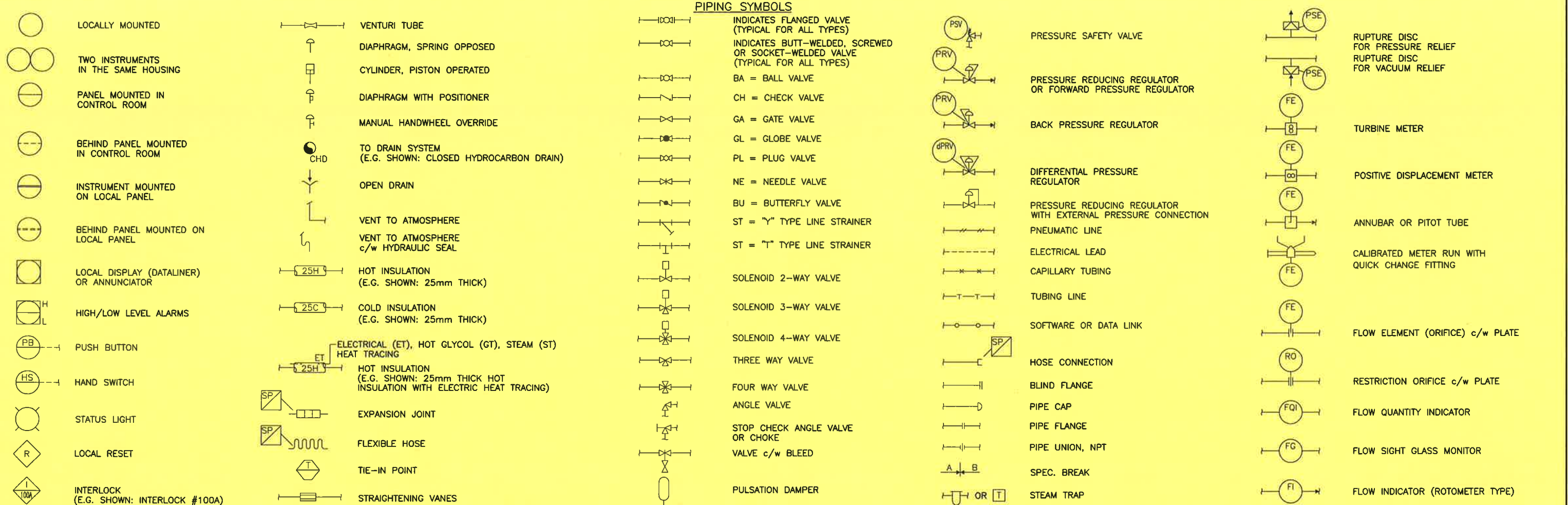


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	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y		
A ANALYSIS		AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC	AIT						AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM				AT		AY		
BJ BURNER FAILURE	BJA																							BJS		BJSD															
C CONDUCTIVITY		CAH	CHL	CAL	CC	CCV	CDR		CE				CI	CIC	CIS	CIT		CL			CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM			CT			CY		
D DENSITY		DAH	DAHL	DAL	DC	DCV	DDR		DE		DG		DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSL		DSM			DT			DY		
dP DIFFERENTIAL PRESSURE	dPA	dPAH	dPAHL	dPAL	dPC	dPCV	dPR						dPI	dPIC	dPIS	dPIT		dPL			dPRC	dPS			dPSD	dPSDH	dPSDL	dPSSH	dPSSL						dPT			dPY			
E EMERGENCY																										ESD												ESDV		EY	
F FLOW		FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM		FSV	FT		FY			
G GAS DETECTION		GAH							GE																		GSDH			GSH											
H HAND (MANUAL)					HC	HCV								HRC										HS													HV		HY		
J POWER														JIC																						JT		JY			
K TIME	KA				KC	KCV	KDR										KL		KQ					KS												KT		KV		KY	
L LEVEL		LAH	LAHL	LAL	LC	LCV	LDR		LE		LG	LGM	LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSLL	LSM			LT		LY			
M MOISTURE		MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM			MT		MY			
P PRESSURE		PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM		PSV	PT		PY			
R REMOTE																																					RSDV		RY		
S SPEED		SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM			ST		SY			
T TEMPERATURE		TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM			TT		TY			
U UNIT	UA							UDV									UL									USD													TW	TY	
V VIBRATION		VAH			VC		VIDR		VE				VI		VIIS	VIIT		VIL			VR		VIR	VS			VSDH			VSH	VISL		VISM			VT		VY			
VI VISCOSITY		VIAH	VIAHL	VIAL	VIC	VICV			VIE				VII	VIIC	VIIS	VIIT		VIL			VIR	VIRC	VIRR	VIS			VISD			VISH	VISL		VISM			VIT		VY			
X FIRE DETECTION	XA								XE																		XSD			XSH										ZY	
Z LIMIT OR POSITION		ZAH	ZAHL	ZAL					ZE						ZIS	ZIT		ZL									ZSDH	ZSDL		ZSH	ZSL		ZSM	ZSO		ZT			ZY		

<p><b>GENERAL NOTES</b></p> <p>5 AS BUILT- PER CLIENT REVISIONS</p> <p>4 CLIENT REVISIONS</p> <p>3 AS BUILT</p> <p>2 RE-ISSUED FOR CONSTRUCTION</p> <p>1 ISSUED FOR CONSTRUCTION</p>	<p><b>GENERAL NOTES</b></p> <p>No. REVISION</p>	<p>BY</p> <p>DATE</p> <p>CKD</p> <p>ENG</p>	<p>H. LE 00/10/25</p> <p>H. LE 00/09/21</p> <p>H. LE 00/08/25</p> <p>H. LE 00/06/09</p> <p>H. LE 00/03/27</p>	<p>GW</p> <p>GW</p> <p>CG</p> <p>SW</p> <p>DP</p>	<p>APPROVED</p> <p>MECH./STRUCT. DATE</p> <p>ELECTRICAL DATE</p> <p>PROJECT DATE</p>	<p>DRAWN</p> <p>BY DATE</p> <p>CHECKED DATE</p> <p>SCALE</p>	<p><b>APACHE CANADA LIMITED</b></p> <p>1478 HP HAMBURG COMPRESSOR PACKAGE</p> <p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>	<p>DWG. No.: D-MFS-99420-100</p> <p>SHT. 1 OF 11</p> <p>REV. 5</p>	<p><b>PROPAC</b></p> <p>440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3</p>
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**GENERAL SPECIFICATIONS**

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

**GENERAL NOTES (ABBREVIATIONS)**

- AC - AIR CLOSERS
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

**COMMODITY (ABBREVIATIONS)**

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

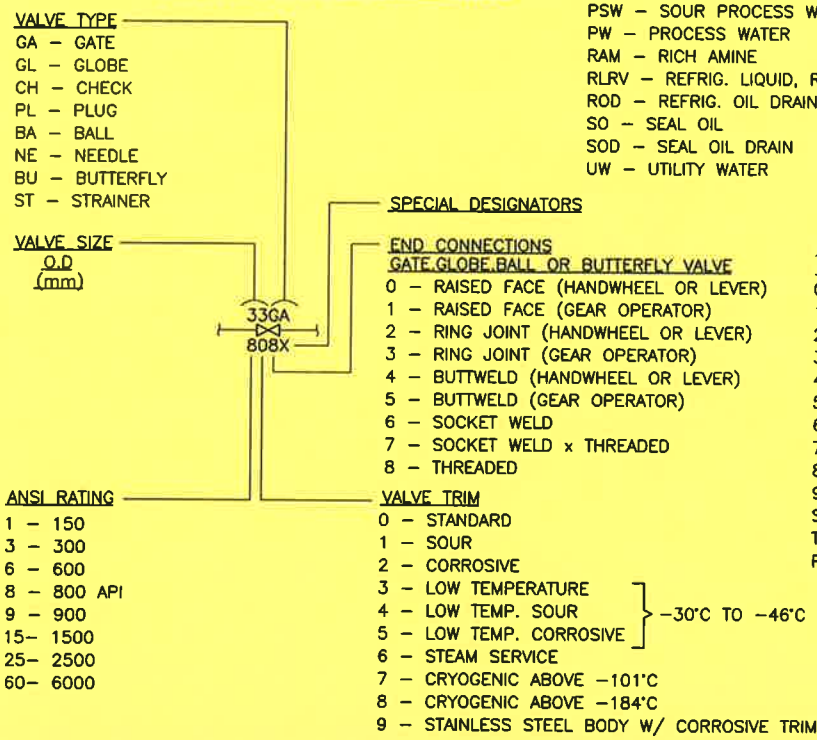
**MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)**

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

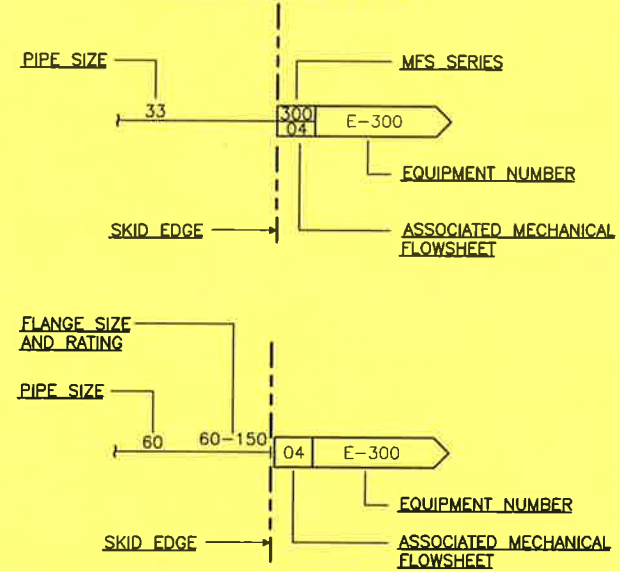
TUBING SIZES	PIPE SIZES	
	METRIC O.D. (mm)	METRIC O.D. (mm)
3	1/8"	14
6	1/4"	17
9	3/8"	21
13	1/2"	27
19	3/4"	33
25	1"	48
	2"	60
	3"	89
	4"	114
	6"	168
	8"	219
	10"	273
	12"	324
	14"	356
	16"	406
	18"	457
	20"	508
	24"	610
	36"	914
	42"	1067

NOTES:  
NPS - NOMINAL PIPE SIZE

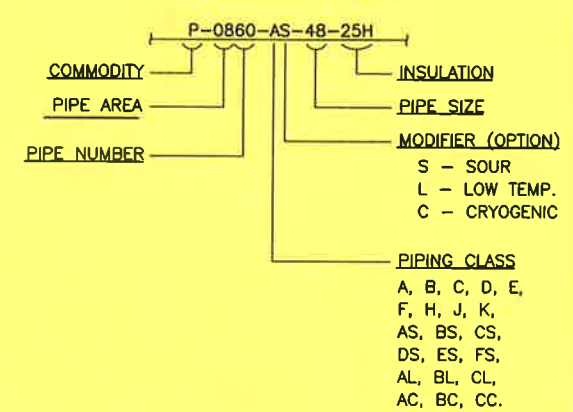
**TYPICAL VALVE IDENTIFICATION**



**TYPICAL PIPE FLAGS**



**TYPICAL PIPE IDENTIFICATION**



**TYPICAL EQUIPMENT IDENTIFICATION**

TAG No: T-820  
 DESCRIPTION: DEETHANIZER  
 DIMENSIONS: ...mm O.D. x ...mm S/S  
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.  
 GAS FLOW RATES: ... m3/d  
 LIQUID FLOW RATES: ... m3/h  
 DUTIES: ... kW  
 MOTOR POWER: ... kW @ V/φ/Hz  
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT  
 MAKE AND MODEL:

GENERAL NOTES		GENERAL NOTES		APPROVED		DRAWN		APACHE CANADA LIMITED	
No.	REVISION	BY	DATE	CKD	ENG	MECH./STRUCT.	DATE	BY	DATE
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25	GW	GW				
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW				
3	AS BUILT	H. LE	00/08/25	CG	CG				
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW				
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP				

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APACHE CANADA LIMITED  
 1478 HP HAMBURG COMPRESSOR PACKAGE  
 LEGEND  
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99420-100 SHT. 2 OF 11 REV. 5

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

**ENGINE CONNECTION INDEX**

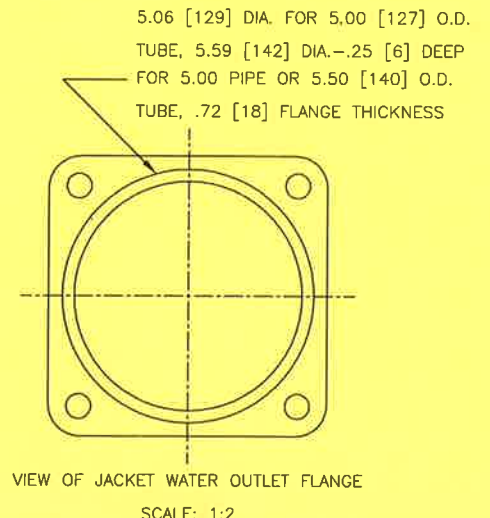
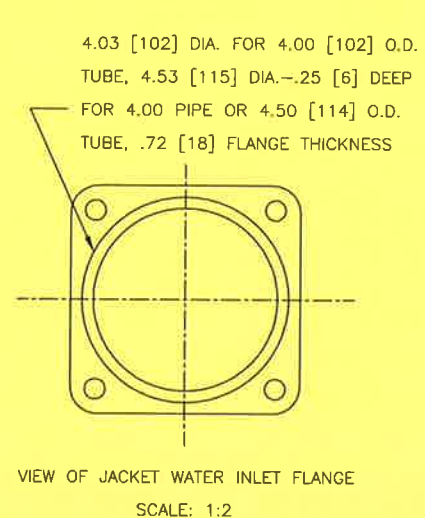
1. NATURAL GAS INLET 2.00-11.5 N.P.T.  
NOTE: FLEXIBLE CONNECTION REQUIRED AT THE FUEL INLET LOCATION(S) TO ISOLATE ENGINE VIBRATION FROM FUEL PIPING. LOCATE AS CLOSE TO ENGINE AS POSSIBLE.
2. STARTING MOTOR PAD .625-11 UNC-2B TAP THRU 3 HOLES FOR STARTING MOTOR WITH S.A.E. NUMBER 3 MOUNTING FLANGE.
4. JACKET WATER OUTLET FLANGE. (SEE VIEW OF FLANGE)
5. FRONT LIFTING EYES 3.00 [76] DIA. HOLE.
6. REAR LIFTING EYES 3.00 [76] DIA. HOLE.
8. CRANKSHAFT PULLEY - (2) 9.88 [251] NOMINAL DIAMETER X .500 [13] WIDE S.A.E. AUTOMOTIVE GROOVES.
9. .88 [22] DIAMETER - 12 ENGINE MOUNTING HOLES.
10. LUBE OIL DRAIN 2.00-11.5 N.P.T.
11. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
12. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
13. .625-11 UNC-2B TAP 1.00 [25] DEEP, 12 HOLES EQUALLY SPACED.
14. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS VENT CONNECTION. (SEE VIEW "A") (SEE NOTE 1)
15. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS SUPPLY CONNECTION. (SEE VIEW "A")
16. .375-18 N.P.T. AIR/GAS PRELUBE SUPPLY CONNECTION.
17. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS START CONNECTION. (SEE VIEW "A")
18. LUBE OIL STRAINER INLET FROM LUBE OIL FILTER, 2.00 RAISED FACE 150 LB. A.N.S.I. WELD NECK FLANGE.
19. JACKET WATER INLET FLANGE, 2 PLACES. (SEE VIEW OF FLANGE)
22. LUBE OIL FILTER INLET FROM LUBE OIL COOLER ASSEMBLY, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
23. LUBE OIL FILTER OUTLET TO ENGINE LUBE OIL STAINER, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
24. .56 [14] DIAMETER - 4 PLACES EQUALLY SPACED IN MOUNTING FEET FOR LUBE OIL FILTER MOUNTING.
25. EXHAUST OUTLET FLANGE - FITS 8.00 FLAT FACE 125 LB. A.N.S.I. CAST IRON PIPE FLANGE. NOTE: EXHAUST SYSTEM MUST SUPPORT ITS OWN WEIGHT BEYOND THIS POINT.
27. AUXILIARY WATER INLET FROM COOLING SYSTEM, 2.50 125 LB. A.N.S.I. FLANGE.
28. 375-18 N.P.T. AIR/GAS PRE-LUBE MOTOR EXHAUST. (SEE NOTE 1)

NOTE 1: ALL GAS VENTED AND/OR DISCHARGED FROM ENGINE EQUIPMENT SHOULD BE PIPED TO A SAFE AREA TO MEET APPLICABLE CODES.  
NOTE 2. ROTATIONS ARE VIEWED FROM FLYWHEEL END.

33. LUBE OIL COOLER ASSEMBLY OUTLET TO LUBE OIL FILTER. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
34. PRESSURE REGULATING VALVE OUTLET ON LUBE OIL COOLER ASSEMBLY TO ENGINE OIL PAN. 1.50 RAISED FACE 150 LB. A.N.S.I. FLANGE.
35. AUXILIARY WATER INLET AT LUBE OIL COOLER ASSEMBLY, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
36. AUXILIARY WATER OUTLET AT LUBE OIL COOLER ASSEMBLY TO THERMOSTATIC VALVE AND COOLING SYSTEM, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
37. .69 X 1.25 [18 X 32] SLOT - 4 PLACES FOR LUBE OIL COOLER ASSEMBLY MOUNTING.
38. AUXILIARY WATER BYPASS CONNECTION FROM LUBE OIL COOLER. 2.00 FLAT FACE 125 LB A.N.S.I. FLANGE.
39. .750-14 N.P.T. AUXILIARY WATER CONNECTION FROM EXPANSION TANK.
40. CLEARANCE REQUIRED TO REMOVE LUBE OIL FILTER ELEMENT.
41. AUXILIARY WATER OUTLET TO LUBE OIL COOLER ASSEMBLY. 1.50 FLAT 150 LB. A.N.S.I. FLANGE.
42. LUBE OIL INLET FROM PRESSURE REGULATING VALVE ON LUBE OIL COOLER ASSEMBLY, 1.50 LAP JOINT 150 LB. A.N.S.I. FLANGE WITH STUB END.
43. LUBE OIL OUTLET TO LUBE OIL COOLER ASSEMBLY, 2.00 LAP JOINT 150 LB A.N.S.I. FLANGE WITH STUB END.
44. LUBE OIL COOLER ASSEMBLY INLET FROM ENGINE LUBE OIL PUMP. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
54. ENGINE PRESSURE BLOCK, OIL AND INTAKE MANIFOLD PRESSURE .125-27 N.P.T. 6 PLACES (4 OIL, 2 AIR.)(SEE VIEW "B")
55. ENGINE IGNITION POWER JUNCTION BOX 24 VOLT DC.
56. ENGINE TEMPERATURE CONNECTION POINTS. THERMOCOUPLE TYPE K, AND CUSTOM CONTROLS JUNCTION BOX.
57. FRONT FACE OF CRANKCASE.
59. DSM FILTER SIGNAL INPUT. INCLUDES 11 FOOT LONG CABLE.
60. DSM FILTER SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
61. DSM FILTER POWER INPUT.
62. DSM SIGNAL INPUT. FROM CONNECTION 60.
63. DSM POWER INPUT.
64. DSM SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
65. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM.
66. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM FILTER.

**EQUIPMENT INDEX**

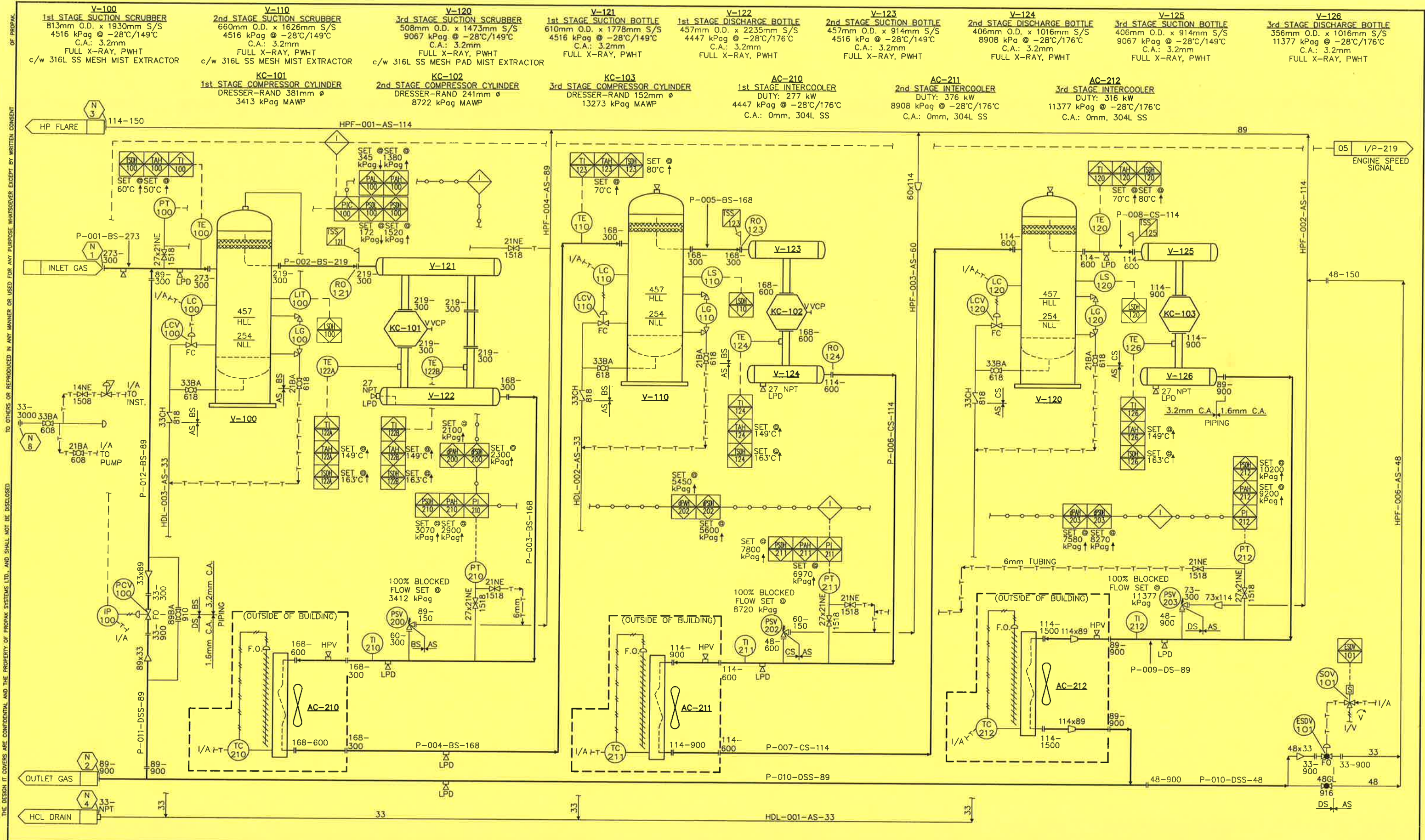
- A. S.A.E NUMBER 00 FLYWHEEL HOUSING
- B. TIMING HOLE PAD
- C. ENGINE WATER DRAIN
- D. GOVERNOR, HYDRAULIC
- E. SAFETY GUARD
- F. LUBE OIL DIPSTICK (BOTH SIDES)
- G. LUBE OIL FILLER
- H. LUBE OIL STRAINER
- J. AIR/GAS MOTORIZED PRE-LUBE PUMP
- K. LUBE OIL FILTER ASSEMBLY (SHIPPED LOOSE)
- L. CRANKCASE BREATHER (2)
- M. AIR CLEANERS (2)
- P. MANUAL BARRING DEVICE
- Q. ENGINE LEVELING BOLTS (4) 1.00-8 UNC-2B THREAD
- R. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- S. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- T. GOVERNOR SPEED CONTROL HAND LEVER
- U. THROTTLE LEVER
- V. LUBE OIL COOLER ASSEMBLY (SHIPPED LOOSE)
- W. FLEXIBLE EXHAUST CONNECTION (SHIPPED LOOSE)
- X. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- UU. PNEUMATIC CONTROL PANEL CONSISTING OF START, STOP, PRELUBE, AND SAFETY RESET.
- XX. CEC IGNITION MODULE
- BA. DETONATION SENSING MODULE (DSM) (SHIPPED LOOSE)
- CA. DSM FILTER (SHIPPED LOOSE)



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DATE: 2000.10.25 1:43pm		FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-03.dwg		No.		REVISION		BY		DATE		CKD		ENG		APPROVED		DRAWN		APACHE CANADA LIMITED		1478 HP HAMBURG COMPRESSOR PACKAGE EQUIPMENT AND ENGINE CONNECTION INDEX MECHANICAL FLOWSHEET		DWG. No.: D-MFS-99420-100		SHT. 3 OF 11		REV. 5	
GENERAL NOTES		GENERAL NOTES		5	AS BUILT- PER CLIENT REVISIONS	H. LE	00/10/25																						
				4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW																				
				3	AS BUILT	H. LE	00/08/25	CG	CG																				
				2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW																				
				1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP																				

**PROPAK**  
440 East Lake Road,  
Postal Bag #2  
Airdrie, Alberta  
Canada T4B 2C3



1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"  
 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"  
 3. VENT ALL VENTING INSTS TO VENT HEADER.

