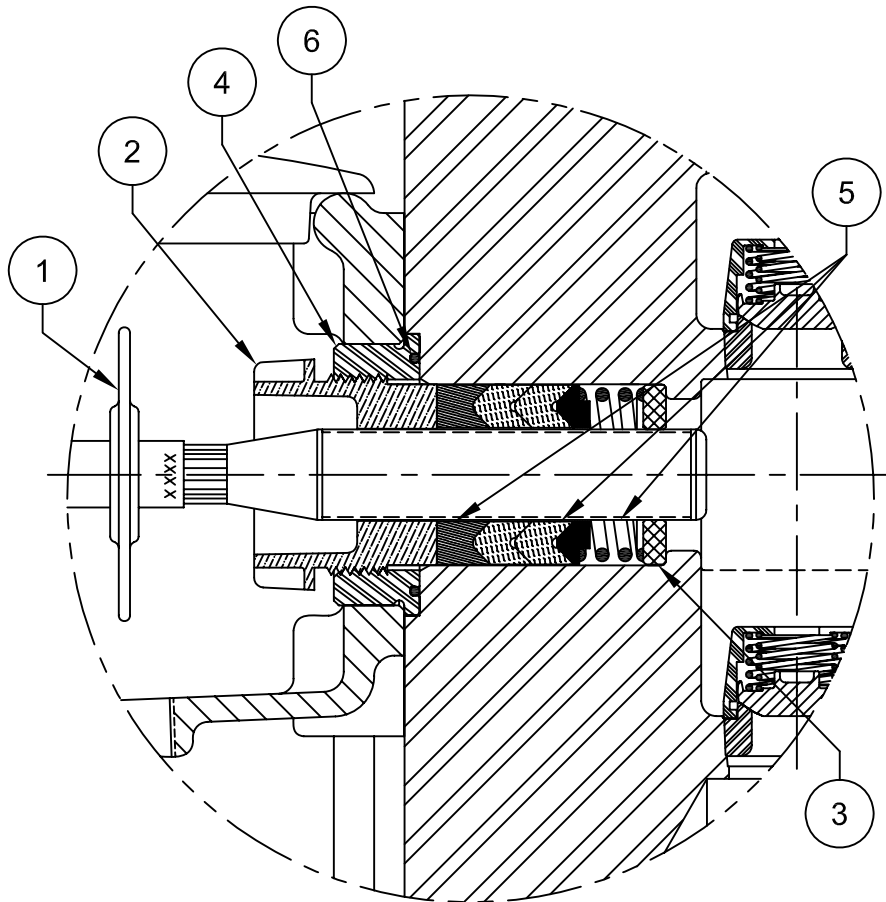
NONE

REV

A

SHT.:

1 OF 5



1	110-000234-201	O-RING		6
1	222-158231-340	PACKING	1068-4	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011178-575		(SS)	
	001-011178-235		(STL)	
1	001-011178-302	THROAT BUSHING	(BRZ)	3
	ADC-115784-E16		(SS)	
	001-011240-351		(DI)	
1	001-011240-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 118727, SHEETS 1 THRU 5.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.:

118727

SCALE:

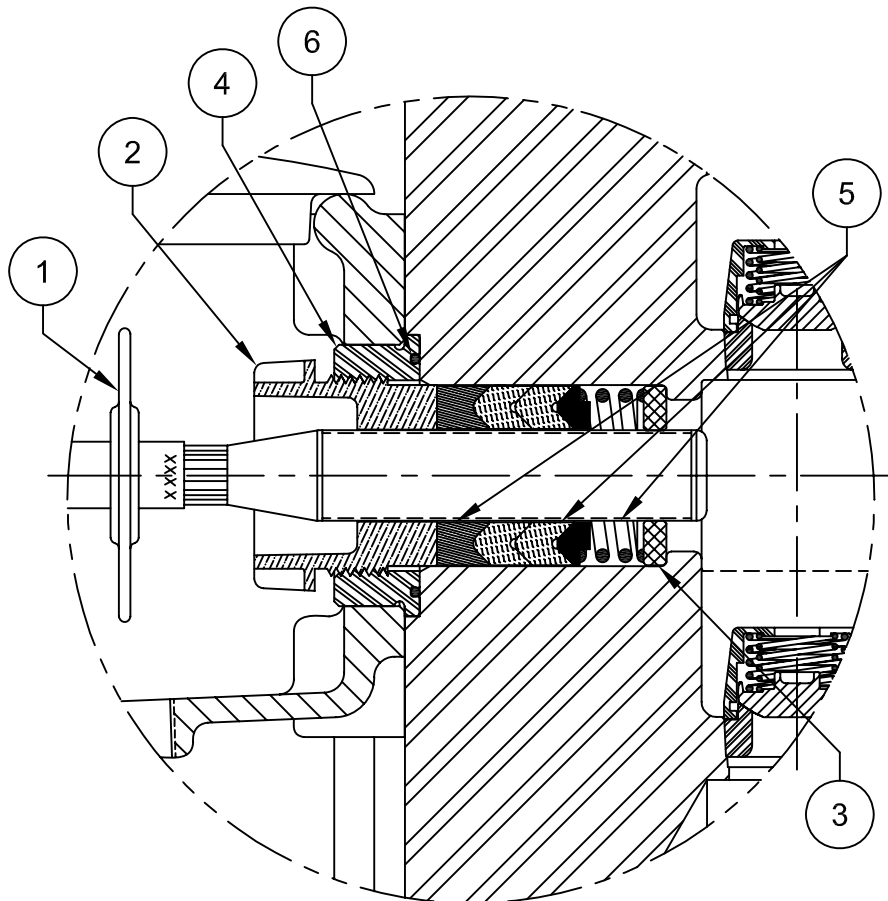
NONE

REV

A

SHT.:


2 OF 5

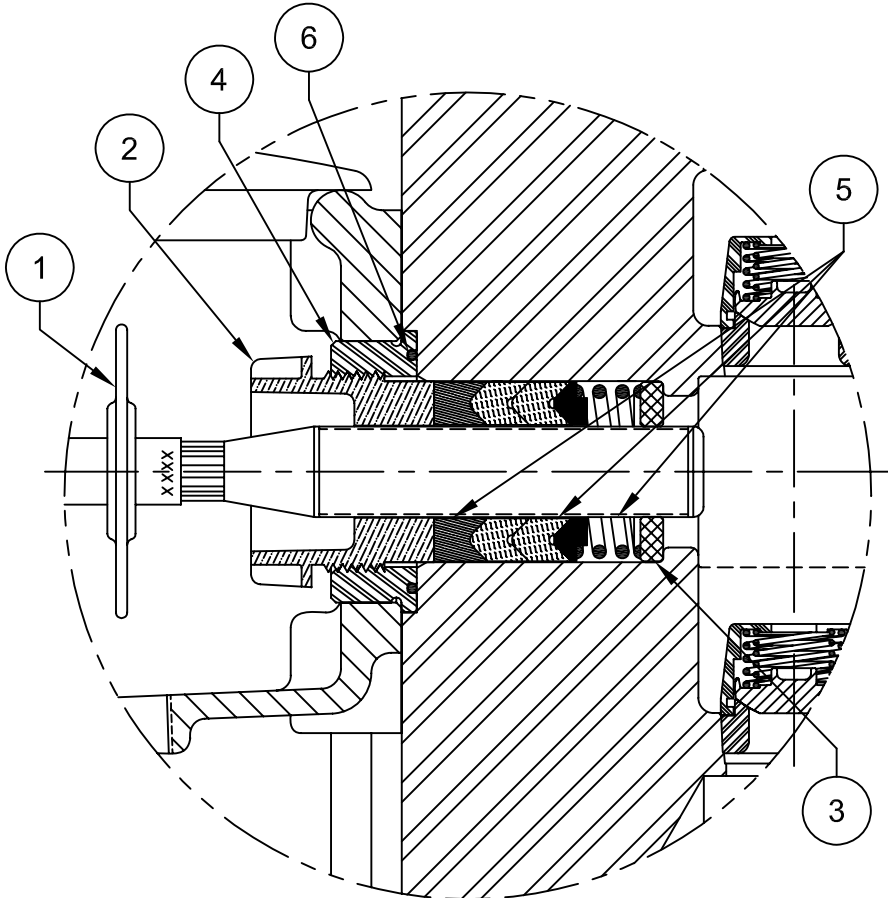


1	110-000234-201	O-RING		6
1	222-134231-340	PACKING	1068-4	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011180-575		(SS)	
	001-011180-235		(STL)	
1	001-011180-302	THROAT BUSHING	(BRZ)	3
	ACC-115784-E16		(SS)	
	001-011241-351		(DI)	
1	001-011241-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 118727, SHEETS 1 THRU 5.

 NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT 1068-4 PACKING, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L	
DWG No.:	118727
SCALE:	NONE
REV	A
SHT.:	3 OF 5




1	110-000234-201	O-RING		6
1	222-178231-340	PACKING	1068-4	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-011181-575		(SS)	
	001-011181-235		(STL)	
1	001-011181-302	THROAT BUSHING	(BRZ)	3
	ABC-115784-E16		(SS)	
	001-011242-351		(DI)	
1	001-011242-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1

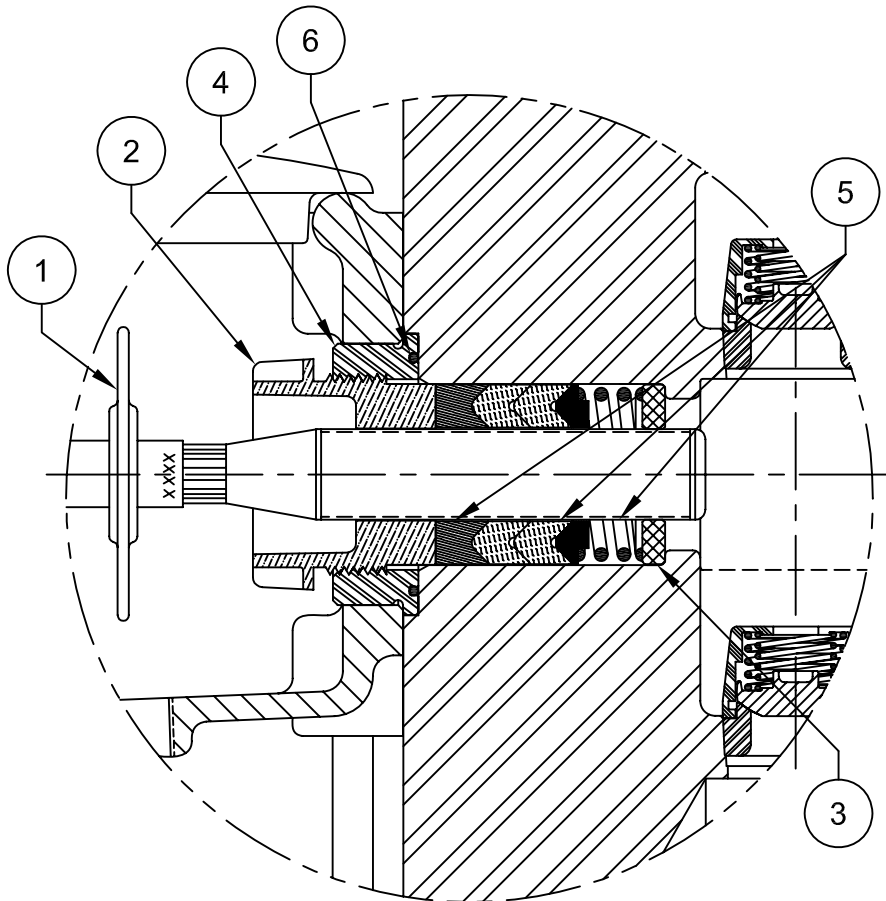
(1-7/8" PLUNGER)

REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

NOTE

1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 118727, SHEETS 1 THRU 5.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT 1068-4 PACKING, 1-1/2" THRU 2" PLUNGER 2S-1L / 5S-2L			
DWG No.:	118727	SCALE:	NONE
REV	A	SHT.:	4 OF 5



1	110-000234-201	O-RING		6
1	222-200231-340	PACKING	1068-4	5
	001-028512-278		(SS)	
	001-028512-236		(STL)	
1	001-028512-313	ADAPTER	(BRZ)	4
	001-028510-575		(SS)	
	001-028510-235		(STL)	
1	001-028510-302	THROAT BUSHING	(BRZ)	3
	AAC-115784-E16		(SS)	
	001-000497-351		(DI)	
1	001-000497-310	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1

(2" PLUNGER)

REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 118727, SHEETS 1 THRU 5.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/2" THRU 2" PLUNGER
2S-1L / 5S-2L

DWG No.:

118727

SCALE:

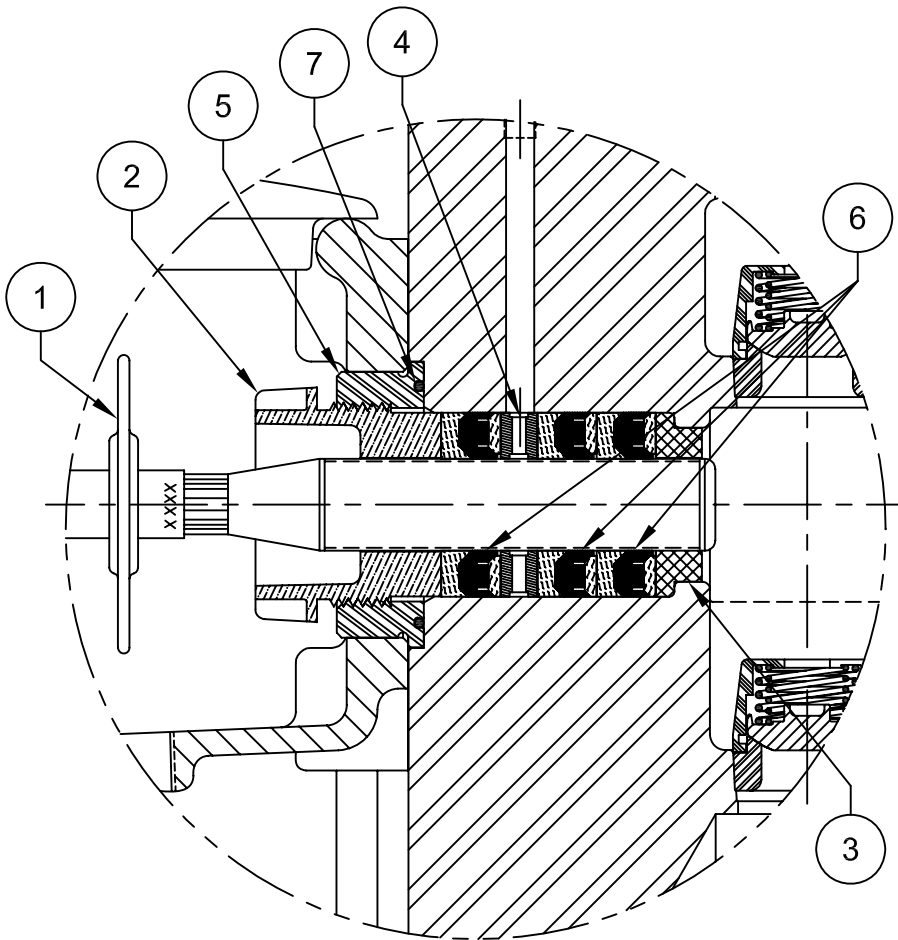
NONE

REV

A

SHT.:

