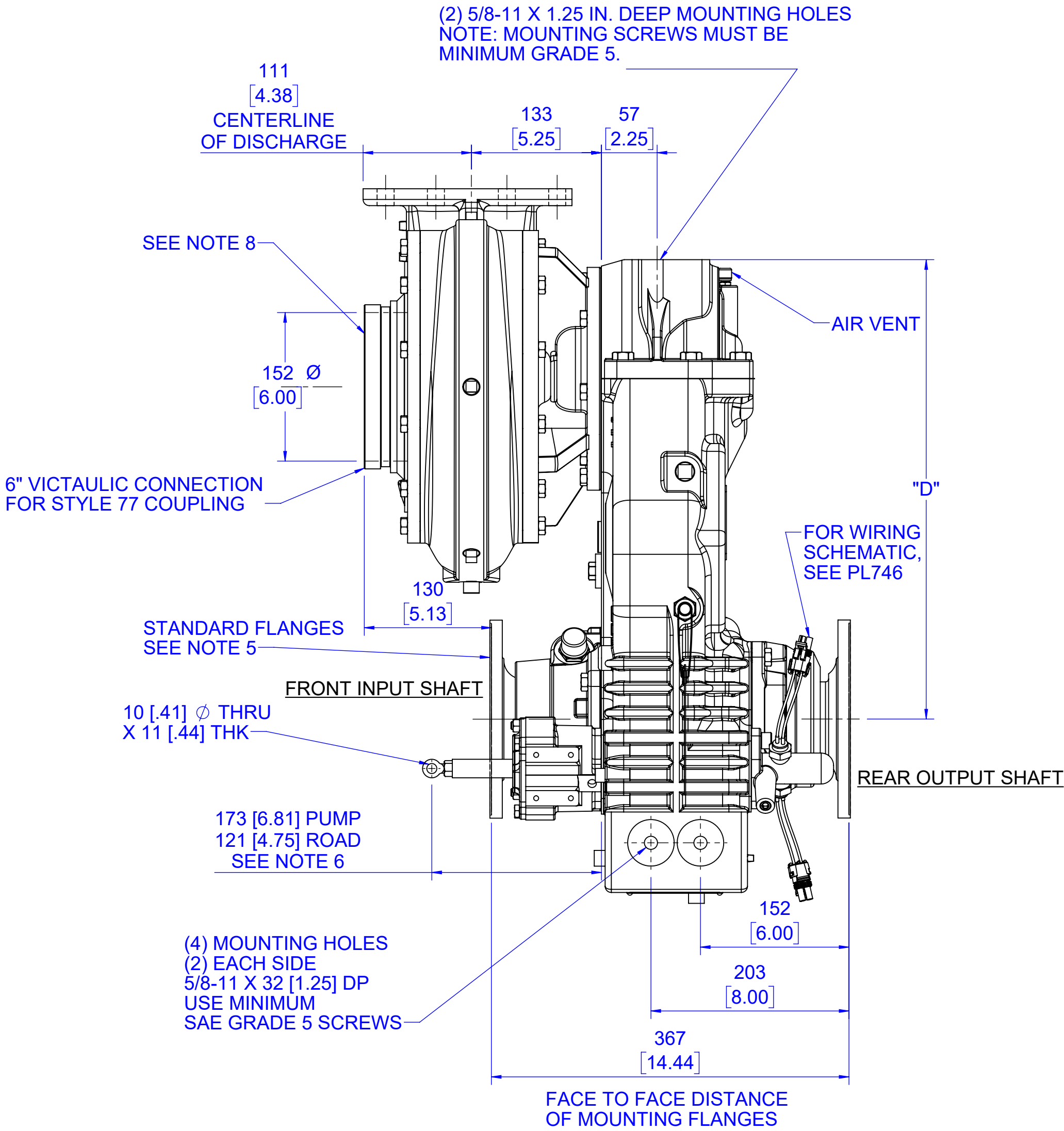
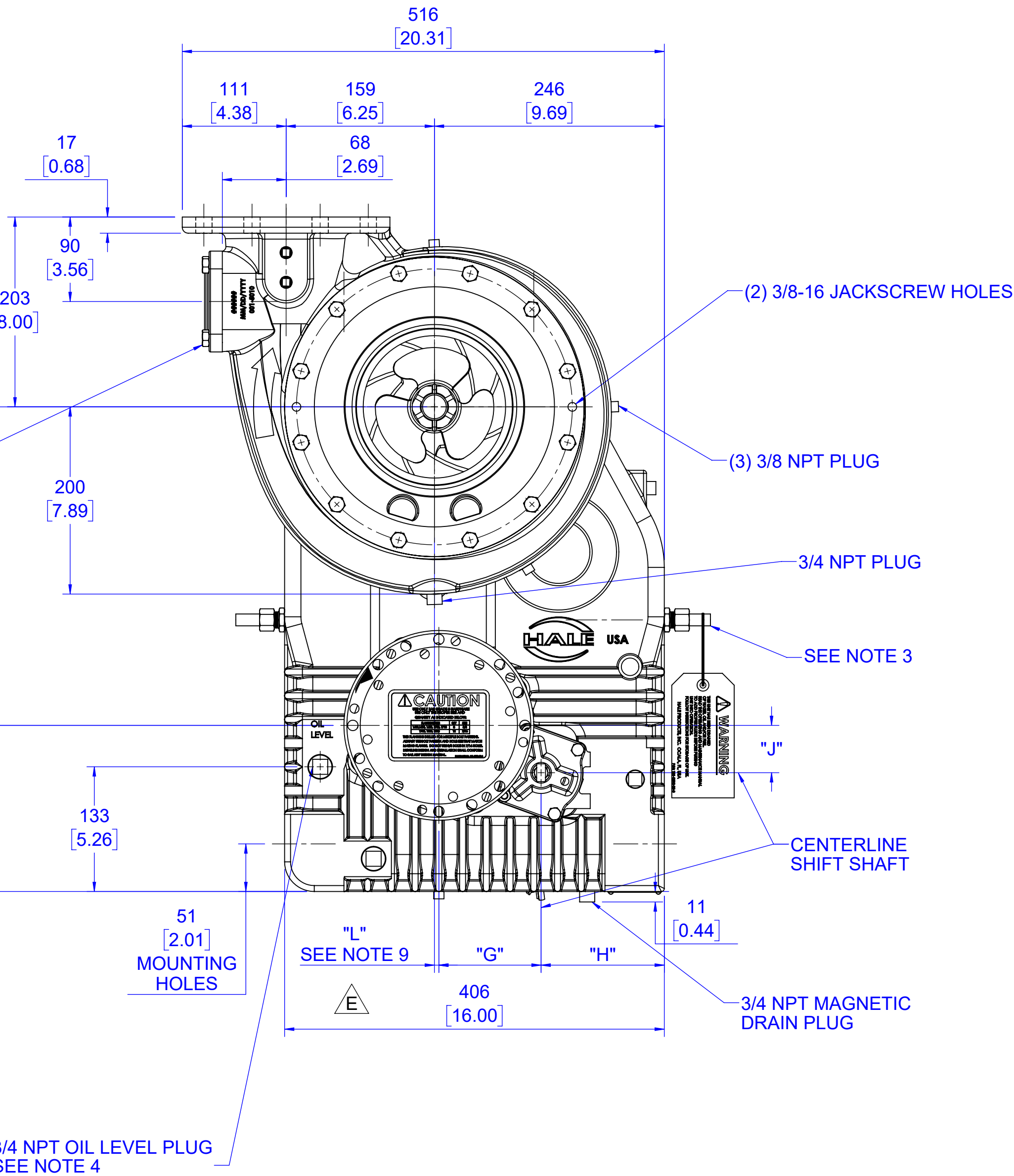
