NATIONAL OILWELL

PARTS LIST

12-P-160
TRIPLEX MUD PUMP

(7-1/4" x 12")

EPL-967

NATIONAL-OILWELL
P.O. BOX 4638
HOUSTON, TEXAS 77210-4638

As used herein, any references to NATIONAL
shall be deemed to mean NATIONAL-OILWELL.

Issue Date: 3-1-2002 (Supersedes Issue: 5-1-95) Printed in U.S.A.

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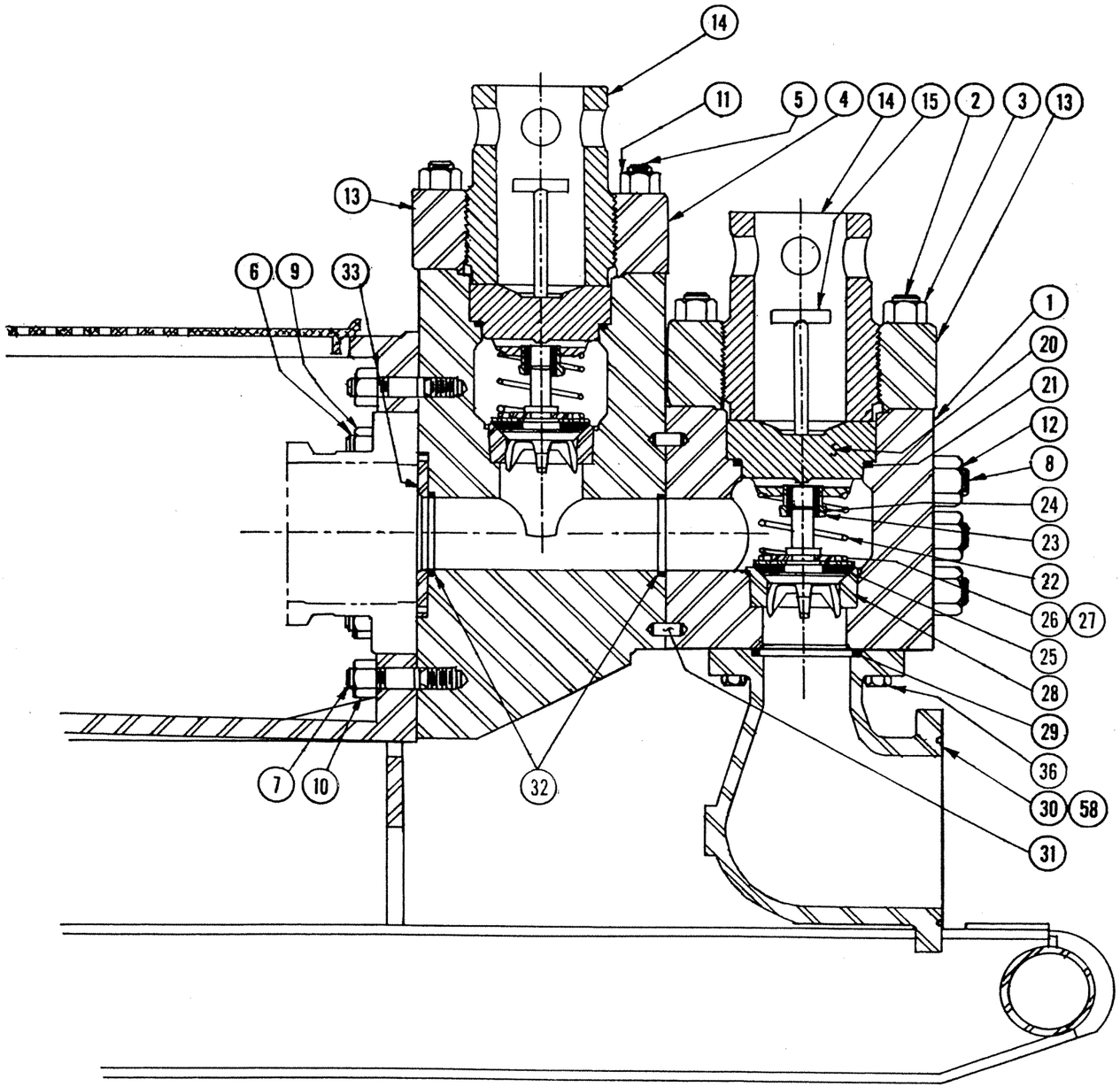
12-P-160 TRIPLEX MUD PUMP
EPL-967

Page	Drawing No.	Description	Rev.
1	PL 1292332	Fluid End Assembly (Standard) With Fast Change Valve Covers	C
2	PL 1292613	Fluid End Assembly with Premium Modules With Fast Change Valve Covers (Optional)	—
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BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
–	3	1292362	MODULE STUDDED, SUCTION (INCLS. ITEMS 1 THRU 3)
1	3	1292244	MODULE, SUCTION
2	36	2408049	STUD, 1-1/2" X 9-7/8" LG. TOP TAPER LOCK
3	36	6300240	NUT, 1-1/2" HEAVY HEX
–	3	1292361	MODULE STUDDED, DISCHARGE (INCLS. ITEMS 4 THRU 12)
4	3	1292241	MODULE, DISCHARGE
5	36	2408049	STUD, 1-1/2" X 9-7/8" LG. TOP TAPER LOCK
6	18	2408028	STUD, 1-1/8" X 6-3/8" LG. TOP TAPER LOCK
7	30	2408029	STUD, 1-3/8" X 6-3/4" LG. TOP TAPER LOCK
8	18	2408033	STUD, 1-3/4" X 21-3/8" LG. BOTTOM TAPER LOCK
9	18	6300180	NUT, 1-1/8" HEAVY HEX
10	30	6300220	NUT, 1-3/8" HEAVY HEX
11	36	6300240	NUT, 1-1/2" HEAVY HEX
12	18	6300281	NUT, 1-3/4" – 8 UNC HEAVY HEX
–	6	1292354	FAST CHANGE SCREW TYPE VALVE COVER KIT (CONSISTS OF ITEMS 2, 3, 5, 11, 13, 14, 15, 20, 21, 23 & 24)
13	6	1292351	RING, THREADED
14	6	1292352	COVER, VALVE
15	6	1292353	PULLER, SEAL RETAINER
20	6	1292350	RETAINER, SEAL
21	6	1540127	SEAL, VALVE RETAINER
22	6	1560702	SPRING, VALVE
23	6	1292140	HOLDER, VALVE GUIDE INSERT
24	6	1292141	INSERT, VALVE GUIDE
–	6	1560985	G2 VALVE COMPLETE WITH POLYURETHANE DISC✳ (CONSISTS OF ITEMS 25 THRU 27)
–	6	1560984	G2 VALVE COMPLETE WITH HYCAR DISC ✳ (CONSISTS OF ITEMS 25 THRU 27)
25✳	6	1560557	DISC, VALVE (POLYURETHANE) ✳
	6	1560558	DISC, VALVE (HYCAR) ✳
26	6	1560706	LOCK, VALVE
27	6	1560705	RING, SNAP
28	6	1561440	SEAT, VALVE
29	3	1540851	SEAL, SUCTION MANIFOLD
30✳	1	1292173	MANIFOLD, FRONT SUCTION✳
	1	1292312	MANIFOLD, SIDE INLET SUCTION✳
31	6	6511416	PIN, 7/8" X 2" LG. DOWEL
32	6	1292257	SEAL
33	3	1292266	PLATE, WEAR
36	24	7000485-11	CAPSCREW, 7/8" X 3" LG. GRADE 5 CAD. PLATED HEX HEAD
58▲	1	7500065	VALVE (SET @ 70 P.S.I.), SUCTION RELIEF ▲

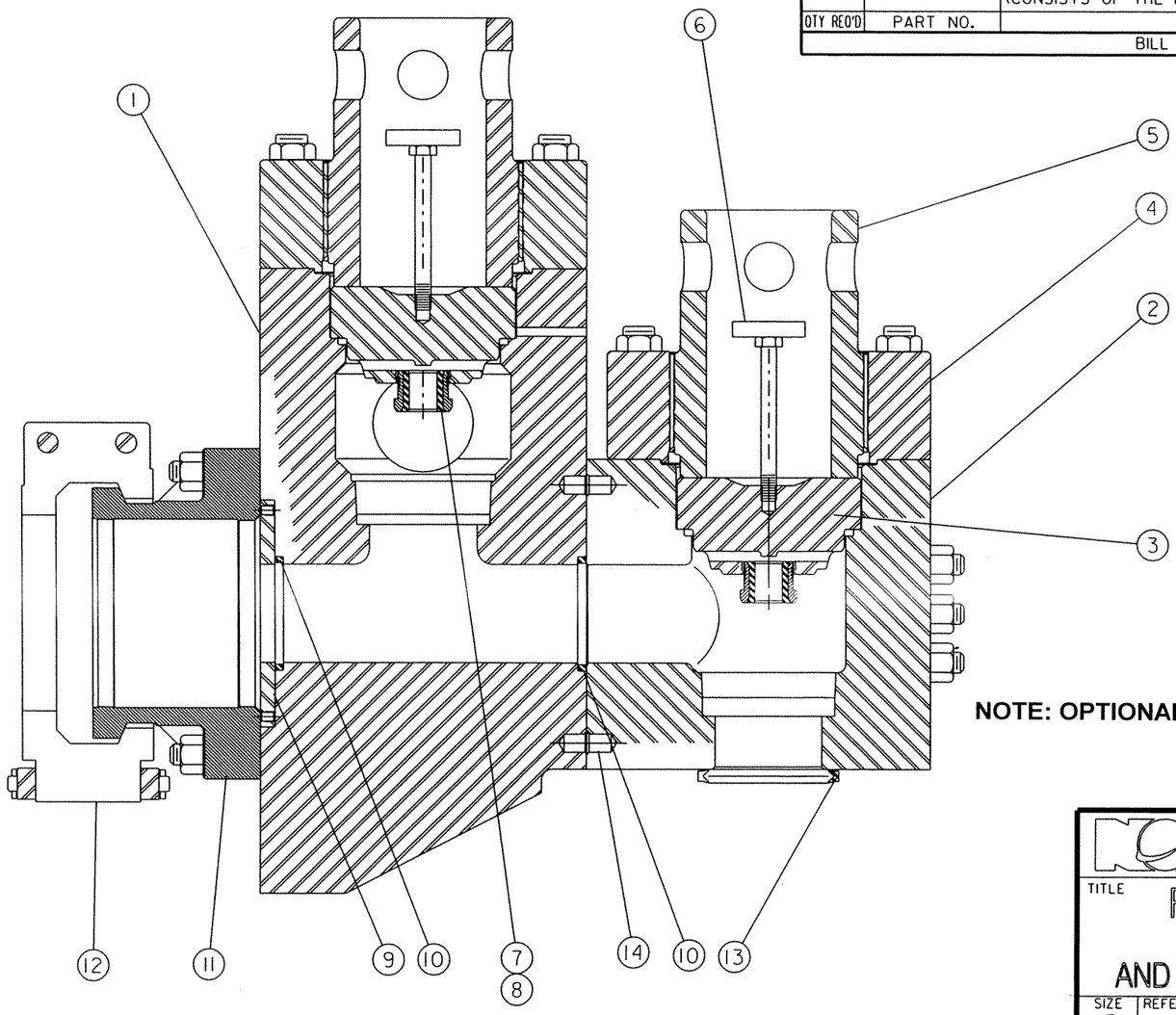
✳OPTIONAL EQUIPMENT, PLEASE SPECIFY WHEN ORDERING.
▲ NOT SHOWN.

NATIONAL OILWELL
Houston, Texas, U.S.A.

FLUID END ASSEMBLY
WITH (STANDARD) FAST CHANGE VALVE COVERS
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	B	PL 1292332	C

QTY REQ'D	PART NO.	DESCRIPTION	ITEM NO.
BILL OF MATERIAL			
—	1292613	FLUID END COMPLETE W/FAST CHANGE COVERS, PREMIUM (CONSISTS OF THE FOLLOWING)	—
1	1292611	MODULE, 12-P-160 PREMIUM DISCH. W/ FAST CHANGE COV	1
1	1292612	MODULE, 12-P-160 PREMIUM SUCT. W/ FAST CHANGE COVE	2
2	1292350	RETAINER, SEAL FAST CHANGE COVER	3
2	1292351	RING, THREADED FAST CHANGE	4
2	1292352	COVER, VALVE FAST CHANGE	5
2	1292353	PULLER, SEAL RETAINER	6
2	1292140	HOLDER, VALVE GUIDE	7
2	1292141	INSERT, VALVE GUIDE	8
1	1292266	PLATE,WEAR	9
2	1292257	SEAL MODULE	10
1	1292165	BUSHING, LINER	11
1	1292166	CLAMP, LINER	12
1	1540851	SEAL, MANIFOLD	13
2	6511416	PIN, DOWEL	14

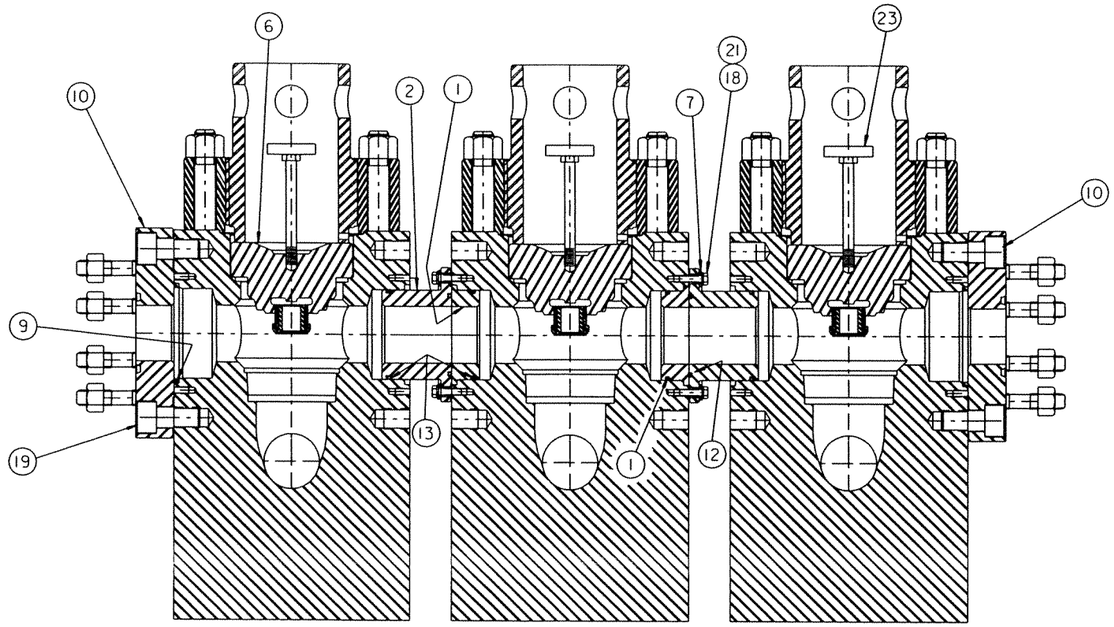


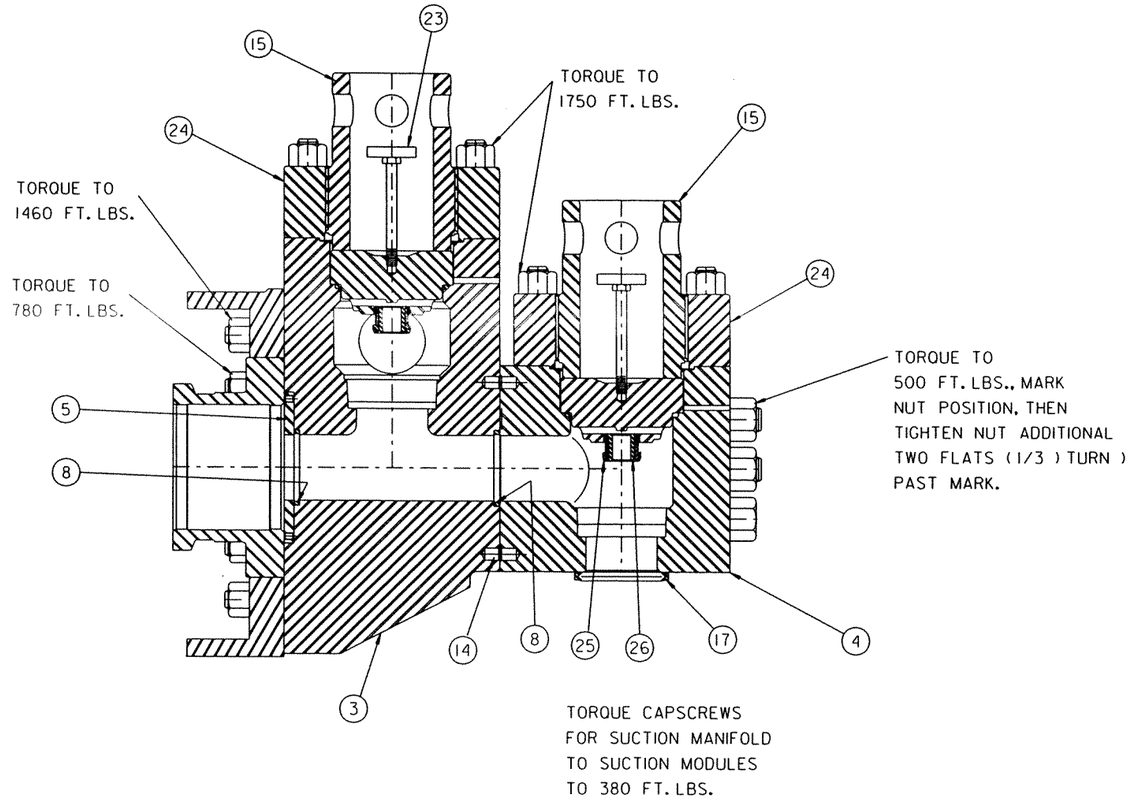
NOTE: OPTIONAL ASSEMBLY, SPECIFY WHEN ORDERING.