**GENERAL NOTES**

DATE: 2000.10.25 1:46pm FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-04.dwg

No.	REVISION	BY	DATE	CKD	ENG
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25	AW	AW
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW
3	AS BUILT	H. LE	00/08/25	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

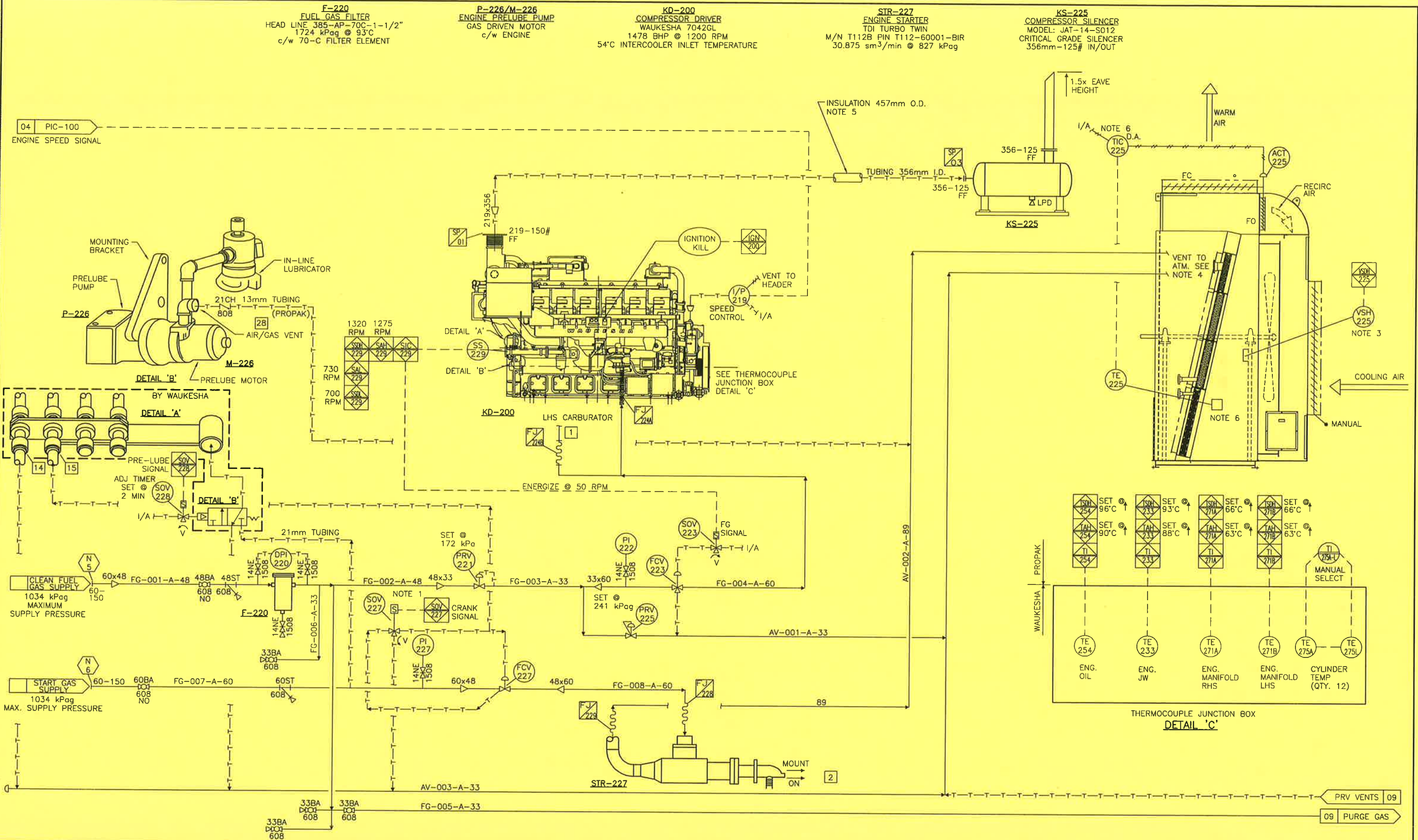
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MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
<b>ELECTRICAL</b>	<b>CHECKED</b>		
DATE	BY	S. WARD	
PROJECT	DATE	JUN. 09/00	
DATE	SCALE		

**APACHE CANADA LIMITED**  
 1478 HP HAMBURG COMPRESSOR PACKAGE  
 COMPRESSOR  
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99420-100 SHT. 4 OF 11 REV. 5

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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1. HIGH PRESSURE SOV. AT 45° AS SHOWN AT APPROXIMATELY THE SAME ELEVATION.
2. ENGINE CONNECTION INDEX SEE 99404-100-03
3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT.
4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT

5. INSULATE TO BUILDING WALL ONLY.
6. MOUNT TIC ON COOLER WALL, ELEMENT SENSES INCOMING AIR

No.	REVISION	BY	DATE	CKD	ENG
5	AS BUILT - PER CLIENT REVISIONS	H. LE	00/10/25		
4	CLIENT REVISIONS	H. LE	00/09/21	GW	GW
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MECH./STRUCT.	BY	H. LE	
DATE		DATE	MAR. 27/00
ELECTRICAL		CHECKED	
DATE		BY	S. WARD
PROJECT	S. WARD	DATE	JUN. 09/00
DATE	JUN. 09/00	SCALE	

**APACHE CANADA LIMITED**  
 1478 HP HAMBURG COMPRESSOR PACKAGE  
 ENGINE FUEL START GAS  
 MECHANICAL FLOWSHEET

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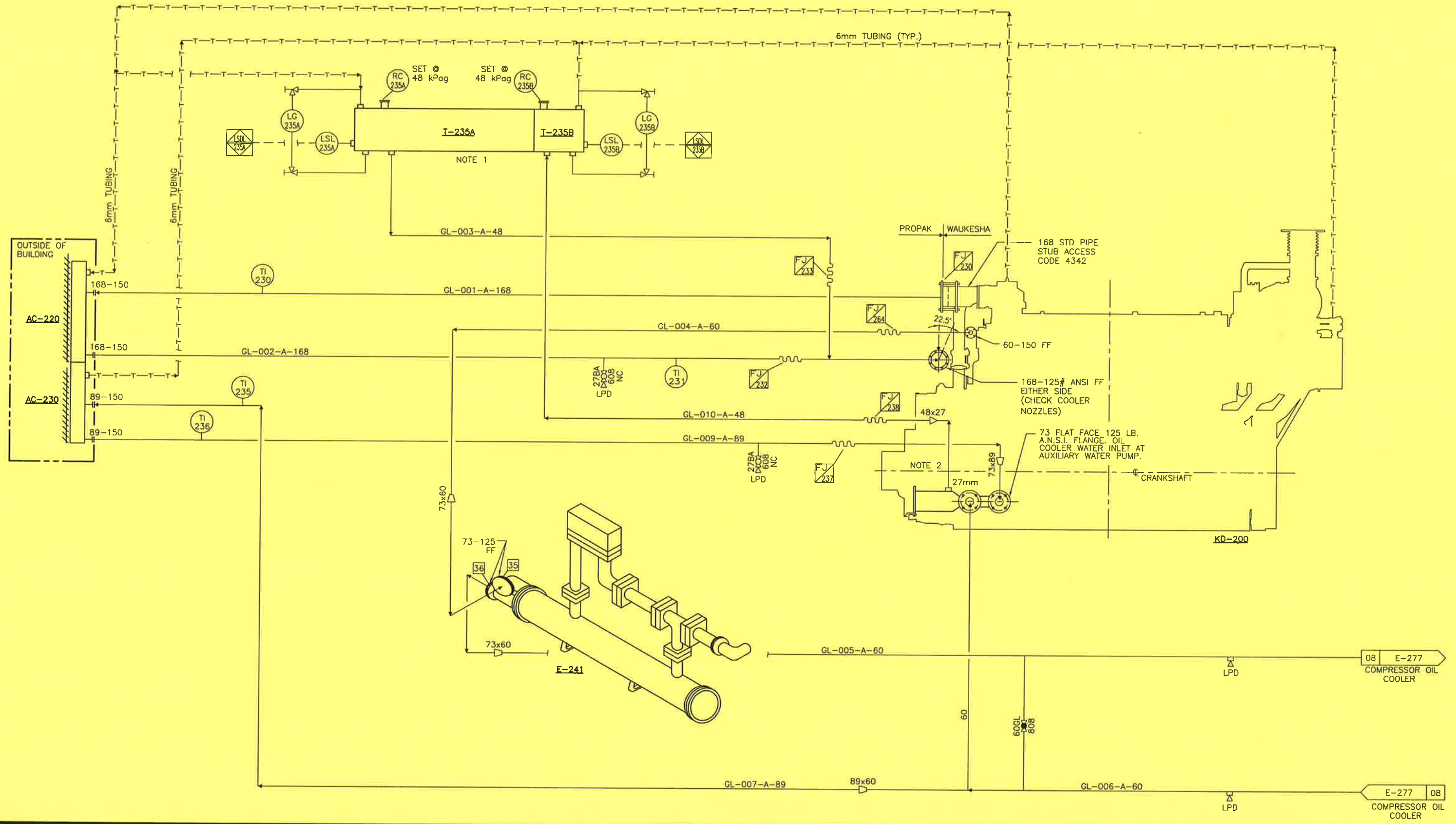
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**AC-220**  
 ENGINE JW COOLER  
 96.5 kPag MAWP  
 DUTY: 4.01mm BTU/hr (117.4 kW/hr)  
 0mm C.A.

**T-235A/T-235B**  
 ENGINE JW/AW SURGE TANK  
 160/74 L CAPACITY  
 96.5 kPag MAWP

**AC-230**  
 ENGINE AW COOLER  
 96.5 kPag MAWP  
 DUTY: 0.775mm BTU/hr (22.7 kW/hr)  
 0mm C.A.

**E-241**  
 ENGINE OIL COOLER  
 c/w ENGINE



1. MOUNT T-235A/T-235B ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.  
 2. SHOP DISCRETION TO RUN 19mm TUBING INTO GL-010-A-48

GENERAL NOTES	
No.	REVISION
5	AS BUILT- PER CLIENT REVISIONS
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION

No.	REVISION	BY	DATE	CKD	ENG
5	AS BUILT- PER CLIENT REVISIONS	H. LE	00/10/25		
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1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

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ELECTRICAL	BY	S. WARD	
DATE	DATE	JUN. 09/00	
PROJECT	S. WARD		
DATE	JUN. 09/00		
	SCALE		

**APACHE CANADA LIMITED**  
 1478 HP HAMBURG COMPRESSOR PACKAGE  
 GLYCOL COOLING SYSTEM  
 MECHANICAL FLOWSHEET

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**F-253**  
ENGINE OIL FILTER  
c/w ENGINE  
SHIPLOOSE

**F-241**  
ENGINE OIL COOLER  
c/w ENGINE  
SHIPLOOSE

**KD-200**  
COMPRESSOR DRIVER  
WAUKESHA L7042GL  
1478 HP @ 1200 RPM

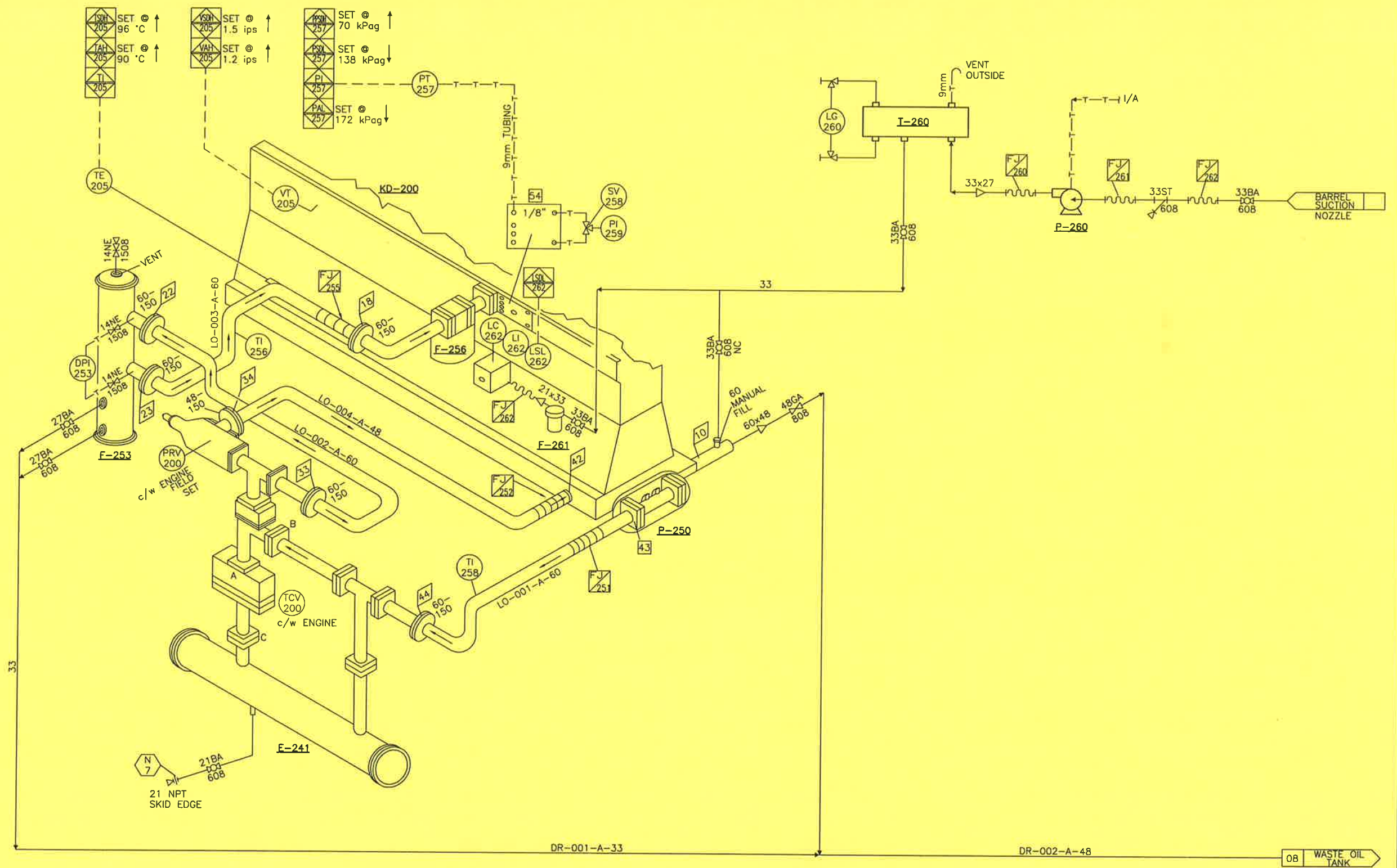
**F-256**  
ENGINE OIL STRAINER  
c/w MAGNETIC FILTER ELEMENT  
(SEE NOTE 1)

**F-261**  
OIL SUPPLY FILTER  
BALDWIN BF914 HOUSING  
c/w BALDWIN BF915 FILTER ELEMENT

**P-250**  
ENGINE OIL PUMP  
c/w ENGINE

**I-260**  
ENGINE LUBE OIL SUPPLY  
TANK INTEGRAL w/ CRANE  
STRUCTURE (425L) (RHS)  
ATM. DESIGN

**P-260**  
PNEUMATIC DIAPHRAGM PUMP  
WILDEN T2 M/N: AAAB/BN/BN/ABN  
75 L/MIN



1. INSTALL PAPER ELEMENT IN F-256. RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.
2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P.10.

GENERAL NOTES	
No.	REVISION
1	ISSUED FOR CONSTRUCTION
2	RE-ISSUED FOR CONSTRUCTION
3	AS BUILT
4	CLIENT REVISIONS
5	AS BUILT - PER CLIENT REVISIONS

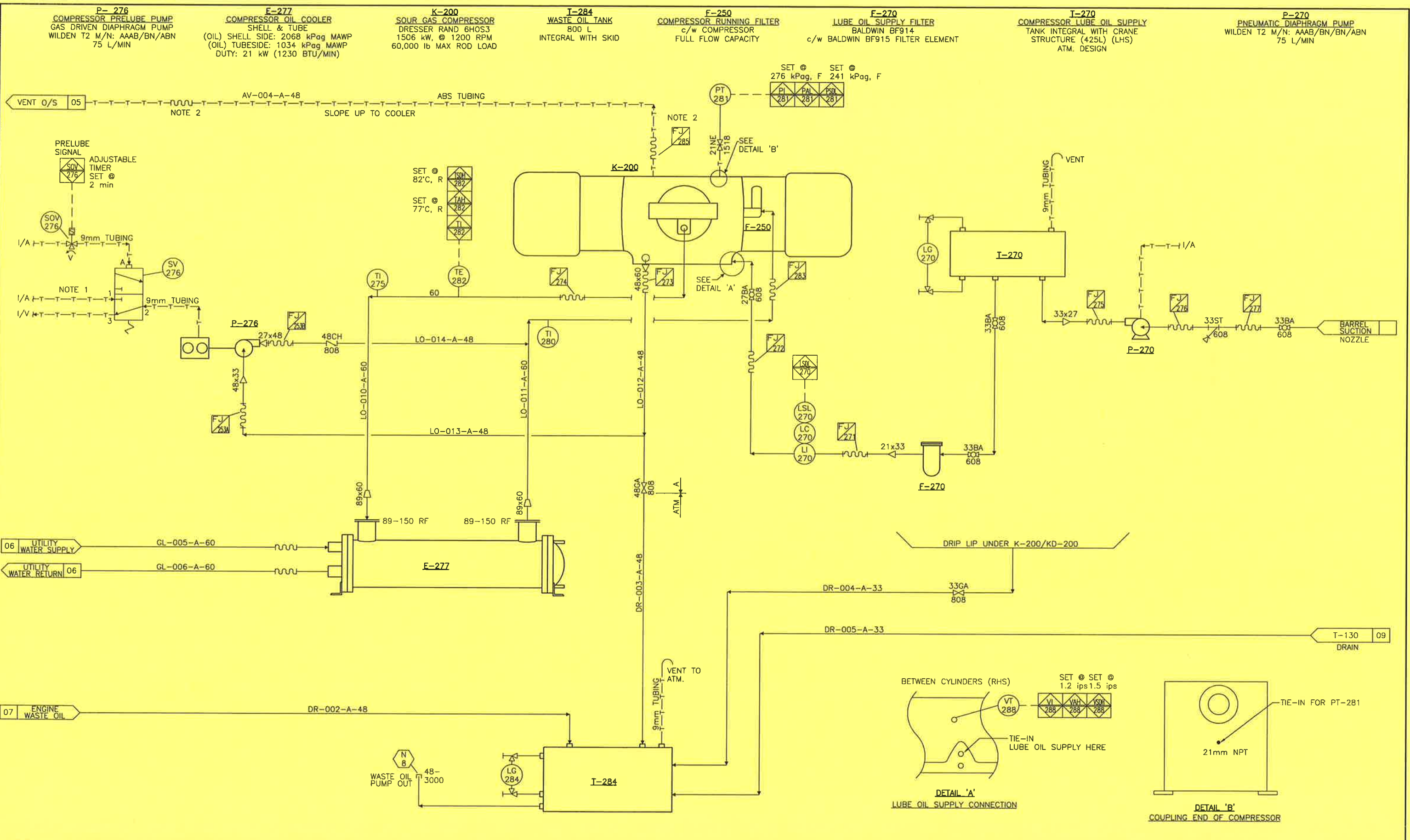
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H. LE	00/09/21	GW	GW
H. LE	00/08/25	CG	CG
H. LE	00/06/09	SW	SW
H. LE	00/03/27	DP	DP

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ELECTRICAL	CHECKED		
DATE	BY	S. WARD	
PROJECT	DATE	JUN. 09/00	
DATE	JUN. 09/00		
	SCALE		

APACHE CANADA LIMITED  
1478 HP HAMBURG COMPRESSOR PACKAGE  
ENGINE UTILITIES  
MECHANICAL FLOWSHEET

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1. NO REGULATOR ON THIS I/S.
2. SHOP FIT, RUBBER HOUSING

GENERAL NOTES	
No.	REVISION

GENERAL NOTES	
5	AS BUILT - PER CLIENT REVISIONS
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION

BY	DATE	CHKD	ENG
H. LE	00/10/25	JW	JW
H. LE	00/09/21	GW	GW
H. LE	00/08/25	CG	CG
H. LE	00/06/09	SW	SW
H. LE	00/03/27	DP	DP

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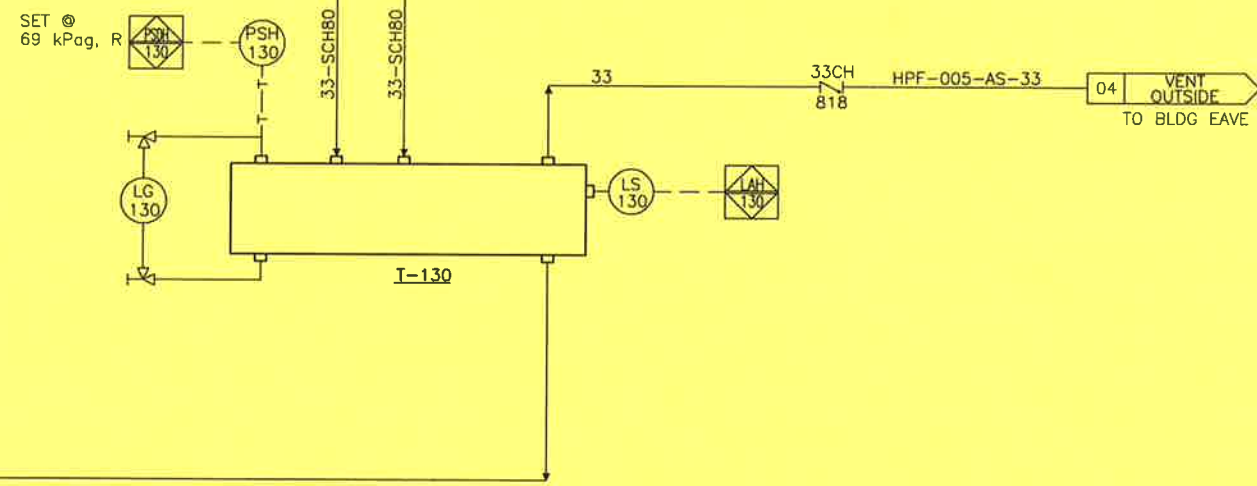
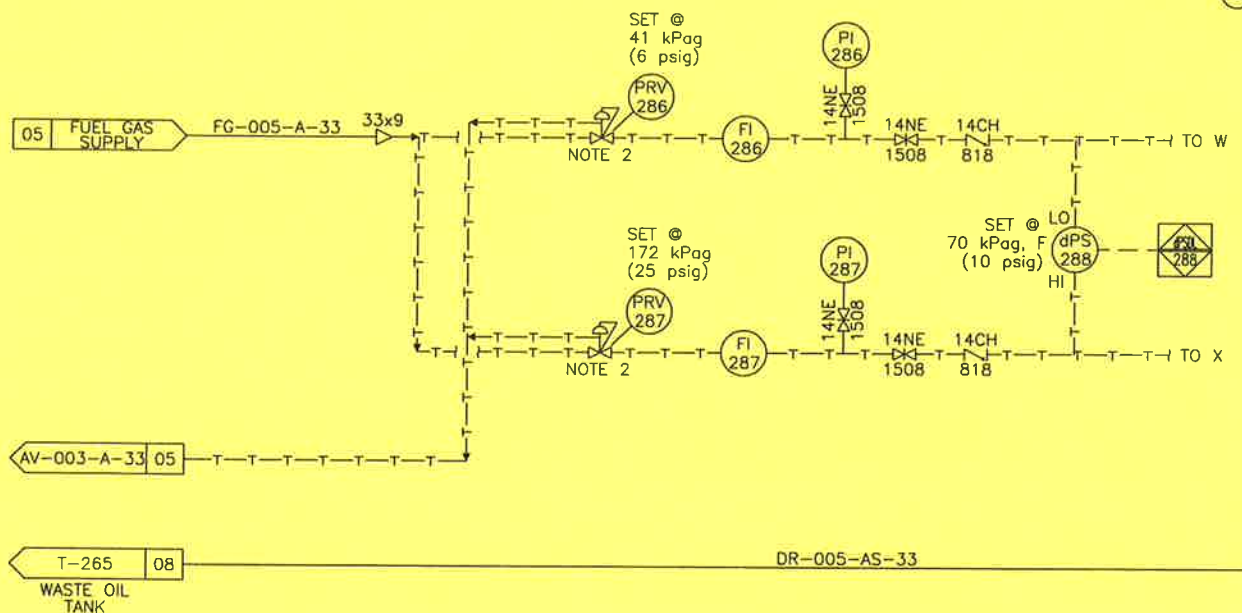
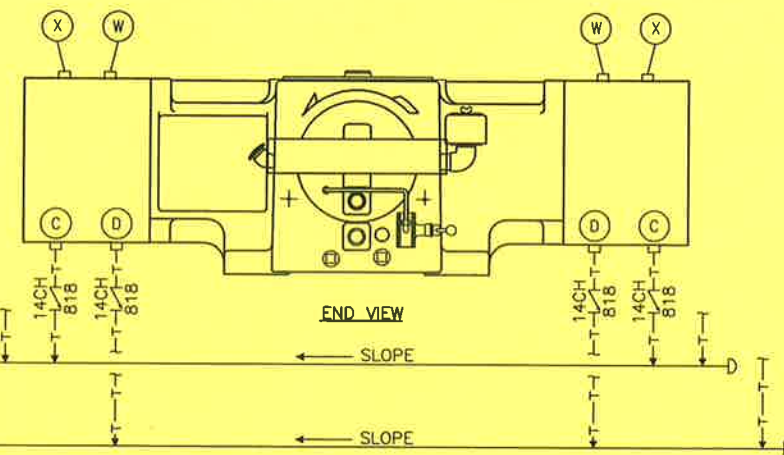
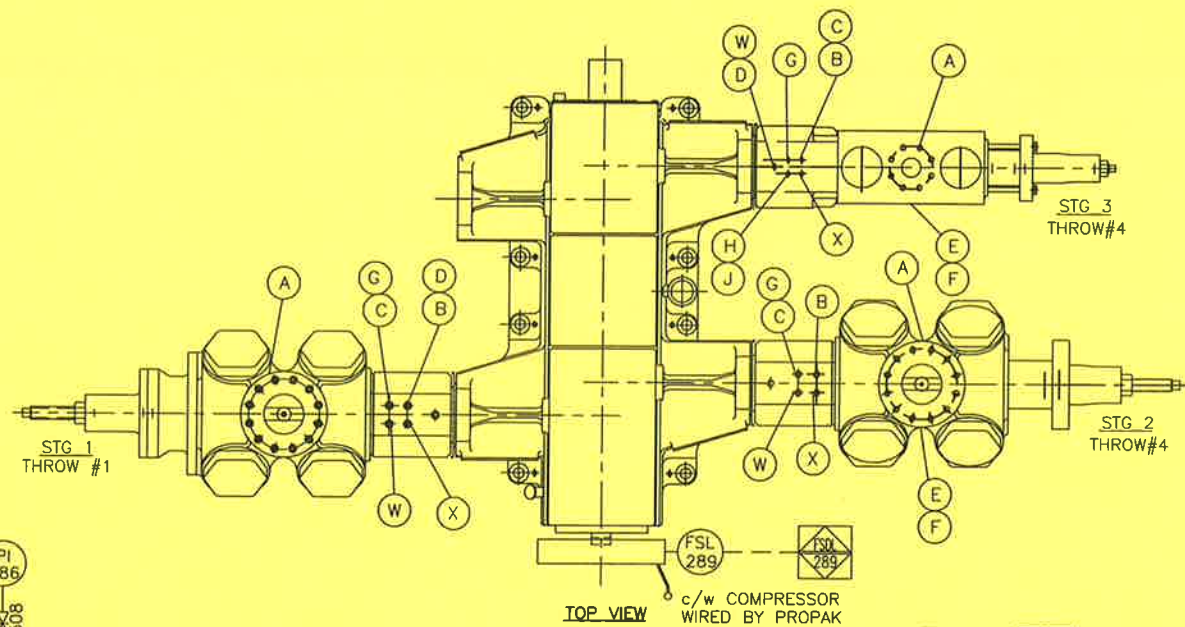
APACHE CANADA LIMITED	
1478 HP HAMBURG COMPRESSOR PACKAGE	
SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL	
MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99420-100
SHT.	8 OF 11
REV.	5

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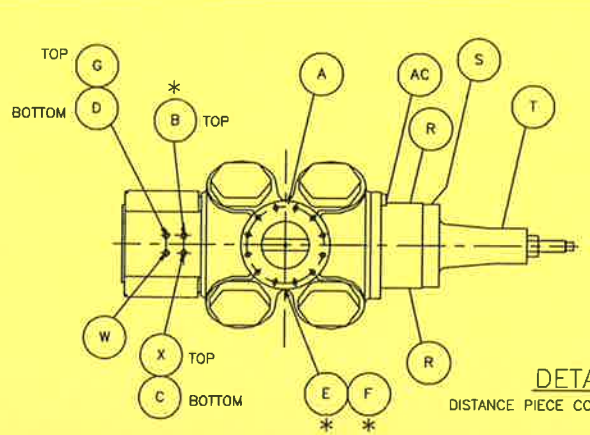


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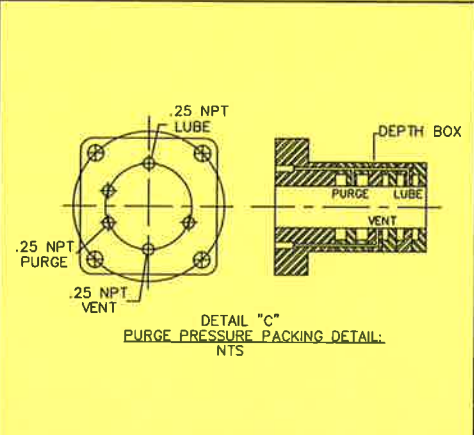
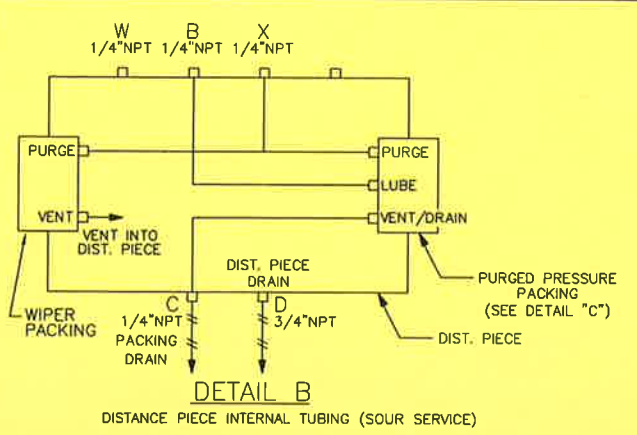
**T-130**  
**PACKING VENT & DRAIN SEAL POT**  
 273mm O.D. x 813mm S/S  
 101 kPag DESIGN



**DISTANCE PIECE EVACUATION SYSTEM**



- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
  - \* B) 1/4" NPT PACKING LUBE CONN.-TOP.
  - C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM
  - D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
  - \* E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
  - \* F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
  - G) 3/4" NPT YOKE VENT CONN.-TOP.
  - R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
  - S) 1/8" NPT WCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
  - T) 1/8" NPT GREASE FITTING.
  - W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
  - X) 1/4" NPT PACKING PURGE CONN.-TOP.
- NOTE:** PROPAK COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.  
 \* BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.
2. INTERNAL TUBING TO BE INSPECTED BY PROPAK SERVICE, PRIOR TO HOOKING UP.