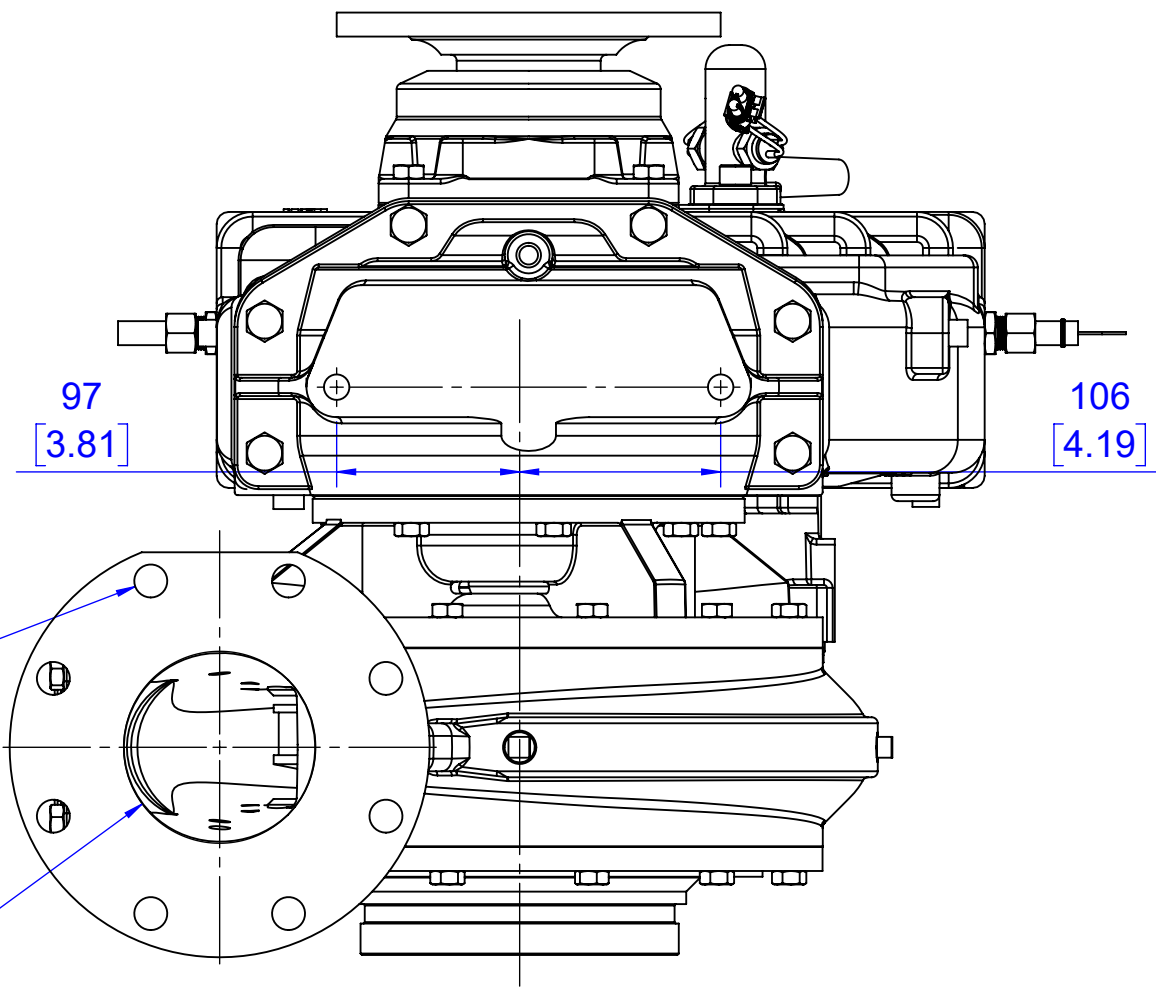


