NATIONAL-OILWELL

PARTS LIST

14-P-220
TRIPLEX PISTON PUMP

(9" X 14")

EPL-955-1

(EPL-955-1 supersedes EPL-955, issue date 3-1-93)

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

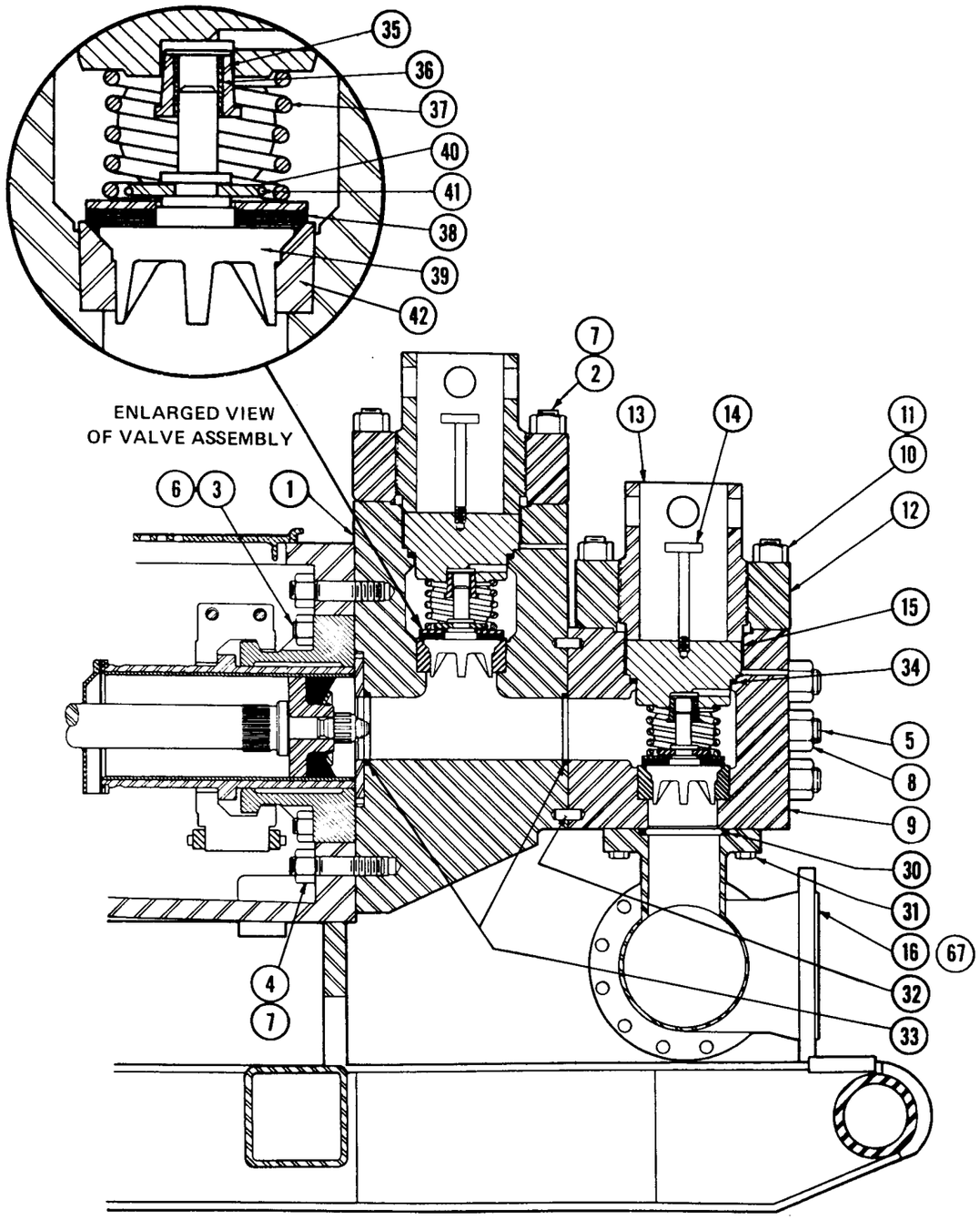
ISSUE DATE: 9-1-95

Printed in U.S.A.

PARTS LIST

INDEX AND CHECK LIST

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BILL OF MATERIAL

ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295240	MODULE STUDDED, DISCHARGE (INCLUDES ITEMS 1 THRU 8)
--	--	1295601	MODULE STUDDED, PREMIUM DISCHARGE (INCLUDES ITEMS 1 THRU 8)*
1	3	1295241	MODULE, DISCHARGE
	3	1295600	MODULE, PREMIUM DISCHARGE*
2	42	2408049	STUD, 1 ½ x 9⅞ TOP TAPER LOCK
3	18	2408047	STUD, 1 ¼ x 7" TOP TAPER LOCK
4	30	2408027	STUD, 1 ½ x 7⅞ TOP TAPER LOCK
5	18	2408048	STUD, 2" - 8 UN x 22⅛ TOP TAPER LOCK
6	18	6300200	NUT, 1 ¼ HEAVY HEX
7	72	6300240	NUT, 1 ½ HEAVY HEX
8	18	6300320	NUT, 2"-8 UN HEAVY HEX
--	--	1295243	MODULE STUDDED, SUCTION (INCLUDES ITEMS 9 THRU 11)
--	--	1295604	MODULE STUDDED, PREMIUM SUCTION (INCLUDES ITEMS 9 THRU 11)*
9	3	1295244	MODULE, SUCTION
	3	1295603	MODULE, PREMIUM SUCTION*
10	42	2408049	STUD, 1 ½ x 9⅞ TOP TAPER LOCK
11	42	6300240	NUT, 1 ½ HEAVY HEX
12	6	1295176	RING, THREADED
13	6	1295172	COVER, VALVE
14	6	1295353	PULLER
15	6	1295174	RETAINER, SEAL
16	1	1295317	MANIFOLD, SUCTION
30	3	1540021	SEAL, SUCTION MANIFOLD
31	24	7000485-11	CAPSCREW, ⅞ x 3" HEX HEAD GR.5 CAD PLT
32	6	6511416	PIN, ⅞ x 2" DOWEL
33	6	1295257	SEAL
34	6	1540163	SEAL
35	6	1292140	HOLDER, VALVE GUIDE INSERT
36	6	1292141	INSERT, VALVE GUIDE
37	6	1560702	SPRING VALVE
--	--	1560965	"G2" VALVE COMPLETE WITH POLYURETHANE DISC (INCLS. ITEMS 38 THRU 41)*
--	--	1560964	"G2" VALVE COMPLETE WITH HYCAR DISC (INCLUDES ITEMS 38-41)*
38*	6	1560567	DISC (POLYURETHANE), VALVE*
	6	1560568	DISC (HYCAR), VALVE*
39	6	1560963	BODY, VALVE
40	6	1560706	LOCK, VALVE
41	6	1560705	RING, SNAP
42	6	1561410	SEAT, VALVE
67**	1	7500065	VALVE (SET AT 70 PSI), SUCTION RELIEF**

(1)

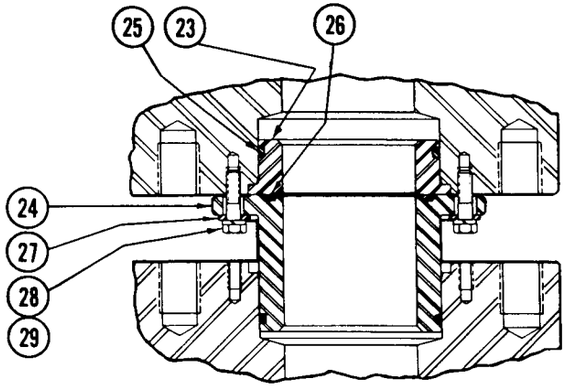
*OPTIONAL EQUIPMENT, PLEASE SPECIFY THE ITEM SIZE AND DESCRIPTION WHEN ORDERING.
**NOT ILLUSTRATED.

SHEET NO. 1

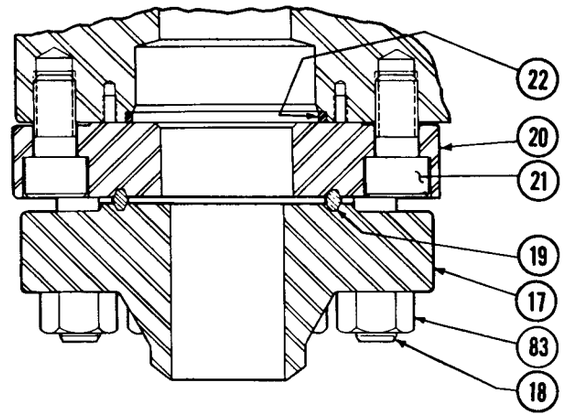
NATIONAL-OILWELL

FLUID END ASSEMBLY
(SECTION THRU CYLINDERS)
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	F	PL 1295000	E



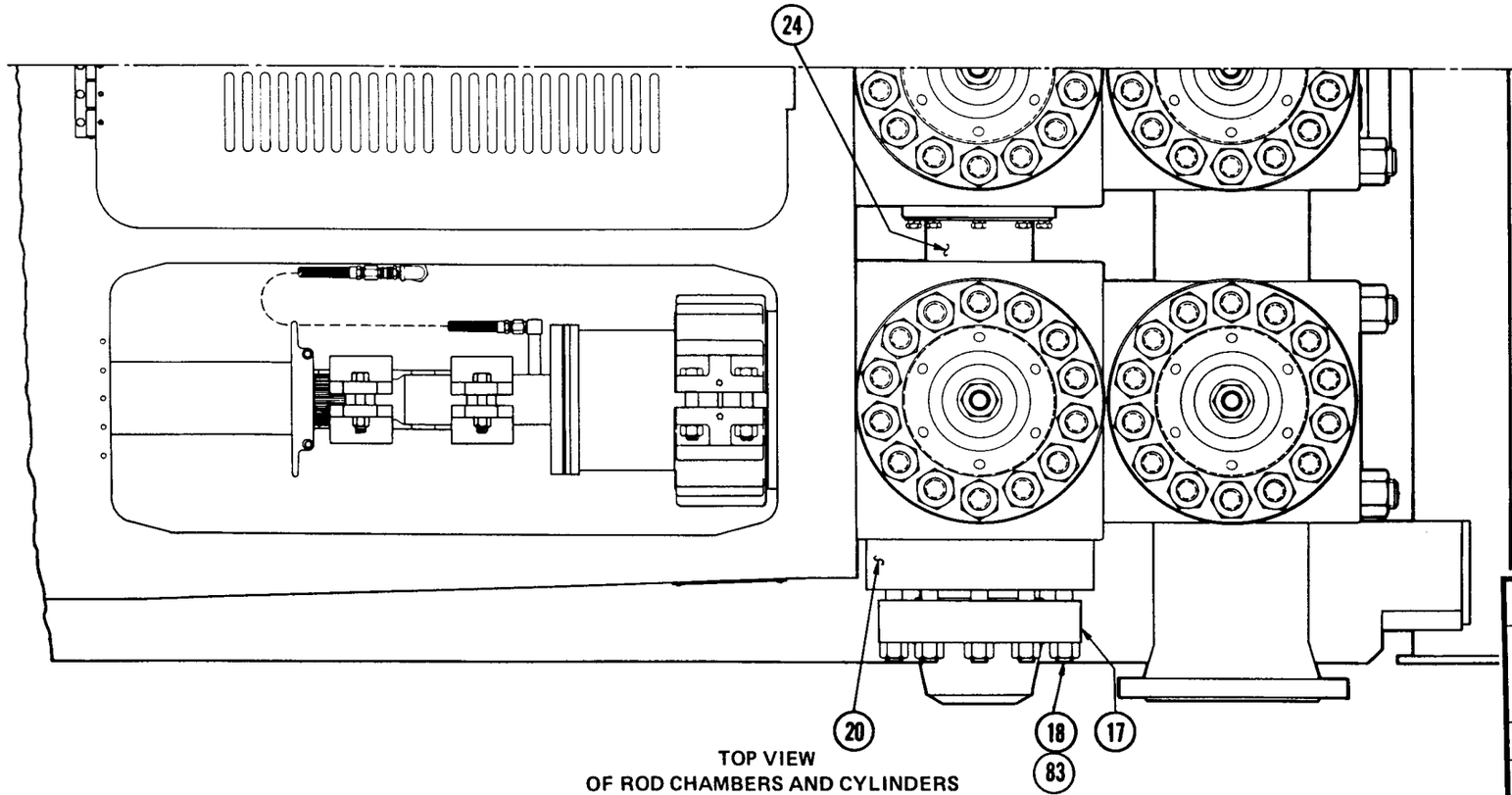
SECTION THRU
DISCHARGE CONNECTOR



SECTION THRU
DISCHARGE OUTLET

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
17*	1	5913390	FLANGE, WELDNECK RING JOINT DBL. X -4.063 5" A.P.I. 10,000#*
	1	5913391	FLANGE, BLIND RING JOINT FACE 5" A.P.I. 10,000#*
18	12	2408014	STUD, 1⅛ X 6¾ BOTTOM TAPER LOCK
19	2	6907339-S	RING, BX-169-S
--	--	1295262	SPACER, STUDDED DISCHARGE (INCLUDES ITEMS 18, 20 & 83)
20	2	1295246	SPACER, DISCHARGE
21	24	7006609	CAPSCREW, 1¼ X 3¾ SOCKET HEAD HT
22	2	1295258	SEAL
23	2	1295253	ADAPTER
24	2	1295252	CONNECTOR
25	4	2410031-440	PACKING
26	2	2410031-438	PACKING
27	4	1295175	RING, BACK-UP
28	16	7000307-11	CAPSCREW, ½ X 2" HEX HEAD GR5 CAD PLT
29	16	7619050	WASHER, ½ SPRING LOCK
83	12	6300180	NUT, 1⅛ HEAVY HEX

