NOTES:

1. REFER TO HALE PUMP/ENGINE COMBINATION LIST 029-0020-52-0 TO SELECT PROPER RATIO TO MATCH PUMP WITH ENGINE.
2. WEIGHT OF STANDARD QMAX-XS K-GEARBOX 1500 GPM PUMP AS SHOWN LESS PRIMING PUMP APPROXIMATELY 1385 KG [630 LB] W/ LK GEARBOX; 1425 KG [648 LB] W/ XK GEARBOX.
3. APPLY LOCTITE #246 HIGH TEMPERATURE THREAD LOCK OR EQUIVALENT TO SCREW THREADS AND TORQUE SCREWS PER HALE ENGINEERING STANDARD ES018-002.
4. UNLESS OTHERWISE INDICATED, FASTENERS ARE GRADE 8 ZINC PLATED STEEL.
5. FOR PUMP COOLING, AN ADDITIONAL 3/8 LINE SHOULD BE INSTALLED BETWEEN THE PUMP DISCHARGE AND BOOSTER TANK. THIS COOLING LINE SHOULD BE CONTROLLED BY A PANEL MOUNTED BALL VALVE AND A CHECK VALVE (HALE P/N: 038-1550-00-0 OR EQUIV) SHOULD BE INSTALLED IN THE BOOSTER TANK END OF THE COOLING LINES.

DIMENSIONS	
G	YOKES
21.20 [538.5]	115-1450-03-0 (17T HALF ROUND)
	115-1450-04-0 (17N FULL ROUND)
21.87 [555.5]	115-1450-01-0 (18T HALF ROUND)
	115-1450-06-0 (18N FULL ROUND)
21.68 [550.7]	115-1450-02-0 (176T HALF ROUND)
	115-1450-05-0 (176N FULL ROUND)
20.68 [525.3]	115-1450-00-0 (RPL25 HALF ROUND)

PUMP MODEL	GEAR RATIO	GEARBOX TYPE**	DIMENSIONS A	DIMENSIONS B
QMAX-XS*-23	2.30	LONG (LK)	12.28 [311.9]	19.87 [503.9]
		EXTRA LONG (XK)	14.58 [370.3]	22.14 [562.4]
QMAX-XS*-21	2.04	LONG (LK)	12.59 [319.8]	19.87 [503.9]
		EXTRA LONG (XK)	14.89 [378.2]	22.14 [562.4]
QMAX-XS*-19	1.89	LONG (LK)	12.78 [324.6]	19.87 [503.9]
		EXTRA LONG (XK)	15.08 [383.0]	22.14 [562.4]
QMAX-XS*-17	1.71	LONG (LK)	12.96 [329.2]	19.87 [503.9]
		EXTRA LONG (XK)	15.26 [387.6]	22.14 [562.4]
QMAX-XS*-16	1.60	LONG (LK)	13.15 [334.0]	19.87 [503.9]
		EXTRA LONG (XK)	15.45 [392.4]	22.14 [562.4]

*RATED CAPACITY 1000, 1250, 1500, 1750, 2000 AND 2250 GPM; 4000, 5000, 6000, 7000 AND 8000 LPM

EXAMPLE: THE MODEL NUMBER FOR A 1500 GPM RATED PUMP WITH A 2.30 GEAR RATIO AND A LONG GEARBOX WOULD BE QMAX-XS150-23LK.

OPTIONAL DISCHARGE FLANGES			
STANDARD		OPTIONAL	STD. CAST HOLE
A	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
B	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
C	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
D	BLANK	1-1/4, 2, 2-1/2, & 3 NPT	3.00 [76.2]
E	BLANK	1-1/4, 2, 2-1/2, & 3 NPT	3.00 [76.2]
F	BLANK	1-1/4, 2, 2-1/2, & 3 NPT	3.00 [76.2]
G	BLANK	1-1/4, 2, 2-1/2, & 3 NPT	3.00 [76.2]
H	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
I	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
J	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
K	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
L	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
M	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
N	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
O	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
P	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
Q	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
R	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	4.00 [101.6]
S	BLANK	3, 4 NPT OR CHECK VALVE	CHECK SOLID
T	-	3, 4 NPT, CHECK VALVE OR 2417	CAST SOLID
U	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
UT	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
V	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
VT	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
W	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
WT	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
X	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
XT	BLANK	1-1/4, 2, 2-1/2 & 3 NPT	3.00 [76.2]
Y	-	3, 4 NPT, CHECK VALVE OR 2417	CAST SOLID
Z	BLANK	1-1/4, 2-1/2, 3 & 4 NPT	3.00 [76.2]

DRIVE LINE RECOMMENDATIONS

APPARATUS BUILDER SUPPLIED DRIVE LINES 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.