HALE TYPE DSD SERIES PUMP INSTALLATION  
WITH "LG/XG" GEARBOX

A  
B  
C  
D  
E  
F  
G  
H  
J  
K  
L  
M

M

(23L MODEL SHOWN)



PROJECTION:

TABLE "A" - GEAR RATIOS & PUMP DIMENSIONS

PUMP MODEL	GEARBOX MODEL	GEAR RATIO	D	E	G	H	J	L
DSD*-28X	XG	2.83	526 [20.72]	395 [15.56]	138 [5.44]	103 [4.06]	47 [1.84]	4.8 [0.19]
DSD*-25X		2.55		400 [15.75]				2.4 [0.09]
DSD*-23X		2.32		404 [15.91]				0.0 [0.00]
DSD*-21X		2.13		408 [16.06]				-2.4 [0.09]
DSD*-19X	LG	1.96	471 [18.56]	413 [16.25]	109 [4.31]	132 [5.19]	51 [2.00]	-4.8 [0.19]
DSD*-23L		2.28		340 [13.38]				4.8 [0.19]
DSD*-21L		2.05		344 [13.56]				2.4 [0.09]
DSD*-19L		1.86		349 [13.75]				0.0 [0.00]
DSD*-17L		1.71		354 [13.94]				-2.4 [0.09]
DSD*-15L		1.58		359 [14.13]				-4.8 [0.19]

THE HALE TYPE DSD PUMP IS AVAILABLE IN 750, 1000, 1250 & 1500 GPM AND 3000, 4000, 5000 & 6000 L/S NFPA RATINGS.