5 OF 5



1	10-000232-200	O-RING		7
	182-118214-477		858	
	182-118214-374		845	
1	182-118214-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-011211-278		(SS)	
	001-011211-235		(STL)	
1	001-011211-302	LANTERN RING	(BRZ)	4
	001-010961-278		(SS)	
	001-010961-235		(STL)	
1	001-010961-302	THROAT BUSHING	(BRZ)	3
	AFC-013800-E16		(SS)	
	001-011227-351		(DI)	
1	001-011227-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
"J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.:

117607

SCALE:

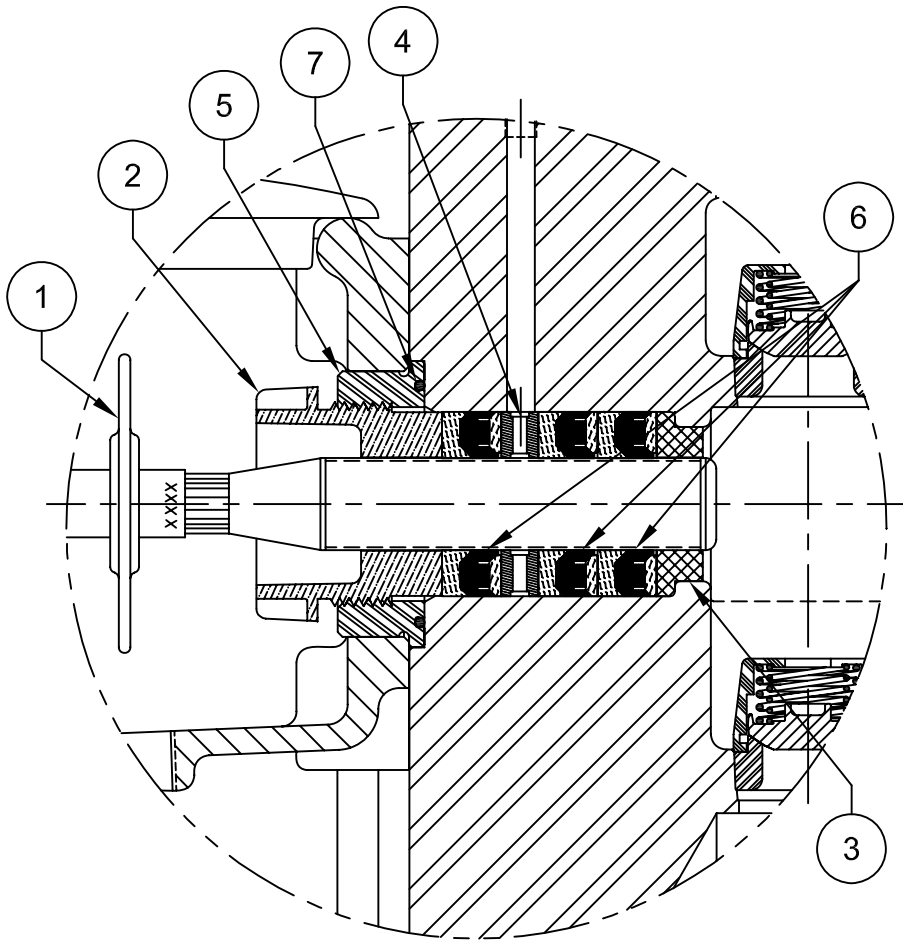
NONE

REV

B

SHT.:

1 OF 6



1	110-000232-200	O-RING		7
	182-114214-477		858	
	182-114214-374		845	
1	182-114214-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-011212-278		(SS)	
	001-011212-235		(STL)	
1	001-011212-302	LANTERN RING	(BRZ)	4
	001-010950-278		(SS)	
	001-010950-235		(STL)	
1	001-010950-302	THROAT BUSHING	(BRZ)	3
	AEC-013800-E16		(SS)	
	001-011228-351		(DI)	
1	001-011228-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM

BILL OF MATERIAL

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

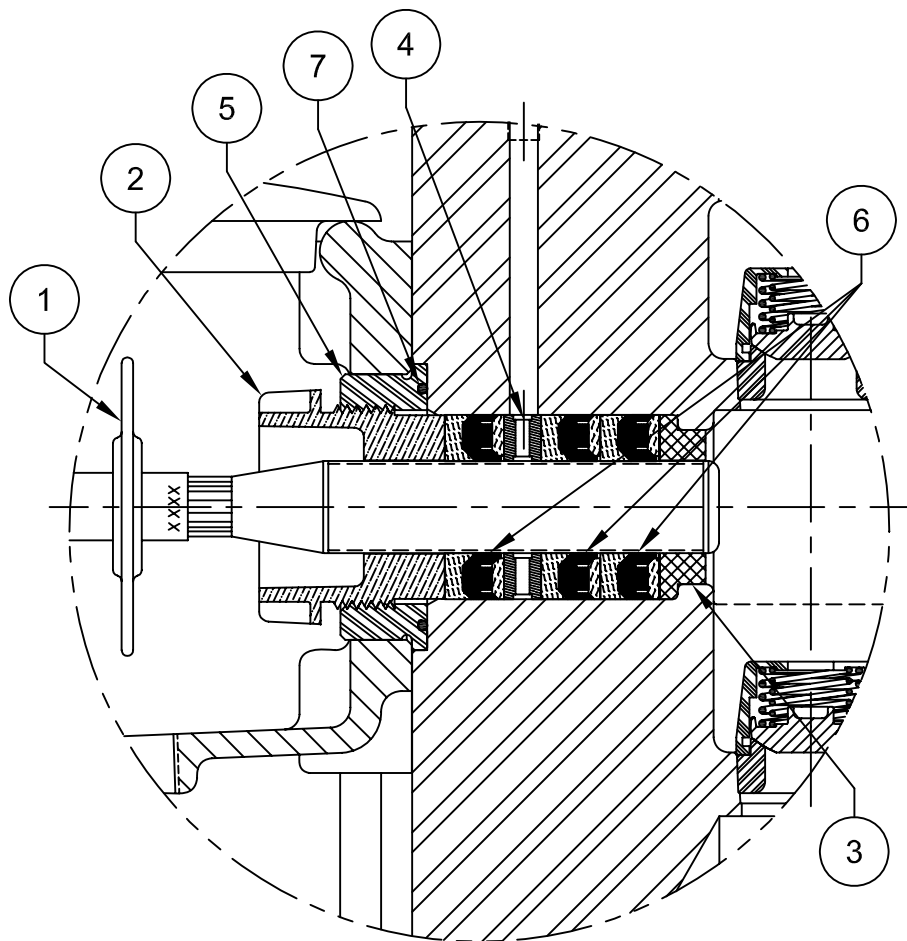
ASSEMBLY, PLUNGER KIT
 "J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER
 2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117607

SCALE: NONE

REV B


SHT.: 2 OF 6

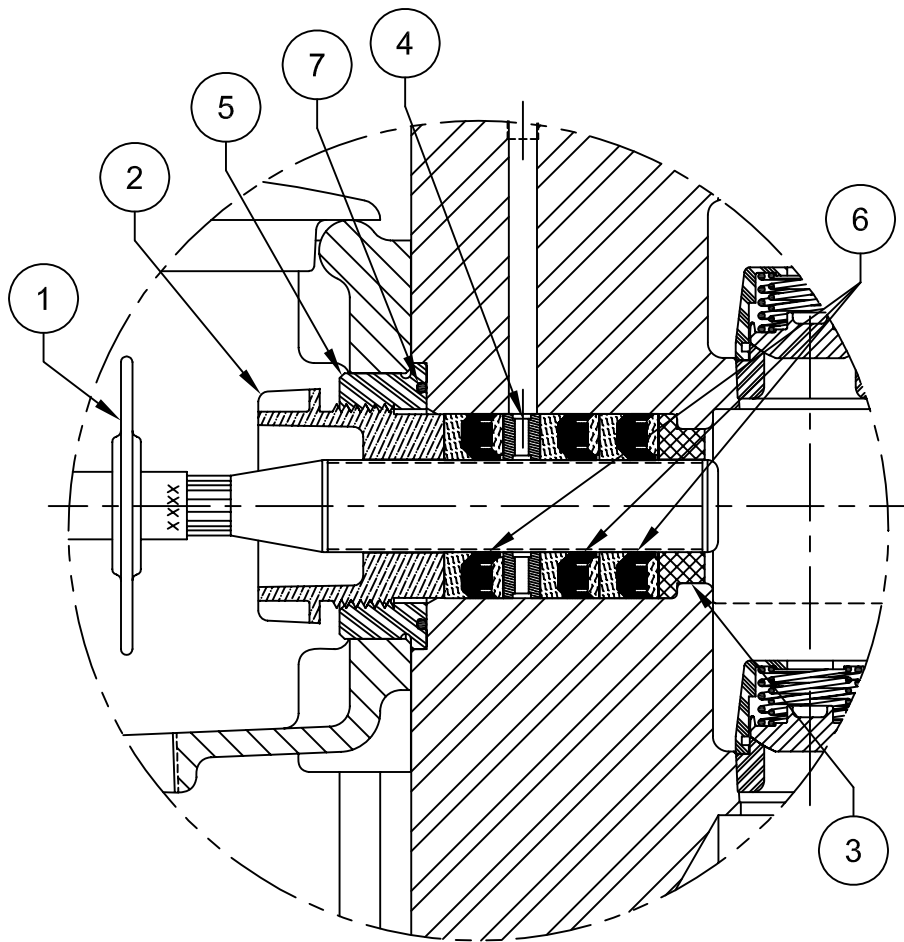


1	110-000232-200	O-RING		7
	182-138214-477		858	
	182-138214-374		845	
1	182-138214-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-011221-278		(SS)	
	001-011221-235		(STL)	
1	001-011221-302	LANTERN RING	(BRZ)	4
	001-008913-278		(SS)	
	001-008913-235		(STL)	
1	001-008913-302	THROAT BUSHING	(BRZ)	3
	ADC-013800-E16		(SS)	
	001-011229-351		(DI)	
1	001-011229-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.


 NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER 2S-1M / 5S-2M (P50A, P50B)	
DWG No.:	117607
SCALE:	NONE
REV	B
SHT.:	3 OF 6

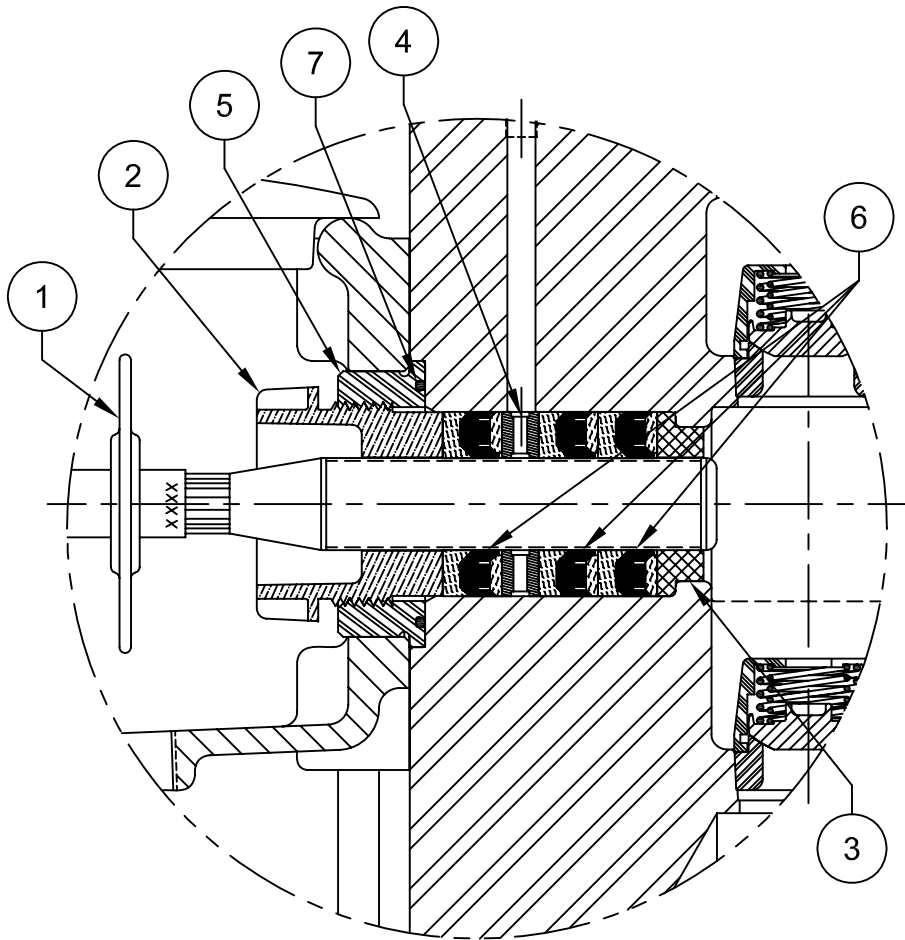


1	110-000232-200	O-RING		7
	182-112214-477		858	
	182-112214-374		845	
1	182-112214-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-011218-278		(SS)	
	001-011218-235		(STL)	
1	001-011218-302	LANTERN RING	(BRZ)	4
	001-010949-278		(SS)	
	001-010949-235		(STL)	
1	001-010949-302	THROAT BUSHING	(BRZ)	3
	ACC-013800-E16		(SS)	
	001-011230-351		(DI)	
1	001-011230-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.