NATIONAL OILWELL

TITLE: FLUID END COMPLETE WITH PREMIUM MODULES AND FAST CHANGE VALVE COVERS

SIZE	REFERENCE NO.	DRAWING NO.	REV.
C		PL 1292613	
SCALE	EST. WT. 3,655 LBS.	SHEET 1 OF 1	





6	1292141	INSERT, VALVE GUIDE	26
6	1292140	HOLDER, VALVE GUIDE INSERT	25
6	1292351	RING, THREADED FAST CHANGE	24
6	1292353	PULLER, SEAL RETAINER	23
▲ 1	7700000	WRENCH, HEX KEY 1 INCH LONG ARM	22
24	7619050	WASHER, 1/2" REG. CAD PLATED SPRING LOCK	21
▲ 4	7178025	SCREW, NO. 2 X 1/4" LG. TYPE U ROUND HEAD DRIVE	20
16	7006685	CAPSCREW, 1-1/2" X 3" LG. HEX SOCKET HEAD	19
24	7000306-11	CAPSCREW, 1/2" X 1-3/4" LG. GR 5 CP HEX HEAD	18
3	1540851	PACKING, FLUID CYLINDER HEAD	17
▲ 2	6907325S	GASKET, RING JOINT OVAL STEEL	16
6	1292352	COVER, THREADED FAST CHANGE	15
6	6511416	PIN, 7/8" X 2" LG. STD. HDN. & GRD. DOWEL	14
4	2410031-437	PACKING, RECT. 5.975 x .505 x .26	13
2	2410031-433	PACKING, RECT. 5.475 x .005 x .26	12
6	1540126	PACKING, VALVE COVER PLATE	11
2	1292713	SPACER, STUDDED DISCHARGE	10
2	1292258	SEAL, DISCHARGE SPACER FLANGE	9
6	1290344	SEAL, SUCTION MODULE	8
4	1292717	RING, BACK-UP	7
6	1292734	RETAINER, SEAL	6
3	1292704	PLATE, WEAR	5
3	1292727	MODULE STUDDED, SUCTION	4
3	1292726	MODULE STUDDED, DISCHARGE	3
2	1292703	CONNECTOR, DISCHARGE	2
2	1292702	ADAPTER, DISCHARGE CONNECTOR	1
—	1292737	FLUID END COMPLETE W/ FAST CHANGE COVERS, 12P160-HP (CONSISTS OF THE FOLLOWING)	—
QTY REQ'D	PART NO.	DESCRIPTION	ITEM NO.

BILL OF MATERIAL

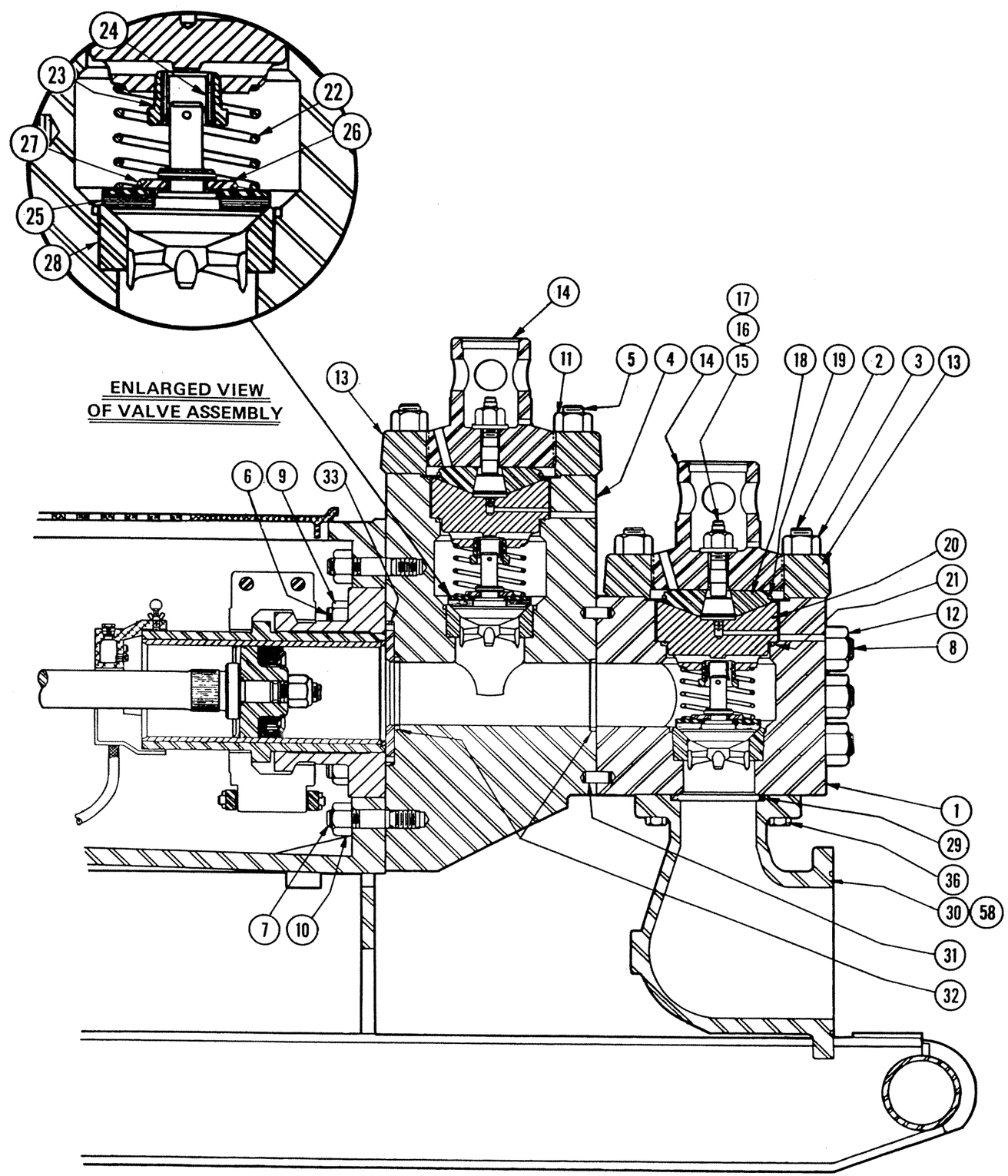
▲ NOT SHOWN

NOTE: OPTIONAL ASSEMBLY, SPECIFY WHEN ORDERING.

NATIONAL OILWELL

TITLE: FLUID END COMPLETE WITH FAST CHANGE VALVE COVERS 12-P-160 HP TRIPLEX MUD PUMP

SIZE	REFERENCE NO.	DRAWING NO.	REV.
D		PL 1292737	
SCALE	EST. WT. 12,188 LBS.	SHEET 1 OF 1	



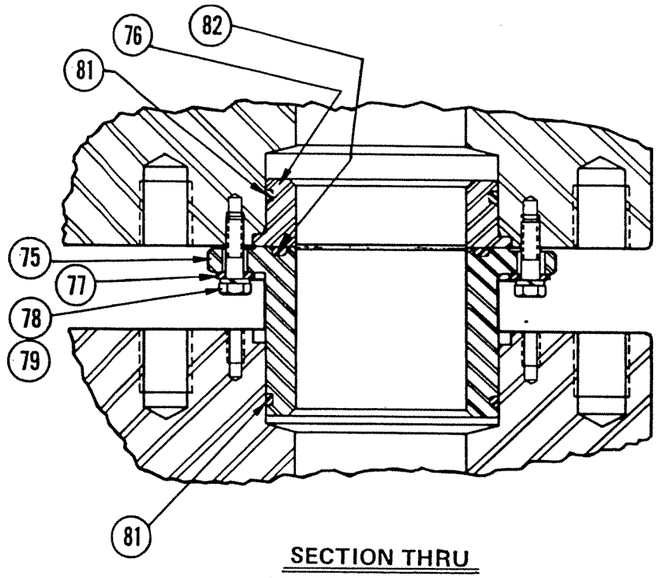
BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292243	MODULE STUDDED, SUCTION (INCLUDES ITEMS 1 THRU 3)
--	--	1292604	MODULE STUDDED, PREMIUM SUCTION (INCLUDES ITEMS 1 THRU 3)*
1	3	1292244	MODULE, SUCTION
	3	1292603	MODULE, PREMIUM SUCTION*
2	36	2408027	STUD, 1-1/2 x 7-7/8 TOP TAPER LOCK
3	36	6300240	NUT, 1-1/2 HEAVY HEX
--	--	1292240	MODULE STUDDED, DISCHARGE (INCLUDES ITEMS 4 THRU 12)
--	--	1292601	MODULE STUDDED, PREMIUM DISCHARGE (INCLUDES ITEMS 4 THRU 12)*
4	3	1292241	MODULE, DISCHARGE
	3	1292600	MODULE, PREMIUM DISCHARGE*
5	36	2408027	STUD, 1-1/2 x 7-7/8 TOP TAPER LOCK
6	18	2408028	STUD, 1-1/8 x 6-3/8 TOP TAPER LOCK
7	30	2408029	STUD, 1-3/8 x 6-3/4 TOP TAPER LOCK
8	18	2408033	STUD, 1-3/4 x 21-1/8 BOTTOM TAPER LOCK
9	18	6300180	NUT, 1-1/8 HEAVY HEX
10	30	6300220	NUT, 1-3/8 HEAVY HEX
11	36	6300240	NUT, 1-1/2 HEAVY HEX
12	18	6300281	NUT, 1-3/4 - 8 UNC HEAVY HEX
13	6	1292176	RING, THREADED
14	6	1292172	COVER, VALVE
15	6	1292171	WASHER
16	6	1292178	SCREW
17	6	6300182	NUT, 1-1/8 - 12 HEAVY HEX
--	--	G-1292268	WEDGE, LOCKING (INCLUDES ITEMS 18 AND 19)
18	6	1292179	WEDGE
19	6	1292181	SPRING, WEDGE RETAINING
20	6	1292174	RETAINER, VALVE
21	6	1540127	SEAL, VALVE RETAINER
22	6	1560702	SPRING, VALVE
23	6	1292140	HOLDER, VALVE GUIDE INSERT
24	6	1292141	INSERT, VALVE GUIDE
--	--	1560985	"G2" VALVE COMPLETE WITH POLYURETHANE DISC* (INCLUDES ITEMS 25 THRU 27)
--	--	1560984	"G2" VALVE COMPLETE WITH HYCAR DISC* (INCLUDES ITEMS 25 THRU 27)
25*	6	1560557	DISC (POLYURETHANE), VALVE*
	6	1560558	DISC (HYCAR), VALVE*
26	6	1560706	LOCK, VALVE
27	6	1560705	RING, SNAP
28	6	1561440	SEAT, VALVE
29	3	1540851	SEAL, SUCTION MANIFOLD
30	1	1292173	MANIFOLD, FRONT SUCTION*
	1	1292312	MANIFOLD/SIDE INLET SUCTION - SEE PAGE 8*
31	6	6511416	PIN, 7/8 x 2" DOWEL
32	6	1292257	SEAL
33	3	1292266	PLATE, WEAR
36	24	7000485-11	CAPSCREW, 7/8 x 3" HEX HEAD CAD PLT GR5
58△	1	7500065	VALVE (SET AT 70 P.S.I.), SUCTION RELIEF△

* OPTIONAL EQUIPMENT, PLEASE SPECIFY THE ITEM SIZE AND DESCRIPTION WHEN ORDERING.
△ NOT ILLUSTRATED.

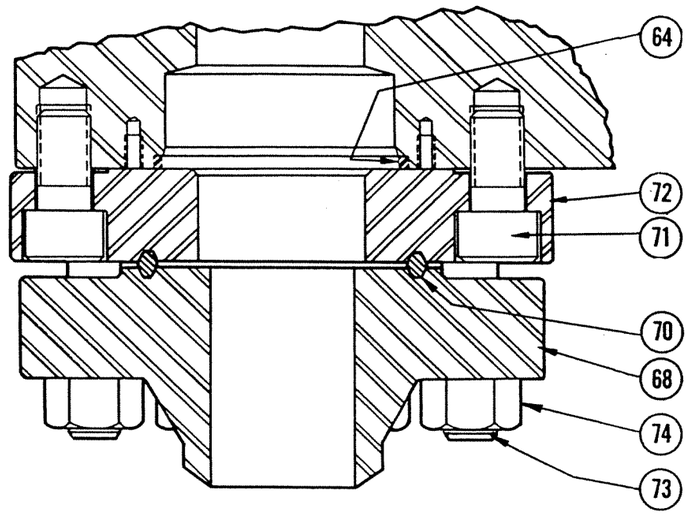
NATIONAL OILWELL
Houston, Texas, U.S.A.

FLUID END ASSEMBLY
WITH (OPTIONAL) "TAPR-LOK" VALVE COVERS
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 3	SIZE:	DRAWING NO.:	REV.:
	F	PL 1292000	U



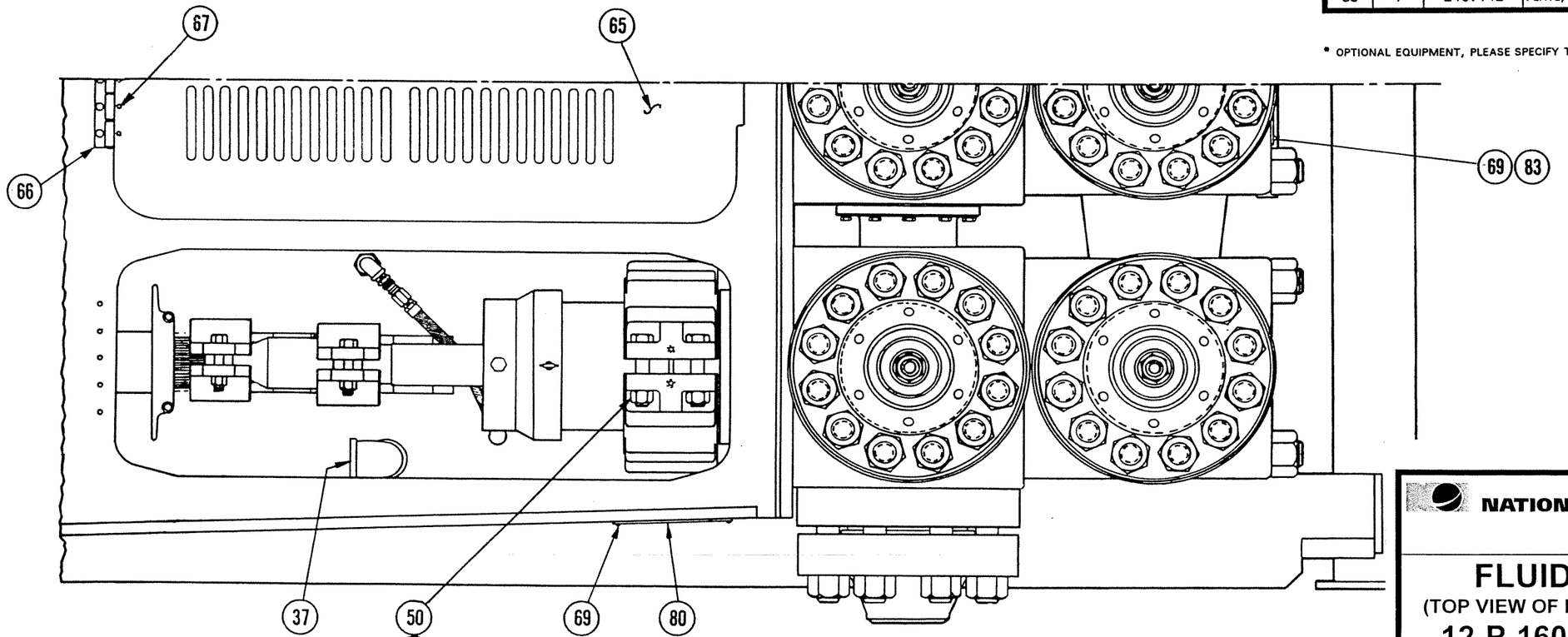
SECTION THRU
DISCHARGE CONNECTOR



SECTION THRU
DISCHARGE OUTLET

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
37*	2	6829016	ELBOW, 2" x 90° 150# M.I.STREET
50	6	6309140	NUT, 7/8 HEX LOCK
51	6	7000491-10	CAPSCREW, 7/8 x 4-1/2 HEX GR5
64	2	1292258	SEAL
--	--	1292130	COVER COMPLETE, ROD CHAMBER (INCLUDES ITEMS 65 THRU 67)
65	3	1292339	COVER, ROD CHAMBER
66	3	1290406	HINGE
67	15	7041102	SCREW, 1/4-20 x 3/8 FLAT HEAD MACHINE
68*	1	5912391	FLANGE, WELD NECK RING JONT DBL. x 5" A.P.I. 5000#*
*	1	5912392	FLANGE, BLIND RING JONIT 5" A.P.I. 5000#*
69	8	7178025	SCREW, NO. 2 x 1/4 ROUND HEAD TYPE "U" DRIVE
70	2	6908040	RING, R44-S OVAL JOINT
71	16	7006685	CAPSCREW, 1-1/2 x 3" SOCKET HEAD
--	--	1292262	SPACER STUDDED, DISCHARGE (INCLUDES ITEMS 72 THRU 74)
72	2	1292246	SPACER
73	16	2408015	STUD, 1-1/2 x 7-1/2 BOTTOM TAPER LOCK
74	16	6300240	NUT, 1-1/2 HEAVY HEX
75	2	1292252	CONNECTOR
76	2	1292253	ADAPTER
77	4	1292175	RING, BACK-UP
78	16	7000307-11	CAPSCREW, 1/2 x 2" HEX HEAD CAD PLT GR5
79	16	7619050	WASHER, 1/2 SPRING LOCK
80	1	G-2407274	PLATE, WARNING
81	4	2410031-437	PACKING
82	2	2410031-433	PACKING
83	1	2407142	PLATE, VALVE COVER INSTRUCTION

* OPTIONAL EQUIPMENT, PLEASE SPECIFY THE ITEM SIZE AND DESCRIPTION WHEN ORDERING.