WARNING

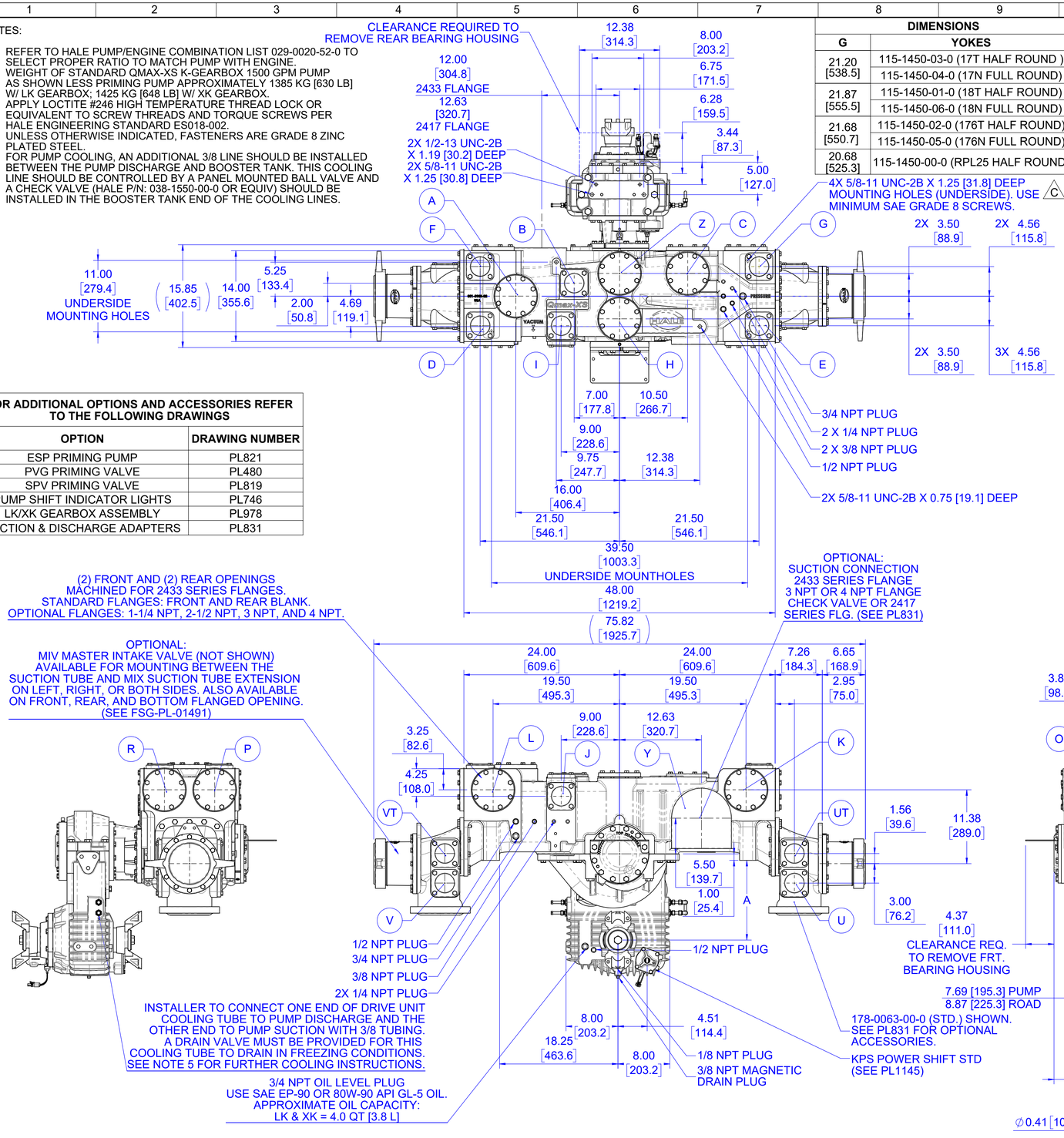
EXCEEDING THE LIMITS OR FAILURE TO FOLLOW THE RECOMMENDATIONS OUTLINED ON THIS DRAWING COULD DAMAGE THE GEARBOX AND RESULT IN PERSONAL INJURY.

QMAX MIDSHIP MAXIMUM PUMP PRESSURE:
HYDROSTATIC = 600 PSI [41.4 BAR] (500 PSI [34.5 BAR] BRONZE)
HYDRODYNAMIC = 400 PSI [27.6 BAR]

MAXIMUM POWER INPUT FOR PUMPING = 525 HP [392 kW]
MAXIMUM TORQUE ON PUMP SHAFT = 2300 LBS-FT [3120 N-m]
MAXIMUM GEARBOX SHAFT TORQUE (ROAD) = 18,500 LBS-FT [25,800 N-m]

C	PUMP MODEL	QMAX-XS*-23 LK/XK	QMAX-XS*-21 LK/XK	QMAX-XS*-19 LK/XK	QMAX-XS*-17 LK/XK	QMAX-XS*-16 LK/XK
	MAX GEARBOX INPUT	2260	2550	2750	3040	3250

FOR ADDITIONAL OPTIONS AND ACCESSORIES REFER TO THE FOLLOWING DRAWINGS	
OPTION	DRAWING NUMBER
ESP PRIMING PUMP	PL821
PVG PRIMING VALVE	PL480
SPV PRIMING VALVE	PL819
PUMP SHIFT INDICATOR LIGHTS	PL746
LK/XK GEARBOX ASSEMBLY	PL978
SUCTION & DISCHARGE ADAPTERS	PL831



HALE TYPE QMAX-XS PUMP INSTALLATION (WITH K SERIES GEARBOX)

ECN	REV	ZONE	CHANGED FROM	BY	DATE	APVD
5102	C		REMOVED 2.5 RATIO	DMB	07APR2020	JS2
5539	D		SHEET FORMAT UPDATED, ADDED DETAIL FOR PORT T MACHINING OPTIONS & LOCATION, ADDITIONAL PORTS & PLUGS ON GEARBOX, MIV PLATE DRAWING UPDATED	KTN	26APR2022	TAM

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCE FOR INCHES DIMENSIONS:
X: ±0.04
X.X: ±0.02
X.XX: ±0.01
X.XXX: ±0.005
ANGLES: ±1°
SURFACE TEXTURE IN µin Ra
REMOVE ALL BURRS AND SHARP EDGES, 0.01MAX

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FSG OF IDEX CORPORATION

HALE GODIVA Class 1

MATERIAL

MADE FROM

FINISH

PROJECT

TITLE: QMAX-XS SERIES PUMP WITH K GEARBOX

DRAWN	KTN	SIZE	DRAWING NUMBER	REV
APPROVED	JRP	D	FSG-PL-01331	D
DATE	01AUG2013	SCALE 1:9		SHEET 1 OF 1