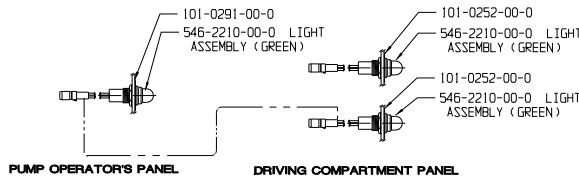


THIS PRODUCT AND ITS COMPONENTS MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS AND OTHER PATENTS PENDING:
 4,337,830 5,018,665
 4,587,862 5,139,393
 4,653,978

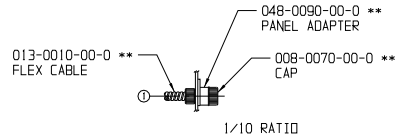
GEARBOX INDICATOR LIGHTS

FOR WIRING SCHEMATIC SEE PLATE NO. 746



OPTIONAL SPEED COUNTER ATTACHMENT (SEE PL910)

OMIT THE FOLLOWING PARTS FROM STANDARD "8FG" PUMP
 217-3007-00-0 (1) PLUG-SPEEDCOUNTER
 ADD THE FOLLOWING PARTS TO THE STANDARD "8FG" PUMP
 007-0040-00-0 (1) ADAPTER-SPEEDCOUNTER
 008-0070-00-0 (1) CAP-SPEEDCOUNTER DRIVE SLEEVE
 013-0010-00-0 (1) SHAFT-SPEEDCOUNTER FLEXIBLE
 031-0170-00-0 (1) GEAR-SPEEDCOUNTER DRIVEN
 048-0070-00-0 (1) BUSHING-SPEEDCOUNTER DRIVE
 048-0090-00-0 (1) SLEEVE-SPEEDCOUNTER DRIVE



PUMP MODEL	GEAR RATIO	"X" DIMENSION
8FGR**23R	2.28	13.375 [340]
8FGR**21R	2.05	13.563 [344]
8FGR**19R	1.86	13.750 [349]
8FGR**17R	1.71	13.938 [354]
8FGR**15R	1.58	14.125 [359]

THE HALE TYPE 8FGR PUMP IS AVAILABLE IN 2000 & 2500 GPM NFPA RATINGS AND A 3000 GPM @ 150 PSIG RATING. THE COMPLETE PUMP MODEL NUMBER IS FORMED AS FOLLOWS:
 FOR EXAMPLE: A 8FGR PUMP IS REQUIRED TO HAVE A 2500 GPM RATING WITH A 1.71 GEAR RATIO. THE PUMP MODEL NUMBER WOULD BE AS SHOWN: **8FGR 2500-17-R**
 PUMP RATED PUMP MODEL CAPACITY RATIO

WARNING

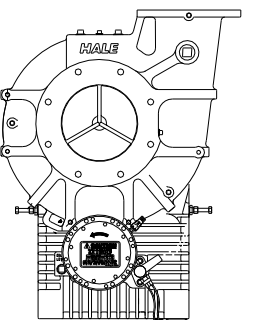
EXCEEDING THESE LIMITS OR FAILURE TO FOLLOW THE RECOMMENDATIONS OUTLINED ON THIS DRAWING COULD DAMAGE THE GEARBOX AND RESULT IN PERSONAL INJURY.
 MAXIMUM TORQUE ON PUMP SHAFT = 2300 LBS-FT (3118 N-m)
 MAXIMUM GEARBOX SHAFT TORQUE (ROAD) = 16,000 LBS-FT (21,693 N-m)