**GENERAL NOTES**  
 DATE: 2000.10.25 1:53pm FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-09.dwg

No.	REVISION	BY	DATE	CKD	ENG
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PROJECT	DATE	JUN. 09/00	
DATE	SCALE		

**APACHE CANADA LIMITED**  
 1478 HP HAMBURG COMPRESSOR PACKAGE  
 CYLINDER & PACKING LUBRICATION  
 MECHANICAL FLOWSHEET

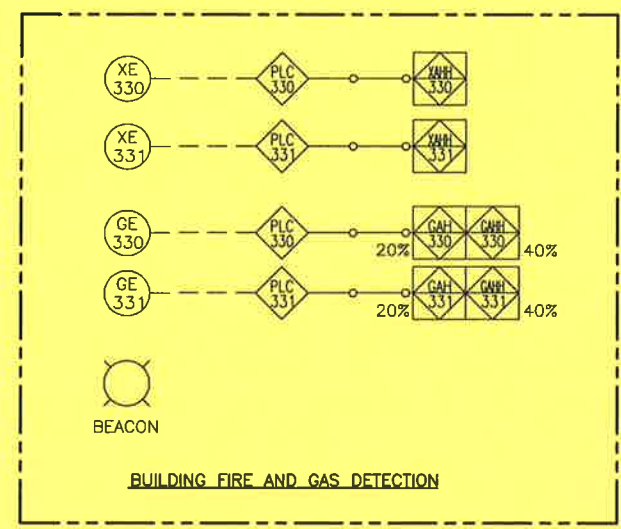
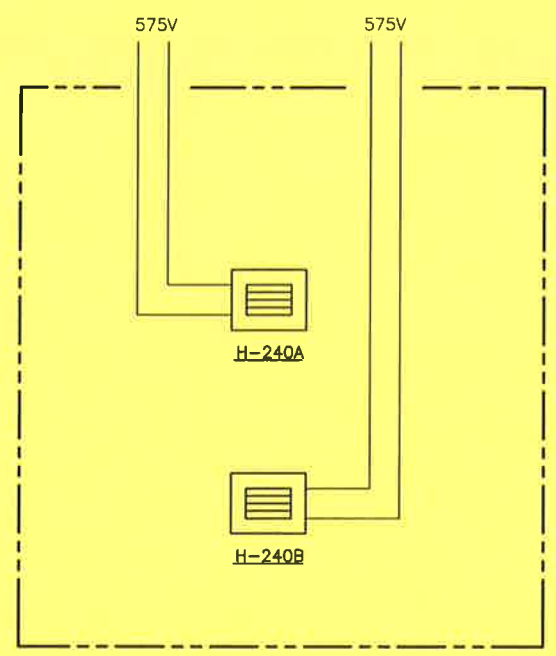
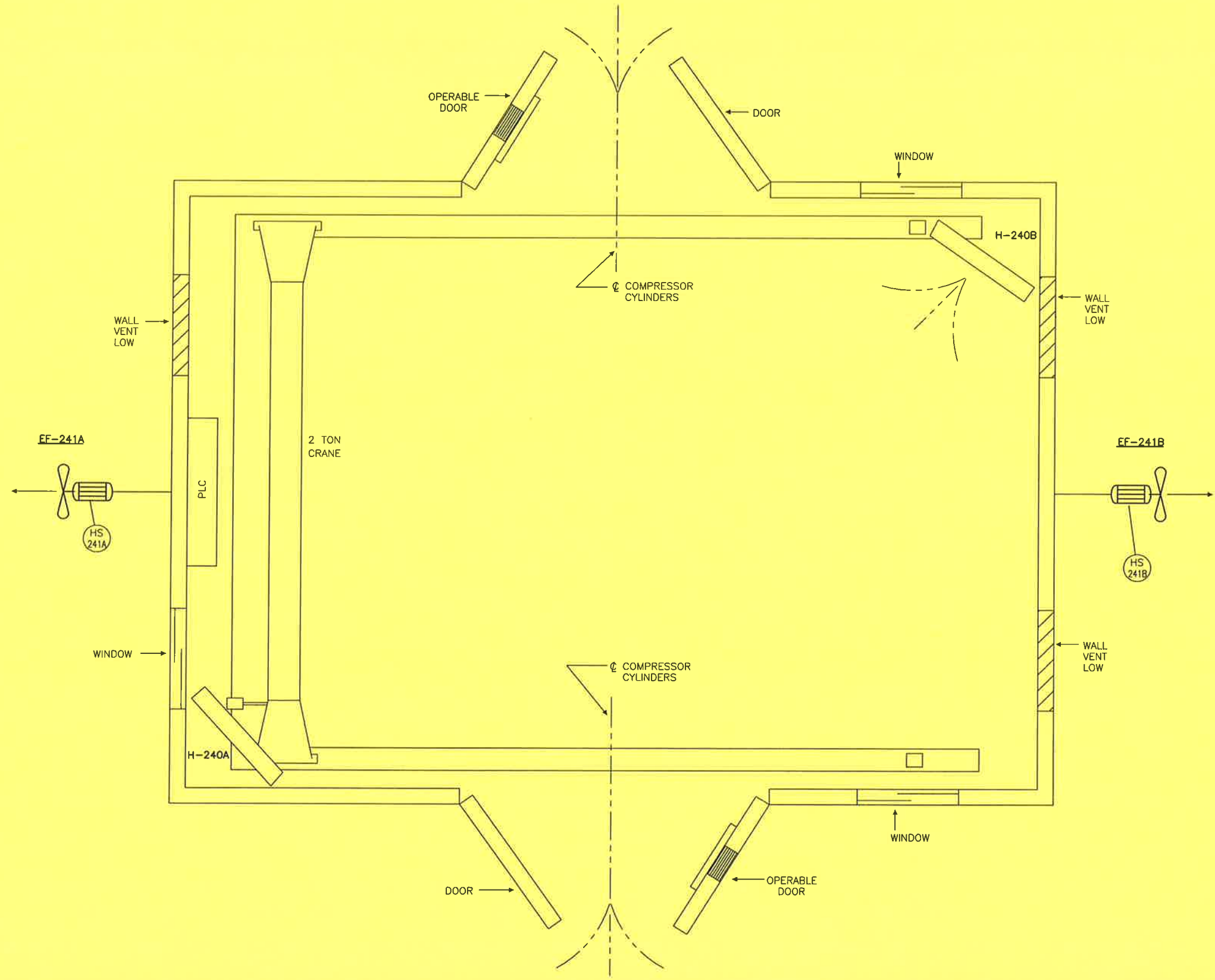
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**EF-241A/B**  
 EXHAUST FAN  
 M/N: ET-12-2  
 xP, 120/1/60

**H-240A/B**  
 BUILDING HEATERS  
 RUFFNECK XL 416-575360-15 kW



GENERAL NOTES		GENERAL NOTES	
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APACHE CANADA LIMITED	
1478 HP HAMBURG COMPRESSOR PACKAGE	
BUILDING UTILITIES	
MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99420-100
SHT.	11 OF 11
REV.	5

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PIPING SYMBOLS

	LOCALLY MOUNTED		VENTURI TUBE		INDICATES FLANGED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE SAFETY VALVE		RUPTURE DISC FOR PRESSURE RELIEF
	TWO INSTRUMENTS IN THE SAME HOUSING		DIAPHRAGM, SPRING OPPOSED		INDICATES BUTT-WELDED, SCREWED OR SOCKET-WELDED VALVE (TYPICAL FOR ALL TYPES)		PRESSURE REDUCING REGULATOR OR FORWARD PRESSURE REGULATOR		RUPTURE DISC FOR VACUUM RELIEF
	PANEL MOUNTED IN CONTROL ROOM		CYLINDER, PISTON OPERATED		BA = BALL VALVE		BACK PRESSURE REGULATOR		TURBINE METER
	BEHIND PANEL MOUNTED IN CONTROL ROOM		DIAPHRAGM WITH POSITIONER		CH = CHECK VALVE		DIFFERENTIAL PRESSURE REGULATOR		POSITIVE DISPLACEMENT METER
	INSTRUMENT MOUNTED ON LOCAL PANEL		MANUAL HANDWHEEL OVERRIDE		GA = GATE VALVE		PNEUMATIC LINE		ANNUBAR OR PITOT TUBE
	BEHIND PANEL MOUNTED ON LOCAL PANEL		TO DRAIN SYSTEM (E.G. SHOWN: CLOSED HYDROCARBON DRAIN)		GL = GLOBE VALVE		ELECTRICAL LEAD		CALIBRATED METER RUN WITH QUICK CHANGE FITTING
	LOCAL DISPLAY (DATALINER) OR ANNUNCIATOR		OPEN DRAIN		PL = PLUG VALVE		CAPILLARY TUBING		FLOW ELEMENT (ORIFICE) c/w PLATE
	HIGH/LOW LEVEL ALARMS		VENT TO ATMOSPHERE		NE = NEEDLE VALVE		TUBING LINE		RESTRICTION ORIFICE c/w PLATE
	PUSH BUTTON		VENT TO ATMOSPHERE c/w HYDRAULIC SEAL		BU = BUTTERFLY VALVE		SOFTWARE OR DATA LINK		FLOW QUANTITY INDICATOR
	HAND SWITCH		HOT INSULATION (E.G. SHOWN: 25mm THICK)		ST = "Y" TYPE LINE STRAINER		HOSE CONNECTION		FLOW SIGHT GLASS MONITOR
	STATUS LIGHT		COLD INSULATION (E.G. SHOWN: 25mm THICK)		ST = "T" TYPE LINE STRAINER		BLIND FLANGE		FLOW INDICATOR (ROTOMETER TYPE)
	LOCAL RESET		ELECTRICAL (ET), HOT GLYCOL (GT), STEAM (ST) HEAT TRACING		SOLENOID 2-WAY VALVE		PIPE CAP		
	INTERLOCK (E.G. SHOWN: INTERLOCK #100A)		HOT INSULATION (E.G. SHOWN: 25mm THICK HOT INSULATION WITH ELECTRIC HEAT TRACING)		SOLENOID 3-WAY VALVE		PIPE FLANGE		
	DISTRIBUTED CONTROL SYSTEM		EXPANSION JOINT		SOLENOID 4-WAY VALVE		PIPE UNION, NPT		
	PROGRAMMABLE LOGIC CONTROL SYSTEM		FLEXIBLE HOSE		THREE WAY VALVE		SPEC. BREAK		
	DISTRIBUTED CONTROL SYSTEM (DCS) PANEL (E.G. SHOWN: DCS CONTROL PANEL #100)		TIE-IN POINT		FOUR WAY VALVE		STEAM TRAP		
	PROGRAMMABLE LOGIC CONTROL (PLC) PANEL (E.G. SHOWN: PLC CONTROL PANEL #900)		STRAIGHTENING VANES		ANGLE VALVE				
	MOTOR CONTROL CENTRE (MCC)		CURRENT/PRESSURE TRANSDUCER		STOP CHECK ANGLE VALVE OR CHOKE				
	LOW SELECT		SPECIALTY ITEM		VALVE c/w BLEED				
	CONICAL STRAINER OR TEMPORARY SUCTION STRAINER		SWAGE		PULSATION DAMPER				
	SPADE/SLIP BLIND								
	SPECTACLE BLIND NORMALLY CLOSED								
	SPECTACLE BLIND NORMALLY OPEN								

	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y				
	ALARM	ALARM HIGH	ALARM HIGH/LOW	ALARM LOW	CONTROLLER	CONTROL VALVE	DIFFERENTIAL RECORDER	DEPRESSURIZING VALVE	PRIMARY ELEMENT	RATIO CONTROLLER	GAUGE GLASS	GAUGE MAGNETIC	INDICATOR	INDICATOR CONTROLLER	INDICATOR SWITCH	INDICATOR TRANSMITTER	MANUAL/AUTOMATIC (STATION)	STATUS LIGHT (NOT ALARM)	PERMISSIVE HIGH	INTERGRATION (TOTALIZER)	RECORDER	RECORDER CONTROLLER	RATIO RECORDER	SWITCH	SWITCH CLOSED	SHUTDOWN	SHUTDOWN HIGH	SHUTDOWN LOW	SAFETY ELEMENT (RUPTURE DISK)	SWITCH HIGH	SWITCH LOW	SWITCH LOW LOW	SWITCH MIDDLE	SWITCH OPEN	SAFETY VALVE	TRANSMITTER	VALVE	THERMOWELL	RELAY COMPUTING SOLENOID VALVE				
A	ANALYSIS	AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC	AIT						AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM				AT		AY				
BJ	BURNER FAILURE	BJA																																									
C	CONDUCTIVITY	CAH	CHL	CAL	CC	CCV	CDR		CE				CI	CIC	CIS	CIT					CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM					CT		CY			
D	DENSITY	DAH	DAHL	DAL	DC	DCV	DDR		DE		DG		DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSDL		DSM				DT		DY				
dP	DIFFERENTIAL PRESSURE	dPA	dPAH	dPAL	dPC	dPCV	dPR						dPI	dPIC	dPIS	dPIT		dPL				dPRC	dPRS				dPSDH	dPSDL		dPSH	dPSL						dPT		dPY				
E	EMERGENCY																																										
F	FLOW	FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM		FSV	FT		ESDV	EY				
G	GAS DETECTION	GAH							GE																		GSDH			GSH													
H	HAND (MANUAL)				HC	HCV								HRC																													
J	POWER													JIC										HS																			
K	TIME	KA			KC	KCV	KDR																																				
L	LEVEL	LAH	LAHL	LAL	LC	LCV	LDR		LE		LG	LGM	LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSSL	LSM					LT		LY			
M	MOISTURE	MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM					MT		MY			
P	PRESSURE	PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM		PSV	PT				PY			
R	REMOTE																																										
S	SPEED	SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM					ST		SY			
T	TEMPERATURE	TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM				TT		TW	TY			
U	UNIT	UA						UDV									UL																										
V	VIBRATION	VAH			VC				VE				VI								VR			VS			VSDH			VSH													
VI	VISCOSITY	VIAH	VIAHL	VIAL	VIC	VICV	VIDR		VIE				VII	VIIC	VIIIS	VIIIT		VIL			VIR	VIRC	VIRR	VIS		VISD			VISH	VISL		VISM											
X	FIRE DETECTION	XA							XE																																		
Z	LIMIT OR POSITION	ZAH	ZAHL	ZAL					ZE								ZIS	ZIT	ZL							ZSD			XSH														
																											ZSDH	ZSDL		ZSH	ZSL		ZSM	ZSO	ZT								

<p>APPROVED</p> <p>MECH./STRUCT. DATE</p> <p>ELECTRICAL DATE</p> <p>PROJECT DATE</p> <p>SCALE</p>		<p>DRAWN</p> <p>BY H. LE</p> <p>DATE MAR. 27/00</p> <p>CHECKED</p> <p>BY S. WARD</p> <p>DATE JUN. 09/00</p>		<p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>		<p>PROPAK</p> <p>440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3</p>	
<p>GENERAL NOTES</p> <p>DATE: 2000.09.22 8:29am FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-01.dwg</p>		<p>GENERAL NOTES</p> <p>No. REVISION</p> <p>4 CLIENT REVISIONS</p> <p>3 AS BUILT</p> <p>2 RE-ISSUED FOR CONSTRUCTION</p> <p>1 ISSUED FOR CONSTRUCTION</p>		<p>BY DATE CKD ENG</p> <p>H. LE 00/09/21</p> <p>H. LE 00/08/25 CG CG</p> <p>H. LE 00/06/09 SW SW</p> <p>H. LE 00/03/27 DP DP</p>		<p>DWG. No.: D-MFS-99420-100 SHT. 1 OF 11 REV. 4</p>	

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**GENERAL SPECIFICATIONS**

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

**GENERAL NOTES (ABBREVIATIONS)**

- AC - AIR CLOSURES
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

**COMMODITY (ABBREVIATIONS)**

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

**MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)**

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHV - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

**TUBING SIZES**

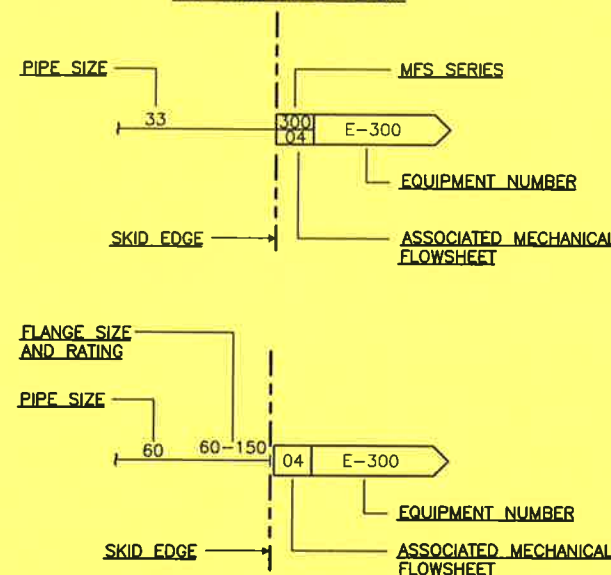
METRIC O.D. (mm)	IMP. O.D. (INCH.)	IMP. NPS (INCH.)
3	1/8"	1/4"
6	1/4"	3/8"
9	3/8"	1/2"
13	1/2"	3/4"
19	3/4"	1"
25	1"	1-1/2"
		2"
		3"
		4"
		6"
		8"
		10"
		12"
		14"
		16"
		18"
		20"
		24"
		36"
		42"

**PIPE SIZES**

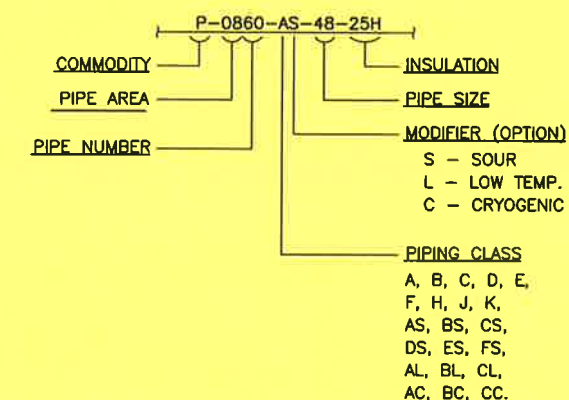
METRIC O.D. (mm)	METRIC DIN (mm)
14	8
17	10
21	15
27	20
33	25
48	40
60	50
89	80
114	100
168	150
219	200
273	250
324	300
356	350
406	400
457	450
508	500
610	600
914	900
1067	1050

NOTES:  
NPS - NOMINAL PIPE SIZE

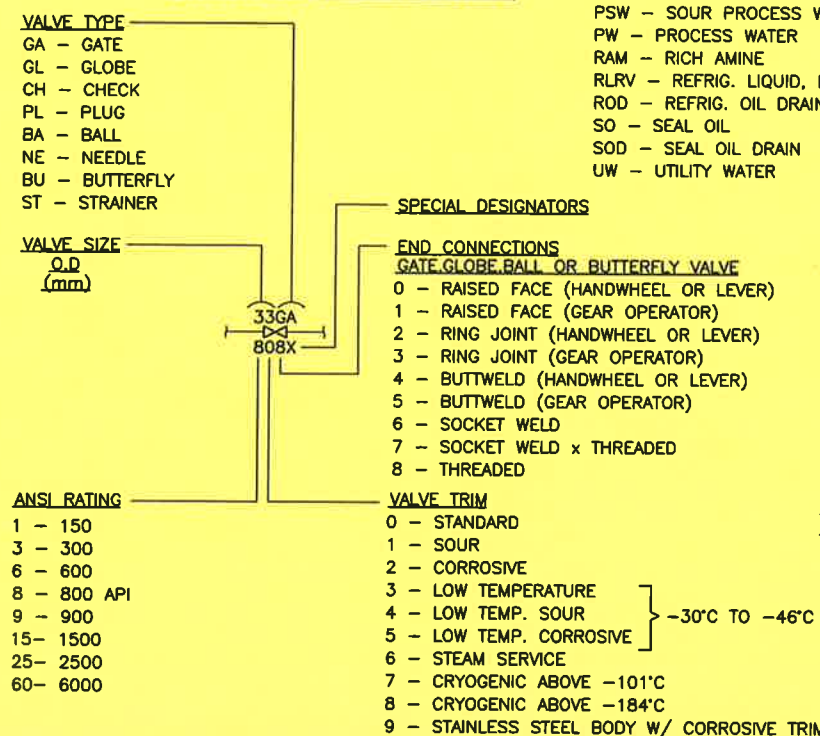
**TYPICAL PIPE FLAGS**



**TYPICAL PIPE IDENTIFICATION**



**TYPICAL VALVE IDENTIFICATION**



**TYPICAL EQUIPMENT IDENTIFICATION**

TAG No: T-820  
 DESCRIPTION: DEETHANIZER  
 DIMENSIONS: ...mm O.D. x ...mm S/S  
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.  
 GAS FLOW RATES: ... m3/d  
 LIQUID FLOW RATES: ... m3/h  
 DUTIES: ... kW  
 MOTOR POWER: ... kW @ V/ø/Hz  
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT  
 MAKE AND MODEL:

<p>APPROVED</p> <p>MECH./STRUCT. BY DATE</p> <p>DATE</p>		<p>DRAWN</p> <p>H. LE MAR. 27/00</p> <p>DATE</p>		<p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>	
<p>GENERAL NOTES</p> <p>1. ISSUED FOR CONSTRUCTION</p>		<p>GENERAL NOTES</p> <p>1. ISSUED FOR CONSTRUCTION</p>		<p>REVISION</p> <p>No. REVISION</p>	
<p>DATE: 2000.09.22 8:30am FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-02.dwg</p>		<p>BY DATE CKD ENG</p> <p>H. LE 00/09/21 CG CG</p> <p>H. LE 00/08/25 CG CG</p> <p>H. LE 00/06/09 SW SW</p> <p>H. LE 00/03/27 DP DP</p>		<p>DWG. No.: D-MFS-99420-100 SHT. 2 OF 11 REV. 4</p>	

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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**ENGINE CONNECTION INDEX**

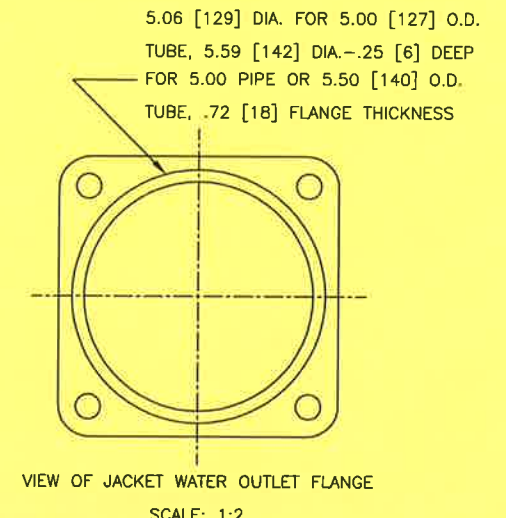
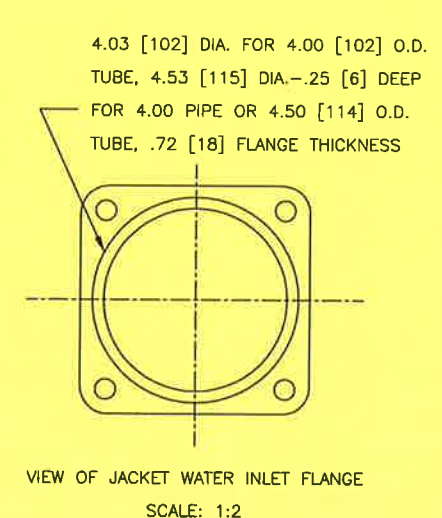
1. NATURAL GAS INLET 2.00-11.5 N.P.T.  
NOTE: FLEXIBLE CONNECTION REQUIRED AT THE FUEL INLET LOCATION(S) TO ISOLATE ENGINE VIBRATION FROM FUEL PIPING. LOCATE AS CLOSE TO ENGINE AS POSSIBLE.
2. STARTING MOTOR PAD .625-11 UNC-2B TAP THRU 3 HOLES FOR STARTING MOTOR WITH S.A.E. NUMBER 3 MOUNTING FLANGE.
4. JACKET WATER OUTLET FLANGE. (SEE VIEW OF FLANGE)
5. FRONT LIFTING EYES 3.00 [76] DIA. HOLE.
6. REAR LIFTING EYES 3.00 [76] DIA. HOLE.
8. CRANKSHAFT PULLEY - (2) 9.88 [251] NOMINAL DIAMETER X .500 [13] WIDE S.A.E. AUTOMOTIVE GROOVES.
9. .88 [22] DIAMETER - 12 ENGINE MOUNTING HOLES.
10. LUBE OIL DRAIN 2.00-11.5 N.P.T.
11. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
12. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
13. .625-11 UNC-2B TAP 1.00 [25] DEEP, 12 HOLES EQUALLY SPACED.
14. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS VENT CONNECTION. (SEE VIEW "A") (SEE NOTE 1)
15. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS SUPPLY CONNECTION. (SEE VIEW "A")
16. .375-18 N.P.T. AIR/GAS PRELUBE SUPPLY CONNECTION.
17. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS START CONNECTION. (SEE VIEW "A")
18. LUBE OIL STRAINER INLET FROM LUBE OIL FILTER, 2.00 RAISED FACE 150 LB. A.N.S.I. WELD NECK FLANGE.
19. JACKET WATER INLET FLANGE, 2 PLACES. (SEE VIEW OF FLANGE)
22. LUBE OIL FILTER INLET FROM LUBE OIL COOLER ASSEMBLY, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
23. LUBE OIL FILTER OUTLET TO ENGINE LUBE OIL STAINER, 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
24. .56 [14] DIAMETER - 4 PLACES EQUALLY SPACED IN MOUNTING FEET FOR LUBE OIL FILTER MOUNTING.
25. EXHAUST OUTLET FLANGE - FITS 8.00 FLAT FACE 125 LB. A.N.S.I. CAST IRON PIPE FLANGE. NOTE: EXHAUST SYSTEM MUST SUPPORT ITS OWN WEIGHT BEYOND THIS POINT.
27. AUXILIARY WATER INLET FROM COOLING SYSTEM, 2.50 125 LB. A.N.S.I. FLANGE.
28. 375-18 N.P.T. AIR/GAS PRE-LUBE MOTOR EXHAUST. (SEE NOTE 1)

NOTE 1: ALL GAS VENTED AND/OR DISCHARGED FROM ENGINE EQUIPMENT SHOULD BE PIPED TO A SAFE AREA TO MEET APPLICABLE CODES.  
NOTE 2. ROTATIONS ARE VIEWED FROM FLYWHEEL END.