THE COMPLETE PUMP MODEL NUMBER IS FORMED AS FOLLOWS:

DSD 125-23 X

FOR EXAMPLE, A DSD PUMP IS REQUIRED TO HAVE A 1250 GPM RATING WITH A 2.32 GEAR RATIO, THE PUMP MODEL NUMBER WOULD BE AS SHOWN:

PUMP MODEL	RATED CAPACITY	PUMP RATIO	GEARBOX TYPE
DSD 125-23 X	1250 GPM	2.32	XG

TABLE "B" - MAXIMUM INPUT RPM

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

PUMP MODEL	MAX GEARBOX INPUT RPM	PUMP MODEL	MAX GEARBOX INPUT RPM
DSD-23L	2630	DSD-28X	2120
DSD-21L	2920	DSD-25X	2350
DSD-19L	3220	DSD-23X	2580
DSD-17L	3500	DSD-21X	2810
DSD-15L	3800	DSD-19X	3060

SEE HALE TORQUE LIMIT CHART F-72 FOR ADDITIONAL DATA.  
MAXIMUM ALLOWABLE HYDRODYNAMIC PRESSURE: 400 PSIG  
IRON: 600 PSIG  
BRONZE: 500 PSIG

TABLE "C" - OPTIONS AND ACCESSORIES

OPTION	DRAWING NUMBER
ESP PRIMING PUMP	PL821
PVG PRIMING VALVE	PL480
SPV PRIMING VALVE	PL828
SPEED COUNTER ADAPTER	PL910
PUMP SHIFT INDICATOR LIGHTS	PL746
LG/XG GEARBOX ASSEMBLY	PL914

TABLE "D" - "K" PORT FLANGE OPTIONS

OPTIONS
BLANK (STANDARD)
1-1/4" NPT
2" NPT
2-1/2" NPT
3" NPT
TRV & TRV-L
ALLOY OR MAGNESIUM ANODE*

\* ANODE REQUIRES SPACER. SEE PL789 FOR PART NUMBER DETAILS.




NOTES:

- PRIMING SYSTEM, DISCHARGE & SUCTION VALVES ARE AVAILABLE.
- CENTERLINE OF INPUT SHAFT TO CENTERLINE OF IMPELLER.
- 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.
- USE SAE EP-90 OR 80W-90 OIL OR 75-140W SYNTHETIC API GL-5 OIL, AND FILL GEARBOX TO OIL LEVEL PLUG. APPROXIMATE OIL CAPACITY IS 4 QUARTS.
- THE HALE COMBINATION FLANGES ARE SIZED FOR SPICER 1600, 1700 AND 1800 SERIES FLANGES.  
-1600 SERIES WITH 6-5/8" Ø FEMALE PILOT.  
-1700 SERIES WITH 7-3/4" Ø FEMALE PILOT.  
-1800 SERIES WITH 7-3/4" Ø FEMALE PILOT.  
USE PROPER DRIVELINE HARDWARE AS SPECIFIED BY DRIVELINE MANUFACTURER. DO NOT PLACE THREADED PORTION OF FASTENER IN SHEAR.
- VPS POWER SHIFT (SEE PL533) AND VPS CONTROL VALVE (SEE PL595)
- SEE PL789 FOR PUMP ASSEMBLY DETAIL.
- TO REDUCE PRE-ROTATION AT LOW FLOW, IT IS RECOMMENDED THAT A STRAIGHT SUCTION VANE BE ADDED TO THE PUMP SUCTION MANIFOLD LEADING UP TO THE VICTAULIC PUMP SUCTION CONNECTION.
- SIDE OFFSET BETWEEN CENTERLINE OF INPUT SHAFT TO CENTERLINE OF IMPELLER. POSITIVE OFFSET VALUE TO BE TOWARDS LEFT SIDE OF DRAWING.