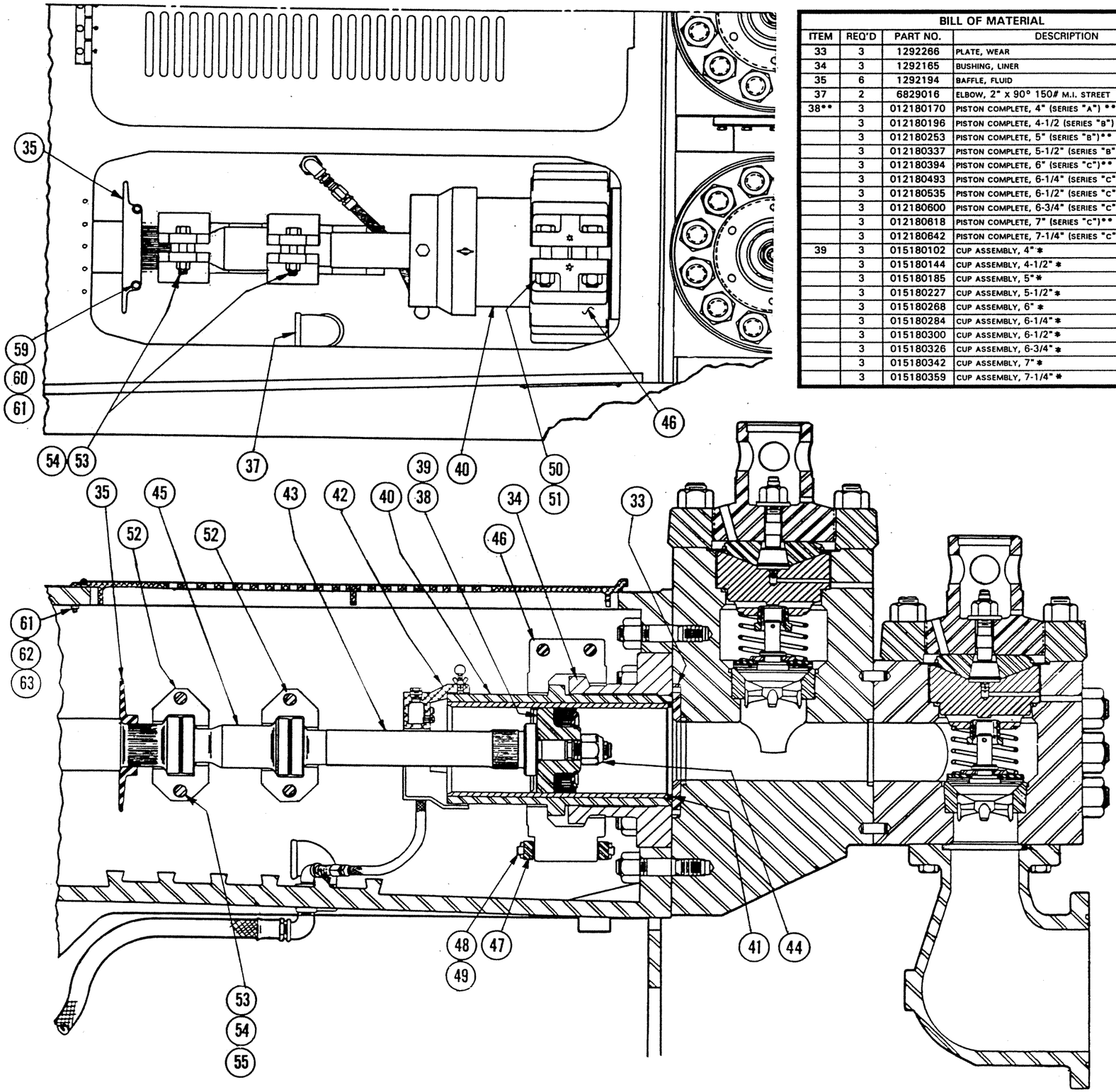


TOP VIEW
OF ROD CHAMBERS AND CYLINDERS

NATIONAL OILWELL
Houston, Texas, U.S.A.

FLUID END ASSEMBLY
(TOP VIEW OF ROD CHAMBERS AND CYLINDERS)
12-P-160 TRIPLEX MUD PUMP

SHEET 2 OF 3	SIZE:	DRAWING NO.:	REV.:
	F	PL 1292000	U



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
33	3	1292266	PLATE, WEAR
34	3	1292165	BUSHING, LINER
35	6	1292194	BAFFLE, FLUID
37	2	6829016	ELBOW, 2" x 90° 150# M.I. STREET
38**	3	012180170	PISTON COMPLETE, 4" (SERIES "A") **
	3	012180196	PISTON COMPLETE, 4-1/2 (SERIES "B") **
	3	012180253	PISTON COMPLETE, 5" (SERIES "B")**
	3	012180337	PISTON COMPLETE, 5-1/2" (SERIES "B")**
	3	012180394	PISTON COMPLETE, 6" (SERIES "C")**
	3	012180493	PISTON COMPLETE, 6-1/4" (SERIES "C")**
	3	012180535	PISTON COMPLETE, 6-1/2" (SERIES "C")**
	3	012180600	PISTON COMPLETE, 6-3/4" (SERIES "C")**
	3	012180618	PISTON COMPLETE, 7" (SERIES "C")**
	3	012180642	PISTON COMPLETE, 7-1/4" (SERIES "C")**
39	3	015180102	CUP ASSEMBLY, 4"*
	3	015180144	CUP ASSEMBLY, 4-1/2"*
	3	015180185	CUP ASSEMBLY, 5"*
	3	015180227	CUP ASSEMBLY, 5-1/2"*
	3	015180268	CUP ASSEMBLY, 6"*
	3	015180284	CUP ASSEMBLY, 6-1/4"*
	3	015180300	CUP ASSEMBLY, 6-1/2"*
	3	015180326	CUP ASSEMBLY, 6-3/4"*
	3	015180342	CUP ASSEMBLY, 7"*
	3	015180359	CUP ASSEMBLY, 7-1/4"*

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
40**	3	05-466-400	LINER, 4"*
	3	05-466-450	LINER, 4-1/2"*
	3	05-466-500	LINER, 5"*
	3	05-466-550	LINER, 5-1/2"*
	3	05-466-600	LINER, 6"*
	3	05-466-625	LINER, 6-1/4"*
	3	05-466-650	LINER, 6-1/2"*
	3	05-466-675	LINER, 6-3/4"*
	3	05-466-700	LINER, 7"*
	3	05-466-725	LINER, 7-1/4"*
41†	3	1540120	GASKET, 4" LINER PACKING †
	3	1540120	GASKET, 4-1/2 LINER PACKING †
	3	07-923-265	GASKET, 5" LINER PACKING †
	3	07-923-263	GASKET, 5-1/2" LINER PACKING †
	3	07-923-261	GASLET, 6" LINER PACKING †
	3	07-923-283	GASKET, 6-1/4" LINER PACKING †
	3	07-923-284	GASKET, 6-1/2" LINER PACKING †
	3	07-923-287	GASKET, 6-3/4" LINER PACKING †
	3	07-923-285	GASKET, 7" LINER PACKING †
	3	1540154	GASKET, 7-1/4" LINER PACKING†
42	3	1292120	SPRAY SYSTEM, LINER (SEE PAGE 4)
43	3	1292147	ROD, PISTON (INCLUDES ITEM 44)
44	3	005-402-052	NUT, 1-1/2" - 8 ELASTIC STOP
45	3	1292146	ROD, PISTON SUB
--	--	1292166	CLAMP COMPLETE, LINER (INCLUDES ITEMS 46 THRU 51)
46	3	1292167	CLAMP, LINER
47	6	G-1292168-P	CONNECTOR
48	6	1292169	PIN
49	12	6571620	PIN, 1/4" x 1-1/4" SPRING
50	6	6309140	NUT, 7/8" HEX LOCK
51	6	7000491-10	CAPSCREW, 7/8" X 4-1/2" HEX HEAD GR5
52	6	1292085	CLAMP COMPLETE, ROD (INCLUDES ITEMS 53 THRU 55)
53	12	7619058	WASHER, 5/8" LOCK
54	12	6309100	NUT, 5/8" HEX LOCK
55	12	7000400-11	CAPSCREW, 5/8" X 2-3/4" CAD PLT GR5 HEX HEAD
59	6	6300041	NUT, 1/4" HEX CAD PLT
60	6	7000124-11	CAPSCREW, 1/4" X 5" HEX HEAD CAD PLT GR5
61	24	7621016	WASHER, 1/4" TYPE "A" CAD PLT
62	15	6310040	NUT, 1/4" FLEXLOC
63	15	7000113-11	CAPSCREW, 1/4" X 2-1/4" HEX HEAD GR5 CAD PLT

*OPTIONAL EQUIPMENT, PLEASE SPECIFY THE ITEM SIZE AND DESCRIPTION WHEN ORDERING.

**OPTIONAL, SPECIFY SIZE WHEN ORDERING. EACH PISTON ASSEMBLY IS PACKAGED WITH ONE 072199508 SEAL.

†OPTIONAL, SPECIFY SIZE WHEN ORDERING. ONE LINER PACKING GASKET IS SHIPPED WITH EACH LINER ORDERED. ADDITIONAL LINER PACKING GASKETS MAY BE ORDERED SEPARATELY FOR SERVICE ITEMS.

NATIONAL OILWELL

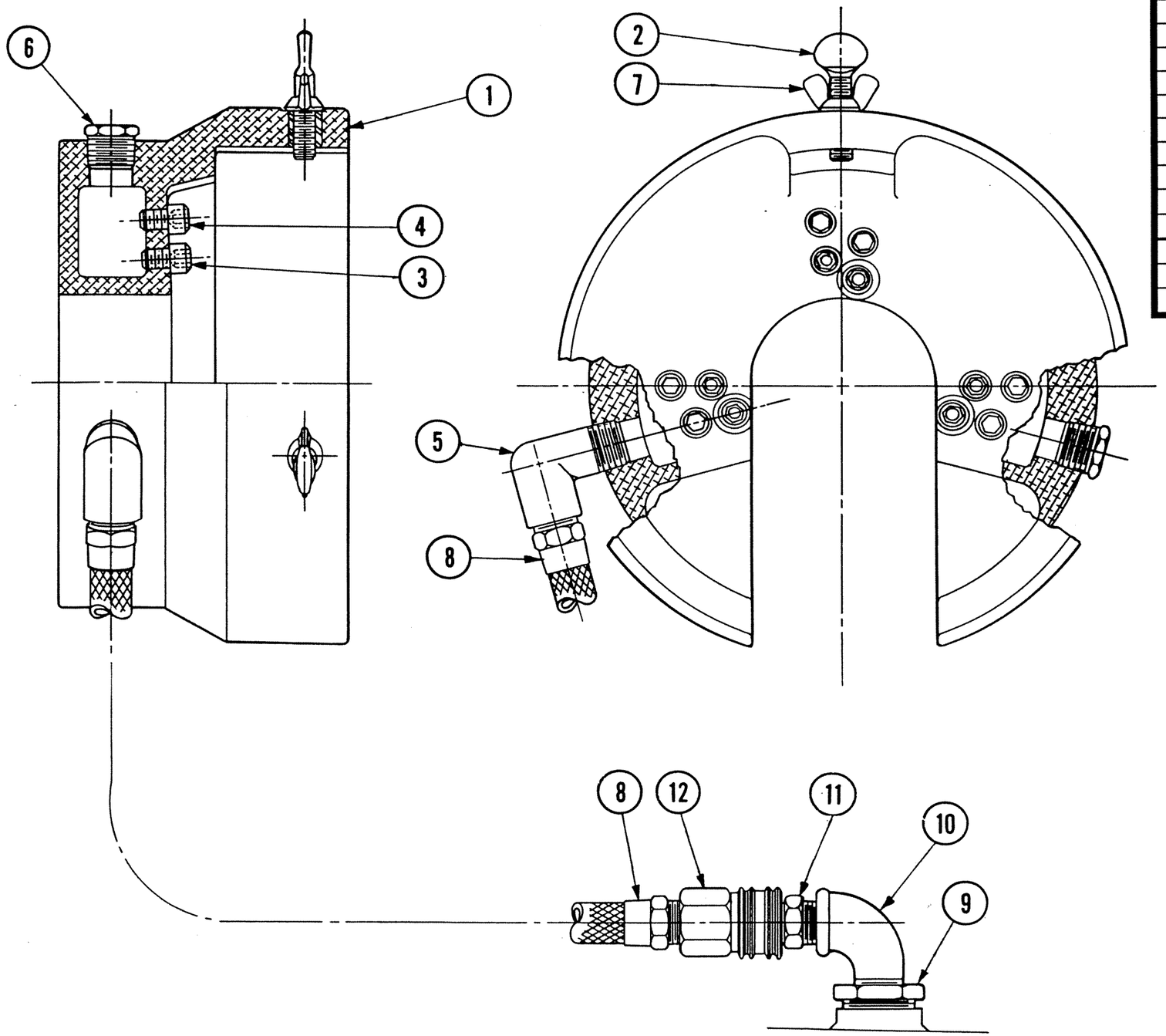
Houston, Texas, U.S.A.

FLUID END ASSEMBLY

(SECTION THRU ROD CHAMBER)

12-P-160 TRIPLEX MUD PUMP

	SHEET 3 OF 3	SIZE:	DRAWING NO.:	REV.:
		F	PL 1292000	U

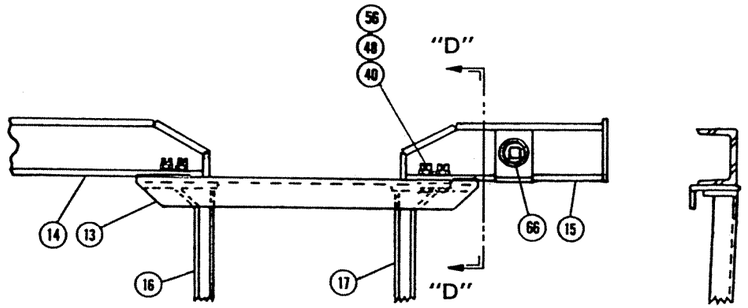


BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292120	SPRAY SYSTEM, LINER (CONSISTS OF THE FOLLOWING)
1	3	1292184	MANIFOLD, SPRAY (INCLUDES ITEMS 2 THRU 7)
2	9	G-7818256	SCREW, 3/8" - 16 X 1-3/4" STAINLESS STEEL THUMB
3	18	1291193	NOZZLE, SPRAY
4	18	7006204-30	CAPSCREW, 3/8" X 1/2" STAINLESS STEEL SOCKET HEAD
5	3	7804075	ELBOW, 1/2" X 90° 150# STAINLESS STEEL STREET
6	6	7815099	PLUG, 1/2 150# STAINLESS STEEL HEX HEAD PIPE
7	9	7813050	NUT, 3/8" - 16 STAINLESS STEEL WING
8	3	G2400075	HOSE, 1/2" X 16-1/2"
9	3	6800083	BUSHING, 1" X 1/2" M.I. HEX PIPE
10	3	6829004	ELBOW, 1/2" X 90° 150# M.I. STREET
11	3	7815094	PLUG, 1/2" M.P.T. QUICK CONNECT
12	3	7818282	SOCKET, 1/2" F.P.T. QUICK CONNECT

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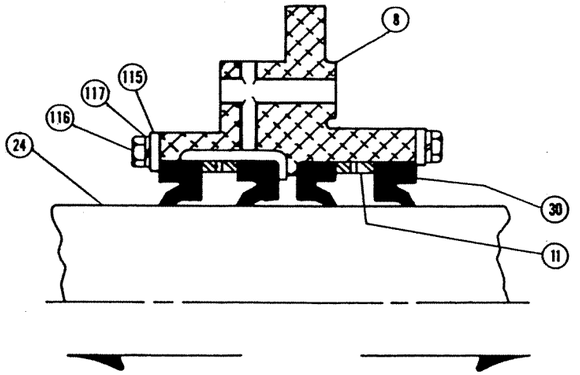
LINER SPRAY SYSTEM
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	D	PL 1292120	D



VIEW "C–C"