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



TOP VIEW
OF ROD CHAMBERS AND CYLINDERS

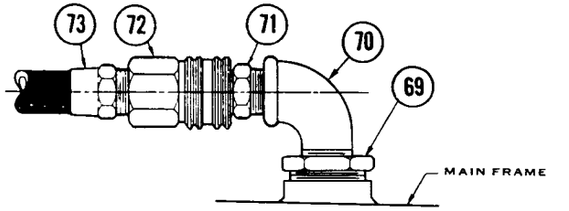
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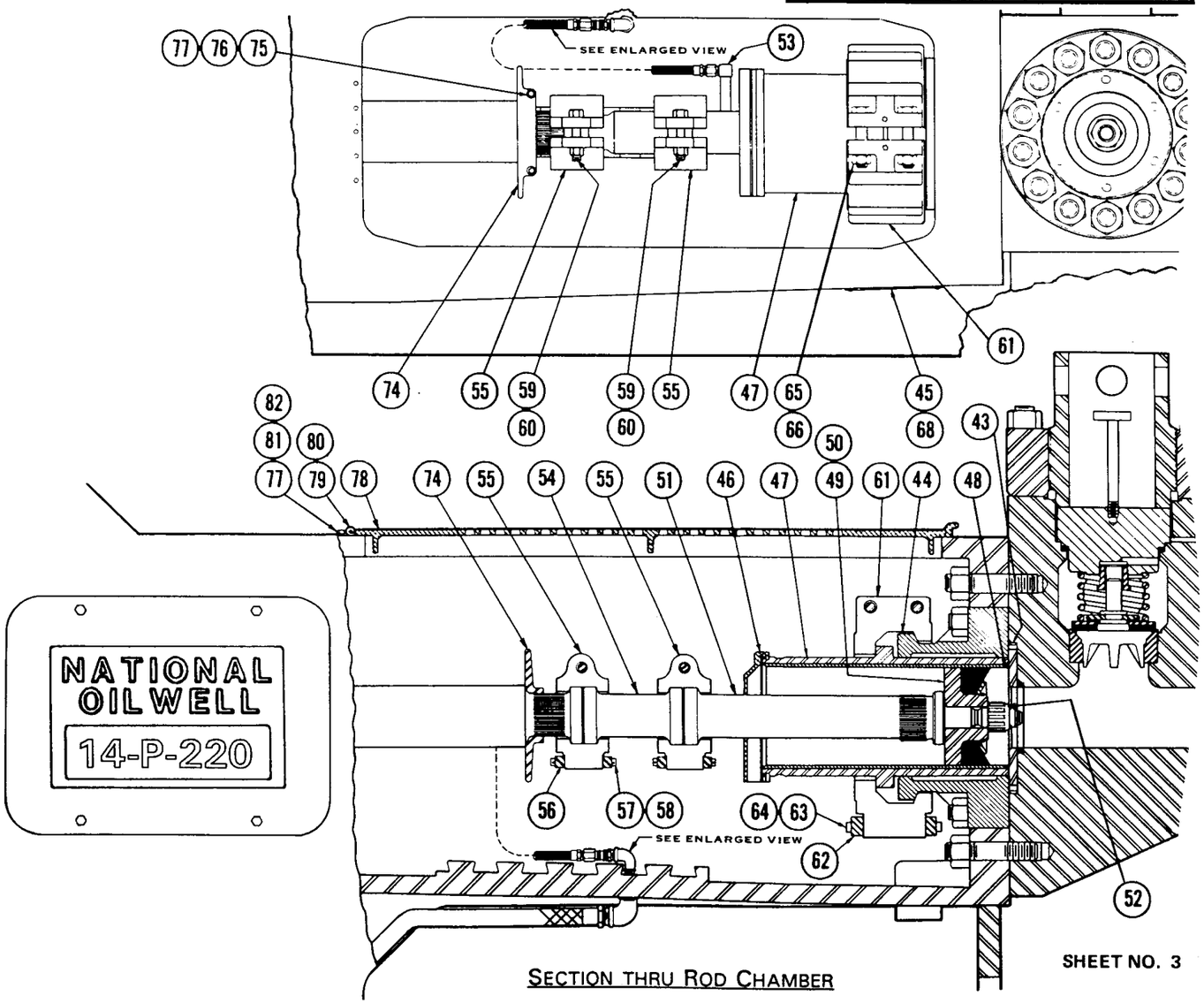
NATIONAL-OILWELL

FLUID END ASSEMBLY
(TOP VIEW OF ROD CHAMBERS & CYLINDERS)
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	F	PL 1295000	E



ENLARGED VIEW



SECTION THRU ROD CHAMBER

SHEET NO. 3

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
43	3	1295266	PLATE, WEAR
44	3	1295185	BUSHING
	3	1295213	BUSHING, SPECIAL - 9" LINER ONLY
45	1	G-2407274	PLATE, WARNING
46	3	1295122	GUARD, LINER SPLASH
	3	1295211	GUARD, LINER SPLASH FOR 9" LINER ONLY
47	3	05-545-500	LINER, 5"*
	3	05-545-550	LINER, 5½"*
	3	05-545-600	LINER 6"*
	3	05-545-650	LINER, 6½"*
	3	05-545-700	LINER, 7"*
	3	05-545-750	LINER, 7½"*
	3	05-545-800	LINER, 8"*
	3	05-545-900	LINER, 9"

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
48**	3	1540121	GASKET, 5" LINER PACKING **
	3	1540122	GASKET, 5½" LINER PACKING **
	3	1540124	GASKET, 6" LINER PACKING **
	3	1540151	GASKET, 6½" LINER PACKING **
	3	1540153	GASKET, 7" LINER PACKING **
	3	1540155	GASKET, 7½" LINER PACKING **
	3	1540157	GASKET, 8" LINER PACKING **
	3	1540159	GASKET, 9" LINER PACKING **
491	3	20-021-517	PISTON COMPLETE, 5" †
	3	20-021-519	PISTON COMPLETE, 5½" †
	3	20-021-521	PISTON COMPLETE, 6" †
	3	20-021-523	PISTON COMPLETE, 6½" †
	3	20-021-525	PISTON COMPLETE, 7" †
	3	20-021-527	PISTON COMPLETE, 7½" †
	3	012-180-725	PISTON COMPLETE, 8" †
	3	20-120-828	PISTON COMPLETE, 9" †
501†	3	20-140-521	PISTON RUBBER, 5" ††
	3	20-140-544	PISTON RUBBER, 5½" ††
	3	20-140-524	PISTON RUBBER, 6" ††
	3	20-140-535	PISTON RUBBER, 6½" ††
	3	20-140-537	PISTON RUBBER, 7" ††
	3	20-140-539	PISTON RUBBER, 7½" ††
	3	020-405-254	PISTON RUBBER, 8" ††
	3	20-140-913	PISTON RUBBER, 9" ††
51	3	1295147	ROD, PISTON (INCLUDES ITEM 52)
52	3	005402052	NUT, 1¼ - 8 ELASTIC STOP
53	3	7804307	ELBOW, ADAPTER
54	3	1295146	ROD, PISTON SUB
--	--	1295085	CLAMP COMPLETE, ROD (INCLUDES ITEMS 55 THRU 60)
55	6	129086	CLAMP, ROD
56	12	G-1292087-P	CONNECTOR
57	12	1292169	PIN
58	24	6571014	PIN, 5/32 x ⅞ SPRING
59	6	6309100	NUT, ⅝ HEX
60	6	7000405-11	CAPSCREW, ⅝ x 4 HEX HEAD GR.5 CAD PLT
--	--	1295166	CLAMP COMPLETE, LINER (INCLUDES ITEMS 61 THRU 66)
61	3	1295167	CLAMP, LINER
	11	1295212	9" LINER ONLY
62	6	G-1292168-P	CONNECTOR
63	6	1292169	PIN
64	12	6571620	PIN, ¼ x 1¼ SPRING
65	6	6309140	NUT, ¾ HEX
66	6	7000491-10	CAPSCREW, ¾ x 4½ HEX HEAD GR5
68	4	7178025	SCREW, NO. 2 x ¼ TYPE "U" ROUND HEAD DRIVE
69	3	6800083	BUSHING, 1" x ½ C.I. STD. HEX PIPE
70	3	6829004	ELBOW, ½ x 90° 150# M.I. STREET
71	3	7815094	COUPLER, ½ M.P.T. QUICK-CONNECT
72	3	7818282	COUPLER, ½ F.P.T. QUICK-CONNECT
73	3	2400091	HOSE ASSEMBLY, 1½ x 33"
74	6	1292194	BAFFLE, FLUID
75	6	6300041	NUT, ¼ HEX
76	6	7000124-11	CAPSCREW, ¼ x 5" HEX HEAD GR5 CAD PLT
77	27	7621016	WASHER, ¼ TYPE "A"
--	--	1295130	COVER COMPLETE, ROD CHAMBER (INCLUDES ITEMS 78 THRU 80)
78	3	1295131	COVER, ROD CHAMBER
79	3	1290408	HINGE
80	15	7041102	SCREW, ¼-20 x ⅝ FLAT HEAD MACHINE
81	15	6310040	NUT, ¼-20 FLEXLOC
82	15	7000114-11	CAPSCREW, ¼ x 2½ HEX HEAD GR5 CAD PLT

3

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

**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.

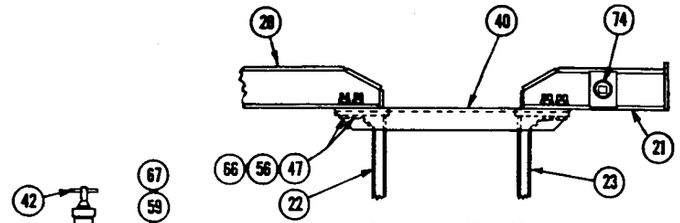
†OPTIONAL, SPECIFY SIZE WHEN ORDERING. EACH PISTON ASSEMBLY IS PACKAGED WITH ONE 072199508 SEAL.

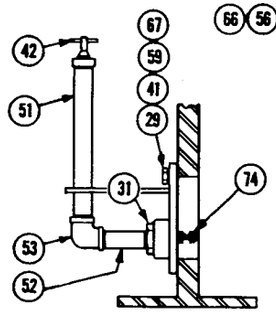
††OPTIONAL, SPECIFY SIZE WHEN ORDERING. EACH PISTON RUBBER IS PACKAGED WITH ONE 072199508 SEAL.