 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117607	SCALE:	NONE
REV	B	SHT.:	4 OF 6

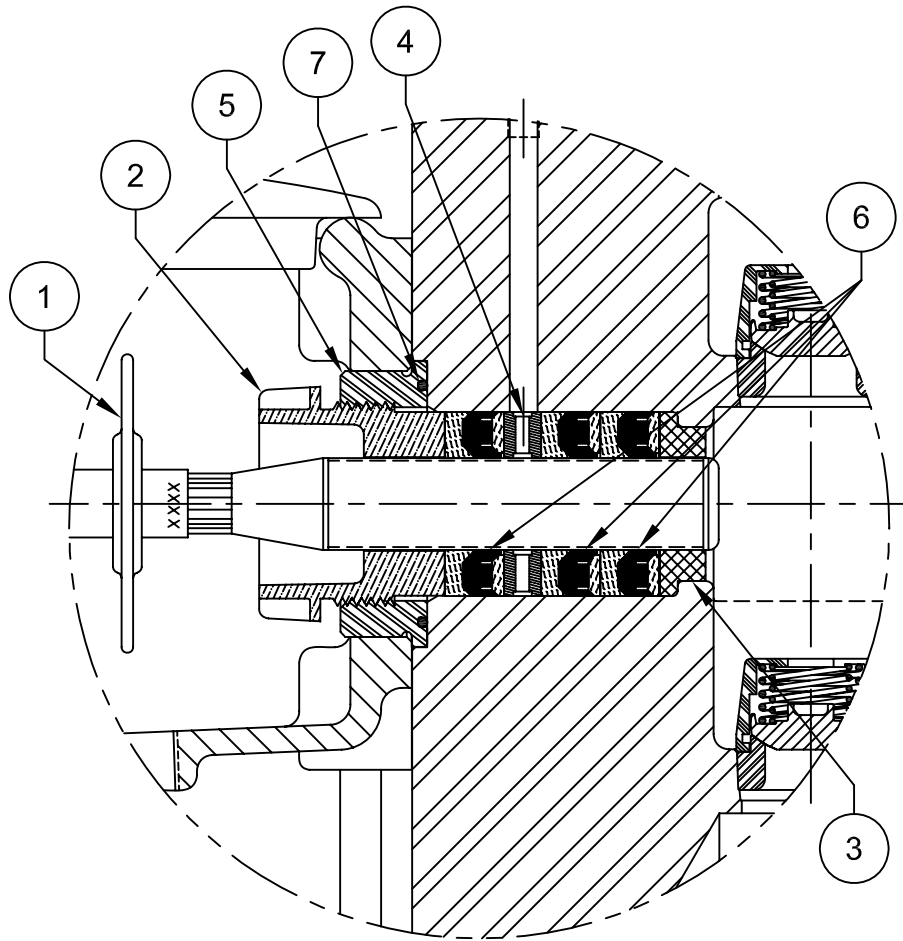


1	110-000232-200	O-RING		7
	182-158214-477		858	
	182-158214-374		845	
1	182-158214-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-005305-278		(SS)	
	001-005305-235		(STL)	
1	001-005305-302	LANTERN RING	(BRZ)	4
	001-010962-278		(SS)	
	001-010962-235		(STL)	
1	001-010962-302	THROAT BUSHING	(BRZ)	3
	ABC-013800-E16		(SS)	
	001-011231-351		(DI)	
1	001-011231-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT "J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117607	SCALE:	NONE
REV	B	SHT.:	5 OF 6



1	110-000232-200	O-RING		7
	182-134178-477		858	
	182-134178-374		845	
1	182-134178-370	PACKING	838	6
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	5
	001-011220-278		(SS)	
	001-011220-235		(STL)	
1	001-011220-302	LANTERN RING	(BRZ)	4
	001-010894-278		(SS)	
	001-010894-235		(STL)	
1	001-010894-302	THROAT BUSHING	(BRZ)	3
	AAC-013800-E16		(SS)	
	001-008909-351		(DI)	
1	001-008909-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " J " STYLE PACKING SEE DRAWING 117607, SHEETS 1 THRU 6.

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HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

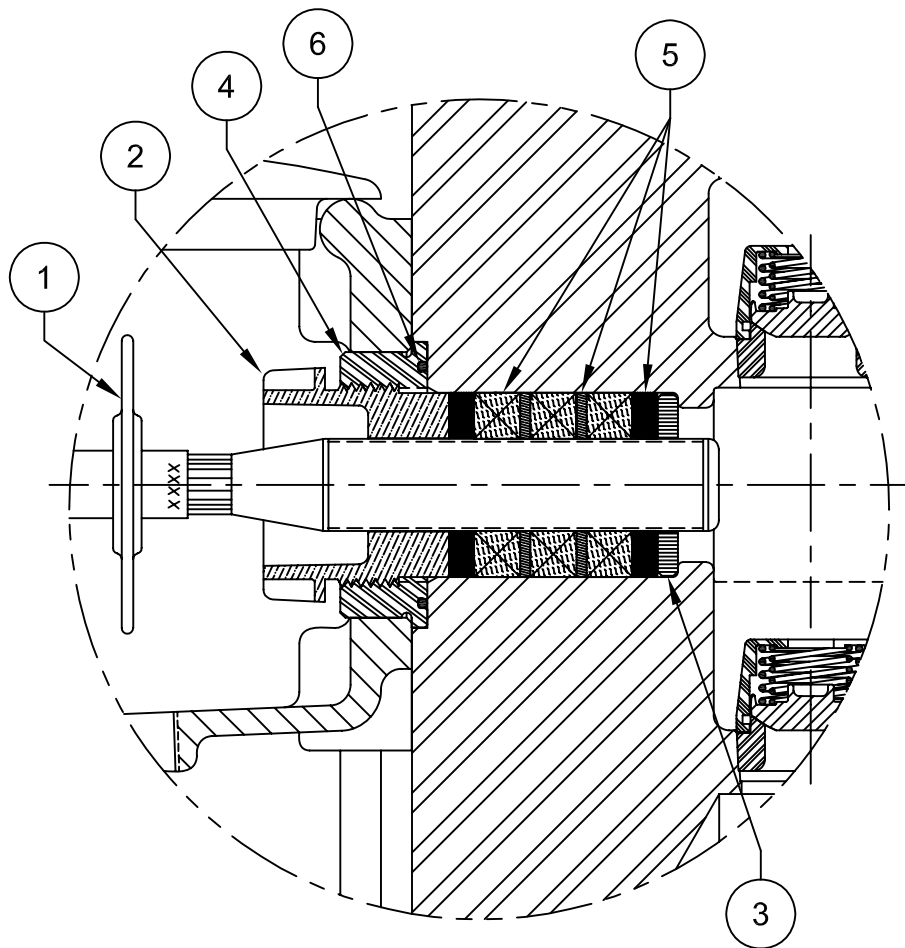
ASSEMBLY, PLUNGER KIT
 "J"-STYLE PKG, 1-1/8" THRU 1-3/4" PLUNGER
 2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117607

SCALE: NONE

REV B


SHT.: 6 OF 6

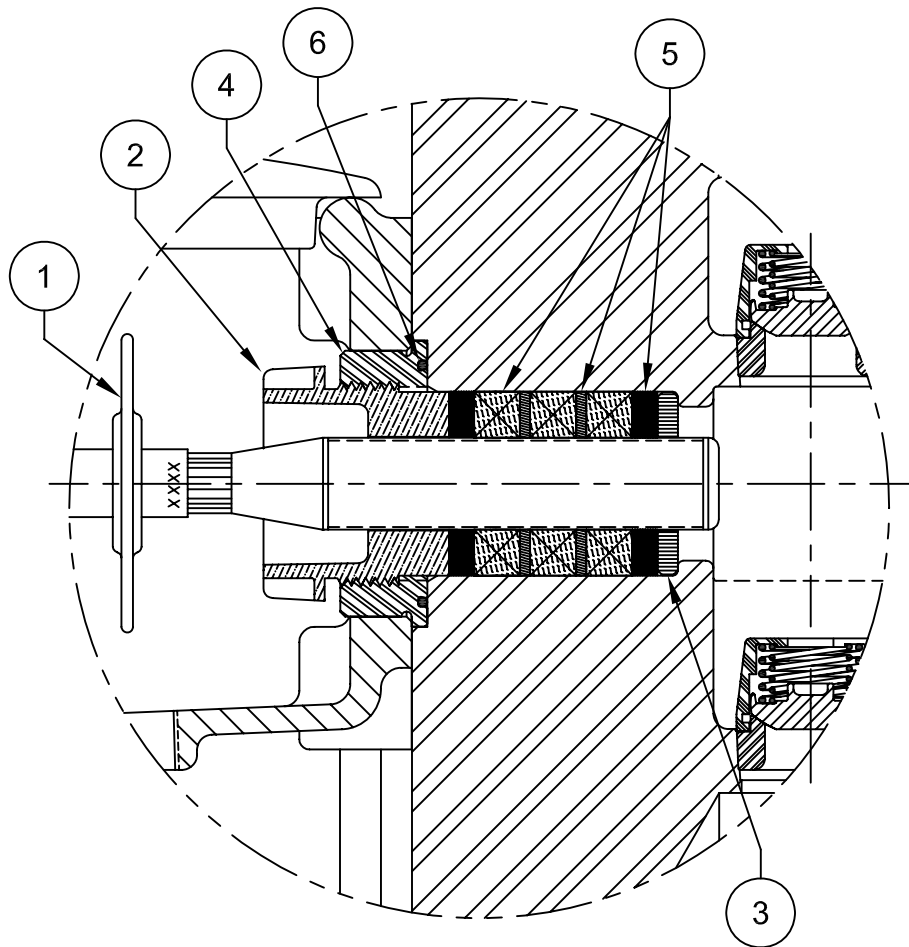


1	110-000232-200	O-RING		6
	287-118212-458		8921-K	
	287-118212-339		249	
	287-118212-337		241	
1	287-118212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010961-278		(SS)	
	001-010961-235		(STL)	
1	001-010961-302	THROAT BUSHING	(BRZ)	3
	AFC-013800-E16		(SS)	
	001-011227-351		(DI)	
1	001-011227-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
dda				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.


 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117608	SCALE:	NONE
REV	A	SHT.:	1 OF 6

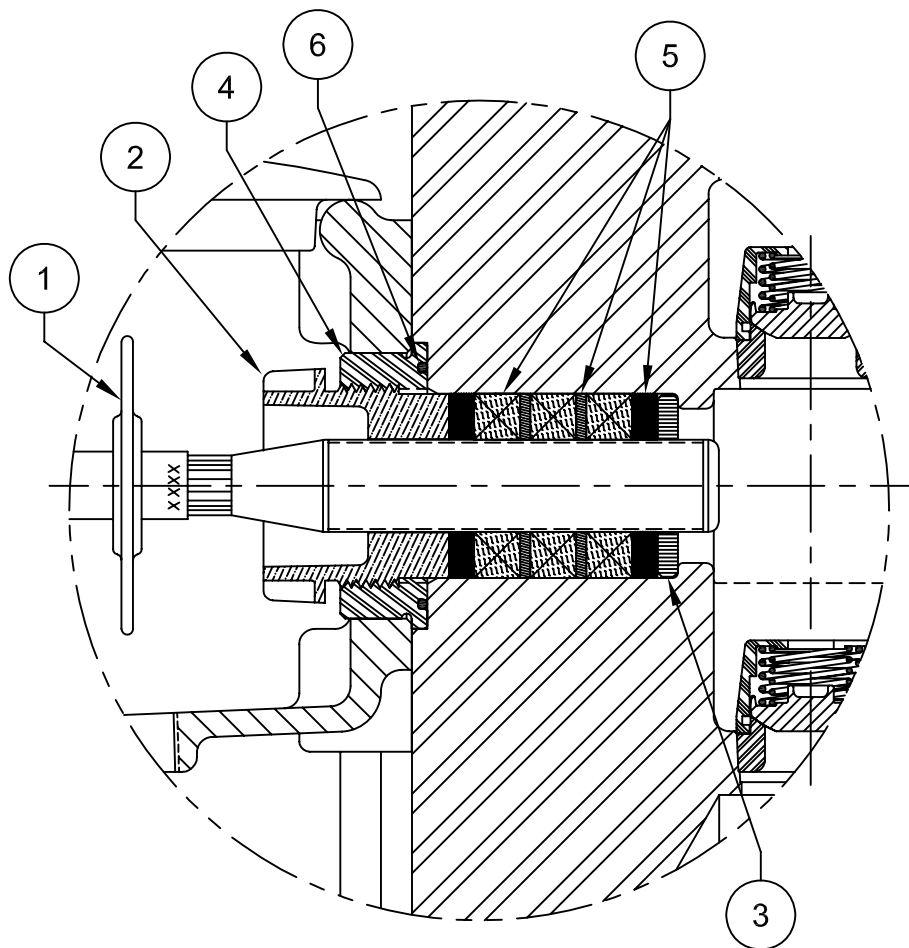


1	110-000232-200	O-RING		6
	287-114212-458		8921-K	
	287-114212-339		249	
	287-114212-337		241	
1	287-114212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010950-278		(SS)	
	001-010950-235		(STL)	
1	001-010950-302	THROAT BUSHING	(BRZ)	3
	AEC-013800-E16		(SS)	
	001-011228-351		(DI)	
1	001-011228-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.


 NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR 2S-1M / 5S-2M (P50A, P50B)	
DWG No.: 117608	SCALE: NONE
REV A	SHT.: 2 OF 6

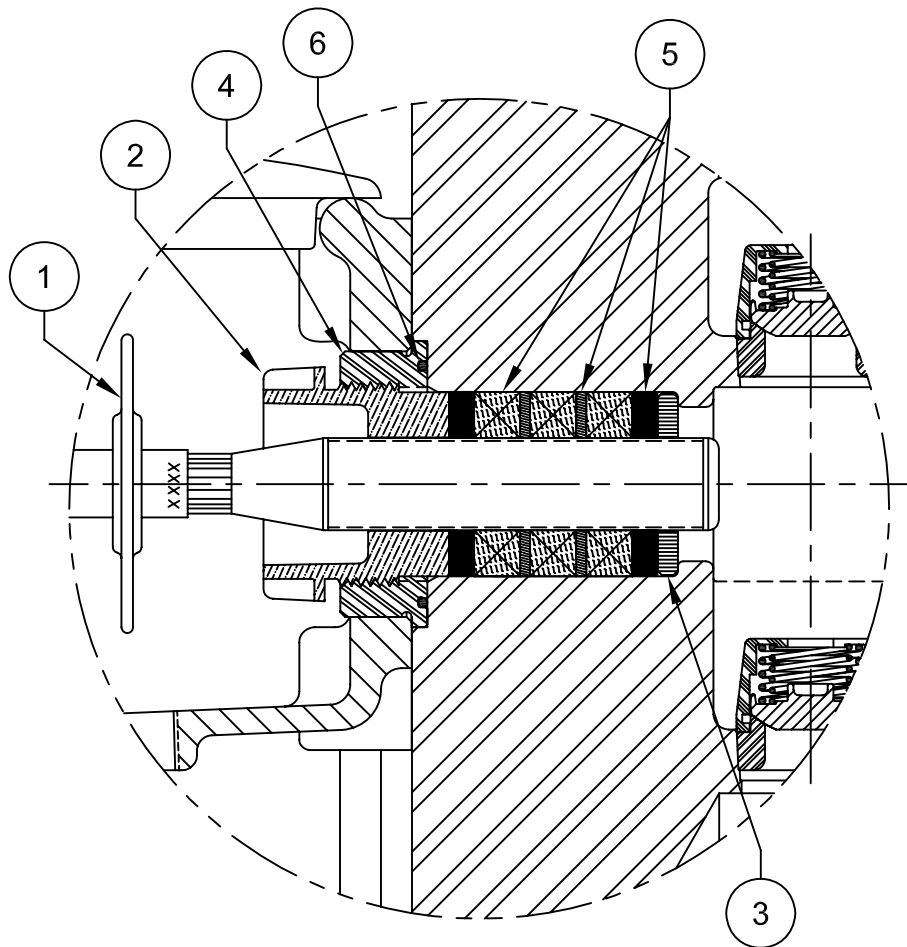


1	110-000232-200	O-RING		6
	287-138212-458		8921-K	
	287-138212-339		249	
	287-138212-337		241	
1	287-138212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-008913-278		(SS)	
	001-008913-235		(STL)	
1	001-008913-302	THROAT BUSHING	(BRZ)	3
	ADC-013800-E16		(SS)	
	001-011229-351		(DI)	
1	001-011229-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.