PUMP MODEL	MAX GEARBOX INPUT RPM
8FGR**23R	2630
8FGR**21R	2920
8FGR**19R	3220
8FGR**17R	3500
8FGR**15R	3800

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

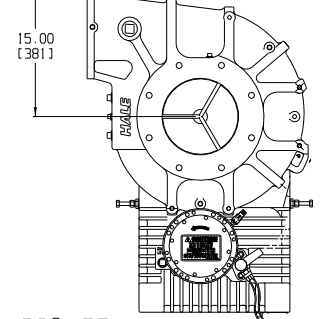
VOLUTE POSITIONS

POSITION #1



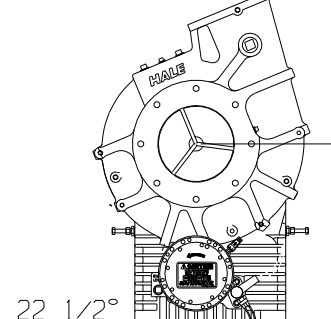
0°

POSITION #13

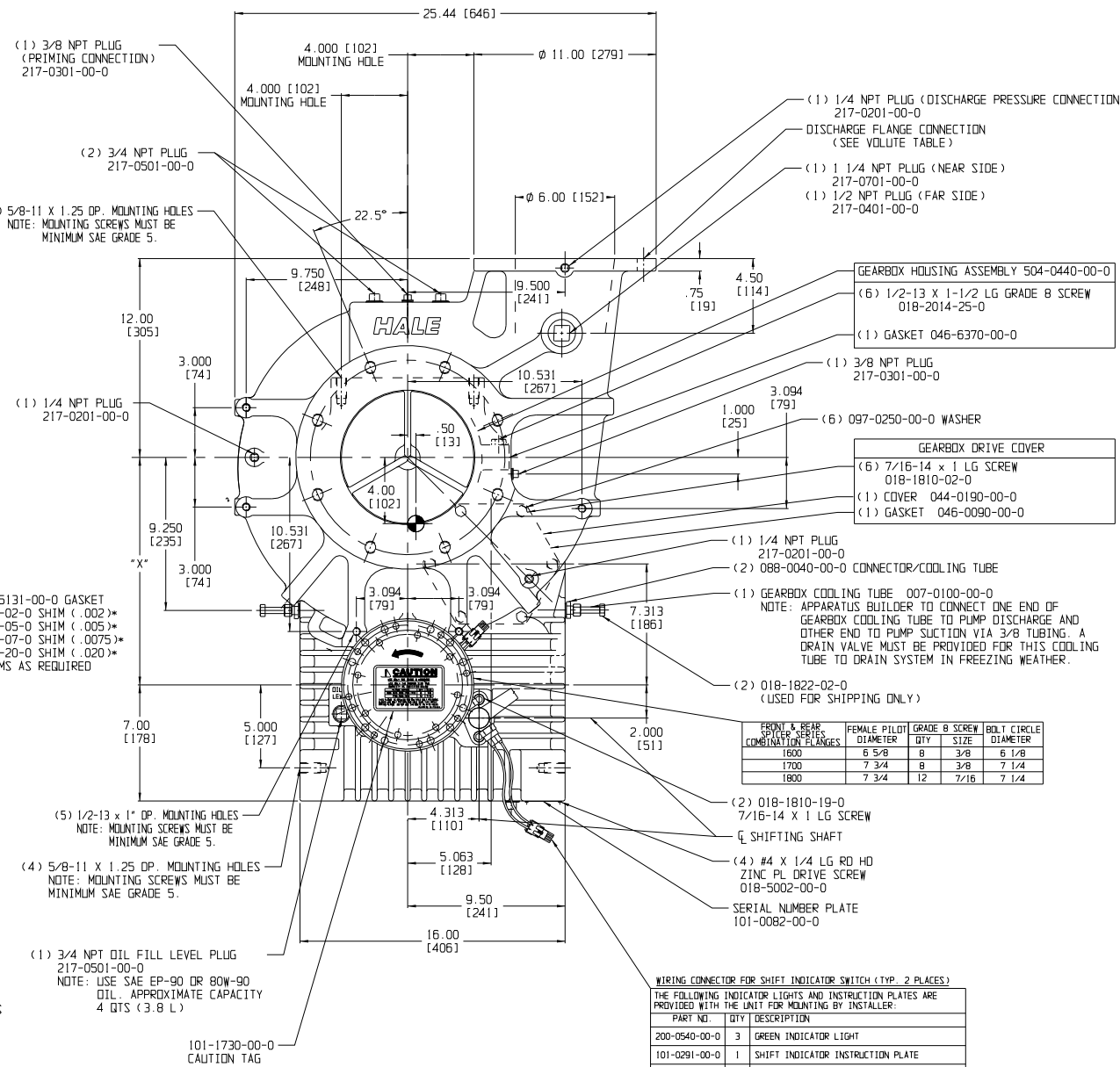
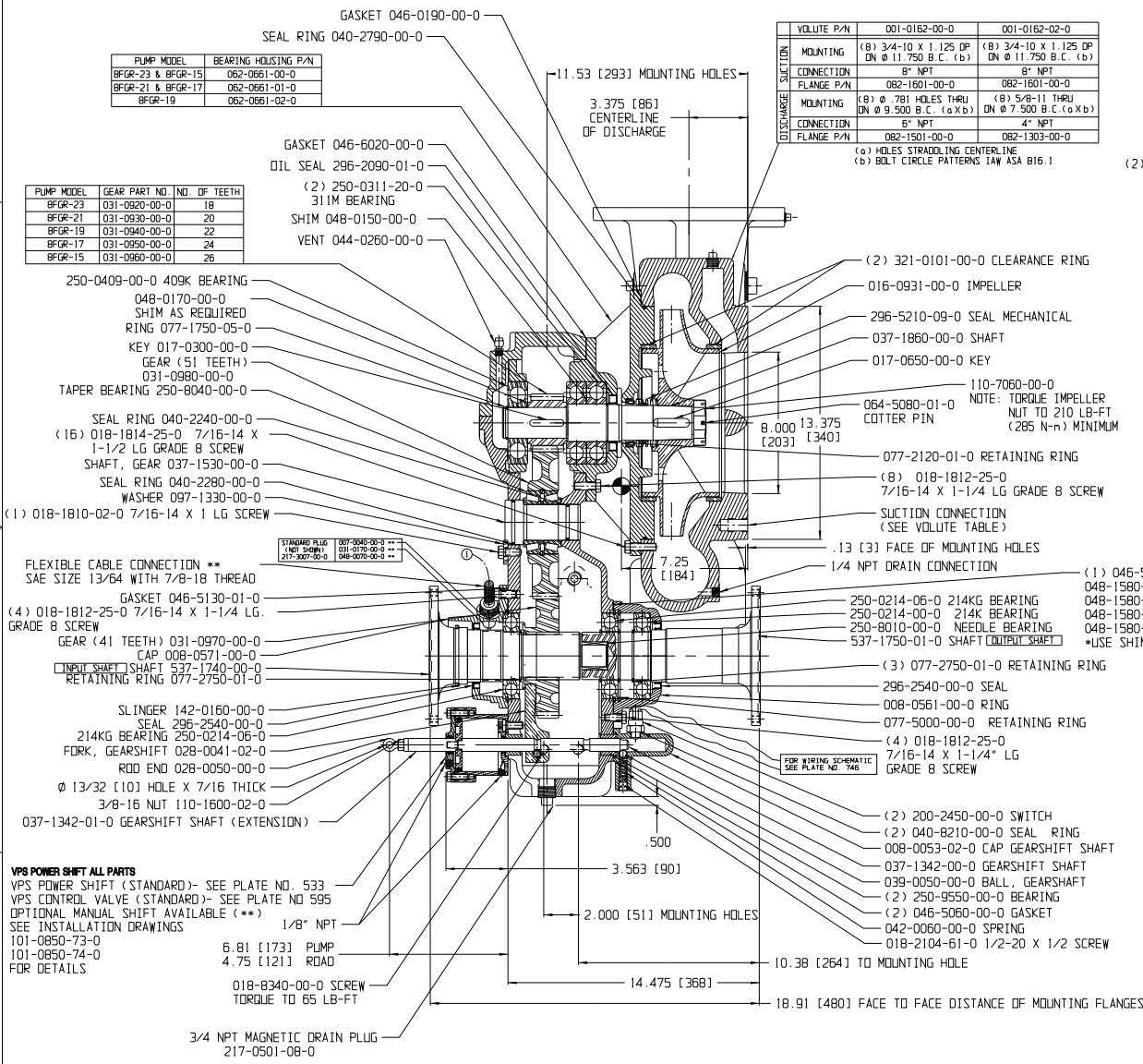