33. LUBE OIL COOLER ASSEMBLY OUTLET TO LUBE OIL FILTER. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
34. PRESSURE REGULATING VALVE OUTLET ON LUBE OIL COOLER ASSEMBLY TO ENGINE OIL PAN. 1.50 RAISED FACE 150 LB. A.N.S.I. FLANGE.
35. AUXILIARY WATER INLET AT LUBE OIL COOLER ASSEMBLY, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
36. AUXILIARY WATER OUTLET AT LUBE OIL COOLER ASSEMBLY TO THERMOSTATIC VALVE AND COOLING SYSTEM, 2.50 FLAT FACE 125 LB. A.N.S.I. FLANGE.
37. .69 X 1.25 [18 X 32] SLOT - 4 PLACES FOR LUBE OIL COOLER ASSEMBLY MOUNTING.
38. AUXILIARY WATER BYPASS CONNECTION FROM LUBE OIL COOLER. 2.00 FLAT FACE 125 LB A.N.S.I. FLANGE.
39. .750-14 N.P.T. AUXILIARY WATER CONNECTION FROM EXPANSION TANK.
40. CLEARANCE REQUIRED TO REMOVE LUBE OIL FILTER ELEMENT.
41. AUXILIARY WATER OUTLET TO LUBE OIL COOLER ASSEMBLY. 1.50 FLAT 150 LB. A.N.S.I. FLANGE.
42. LUBE OIL INLET FROM PRESSURE REGULATING VALVE ON LUBE OIL COOLER ASSEMBLY, 1.50 LAP JOINT 150 LB. A.N.S.I. FLANGE WITH STUB END.
43. LUBE OIL OUTLET TO LUBE OIL COOLER ASSEMBLY, 2.00 LAP JOINT 150 LB A.N.S.I. FLANGE WITH STUB END.
44. LUBE OIL COOLER ASSEMBLY INLET FROM ENGINE LUBE OIL PUMP. 2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
54. ENGINE PRESSURE BLOCK, OIL AND INTAKE MANIFOLD PRESSURE .125-27 N.P.T. 6 PLACES (4 OIL, 2 AIR.) (SEE VIEW "B")
55. ENGINE IGNITION POWER JUNCTION BOX 24 VOLT DC.
56. ENGINE TEMPERATURE CONNECTION POINTS. THERMOCOUPLE TYPE K, AND CUSTOM CONTROLS JUNCTION BOX.
57. FRONT FACE OF CRANKCASE.
59. DSM FILTER SIGNAL INPUT. INCLUDES 11 FOOT LONG CABLE.
60. DSM FILTER SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
61. DSM FILTER POWER INPUT.
62. DSM SIGNAL INPUT. FROM CONNECTION 60.
63. DSM POWER INPUT.
64. DSM SIGNAL OUTPUT. INCLUDES 15 FOOT LONG CABLE.
65. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM.
66. .31-18 UNC-2A 4 PLACES, FOR MOUNTING DSM FILTER.

**EQUIPMENT INDEX**

- A. S.A.E NUMBER 00 FLYWHEEL HOUSING
- B. TIMING HOLE PAD
- C. ENGINE WATER DRAIN
- D. GOVERNOR, HYDRAULIC
- E. SAFETY GUARD
- F. LUBE OIL DIPSTICK (BOTH SIDES)
- G. LUBE OIL FILLER
- H. LUBE OIL STRAINER
- J. AIR/GAS MOTORIZED PRE-LUBE PUMP
- K. LUBE OIL FILTER ASSEMBLY (SHIPPED LOOSE)
- L. CRANKCASE BREATHER (2)
- M. AIR CLEANERS (2)
- P. MANUAL BARRING DEVICE
- Q. ENGINE LEVELING BOLTS (4) 1.00-8 UNC-2B THREAD
- R. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- S. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- T. GOVERNOR SPEED CONTROL HAND LEVER
- U. THROTTLE LEVER
- V. LUBE OIL COOLER ASSEMBLY (SHIPPED LOOSE)
- W. FLEXIBLE EXHAUST CONNECTION (SHIPPED LOOSE)
- X. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- UU. PNEUMATIC CONTROL PANEL CONSISTING OF START, STOP, PRELUBE, AND SAFETY RESET.
- XX. CEC IGNITION MODULE
- BA. DETONATION SENSING MODULE (DSM) (SHIPPED LOOSE)
- CA. DSM FILTER (SHIPPED LOOSE)

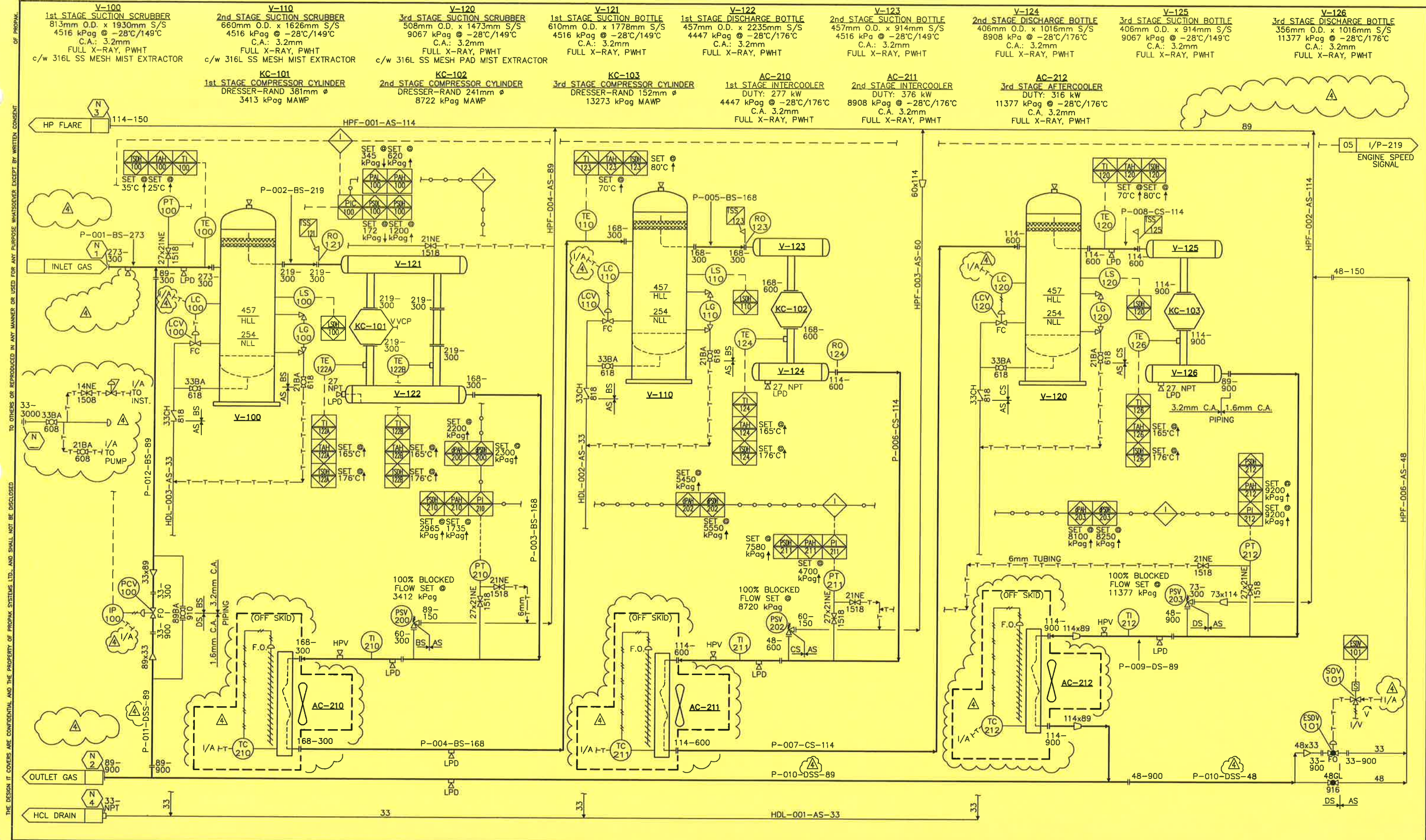


GENERAL NOTES		GENERAL NOTES				APPROVED		DRAWN		EQUIPMENT AND ENGINE CONNECTION INDEX MECHANICAL FLOWSHEET DWG. No.: D-MFS-99420-100 SHT. 3 OF 11 REV. 4			
						MECH./STRUCT.		BY H. LE					
						DATE		DATE MAR. 27/00					
						ELECTRICAL		CHECKED					
						DATE		BY S. WARD					
						PROJECT		DATE JUN. 09/00					
						DATE		SCALE					

4	CLIENT REVISIONS	H. LE	00/09/21	CG	CG				
3	AS BUILT	H. LE	00/08/25	CG	CG				
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW				
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP				
No.	REVISION	BY	DATE	CKD	ENG				

DATE: 2000.09.22 8:31am FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-03.dwg

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 Canada T4B 2C3



1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"  
2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"  
3. VENT ALL VENTING INSTS TO VENT HEADER.

**GENERAL NOTES**

DATE: 2000.09.22 8:32am FILE NAME: J:\Jobs99\DWG\99420\FLW\MFS-99420-100-04.dwg

No.	REVISION	BY	DATE	CKD	ENG
4	CLIENT REVISIONS	H. LE	00/09/21		
3	AS BUILT	H. LE	00/08/25	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH/STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE	S. WARD	
PROJECT	DATE	JUN. 09/00	
DATE	SCALE		

**COMPRESSOR MECHANICAL FLOWSHEET**

DWG. No.: D-MFS-99420-100 SHT. 4 OF 11 REV. 4

**PROPAK**  
440 East Lake Road,  
Postal Bag #2  
Airdrie, Alberta  
Canada T4B 2C3

**F-220**  
**FUEL GAS FILTER**  
 HEAD LINE 385-AP-70C-1-1/2"  
 1724 kPag @ 93°C  
 c/w 70-C FILTER ELEMENT

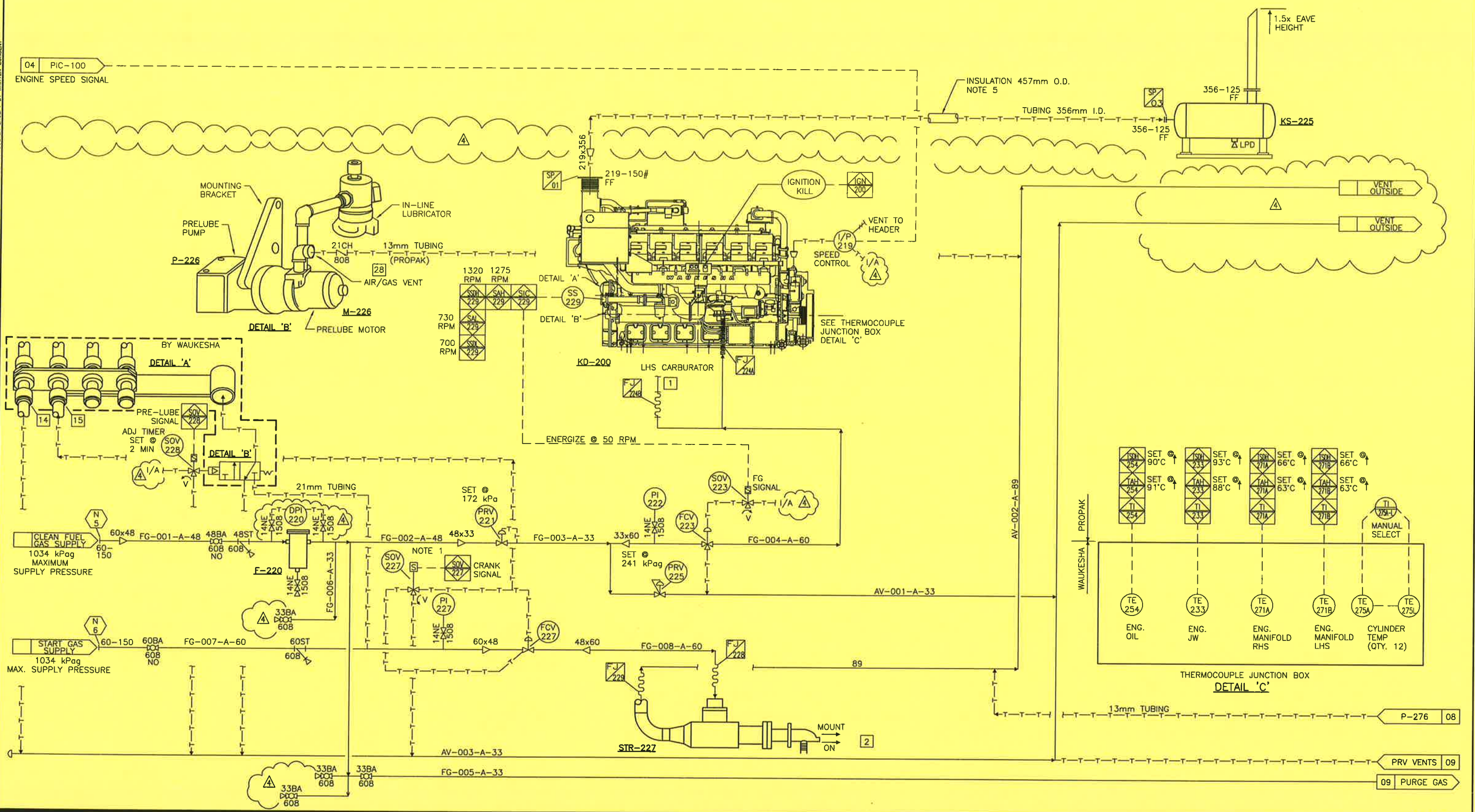
**P-226/M226**  
**ENGINE PRELUBE PUMP**  
 GAS DRIVEN MOTOR  
 c/w ENGINE

**KD-200**  
**COMPRESSOR DRIVER**  
 WAUKESHA 7042GL  
 1478 BHP @ 1200 RPM  
 54°C INTERCOOLER INLET TEMPERATURE

**STR-227**  
**ENGINE STARTER**  
 TDI TURBO TWIN  
 MIN T112B PIN T112-60001-BIR  
 30.875 sm<sup>3</sup>/min @ 827 kPag

**KS-225**  
**COMPRESSOR SILENCER**  
 MODEL: JAT-14-S012  
 CRITICAL GRADE SILENCER  
 356mm-125# IN/OUT

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- |  |                                      |
|--|--------------------------------------|
| 1. HIGH PRESSURE SOV.  | AT 45° AS SHOWN AT APPROXIMATELY THE |
| 2. ENGINE CONNECTION INDEX SEE 99404-100-03  | SAME ELEVATION.                      |
| 3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT.                               | 5. INSULATE TO BUILDING WALL ONLY.   |
| 4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT |                                      |
- GENERAL NOTES**
- |   |                            |       |          |    |    |
|---|----------------------------|-------|----------|----|----|
| 4 | CLIENT REVISIONS           | H. LE | 00/09/23 | CG | CG |
| 3 | AS BUILT                   | H. LE | 00/08/25 | CG | CG |
| 2 | RE-ISSUED FOR CONSTRUCTION | H. LE | 00/06/09 | SW | SW |
| 1 | ISSUED FOR CONSTRUCTION    | H. LE | 00/03/27 | DP | DP |
- DATE: 2000.09.22 8:33am FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-05.dwg

No.	REVISION	BY	DATE	CKD	ENG

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	S. WARD	
DATE	DATE	JUN. 09/00	
PROJECT	S. WARD		
DATE	JUN. 09/00		
	SCALE		

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

ENGINE FUEL START GAS  
 MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99420-100 SHT. 5 OF 11 REV. 4



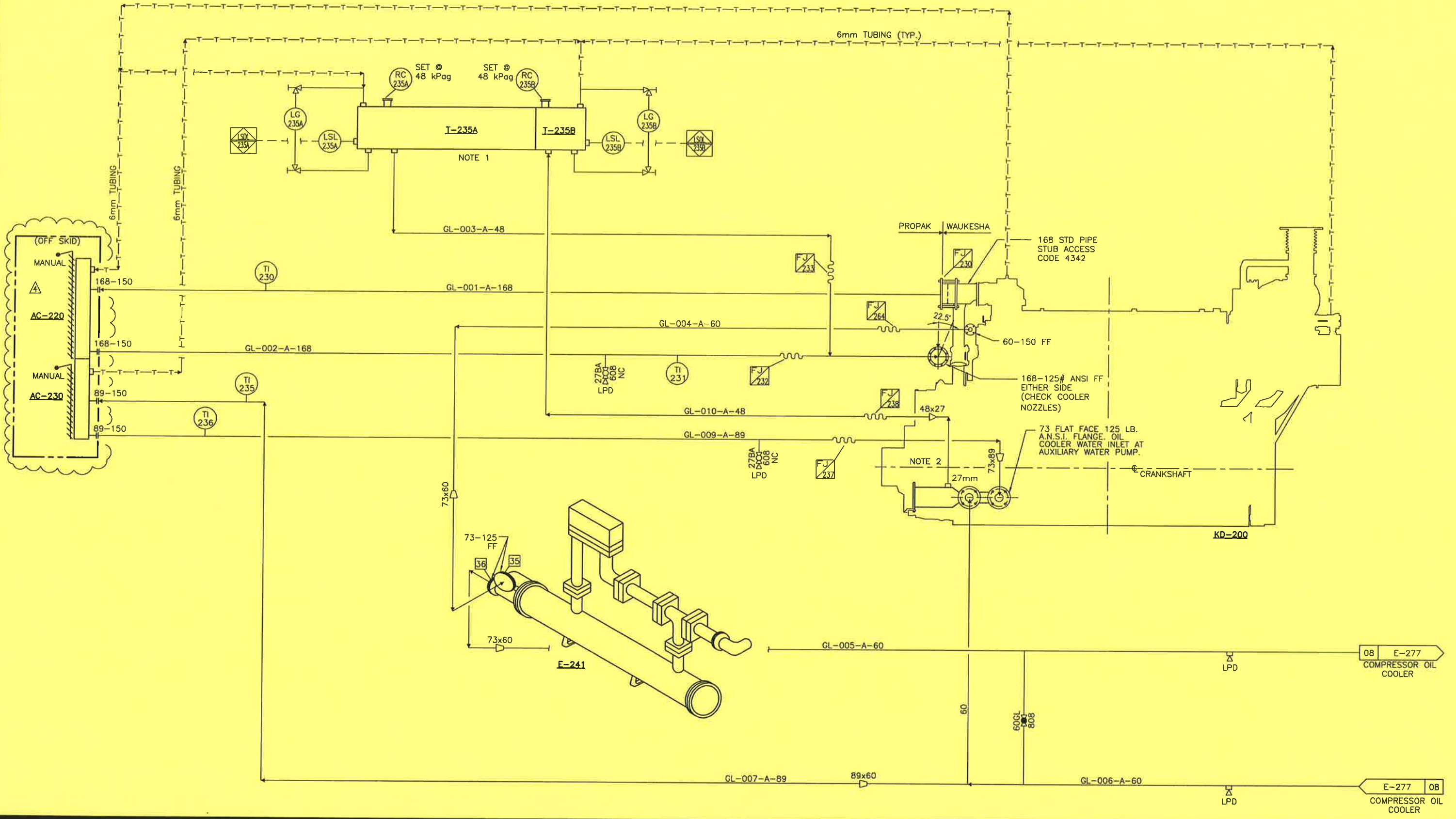
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**AC-220**  
ENGINE JW COOLER  
96.5 kPag MAWP  
DUTY: 4.01mm BTU/hr (117.4 kW/hr)  
0mm C.A.

**AC-230**  
ENGINE AW COOLER  
96.5 kPag MAWP  
DUTY: 0.775mm BTU/hr (22.7 kW/hr)  
0mm C.A.

**I-235A/I-235B**  
ENGINE JW/AW SURGE TANK  
160/74 L CAPACITY  
96.5 kPag MAWP

**E-241**  
ENGINE OIL COOLER  
c/w ENGINE



1. MOUNT I-235A/I-235B ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.

2. SHOP DISCRETION TO RUN 19mm TUBING INTO GL-010-A-48

GENERAL NOTES		GENERAL NOTES	
No.	REVISION	No.	REVISION

No.	REVISION	BY	DATE	CKD	ENG
4	CLIENT REVISIONS	H. LE	00/09/21	CG	CG
3	AS BUILT	H. LE	00/08/75	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE	S. WARD	
PROJECT	S. WARD	DATE	JUN. 09/00
DATE	JUN. 09/00	SCALE	

GLYCOL COOLING SYSTEM MECHANICAL FLOWSHEET	
DWG. No.: D-MFS-99420-100	SHT. 6 OF 11
REV. 4	

**PROPAK**  
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**F-253**  
ENGINE OIL FILTER  
c/w ENGINE  
SHIPLOOSE

**E-241**  
ENGINE OIL COOLER  
c/w ENGINE  
SHIPLOOSE

**KD-200**  
COMPRESSOR DRIVE  
WAUKESHA L7042GL  
1478 HP @ 1200 RPM

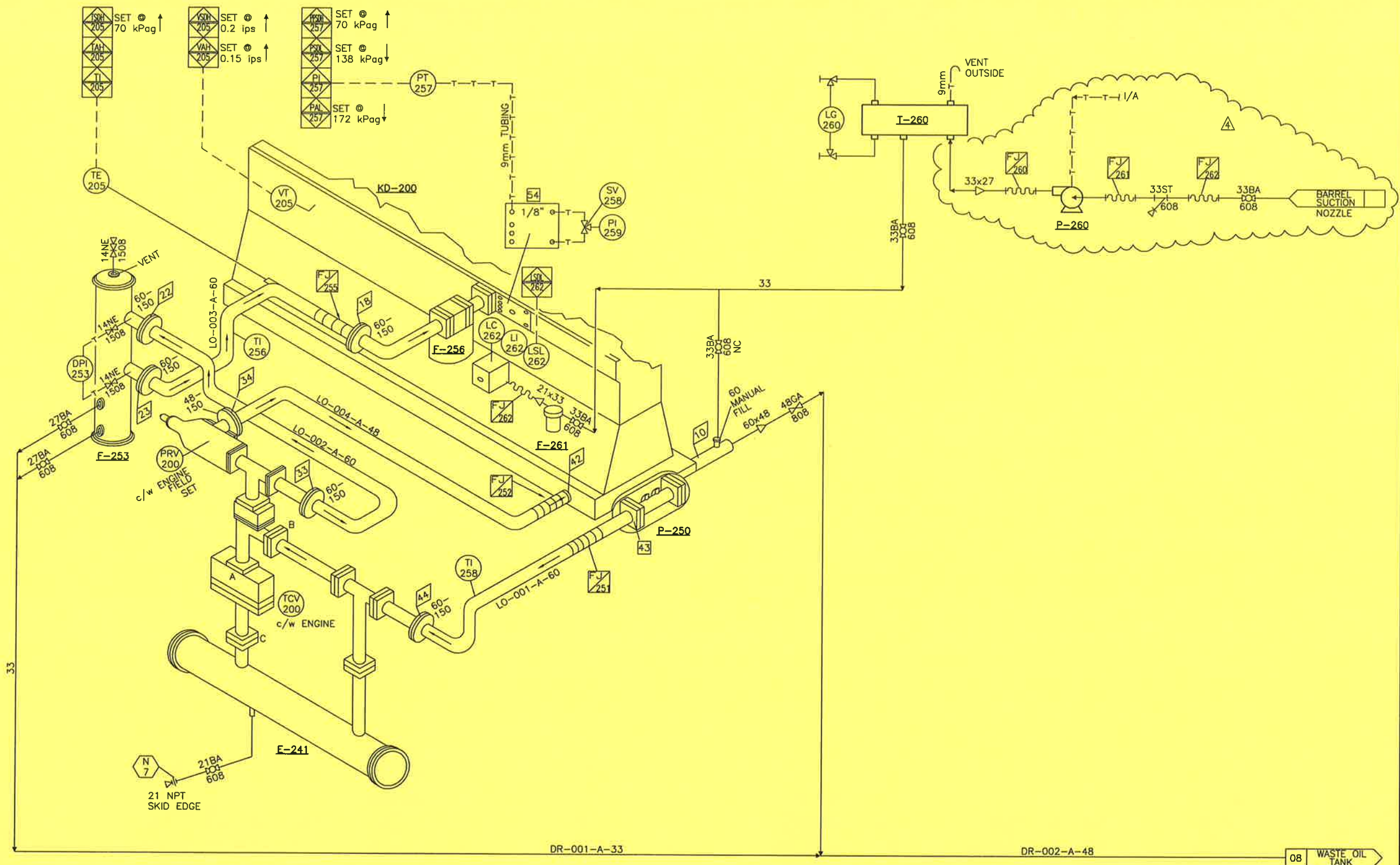
**F-256**  
ENGINE OIL STRAINER  
c/w MAGNETIC FILTER ELEMENT  
(SEE NOTE 1)

**F-261**  
OIL SUPPLY FILTER  
BALDWIN BF914 HOUSING  
c/w BALDWIN BF915 FILTER ELEMENT

**P-250**  
ENGINE OIL PUMP  
c/w ENGINE

**I-260**  
ENGINE LUBE OIL SUPPLY  
TANK INTEGRAL w/ CRANE  
STRUCTURE (425L) (RHS)

**P-260**  
PNEUMATIC DIAPHRAGM PUMP  
WILDEN T2 M/N: AAAB/BN/BN/ABN  
75 L/MIN



DR-001-A-33

DR-002-A-48

08 WASTE OIL TANK

1. INSTALL PAPER ELEMENT IN F-256. RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.  
2. ENGINE CONNECTION INDEX SEE MFS-98147-100-P. 10.