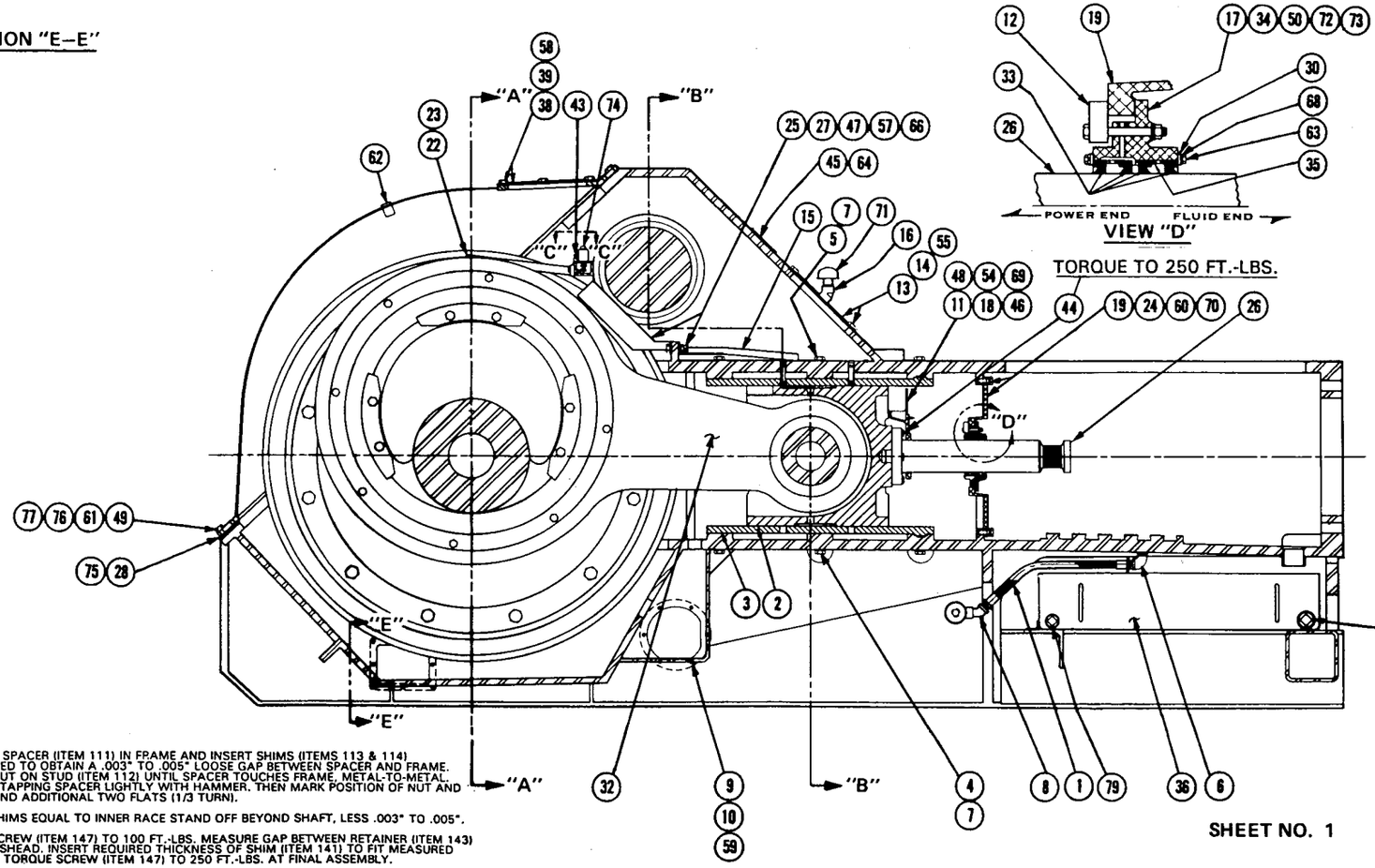
NATIONAL-OILWELL

FLUID END ASSEMBLY
(SECTION THRU ROD CHAMBER)
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	F	PL 1295000	E







BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
1	3	1282036	HOSE ASSEMBLY 1" x 30"
2	6	1295017	LINER, CROSSHEAD
3	15	1295103	SHIM, (.005" THICK), CROSSHEAD LINER
4	18	2404018	CAPSCREW, ⅞ x 4½ DRILLED HEX HEAD GR5
5	18	2405114	CAPSCREW, ⅞ x 4¾ DRILLED HEX HEAD GR5
6	3	6829008	ELBOW, 1½ x 45° 150# M.I. STREET
7	36	7618026	WASHER, ⅞ STAT-O-SEAL
8	3	6839008	ELBOW, 1½ x 45° 150# M.I. STREET
9	2	1283190	PLATE, CLEAN-OUT
10	2	1283191	GASKET, CLEAN-OUT PLATE
11	3	1290251	SCREW, OIL PRESSURE
12	9	1291074	BOLT, HOOK
13	3	1292064	GASKET, WRENCH HOLE COVER
14	2	1292077	COVER, WRENCH HOLE
15	1	1292089	TROUGH (LEFT HAND), CROSSHEAD LUBE OIL
16	1	1292110	COVER (CENTER), WRENCH HOLE
17	3	1295009	RETAINER, OIL WIPER
18	3	1295016	SHIELD, INTERMEDIATE ROD OIL
19	3	1295023	PLATE, INTERMEDIATE ROD OIL WIPER RETAINER
20	1	1295070	TROUGH (LEFT HAND), PINION BEARING OIL

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
21	1	1295071	TROUGH (RIGHT HAND), PINION BEARING OIL
22	1	1295072	WIPER (LEFT HAND), GEAR OIL
23	1	1295073	WIPER (RIGHT HAND), GEAR OIL
24	3	1295079	GASKET, OIL WIPER RETAINER PLATE
25	1	1295082	WIPER (LEFT HAND), GEAR AND PINION OIL
26	3	1295083	ROD, INTERMEDIATE
27	1	1295092	WIPER (RIGHT HAND), GEAR AND PINION OIL
28	1	1295095	GASKET, MAIN FRAME COVER
29	2	1295114	PLATE, OIL GAUGE MOUNTING (INCLUDES ITEM 31)
30	6	1295139	PLATE, OIL WIPER RETAINER
31	4	6803160	BUSHING, 2" x 1" 6000# FORGED STEEL HEX PIPE
32	3	1295007	ROD, CONNECTING
33	12	1295182	WIPER, INTERMEDIATE ROD
34	3	1295227	GASKET, INTERMEDIATE ROD OIL WIPER
35	6	1295269	SPACER, OIL WIPER
36	1	1295282	SUMP, LINER FLUSHING (INCLUDES ITEMS 78 AND 79)
38	2	1295407	GASKET, GEAR INSPECTION COVER
39	2	1295408	COVER, GEAR INSPECTION
40	1	1295069	BRACE, PINION BEARING OIL TROUGH
41	2	1295413	GASKET, OIL GAUGE PLATE
42	1	2400029	DIPSTICK, OIL LEVEL
43	8	2400040	SCREW, ⅝ x ¾ DRILLED HEX HEAD GR5
44	12	2405033	SCREW, ¾ x 2¾ DRILLED HEX HEAD GR5
45	1	2407100	PLATE, NAME AND INSTRUCTION
46	6	6310040	NUT, ¼-20 UNC FLEXLOC
47	8	6310060	NUT, ⅜-16 UNC FLEXLOC
48	3	6320062	NUT, ⅝ HEX JAM
49	2	6511012	PIN, ⅝ x 1½ DOWEL
50	9	6541612	PIN, ¼ x 1¼ TYPE "C" GROOVE
51	1	6700841	NIPPLE, 1" x 14" SCH 40 BW STEEL PIPE
52	1	6817079	NIPPLE, 1" x 4½ SCH 40 BW STEEL PIPE
53	1	6843008	ELBOW, 1" x 90° 150# M.I. PIPE
54	6	7000114-11	CAPSCREW, ¼ x 2½ HEX HEAD GR5 CAD PLT
55	36	7000208-11	CAPSCREW, ⅜ x 1" HEX HEAD GR5 CAD PLT
56	4	7000210-11	CAPSCREW, ⅜ x 1½" HEX HEAD GR5 CAD PLT
57	4	7000213-11	CAPSCREW, ⅜ x 2¼" HEX HEAD GR5 CAD PLT
58	24	7000303-11	CAPSCREW, ½ x 1" HEX HEAD GR5 CAD PLT
59	28	7000304-11	CAPSCREW, ½ x 1¼" HEX HEAD GR5 CAD PLT
60	12	7000309-11	CAPSCREW, ½ x 2¼" HEX HEAD GR5 CAD PLT
61	40	7000397-11	CAPSCREW, ⅝ x 2" HEX HEAD GR5 CAD PLT
62	2	7027393	SETSCREW, ⅝ x 1" SOCKET HEX HEAD CUP POINT
63	18	G-7061091-17	SCREW, NO. 10-24 x ⅜ ZINC PLATED HEX HEAD MACHINE
64	6	7178025	SCREW, NO. 2 x ¼ TYPE "U" ROUND HEAD DRIVE
65	2	7400842	TUBING, ½ O.D. x 32 SMLS. STEEL
66	42	7600024	WASHER, ⅜ TYPE "A"
67	16	7618018	WASHER, ½ STAT-O-SEAL
68	18	7619025	WASHER, NO. 10 SPRING LOCK
69	12	7621016	WASHER, ¼ TYPE "A"
70	12	7621032	WASHER, ½ TYPE "A"
71	1	7802020	BREATHER
72	3	7805052	FITTING, ⅛" HYDRAULIC GREASE
73	3	7805062	FITTING, ⅛ x 45° ELBOW BODY GREASE
74	4	7815057	PLUG, 1" MAGNETIC POST
75	2	7817170	GASKET, 3/16 x 2" x 24" SPONGE RUBBER
76	40	7621040	WASHER, ⅜ TYPE "A"
77	40	7619058	WASHER, ⅜ SPRING LOCK
78	2	6874016	PLUG , 2" C.I. SOLID SQUARE HEAD PIPE
79	2	6874012	PLUG, 1½" C.I. SOLID SQUARE HEAD PIPE

NOTES:

1. ASSEMBLE SPACER (ITEM 111) IN FRAME AND INSERT SHIMS (ITEMS 113 & 114) AS REQUIRED TO OBTAIN A .003" TO .005" LOOSE GAP BETWEEN SPACER AND FRAME. TIGHTEN NUT ON STUD (ITEM 112) UNTIL SPACER TOUCHES FRAME, METAL-TO-METAL. CHECK BY TAPPING SPACER LIGHTLY WITH HAMMER. THEN MARK POSITION OF NUT AND TIGHTEN AND ADDITIONAL TWO FLATS (1/3 TURN).
2. INSTALL SHIMS EQUAL TO INNER RACE STAND OFF BEYOND SHAFT, LESS .003" TO .005".
3. TORQUE SCREW (ITEM 147) TO 100 FT.-LBS. MEASURE GAP BETWEEN RETAINER (ITEM 143) AND CROSSHEAD. INSERT REQUIRED THICKNESS OF SHIM (ITEM 141) TO FIT MEASURED SHIM GAP. TORQUE SCREW (ITEM 147) TO 250 FT.-LBS. AT FINAL ASSEMBLY.

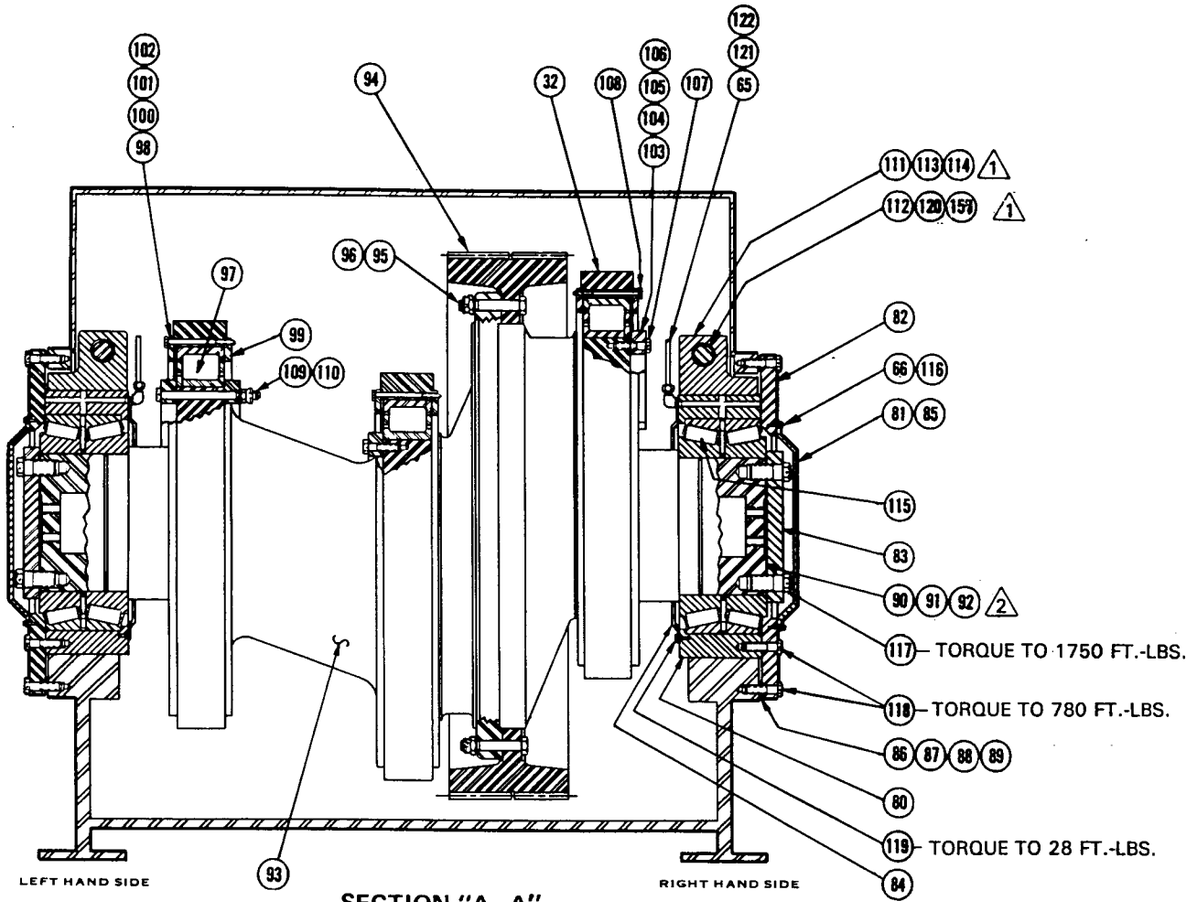
SHEET NO. 1

4

NATIONAL-OILWELL

POWER END ASSEMBLY (SECTION THRU POWER END) 14-P-220 TRIPLEX PISTON PUMP

SIZE	DRAWING NO.	REV.
F	PL 1295001	D



SECTION "A–A"