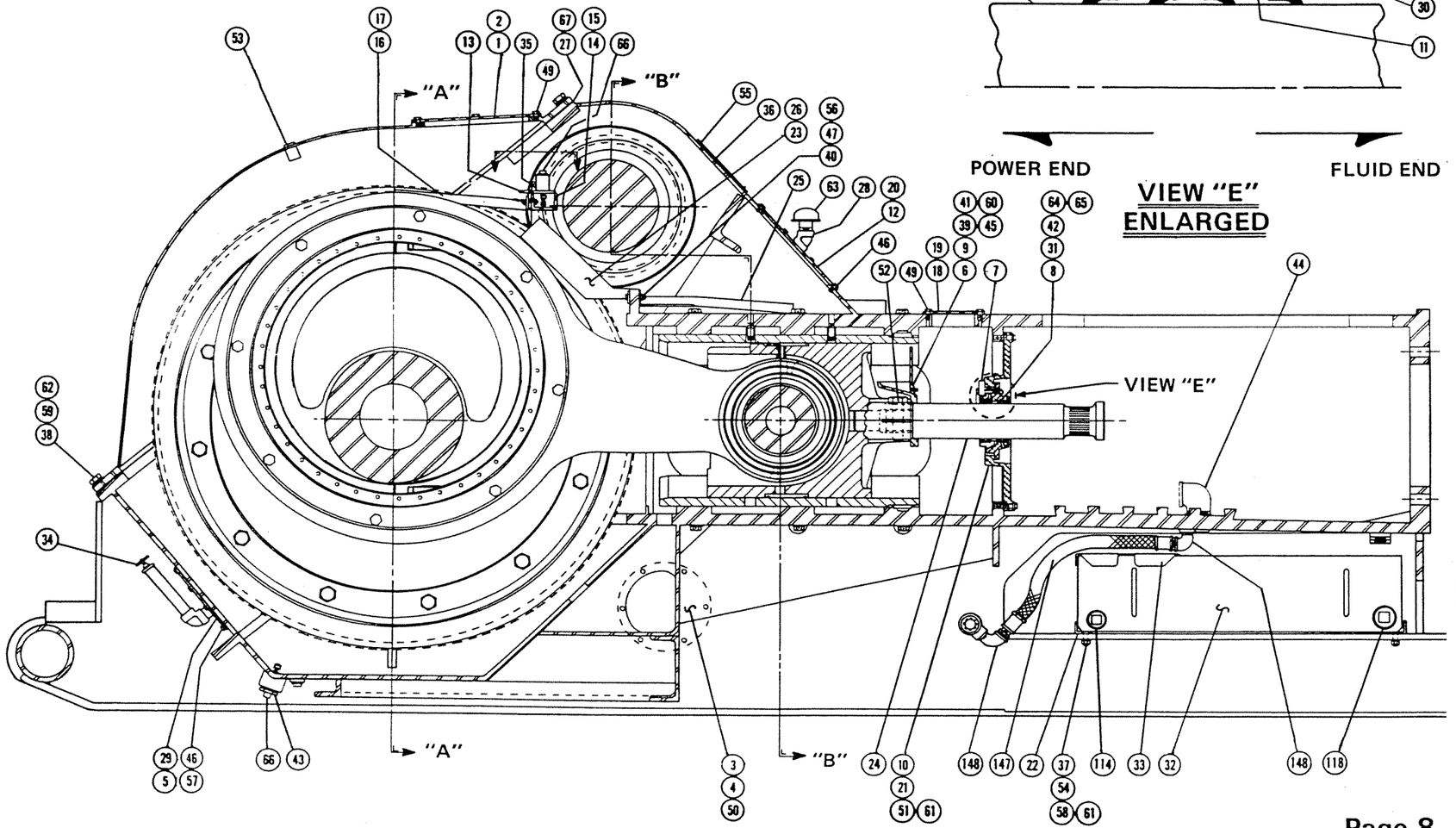
SECTION "D–D"



POWER END

FLUID END

VIEW "E" ENLARGED



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
1	2	1275157	COVER, INSPECTION
2	2	1275158	GASKET, INSPECTION COVER
3	2	1283190	PLATE, CLEAN-OUT
4	2	1283191	GASKET, CLEAN-OUT PLATE
5	1	1284106	GASKET, OIL GAUGE
6	3	1290251	SCREW, OIL PASSAGE
7	9	1291074	BOLT, HOOK
8	3	1292009	RETAINER, OIL WIPER
9	3	1292016	SHIELD, INTERMEDIATE ROD OIL
10	3	1292023	PLATE, RETAINER
11	6	1292269	SPACER, OIL WIPER
12	3	1292064	GASKET, WRENCH HOLE
13	1	1292069	BRACE, OIL TROUGH
14	1	1292070	TROUGH (LEFT HAND), PINION OIL
15	1	1292071	TROUGH (RIGHT HAND), PINION OIL

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
16	1	1292072	WIPER (LEFT HAND), PINION OIL
17	1	1292073	WIPER (RIGHT HAND), PINION OIL
18	3	1292075	COVER, TOP ACCESS
19	3	1292076	GASKET, TOP ACCESS COVER
20	2	1292077	COVER, WRENCH HOLE
21	3	1292079	GASKET, OIL WIPER
22	2	1292080	RAIL, SUMP SUPPORT
23	1	1292082	WIPER (LEFT HAND), GEAR AND PINION
24	3	1292083	ROD, INTERMEDIATE
25	1	1292089	TROUGH (LEFT HAND), CROSSHEAD LUBE OIL
26	1	1292092	WIPER (RIGHT HAND), GEAR AND PINION
27	1	1292095	GASKET, MAIN FRAME COVER
28	1	1292110	COVER (CENTER), WRENCH HOLE
29	1	1292114	PLATE, OIL GAUGE
30	12	1292182	WIPER, INTERMEDIATE ROD OIL
31	3	1292227	GASKET, OIL WIPER RETAINER
32	1	1292282	SUMP, LUBE OIL (INCLUDES ITEMS 114 AND 118)
33	1	1292295	STRAINER, LUBE SUMP
34	1	2400029	DISTICK, OIL LEVEL
35	8	2400040	SCREW, 3/8" x 3/4" DRILLED HEAD
36	1	2407100	PLATE, NAME AND INSTRUCTION
37	8	6300081	NUT, 1/2" CAD PLATED HEX
38	34	7000397-11	CAPSCREW, 5/8" X 2" CAD PLT HEX HEAD GR5
39	6	6310040	NUT, 1/4" - 20 UNC FLEXLOC
40	8	6310060	NUT, 3/8" - 16 UNC FLEXLOC
41	3	6320062	NUT, 3/8" - UNC HEX JAM
42	9	6541612	PIN, 1/4" X 1-1/2
43	1	6800163	BUSHING, 2" X 1" C.I. 150# BLK HEX PIPE
44	2	6829016	ELBOW, 2" X 90° 150# M.I. STREET
45	6	7000114-11	CAPSCREW, 1/4" X 2-1/2" CAD PLT HEX HEAD GR5
46	48	7000208-11	CAPSCREW, 3/8" X 1" CAD PLT HEX HEAD GR5
47	4	7000213-11	CAPSCREW, 3/8" X 2-1/4" CAD PLT HEX HEAD GR5
48	4	7000210-11	CAPSCREW, 3/8" X 1-1/2" CAD PLT HEX HEAD GR5
49	44	7000303-11	CAPSCREW, 1/2" X 1" CAD PLT HEX HEAD GR5
50	12	7000304-11	CAPSCREW, 1/2" X 1-1/4" CAD PLT HEX HEAD GR5
51	12	7000309-11	CAPSCREW, 1/2" X 2-1/4" CAD PLT HEX HEAD GR5
52	6	7000612-10F	CAPSCREW, 1-1/4" - 12 X 4-1/2" HEX HEAD GR5
53	2	7027393	SCREW, 5/8" X 1" CUP POINT SOCKET HEAD
54	8	7035305-01	SCREW, 1/2" X 1-1/2" CAD PLT FLAT HEAD MACHINE
55	6	7178025	SCREW, No. 2 X 1/4" TYPE "U" ROUND HEAD MACHINE
56	16	7600024	WASHER, 3/8" TYPE "A"
57	12	7618014	WASHER, STAT-O-SEAL
58	8	7619050	WASHER, 1/2" CAD PLT SPRING
59	34	7619058	WASHER, 5/8" CAD PLT SPRING
60	12	7621016	WASHER, 1/4" CAD PLT TYPE "A"
61	20	7621032	WASHER, 1/2" CAD PLT TYPE "A"
62	34	7621040	WASHER, 5/8" CAD PLT TYPE "A"
63	1	7802020	BREATHER
64	3	7805052	FITTING, 1/8" HYDRAULIC GREASE
65	3	7805062	FITTING, 1/8" X 45° ELBOW BODY GREASE
66	3	7815057	PLUG, 1" MAGNETIC POST
67	2	7817170	GASKET, 3/16 X 2" X 24" SPONGE RUBBER
114	2	6874012	PLUG, 1-1/2" C.I. SOLID SQUARE HEAD PIPE
115	6	G-1292139	PLATE, OIL WIPER RETAINING
116	18	G-7061091-17	SCREW, No. 10-24 x 5/8" ZINC PLT HEX HEAD MACHINE
117	18	7619025	WASHER, No. 10 CAD PLT SPRING LOCK
118	2	6874016	PLUG, 2" C.I. SOLID SQUARE HEAD PIPE
147	3	1282036	HOSE, 1" X 30"
148	6	6829008	ELBOW, 1" X 90° M.I. STREET

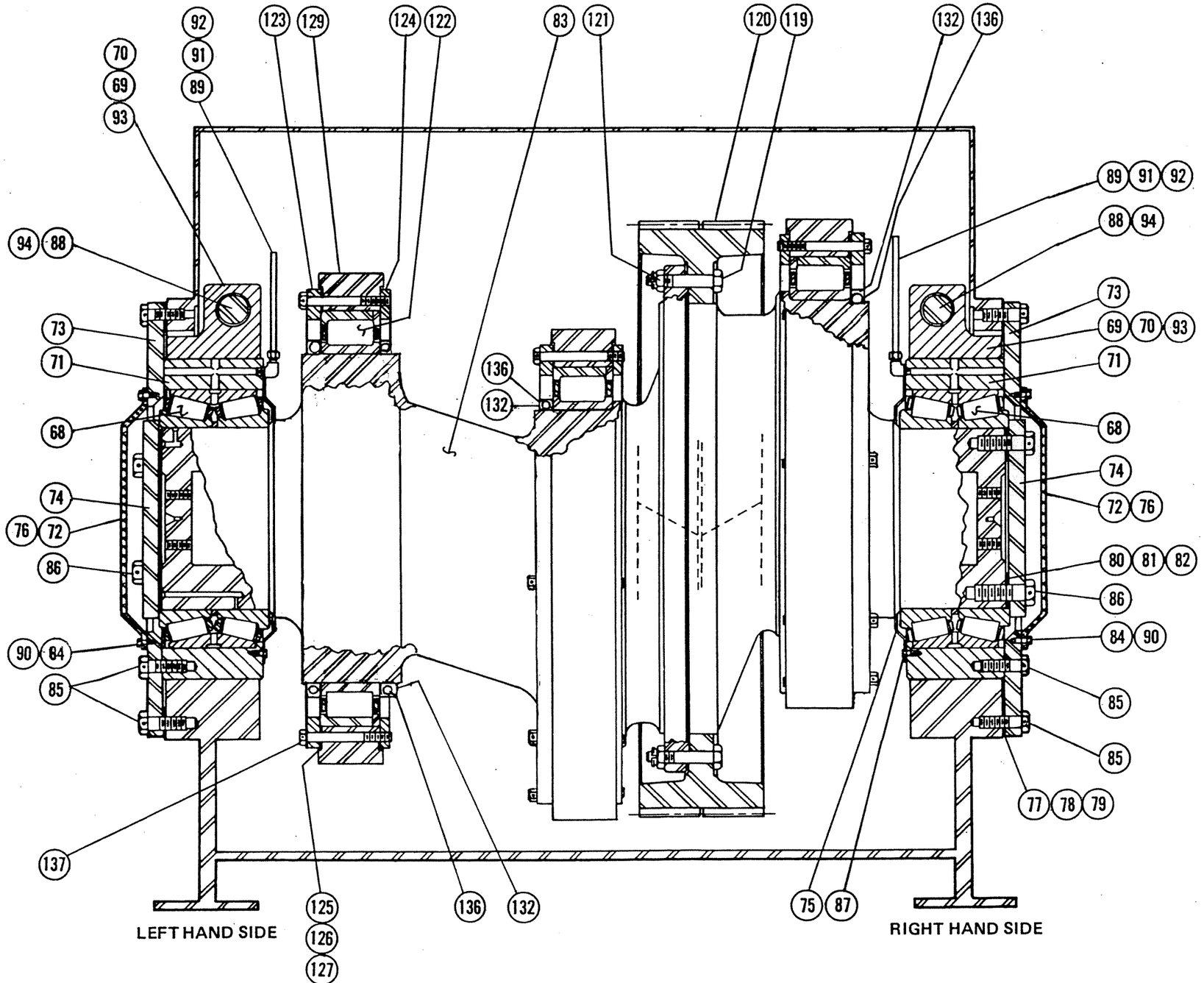
NATIONAL OILWELL

Houston, Texas, U.S.A.

POWER END ASSEMBLY

(SECTION THRU POWER END)
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 3	SIZE:	DRAWING NO.:	REV.:
	F	PL 1292001	X



SECTION "A–A"

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
68	2	ZT-15000	BEARING, MAIN
69	4	1283147	SHIM (.005" THICK), BEARING SUPPORT
70	2	1283148	SHIM (.007" THICK), BEARING SUPPORT
71	2	1292011	CAGE, MAIN BEARING
72	2	1292012	CAP, MAIN BEARING END
73	2	1292021	RING, MAIN BEARING LOCK
74	2	1292022	PLATE, MAIN BEARING RETAINER
75	2	1292081	RETAINER, MAIN BEARING CAGE OIL
76	2	1292096	GASKET, MAIN BEARING END CAP
77	8	1292104	SHIM, (.020" THICK), MAIN BEARING LOCKING RING (YELLOW)
78	10	1292105	SHIM, (.0075" THICK), MAIN BEARING LOCKING RING (CLEAR)
79	14	1292106	SHIM, (.005" THICK), MAIN BEARING LOCKING RING (BLUE)
80	2	1292152	SHIM, (.0625" THICK), MAIN BEARING RETAINER PLATE
81	4	1292153	SHIM, (.020" THICK), MAIN BEARING RETAINER PLATE
82	8	1292154	SHIM, (.005" THICK), MAIN BEARING RETAINER PLATE
83	1	1292005	CRANKSHAFT (INCLUDES 4 OF ITEM 132)
84	24	2400690	SCREW, 3/8" x 1" DRILLED HEAD
85	48	2402180	SCREW, 1" x 3" DRILLED HEAD
86	8	2405024	SCREW, 1-3/8" x 3-1/2" DRILLED HEAD
87	16	5506202	BOLT, 3/8" x 3/4" PLACE
88	2	6310360	NUT, 2-1/4" - 8 UNC FLEXLOC
89	2	7400842	TUBING, 1/2" O.D. X 19" SMLS. STEEL
90	24	7600024	WASHER, 3/8" TYPE "A"
91	2	7804146	ELBOW, 1/2" T. X 3/8" P.T. X 90° MALE COMPRESSION
92	2	G-7804202	ELBOW, 1/2" T. X 3/8" P.T. X 45° MALE COMPRESSION
93	2	1292014	SPACER, MAIN & PINION BEARING SUPPORT
94	2	1292024	BOLT, MAIN BEARING SUPPORT
119	12	1292006	BOLT, CRANKSHAFT GEAR
120	1	1292008	GEAR (141 TEETH), CRANKSHAFT
121	12	6310181	NUT, 1-1/8" 7 UNC FLEXLOC
122	3	ZB-28515	BEARING, CONNECTING ROD
123	3	1286230	RETAINER (OUTER), CONNECTING ROD BEARING
124	3	1286237	RETAINER (INNER), CONNECTING ROD BEARING
125	3	1287149	SHIM (.020" THICK), OUTER CONNECTING ROD RETAINER (YELLOW)
126	9	1287150	SHIM (.0075" THICK), OUTER CONNECTING ROD RETAINER (CLEAR)
127	9	1287151	SHIM (.005" THICK), OUTER CONNECTING ROD RETAINER (BLUE)
129	3	1292007	ROD, CONNECTING
132	4	10-306-037	RETAINER, CONNECTING ROD (INCLUDES TWO ITEM 136)
136	8	75-632-445	SCREW, 1/2" - 13 x 2-1/4" SELF LOC
137	24	2405013	SCREW, 3/4" x 6-1/2" DRILLED HEAD

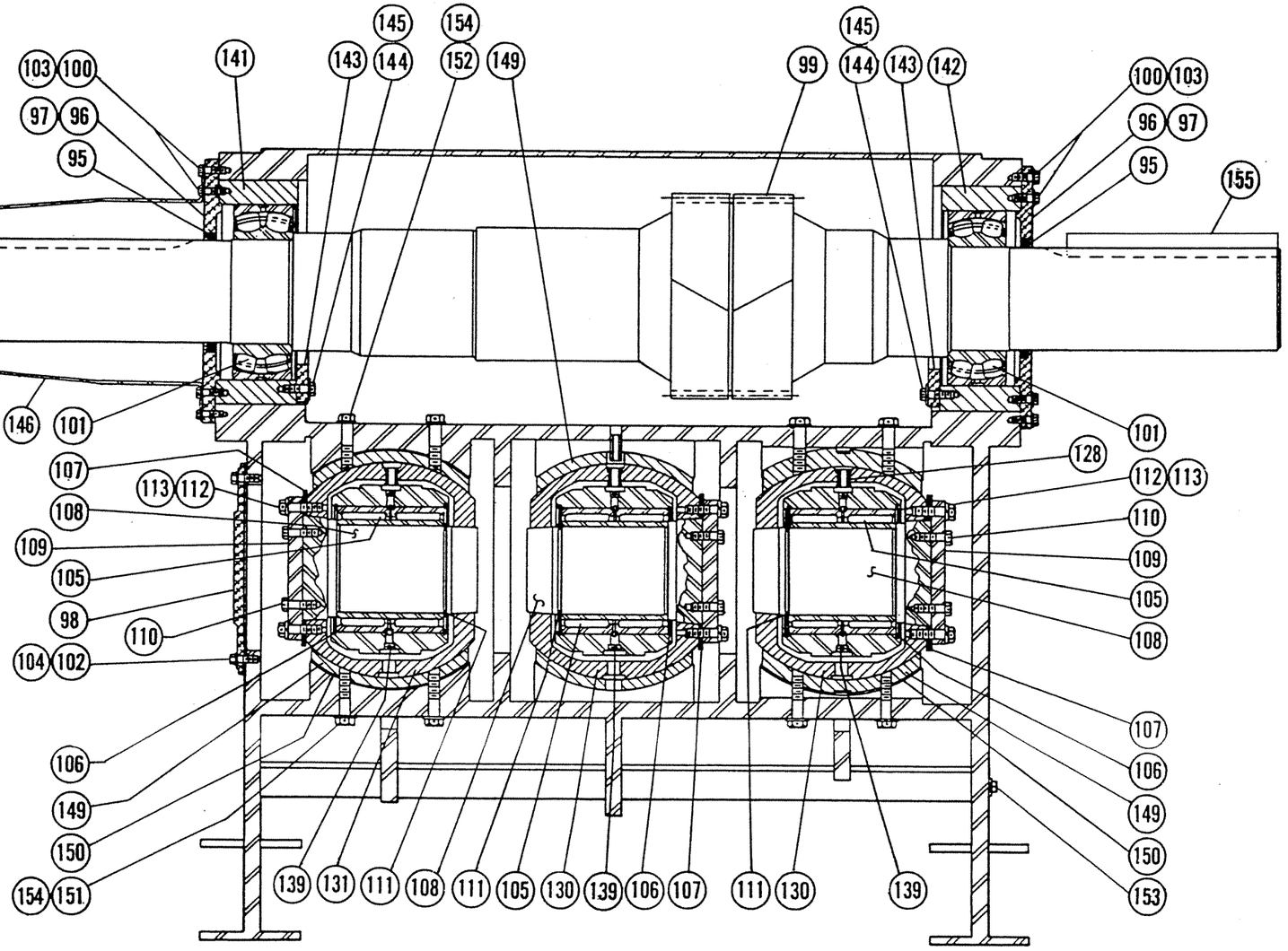
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Houston, Texas, U.S.A.