GENERAL NOTES	
No.	REVISION

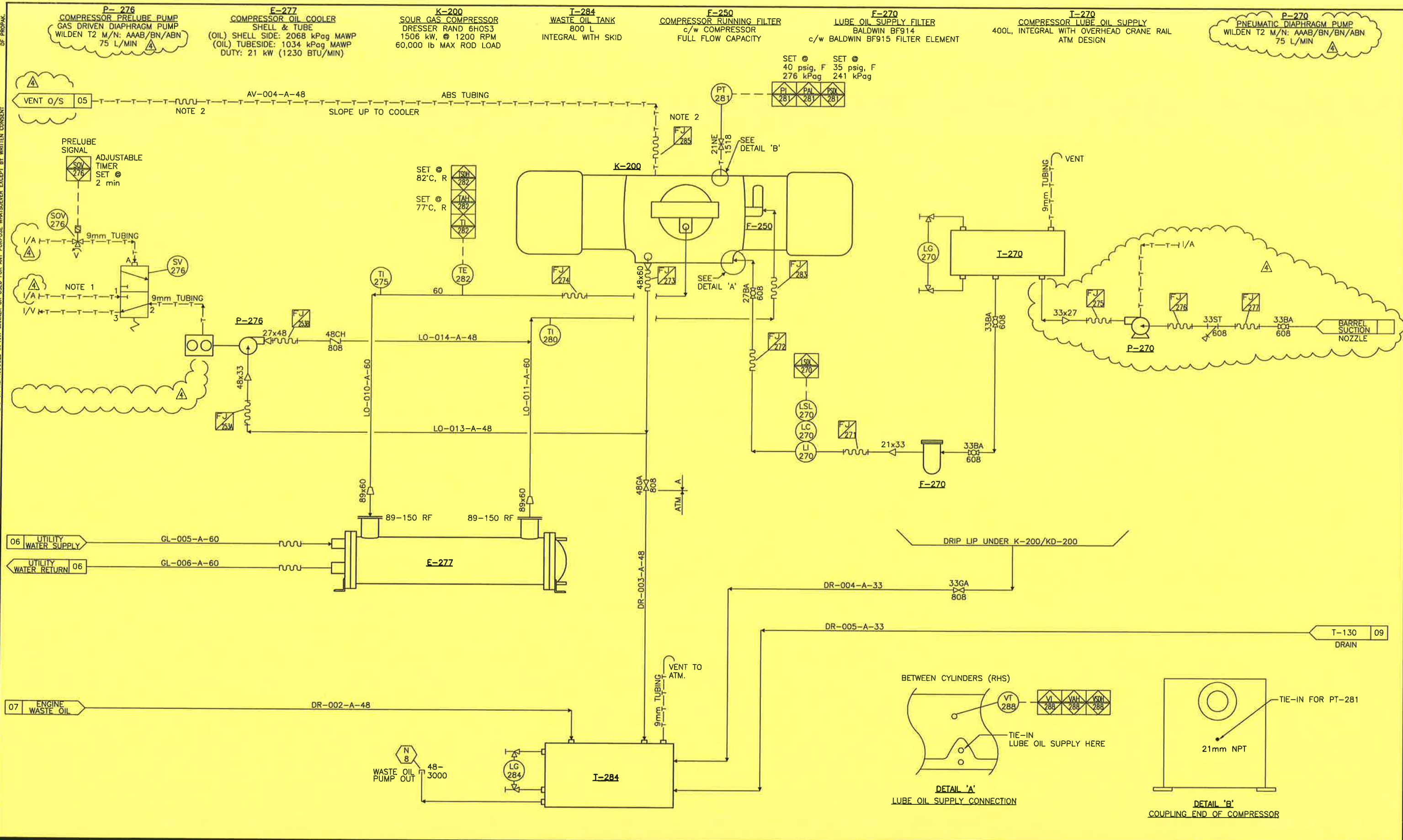
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3	AS BUILT	H. LE	00/08/25	CG	CG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH/STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE	S. WARD	
PROJECT	S. WARD	DATE	JUN. 09/00
DATE	JUN. 09/00	SCALE	

ENGINE UTILITIES  
MECHANICAL FLOWSHEET  
DWG. No.: D-MFS-99420-100 SHT. 7 OF 11 REV. 4

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1. NO REGULATOR ON THIS I/S.
2. SHOP FIT, RUBBER HOISING

GENERAL NOTES	
No.	REVISION
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION

BY	DATE	CKD	ENG
H. LE	00/09/21		
H. LE	00/08/25	CG	CG
H. LE	00/06/09	SW	SW
H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE	JUN. 09/00	
PROJECT	S. WARD	DATE	
DATE	JUN. 09/00	SCALE	

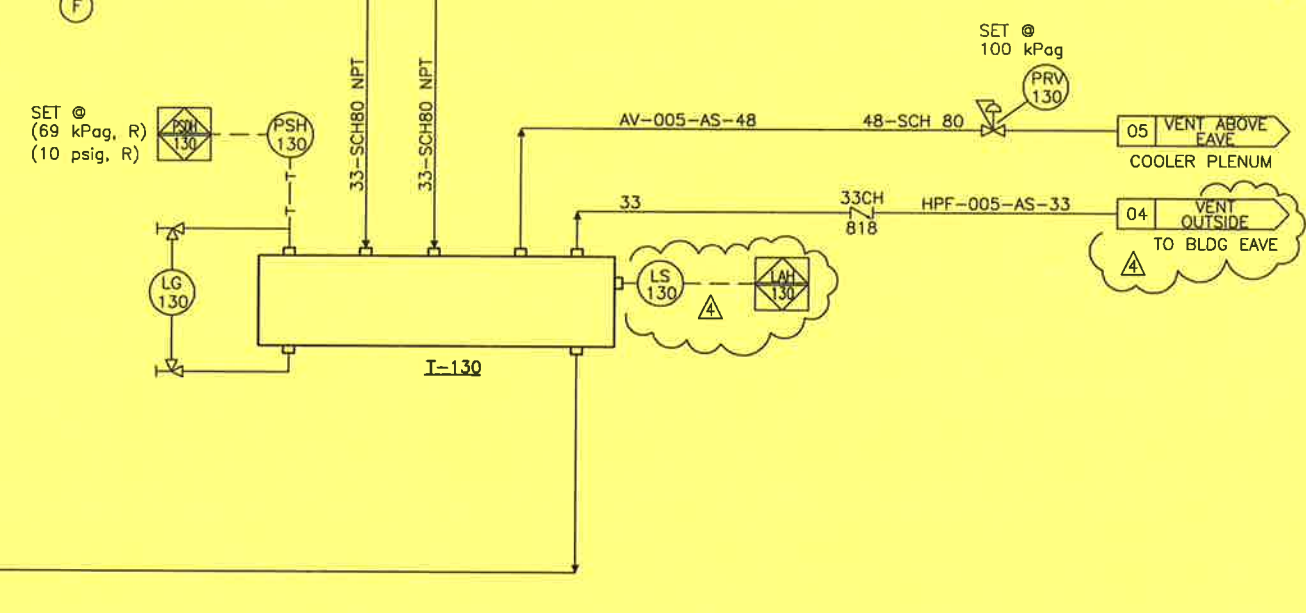
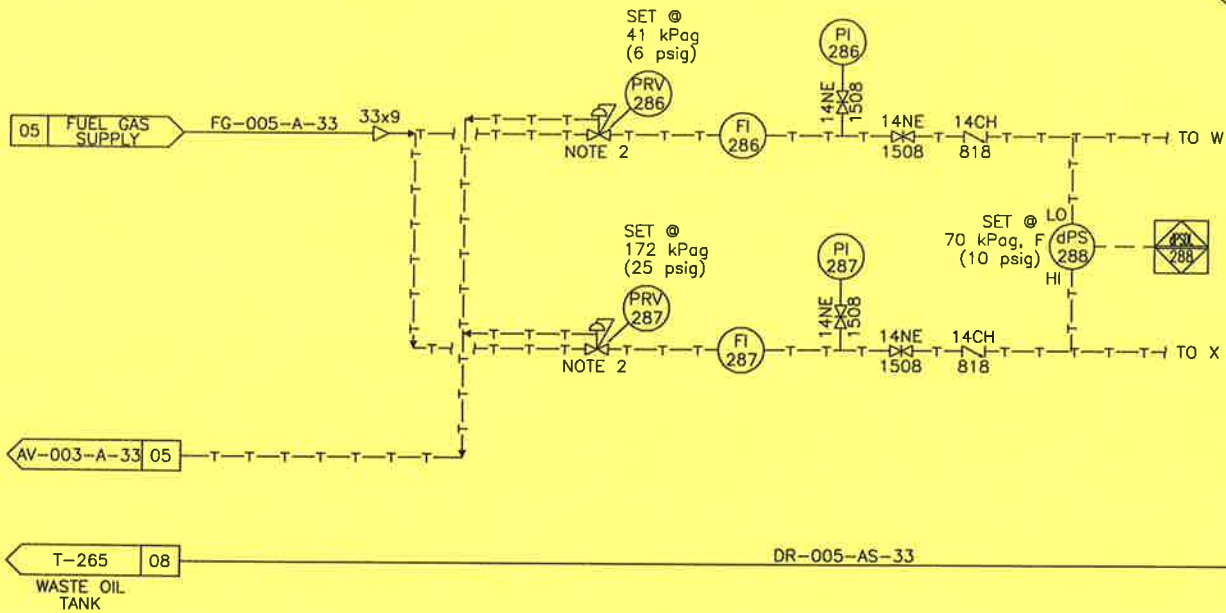
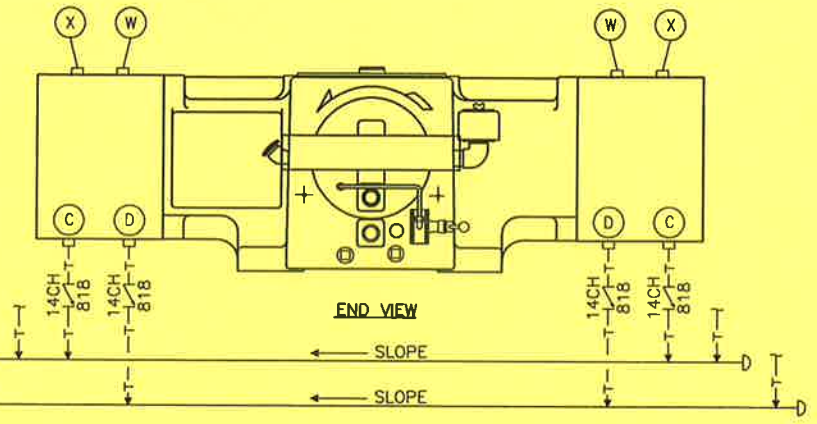
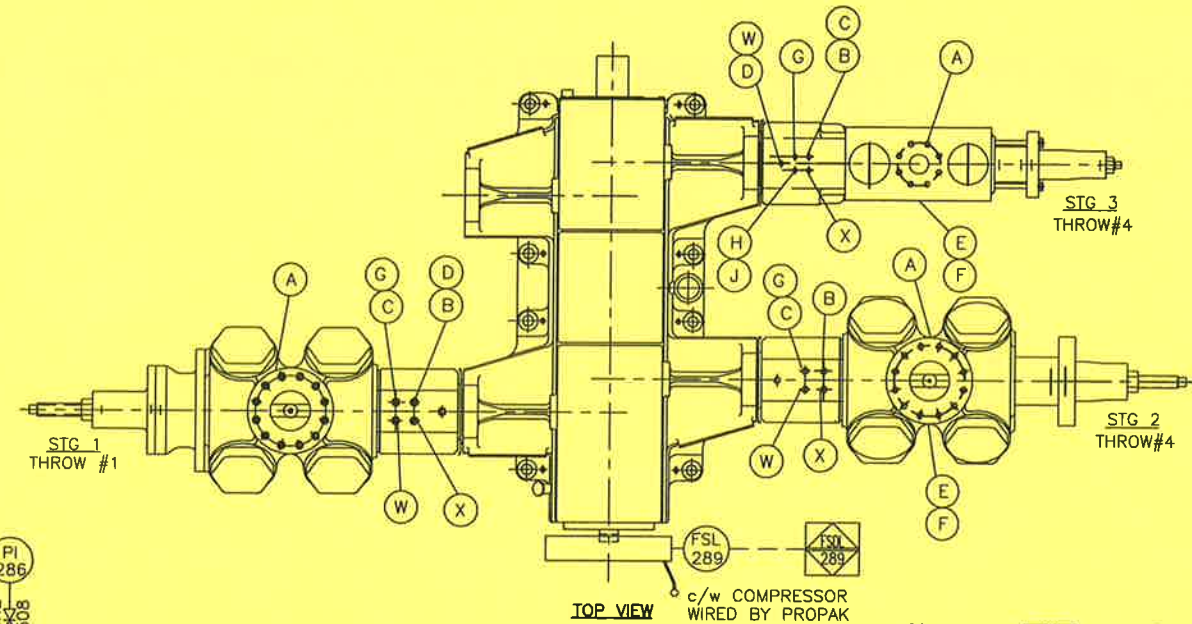
SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL MECHANICAL FLOWSHEET

DWG. No.: D-MFS-99420-100 SHT. 8 OF 11 REV. 4

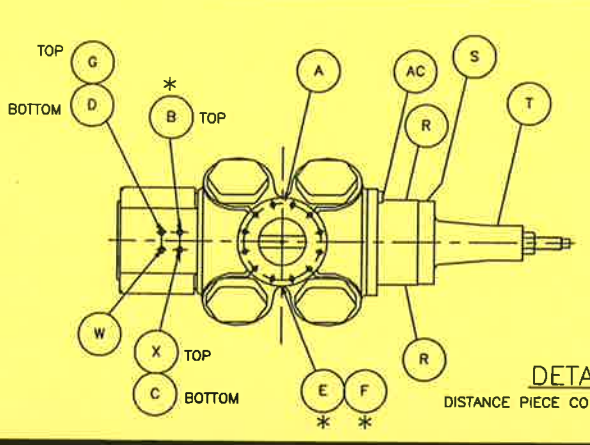
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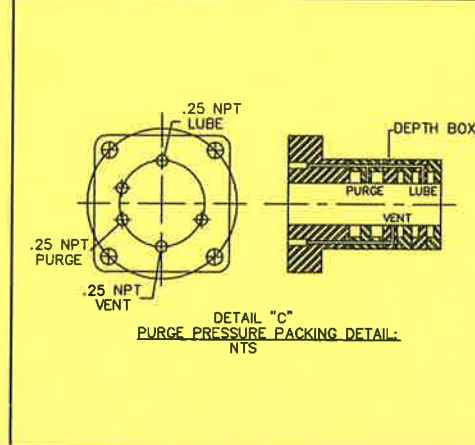
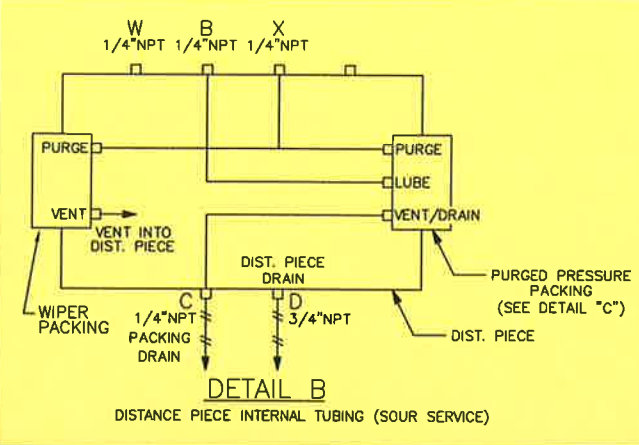
**I-130**  
**PACKING VENT & DRAIN SEAL POT**  
 273mm O.D. x 813mm S/S  
 101 kPag DESIGN



**DISTANCE PIECE EVACUATION SYSTEM**



- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
  - \* B) 1/4" NPT PACKING LUBE CONN.-TOP.
  - C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
  - D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
  - \* E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
  - \* F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
  - G) 3/4" NPT YOKE VENT CONN.-TOP.
  - R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
  - S) 1/8" NPT VCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
  - T) 1/8" NPT GREASE FITTING.
  - W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
  - X) 1/4" NPT PACKING PURGE CONN.-TOP.
- NOTE: PROPAK COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.  
 \* BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.  
 2. INTERNAL TUBING TO BE INSPECTED BY PROPAK SERVICE, PRIOR TO HOOKING UP.

No.	REVISION
4	CLIENT REVISIONS
3	AS BUILT
2	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION

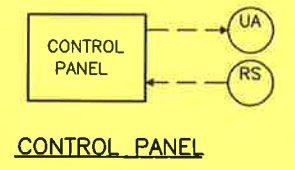
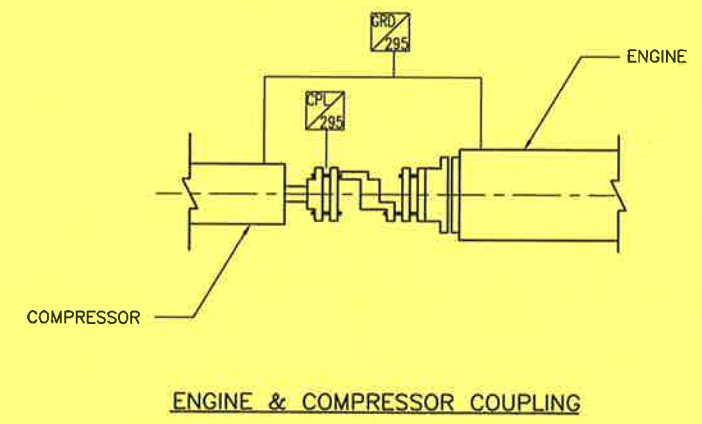
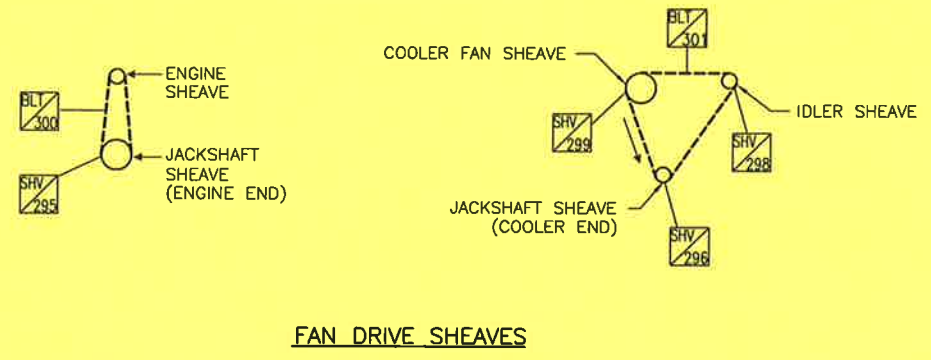
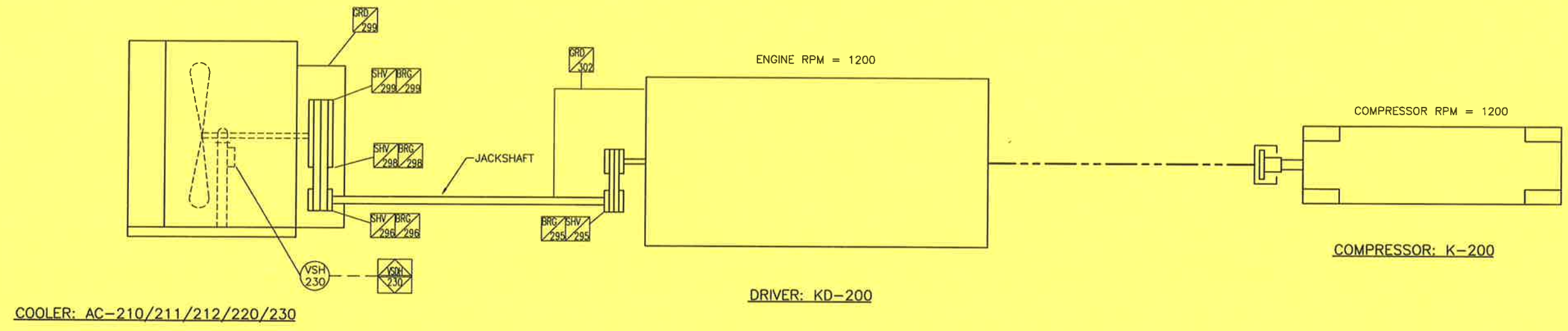
BY	DATE	CKD	ENG
H. LE	00/09/21		
H. LE	00/08/25	CG	CG
H. LE	00/06/09	SW	SW
H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	S. WARD	
DATE	DATE	JUN. 09/00	
PROJECT	S. WARD		
DATE	JUN. 09/00		
SCALE			