SECTION THRU CRANKSHAFT

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
32	3	1295007	ROD, CONNECTING
65	2	7400842	TUBING, ½ O.D. X 32" SMLS. STEEL
66	8	7600024	WASHER, ⅜ TYPE "A"
80	2	1295011	CAGE, MAIN BEARING
81	2	1295012	CAP, MAIN BEARING END
82	2	1295021	RING, MAIN BEARING LOCK
83	2	1295022	PLATE, MAIN BEARING RETAINER
84	2	1295081	RETAINER, MAIN BEARING CAGE OIL
85	2	1295096	GASKET, MAIN BEARING END CAP
86	6	1295104	SHIM, (.020" THICK), MAIN BEARING LOCKING RING
87	8	1295105	SHIM, (.0075" THICK), MAIN BEARING LOCKING RING
88	12	1295106	SHIM, (.005" THICK), MAIN BEARING LOCKING RING
89	2	1295107	SHIM, (.125" THICK), MAIN BEARING LOCKING RING
2	90	2	1295152	SHIM, (.0625" THICK), MAIN BEARING RETAINER
2	91	2	1295153	SHIM, (.020" THICK), MAIN BEARING RETAINER
2	92	8	1295154	SHIM, (.005" THICK), MAIN BEARING RETAINER
93	1	1295005	CRANKSHAFT
94	1	1295008	GEAR (127 TEETH), CRANKSHAFT
95	12	1295006	BOLT, CRANKSHAFT GEAR
96	12	6310201	NUT, 1¼-7 NC FLEXLOC HEX
97	3	ZB-32000	BEARING, CONNECTING ROD
98	3	1295403	RETAINER (OUTER), CONNECTING ROD BEARING
99	3	1295402	RETAINER (INNER), CONNECTING ROD BEARING
100	3	1295412	SHIM (.020" THICK), CONNECTING ROD OUTER RETAINER
101	9	1295411	SHIM (.0075" THICK), CONNECTING ROD OUTER RETAINER
102	9	1295410	SHIM (.005" THICK), CONNECTING ROD OUTER RETAINER
103	12	1295026	PLATE, CONNECTING ROD BEARING RETAINER
104	9	1295100	SHIM (.020" THICK), CONNECTING ROD BEARING RETAINER PLATE
105	18	1295101	SHIM (.0075" THICK), CONNECTING ROD BEARING RETAINER PLATE
106	27	1295102	SHIM (.005" THICK), CONNECTING ROD BEARING RETAINER PLATE
107	12	2402580	SCREW, ⅞ X 3½ DRILLED HEX HEAD GR5
108	24	2405069	SCREW, ¾ X 7¼ DRILLED HEX HEAD GR5
109	6	6310140	NUT, ⅞ FLEXLOC HEX
110	6	7000514-10	CAPSCREW, ⅞ X 10½ HEX HEAD GR5
1	111	2	1295014	SPACER, BEARING SUPPORT
1	112	2	1295024	STUD, BEARING SUPPORT
1	113	4	1295416	SHIM (.005" THICK), CRANKSHAFT BEARING SUPPORT
1	114	2	1295417	SHIM (.007" THICK), CRANKSHAFT BEARING SUPPORT
115	2	ZT-16125	BEARING, MAIN
116	24	2400690	SCREW, ⅜ X 1" DRILLED HEX HEAD GR5
117	8	2405010	SCREW, 1½ X 4" DRILLED HEX HEAD GR5
118	48	2405026	SCREW, 1⅛ X 3¼" DRILLED HEX HEAD GR5
119	16	5506202	BOLT, ⅝ X ¾ PLACE
1	120	4	6310400	NUT, 2½-8 FLEXLOC HEX
121	2	7084146	ELBOW, ½ T. X ⅜ P.T. X 90° MALE COMPRESSION
122	2	G-7804202	ELBOW, ½ T. X ⅜ P.T. X 45° MALE COMPRESSION
1	157	2	1295339	BEARING SUPPORT SUB-ASSEMBLY, MAIN & PINION

5

1 NOTE 1: ASSEMBLE SPACER (ITEM 111) IN FRAME AND INSERT SHIMS (ITEMS 113 & 114) AS REQUIRED TO OBTAIN .003" TO .005" LOOSE GAP BETWEEN SPACER & FRAME. TIGHTEN NUT ON STUD (ITEM 112) UNTIL SPACER TOUCHES FRAME, METAL-TO-METAL. CHECK BY TAPPING SPACER LIGHTLY WITH HAMMER. THEN MARK POSITION OF NUT AND TIGHTEN AND ADDITIONAL TWO FLATS (1/3 TURN). INSTALL RETAINER PLATES UNDER 2-1/2" HEX NUTS PER DRAWING 1295339.

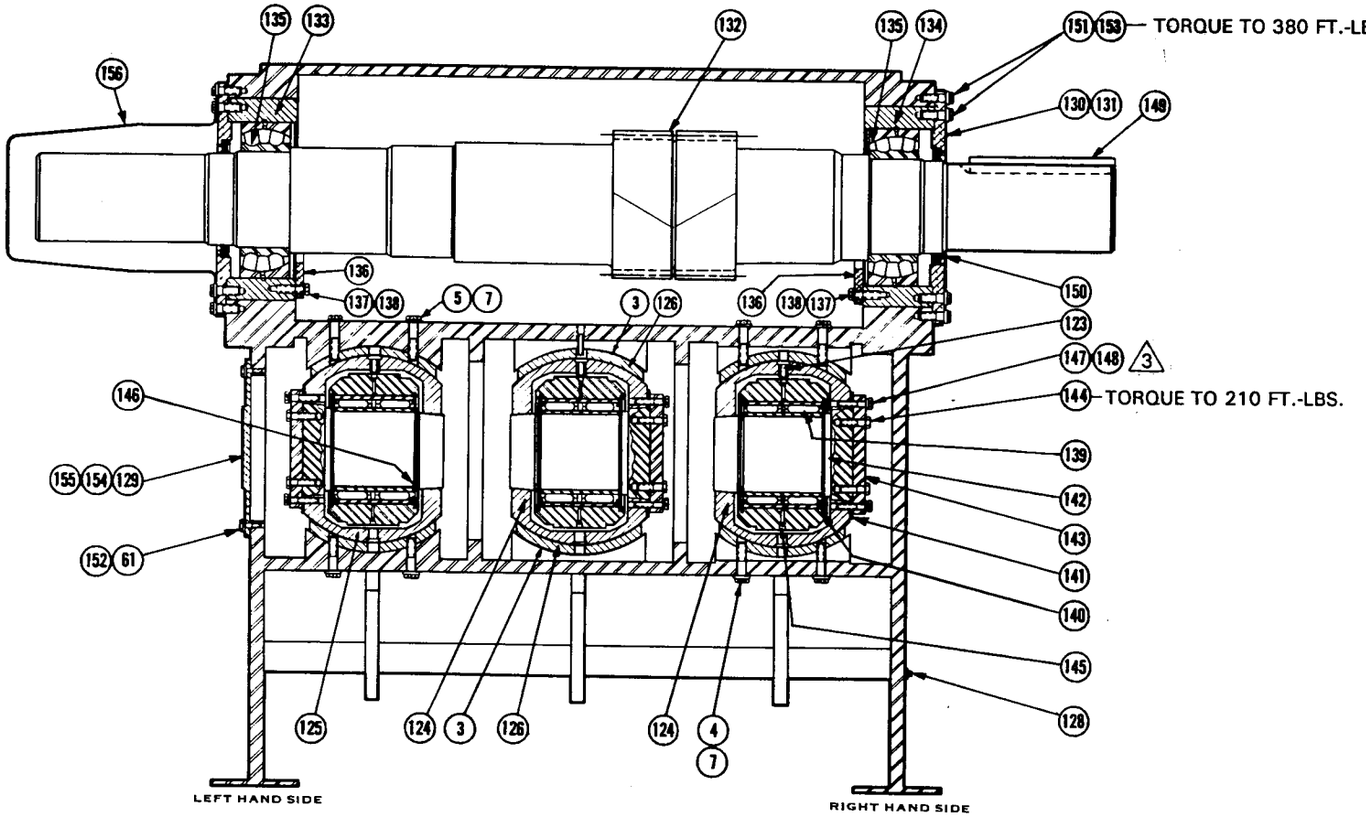
2 NOTE 2: INSTALL SHIMS EQUAL TO INNER RACE STAND OFF BEYOND SHAFT, LESS .003" TO .005".

3 NOTE 3: TORQUE SCREW (ITEM 147) TO 100 FT.-LBS. MEASURE GAP BETWEEN RETAINER (ITEM 143) AND CROSSHEAD. INSERT REQUIRED THICKNESS OF SHIM (ITEM 141) TO FIT MEASURED SHIM GAP. TORQUE SCREW (ITEM 147) TO 250 FT.-LBS. AT FINAL ASSEMBLY.

NATIONAL-OILWELL

POWER END ASSEMBLY
(SECTION THRU CRANKSHAFT)
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	F	PL 1295001	D



SECTION "B–B"

SECTION THRU PINION AND CROSSHEADS

BILL OF MATERIAL

ITEM	REQ'D	PART NO.	DESCRIPTION
3	15	1295103	SHIM (.005" THICK), CROSSHEAD LINER
4	18	2405018	CAPSCREW, ⅞ x 4½ DRILLED HEX HEAD GR5
5	18	2405114	CAPSCREW, ⅞ x 4¾ DRILLED HEX HEAD GR5
7	36	7618026	WASHER, ⅞ STAT-O-SEAL
61	8	7000397-11	CAPSCREW, ⅝ x 2" HEX HEAD HT
123	2	1290089	CONDUCTOR, OIL
124	2	1295015	CROSSHEAD (CENTER AND RIGHT HAND)
125	1	1295090	CROSSHEAD (LEFT HAND)
127	--	--	--
128	1	6873008	PLUG, 1" C.I. CORED SQUARE HEAD PIPE
129	2	1295013	COVER, CROSSHEAD HAND HOLE
130	2	1295020	RETAINER, PINION BEARING OIL SEAL
131	2	1295097	GASKET, PINION BEARING RETAINER
132	1	1295010	SHAFT WITH INTEGRAL PINION (32 TEETH), PINION
133	1	1295018	CAGE (LEFT HAND), PINION BEARING
134	1	1295019	CAGE (RIGHT HAND), PINION BEARING
135	2	11028	BEARING, PINION
136	2	1295027	PLATE, PINION BEARING CAGE
137	8	2402680	CAPSCREW, 5/8 x 2" DRILLED HEX HEAD GR5
138	8	7600040	WASHER, ⅝ TYPE "A"
139	3	ZB-9005	BEARING, CROSSHEAD PIN
140	6	1295401	RING, CROSSHEAD BEARING SNAP
141	6	1290114	SHIM (.3125" THICK), PIN RETAINER
142	3	1295028	PIN, CROSSHEAD
143	3	1295112	RETAINER, CROSSHEAD PIN
144	6	5506718	BOLT, ¾ x 3" PLACE
145	3	6875003	PLUG, ⅜ COUNTERSUNK PIPE
146	3	6912035	RING, RETAINING
3 147	6	2405005	CAPSCREW, ¾ x 3¼ DRILLED HEX HEAD GR5
3 148	6	7619068	WASHER, ¾ EXTRA DUTY SPRING
149	1	2404106	KEY, (1-3/16 x 2½ x 15½)
150	2	YS-10750	SEAL, PINION BEARING OIL
151	32	2405019	SCREW, ⅞ x 2½ DRILLED HEX HEAD GR5
152	8	7618022	WASHER, ⅝ STAT-O-SEAL
153	32	7621048	WASHER, ⅞ TYPE "A"
154	4	7817170	GASKET, 3/16 x 2" x 16½ SPONGE RUBBER
155	4	7817170	GASKET, 3/16 x 2" x 27¾ SPONGE RUBBER
156*	1	1295098	CAP, PINION SHAFT END*

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*TO BE FURNISHED ONLY WHEN THE PUMP IS SHIPPED WITHOUT A DRIVE OR CHARGING PUMP.

