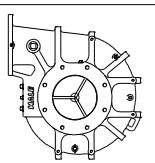
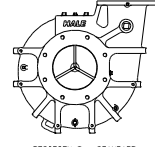


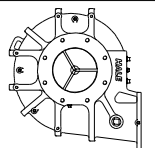
**PUMP DISCHARGE MOUNTING POSITIONS**



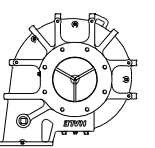
POSITION 1



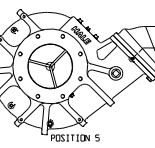
POSITION 2 - STANDARD



POSITION 3



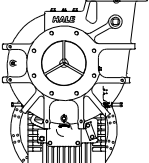
POSITION 4



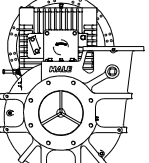
POSITION 5

80FC CHECK VALVE IS OPTIONAL. SEE HALE PLATE NO. 655A FOR PART IDENTIFICATION.

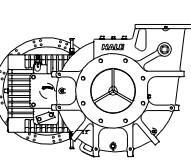
**GEARBOX MOUNTING POSITIONS**



V-POSITION GEARBOX (SHOWN)



LV-POSITION GEARBOX



H-POSITION GEARBOX

PUMP MODEL	GEAR PART NO.	NO. OF TEETH
80FCG-23	031-0920-00-0	18
80FCG-21	031-0920-00-0	20
80FCG-19	031-0940-00-0	22
80FCG-17	031-0950-00-0	24
80FCG-15	031-0960-00-0	26

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT MAGNETIC DRAIN PLUG (SEE NOTE 3)	217-0501-08-0
H	3/4 NPT OIL LEVEL PLUG (SEE NOTE 3)	217-0501-00-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
V	BUSHING (SHOWN)	082-0512-00-0
LV	AIR VENT (SHOWN)	044-0260-00-0
LV	1/2" NPT PLUG	217-0101-00-0
H	1/2" NPT PLUG	217-0101-00-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
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GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
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LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
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GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
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GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
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H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