MECHANICAL FLOWSHEET  
 DWG. No.: D-MFS-99420-100 SHT. 9 OF 11 REV. 4

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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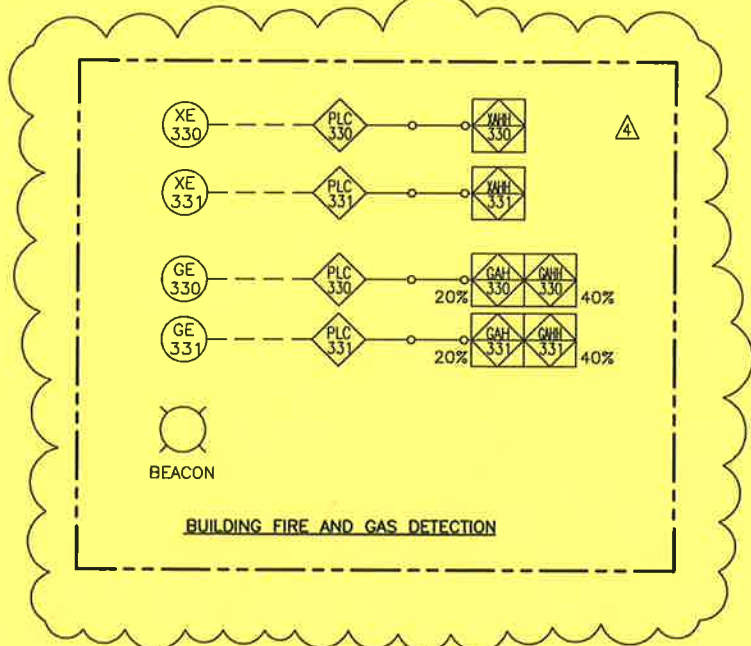
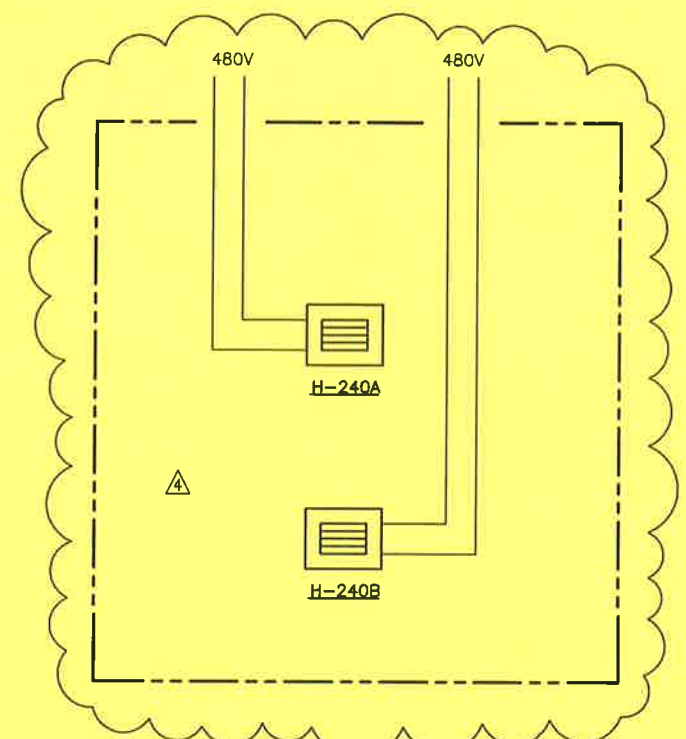
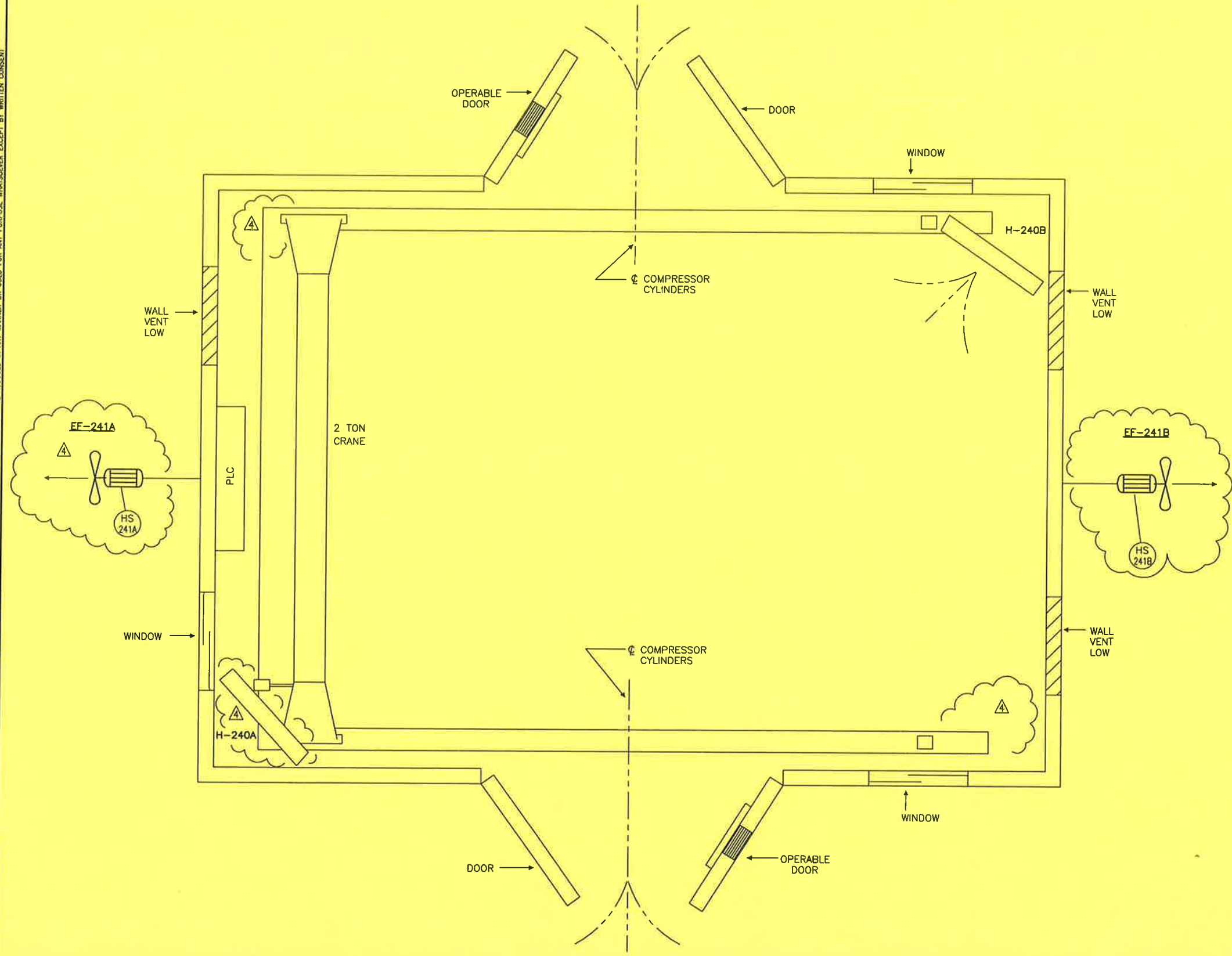


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		4 CLIENT REVISIONS		H. LE 00/09/21 <i>bw sw</i>									
		3 AS BUILT		H. LE 00/08/25 CG CG									
		2 RE-ISSUED FOR CONSTRUCTION		H. LE 00/06/09 SW SW									
		1 ISSUED FOR CONSTRUCTION		H. LE 00/03/27 DP DP									

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EF-241A/B  
EXHAUST FAN  
M/N: ET-20  
0.25 kW, 120/1/60

H-240A/B  
CATALYTIC HEATERS  
RUFFNECK XL 416-480360-15 kW



GENERAL NOTES		GENERAL NOTES	
4	CLIENT REVISIONS	H. LE	00/09/21
3	AS BUILT	H. LE	00/08/25
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27

No.	REVISION	BY	DATE	CKD	ENG

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE		
PROJECT	S. WARD	DATE	JUN. 09/00
DATE	JUN. 09/00	SCALE	

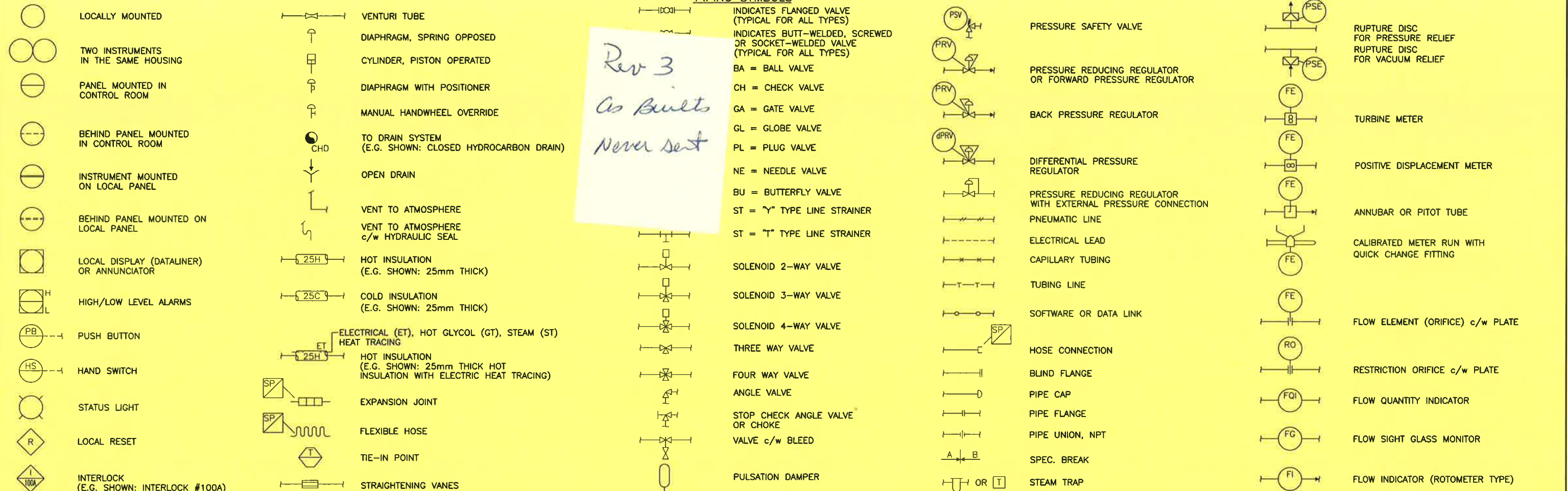
BUILDING UTILITIES MECHANICAL FLOWSHEET		
DWG. No.:	D-MFS-99420-100	SHT. 11 OF 11
REV.	4	

**PROPAK**  
440 East Lake Road,  
Postal Bag #2  
Airdrie, Alberta  
Canada T4B 2C3

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PIPING SYMBOLS

*Rev 3  
As Built  
Never sent*



	A	AH	AHL	AL	C	CV	DR	DV	E	FIC	G	GM	I	IC	IS	IT	K	L	PH	Q	R	RC	RR	S	SC	SD	SDH	SDL	SE	SH	SL	SLL	SM	SO	SV	T	V	W	Y									
A ANALYSIS		AAH	AHL	AAL	AC	ACV	ADR		AE				AI	AIC		AIT					AR	ARC	ARR	AS			ASDH	ASDL		ASH	ASL		ASM						AT		AY							
BJ BURNER FAILURE	BJA																							BJS		BJSD																						
C CONDUCTIVITY		CAH	CHL	CAL	CC	CCV	CDR		CE				CI	CIC	CIS	CIT		CL			CR	CRC	CRR	CS			CSDH	CSDL		CSH	CSL		CSM								CT		CY					
D DENSITY		DAH	DAHL	DAL	DC	DCV	DDR		DE		DG		DI	DIC	DIS	DIT	DK	DL			DR	DRC	DRR	DS			DSDH	DSDL	DSE	DSH	DSL		DSM								DT		DY					
dP DIFFERENTIAL PRESSURE	dPA	dPAH	dPAHL	dPAL	dPC	dPCV	dPR					dPI	dPIC	dPIS	dPIT		dPL				dPRC		dPS			dPSD	dPSDL		dPSH	dPSL											dPT		dPY					
E EMERGENCY																										ESD																ESDV		EY				
F FLOW		FAH	FAHL	FAL	FC	FCV	FDR		FE	FFIC	FG		FI	FIC	FIS	FIT	FK	FL		FQ	FR	FRC	FRR	FS			FSDH	FSDL		FSH	FSL		FSM									FT		FY				
G GAS DETECTION		GAH							GE																		GSDH			GSH																		
H HAND (MANUAL)					HC	HCV								HRC										HS																		HV		HY				
J POWER															JIC																											JT		JY				
K TIME	KA				KC	KCV	KDR										KL		KQ					KS																		KT		KV		KY		
L LEVEL		LAH	LAHL	LAL	LC	LCV	LDR		LE		LG	LGM	LI	LIC	LIS	LIT		LL			LR	LRC	LRR	LS		LSD	LSDH	LSDL		LSH	LSL	LSSL	LSM									LT		LY				
M MOISTURE		MAH	MAHL	MAL	MC	MCV	MDR		ME				MI	MIC	MIS	MIT		ML			MR	MRC	MRR	MS			MSDH	MSDL		MSH	MSL		MSM										MT		MY			
P PRESSURE		PAH	PAHL	PAL	PC	PCV	PDR		PE				PI	PIC	PIS	PIT	PK	PL	PPH		PR	PRC	PRR	PS			PSDH	PSDL	PSE	PSH	PSL		PSM										PT		PY			
R REMOTE																																													RSDV		RY	
S SPEED		SAH	SAHL	SAL	SC	SCV	SDR		SE				SI	SIC	SIS	SIT	SK	SL			SR	SRC	SRR	SS			SSDH	SSDL		SSH	SSL		SSM										ST		SY			
T TEMPERATURE		TAH	TAHL	TAL	TC	TCV	TDR		TE				TI	TIC	TIS	TIT	TK	TL			TR	TRC	TRR	TS			TSDH	TSDL	TSE	TSH	TSL		TSM										TT		TY			
U UNIT	UA							UDV									UL									USD																			TW		TY	
V VIBRATION		VAH			VC				VE				VI								VR			VS			VSDH			VSH															VT		VY	
VI VISCOSITY		VIAH	VIAHL	VIAL	VIC	VICV	VIDR		VIE				VII	VIIC	VIIS	VIIT		VIL			VIR	VIRC	VIRR	VIS		VISD			VISH	VISL		VISM													VIT		VY	
X FIRE DETECTION	XA								XE																	XSD			XSH																			
Z LIMIT OR POSITION		ZAH	ZAHL	ZAL					ZE						ZIS	ZIT	ZL									ZSC		ZSDH	ZSDL		ZSH	ZSL		ZSM	ZSO											ZT		ZY

<p>APPROVED</p> <p>MECH./STRUCT. DATE</p>		<p>DRAWN</p> <p>BY H. LE DATE MAR. 27/00</p>		<p>PROPAC W-1380 6HOS-3</p> <p>STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3</p>		<p>440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3</p>	
<p>ELECTRICAL</p> <p>DATE</p>		<p>CHECKED</p> <p>BY S. WARD DATE JUN 09/00</p>		<p>LEGEND</p> <p>MECHANICAL FLOWSHEET</p>		<p>DWG. No.: D-MFS-99420-100 SHT. 1 OF 11 REV. 2</p>	
<p>GENERAL NOTES</p> <p>2 RE-ISSUED FOR CONSTRUCTION</p> <p>1 ISSUED FOR CONSTRUCTION</p>		<p>REVISION</p> <p>BY DATE CKD ENG</p>		<p>H. LE 00/06/09 SW SW</p> <p>H. LE 00/03/27 DP DP</p>		<p>DATE JUN 09/00 SCALE</p>	

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**GENERAL SPECIFICATIONS**

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

**GENERAL NOTES (ABBREVIATIONS)**

- AC - AIR CLOSURE
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- LPD - LOW POINT DRAIN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

**COMMODITY (ABBREVIATIONS)**

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

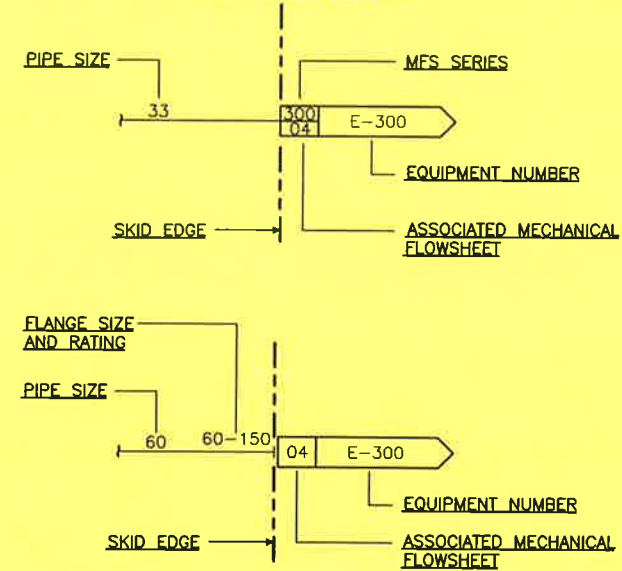
**MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)**

- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

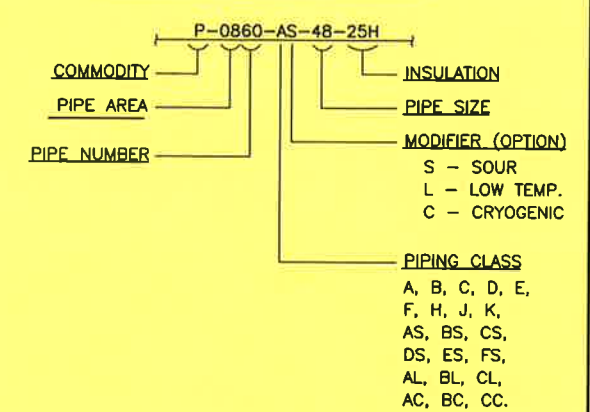
METRIC O.D. (mm)	IMP O.D. (INCH.)	IMP NPS (INCH.)	PIPE SIZES	
			METRIC O.D. (mm)	METRIC DIN (mm)
3	1/8"	1/4"	14	8
6	1/4"	3/8"	17	10
9	3/8"	1/2"	21	15
13	1/2"	3/4"	27	20
19	3/4"	1"	33	25
25	1"	1-1/2"	48	40
		2"	60	50
		3"	89	80
		4"	114	100
		6"	168	150
		8"	219	200
		10"	273	250
		12"	324	300
		14"	356	350
		16"	406	400
		18"	457	450
		20"	508	500
		24"	610	600
		36"	914	900
		42"	1067	1050

NOTES:  
NPS - NOMINAL PIPE SIZE

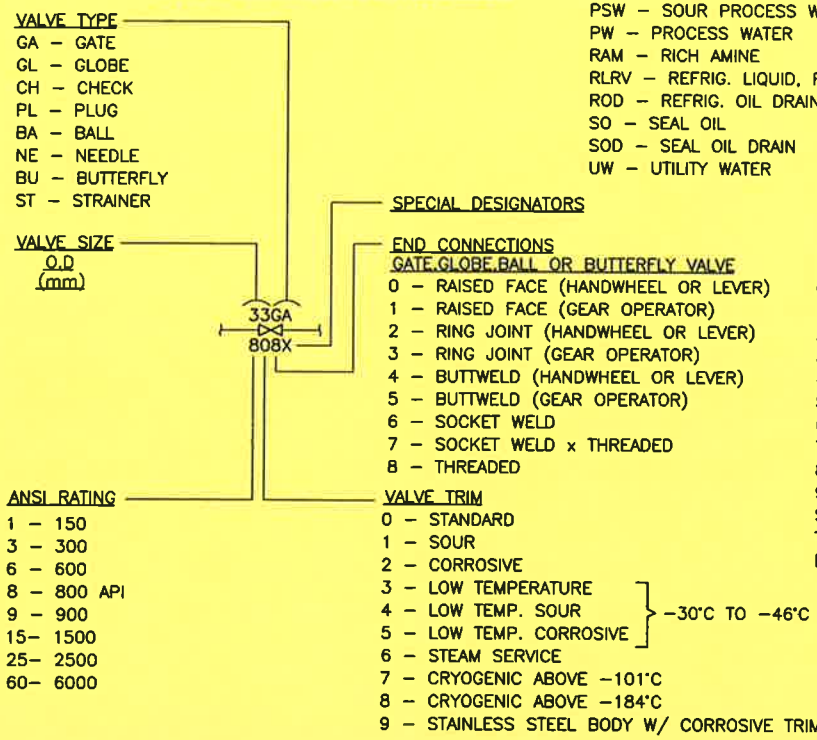
**TYPICAL PIPE FLAGS**



**TYPICAL PIPE IDENTIFICATION**



**TYPICAL VALVE IDENTIFICATION**



**TYPICAL EQUIPMENT IDENTIFICATION**

TAG No: I-820  
 DESCRIPTION: DEETHANIZER  
 DIMENSIONS: ...mm O.D. x ...mm S/S  
 DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.  
 GAS FLOW RATES: ... m3/d  
 LIQUID FLOW RATES: ... m3/h  
 DUTIES: ... kW  
 MOTOR POWER: ... kW @ V/φ/Hz  
 STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT  
 MAKE AND MODEL:

GENERAL NOTES		GENERAL NOTES		APPROVED		DRAWN		PROJECT		DATE	
2	RE-ISSUED FOR CONSTRUCTION	1	ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW	S.WARD	JUN 09/00	JUN 27/00	JUN 09/00
1	ISSUED FOR CONSTRUCTION			H. LE	00/03/27	DP	DP	S.WARD	JUN 09/00		
No.	REVISION	BY	DATE	CKD	ENG	SCALE					



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**ENGINE CONNECTION INDEX**

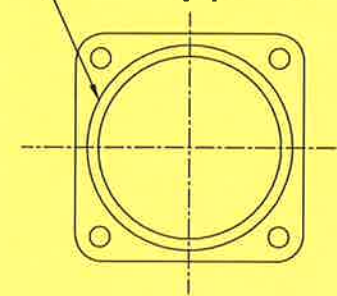
1. NATURAL GAS INLET 2.00-11.5 N.P.T.  
NOTE: FLEXIBLE CONNECTION REQUIRED AT THE FUEL INLET LOCATION(S) TO ISOLATE ENGINE VIBRATION FROM FUEL PIPING. LOCATE AS CLOSE TO ENGINE AS POSSIBLE.
2. STARTING MOTOR PAD .625-11 UNC-2B TAP THRU 3 HOLES FOR STARTING MOTOR WITH S.A.E. NUMBER 3 MOUNTING FLANGE.
4. JACKET WATER OUTLET FLANGE. (SEE VIEW OF FLANGE)
5. FRONT LIFTING EYES 3.00 [76] DIA. HOLE.
6. REAR LIFTING EYES 3.00 [76] DIA. HOLE.
8. CRANKSHAFT PULLEY - (2) 9.88 [251] NOMINAL DIAMETER X .500 [13] WIDE S.A.E. AUTOMOTIVE GROOVES.
9. .88 [22] DIAMETER - 12 ENGINE MOUNTING HOLES.
10. LUBE OIL DRAIN 2.00-11.5 N.P.T.
11. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
12. .75-10 UNC-2B TAP 1.25 [32] DEEP, 12 HOLES EQUALLY SPACED.
13. .625-11 UNC-2B TAP 1.00 [25] DEEP, 12 HOLES EQUALLY SPACED.
14. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS VENT CONNECTION.  
(SEE VIEW "A") (SEE NOTE 1)
15. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS SUPPLY CONNECTION.  
(SEE VIEW "A")
16. .375-18 N.P.T. AIR/GAS PRELUBE SUPPLY CONNECTION.
17. .250 [6] NOMINAL DIAMETER TUBE, AIR/GAS START CONNECTION.  
(SEE VIEW "A")
18. LUBE OIL STRAINER INLET FROM LUBE OIL FILTER,  
2.00 RAISED FACE 150 LB. A.N.S.I. WELD NECK FLANGE.
19. JACKET WATER INLET FLANGE, 2 PLACES. (SEE VIEW OF FLANGE)
22. LUBE OIL FILTER INLET FROM LUBE OIL COOLER ASSEMBLY,  
2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
23. LUBE OIL FILTER OUTLET TO ENGINE LUBE OIL STAINER,  
2.00 RAISED FACE 150 LB. A.N.S.I. FLANGE.
24. .56 [14] DIAMETER - 4 PLACES EQUALLY SPACED IN MOUNTING FEET FOR LUBE OIL FILTER MOUNTING.
25. EXHAUST OUTLET FLANGE - FITS 8.00 FLAT FACE 125 LB. A.N.S.I. CAST IRON PIPE FLANGE. NOTE: EXHAUST SYSTEM MUST SUPPORT ITS OWN WEIGHT BEYOND THIS POINT.
27. AUXILIARY WATER INLET FROM COOLING SYSTEM,  
2.50 125 LB. A.N.S.I. FLANGE.
28. 375-18 N.P.T. AIR/GAS PRE-LUBE MOTOR EXHAUST.  
(SEE NOTE 1)

NOTE 1: ALL GAS VENTED AND/OR DISCHARGED FROM ENGINE EQUIPMENT SHOULD BE PIPED TO A SAFE AREA TO MEET APPLICABLE CODES.  
NOTE 2: ROTATIONS ARE VIEWED FROM FLYWHEEL END.

**EQUIPMENT INDEX**

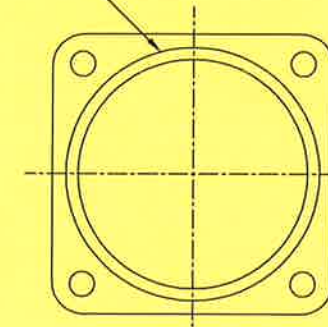
- A. S.A.E NUMBER 00 FLYWHEEL HOUSING
- B. TIMING HOLE PAD
- C. ENGINE WATER DRAIN
- D. GOVERNOR, HYDRAULIC
- E. SAFETY GUARD
- F. LUBE OIL DIPSTICK (BOTH SIDES)
- G. LUBE OIL FILLER
- H. LUBE OIL STRAINER
- J. AIR/GAS MOTORIZED PRE-LUBE PUMP
- K. LUBE OIL FILTER ASSEMBLY (SHIPPED LOOSE)
- L. CRANKCASE BREATHER (2)
- M. AIR CLEANERS (2)
- P. MANUAL BARRING DEVICE
- Q. ENGINE LEVELING BOLTS (4) 1.00-8 UNC-2B THREAD
- R. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- S. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- T. GOVERNOR SPEED CONTROL HAND LEVER
- U. THROTTLE LEVER
- V. LUBE OIL COOLER ASSEMBLY (SHIPPED LOOSE)
- W. FLEXIBLE EXHAUST CONNECTION (SHIPPED LOOSE)
- X. 24.00 [610] LONG FLEXIBLE METAL HOSE (SHIPPED LOOSE)
- UU. PNEUMATIC CONTROL PANEL CONSISTING OF START, STOP, PRELUBE, AND SAFETY RESET.
- XX. CEC IGNITION MODULE
- BA. DETONATION SENSING MODULE (DSM)
- CA. DSM FILTER
- DA.
- EA. MICROSPIN DRAIN DOOR (SHIPPED LOOSE).
- FA. MICROSPIN OIL FILTER (SHIPPED LOOSE).  
(REF. LATEST REVISION OF MICROSPIN INSTALLATION GUIDELINES)
- GA. SHUTOFF VALVE (SHIPPED LOOSE).