NOTES:

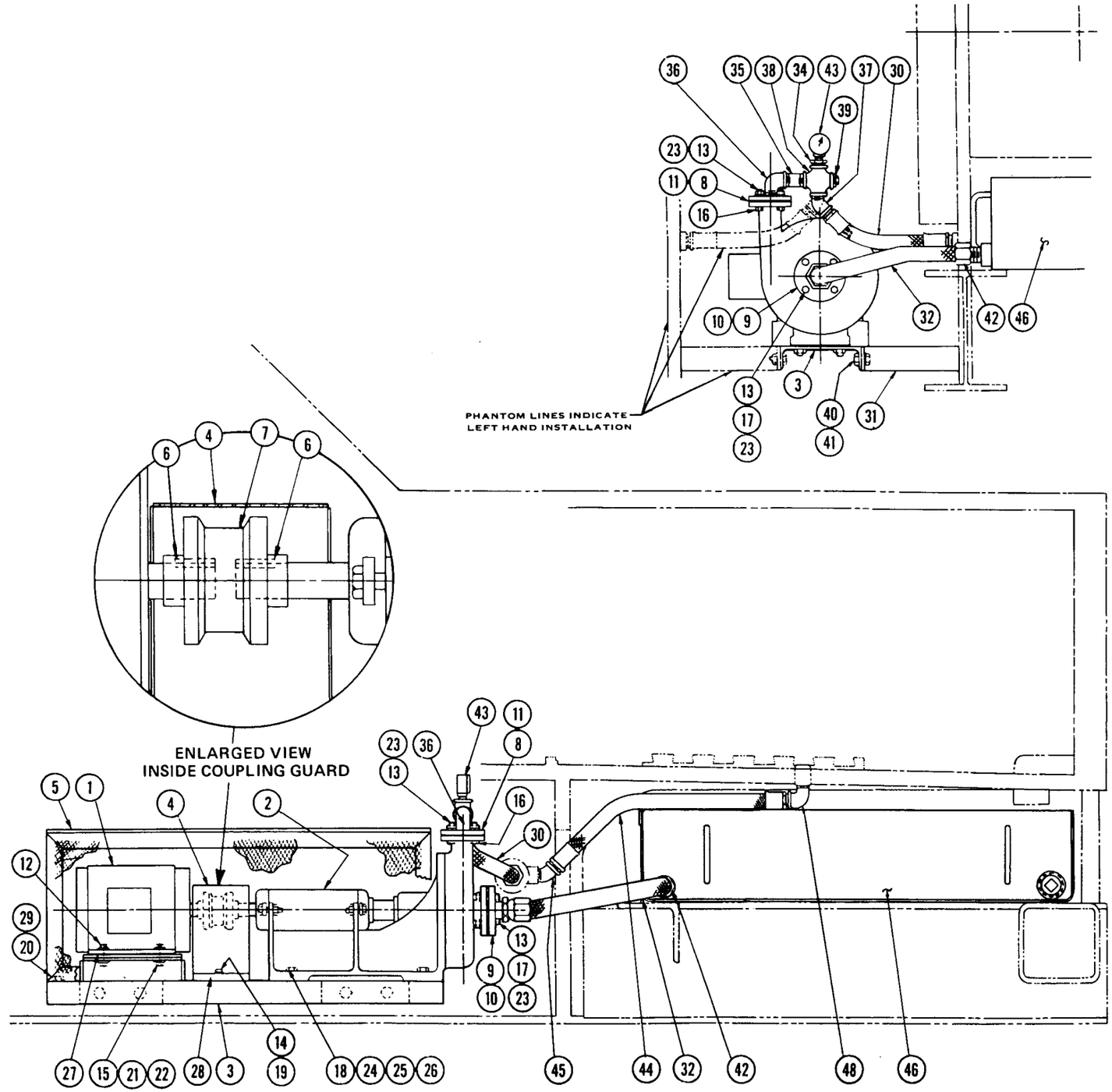
1. ASSEMBLE SPACER (ITEM 111) IN FRAME AND INSERT SHIMS (ITEMS 113 & 114) AS REQUIRED TO OBTAIN A .003" TO .005" LOOSE GAP BETWEEN SPACER AND FRAME. TIGHTEN NUT ON STUD (ITEM 112) UNTIL SPACER TOUCHES FRAME, METAL-TO-METAL. CHECK BY TAPPING SPACER LIGHTLY WITH HAMMER. THEN MARK POSITION OF NUT AND TIGHTEN AND ADDITIONAL TWO FLATS (1/3 TURN).
2. INSTALL SHIMS EQUAL TO INNER RACE STAND OFF BEYOND SHAFT, LESS .003" TO .005".
3. TORQUE SCREW (ITEM 147) TO 100 FT.-LBS. MEASURE GAP BETWEEN RETAINER (ITEM 143) AND CROSSHEAD. INSERT REQUIRED THICKNESS OF SHIM (ITEM 141) TO FIT MEASURED SHIM GAP. TORQUE SCREW (ITEM 147) TO 250 FT.-LBS. AT FINAL ASSEMBLY.

SHEET NO. 3

NATIONAL-OILWELL

POWER END ASSEMBLY
(SECTION THRU PINION & CROSSHEADS)
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	F	PL 1295001	D



BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295229	PISTON-LINER SPRAY SYSTEM (CONSISTS OF THE FOLLOWING)
1*	1	7812008	MOTOR, 230 / 460 V. ELECTRIC*
**	1	7812009	MOTOR, 575 V. ELECTRIC**
2	1	7815147	PUMP, 1" x 1½ CENTRIFUGAL
3	1	1295303	BASE, MOTOR AND PUMP
4	1	1295298	GUARD, COUPLING
5	1	10-304-044	GUARD, MOTOR AND PUMP
6	2	2401860	KEY (¼ x ¼ x 1¼)
7	1	7802327	COUPLING, TYPE "T-10" SIZE 20 T 10 WITH 1⅛ BORE
8	1	5902091	FLANGE, 1" 150# THREADED FLAT FACE
9	1	5902172	FLANGE, 1½ 150# THREADED FLAT FACE
10	1	6010036	GASKET, 1½ FULL FACE FLANGE
11	1	6010037	GASKET, 1" FULL FACE FLANGE
12	4	6300061	NUT, ⅜ CAD. PLATED HEX
13	8	6300081	NUT, ½ CAD. PLATED HEX
14	2	75-634-415	CAPSCREW, ½-13 x ¾ HEX HEAD GR5
15	4	7000211-11	CAPSCREW, ⅜ x 1¾ CAD PLATED HEX HEAD GR5
16	4	7000307-11	CAPSCREW, ½ x 2" CAD. PLATED HEX HEAD GR5
17	4	7000309-11	CAPSCREW, ½ x 2¼" CAD. PLATED HEX HEAD GR5
18	4	7000396-11	CAPSCREW, ⅝ x 1¾ CAD PLATED HEX HEAD GR5
19	2	75-770-474	LOCKWASHER, ½ EXTERNAL SHAKEPROOF
20	6	75-634-313	CAPSCREW, ⅜-16 x ¾ HEX HEAD GR5
21	4	1292293	WASHER, ¼ x 1¾ SQUARE
22	4	7619041	WASHER, ⅜ CAD. PLATED SPRING LOCK
23	8	7619050	WASHER, ½ CAD. PLATE SPRING LOCK
24	4	75-510-408	NUT, ⅝-11 HEX
25	4	75-770-205	WASHER, ⅝ WROT IRON
26	4	75-770-475	LOCKWASHER, ⅝ EXTERNAL SHAKEPROOF
27	2	29-001-153	SHIM SET (.1577" THICK)
28	2	10-300-300	BAR, TAPPED
29	6	75-770-472	LOCKWASHER, ⅜ CAD. EXTERNAL SHAKEPROOF
30	1	1283036	HOSE ASSEMBLY, 1" x 16"
31	2	1295327	SPACER
32	1	1292294	HOSE ASSEMBLY, 1½ x 26"
33	--	--	--
34	1	6800081	BUSHING, 1" x ¼ C.I. STD. BLK. HEX PIPE
35	1	6817077	NIPPLE, 1" x 3½ STD. PIPE
36	1	6829008	ELBOW, 1" x 90° STD. BLK. M.I. STREET
37	1	6839008	ELBOW, 1" x 45° STD. BLK. M.I. STREET
38	1	6859008	CROSS, 1" STD. M.I. STREET
39	1	6873008	PLUG, 1" C.I. CORED SQUARE HEAD PIPE
40	4	7000454-11	CAPSCREW, ¾ x 5½ CAD. PLATED HEX HEAD GR5
41	4	7619066	WASHER, ¾ LOCK
42	1	7800070	ADAPTER, MALE
43	1	7806002	GAUGE (0-100 PSI), PRESSURE
44	1	1282036	HOSE ASSEMBLY, 1" x 30"
45	1	6839008	ELBOW, 1" x 45° STD. M.I. STREET
46	1	1295282	SUMP, PISTON AND LINER LUBE
47	--	--	--
48	1	6829008	ELBOW, 1" x 90° STD. BLK. M.I. STREET

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*PART NUMBER 7812008 IS: 230/460 V., 3 H.P., 182 TC., 60 HZ., 1735 RPM, 3 PHASE ELECTRIC MOTOR.

**PART NUMBER 7812009 IS: 575 V., 3 H.P., 182 TC., 60 HZ., 1735 RPM.

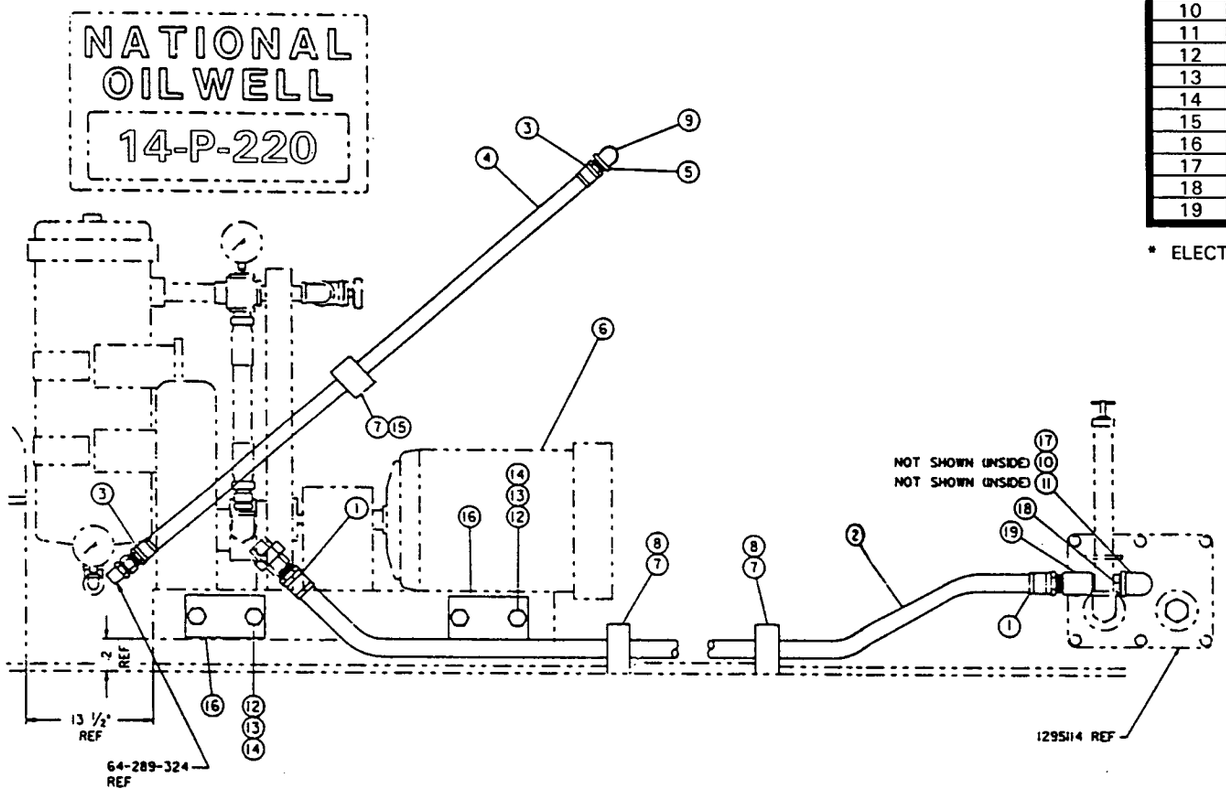
NATIONAL-OILWELL

PISTON & LINER SPRAY SYSTEM
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	B	PL 1295229	