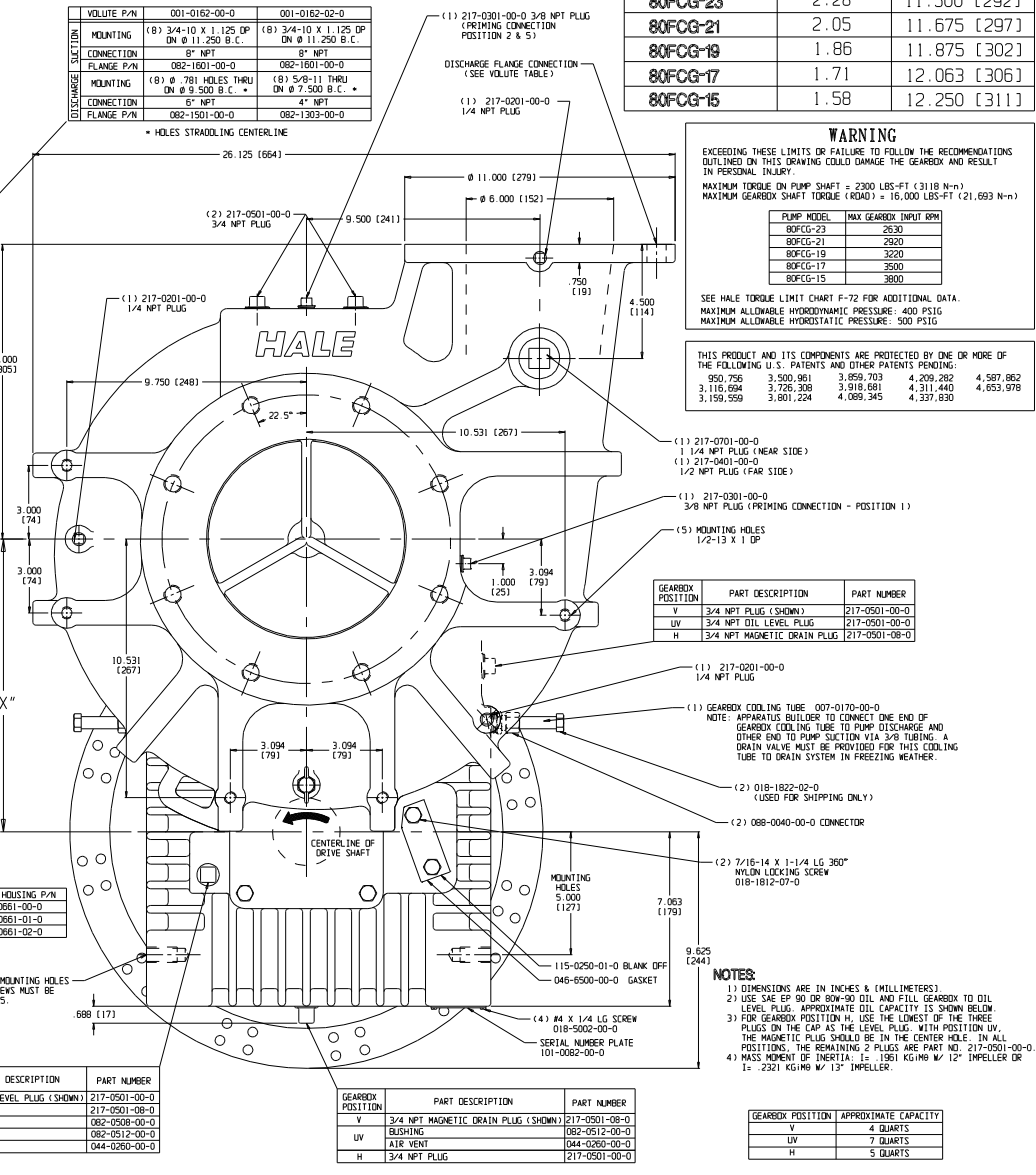
**TABLE-A**

STANDARD DISC DESCRIPTION	SAE #11.5, 2 X 10 SPLINE
005-0760-00-0	SAE #11.5, 2 X 10 SPLINE
OPTIONAL DISC DESCRIPTION	SAE #11.5 ELASTOMERIC, 2 X 10 SPLINE
005-0810-01-0	SAE #11.5 ELASTOMERIC, 2 X 10 SPLINE
005-0760-01-0	SAE #10, 2 X 10 SPLINE

FLANGE TYPE	SAE NO. 2	SAE NO. 3
NO. OF HOLES	12	12
SOLE DIA.	13-3/8	13-3/8
BOLT CIRCLE	18-3/8	18-7/8
PILOT DIA.	17-5/8	16-1/8
DISTANCE FROM MOUNTING FACE	4"	3-7/8

VOLUME P/N	001-0162-00-0	001-0162-02-0
MOUNTING	(8) 3/4-10 X 1.125 DP DN @ 11.250 B.C.	(8) 3/4-10 X 1.125 DP DN @ 11.250 B.C.
CONNECTION	8" NPT	8" NPT
FLANGE P/N	082-1601-00-0	082-1601-00-0
MOUNTING	(8) Ø 781 HOLES THRU DN @ 9.500 B.C. *	(8) 5/8-11 THRU DN @ 7.500 B.C. *
CONNECTION	8" NPT	4" NPT
FLANGE P/N	082-1501-00-0	082-1303-00-0

\* HOLES STRADDLING CENTERLINE



PUMP MODEL	GEAR RATIO	"X" DIMENSION
80FCG-23	2.28	11.500 [292]
80FCG-21	2.05	11.675 [297]
80FCG-19	1.86	11.875 [302]
80FCG-17	1.71	12.063 [306]
80FCG-15	1.58	12.250 [311]

**WARNING**  
 EXCEEDING THESE LIMITS OR FAILURE TO FOLLOW THE RECOMMENDATIONS OUTLINED ON THIS DRAWING COULD DAMAGE THE GEARBOX AND RESULT IN PERSONAL INJURY.  
 MAXIMUM TORQUE ON PUMP SHAFT = 2300 LBS-FT (318 N-m)  
 MAXIMUM GEARBOX SHAFT TORQUE (K80A) = 16,000 LBS-FT (21,693 N-m)