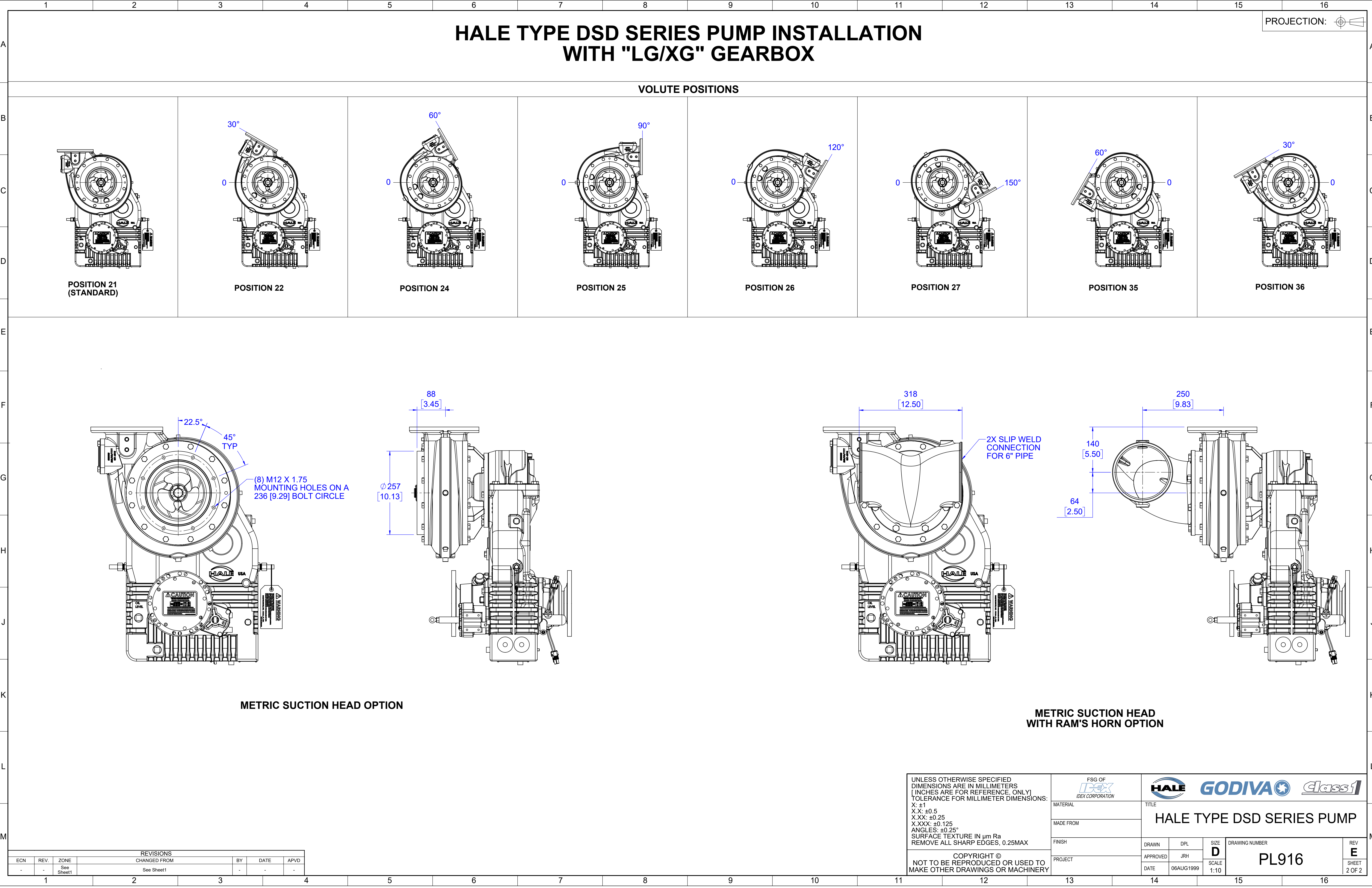
REVISIONS					
ECN	REV.	ZONE	CHANGED FROM	BY	DATE
CFL3300	D	--	REDRAWN IN SOLIDWORKS; REDRAWN ON FSG BORDER	JRH	27OCT2014
5427	E	A14, K4, K13	CHANGED DIM "D" TO 526 [20.72] FOR XG; ADDED DIM "L" & NOTE 9	KTN	20APR2021

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MILLIMETERS  
[INCHES ARE FOR REFERENCE, ONLY]  
TOLERANCE FOR MILLIMETER DIMENSIONS:  
X: ±1  
X.X: ±0.5  
X.XX: ±0.25  
X.XXX: ±0.125  
ANGLES: ±0.25°  
SURFACE TEXTURE IN µm Ra  
REMOVE ALL SHARP EDGES, 0.25MAX

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MAKE OTHER DRAWINGS OR MACHINERY

<div>FSG OF <b>DEX</b> INDEX CORPORATION</div>		<div></div>					
MATERIAL		TITLE  HALE TYPE DSD SERIES PUMP					
MADE FROM							
FINISH		DRAWN	DPL	SIZE <b>D</b>	DRAWING NUMBER  PL916		REV <b>E</b>
PROJECT		APPROVED	JRH	SCALE 1:4			SHEET 1 OF 2
		DATE	06AUG1999				