POWER END ASSEMBLY

(SECTION THRU CRANKSHAFT) 12-P-160 TRIPLEX MUD PUMP

SHEET 2 OF 3	SIZE:	DRAWING NO.:	REV.:
	F	PL 1292001	X



LEFT HAND SIDE

RIGHT HAND SIDE

SECTION "B–B"

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
95	2	YS-10004	SEAL, PINION BEARING OIL
96	2	1292020	RETAINER, PINION BEARING SEAL
97	2	1292097	GASKET, BEARING RETAINER
98	2	1292113	COVER, CROSSHEAD HAND HOLE
99	1	1292010	PINION (41 TEETH)
100	32	2405016	SCREW, 3/4" x 2" DRILLED HEAD
101	2	ZB-10236	BEARING, PINION
102	8	7000396-11	CAPSCREW, 5/8" x 1-3/4" CAD PLT HEX HEAD GR5
103	32	7621044	WASHER, 3/4" TYPE "A" CAD PLT
104	8	7618022	WASHER, 5/8 STAT-O-SEAL
105	3	ZB-8253	BEARING, CROSSHEAD PIN
106	6	1287109	RING, CROSSHEAD PIN BEARING SNAP
107	6	1290114	SHIM, CROSSHEAD PIN RETAINER
108	3	1292028	PIN, CROSSHEAD
109	3	1292112	RETAINER, CROSSHEAD PIN
110	6	5506714	BOLT, 3/4" x 2-1/2" PLACE
111	3	6912019	RING, RETAINING
112	6	2402470	CAPSCREW, 3/4" x 3" DRILLED HEX HEAD
113	6	7619068	WASHER, 3/4" EXTRA DUTY SPRING
128	3	1290089	CONDUCTOR, OIL
130	2	1292015	CROSSHEAD, RIGHT HAND AND CENTER
131	1	1292090	CROSSHEAD, LEFT HAND
139	3	6875003	PLUG, 3/8" COUNTERSUNK PIPE
141	1	1292018	CAGE (LEFT HAND), PINION BEARING
142	1	1292019	CAGE (RIGHT HAND), PINION BEARING
143	2	1292027	PLATE, PINION BEARING CAGE
144	8	2402680	CAPSCREW, 5/8" x 2" DRILLED HEX HEAD
145	8	7600040	WASHER, 5/8" TYPE "A"
146††	1	x12-2537	CAP, PINION SHAFT ††
149	6	1292017	LINER, CROSSHEAD
150	15	1292103	SHIM, CROSSHEAD LINER
151	18	2405022	CAPSCREW, 7/8" x 4" DRILLED HEX HEAD
152	18	2405023	CAPSCREW, 7/8" x 4-1/4" DRILLED HEX HEAD
153	1	6873008	PLUG, 1" C.I. CORED SQUARE HEAD PIPE
154	36	7618026	WASHER, 7/8" STAT-O-SEAL
155	1	2404073	KEY, 1-1/8" x 2 x 15-1/4" LONG

†† FURNISHED ONLY WHEN PUMP IS SHIPPED WITHOUT A DRIVE OR CHARGING PUMP.

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Houston, Texas, U.S.A.

POWER END ASSEMBLY

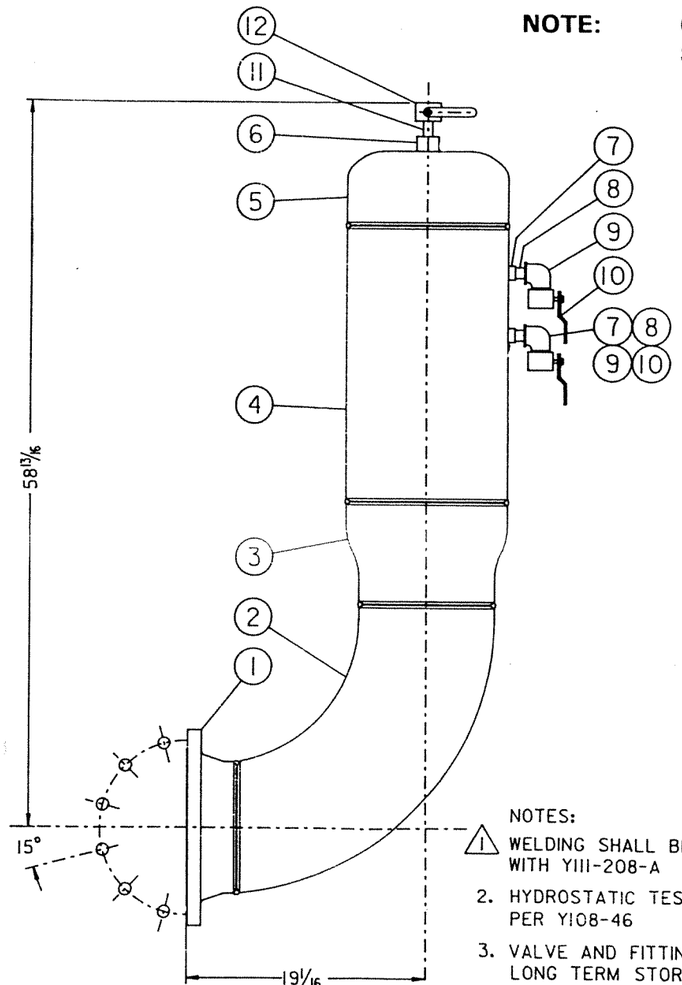
(SECTION THRU PINION & CROSSHEADS)

12-P-160 TRIPLEX MUD PUMP

SHEET 3 OF 3	SIZE:	DRAWING NO.:	REV.:
	F	PL 1292001	X

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292369	STABILIZER ASSEMBLY, SUCTION (CONSISTS OF THE FOLLOWING)
1	1	5902487	FLANGE, 10" 150# R.J. WELD NECK
2	1	98-016-232	ELBOW, 10" X 90 DEG. SCH. 40 LONG RADIUS
3	1	98-052-100	REDUCER, 12" X 10" SCH. 40 CONCENTRIC
4	1	6709658B	PIPE, 12" STD. WEIGHT
5	1	98-012-034	CAP, 12" STD. WEIGHT
6	1	78-105-206	COUPLING, 3/4" 3000# HALF
7	2	78-105-204	COUPLING, 1/2" 3000# HALF
8	2	86-424-001	NIPPLE, 1/2" X CLOSE SCH. 40 BW STEEL PIPE
9	2	78-179-004	ELBOW, 1/2" X 90 DEG. 3000# STREET
10	2	78-101-081	VALVE, 1/2" BALL
11	1	86-425-013	NIPPLE, 3/4" X 4" SCH. 40 BW STEEL PIPE
12	1	78-101-082	VALVE, 3/4" BALL

NOTE: **OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.**

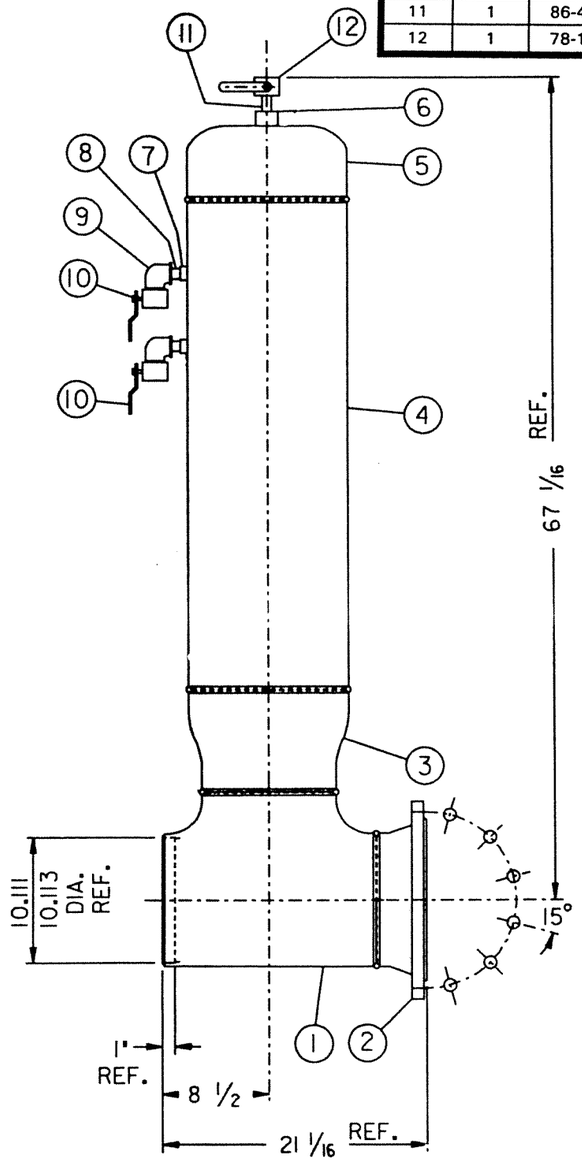


NOTES:

1. WELDING SHALL BE IN ACCORDANCE WITH YIII-208-A
2. HYDROSTATIC TEST PRESSURE 425 PSI PER YI08-46
3. VALVE AND FITTINGS TO BE BOXED FOR LONG TERM STORAGE WITH WEATHER PROOF PAPER AND STORED WITH UNIT FOR FIELD ASSEMBLY

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292368	STABILIZER ASSEMBLY, SUCTION (CONSISTS OF THE FOLLOWING)
1	1	98-Q55-032	TEE, 10" SCH. 40 WELDING
2	1	5902487	FLANGE, 10" ANSI CLASS 150# R.J. WELD NECK STD. WT.
3	1	98-052-100	REDUCER, 12" X 10" STD. WT. CONCENTRIC
4	1	6709658B	PIPE, 12" STD. WEIGHT
5	1	98-012-034	CAP, 12" STD. WEIGHT
6	1	78-105-206	COUPLING, 3/4" 3000# HALF
7	2	78-105-204	COUPLING, 1/2" 3000# HALF
8	2	86-424-001	NIPPLE, 1/2" X CLOSE SCH. 40 BW STEEL PIPE
9	2	78-179-004	ELBOW, 1/2" X 90 DEG. 3000# STREET
10	2	78-101-081	VALVE, 1/2" BALL
11	1	86-425-013	NIPPLE, 3/4" X 4" SCH. 40 BW STEEL PIPE
12	1	78-101-082	VALVE, 3/4" BALL

NOTE: **OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.**



NOTES:

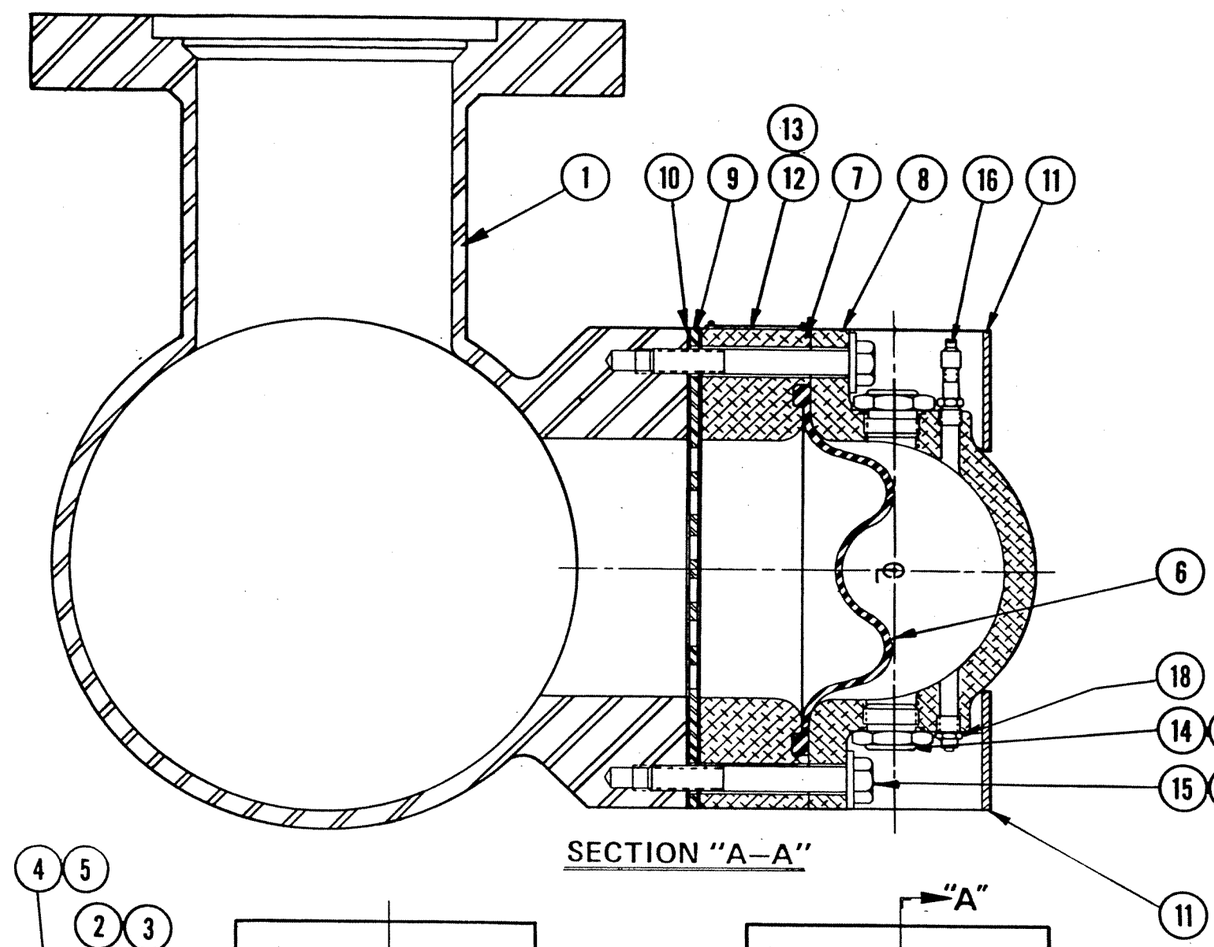
1. WELDING SHALL BE IN ACCORDANCE WITH YIII-208-A.
2. HYDRO. TEST TO 350 P.S.I.
3. VALVE AND FITTINGS TO BE BOXED FOR LONG TERM STORAGE WITH WEATHER PROOF PAPER AND STORED WITH UNIT FOR FIELD ASSEMBLY.

NATIONAL OILWELL

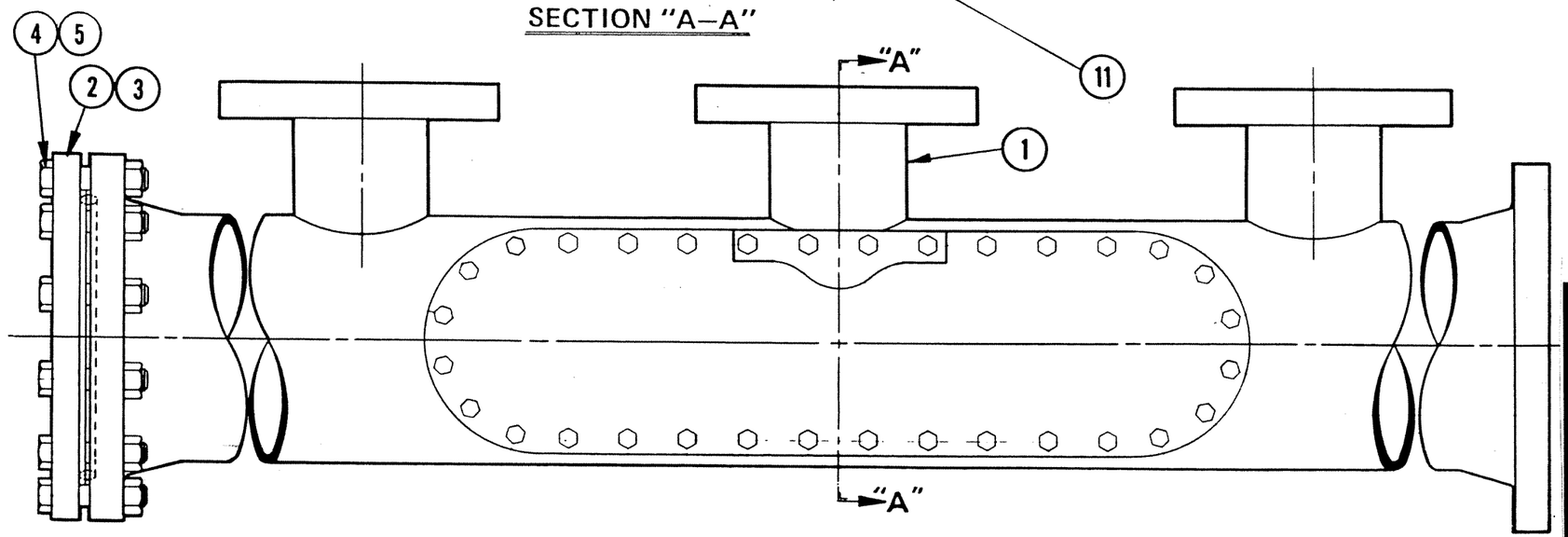
Houston, Texas, U.S.A.