 NATIONAL OILWELL	
<small>HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA</small>	
TITLE: ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR 2S-1M / 5S-2M (P50A, P50B)	
<small>DWG No.:</small> 117608	<small>SCALE:</small> NONE
<small>REV</small> A	<small>SHT.:</small> 3 OF 6

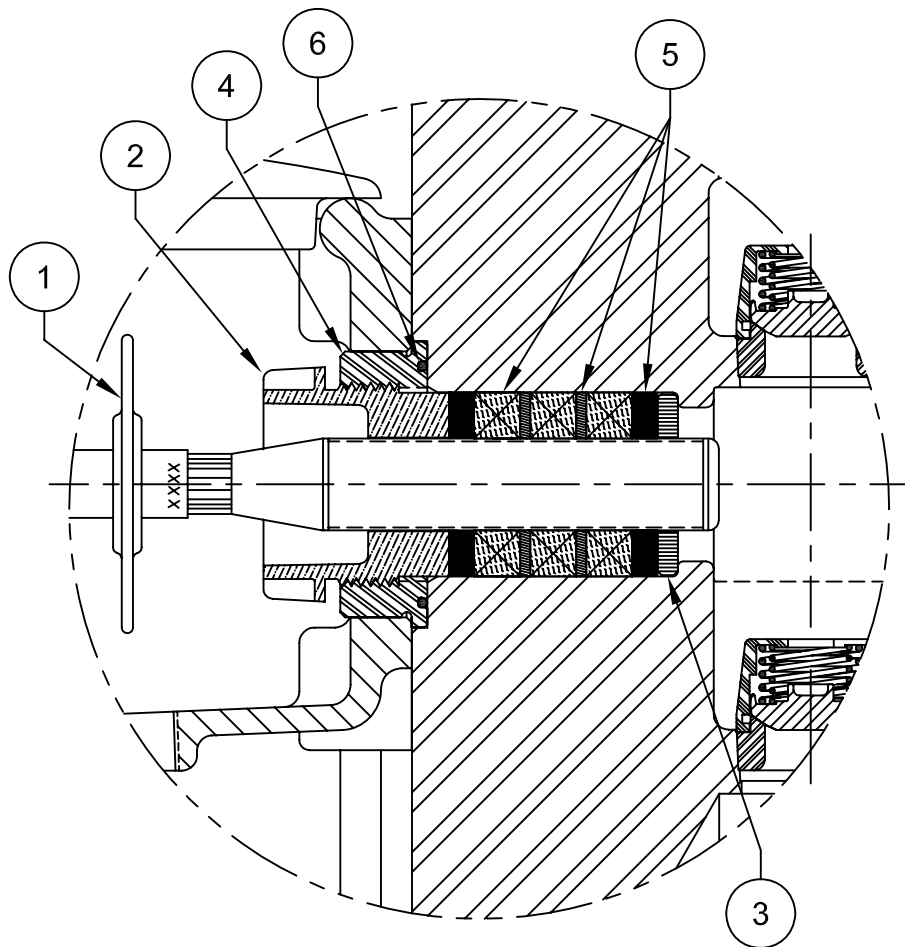


1	110-000232-200	O-RING		6
	287-112212-458		8921-K	
	287-112212-339		249	
	287-112212-337		241	
1	287-112212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010949-278		(SS)	
	001-010949-235		(STL)	
1	001-010949-302	THROAT BUSHING	(BRZ)	3
	ACC-013800-E16		(SS)	
	001-011230-351		(DI)	
1	001-011230-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117608	SCALE:	NONE
REV	A	SHT.:	4 OF 6



1	110-000232-200	O-RING		6
	287-158212-458		8921-K	
	287-158212-339		249	
	287-158212-337		241	
1	287-158212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010962-278		(SS)	
	001-010962-235		(STL)	
1	001-010962-302	THROAT BUSHING	(BRZ)	3
	ABC-013800-E16		(SS)	
	001-011231-351		(DI)	
1	001-011231-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

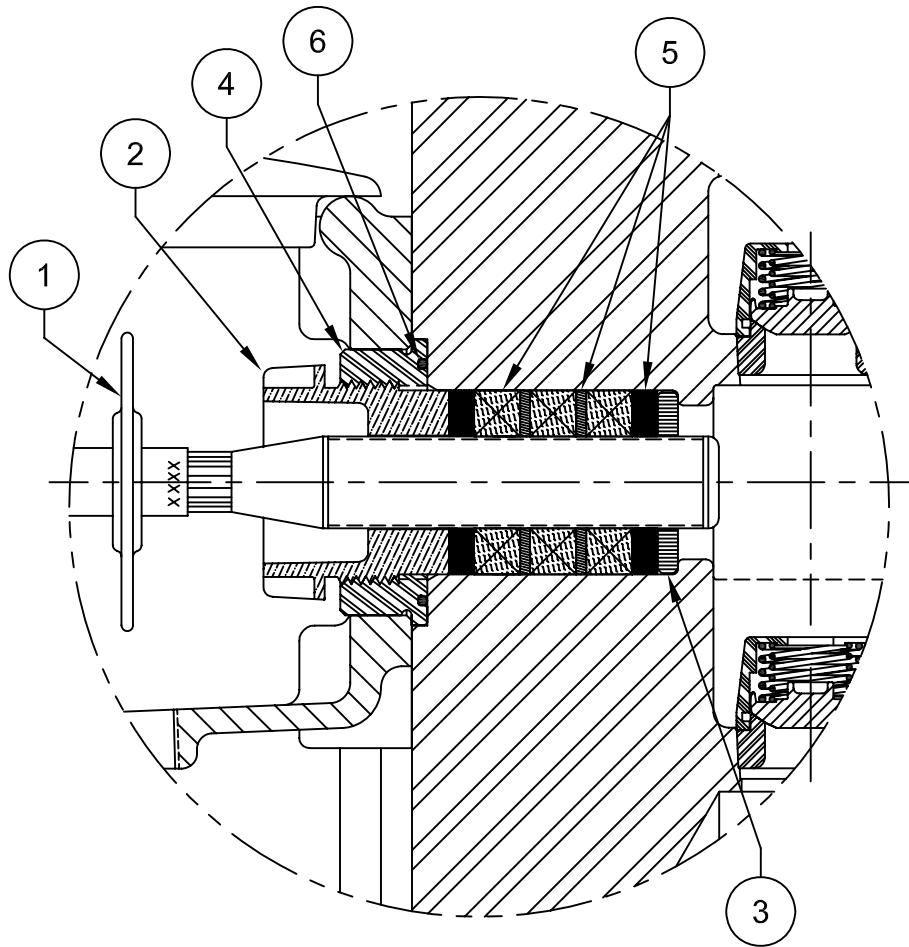
ASSEMBLY, PLUNGER KIT
BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR
2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117608

SCALE: NONE

REV A


SHT.: 5 OF 6

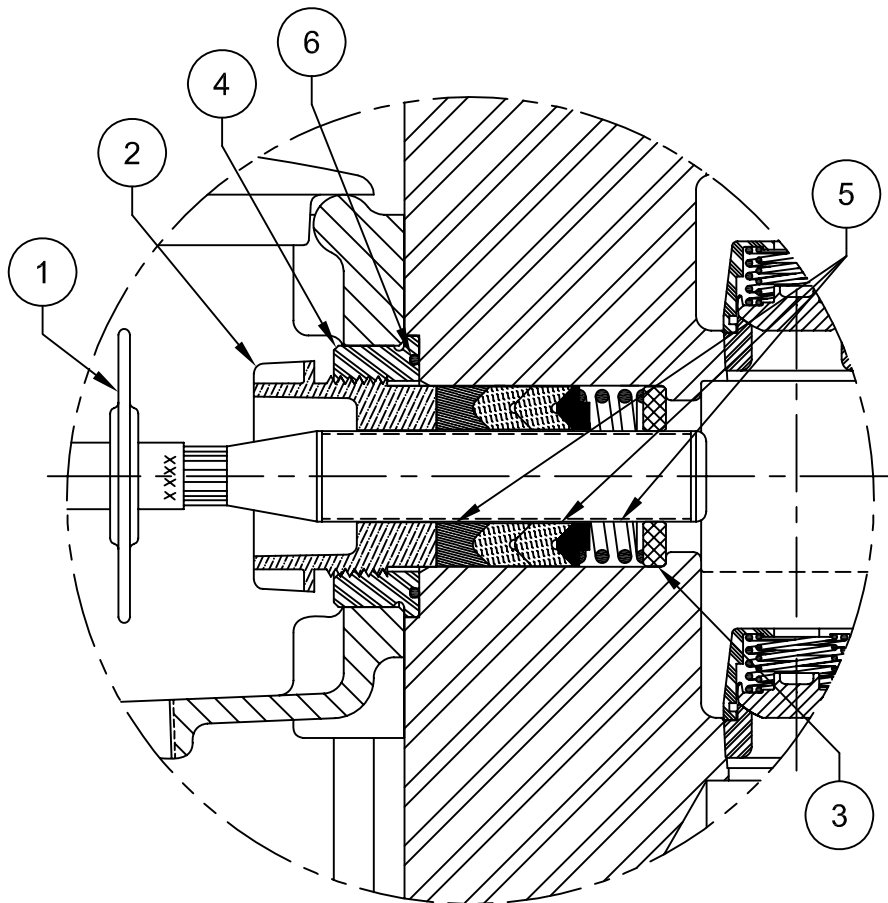


1	110-000232-200	O-RING		6
	287-134212-458		8921-K	
	287-134212-339		249	
	287-134212-337		241	
1	287-134212-395	PACKING	238	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-024096-278		(SS)	
	001-024096-235		(STL)	
1	001-024096-302	THROAT BUSHING	(BRZ)	3
	AAC-013800-E16		(SS)	
	001-008909-351		(DI)	
1	001-008909-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " BRAID STYLE " PACKING SEE DRAWING 117608, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT BRAID STYLE PKG, 1-1/8" THRU 1-3/4" PLGR 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117608	SCALE:	NONE
REV	A	SHT.:	6 OF 6



1	110-000232-200	O-RING		6
1	432-118238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010961-278		(SS)	
	001-010961-235		(STL)	
1	001-010961-302	THROAT BUSHING	(BRZ)	3
	AFC-013800-E16		(SS)	
	001-011227-351		(DI)	
1	001-011227-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/8" THRU 1-3/4" PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.:

117609

SCALE:

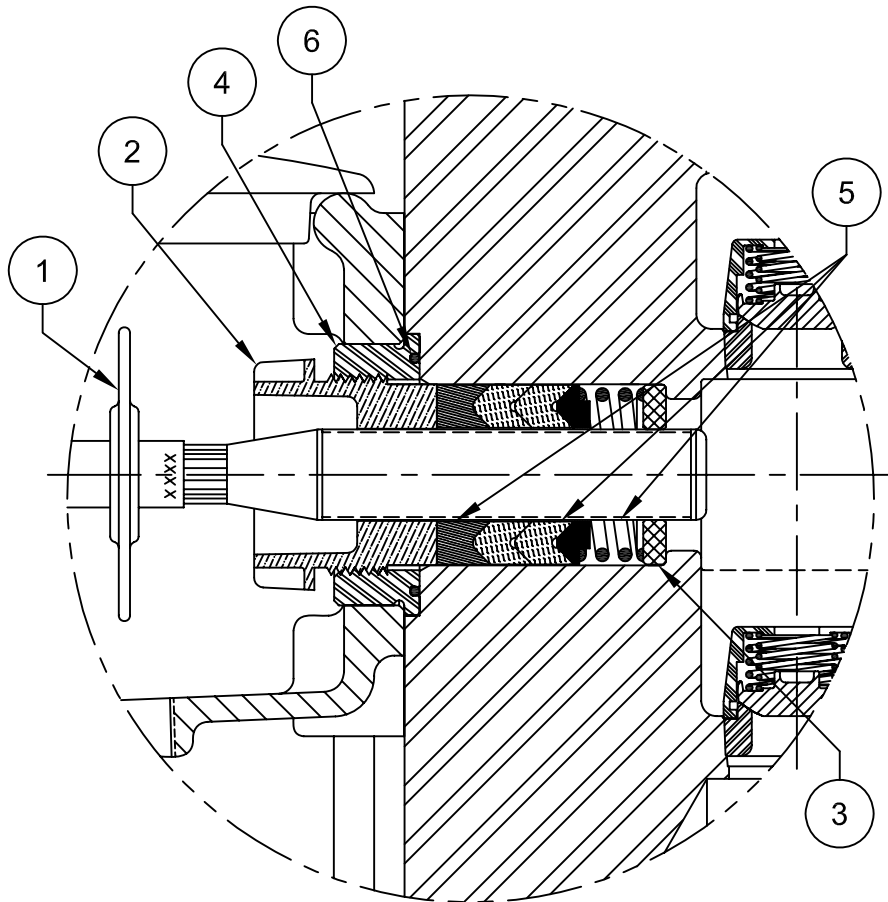
NONE

REV

A

SHT.:

1 OF 6



1	110-000232-200	O-RING		6
1	432-114238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010950-278		(SS)	
	001-010950-235		(STL)	
1	001-010950-302	THROAT BUSHING	(BRZ)	3
	AEC-013800-E16		(SS)	
	001-011228-351		(DI)	
1	001-011228-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.