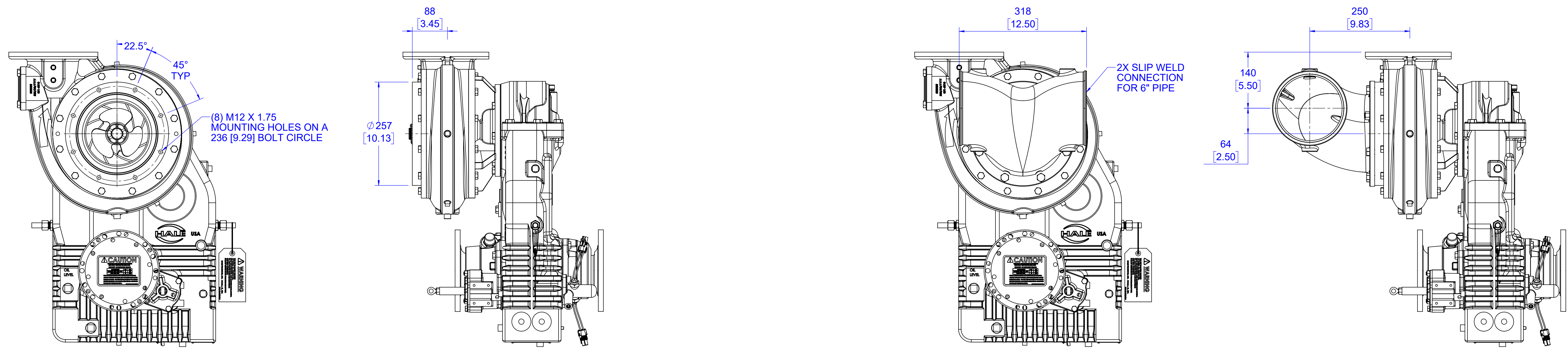
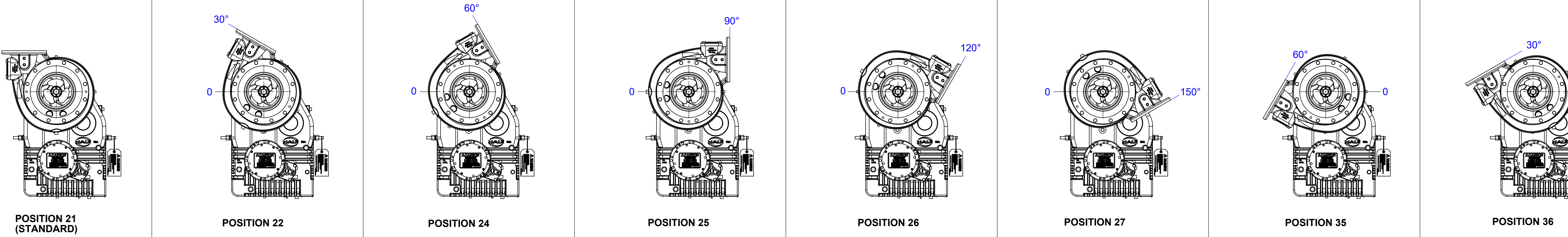




HALE TYPE DSD SERIES PUMP INSTALLATION  
WITH "LG/XG" GEARBOX

PROJECTION: 

VOLUTE POSITIONS



METRIC SUCTION HEAD OPTION

METRIC SUCTION HEAD  
WITH RAM'S HORN OPTION

REVISIONS					
ECN	REV.	ZONE	CHANGED FROM	BY	DATE
-	-	See Sheet1	See Sheet1	-	-

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS [INCHES ARE FOR REFERENCE, ONLY] TOLERANCE FOR MILLIMETER DIMENSIONS: X: ±1 X.X: ±0.5 X.XX: ±0.25 X.XXX: ±0.125 ANGLES: ±0.25° SURFACE TEXTURE IN µm Ra REMOVE ALL SHARP EDGES, 0.25MAX		FSG OF <b>IDEX</b> IDEX CORPORATION		<b>HALE</b> <b>GODIVA</b> <i>Class1</i>	
MATERIAL		MADE FROM		TITLE <b>HALE TYPE DSD SERIES PUMP</b>	
FINISH		PROJECT		DRAWN DPL	REV E
APPROVED JRH		DATE 06AUG1999		SIZE <b>D</b> SCALE 1:10	DRAWING NUMBER <b>PL916</b>
NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY		COPYRIGHT © NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY		SHEET 2 OF 2	