PUMP MODEL	MAX GEARBOX INPUT RPM
80FCG-23	2630
80FCG-21	2920
80FCG-19	3220
80FCG-17	3500
80FCG-15	3800

SEE MALE TORQUE LIMIT CHART F-72 FOR ADDITIONAL DATA.  
 MAXIMUM ALLOWABLE HYDRODYNAMIC PRESSURE: 400 PSIG  
 MAXIMUM ALLOWABLE HYDROSTATIC PRESSURE: 500 PSIG

THIS PRODUCT AND ITS COMPONENTS ARE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS AND OTHER PATENTS PENDING:  
 590,756 3,500,961 3,859,703 4,209,282 4,597,862  
 3,116,694 3,726,268 3,918,691 4,311,440 4,653,978  
 3,159,559 3,801,224 4,089,345 4,337,930

- (1) 217-0701-00-0 1/4 NPT PLUG (NEAR SIDE)
- (1) 217-0401-00-0 1/2 NPT PLUG (FAR SIDE)
- (1) 217-0301-00-0 3/8 NPT PLUG (PRIMING CONNECTION - POSITION 1)
- (5) MOUNTING HOLES 1/2-13 X 1 DP

GEARBOX POSITION	PART DESCRIPTION	PART NUMBER
Y	3/4 NPT PLUG (SHOWN)	217-0501-00-0
LV	3/4 NPT OIL LEVEL PLUG	217-0501-00-0
H	3/4 NPT MAGNETIC DRAIN PLUG	217-0501-08-0

- (1) 217-0201-00-0 1/4 NPT PLUG
- (1) GEARBOX COOLING TUBE 007-0170-00-0  
 NOTE: APPARATUS BUILDER TO CONNECT ONE END OF GEARBOX COOLING TUBE TO PUMP DISCHARGE AND OTHER END TO PUMP SUCTION VIA 3/8" TUBING. A DRAIN VALVE MUST BE PROVIDED FOR THIS COOLING TUBE TO DRAIN SYSTEM IN FREEZING WEATHER.
- (2) 018-1822-02-0 (USED FOR SHIPPING ONLY)
- (2) 088-0040-00-0 CONNECTOR
- (2) 7/16-14 X 1-1/4 LG 360° NYLON LOCKING SCREW 018-1812-07-0

- (2) 115-0250-01-0 BLANK OFF
- (2) 046-6500-00-0 GASKET
- (4) #4 X 1/4 LG SCREW 101-0082-00-0 SERIAL NUMBER PLATE

- NOTES:**
- DIMENSIONS ARE IN INCHES & (MILLIMETERS)
  - USE SAE #9 DR OR 80W-90 OIL AND FILL GEARBOX TO OIL LEVEL. USE APPROPRIATE OIL CAPACITY IS SHOWN BELOW.
  - FOR GEARBOX POSITION H, USE THE LOWEST OF THE THREE PLUGS ON THE CAP AS THE LEVEL PLUG. WITH POSITION LV, THE MAGNETIC PLUG SHOULD BE IN THE CENTER HOLE. IN ALL POSITIONS, THE REMAINING 2 PLUGS ARE PART NO. 217-0501-00-0.
  - MAXIMUM MOMENT OF INERTIA: I<sub>x</sub> = 1801 KG/M<sup>2</sup> 1/2" IMPELLER OR I<sub>y</sub> = 2321 KG/M<sup>2</sup> 1/3" IMPELLER.

GEARBOX POSITION	APPROXIMATE CAPACITY
V	4 QUARTS
LV	7 QUARTS
H	5 QUARTS

**HALE TYPE 80FCG SERIES PUMP**

**PLATE NO. 755AB**

ECO NO/REV	CHANGED FROM	BY	DATE	APPROV
THB-3	A1 SINGLE PLUG ON CAP	MS	1-21-88	MS
01-07B	B UPDATED W/DESCRIPTIONS	TC	2-12-01	HAL

HALE PRODUCTS, INC.  
 A Unit of IDEX Corporation  
 Conshohocken, PA 19380 USA

DATE 12-9-94  
 SCALE: NONE