45



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/8" THRU 1-3/4" PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.:

117609

SCALE:

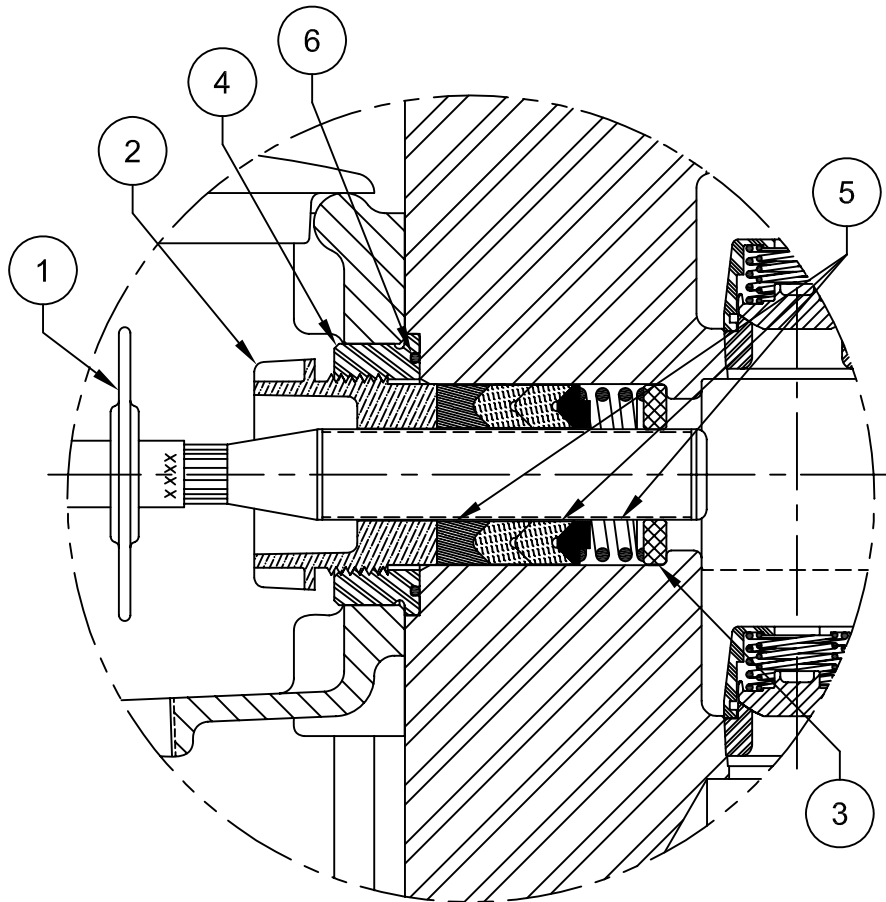
NONE

REV

A

SHT.:

2 OF 6



1	110-000232-200	O-RING		6
1	432-138238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-008913-278		(SS)	
	001-008913-235		(STL)	
1	001-008913-302	THROAT BUSHING	(BRZ)	3
	ADC-013800-E16		(SS)	
	001-011229-351		(DI)	
1	001-011229-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.

46



NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

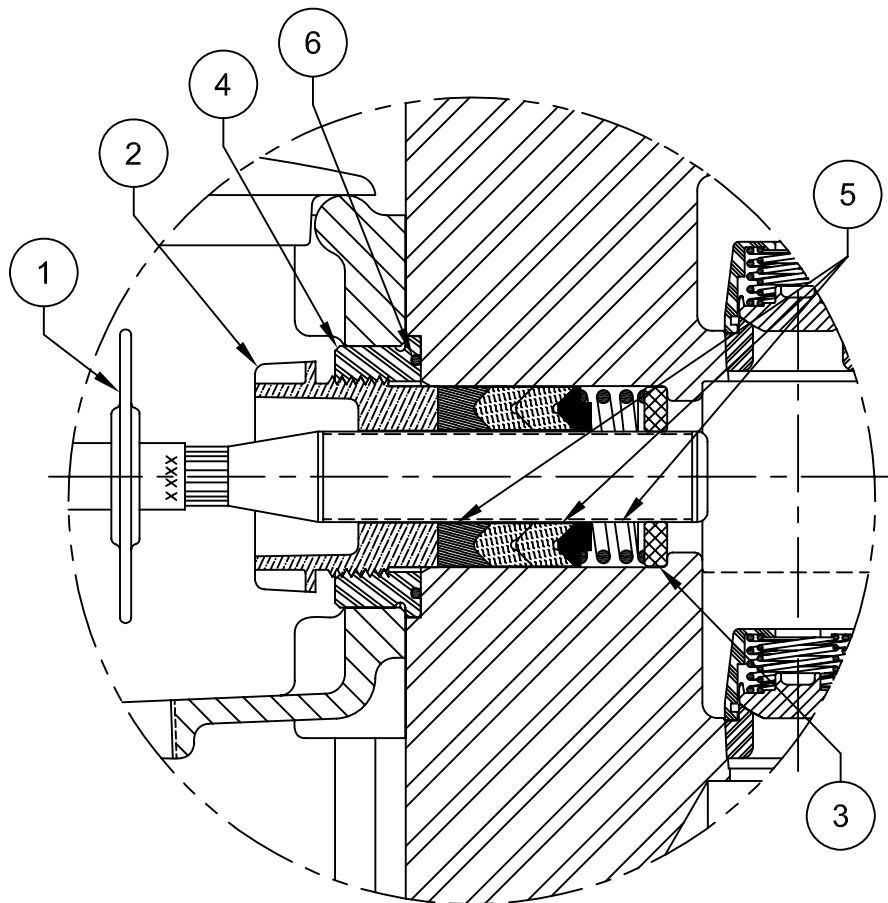
ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/8" THRU 1-3/4 PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117609

SCALE: NONE

REV A


SHT.: 3 OF 6

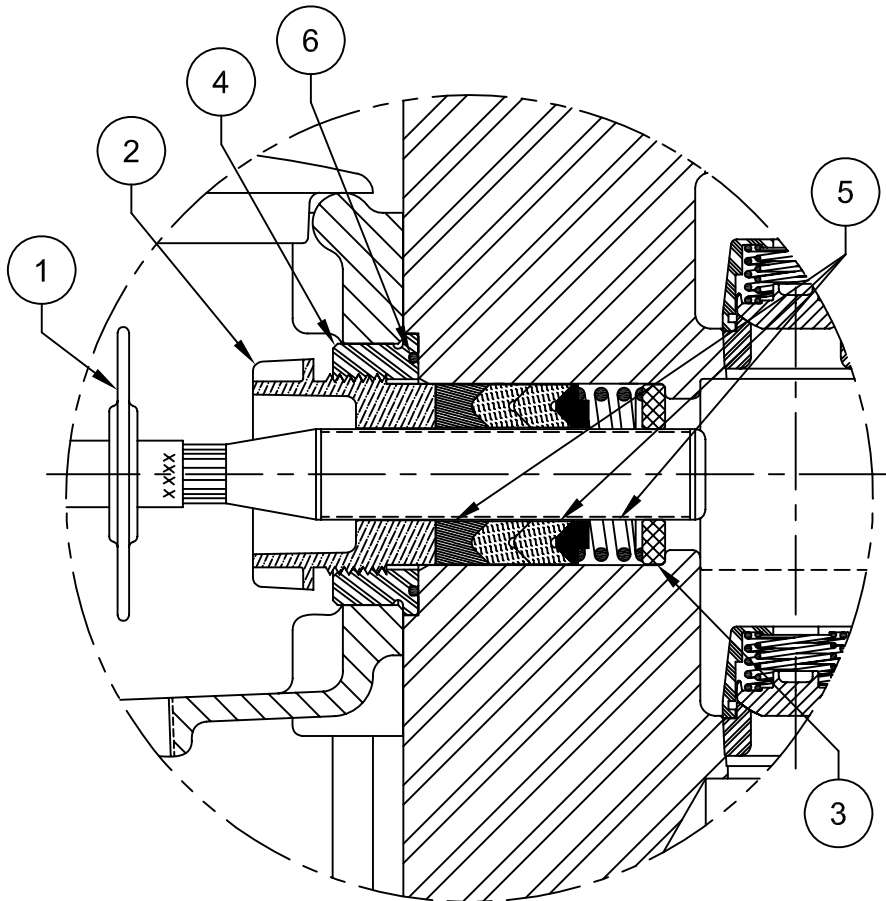


1	110-000232-200	O-RING		6
1	432-112238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010949-278		(SS)	
	001-010949-235		(STL)	
1	001-010949-302	THROAT BUSHING	(BRZ)	3
	ACC-013800-E16		(SS)	
	001-011230-351		(DI)	
1	001-011230-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-1/2" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT 1068-4 PACKING, 1-1/8" THRU 1-3/4" PLUNGER 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	117609	SCALE:	NONE
REV	A	SHT.:	4 OF 6



1	110-000232-200	O-RING		6
1	438-158238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-010962-278		(SS)	
	001-010962-235		(STL)	
1	001-010962-302	THROAT BUSHING	(BRZ)	3
	ABC-013800-E16		(SS)	
	001-011231-351		(DI)	
1	001-011231-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-5/8" PLUNGER)				
REQ'D	Part No.	DESCRIPTION		ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.

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HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/8" THRU 1-3/4" PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.:

117609

SCALE:

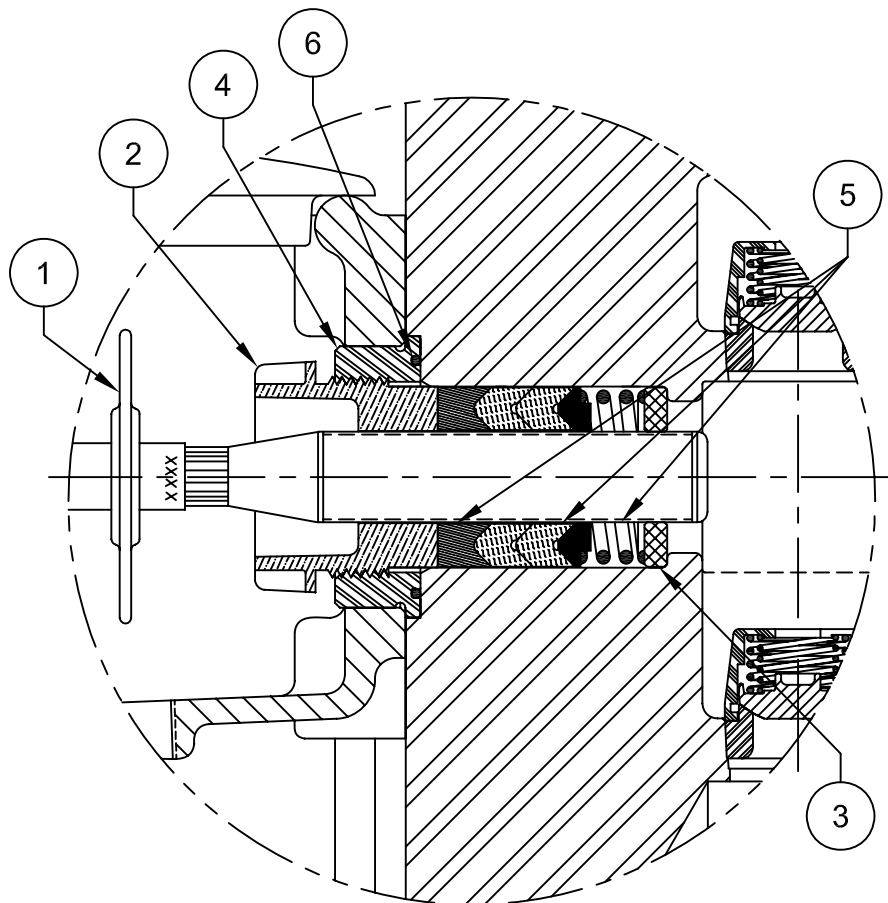
NONE

REV

A

SHT.:

5 OF 6



1	110-000232-200	O-RING		6
1	432-134238-340	PACKING	1068-4	5
	001-003948-278		(SS)	
	001-003948-236		(STL)	
1	001-003948-316	ADAPTER	(BRZ)	4
	001-024096-278		(SS)	
	001-024096-235		(STL)	
1	001-024096-302	THROAT BUSHING	(BRZ)	3
	AAC-013800-E16		(SS)	
	001-008909-351		(DI)	
1	001-008909-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1
(1-3/4" PLUNGER)				
REQ'D	Part No.	DESCRIPTION	z e	ITEM
BILL OF MATERIAL				

NOTE

- 1) FOR ALL " 1068-4 STYLE " PACKING SEE DRAWING 117609, SHEETS 1 THRU 6.