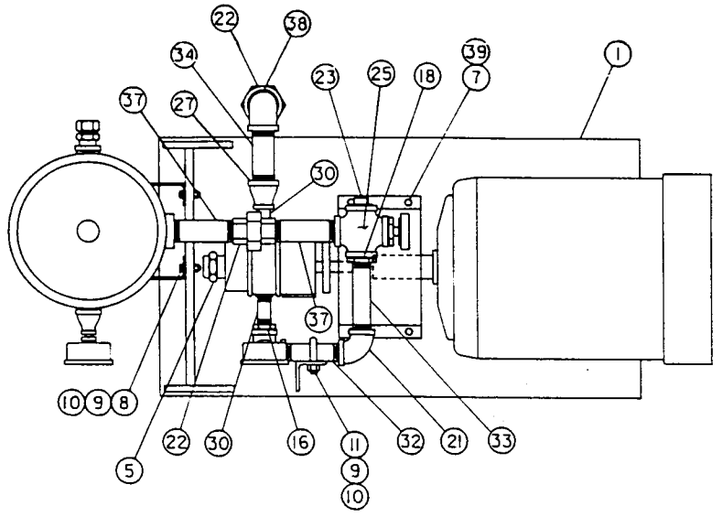
BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295326	EXTERNAL LUBRICATION SYSTEM (CONSISTS OF THE FOLLOWING)
1	2	64-271-226	COUPLING, 1" HOSE
2	1	64-270-016	HOSE, 1"
3	2	64-271-012	COUPLING, 3/4" HOSE
4	1	64-270-012	HOSE, 3/4"
5	1	6829006	ELBOW, 3/4" X 90 DEG. STD. M.I. STREET
6*	1	1295324	PUMP COMPLETE, MOTOR AND LUBE OIL *
7	3	7802163	CHANNEL, ANCHOR
8	2	G-7802466	CLAMP, PIPE
9	1	6800084	BUSHING, 1" X 3/4" STD. M.I. HEX PIPE
10	1	10-300-037	STRAINER, OIL
11	1	86-132-008	CAP, 1"
12	4	7000452-11	CAPSCREW, 3/4" X 5" GRADE 5 HEX HEAD
13	4	75-777-405	WASHER, 3/4" FLAT BEVEL SQUARE
14	4	7619066	WASHER, 3/4" LOCK
15	1	7802353	CLAMP, 3/4" PIPE
16	2	1295322	SPACER
17	1	6829008	ELBOW, 1" X 90 DEG. STREET
18	1	6817074	NIPPLE, 1" X 2" SCH. 40 PIPE
19	1	6806008	COUPLING, 1" STD. PIPE

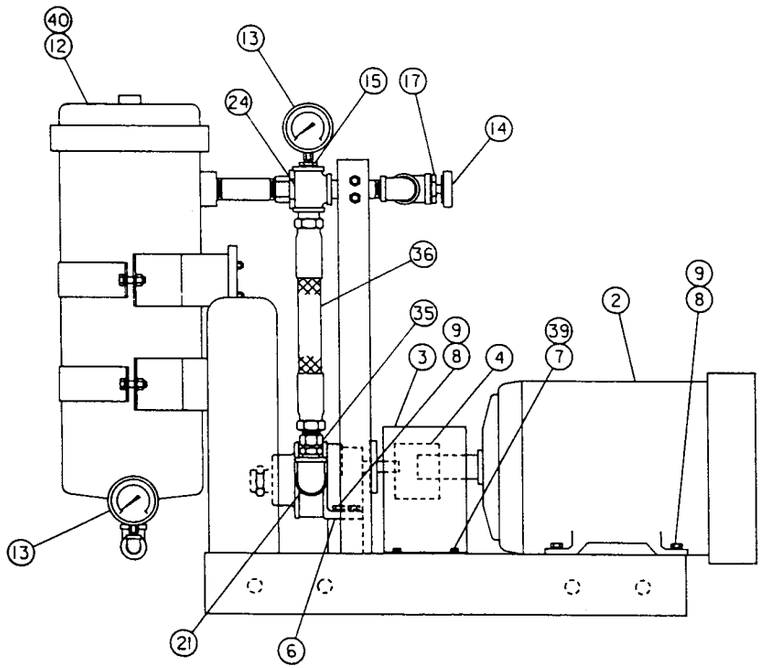
* ELECTRIC MOTOR IS: 1-1/2 H.P., 900 R.P.M., 60 HZ., 230/460 VOLT.

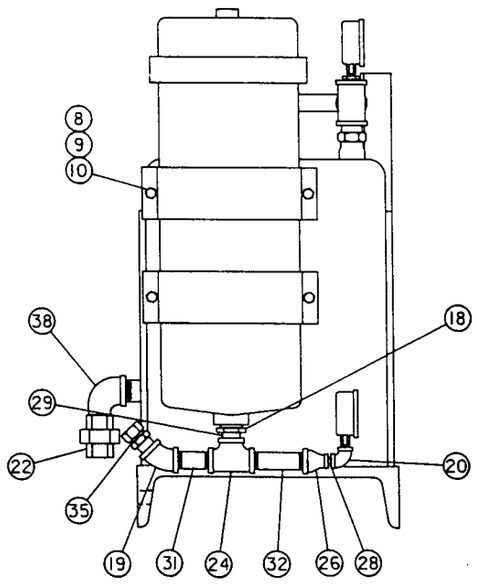


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NATIONAL-OILWELL			
EXTERNAL LUBE SYSTEM 14-P-220 TRIPLEX PISTON PUMP			
	SIZE	DRAWING NO.	REV.
	D	PL 1295326	







BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295324	MOTOR AND OIL PUMP COMPLETE (CONSISTS OF THE FOLLOWING)
1	1	1295325	BASE, OIL PUMP / MOTOR AND FILTER
2*	1	74-450-830	MOTOR, ELECTRIC *
3	1	06-510-607	GUARD, COUPLING
4	1	68-103-991	COUPLING, FLEX
5	1	64-182-010	PUMP, OIL
6	--	45-194-207	SHIM SET (1 REQ'D.) (CONSISTS OF THE FOLLOWING)
	3	45-194-208	SHIM (.020" THICK)
	3	06-015-462	SHIM (16 GAUGE)
7	4	75-634-300	CAPSCREW, 1/4" - 20 X 5/8" GRADE 5 HEX HEAD
8	16	75-634-340	CAPSCREW, 3/8" - 16 X 1-1/4" GRADE 5 HEX HD.
9	18	75-770-472	WASHER, 3/8" EXTERNAL SHAKEPROOF LOCK
10	10	75-510-404	NUT, 3/8" - 16 HEX STEEL
11	1	45-804-150	"U"-BOLT, 3/8" - 16
12	1	64-212-832	FILTER, CARTRIDGE OIL
13	2	78-256-532	GAUGE (0 - 1000 P.S.I.), 2-1/2" OIL PRESSURE
14	1	78-684-250	THERMOMETER (0 - 250° F.), 3" DIAL
15	1	86-061-008	BUSHING, 3/4" X 1/4" C.I. BLK. HEX PIPE
16	1	86-061-010	BUSHING, 3/4" X 1/2" C.I. BLK. HEX PIPE
17	1	86-061-014	BUSHING, 1" X 1/2" C.I. BLK. HEX PIPE
18	2	86-061-015	BUSHING, 1" X 3/4" C.I. BLK. HEX PIPE
19	1	86-339-106	ELBOW, 3/4" X 45 DEG. PIPE
20	1	78-176-002	ELBOW, 1/4" X 90 DEG. 2000# F.S. PIPE
21	2	86-336-106	ELBOW, 3/4" X 90 DEG. 150# M.I. BLK. PIPE
22	2	86-641-108	UNION, 1" 150# M.I. FEMALE GROUND JOINT PIPE
23	1	86-485-508	PLUG, 1" C.I. SOLID SQUARE HEX HEAD PIPE
24	2	86-543-106	TEE, 3/4" 150# M.I. PIPE
25	1	6859008	CROSS, 1" 150# M.I. PIPE
26	1	86-600-008	COUPLING, 3/4" X 1/4" 150# M.I. REDUCING
27	1	86-600-014	COUPLING, 1" X 1/2" 150# M.I. REDUCING
28	1	78-420-001	NIPPLE, 1/4" X CLOSE SCH. 80 PIPE
29	1	86-425-001	NIPPLE, 3/4" X CLOSE SCH. 40 PIPE
30	2	86-424-007	NIPPLE, 1/2" X 2-1/2" SCH. 40 PIPE
31	1	6817067	NIPPLE, 3/4" X 2" SCH. 40 PIPE
32	2	86-425-013	NIPPLE, 3/4" X 4" SCH. 40 PIPE
33	1	86-425-017	NIPPLE, 3/4" X 5" SCH. 40 PIPE
34	1	86-426-013	NIPPLE, 1" X 4" SCH. 40 PIPE
35	2	64-289-324	ADAPTER, 3/4" MALE TO FEMALE
36	1	45-804-717	HOSE ASSEMBLY, 3/4"
37	2	6817079	NIPPLE, 1" X 4-1/2" SCH. 40 PIPE
38	1	86-342-108	ELBOW, 1" X 90 DEG. 150# BLK. M.I. STREET
39	4	75-770-470	WASHER, 1/4" EXTERNAL SHAKEPROOF LOCK
40**	REF.	64-212-848	ELEMENT, FILTER

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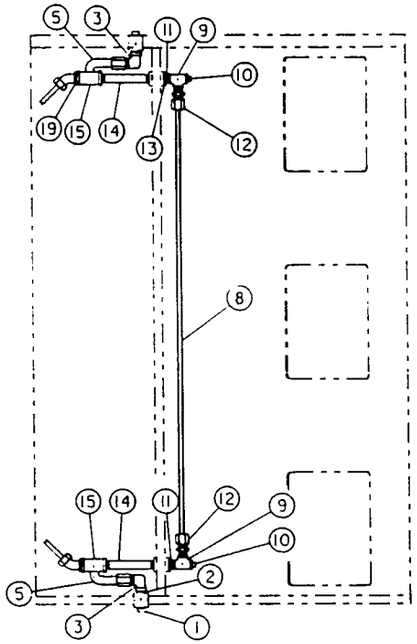
* ELECTRIC MOTOR IS: 1-1/2 H.P., 60 HZ., 230/460 V., 900 R.P.M.
** INCLUDED IN FILTER, ITEM 12.

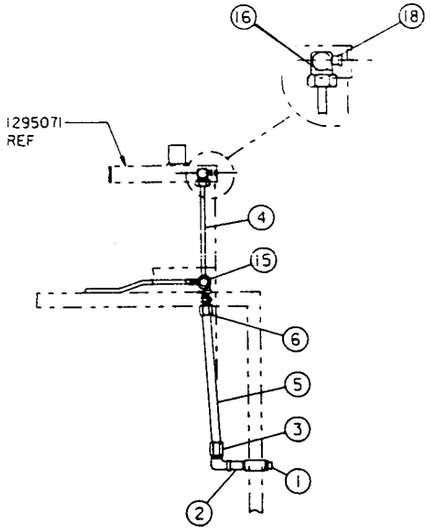
NATIONAL-OILWELL

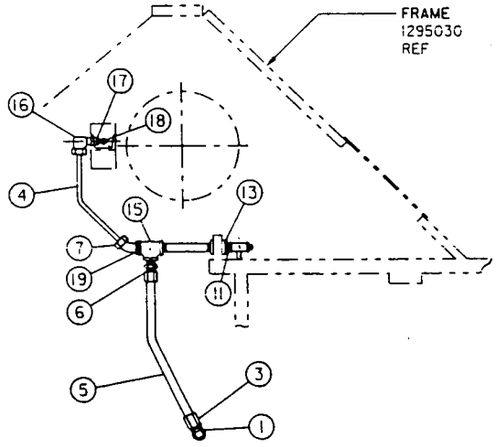
MOTOR & OIL PUMP COMPLETE
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	D	PL 1295324	A