SUCTION STABILIZER ASSY'S (OPTIONAL EQUIPMENT) 12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	B		



SECTION "A–A"



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292312	MANIFOLD WITH DAMPENER, DOUBLE SIDE INLET SUCTION* (CONSISTS OF THE FOLLOWING)
1	1	1292313	MANIFOLD, DAMPENER
2	1	5902485	FLANGE, 10" A.S.A. 150# RING JOINT BLIND
3	1	6908046	RING, R52-S OVAL JOINT
4	12	7000491-10	CAPSCREW, 7/8" X 4-1/2" HEX HEAD GR5
5	12	6300149	NUT, 7/8" CAD PLT HEX
6	1	1290195	DIAPHRAGM
7	1	1290196	SPACER
8	1	1290197	COVER
9	1	1290198	RETAINER
10	2	1290199	GASKET
11	2	1290228	GUARD
12	1	2407136	PLATE, INSTRUCTION
13	8	7178025	SCREW, NO. 2" X 1/4" TYPE "U" ROUND HEAD DRIVE
14	2	2410031-024	PACKING
15	32	7000361-11	CAPSCREW, 9/16" X 4" CAD PLT HEX HEAD GR5
16	1	7500021	VALVE, CHECK
17	32	7600036	WASHER, 9/16" TYPE "A"
18	1	7500396	VALVE, 1/4" RELIEF
19	2	7815106	PLUG, SIGHT
20**	1	6817124	NIPPLE, 2" X 5-1/2" STD. BW PIPE **
21**	2	6874016	PLUG, 2" C.I. SOLID SQUARE HEAD PIPE**
22**	1	6888016	TEE, 2" 150# M.I. PIPE **

*OPTIONAL, SPECIFY WHEN ORDERING

**NOT ILLUSTRATED

NOTE: OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.

NATIONAL OILWELL

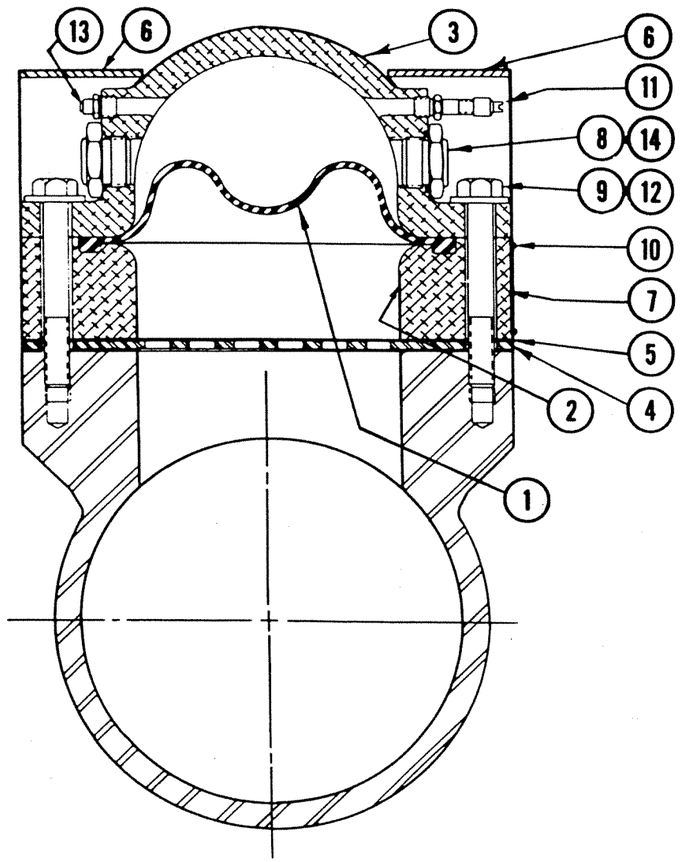
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DAMPENER MANIFOLD ASSY.

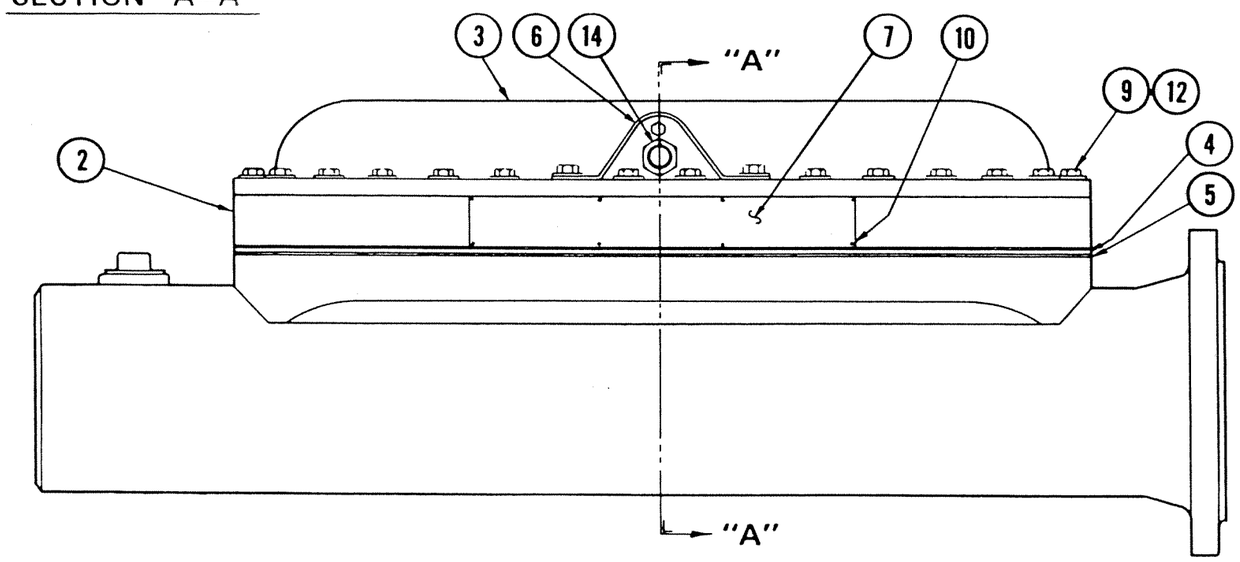
(OPTIONAL DOUBLE SIDE INLET SUCTION)

12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	C	PL 1292312	G



SECTION "A–A"



BILL OF MATERIAL

ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	1290195	DIAPHRAGM
2	1	1290196	SPACER
3	1	1290197	COVER
4	1	1290198	RETAINER
5	2	1290199	GASKET
6	2	1290228	GUARD
7	1	2407136	PLATE, INSTRUCTION
8	2	2410031-024	PACKING
9	32	7000361-11	CAPSCREW, 9/16" X 4" HEX HEAD CAD PLT GR5
10	8	7178025	SCREW, No. 2" X 1/4" TYPE "U" ROUND HEAD DRIVE
11	1	7500021	VALVE, CHECK
12	32	7621036	WASHER, 9/16" TYPE "A"
13	1	7500396	VALVE, 1/4" RELIEF
14	2	7815106	PLUG, SIGHT

--	--	1292230	DAMPENER, 8" RIGHT HAND SIDE INLET FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292231	BODY, DAMPENER
	1	6010023	GASKET, 8" FLAT RING
	8	6300121	NUT, 3/4" CAD PLT HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-S
	8	7000445-11	CAPSCREW, 3/4" X 3-1/4" CAD PLT HEX HEAD GR5
	12	7000486-10	CAPSCREW, 7/8" X 3-1/4" CAD PLT HEX HEAD GR5

--	--	1292206	DAMPENER, 8" LEFT HAND SIDE INLET FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292205	BODY, DAMPENER
	1	6010023	GASKET, 8" FLAT RING
	8	6300121	NUT, 3/4" CAD PLT HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-S
	8	7000445-11	CAPSCREW, 3/4" X 3-1/4" CAD PLT HEX HEAD GR5
	12	7000486-10	CAPSCREW, 7/8" X 3-1/4" CAD PLT HEX HEAD GR5

--	--	1292298	DAMPENER, 10" RIGHT HAND SIDE INLET FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	G-1292299	BODY, DAMPENER
	1	6010030	GASKET, 10" FLAT RING
	12	6300149	NUT, 7/8" CAD PLT HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-S
	12	7000486-10	CAPSCREW, 7/8" X 3-1/4" CAD PLT HEX HEAD GR5
	12	7000487-10	CAPSCREW, 7/8" X 3-1/2 HEX HEAD GR5

--	--	1292296	DAMPENER, 10" LEFT HAND SIDE INLET FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	G-1292297	BODY, DAMPENER
	1	6010030	GASKET, 10" FLAT RING
	12	6300149	NUT, 7/8" CAD. PLATED HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-S
	12	7000486-10	CAPSCREW, 7/8" X 3-3/4" CAD PLT HEX HEAD GR5
	12	7000487-10	CAPSCREW, 7/8 X 3-1/2 HEX HEAD GR5

--	--	1292275	DAMPENER, DOUBLE PLAIN END FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292277	BODY, DAMPENER
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE

--	--	1292212	DAMPENER, SINGLE FLANGE FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292213	BODY, DAMPENER
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-S
	12	7000486-10	CAPSCREW, 7/8" X 3-1/4" CAD PLT HEX HEAD GR5

--	--	1292203	DAMPENER, DOUBLE FLANGED FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292200	BODY, DAMPENER
	12	6300149	NUT, 7/8" CAD. PLATED HEX
	1	6817121	NIPPLE, 2" X 3" STD. PIPE
	2	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6888016	TEE, 2" STD. M.I. PIPE
	2	6908046	RING, R52-S
	12	7000486-10	CAPSCREW, 7/8" X 3-1/4" CAD PLT HEX HEAD GR5
	12	7000490-10	CAPSCREW, 7/8" X 4-1/4" HEX HEAD GR5

--	--	1290208	DAMPENER, SUCTION LINE FOR FIELD INSTALLATION* TO EXISTING 10" PIPE (CONSISTS OF THE FOLLOWING)
	1	1290209	PLATE, MOUNTING

--	--	1292233	DAMPENER, SUCTION LINE FOR FIELD INSTALLATION* TO EXISTING 12" PIPE (CONSISTS OF THE FOLLOWING)
	1	1292234	PLATE, MOUNTING

*OPTIONAL EQUIPMENT, SPECIFY SIZE AND DESCRIPTION WHEN ORDERING.
EACH DAMPENER INCLUDES ITEMS 1 THRU 14.

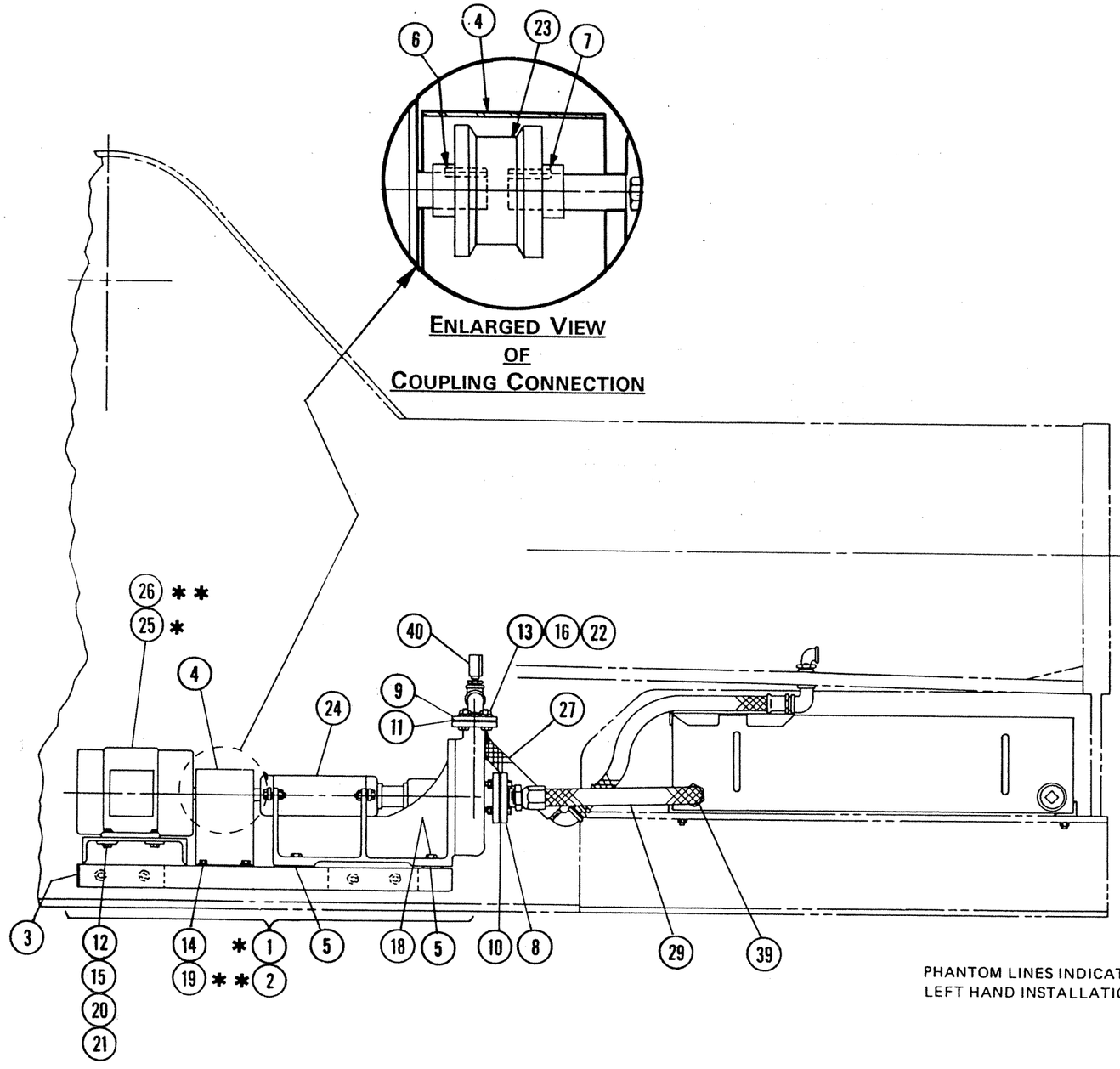
NOTE: DAMPENER ASSEMBLY 1292212 IS SHOWN PICTORIALLY.

NOTE: OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.

NATIONAL OILWELL
Houston, Texas, U.S.A.

DAMPENER MANIFOLD ASSY'S
(OPTIONAL EQUIPMENT)
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE: B	DRAWING NO.:	REV.:



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292290	LINER FLUSHING SYSTEM (INCLUDES THE FOLLOWING EXEPT ITEMS 2 & 26)
--	--	1292310	LINER FLUSHING SYSTEM (INCLUDES THE FOLLLOWING EXCEPT ITEMS 1 & 25)
1*	1	1292288	PUMP COMPLETE (INCLUDES ITEMS 3 THRU 25)
2**	1	1292309	PUMP COMPLETE (INCLUDES ITEMS 3 THRU 24 & 26)
3	1	1292285	BASE, PUMP AND MOTOR
4	1	1292286	GUARD, DRIVE SHAFT
5	4	1292283	SHIM, PUMP
6	1	2401860	KEY (1/4" X 1/4" X 1-1/4" LG.)
7	1	2401860	KEY (1/4" X 1/4" X 1-1/4" LG.)
8	1	5902172	FLANGE, 1-1/2" A.S.A. 150# THREADED FLAT FACE
9	1	5902091	FLANGE, 1" A.S.A. 150# THREADED FLAT FLACE
10	1	6010036	GASKET, 1-1/2" 150# FULL FACE FLANGE
11	1	6010037	GASKET, 1" 150# FULL FACE FLANGE
12	4	6300062	NUT, 3/8" CAD. PLATED HEX
13	8	6300081	NUT, 1/2" CAD. PLATED HEX
14	4	7000207-11	CAPSCREW, 3/8" X 7/8" LG. CAD. PLTD GR5 HEX HEAD
15	4	7000211-11	CAPSCREW, 3/8" X 1-3/4" LG. CAD. PLTD GR5 HEX HEAD
16	4	7000307-11	CAPSCREW, 1/2" X 2" LG. CAD. PLTD GR5 HEX HEAD
17	4	7000309-11	CAPSCREW, 1/2" X 2-1/4" LG. CAD. PLTD. GR5 HEX HEAD
18	4	7000396-11	CAPSCREW, 5/8" X 1-3/4" LG. CAD. PLTD GR5 HEX HEAD
19	4	7600026	WASHER, 3/8" TYPE "A"
20	4	1292293	WASHER, 1/4" X 1-3/4" SQUARE
21	4	7619041	WASHER, 3/8" REG. CAD. PLTD SPRING LOCK
22	8	7619050	WASHER, 1/2" REG. CAD. PLTD SPRING LOCK
23	1	7802327	COUPLING
24	1	7815147	PUMP, 1" X 1-1/2" CENTRIFUGAL
25*	1	7812008	MOTOR, ELECTRIC
26**	1	7812009	MOTOR, ELECTRIC
27	1	1284036	HOSE, 1" X 18" LG. (FOR REAR MOUNT PUMP DRIVE)
	1	1282036	HOSE, 1" X 30" LG. (FOR TOP MOUNT PUMP DRIVE)
28	2	1292284	SUPPORT, MOTOR & PUMP
29	1	1292294	HOSE, 1-1/2" X 26" LG. (FOR REAR MOUNT PUMP DRIVE)
	1	1292292	HOSE, 1-1/2" X 37" LG. (FOR TOP MOUNT PUMP DRIVE)
30	4	6310120	NUT, 3/4" - 10 UNC FLEXLOC
31	1	6800081	BUSHING, 1" X 1/4" M.I. 150# BLK. HEX PIPE
32	1	6817077	NIPPLE, 1" X 3-1/2" STD. BLK. PIPE
33	1	6829008	ELBOW, 1" X 90° M.I. 150# STREET
34	1	6839008	ELBOW, 1" X 45° M.I. 150# STREET
35	1	6859008	CROSS, 1" 150# PIPE
36	1	6873008	PLUG, 1" CORED SQUARE HEAD PIPE
37	4	7000439-11	CAPSCREW, 3/4" X 1-3/4" GR. 5 CAD. PLTD HEX HEAD
38	4	7621044	WASHER, 3/4" TYPE "A" CAD. PLTD
39	1	7800070	ADAPTER, MALE PIPE
40	1	7806002	GAUGE (0-100 P.S.I.), 2-1/2" PRESSURE

* INCLUDES ELECTRIC MOTOR 7812008: 230/460V., 3 H.P., 182 TC. 60 HZ & 1735 R.P.M. THREE PHASE ELECTRIC MOTOR

** INCLUDES ELECTRIC MOTOR 7812009: 575 V., 3 H.P., 182 TC., 60 HZ & 1735 R.P.M.

NOTE: OPTIONAL EQUIPMENT,
SPECIFY WHEN ORDERING.