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HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

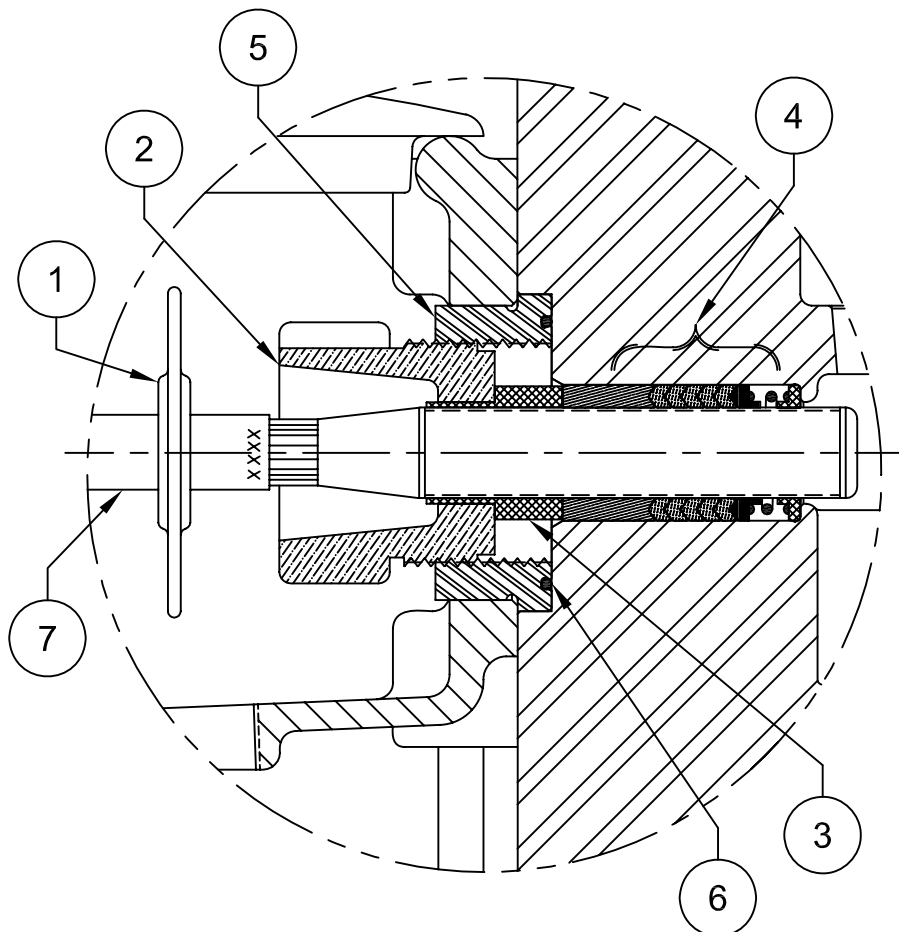
ASSEMBLY, PLUNGER KIT
1068-4 PACKING, 1-1/8" THRU 1-3/4" PLUNGER
2S-1M / 5S-2M (P50A, P50B)

DWG No.: 117609

SCALE: NONE

REV A

SHT.: 6 OF 6




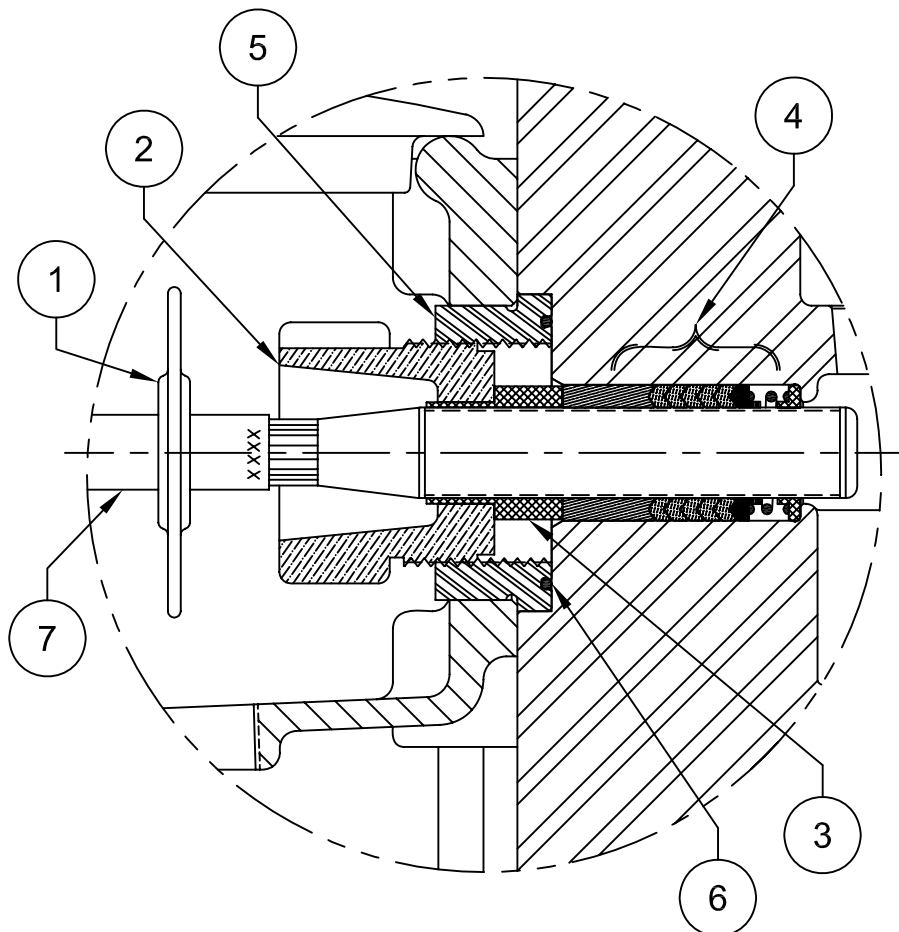
1	001-014266-402	PONY ROD	(SS)	7
1	110-000232-200	O-RING		6
1	001-019879-310	ADAPTER	(BRZ)	5
1	297-034258-397	PACKING	805-4	4
	001-017049-235		(STL)	
1	001-017049-302	FOLLOWER	(BRZ)	3
	001-014278-351		(DI)	
1	001-014278-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1

(3/4" PLUNGER)

REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

NOTE
 1) FOR ALL " 805-4 STYLE" PACKING SEE DRAWING 117610, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
ASSEMBLY, PLUNGER KIT 805-4 STYLE PKG FOR 3/4" THRU 1" PLUNGER 2S-1H / 5S-2H (P50H)			
DWG No.:	SCALE:	REV	SHT.:
117610	NONE	A	1 OF 3




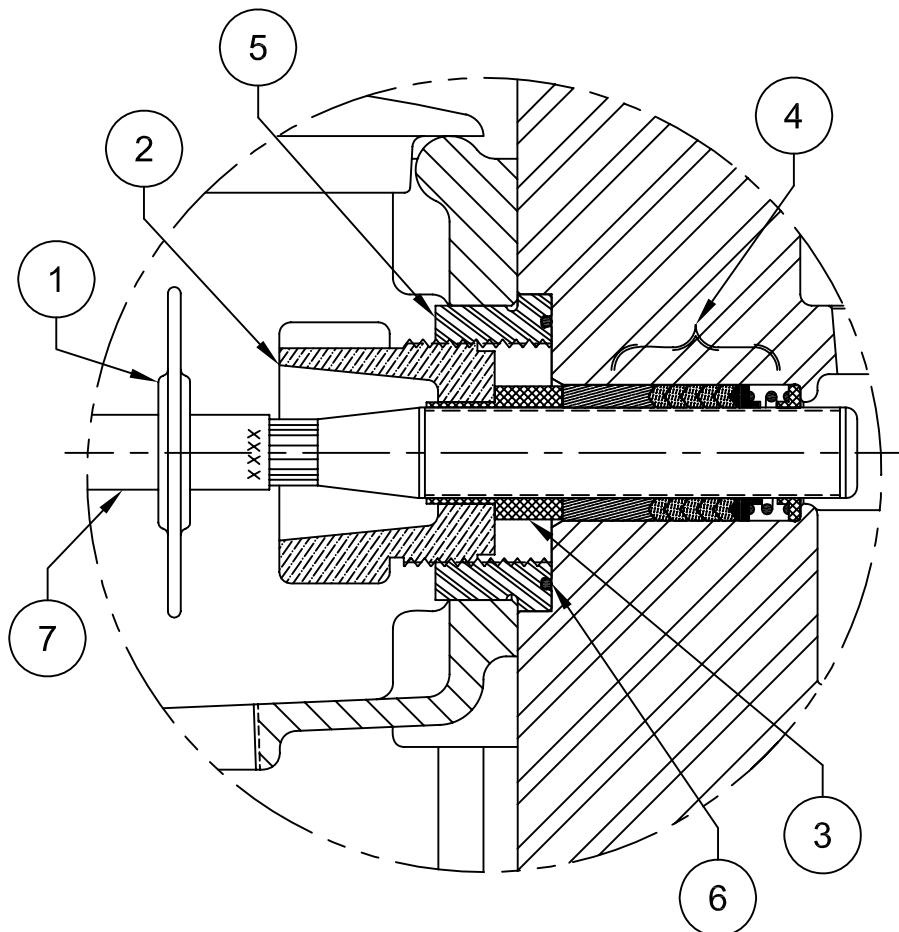
1	001-014266-402	PONY ROD	(SS)	7
1	110-000232-200	O-RING		6
1	001-019879-310	ADAPTER	(BRZ)	5
1	297-078258-397	PACKING	805-4	4
	001-014719-235		(STL)	
1	001-014719-302	FOLLOWER	(BRZ)	3
	001-014278-351		(DI)	
1	001-014278-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1

(7/8" PLUNGER)

REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

NOTE
 1) FOR ALL " 805-4 STYLE" PACKING SEE DRAWING 117610, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT 805-4 STYLE PKG FOR 3/4" THRU 1" PLUNGER 2S-1H / 5S-2H (P50H)			
DWG No.:	117610	SCALE:	NONE
REV	A	SHT.:	2 OF 3




1	001-014266-402	PONY ROD	(SS)	7
1	110-000232-200	O-RING		6
1	001-019879-310	ADAPTER	(BRZ)	5
1	297-100258-397	PACKING	805-4	4
	001-017050-235		(STL)	
1	001-017050-302	FOLLOWER	(BRZ)	3
	001-014278-351		(DI)	
1	001-014278-304	GLAND NUT	(BRZ)	2
1	001-008910-201	BAFFLE DISC		1

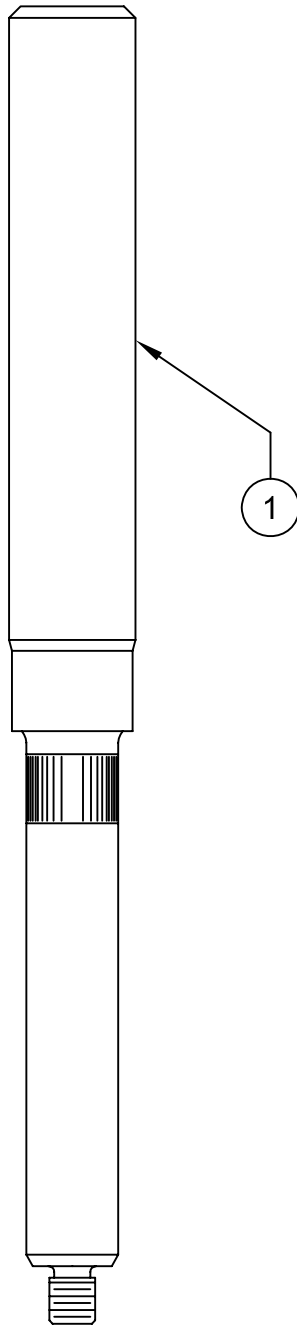
(1" PLUNGER)

REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

NOTE

1) FOR ALL " 805-4 STYLE" PACKING SEE DRAWING 117610, SHEETS 1 THRU 6.

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE: ASSEMBLY, PLUNGER KIT 805-4 STYLE PKG FOR 3/4" THRU 1" PLUNGER 2S-1H / 5S-2H (P50H)			
DWG No.:	117610	SCALE:	NONE
REV	A	SHT.:	3 OF 3



1	AHC-115977-E24	2" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	002-011349-E23	2" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011349-E22	2" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011349-E26	2" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	AGC-115977-E24	1-7/8" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	AGC-115977-E23	1-7/8" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011348-E22	1-7/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011348-E26	1-7/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025838-999	1-3/4" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	AFC-115977-E23	1-3/4" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011347-E22	1-3/4" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011347-E26	1-3/4" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025372-E24	1-5/8" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	AEC-115977-E23	1-5/8" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011346-E22	1-5/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011346-E26	1-5/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025694-999	1-1/2" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	002-009539-E23	1-1/2" DIA. PLUNGER, HARD COAT, COBALT	
1	002-009539-E22	1-1/2" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-009539-E26	1-1/2" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

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NATIONAL OILWELL

HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

PLUNGERS 1-1/2" TO 2"
HARD SURFACE
2S-1L / 5S-2L

DWG No.:

118728

SCALE:

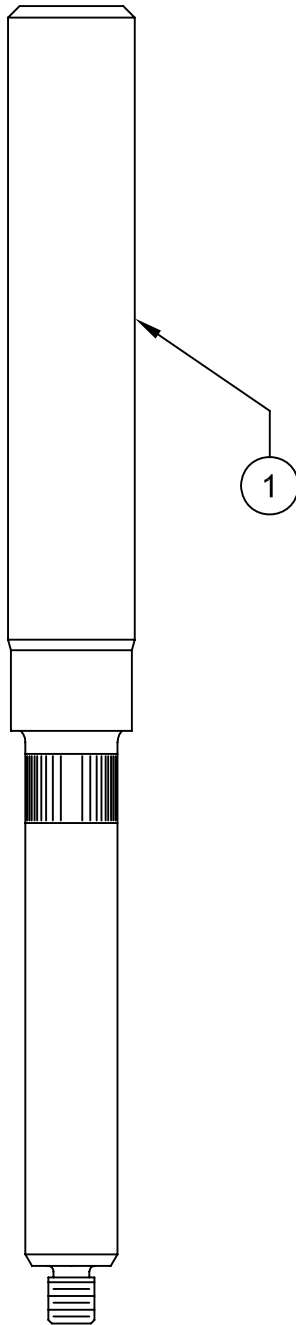
NONE

REV


A

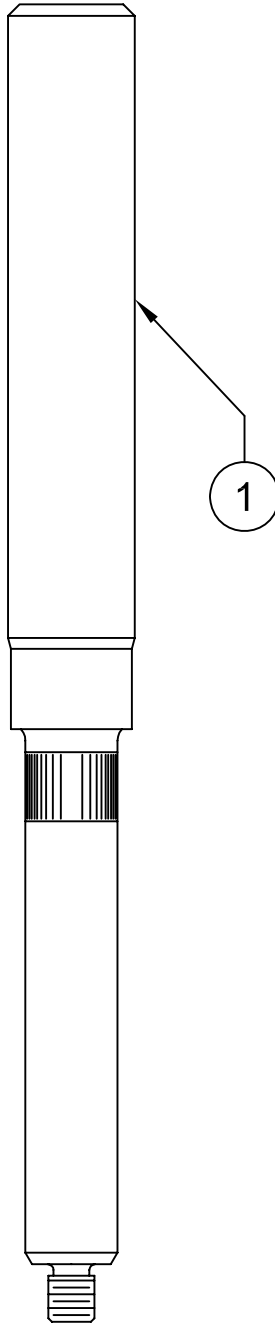
SHT.:

1 OF 1



1	002-011368-999	2" DIA. PLUNGER, CERAMIC	1
1	002-011367-999	1-7/8" DIA. PLUNGER, CERAMIC	1
1	002-011365-999	1-3/4" DIA. PLUNGER, CERAMIC	1
1	002-011364-999	1-5/8" DIA. PLUNGER, CERAMIC	1
1	002-011363-999	1-1/2" DIA. PLUNGER, CERAMIC	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
PLUNGERS 1-1/2" THRU 2" CERAMIC 2S-1L / 5S-2L (P50A, P50B)			
DWG No.:	118729	SCALE:	NONE
REV	A	SHT.:	1 OF 1