4.03 [102] DIA. FOR 4.00 [102] O.D. TUBE, 4.53 [115] DIA.-.25 [6] DEEP FOR 4.00 PIPE OR 4.50 [114] O.D. TUBE, .72 [18] FLANGE THICKNESS



VIEW OF JACKET WATER INLET FLANGE  
SCALE: 1:2

5.06 [129] DIA. FOR 5.00 [127] O.D. TUBE, 5.59 [142] DIA.-.25 [6] DEEP FOR 5.00 PIPE OR 5.50 [140] O.D. TUBE, .72 [18] FLANGE THICKNESS

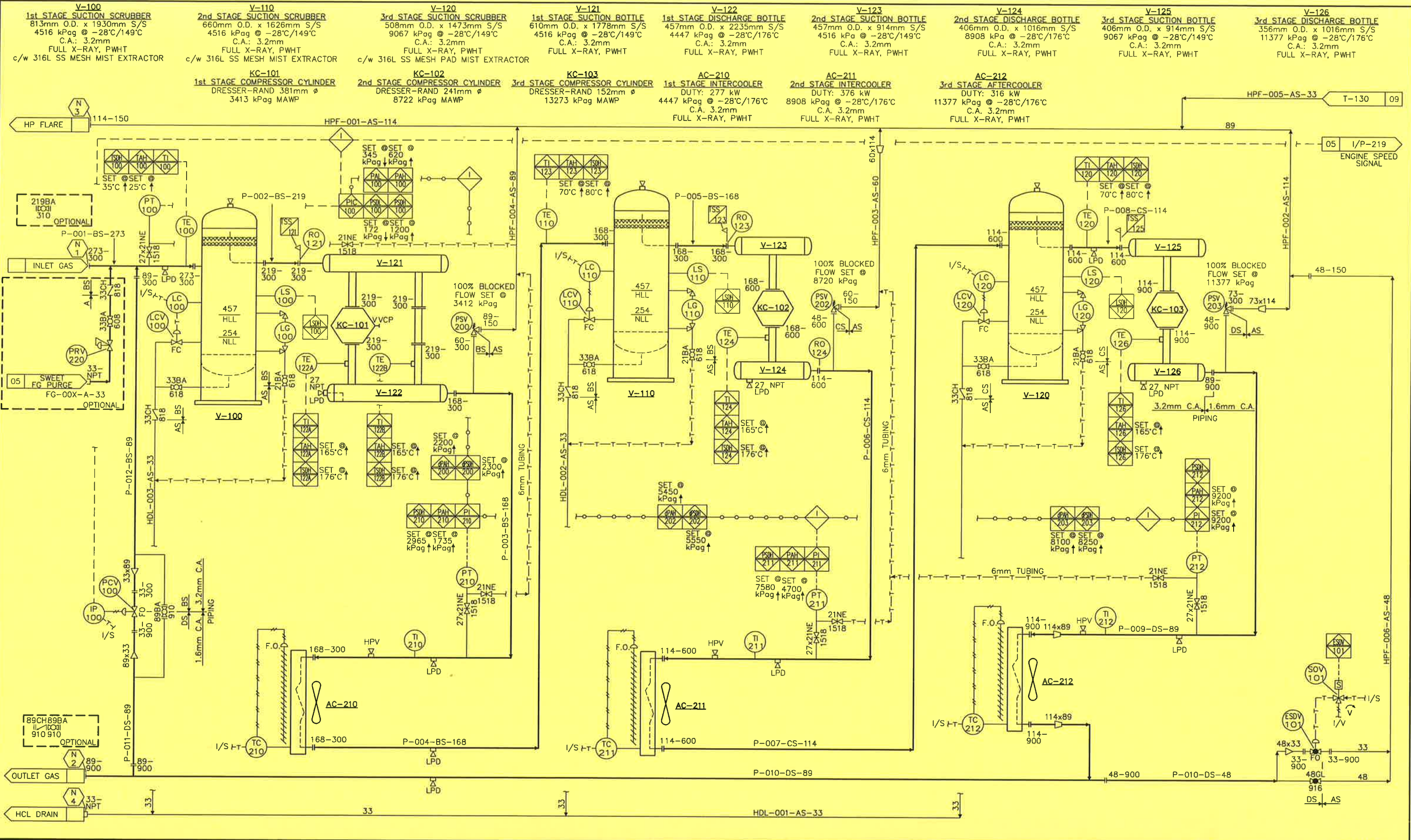


VIEW OF JACKET WATER OUTLET FLANGE  
SCALE: 1:2

GENERAL NOTES		GENERAL NOTES																			
DATE: 2000.06.09 11:47am		FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-03.dwg		No.		REVISION		BY		DATE		CKD		ENG		APPROVED		DRAWN		PROPAC W-1380 6HOS-3	
				2		RE-ISSUED FOR CONSTRUCTION		H. LE		00/06/08		SW		SW						STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3	
				1		ISSUED FOR CONSTRUCTION		H. LE		00/03/27		DP		DP						EQUIPMENT AND ENGINE CONNECTION INDEX	
																				MECHANICAL FLOWSHEET	
																				DWG. No.: D-MFS-99420-100	
																				SHT. 3 OF 11	
																				REV. 2	

**PROPAC**  
440 East Lake Road,  
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Canada T4B 2C3

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1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"  
 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"  
 3. VENT ALL VENTING INSTS TO VENT HEADER.

GENERAL NOTES		GENERAL NOTES	
2	RE-ISSUED FOR CONSTRUCTION	H. LE	06/06/09
1	ISSUED FOR CONSTRUCTION	H. LE	06/03/07

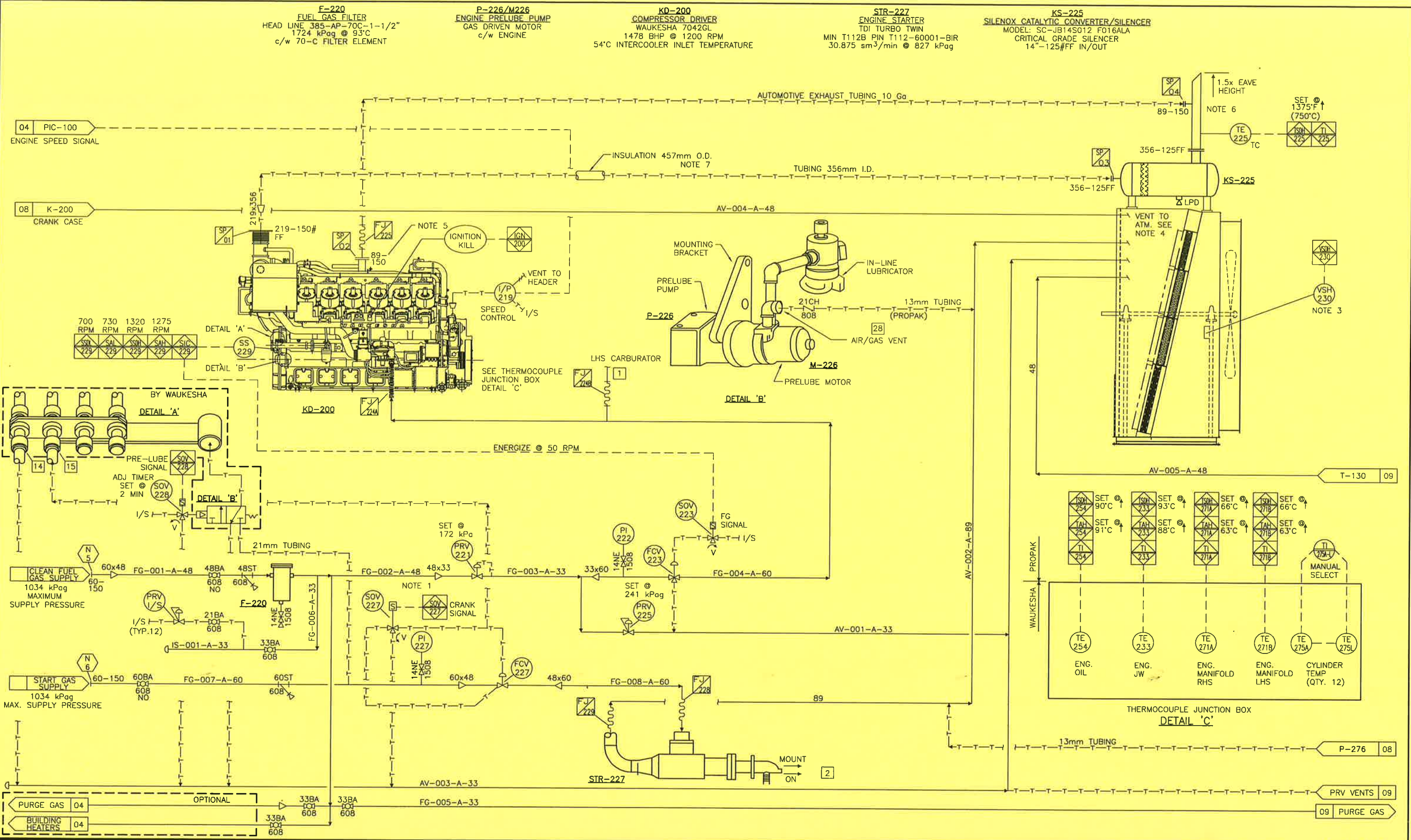
REVISION		BY		DATE		CKD		ENG	
No.									

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	CHECKED		
DATE	BY	S. WARD	
PROJECT	DATE	JUN 09/00	
DATE	SCALE		

PROPAG W-1380 6HOS-3  
 STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
 COMPRESSOR  
 MECHANICAL FLOWSHEET  
 DWG. No.: D-MFS-99420-100 SHT. 4 OF 11 REV. 2

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- |  |  |
|--|--|
| 1. HIGH PRESSURE SOV. AT 45° AS SHOWN AT APPROXIMATELY THE SAME ELEVATION.         |  |
| 2. ENGINE CONNECTION INDEX SEE 99420-100-03  |  |
| 3. LOCATE VSH CLOSE TO FAN SHAFT ON BEARING SUPPORT.                               | 5. HUB FLANGE BY PROPAK.                             |
| 4. VENTS TO ATM. INSIDE COOLER PLENUM TO TERMINATE HORIZONTALLY WITH PIPE ENDS CUT | 6. SPECIAL INSTALL ARRANGEMENT SEE SEPARATE DRAWING. |
|  | 7. INSULATE TO BUILDING WALL ONLY.                   |

GENERAL NOTES		GENERAL NOTES			
No.	2	RE-ISSUED FOR CONSTRUCTION	H. LE 00/06/09 SW SW		
	1	ISSUED FOR CONSTRUCTION	H. LE 00/03/27 DP DP		
REVISION		BY	DATE	CKD	ENG

APPROVED		DRAWN	
MECH./STRUCT.	BY	H. LE	
DATE	DATE	MAR 27/00	
ELECTRICAL	BY	CHECKED	
DATE	DATE	S. WARD	
PROJECT	S. WARD	DATE	JUN 09/00
DATE	JUN 09/00	SCALE	

**PROPAK W-1380 6HOS-3**  
 STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
 ENGINE FUEL START GAS MECHANICAL FLOWSHEET  
 DWG. No.: D-MFS-99420-100 SHT. 5 OF 11 REV. 2

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

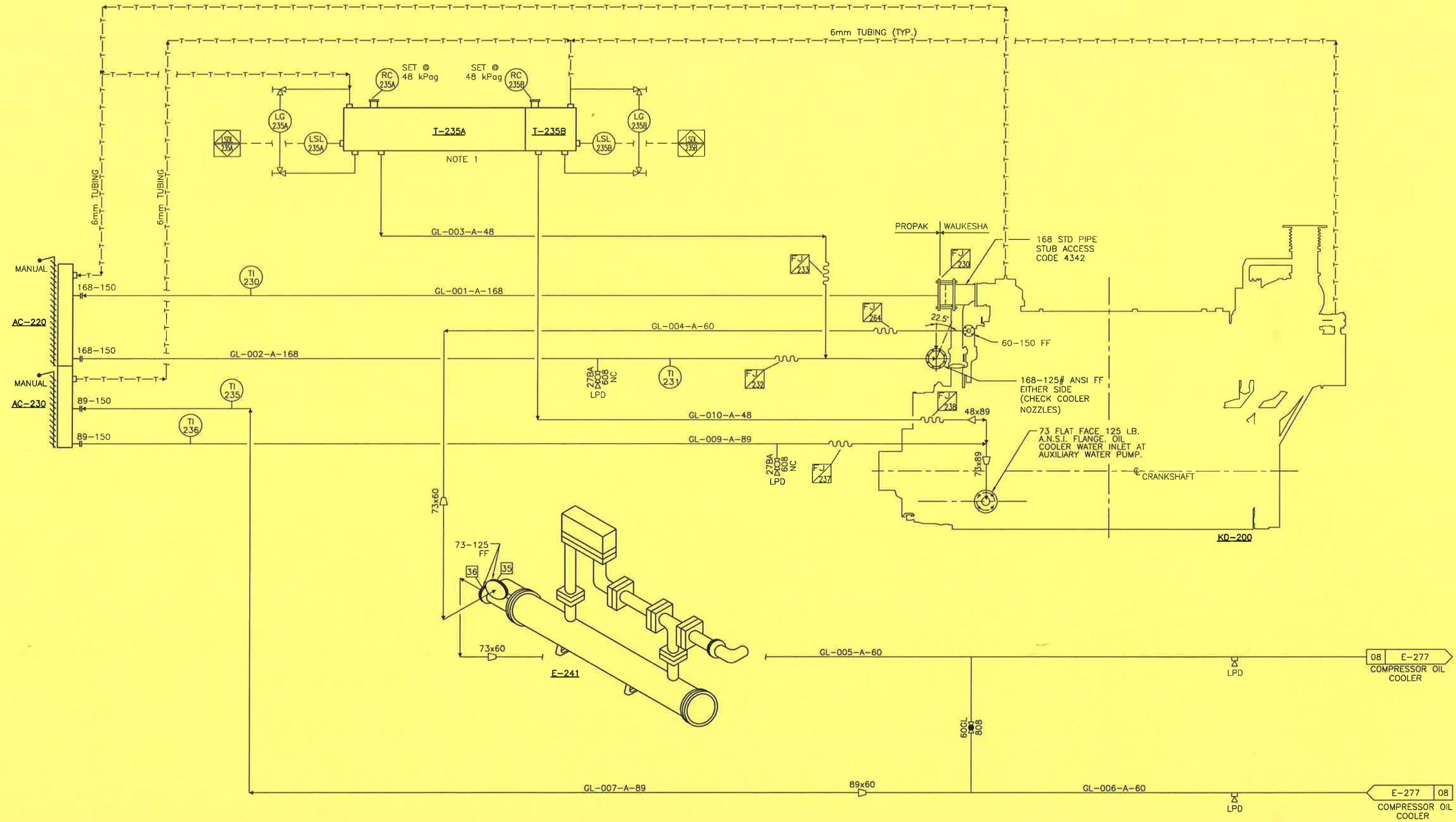
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**AC-220**  
 ENGINE JW COOLER  
 96.5 kPag MAWP  
 DUTY: 4.01mm BTU/hr (117.4 kW/hr)  
 0mm C.A.

**AC-230**  
 ENGINE AW COOLER  
 96.5 kPag MAWP  
 DUTY: 0.775mm BTU/hr (22.7 kW/hr)  
 0mm C.A.

**T-235A/T-235B**  
 ENGINE JW/AW SURGE TANK  
 160/74 L CAPACITY  
 96.5 kPag MAWP

**E-241**  
 ENGINE OIL COOLER  
 c/w ENGINE



1. MOUNT T-230/T-235 ON TOP OF COOLER, AS CLOSE AS POSSIBLE TO EDGE.

GENERAL NOTES		GENERAL NOTES	
No.	REVISION	No.	REVISION
2	RE-ISSUED FOR CONSTRUCTION	1	RE-ISSUED FOR CONSTRUCTION
1	ISSUED FOR CONSTRUCTION		

BY	DATE	CKD	ENG
H. LE	00/06/09	SW	SW
H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH./STRUCT.	DATE	BY	H. LE
ELECTRICAL	DATE	CHECKED	DATE
PROJECT	DATE	BY	S. WARD
DATE	JUN 09/00	DATE	JUN 09/00
SCALE			

**PROPAK W-1380 6HOS-3**  
 STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
 GLYCOL COOLING SYSTEM  
 MECHANICAL FLOWSHEET  
 DWG. No.: D-MFS-99420-100 SHT. 6 OF 11 REV. 2

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
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**F-253**  
ENGINE OIL FILTER  
c/w ENGINE  
SHIP LOOSE

**F-241**  
ENGINE OIL COOLER  
c/w ENGINE  
SHIP LOOSE

**KD-200**  
WAUKESHA 5794GSI  
1380 HP @ 1200 RPM

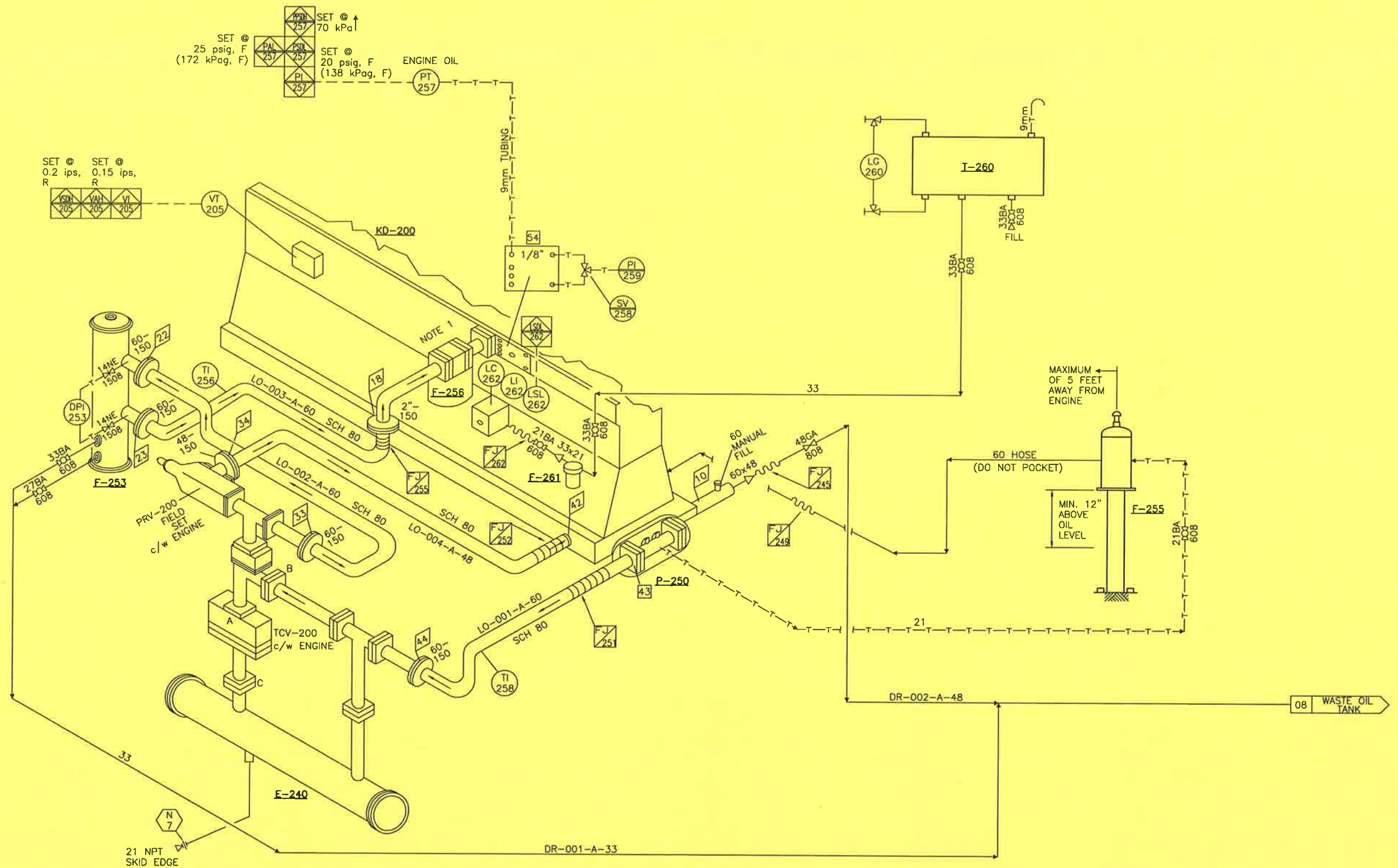
**F-256**  
ENGINE OIL STRAINER  
c/w MAGNETIC FILTER ELEMENT  
(SEE NOTE 1)

**F-261**  
OIL SUPPLY FILTER  
BALDWIN BF914 HOUSING  
c/w BALDWIN BF915 FILTER ELEMENT  
1" NPT, 20 psig MAWP

**P-250**  
ENGINE OIL PUMP  
c/w ENGINE

**F-255**  
MICROSPIN BYPASS OIL FILTER  
c/w ENGINE

**I-260**  
ENGINE LUBE OIL SUPPLY TANK  
680 L INTEGRAL WITH OVERHEAD CRANE



1. INSTALL PAPER ELEMENT IN F-273, RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO SHOP TEST RUN.  
2. ENGINE CONNECTION INDEX SEE MFS-99179-100-P. 03.

GENERAL NOTES		GENERAL NOTES	
No.	1	RE-ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION

REVISION		BY	DATE	CKD	ENG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH/STRUCT.	BY	H. LE	
DATE	DATE	MAR 27/00	
ELECTRICAL	CHECKED		
DATE	BY	S. WARD	
PROJECT	DATE	JUN 09/00	
DATE	JUN 09/00		
	SCALE		

PROPAK W-1380 6HOS-3  
STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
ENGINE LUBE OIL SYSTEM  
MECHANICAL FLOWSHEET  
DWG. No.: D-MFS-99420-100 SHT. 7 OF - REV. 2

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**P-276**  
 COMPRESSOR PRELUDE PUMP  
 GAS DRIVEN DIAPHRAGM PUMP  
 WILDEN M2, M/N: 02-10001  
 132.5 L/MIN

**F-277**  
 COMPRESSOR OIL COOLER  
 SHELL & TUBE  
 (OIL) SHELL SIDE: 2068 kPag MAWP  
 (OIL) TUBESIDE: 1034 kPag MAWP  
 DUTY: 21 kW (1230 BTU/MIN)

**K-200**  
 SOUR GAS COMPRESSOR  
 DRESSER RAND 6HOS3  
 1506 kW, @ 1200 RPM  
 60,000 lb MAX ROD LOAD

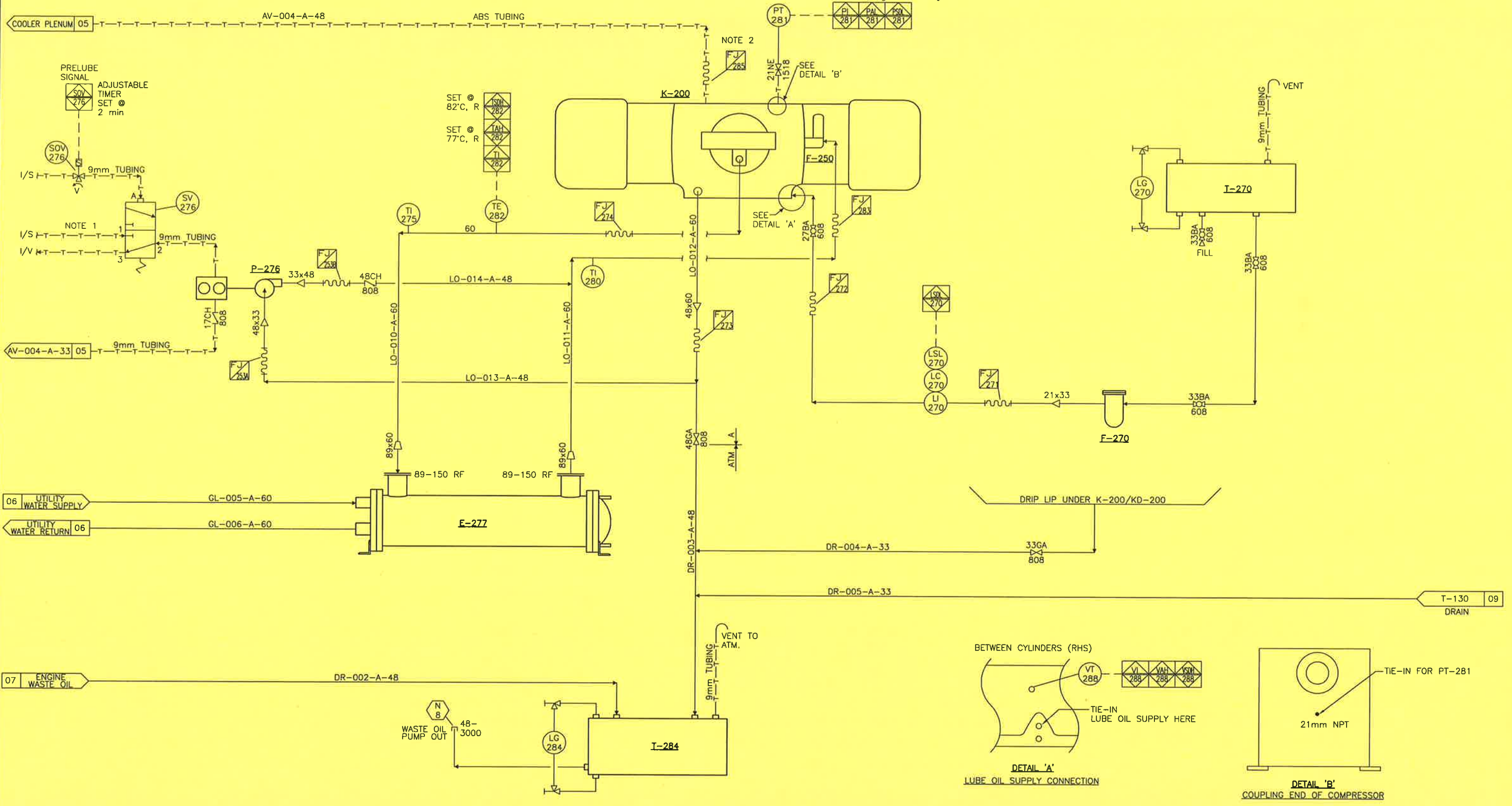
**I-284**  
 WASTE OIL TANK  
 800 L  
 INTEGRAL WITH SKID

**F-250**  
 COMPRESSOR RUNNING FILTER  
 c/w COMPRESSOR  
 FULL FLOW CAPACITY

**F-270**  
 LUBE OIL SUPPLY FILTER  
 BALDWIN BF914  
 c/w BALDWIN BF915 FILTER ELEMENT

**I-270**  
 COMPRESSOR LUBE OIL SUPPLY  
 400L, INTEGRAL WITH OVERHEAD CRANE RAIL  
 ATM DESIGN

SET @ 40 psig, F 276 kPag  
 SET @ 35 psig, F 241 kPag



- NO REGULATOR ON THIS I/S.
- SHOP FIT, RUBBER HOISING

GENERAL NOTES

GENERAL NOTES

No.	REVISION	BY	DATE	CKD	ENG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