NATIONAL OILWELL

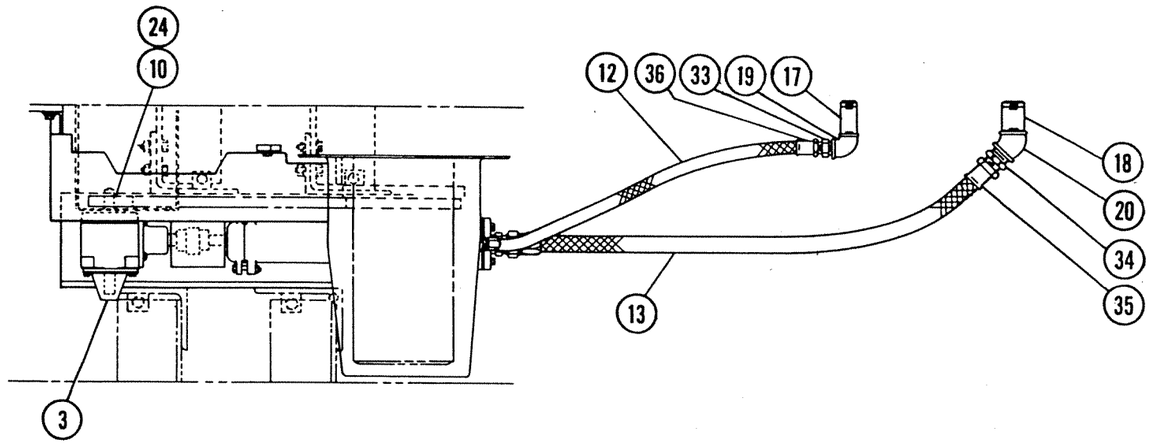
Houston, Texas, U.S.A.

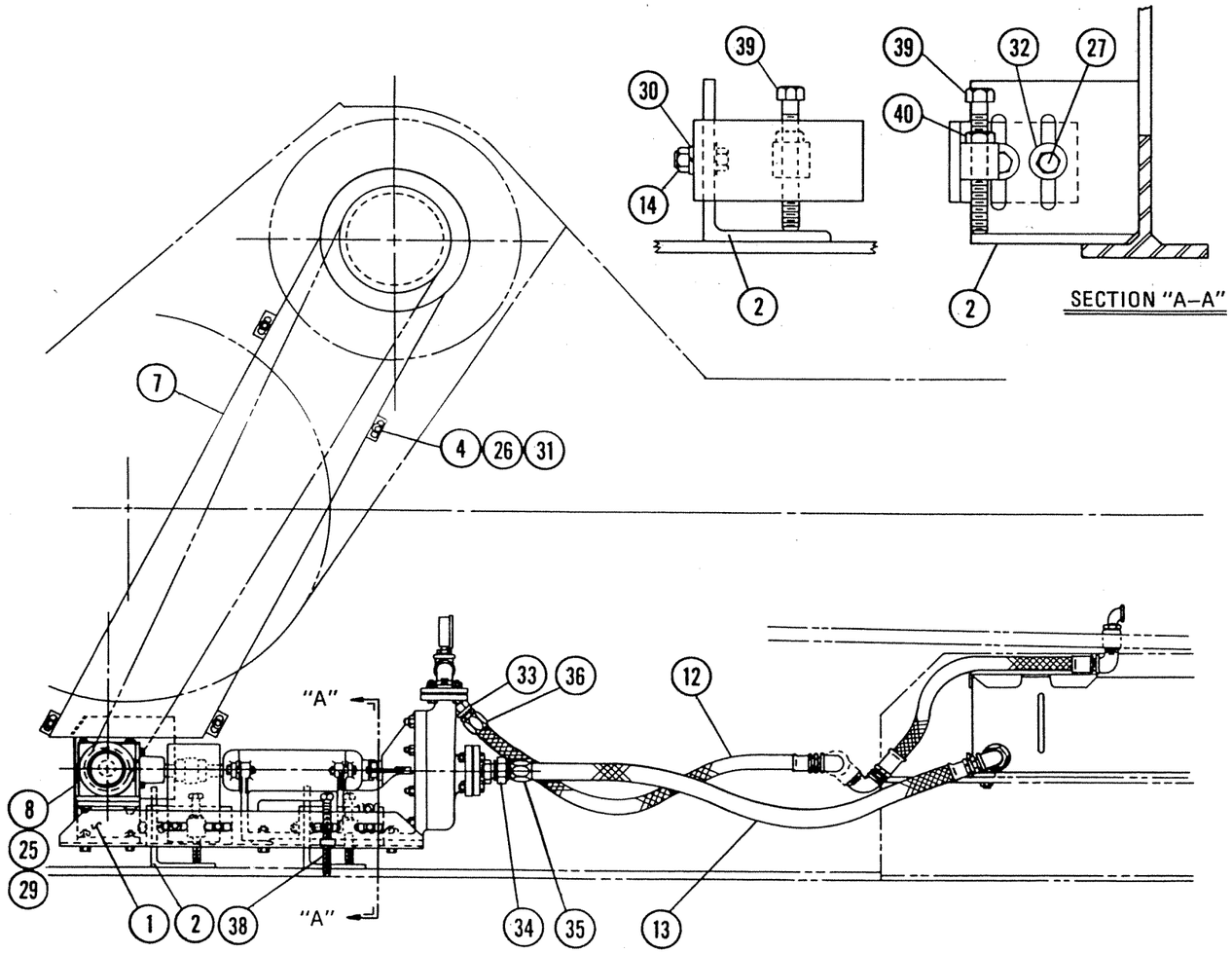
LINER FLUSHING SYSTEM

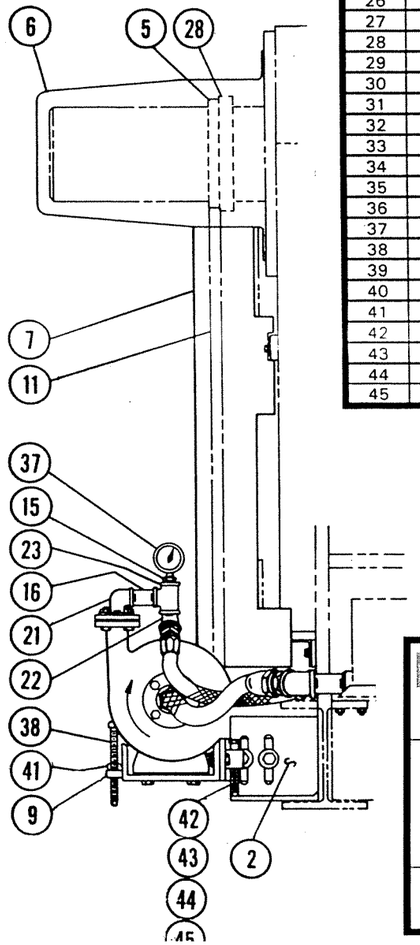
(OPTIONAL EQUIPMENT)

12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE: B	DRAWING NO.:	REV.:







BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	G1291157	PUMP AND GEAR BOX COMPLETE, SEE PAGE 12
2*	2	G1292319	BRACKET, PUMP MOUNTING*
3	1	G1291258	COVER, CROSS SHAFT
4	4	1293064	BLOCK, LUGUARD MOUNTING
5	1	G1292320	SHEAVE, LUBRICATION PUMP
6	1	1292098	CAP, PINION SHAFT END
7	1	G1292317	GUARD (LEFT HAND), "V" - BELT
	1	G1292318	GUARD (RIGHT HAND), "V" - BELT
8	1	G1290380	GUARD (LEFT HAND), SHEAVE
	1	G1290381	GUARD (RIGHT HAND), SHEAVE
9	1	1290293	BLOCK, ADJUSTING SCREW
10	1	2401860	KEY (1/4" X 1/4" X 1-1/4")
11	1	G-4730030-2	BELT, 2/3V 1400 HC POWER BAND
12	1	6100036	HOSE, 1" X 40"
13	1	6100037	HOSE, 1-1/2" X 46"
14	4	6300103	NUT, 5/8" - 11 UNC CAD. PLATED HEX
15	1	6800081	BUSHING, 1" X 1/4 M.I. STD BLK HEX PIPE
16	1	6817076	NIPPLE, 1" X 3" STD. STEEL PIPE
17	1	6817078	NIPPLE, 1" X 4" STD. STEEL PIPE
18	1	6817112	NIPPLE, 1-1/2 X 4" STD. STEEL PIPE
19	1	6826008	ELBOW, 1" X 90° STD. M.I. PIPE
20	1	6828012	ELBOW, 1-1/2" X 45° STD. M.I. PIPE
21	1	6829008	ELBOW, 1" X 90° STD. M.I. PIPE STREET
22	1	6839008	ELBOW, 1" X 45° STD. M.I. PIPE STREET
23	1	6888088	TEE, 1" STD. M.I. PIPE
24	1	G7200052	SHEAVE WITH HUB, 4.12" O.D. 2/3V GROOVE
25	2	G-7000254-11	CAPSCREW, 7/16" X 3/4" CAD. PLT HEX HEAD GR5
26	4	7000301-11	CAPSCREW, 1/2" X 3/4" CAD. PLT HEX HEAD GR5
27	4	7000397-11	CAPSCREW, 5/8" X 2" CAD. PLT HEX HEAD GR5
28	2	7027206-02	SETSCREW, 3/8" X 3/4" SOCKET HEX HEAD CUP POINT
29	2	7619045	WASHER, 7/16" CAD. PLATED SPRING LOCK
30	4	7619058	WASHER, 5/8" CAD. PLATED SPRING LOCK
31	4	7621032	WASHER, 1/2" CAD. PLATED TYPE "A"
32	4	7621042	WASHER, 5/8" CAD. PLATED TYPE "A"
33	2	7800076	ADAPTER, 1" MALE HOSE
34	2	7802358	CONNECTOR, 1-1/2" MALE HOSE
35	2	7805072	SWIVEL, 1-1/2" FEMALE HOSE
36	2	7805083	SWIVEL, 1" FEMALE HOSE
37	1	7806002	GUAGE (0-100 P.S.I.), PRESSURE
38	1	7016421	SETSCREW 5/8" X 8" SQUARE HEAD CUP POINT
39	2	7014456-01	SETSCREW 3/4" X 6" SQUARE HEAD DOG POINT
40	2	6320120	NUT, 3/4" HEX JAM
41	1	6320100	NUT, 5/8" HEX JAM
42	4	6300103	NUT, 5/8" HEX CAD PLT
43	4	7000397-11	CAPSCREW, 5/8" X 2" CAD PLT HEX HD GR5
44	4	7619058	WASHER, 5/8" CAD PLATED SPRING LOCK
45	4	7621042	WASHER, 5/8" W TYPE A CAD PLATED

*MOUNTING BRACKET INCLUDES ITEMS 14, 27, 30, 32, 39 AND 40

NOTE: OPTIONAL EQUIPMENT,
SPECIFY WHEN ORDERING.

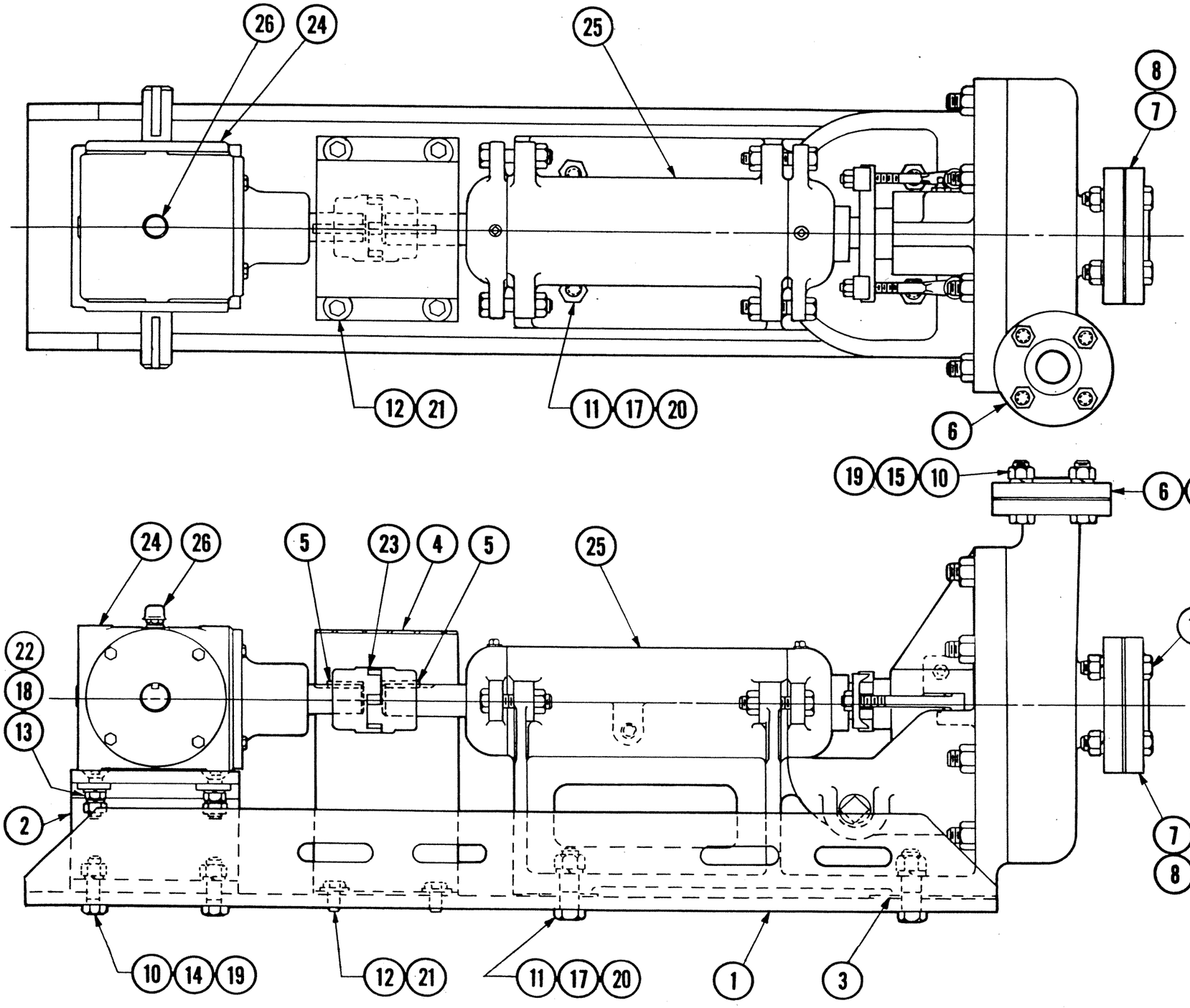
NATIONAL OILWELL

Houston, Texas, U.S.A.

LINER FLUSHING SYSTEM

(OPTIONAL RIGHT ANGLE DRIVE)
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	E	PL 1292316	



NOTE: OPTIONAL ASSEMBLY, SPECIFY WHEN ORDERING.

