



- NOTES: 1. INNER BEARING RING (ITEM 7) IS PRESS FIT ONTO SHAFT (ITEM 1)
2. CUT ON ASSEMBLY.
- △ 3. CONE SPRING (ITEM 35) TO BE INSTALLED WITH SMALL OD TOWARDS CYCLE BALL (ITEM 31).

-NO	ITEM	PART NO.	DESCRIPTION	SPEC.
3-2-1	NO.			
QTY				
1	1	1	301003-1	ROTOR-SLEEVE-SHAFT ASS'Y
△	1	1	2	316001 1/2" BELLEVILLE WASHER
△	1	1	3	309001 HEX. HD CSREW
	1	1	4	311004-4 KEY
△	2	2	5	509002 PLUG
	1	1	6	553005 PLUG
	1	1	7	406002 BRG. INNER RING
	1	1	8	405002 BRG. NEEDLE OUTER RACE
	1	1	9	215002 SHAFT SEAL
	1	1	10	201166 O'RING-166 6 3/4 ID X 6 15/16 OD X 3/32
△	1	1	11	311029-1 PINTLE
	1	1	12	311010-1 FRONT HOUSING H60/H110
	-	1	13	311018-1 WEDGE - H60
	-	1	14	311018-2 WEDGE - H110
	1	1	15	311017-1 SWASH PLATE
△	-	7	16	311022-1 PISTON - H 60
△	-	7	17	311022-2 PISTON - H 110
	7	7	18	602003 SPRING
	7	7	19	311015-1 SPRING INSERT
△	8	8	20	304018 SH. CAP SCREW
	1	1	21	901007 SERIAL NO./IDENT. LABEL
	1	-	22	311018-3 WEDGE - H90
	2	2	23	401003 THRUST BEARING
	1	1	24	311011-1 REAR HOUSING
	1	-	25	311022-3 PISTON - H90
	1	1	26	201008 O'RING-008 3/16 ID X 5/16 OD X 1/16 SEC.
	2	2	27	201012 O'RING-012 3/8 ID X 1/2 OD X 1/16 SEC
	1	1	28	401002-1 1/2" LOCKVALVE ASS'Y
△	1	1	29	343005 DOWEL PIN
△	1	1	30	311033-1 HELM PUMP SPACER
△	2	2	31	601006 CYCLE BALL
△△	3	3	32	325001 HIGH COLLAR LOCKWASHER
△△△	3	3	33	301003 S.H. CAP SCREW
△	4	4	34	553007 MOUNTING HOLE PLUG
△△	2	2	35	602019 CONE SPRING
△△	1	1	36	343016 WELDING ROD

CUSTOMER PARTS LIST

APPLICATION	-NO	ASS'Y NO.
H 60, 12° & LOCKVALVE 1/2"	-1	301002-1
H 110, 20° & LOCKVALVE 1/2"	-2	301002-2
H 90, 16° & LOCKVALVE 1/2"	-3	301002-3

1 130397 SEE DCN 960021

H	01-03-93	SEE DCN 940023	LL
G	28-01-94	SEE DCN 940014	LL
F	20-07-93	SEE DCN 930037	LL
E	22-04-92	SEE DCN 920023	LL
D	11.27.90	SEE DCN 900032	JG
C	07.03.90	SEE DCN 900021	JG
B	04.23.90	SEE DCN 900005	J.G.
A	04.06.90	SEE DCN 900010	JG
-	01.16.90	PRODUCTION ISSUE	LL

ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES. DIMENSIONS IN MILLIMETERS ARE GIVEN IN PARENTHESES. DIMENSIONS IN MILLIMETERS ARE GIVEN IN PARENTHESES. DIMENSIONS IN MILLIMETERS ARE GIVEN IN PARENTHESES.

TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

SIZE	± .01	FRACTION	± .004
2.50	± .001	ANGULAR	± .01 DEG
3.00	± .0005	SURFACE FINISH	✓

ALL DIMENSIONS IN PARENTHESES

REV. DATE DRAWING / DESIGN CHANGE NO. BY

Justin

DATE 900103 SCALE N.T.S. DRAWING J.G. [Signature]

TITLE H60/H90/H110 HELM PUMP ASSEMBLY D-301002

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