

NOTES:

- REFER TO HALE PUMP/ENGINE COMBINATION LIST 029-0020-52-0 TO SELECT PROPER RATIO TO MATCH PUMP WITH ENGINE.
- WEIGHT OF STANDARD QMAX-XS K-GEARBOX 1500 GPM PUMP AS SHOWN LESS PRIMING PUMP APPROXIMATELY 630 KG [1385 LB] W/LK GEARBOX; 648 KG [1425 LB] W/XK GEARBOX.
- APPLY LOCTITE #246 HIGH TEMPERATURE THREAD LOCK OR EQUIVALENT TO SCREW THREADS AND TORQUE SCREWS PER HAILE ENGINEERING STANDARD ES018-002.
- UNLESS OTHERWISE INDICATED, FASTENERS ARE GRADE 5 ZINC PLATED STEEL.
- 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
538.5 [21.20]	115-1450-03-0 (17T HALF ROUND)
	115-1450-04-0 (17N FULL ROUND)
555.5 [21.87]	115-1450-01-0 (18T HALF ROUND)
	115-1450-06-0 (18N FULL ROUND)
550.7 [21.68]	115-1450-02-0 (176T HALF ROUND)
	115-1450-05-0 (176N FULL ROUND)
525.3 [20.68]	115-1450-00-0 (RPL25 HALF ROUND)

PUMP MODEL	GEAR RATIO	GEARBOX TYPE**	DIMENSIONS	
			A	B
QMAX-XS*-25	2.52	LONG (LK)	310.1 [12.21]	503.9 [19.84]
		EXTRA LONG (XK)	368.6 [14.51]	562.4 [22.14]
QMAX-XS*-23	2.30	LONG (LK)	311.9 [12.28]	503.9 [19.84]
		EXTRA LONG (XK)	370.3 [14.58]	562.4 [22.14]
QMAX-XS*-21	2.04	LONG (LK)	319.8 [12.59]	503.9 [19.84]
		EXTRA LONG (XK)	378.2 [14.89]	562.4 [22.14]
QMAX-XS*-19	1.89	LONG (LK)	324.6 [12.78]	503.9 [19.84]
		EXTRA LONG (XK)	383.0 [15.08]	562.4 [22.14]
QMAX-XS*-17	1.71	LONG (LK)	380.0 [14.96]	503.9 [19.84]
		EXTRA LONG (XK)	387.6 [15.26]	562.4 [22.14]
QMAX-XS*-16	1.60	LONG (LK)	334.0 [13.15]	503.9 [19.84]
		EXTRA LONG (XK)	392.4 [15.45]	562.4 [22.14]

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

*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.

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.