90° CCW

POSITION #16



22 1/2° CCW



NOTES:
 1) DIMENSIONS ARE IN INCHES & [MILLIMETERS].
 2) WEIGHT 575 LBS (261 kg).
 3) PRIMING SYSTEM, DISCHARGE & SUCTION VALVES ARE AVAILABLE.
 4) OPTIONAL EQUIPMENT INDICATED BY (**).
ITEMS NOT SHOWN
 101-0310-00-0 (1) OIL WARNING TAG
 101-0940-00-0 (1) INSTRUCTION TAG

DRIVE LINE RECOMMENDATIONS
 APPARATUS BUILDER SUPPLIED DRIVELINES SHALL BE OF APPROPRIATE SIZE TO MATCH THE CHASSIS AND PUMP REQUIREMENTS WITH INDIVIDUAL JOINT CANCELLATION AND PHASING BEFORE AND AFTER THE PUMP. DRIVE SHAFT BALANCE (INCLUDING YOKES) SHALL NOT EXCEED THE RECOMMENDED LIMIT OF EITHER THE DRIVE SHAFT OR CHASSIS TRANSMISSION MANUFACTURER'S SPECIFICATIONS. DRIVE SHAFT FULL RANGE OPERATING SPEEDS SHALL NOT EXCEED 42% OF ITS CRITICAL SPEED. DRIVELINE SHALL BE INSTALLED PER SAE UNIVERSAL JOINT AND DRIVESHAFT DESIGN MANUAL, PUBLICATION # AE-7

FASTENER NOTE
 UNLESS OTHERWISE NOTED FASTENERS TO BE USED ARE GRADE 5. WHEN REPLACING BROKEN OR DAMAGED FASTENERS MAKE SURE THE PROPER GRADE IS USED. DURING ASSEMBLY COAT FASTENERS WITH LOCTITE #246 (OR EQUIV.) HIGH TEMPERATURE REMOVABLE THREAD LOCKER.

WIRING CONNECTOR FOR SHIFT INDICATOR SWITCH (TYP. 2 PLACES)
 THE FOLLOWING INDICATOR LIGHTS AND INSTRUCTION PLATES ARE PROVIDED WITH THE UNIT FOR MOUNTING BY INSTALLER:

PART NO.	QTY	DESCRIPTION
200-0540-00-0	3	GREEN INDICATOR LIGHT
101-0291-00-0	1	SHIFT INDICATOR INSTRUCTION PLATE
101-0252-00-0	1	SHIFT INDICATOR INSTRUCTION PLATE - STD.
101-0072-00-0	1	SHIFT INDICATOR INSTRUCTION PLATE - VPS

* VPS INSTRUCTION PLATE IS REPLACED BY (1) ADDITIONAL 101-0252-00-0 INSTRUCTION PLATE FOR MANUAL SHIFT UNITS.
 SEE HALE PLATE 746 - WIRING SCHEMATIC FOR SHIFT INDICATOR LIGHTS. FOR INSTALLATION DETAILS.

PLATE NO. 765AH

HALE TYPE 8FGR SERIES PUMP

ECD NO	REV	CHANGED FROM	BY	DATE	APVD
03-132	E	REDRAWN - UPDATED	JG	4-25-03	MAL
04-017	F	018-1812-02-0 TO 018-1812-25-0	JFG	3-5-04	MAL
04-280	G	046-5130-01-0 TO 046-5131-00-0 & SHIMS	JFG	11-16-04	MAL
0803	H	VOLUTE RIBS UPDATED TO MATCH CHANGES TO CASTING	GMH	03-18-09	MAL



HALE PRODUCTS, INC.
 A Unit of IDEX Corporation
 Conshohocken, PA 19428 USA

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 DRAWN: JOR, CHECKED: RET, DATE: 10-24-95, SIZE: SCALE: FULL