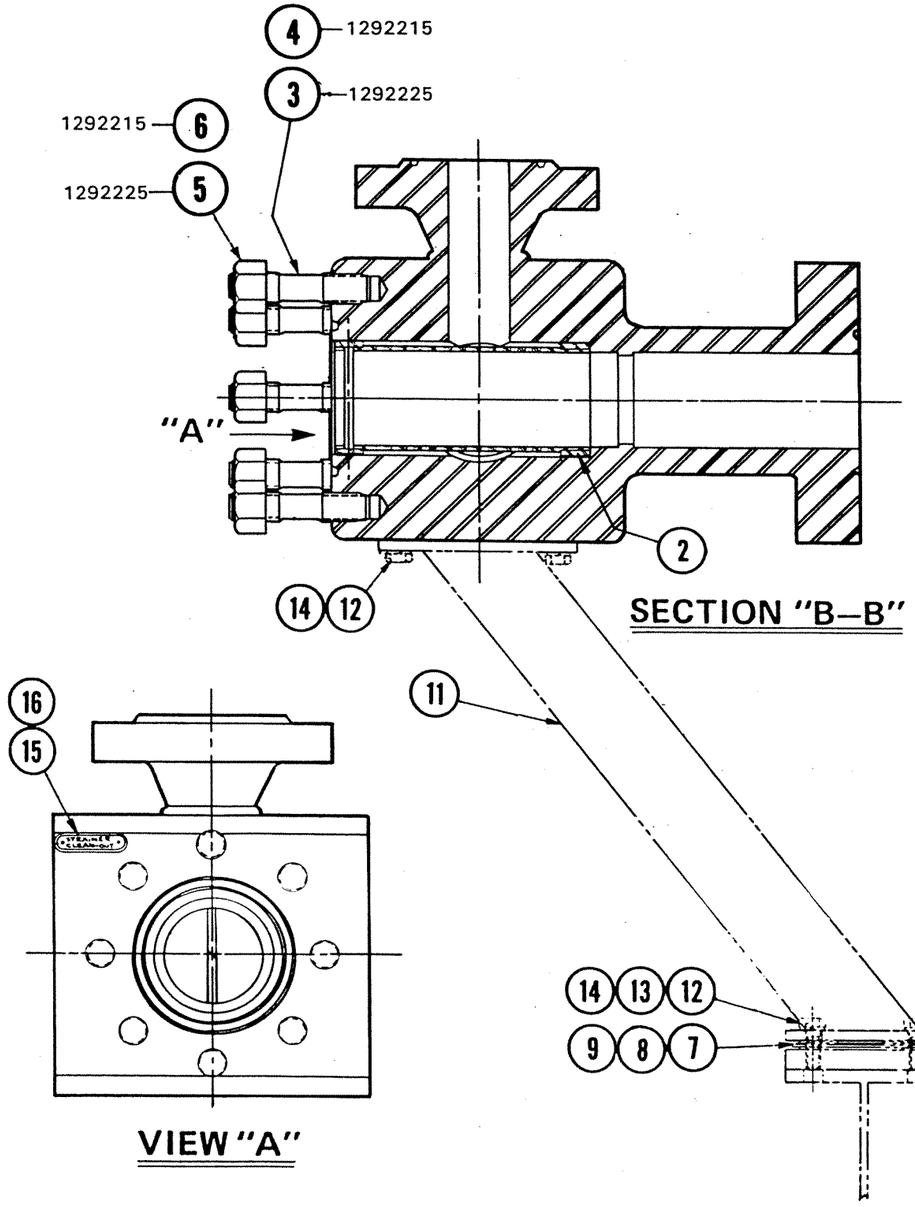
BILL OF MATERIAL

ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	G1291158	BRACKET, PUMP AND GEAR BOX MOUNTING
2	1	G1291159	PEDESTAL, GEAR BOX
3	4	G1292283	SHIM, PUMP
4	1	1292286	GUARD, COUPLING
5	2	2401860	KEY (1/4" X 1/4" X 1-1/4")
6	1	5902091	FLANGE, 1" A.S.A. 150# THREADED FLAT FACE
7	1	5902172	FLANGE, 1-1/2" A.S.A. 150# THREADED FLAT FACE
8	1	6010036	GASKET, 1-1/2" 150# FLANGE
9	1	6010037	GASKET, 1" 150# FLANGE
10	10	6300081	NUT, 1/2" CAD. PLATED HEX
11	4	6300103	NUT, 5/8" - 11 UNC CAD. PLATED HEX
12	4	7000206-11	CAPSCREW, 3/8" X 3/4" CAD. PLT HEX HEAD GR5
13	4	7000211-11	CAPSCREW, 3/8" X 1-3/4" CAD. PLT HEX HEAD GR5
14	2	7000306-11	CAPSCREW, 1/2" X 1-3/4" CAD. PLT HEX HEAD GR5
15	4	7000307-11	CAPSCREW, 1/2" X 2" CAD. PLT HEX HEAD GR5
16	4	7000309-11	CAPSCREW, 1/2" X 2-1/4" CAD. PLT HEX HEAD GR5
17	4	7000398-11	CAPSCREW, 5/8" X 2-1/4" CAD. PLT HEX HEAD GR5
18	4	7619041	WASHER, 3/8" CAD. PLATED SPRING LOCK
19	10	7619050	WASHER, 1/2" CAD. PLATED SPRING LOCK
20	4	7619058	WASHER, 5/8" CAD. PLATED SPRING LOCK
21	4	7621024	WASHER, 3/8" CAD. PLATED TYPE "A"
22	4	G7624021	WASHER, 1/2" I.D. X 1-1/4" O.D. X .217" THICK FLAT
23	1	G7802332	COUPLING
24	1	7806091	BOX, GEAR
25	1	7815147	PUMP, 1" X 1-1/2" CENTRIFUGAL
26	1	7801121	BREATHER

NATIONAL OILWELL
Houston, Texas, U.S.A.

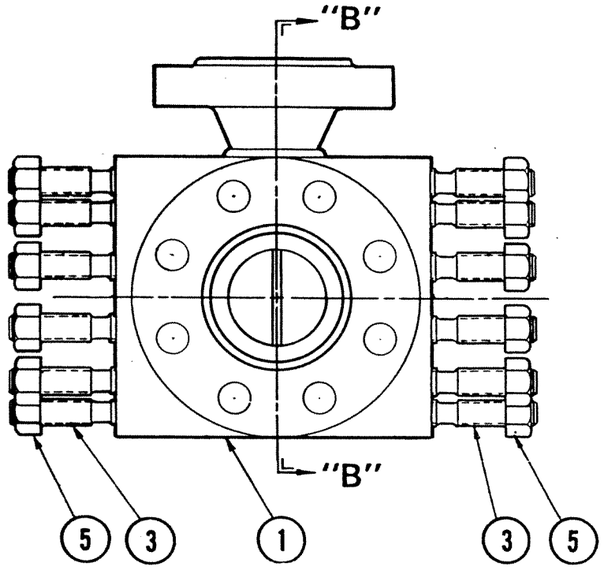
LINER FLUSHING PUMP
WITH RIGHT ANGLE GEARBOX ASSEMBLY
(OPTIONAL EQUIPMENT)
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	D	PL 1291157	B



SECTION "B–B"

VIEW "A"



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292215	CROSS COMPLETE, STRAINER * (WITH 6" - 5000# DISCHARGE FLANGE)
1	1	1292216	CROSS
2	1	1292219	STRAINER
3	24	2408000	STUD, 1-3/8" X 7-1/2" BOTTOM TAPER LOCK
4	8	2403070	STUD, 1-1/2" X 7-1/4" BOTTOM TAPER LOCK
5	24	6300220	NUT, 1-3/8" HEAVY HEX
6	8	6300240	NUT, 1-1/2" HEAVY HEX
7	4	1028421	SHIM (.125" THICK)
8	3	102842-2	SHIM (.0625" THICK)
9	4	102842-3	SHIM (.0312" THICK)
10	1	1290221	PLATE, BASE
11	1	1292218	SUPPORT
12	4	7000439-11	CAPSCREW, 3/4" X 1-3/4" CAD. PLT HEX HEAD GR5
13	4	7000440-11	CAPSCREW, 3/4" X 2" CAD. PLT HEX HEAD GR5
14	8	7619066	WASHER, 3/4" CAD. PLATED SPRING LOCK
15	1	G-2407004	TAG, STRAINER CLEAN-OUT
16	2	7178088	SCREW, No. 10 x 3/8" TYPE "U" ROUND HEAD DRIVE

* INCLUDES ITEMS 1 THRU 16

APPLICABLE TO 1292215 STRAINER CROSS			
--	1	1292223	KIT, FLANGE AND GASKET (CONSISTS OF THE FOLLOWING)
	1	1292222	FLANGE, STRAINER CLEAN-OUT
	1	5912400	FLANGE, 6" A.P.I. 5000# RING JOINT WELD NECK
	1	6908033	RING, R39-S OVAL JOINT
	1	6908040	RING, R44-S OVAL JOINT
	2	6908044	RING, R46-S OVAL JOINT

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1292225	CROSS COMPLETE, STRAINER * (WITH 5" - 5000# DISCHARGE FLANGE)
1	1	1292226	CROSS
2	1	1292219	STRAINER
3	24	2403070	STUD, 1-1/2" X 7-1/4" BOTTOM TAPER LOCK
5	24	6300240	NUT, 1-1/2" HEAVY HEX
7	4	102842-1	SHIM (.125" THICK)
8	3	102842-2	SHIM (.0625" THICK)
9	4	102842-3	SHIM (.0312" THICK)
10	1	1290221	PLATE, BASE
11	1	1292218	SUPPORT
12	4	7000439-11	CAPSCREW, 3/4" X 1-3/4" CAD PLT HEX HEAD GR5
13	4	7000440-11	CAPSCREW, 3/4" X 2" CAD PLT HEX HEAD GR5
14	8	7619066	WASHER, 3/4" CAD PLATED SPRING LOCK
15	1	G-2407004	TAG, STRAINER CLEAN-OUT
16	2	7178088	SCREW, No. 10 x 3/8" TYPE "U" ROUND HEAD DRIVE

* INCLUDES ITEMS 1 THRU 3, 5, & 7 THRU 16

APPLICABLE TO 1292225 STRAINER CROSS			
--	1	1292229	KIT, FLANGE AND GASKET (CONSISTS OF THE FOLLOWING)
	1	1292222	FLANGE, STRAINER CLEAN-OUT
	2	5912391	FLANGE, 5" API 5000# RING JOINT WELD NECK
	1	6908033	RING, R39-S OVAL JOINT
	3	6908040	RING, R44-S OVAL JOINT

NOTE: STRAINER CROSS ASSEMBLY 1292215 IS SHOWN PICTORIALLY.

NOTE: OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.

NATIONAL OILWELL

Houston, Texas, U.S.A.

STRAINER CROSS ASSY'S.

(OPTIONAL EQUIPMENT)

12-P-160 TRIPLEX MUD PUMP

	SHEET 1 OF 1	SIZE: B	DRAWING NO.:	REV.:

TOOLS FURNISHED - NOT ILLUSTRATED

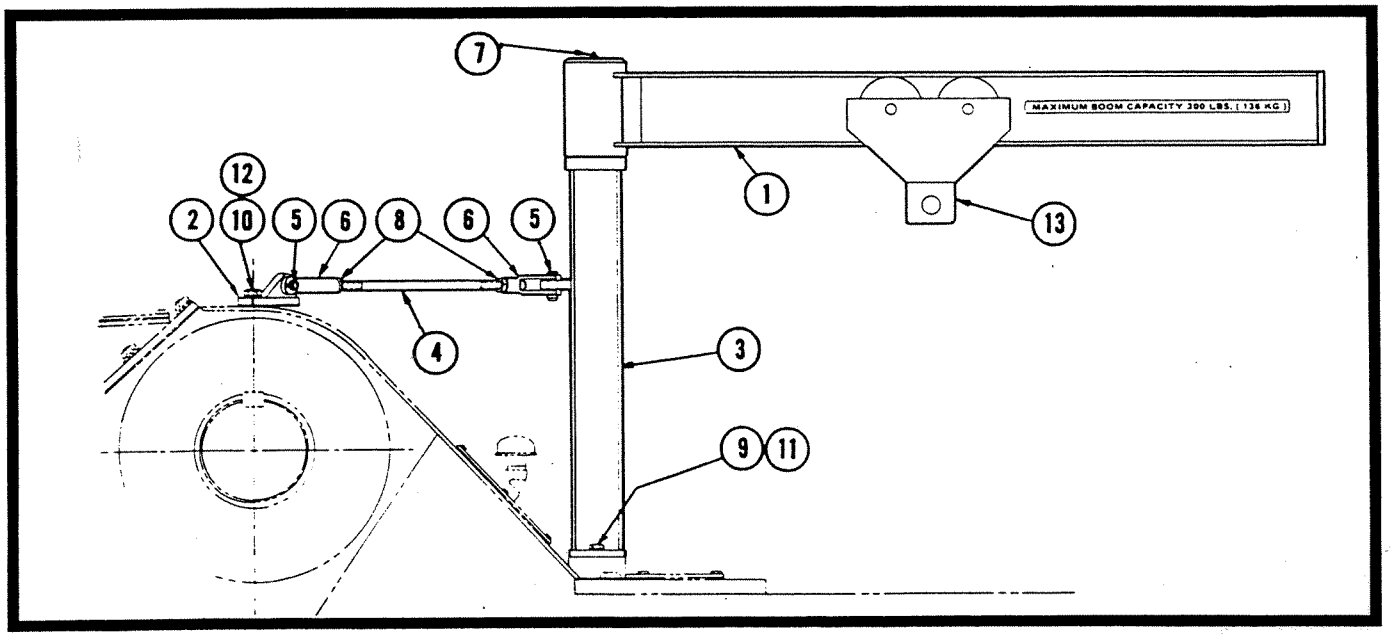
THE ITEMS BELOW ARE NOT ILLUSTRATED.
THEY ARE STANDARD PARTS THAT ARE FURNISHED
WITH EACH SET OF PUMPS, BUT SHIPPED SEPARATELY.

BILL OF MATERIAL		
REQ'D	PART NO.	DESCRIPTION
1	1290140	ADAPTER, PINION ROTATING
3	7000394-11	CAPSCREW, 5/8" X 1-1/4" CAD. PLATED HEX HEAD GR5
3	7619058	WASHER, 5/8" CAD. PLATED SPRING LOCK
1	2402290	WRENCH, (FOR 1290140 ADAPTER)
1	1290183	PULLER, SEAL RETAINER
1	1290207	BOLT, LINER CLAMP TEE HANDLE LIFTING (4" LONG)
1	1290206	BOLT, LINER CLAMP TEE HANDLE LIFTING (3" LONG)
1	M-1060	PULLER, VALVE SEAT
1	M-1098	HEAD, VALVE SEAT PULLER
1	1292127	DRIVER, VALVE SEAT
1	1292278	HOLDER, SEAL RETAINER
1	1291356	BAR, WEDGE LOOSENING
1	2409013	WRENCH, WEDGE ADJUSTING SCREW
1	2409011	WRENCH, (FOR 2409013 WRENCH)
1	1292164	PLATE, BUSHING PULLER

HOIST - OPTIONAL

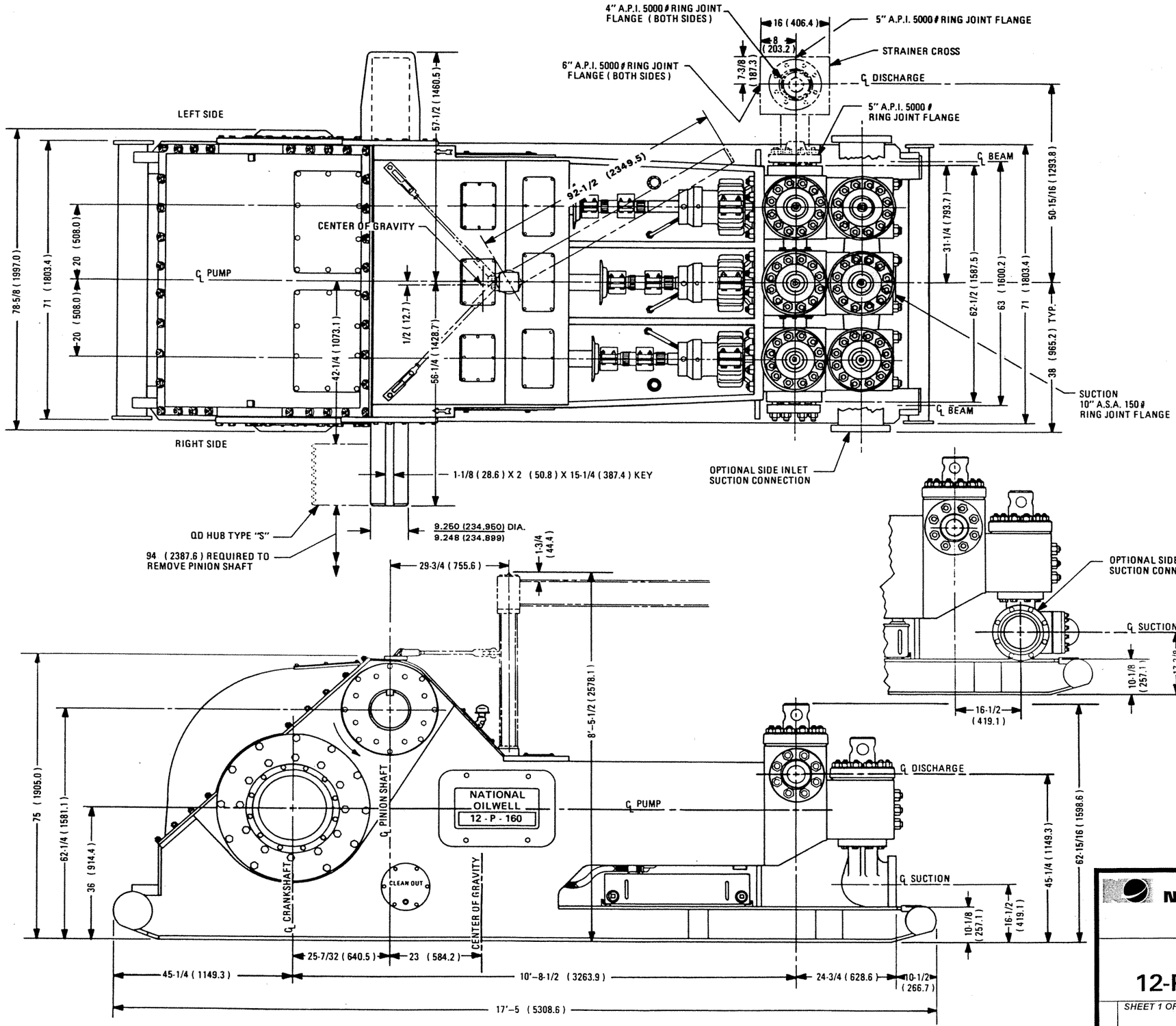
BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	1	1292125	HOIST COMPLETE (CONSISTS OF THE FOLLOWING)*
1	1	1292126	BOOM
2	1	1290127	BRACKET
3	1	1292128	MAST
4	2	1292129	ROD
5	4	7800044	PIN, YOKE
6	4	7804019	YOKE, ADJUSTABLE
7	1	7805052	FITTING, 1/8" HYDRAULIC GREASE
8	4	6320120	NUT, 3/4" HEX JAM
9	2	7000395-11	CAPSCREW, 5/8" X 1-1/2" HEX HEAD CAD. PLT GR5
10	2	7000440-11	CAPSCREW, 3/4" X 2" HEX HEAD CAD. PLT GR5
11	2	7619058	WASHER, 5/8" SPRING LOCK
12	2	7619066	WASHER, 3/4" SPRING LOCK
13	1	7819040	TROLLEY

*OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.



NOTE: THESE DIMENSIONS ARE ACCURATE BUT SHOULD NOT BE USED FOR INSTALLATION UNLESS CERTIFIED. DIMENSIONS IN BRACKETS ARE MEASURED IN MILLIMETERS.

PUMP, AS SHOWN, IS FOR RIGHT HAND DRIVE. LEFT HAND DRIVE IS OPPOSITE THAT SHOWN.



NATIONAL OILWELL

Houston, Texas, U.S.A.

OUTLINE DRAWING
12-P-160 TRIPLEX MUD PUMP

SHEET 1 OF 1	SIZE:	DRAWING NO.:	REV.:
	E	PL 1292004	E