1	002-025838-999	1-3/4" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	AFC-115977-E23	1-3/4" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011347-E22	1-3/4" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011347-E26	1-3/4" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025372-E24	1-5/8" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	AEC-115977-E23	1-5/8" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011346-E22	1-5/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011346-E26	1-5/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025694-999	1-1/2" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	002-009539-E23	1-1/2" DIA. PLUNGER, HARD COAT, COBALT	
1	002-009539-E22	1-1/2" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-009539-E26	1-1/2" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025373-999	1-3/8" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	002-011638-E23	1-3/8" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011638-999	1-3/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011638-E26	1-3/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025847-E24	1-1/4" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	ABC-115977-E23	1-1/4" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011637-999	1-1/4" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011637-E26	1-1/4" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
1	002-025831-999	1-1/8" DIA. PLUNGER, HARD COAT, CHROME OXIDE	
1	002-011636-E23	1-1/8" DIA. PLUNGER, HARD COAT, COBALT	
1	002-011636-E22	1-1/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011636-E26	1-1/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

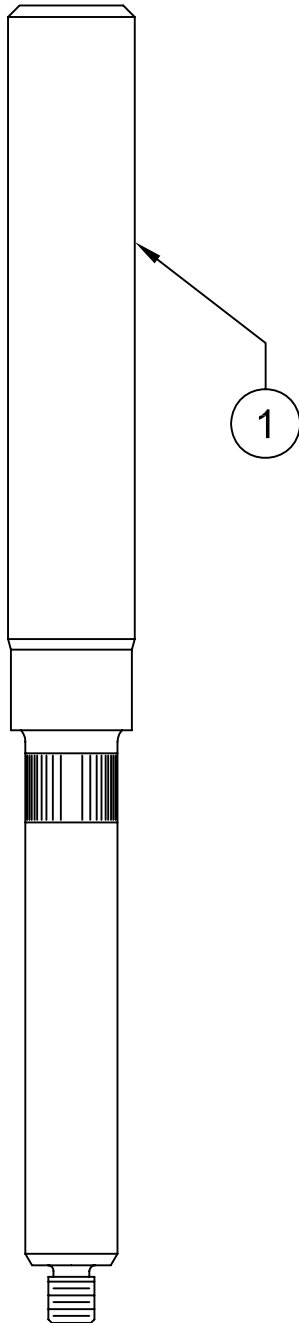


NATIONAL OILWELL


HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA

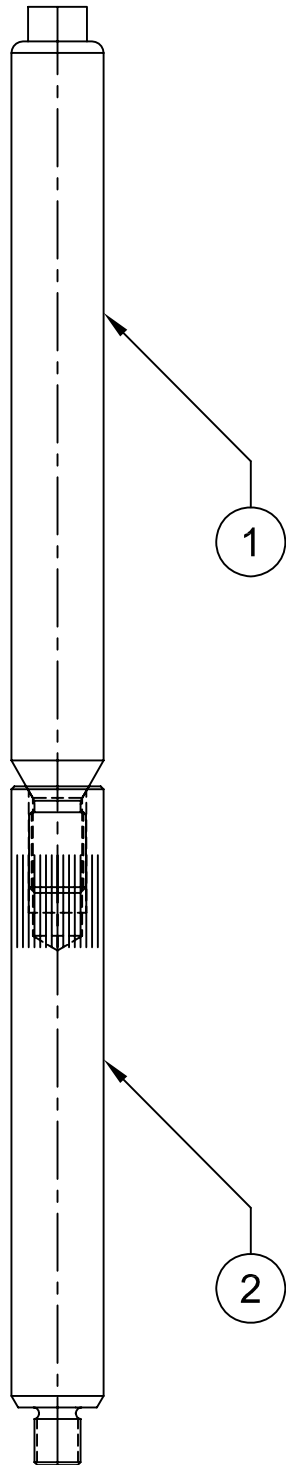
TITLE: **PLUNGERS 1-1/8" THRU 1-3/4" HARD SURFACE 2S-1M / 5S-2M (P50A, P50B)**

DWG No.: 117611	SCALE: NONE	REV B	SHT.: 1 OF 1
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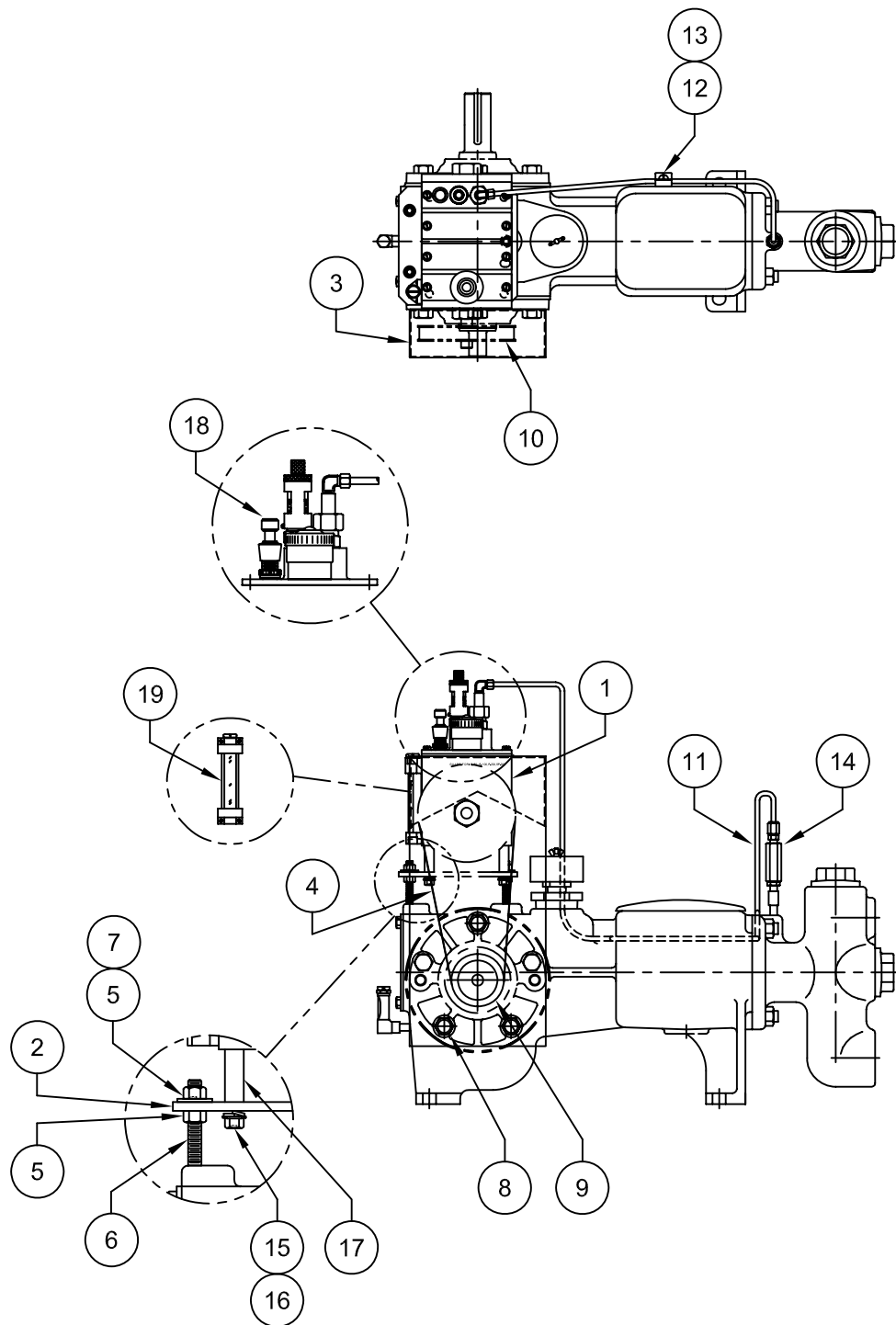
1	002-011365-999	1-3/4" DIA. PLUNGER, CERAMIC	1
1	002-011364-999	1-5/8" DIA. PLUNGER, CERAMIC	1
1	002-011363-999	1-1/2" DIA. PLUNGER, CERAMIC	1
1	002-011366-999	1-3/8" DIA. PLUNGER, CERAMIC	1
1	002-011362-999	1-1/4" DIA. PLUNGER, CERAMIC	1
1	002-001753-999	1-1/8" DIA. PLUNGER, CERAMIC	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

 NATIONAL OILWELL			
HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
PLUNGERS 1-1/8" THRU 1-3/4" CERAMIC 2S-1M / 5S-2M (P50A, P50B)			
DWG No.:	SCALE:	REV	SHT.:
117612	NONE	B	1 OF 1



1	001-014266-402	PONY ROD	2
	002-002252-999	1" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-002252-E26	1" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
	002-011068-999	7/8" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011068-E26	7/8" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
	002-011067-999	3/4" DIA. PLUNGER, HARD COAT, TUNGSTEN	
1	002-011067-E26	3/4" DIA. PLUNGER, HARD COAT, PREMIUM TUNGSTEN	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

HOUSTON, TEXAS, U.S.A.		ENGINEERING, TULSA, OKLAHOMA	
TITLE:			
PLUNGERS 3/4" THRU 1" HARD SURFACE 2S-1H / 5S-2H (P50H)			
DWG No.:	117617	SCALE:	NONE
REV	B	SHT.:	1 OF 1



1	GAS-105265-000	SIGHT GLASS	19
1	GAS-105264-000	PUMP ASSEMBLY w/ GASKET	18
REPLACEMENT PARTS			
4	186-130112-220	SPACER	17
4	100-516212-290	CAP SCREW 5/16" x 2-1/2" LG.	16
4	154-516059-220	LOCK WASHER, 5/16"	15
1	GAS-105240-000	CHECK VALVE, 1/8" NPT	14
2	113-010038-220	MACHINE SCREW, RND HD	13
1	001-008783-405	LINE CLAMP	12
60"	330-002003-365	TUBING, 1/4"	11
1	001-011513-999	SHEAVE, LUBRICATOR	10
1	001-011632-999	SHEAVE, PUMP DRIVER	9
3	100-058412-290	CAP SCREW, 5/8" x 4-1/2" LG.	8
3	154-038068-220	LOCK WASHER 3/8"	7
3	104-038300-286	STUD, 3/8" x 3" LG	6
6	133-038016-286	NUT, ZINC PLATED 3/8"	5
1	001-011617-999	V-BELT	4
1	004-001977-231	BELT GUARD	3
1	001-012229-231	LUBRICATOR BRACKET LH/RH	2
1	001-014067-999	LUBRICATOR RHD, (1) FEED	
1	001-014657-999	LUBRICATOR LHD, (1) FEED	1
REQ'D	Part No.	DESCRIPTION	ITEM
BILL OF MATERIAL			

LEFT HAND DRIVE POWER PUMP (SHOWN) REQUIRES
RIGHT HAND DRIVE LUBRICATOR.

SAME PLUMBING FOR CASTINGS AND BILLETS (CASTING SHOWN).



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

ASSEMBLY, PACKING LUBRICATOR
(RHD OR LHD) LHD SHOWN
2S-1 / 5S-2 / P50

DWG No.:

117591

SCALE:

NONE

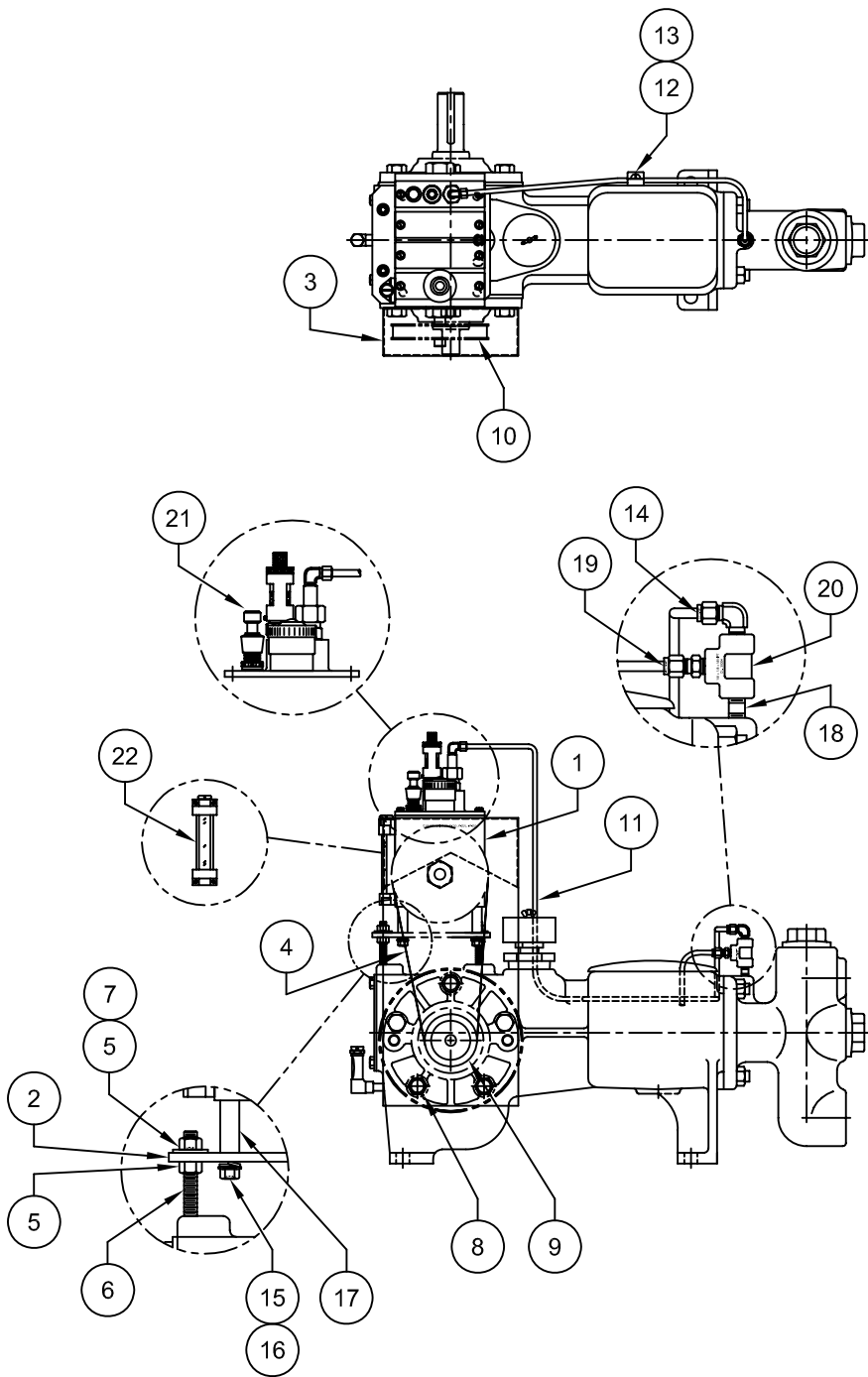
REV

B

SHT.:

1

OF 1




1	GAS-105265-000	SIGHT GLASS	22
1	GAS-105264-000	PUMP ASSEMBLY w/ GASKET	21
REPLACEMENT PARTS			
1	469-020002-278	TEE, 1/8" NPT	20
1	462-040012-278	MALE CONNECTOR, 1/4" TUBE x 1/8" NPT	19
1	157-018112-278	PIPE NIPPLE	18
4	186-130112-220	SPACER	17
4	100-516212-290	CAP SCREW 5/16" x 2-1/2" LG.	16
4	154-516059-220	LOCK WASHER, 5/16"	15
1	462-040022-278	TUBE FITTING, 90 DEG ELBOW 1/4" TUBE x 1/8" NPT	14
2	113-010038-220	MACHINE SCREW, RND HD	13
1	001-008783-405	LINE CLAMP	12
60"	330-002003-365	TUBING, 1/4"	11
1	001-011513-999	SHEAVE, LUBRICATOR	10
1	001-011632-999	SHEAVE, PUMP DRIVER	9
3	100-058412-290	CAP SCREW, 5/8" x 4-1/2" LG.	8
3	154-038068-220	LOCK WASHER 3/8"	7
3	104-038300-286	STUD, 3/8" x 3" LG	6
6	133-038016-286	NUT, ZINC PLATED 3/8"	5
1	001-011617-999	V-BELT	4
1	004-001977-231	BELT GUARD	3
1	001-012229-231	LUBRICATOR BRACKET LH/RH	2
1	001-014067-999	LUBRICATOR R/H, (1) FEED	
1	001-014657-999	LUBRICATOR L/H, (1) FEED	1
REQ'D	Part No.	DESCRIPTION	ITEM

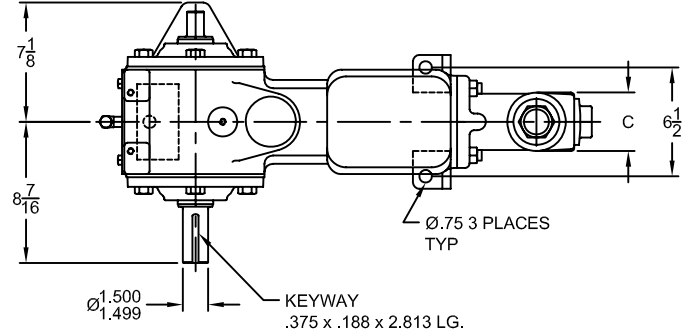
BILL OF MATERIAL

LEFT HAND DRIVE POWER PUMP (SHOWN) REQUIRES RIGHT HAND DRIVE LUBRICATOR.

SAME PLUMBING FOR CASTINGS AND BILLETS (CASTING SHOWN).

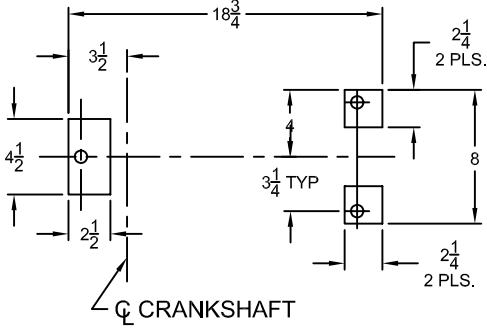
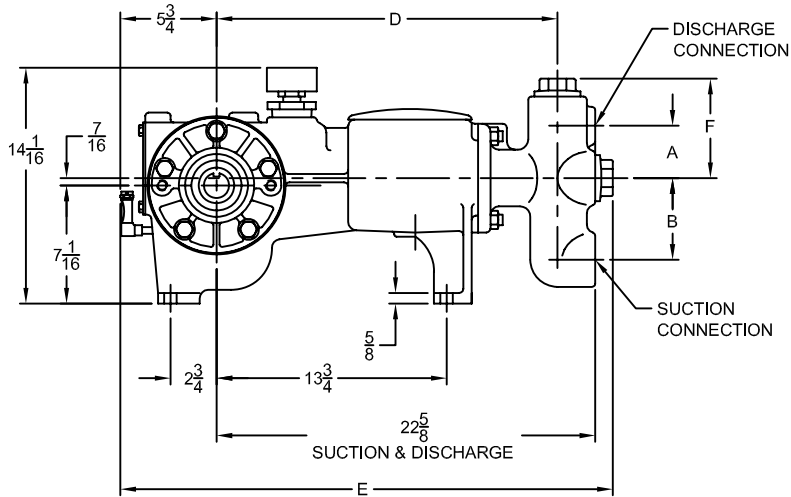
 NATIONAL OILWELL	
HOUSTON, TEXAS, U.S.A.	ENGINEERING, TULSA, OKLAHOMA
TITLE: ASSEMBLY, D.O.H. LUBRICATOR (DRIP ON THE HEEL) - (RHD OR LHD) LHD SHOWN, 2S-1 / 5S-2 / P50	
DWG No.: 117603	SCALE: NONE
REV B	SHT.: 1 OF 1

FIELD CONNECTIONS



PUMP TYPE	DIMENSIONS IN INCHES	
	DISCHARGE CONNECTION SIZE	SUCTION CONNECTION SIZE
2S-1L	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT
2S-1M	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT

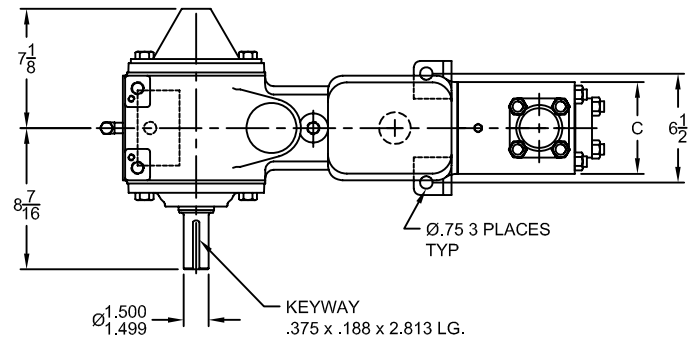
PUMP TYPE	DIMENSIONS IN INCHES					
	A	B	C	D	E	F
5S-2L	3-1/8	4-7/8	3-1/2	20 3/8	29-9/16	5-15/16
5S-2M	3-1/8	4-7/8	3-1/2	20 3/8	29-9/16	5-15/16



PUMP FOOTPRINT

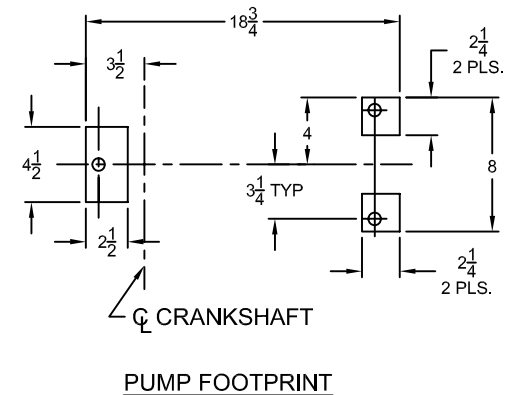
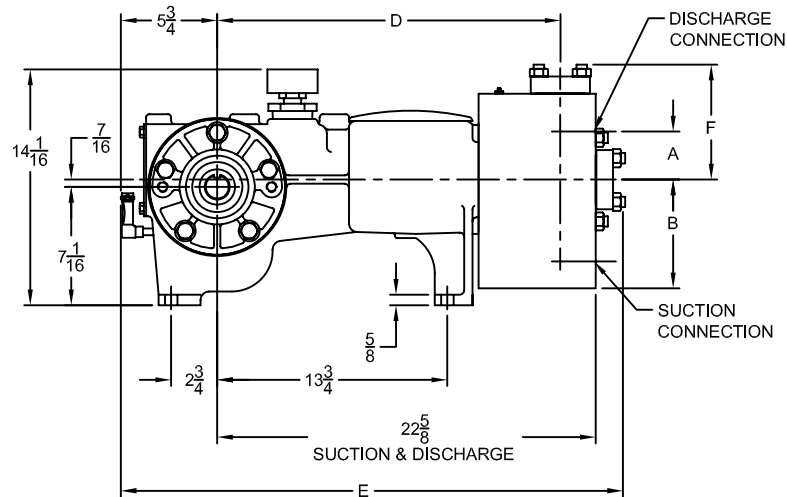
NO NATIONAL OILWELL
 HOUSTON, TEXAS, U.S.A. ENGINEERING, TULSA, OKLAHOMA
 TITLE: GENERAL DIMENSION
 RHD, CAST FLUID END
 2S-1L & M / 5S-2L & M (P-50A, P50-B)
 DWG No.: 117589 SCALE: NONE REV A SHT.: 1 OF 1

FIELD CONNECTIONS



PUMP TYPE	DIMENSIONS IN INCHES	
	DISCHARGE CONNECTION SIZE	SUCTION CONNECTION SIZE
2S-1L	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT
2S-1M	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT

PUMP TYPE	DIMENSIONS IN INCHES					
	A	B	C	D	E	F
5S-2L	2-7/8	4-7/8	5-1/2	20-1/2	30-1/8	6-7/8
5S-2M	2-7/8	4-7/8	5-1/2	20-1/2	30-1/8	6-7/8



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

**GENERAL DIMENSION
RHD, BILLET FLUID END
2S-1L & M / 5S-2L & M (P-50A & P-50B)**

DWG No.: **117590**

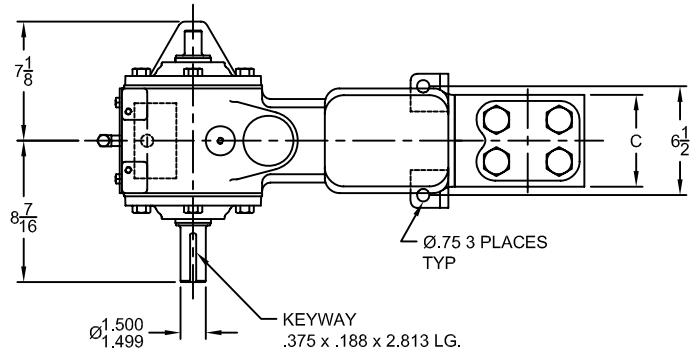
SCALE: **NONE**

REV **A**

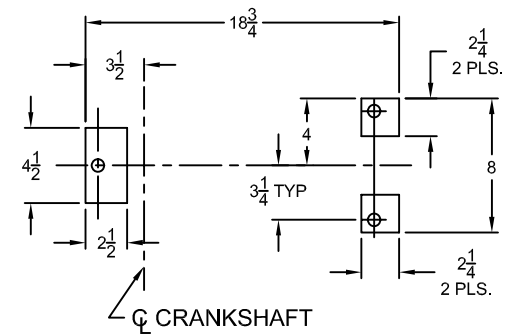
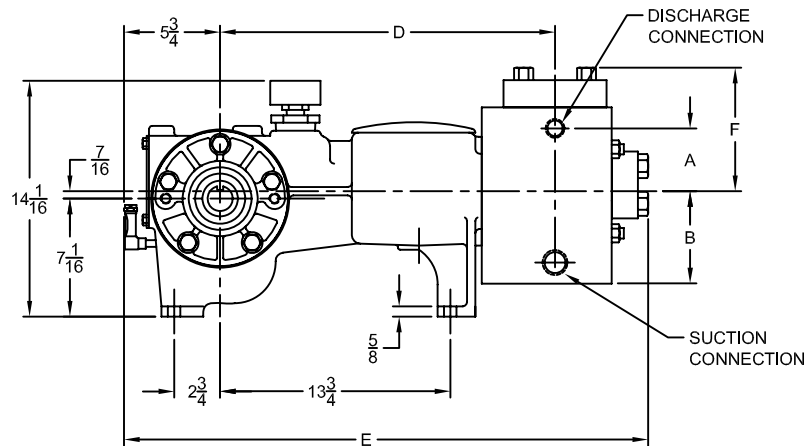
SHT.: **1** OF **1**

FIELD CONNECTIONS

PUMP TYPE	DIMENSIONS IN INCHES (MM)	
	DISCHARGE CONNECTION SIZE	SUCTION CONNECTION SIZE
2S-1H	3/4 (19.05)-14 NPT	1 1/4 (31.75)-11 1/2 THDS
5S-2H	3/4 (19.05)-14 NPT	1 1/4 (31.75)-11 1/2 THDS



PUMP TYPE	DIMENSIONS IN INCHES					
	A	B	C	D	E	F
2S-2H	3-3/4	4-1/4	5-1/2	20	31-5/16	7-3/8
5S-2H	3-3/4	4-1/4	5-1/2	20	31-5/16	7-3/8



PUMP FOOTPRINT



HOUSTON, TEXAS, U.S.A.

ENGINEERING, TULSA, OKLAHOMA

TITLE:

GENERAL DIMENSION
RHD, BILLET FLUID END
2S-1H / 5S-2H (P50H)

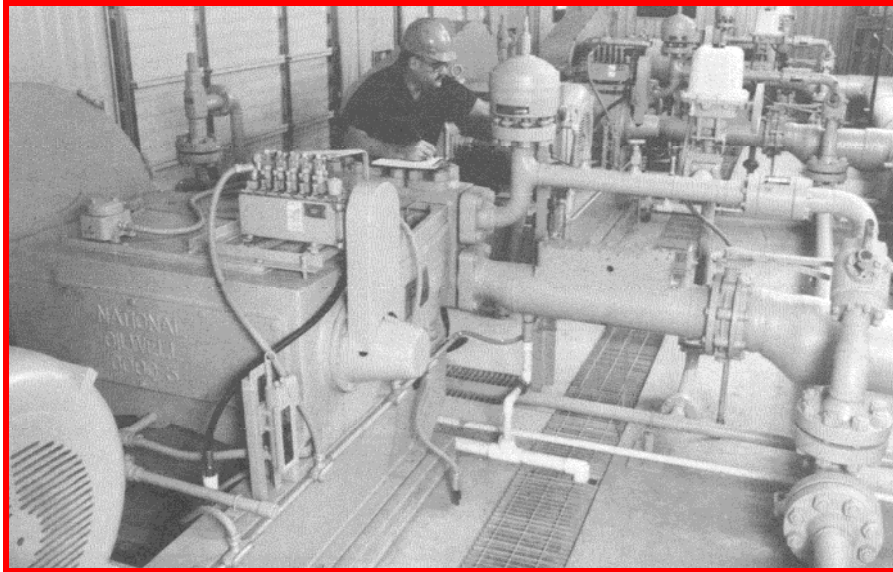
DWG No.: **117592**

SCALE: **NONE**

REV **A**

SHT.: **1** OF **1**

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