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295308	INTERNAL LUBE SYSTEM (CONSISTS OF THE FOLLOWING)
1	1	6874008	PLUG, 1 STD
2	2	6817078	NIPPLE, STD PIPE 1" X 4"
3	2	7804563	ELBOW, 1" T X 1" PT X 90° FEMALE
4	2	7400842	TUBING, ½ X ⅜ X 14" LG
5	2	7401642	TUBING, CD SMLS STL 1 OD X .049 WALL X 17 LG
6	2	7902380	TEE, 1" T X 1" PT FEMALE RUN
7	2	G7804202	45 ELBOW, MALE ½
8	1	7401240	TUBING, CD SMLS STEEL ¾ OD X ⅝ ID X 61" LG
9	2	6888004	TEE, STD MI PIPE ½
10	2	1295306	PLUG, ½ WITH 7/32 DIA
11	2	6817044	NIPPLE, STD PIPE ½ X CLOSE
12	2	7802946	CONNECTOR, ¾ T X ½ PT MALE
13	2	6800083	BUSHING, STD MI HEX 1 X ½
14	2	6817082	NIPPLE, STD PIPE 1 X 7½
15	2	6888008	TEE, STD MI PIPE 1
16	2	7804146	ELBOW, ½ T X ⅜ PT X 90° MALE
17	2	6800030	BUSHING, STD MI HEX ⅜ X ⅛
18	2	6829001	ELBOW, STD MI STREET 90° ⅛
19	2	6800082	BUSHING, STD MI HEX 1" X ⅜"

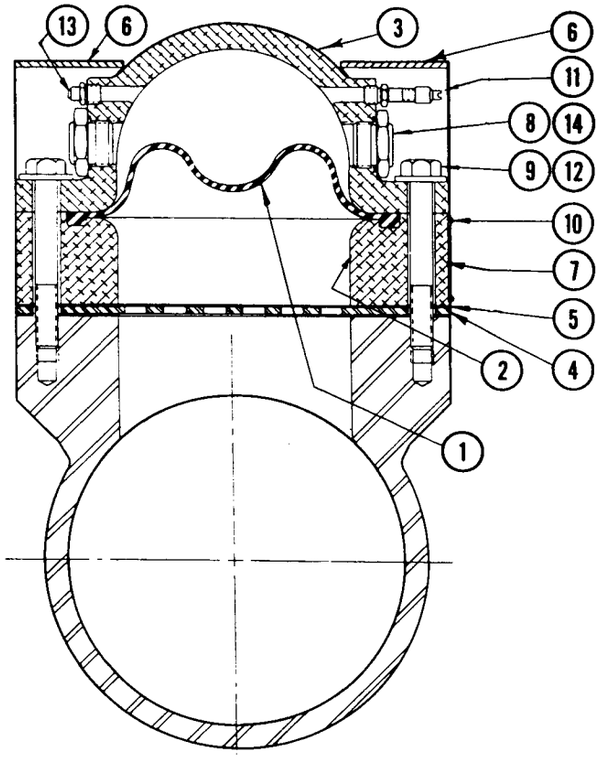






10

NATIONAL-OILWELL			
INTERNAL LUBRICATION SYSTEM 14-P-220 TRIPLEX PISTON PUMP			
	SIZE	DRAWING NO.	REV.
	D	PL 1295308	B



BILL OF MATERIAL

ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	1290195	DIAPRHAGM
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	2410031-24	PACKING
9	32	7000361-11	CAPSCREW, 9/16 X 4" HEX HEAD GR5 CAD. PLT.
10	8	7178025	SCREW, NO. 2 X ¼ TYPE "U" ROUND HEAD DRIVE
11	1	7500021	VALVE, CHECK
12	32	7621036	WASHER, 9/16 TYPE "A"
13	1	7500396	VALVE, ¼ 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, ¾ CAD. PLATED HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-D
	8	7000445-11	CAPSCREW, ¾ X 3¼ CAD. PLATED HEX HEAD GR5
	12	7000486-10	CAPSCREW, ⅞ X 3¼ 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, ¾ CAD. PLATED HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908046	RING, R52-D
	8	7000445-11	CAPSCREW, ¾ X 3¼ CAD. PLATED HEX HEAD GR5
	12	7000486-10	CAPSCREW, ⅞ X 3¼ 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, ⅞ CAD. PLATED HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908041	RING, R48-D
	12	7000486-10	CAPSCREW, ⅞ X 3¼ CAD. PLATED HEX HEAD GR5
	12	7000487-10	CAPSCREW, ⅞ X 3½ 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, ⅞ CAD. PLATED HEX
	1	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6908041	RING, R48-D
	12	7000486-10	CAPSCREW, ⅞ X 3¼ CAD. PLATED HEX HEAD GR5
	12	7000487-10	CAPSCREW, ⅞ X 3½ 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-D
	12	7000486-10	CAPSCREW, ⅞ X 3¼ HEX HEAD GR5

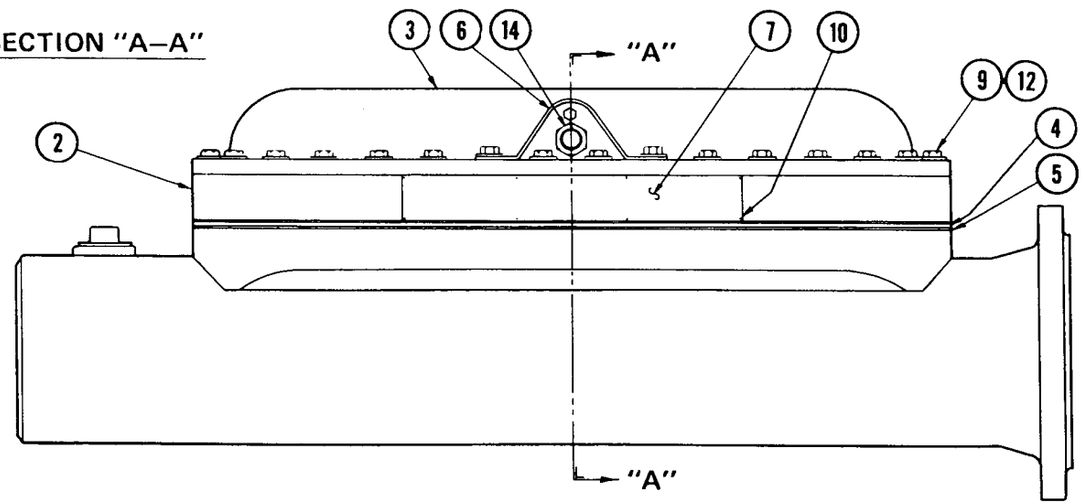
--	--	1292203	DAMPENER, DOUBLE FLANGED FOR 10" SUCTION LINE* (CONSISTS OF THE FOLLOWING)
	1	1292200	BODY, DAMPENER
	12	6300149	NUT, ⅞ CAD. PLATED HEX
	1	6817121	NIPPLE, 2" X 3" STD. PIPE
	2	6874016	PLUG, 2" SOLID SQUARE HEAD PIPE
	1	6888016	TEE, 2" STD. M.I. PIPE
	2	6908046	RING, R52-D
	12	7000486-10	CAPSCREW, ⅞ X 3¼ HEX HEAD GR5
	12	7000490-10	CAPSCREW, ⅞ X 4¼ 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.

SECTION "A–A"



NOTE: DAMPENER ASSEMBLY 1292212 IS SHOWN PICTORIALLY.

NATIONAL-OILWELL

SUCTION LINE PULSATION DAMPENER ASSY'S. (OPTIONAL EQUIPMENT) 14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295225	CROSS COMPLETE, STRAINER* (WITH 5" - 5000# DISCHARGE FLANGE)
1	1	1295226	CROSS
2	1	1292219	STRAINER
3	12	2408014	STUD, 1⅛ X 6¾ BOTTOM TAPER LOCK
4	12	6300180	NUT, 1⅛ HEAVY HEX
5	4	102842-1	SHIM (.125" THICK)
6	3	102842-2	SHIM (.0625" THICK)
7	4	102842-3	SHIM (.0312" THICK)
8	1	1290221	PLATE, BASE
9	1	1295218	SUPPORT
10	4	7000439-11	CAPSCREW, ¾ X 1¾ CAD. PLATED HEX HEAD GR5
11	4	7000440-11	CAPSCREW, ¾ X 2" CAD. PLATED HEX HEAD GR5
12	8	7619066	WASHER, ¾ CAD. PLATED SPRING LOCK
13	1	G-2407004	TAG, STRAINER CLEAN-OUT
14	2	7178088	SCREW, NO. 10 X ⅜ TYPE "U" ROUND HEAD DRIVE
15	1	6907339-S	RING, BX-169S
16	1	1295209	SPOOL, DISCHARGE CROSS
17	24	2403070	STUD, 1⅛ X 7¼ BOTTOM TAPER LOCK
18	24	6300240	NUT, 1⅛ HEAVY HEX

*INCLUDES ITEMS 1 THRU 18

APPLICABLE TO 1295225 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	6508033	RING, R39-D
	3	6908040	RING, R44-D

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295215	CROSS COMPLETE, STRAINER* (WITH 6" - 5000# DISCHARGE FLANGE)
1	1	1295216	CROSS
2	1	1292219	STRAINER
3	12	2408014	STUD, 1⅛ X 6¾ BOTTOM TAPER LOCK
4	12	6300180	NUT, 1⅛ HEAVY HEX
5	4	102842-1	SHIM (.125" THICK)
6	3	102842-2	SHIM (.0625" THICK)
7	4	102842-3	SHIM (.0312" THICK)
8	1	1290221	PLATE, BASE
9	1	1295218	SUPPORT
10	4	7000439-11	CAPSCREW, ¾ X 1¾ CAD. PLATED HEX HEAD GR5
11	4	7000440-11	CAPSCREW, ¾ X 2" CAD. PLATED HEX HEAD GR5
12	8	7619066	WASHER, ¾ CAD. PLATED SPRING LOCK
13	1	G-2407004	TAG, STRAINER CLEAN-OUT
14	2	7178088	SCREW, NO. 10 X ⅜ TYPE "U" ROUND HEAD DRIVE
15	1	6907339-S	RING, BX-169S
16	1	1295209	SPOOL, DISCHARGE CROSS
17	8	2403070	STUD, 1⅛ X 7¼ BOTTOM TAPER LOCK
18	8	6300240	NUT, 1⅛ HEAVY HEX
19	24	2408000	STUD, 1⅜ X 7½ BOTTOM TAPER LOCK
20	24	6300220	NUT, 1⅜ HEAVY HEX

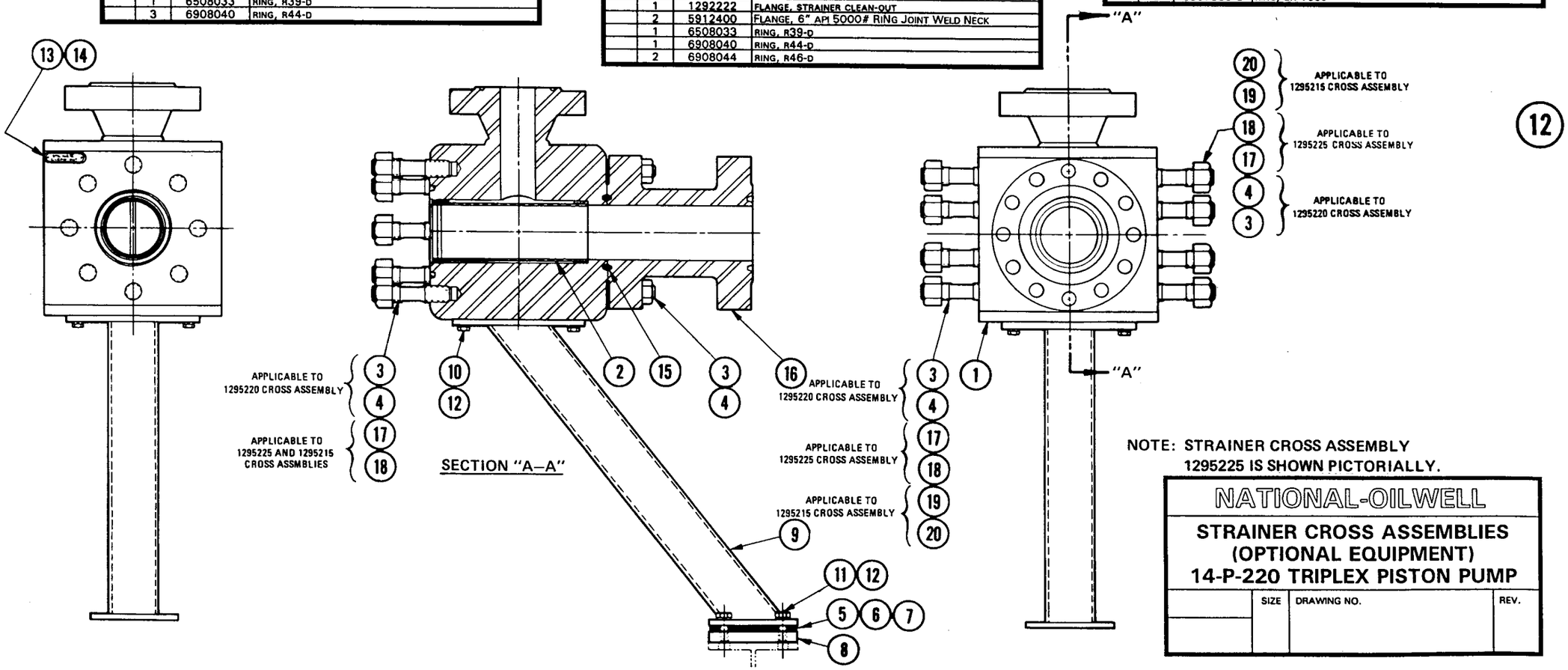
*INCLUDES ITEMS 1 THRU 20

APPLICABLE TO 1295215 STRAINER CROSS			
--	1	1292223	KIT, FLANGE AND GASKET (CONSISTS OF THE FOLLOWING)
	1	1292222	FLANGE, STRAINER CLEAN-OUT
	2	5912400	FLANGE, 6" API 5000# RING JOINT WELD NECK
	1	6508033	RING, R39-D
	1	6908040	RING, R44-D
	2	6908044	RING, R46-D