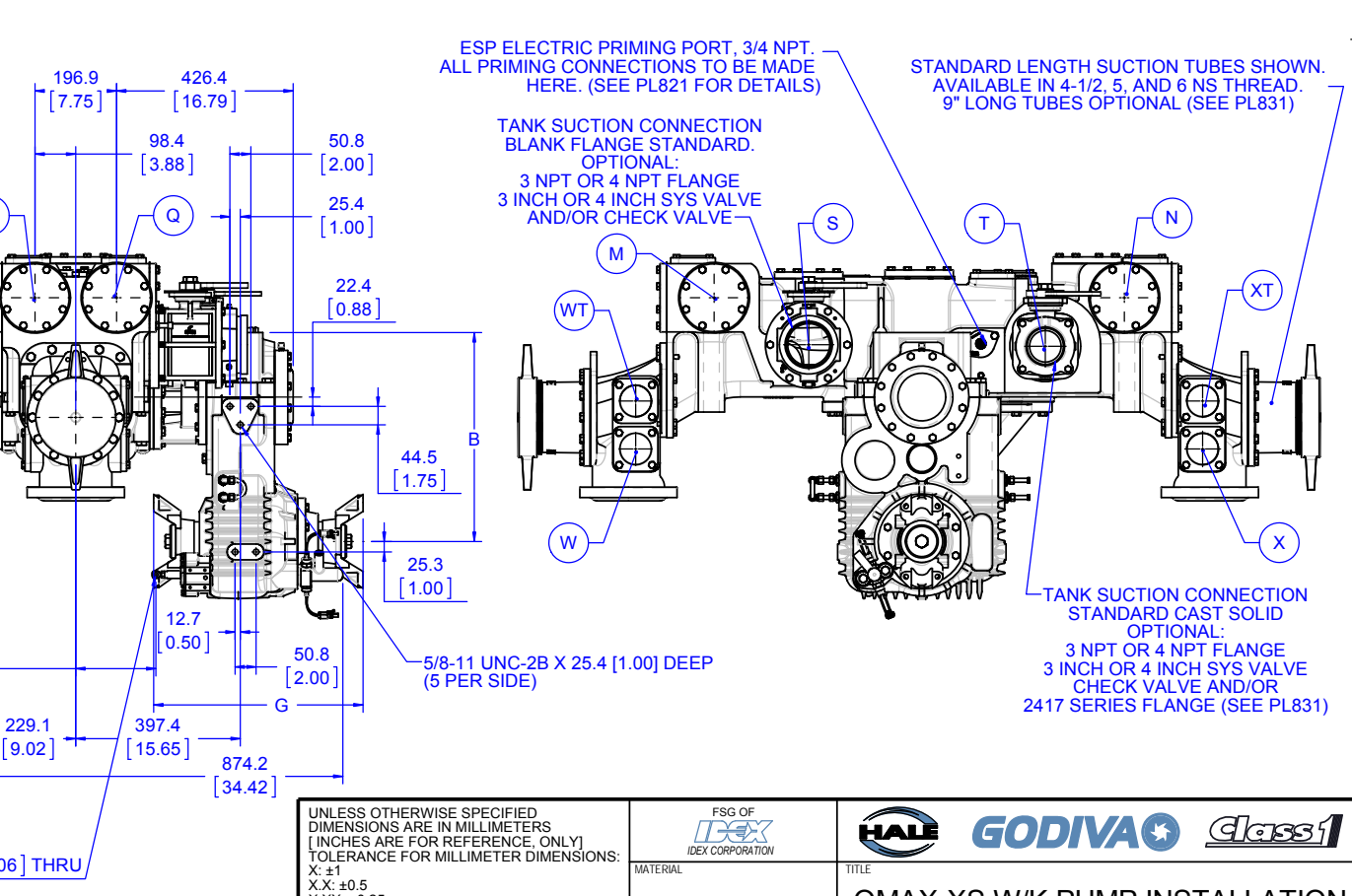
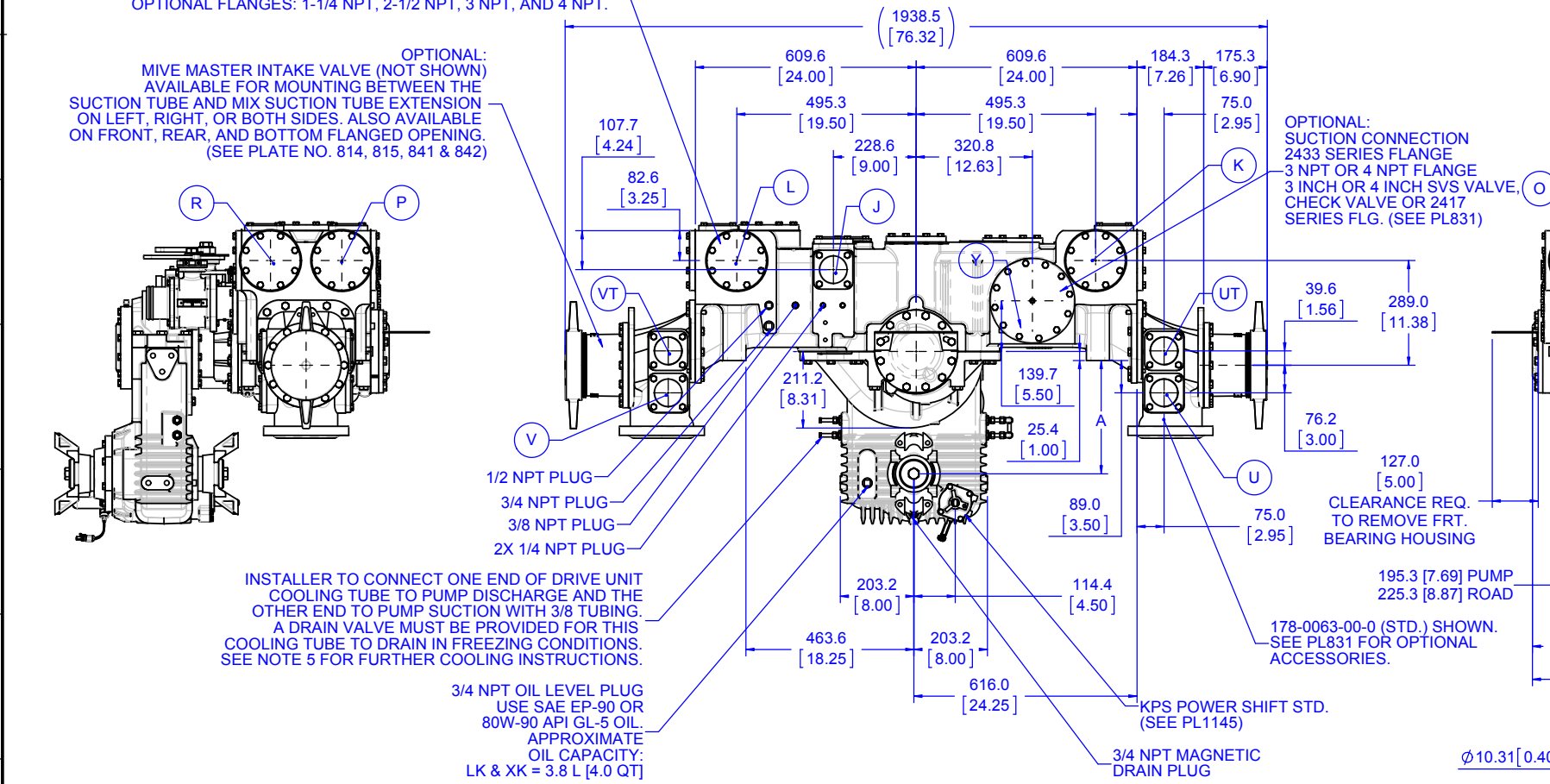
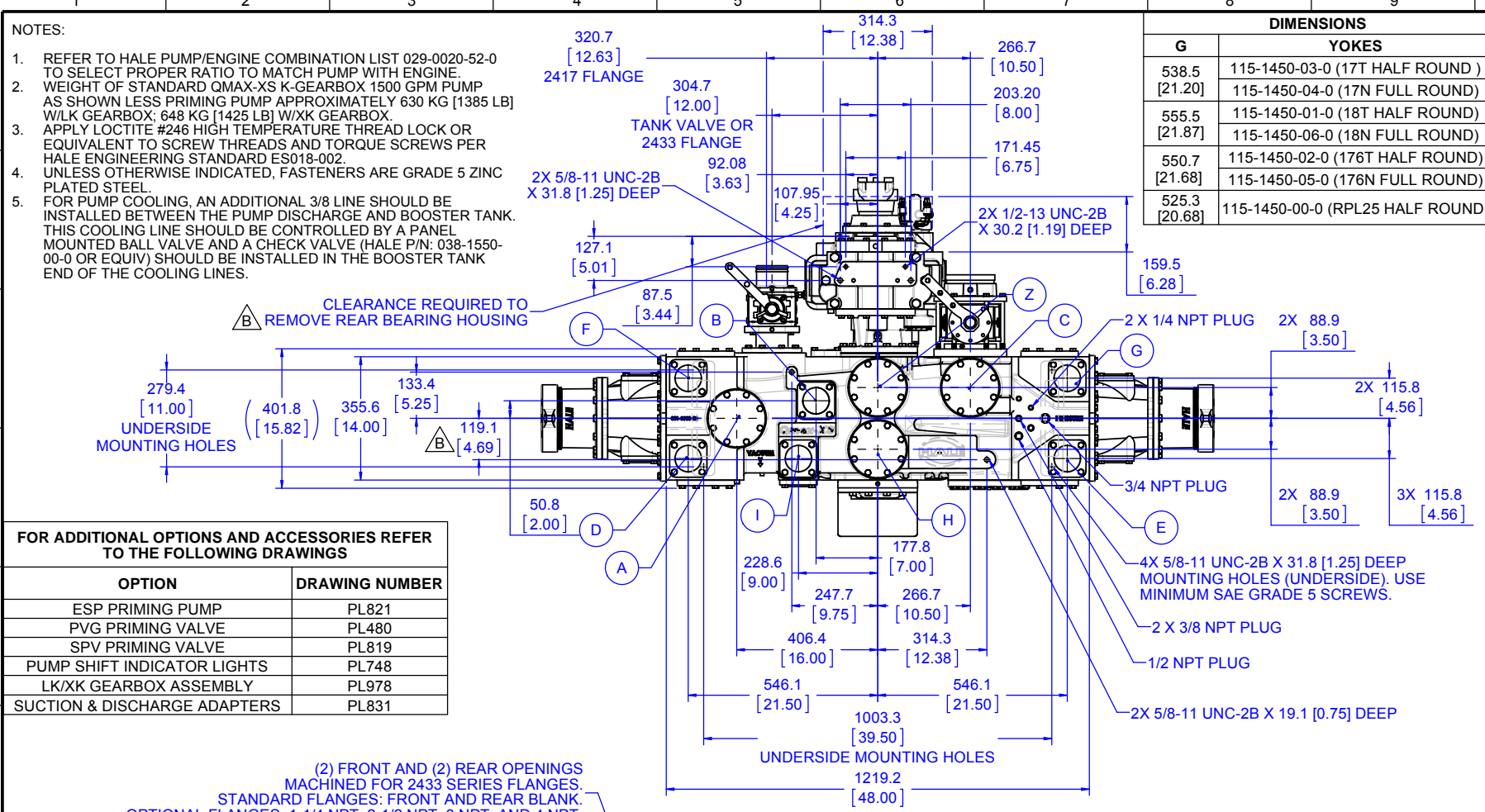
QMAX-XS MIDSHIP MAXIMUM PUMP PRESSURE:
 HYDROSTATIC = 41.4 BAR [600 PSI] (34.5 BAR [500 PSI] BRONZE)
 HYDRODYNAMIC = 27.6 BAR [400 PSI]

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

PUMP MODEL	QMAX-XS*-25 LK/XK	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	2060	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	PL748
LK/XK GEARBOX ASSEMBLY	PL978
SUCTION & DISCHARGE ADAPTERS	PL831



REVISIONS

ECN	REV	ZONE	CHANGED FROM	BY	DATE	APVD
CFL3159	A	-	RELEASE FOR PRODUCTION	KTN	01AUG2013	JRP
CFL3299	B	-	128.6 [5.06]; ADDED BAR & N-m EQUIVALENTS; ADDED REAR BEARING HOUSING CLEARANCE	JRP	24SEP2014	AJG

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

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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FSG OF IDEX CORPORATION		HALE GODIVA Class1	
MATERIAL	TITLE	QMAX-XS W/K PUMP INSTALLATION	
MADE FROM	DRAWN	KTN	SIZE
FINISH	APPROVED	JRP	D
PROJECT	DATE	01AUG2013	SCALE
QMAX-XS W/K	DRAWING NUMBER	FSG-PL-01331	
REV	B	SHEET 1 OF 1	