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	--	1295220	CROSS COMPLETE, STRAINER* (WITH 5" - 10,000# DISCHARGE FLANGE)
1	1	1295221	CROSS
2	1	1292219	STRAINER
3	48	2408014	STUD, 1⅛ X 6¾ BOTTOM TAPER LOCK
4	48	6300180	NUT, 1⅛ HEAVY HEX
5	4	102842-1	SHIM (.125" THICK)
6	3	102842-2	SHIM (.0625" THICK)
7	4	102842-3	SHIM (.0312" THICK)
8	1	1290221	PLATE, BASE
9	1	1295218	SUPPORT
10	4	7000439-11	CAPSCREW, ¾ X 1¾ CAD. PLATED HEX HEAD GR5
11	4	7000440-11	CAPSCREW, ¾ X 2" CAD. PLATED HEX HEAD GR5
12	8	7619066	WASHER, ¾ CAD. PLATED SPRING LOCK
13	1	G-2407004	TAG, STRAINER CLEAN-OUT
14	2	7178088	SCREW, NO. 10 X ⅜ TYPE "U" ROUND HEAD DRIVE
15	1	6907339-S	RING, BX-169S
16	1	1295209	SPOOL, DISCHARGE CROSS

*INCLUDES ITEMS 1 THRU 16.

APPLICABLE TO 1295220 STRAINER CROSS			
--	1	1295223	KIT, FLANGE AND GASKET (CONSISTS OF THE FOLLOWING)
	1	1295222	FLANGE, STRAINER CLEAN-OUT
	2	5913390	FLANGE, 5" API 10,000# RING JOINT WELD NECK
	1	6907325-S	RING, BX-155S
	3	6907339-S	RING, BX-169S



NOTE: STRAINER CROSS ASSEMBLY 1295225 IS SHOWN PICTORIALLY.

NATIONAL-OILWELL

STRAINER CROSS ASSEMBLIES (OPTIONAL EQUIPMENT) 14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.

TOOLS FURNISHED - NOT ILLUSTRATED

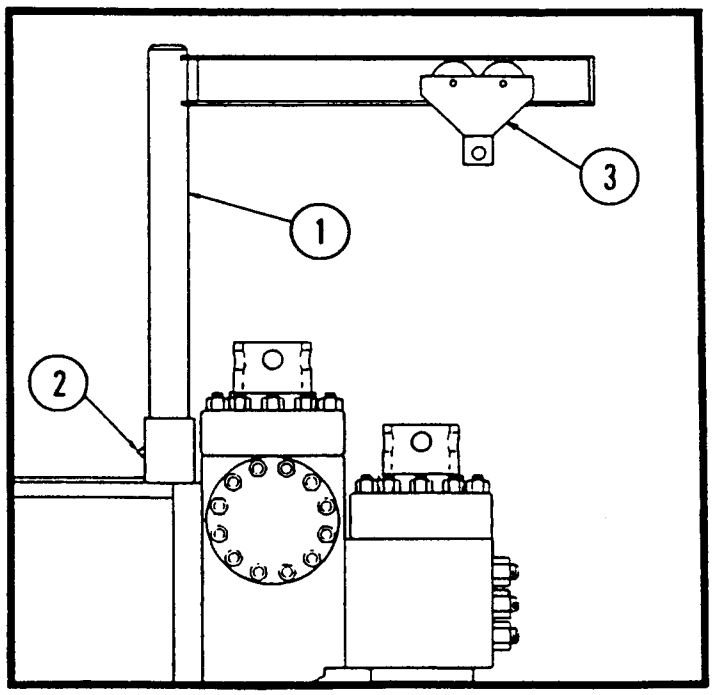
THE ITEMS BELOW ARE NOT ILLUSTRATED.
THEY ARE STANDARD PARTS THAT ARE FURNISHED
WITH EACH SET OF PUMPS, BUT SHIPPED SEPARATELY.

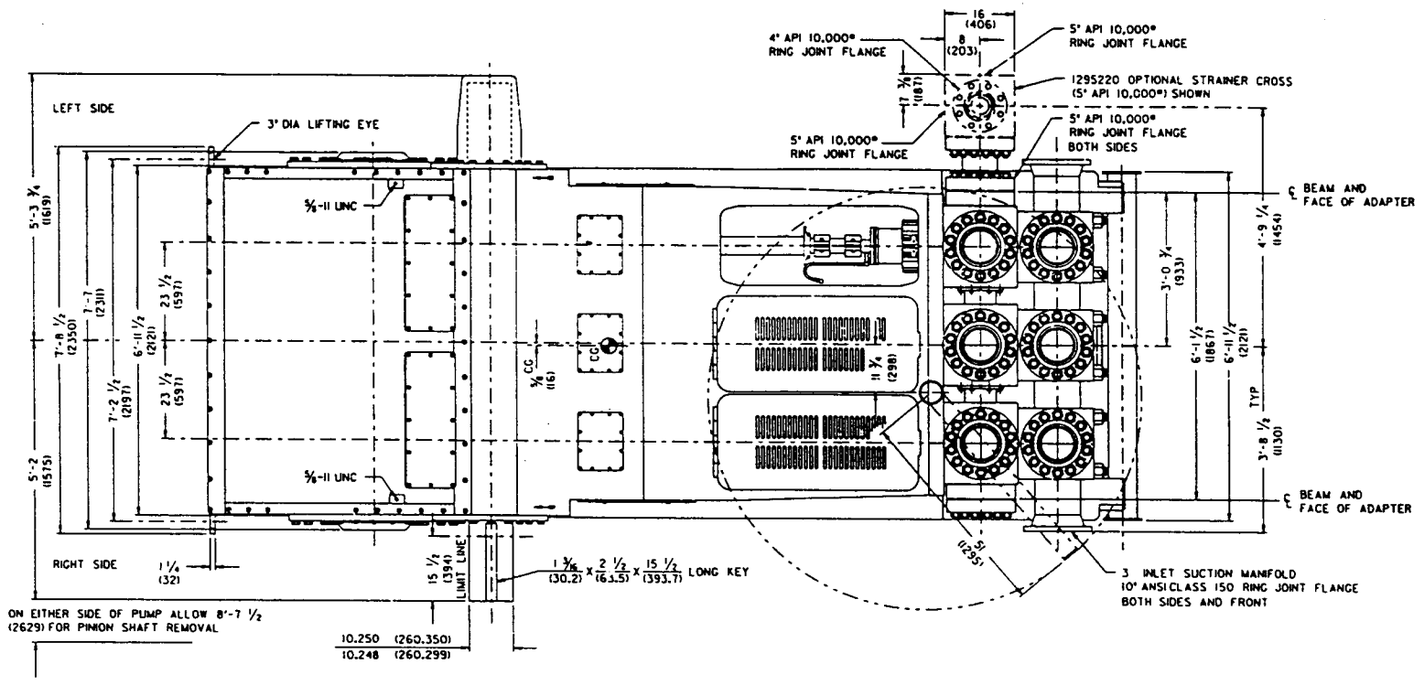
BILL OF MATERIAL		
REQ'D	PART NO.	DESCRIPTION
1	1295127	DRIVE, VALVE SEAT
1	1290206	BOLT, SHORT LIFTING
1	1290207	BOLT, LONG LIFTING
1	M-1060	PULLER, VALVE SEAT
1	M-1087	HEAD, VALVE SEAT PULLER
1	2402290	WRENCH (FOR 1290140, PINION ROTATING ADAPTER)
1	1290140	ADAPTER, PINION ROTATING
1	1295164	PLATE, LINER BUSING PULLER

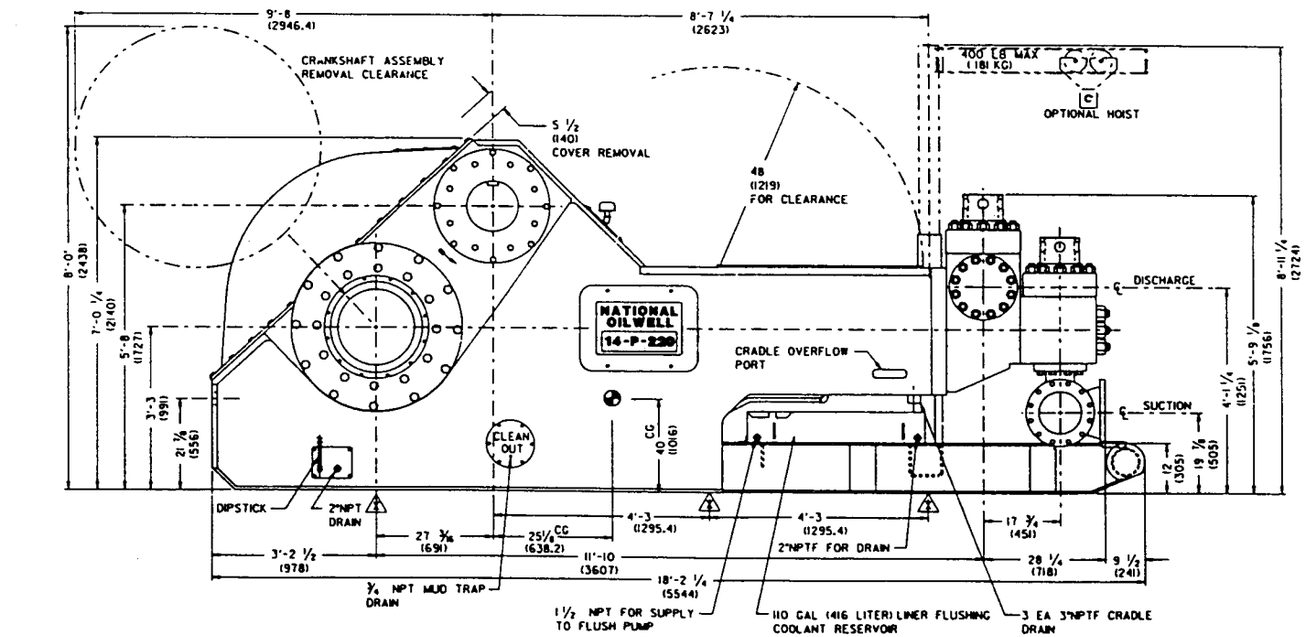
HOIST - OPTIONAL

BILL OF MATERIAL			
ITEM	REQ'D	PART NO.	DESCRIPTION
--	1	1295197	HOIST COMPLETE (CONSISTS OF THE FOLLOWING)*
1	1	1295196	BOOM
2	1	7805052	FITTING, ⅛ HYDRAULIC GREASE
3	1	7819040	TROLLEY, ½ TON

*OPTIONAL EQUIPMENT, SPECIFY WHEN ORDERING.







EST. WEIGHT		
DESCRIPTION	ENGLISH	METRIC
PUMP	86,000 lbs.	39,010 Kg
STRAINER CROSS	1,400 lbs.	635 Kg
HOST	150 lbs.	68 Kg
MISC. REFERENCE INFORMATION		
WK^2 AT PINION SHAFT	3,150 f^2	(132.7 Kg-m^2)
LUBRICATION OIL CAPACITY	180 GAL.	680 LITERS
LUBRICATION OIL	SEE SERVICE MANUAL	
GEAR RATIO	3.969	

14

APPROXIMATE CENTER OF GRAVITY

RECOMMENDED SUPPORT LOCATIONS (MINIMUM)

DIMENSIONS ENCLOSED IN PARENTHESIS ( ) ARE IN MILLIMETERS

NATIONAL-OILWELL

OUTLINE & INSTALLATION DRAWING
14-P-220 TRIPLEX PISTON PUMP

	SIZE	DRAWING NO.	REV.
	E	PL 1295004	C