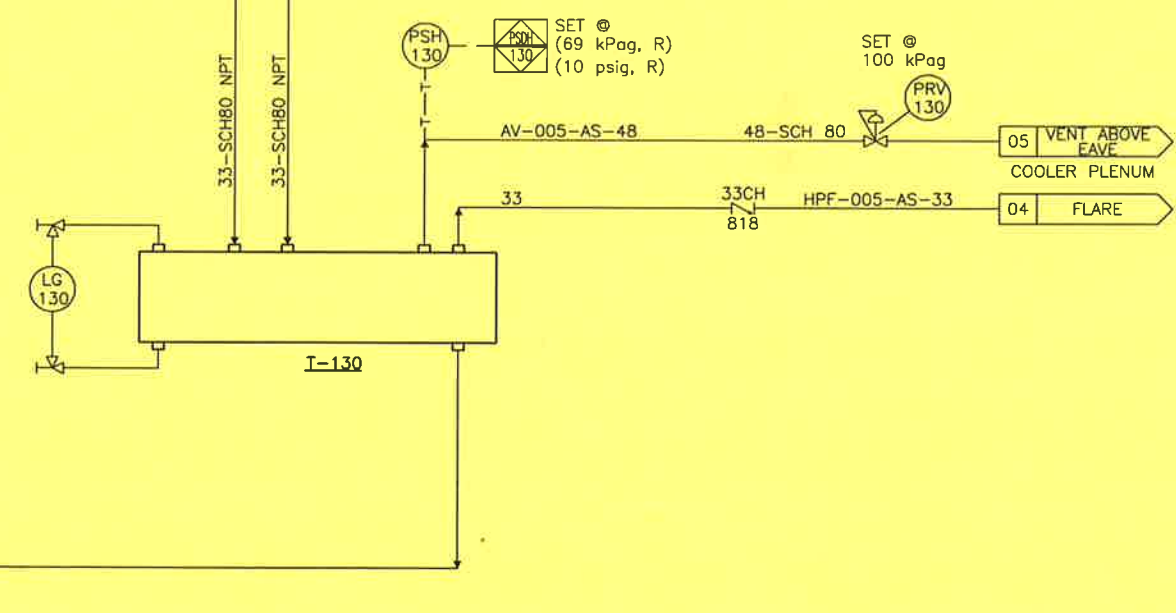
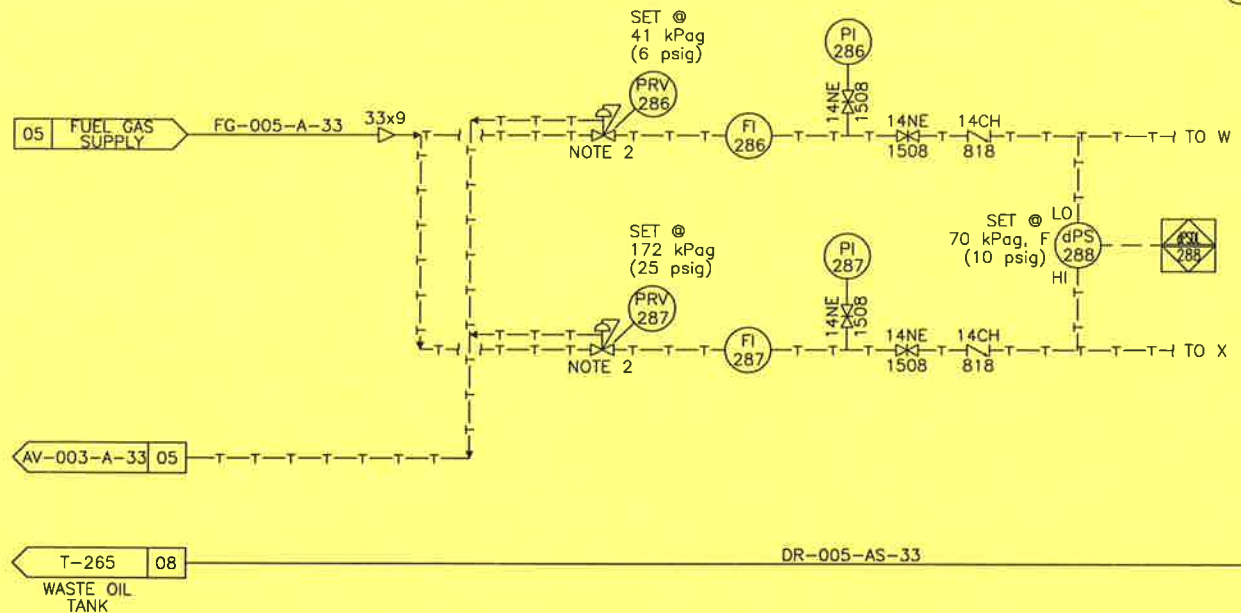
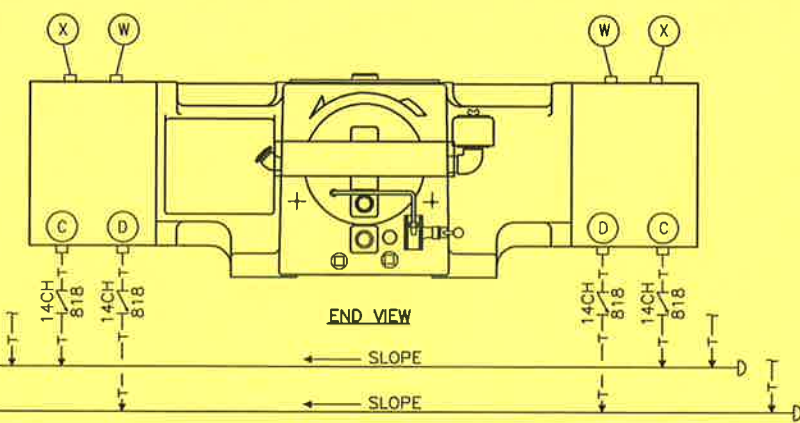
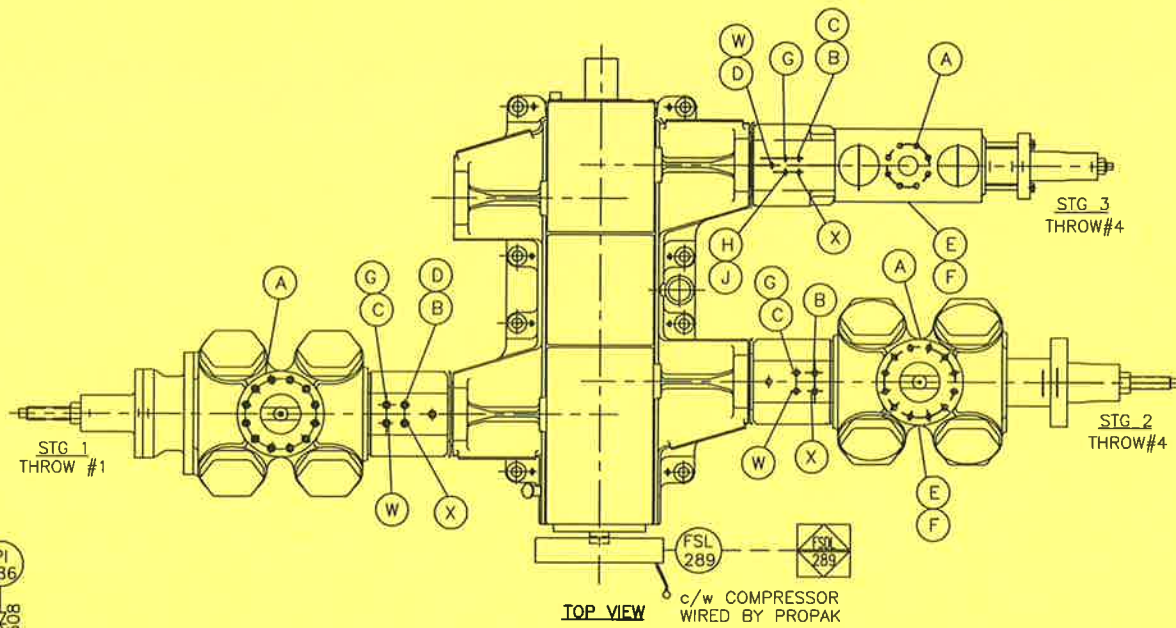
APPROVED		DRAWN	
MECH/STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	CHECKED		
DATE	BY	S. WARD	
PROJECT	DATE	JUN 09/00	
DATE	SCALE		

**PROPAK W-1380 6HOS-3**  
 STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
 SOUR GAS COMPRESSOR-COMPRESSOR FRAME OIL & GLYCOL  
 MECHANICAL FLOWSHEET  
 DWG. No.: D-MFS-99420-100 SHT. 8 OF 11 REV. 2

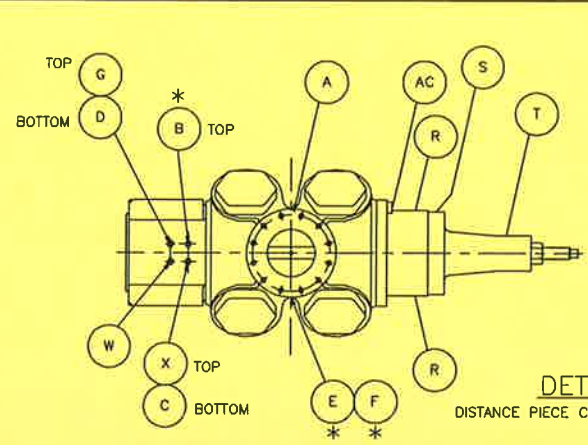
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 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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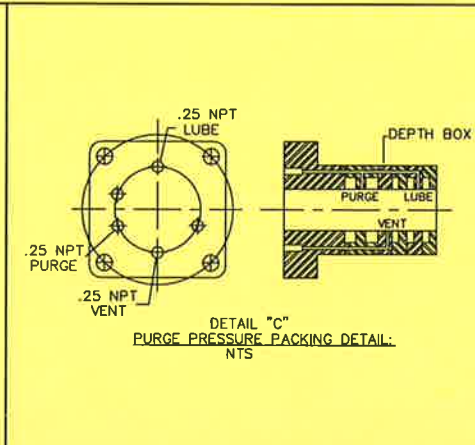
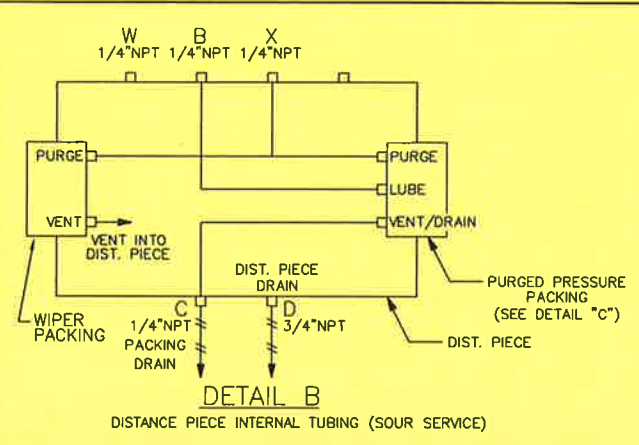
**T-130**  
**PACKING VENT & DRAIN SEAL POT**  
 273mm O.D. x 813mm S/S  
 101 kPag DESIGN



**DISTANCE PIECE EVACUATION SYSTEM**



- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
  - \* B) 1/4" NPT PACKING LUBE CONN.-TOP.
  - C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM
  - D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
  - \* E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
  - \* F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
  - G) 3/4" NPT YOKE VENT CONN.-TOP.
  - R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
  - S) 1/8" NPT WCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
  - T) 1/8" NPT GREASE FITTING.
  - W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
  - X) 1/4" NPT PACKING PURGE CONN.-TOP.
- NOTE: PROPAK COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.  
 \* BY DRESSER-RAND



1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.  
 2. INTERNAL TUBING TO BE INSPECTED BY PROPAK SERVICE, PRIOR TO HOOKING UP.

GENERAL NOTES		GENERAL NOTES	
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09 SW SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27 DP DP

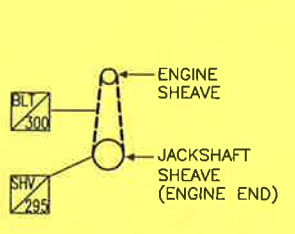
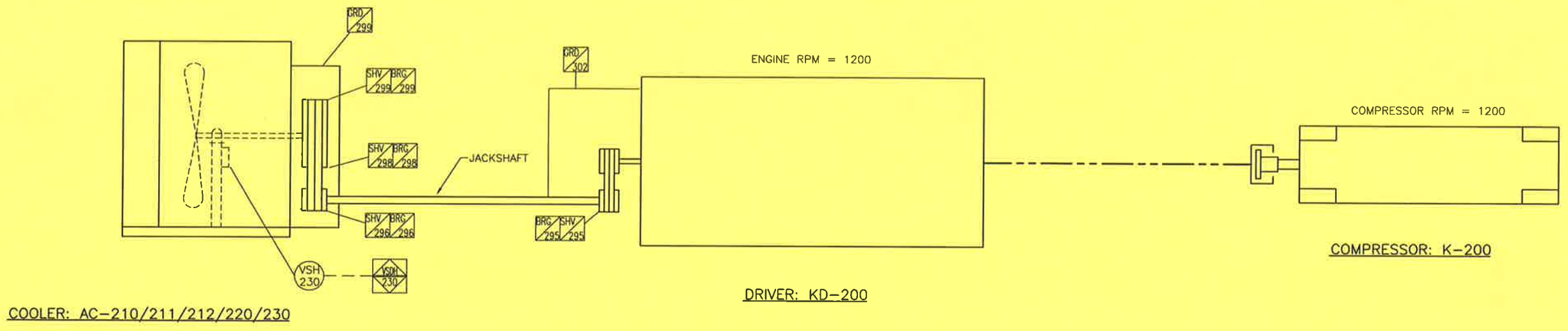
REVISION		BY	DATE	CKD	ENG
2	RE-ISSUED FOR CONSTRUCTION	H. LE	00/06/09	SW	SW
1	ISSUED FOR CONSTRUCTION	H. LE	00/03/27	DP	DP

APPROVED		DRAWN	
MECH/STRUCT.	BY	H. LE	
DATE	DATE	MAR. 27/00	
ELECTRICAL	BY	S. WARD	
DATE	DATE	JUN 09/00	
PROJECT	S. WARD		
DATE	JUN 09/00		

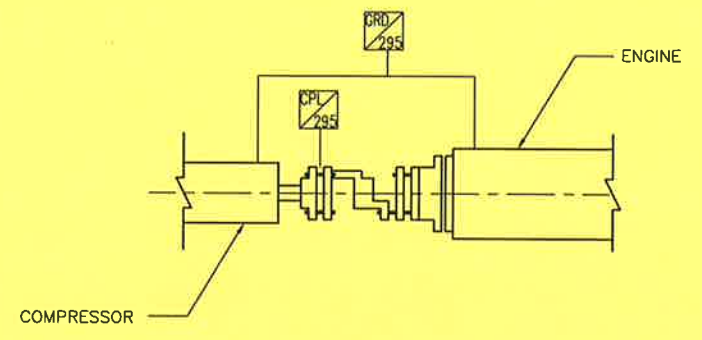
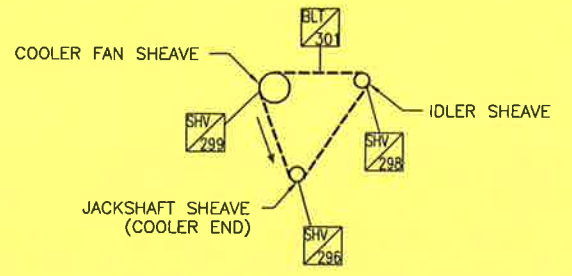
**PROPAC W-1380 6HOS-3**  
 STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3  
 CYLINDER & PACKING LUBRICATION  
 MECHANICAL FLOWSHEET

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

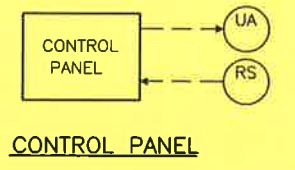
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FAN DRIVE SHEAVES



ENGINE & COMPRESSOR COUPLING



CONTROL PANEL

DATE: 2000.06.09 11:58am		FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-10.dwg		No.		REVISION		BY		DATE		CKD		ENG		APPROVED		DRAWN		PROPAC W-1380 6HOS-3		STOCK 1380 HP COMPRESSOR, M/N W 1380, 6HOS-3		440 East Lake Road, Postal Bag #2 Airdrie, Alberta Canada T4B 2C3			
GENERAL NOTES		GENERAL NOTES		2		RE-ISSUED FOR CONSTRUCTION		H. LE		00/06/09		SW		SW		MECH./STRUCT.		BY		H. LE		DATE		MAR. 27/00			
				1		ISSUED FOR CONSTRUCTION		H. LE		00/03/27		DP		DP		ELECTRICAL		DATE		CHECKED		DATE		JUN 09/00			
																PROJECT		S. WARD		BY		S. WARD		DATE		JUN 09/00	
																DATE		JUN 09/00		SCALE		DWG. No.: D-MFS-99420-100		SHT. 10 OF 11		REV. 2	







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**GENERAL SPECIFICATIONS**

CLASS	TYPICAL SERVICE	TEMP. RANGE (°C)	PRESS. RATING (ANSI)
A	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	150 # RF
B	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	300 # RF
C	SWEET HYDROCARBON, PROPANE REFRIGERANT, FUEL GAS AND FLARE GAS	-29°C TO 260°C	600 # RF
D	SWEET HYDROCARBON	-29°C TO 260°C	900 # RF
E	SWEET HYDROCARBON	-29°C TO 260°C	1500 # RF
F	SWEET HYDROCARBON	-29°C TO 260°C	2500 # RF
H	COMPRESSED AIR AND UTILITY WATER	0°C TO 38°C	150 # RF
J	DRAIN SYSTEM PIPING	5°C TO 95°C	150 # RF
K	GLYCOL	1.21 MPa @ 177°C	150 # RF TO 1500 # RF
AS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	150 # RF
BS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	300 # RF
CS	SOUR HYDROCARBON, RICH AMINE AND SOUR WATER	-29°C TO 260°C	600 # RF
DS	SOUR HYDROCARBON	-29°C TO 260°C	900 # RF
ES	SOUR HYDROCARBON	-29°C TO 260°C	1500 # RF
FS	SOUR HYDROCARBON	-29°C TO 260°C	2500 # RF
AL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	150 # RF
BL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	300 # RF
CL	SWEET HYDROCARBON, PROPANE REFRIGERANT	-46°C TO 66°C	600 # RF
AC	SWEET HYDROCARBON	-184°C TO 66°C	150 # RF
BC	SWEET HYDROCARBON	-184°C TO 66°C	300 # RF
CC	SWEET HYDROCARBON	-184°C TO 66°C	600 # RF

**GENERAL NOTES (ABBREVIATIONS)**

- AC - AIR CLOSURE
- AO - AIR OPENS
- AVT - AUTOVENT TRAP
- BD - BLOWDOWN
- BF - BLIND FLANGE
- CBD - CONTINUOUS BD
- CD - CLOSED DRAIN
- CO - CHAIN OPERATED
- CSC - CAR SEAL CLOSED
- CSO - CAR SEAL OPEN
- DC - DRAIN CONNECTION
- EBD - EMERGENCY BD
- ESD - EMERGENCY SHUTDOWN
- ET - ELECTRICAL HEAT TRACE
- FO - FAIL OPEN
- FC - FAIL CLOSED
- FP - FULL PORT
- GT - GLYCOL HEAT TRACE
- HH - HAND HOLE
- HC - HOSE CONNECTION
- L - LOW
- LC - LOCK CLOSED
- LO - LOCK OPEN
- ML - MANUAL LOADING
- MW - MANWAY
- NC - NORMALLY CLOSED
- NE - NORMALLY ENERGIZED UNDER OPER. COND.
- NO - NORMALLY OPEN
- ND - NORMALLY DE-ENERGIZED UNDER OPER. COND.
- PC - PISTON CHECK VALVE
- PO - PUMPOUT
- PP - PERSONNEL PROTECTION
- QO - QUICK OPENING
- SC - SAMPLE CONNECTION
- SO - STEAM OUT
- SP - SET POINT
- ST - STEAM HEAT TRACE
- UG - UNDERGROUND
- VB - VACUUM BREAKER
- WC - WATER COLUMN

**COMMODITY (ABBREVIATIONS)**

- AG - ACID GAS
- AGF - ACID GAS FLARE
- AMD - AMINE DRAIN
- AV - ATMOSPHERIC VENTS
- BD - BLOWDOWN
- C - CAUSTIC
- CCD - CLOSED CRYOGENIC DRAIN
- CHD - CLOSED HYDROCARBON DRAIN
- CSD - CLOSED SOUR DRAIN
- CV - CRYOGENIC VENT
- CWD - CLOSED WATER DRAIN
- DR - DRAIN (ATMOSPHERIC)
- EQL - EQUALIZING
- FG - FUEL GAS
- FL - FLARE
- FO - FUEL OIL
- FW - FIRE WATER
- GD - GLYCOL DRAIN
- GL - GLYCOL
- HC - HIGH PRESSURE STEAM CONDENSATE
- HCL - HYDROCARBON LIQUIDS
- HCV - HYDROCARBON VAPOUR
- HM - HEAT MEDIUM
- HPF - HIGH PRESSURE FLARE
- HS - HIGH PRESSURE STEAM
- I/A - INSTRUMENT AIR
- I/G - INSTRUMENT GAS
- IS - INSTRUMENT SUPPLY
- JW - JACKET WATER
- K - CHEMICALS
- LAM - LEAN AMINE
- LC - LOW PRESSURE STEAM CONDENSATE
- LO - LUBE OIL
- LOD - LUBE OIL DRAIN
- LPF - LOW PRESSURE FLARE
- LPG - LOW PRESSURE GAS
- LS - LOW PRESSURE STEAM
- MC - MEDIUM PRESSURE STEAM CONDENSATE
- MS - MEDIUM PRESSURE STEAM
- P - PROCESS GAS/LIQUID
- PDW - PRODUCED WATER
- POD - PACKING OIL DRAIN/VENT
- POW - POTABLE WATER
- PS - SOUR PROCESS GAS
- PSW - SOUR PROCESS WATER
- PW - PROCESS WATER
- RAM - RICH AMINE
- RLRV - REFRIG. LIQUID, REFRIG. VAPOUR
- ROD - REFRIG. OIL DRAIN
- SO - SEAL OIL
- SOD - SEAL OIL DRAIN
- UW - UTILITY WATER

**MISCELLANEOUS EQUIPMENT (ABBREVIATIONS)**

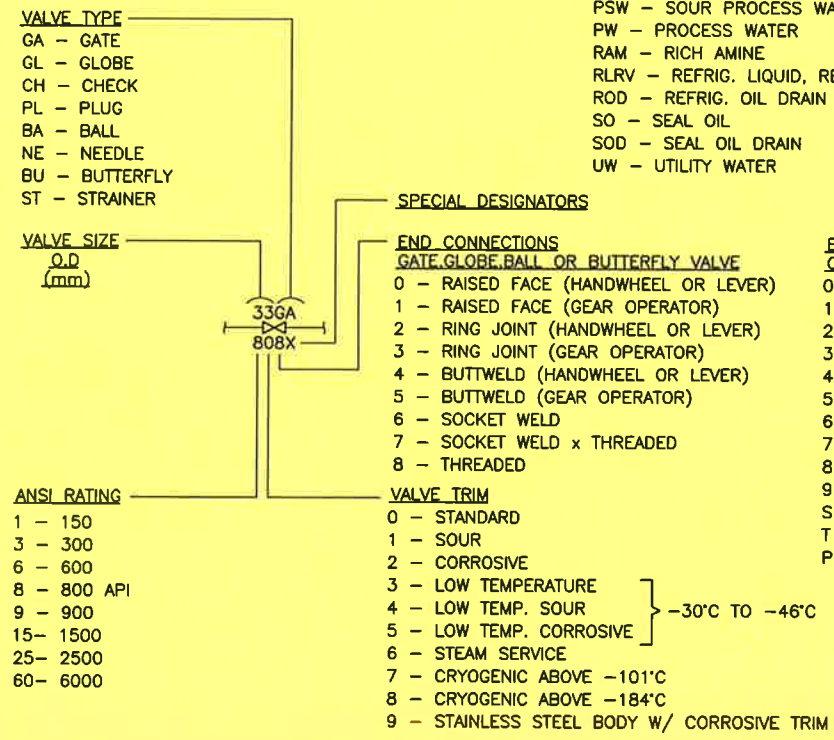
- ACT - ACTUATOR
- BLT - BELT
- BUS - BUSHING
- CPL - COUPLING
- EM - HEAT EXCHANGER MOTOR
- ES - EXHAUST SILENCER
- F - FILTER
- FW - FLYWHEEL
- H - HEATER
- INS - INSULATION
- LUB - LUBRICATOR
- MIS - MISCELLANEOUS
- PIP - PIPE
- PM - PUMP MOTOR
- RC - RADIATOR CAP
- SB - SPECTACLE BLIND
- SHF - SHAFT
- SHV - SHEAVE
- SP - SPACER
- STR - STARTER (ELECTRIC/PNEUMATIC)
- T - TANK
- TSS - TEMPORARY SUCTION SCREEN
- TUB - TUBING

**TUBING SIZES**

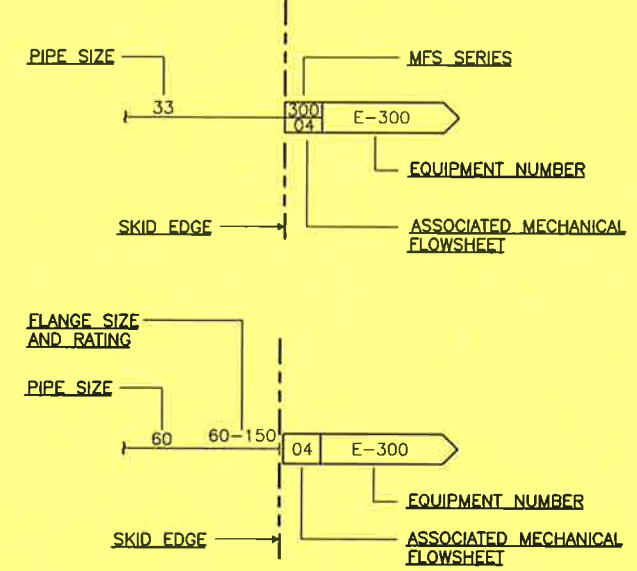
METRIC O.D. (mm)	IMP O.D. (INCH.)	IMP NPS (INCH.)	METRIC O.D. (mm)	METRIC DIN (mm)
3	1/8"	1/4"	14	8
6	1/4"	3/8"	17	10
9	3/8"	1/2"	21	15
13	1/2"	3/4"	27	20
19	3/4"	1"	33	25
25	1"	1-1/2"	48	40
		2"	60	50
		3"	89	80
		4"	114	100
		6"	168	150
		8"	219	200
		10"	273	250
		12"	324	300
		14"	356	350
		16"	406	400
		18"	457	450
		20"	508	500
		24"	610	600
		36"	914	900
		42"	1067	1050

NOTES:  
NPS - NOMINAL PIPE SIZE

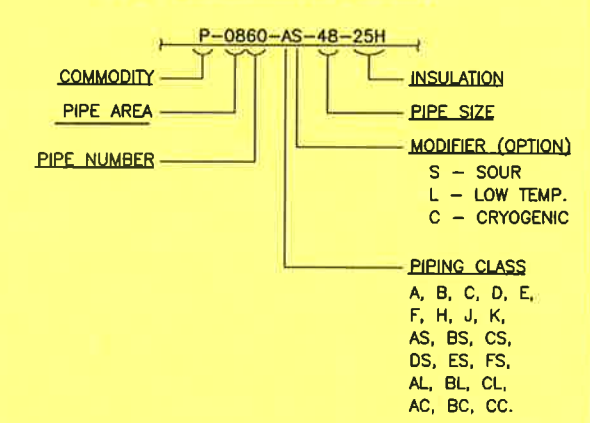
**TYPICAL VALVE IDENTIFICATION**



**TYPICAL PIPE FLAGS**



**TYPICAL PIPE IDENTIFICATION**



**TYPICAL EQUIPMENT IDENTIFICATION**

TAG No: **T-820**

DESCRIPTION: **DEETHANIZER**

DIMENSIONS: ...mm O.D. x ...mm S/S

DESIGN PRESSURE @ DESIGN TEMP., CORROS. ALLOWANCE: ... kPa @ ... °C, ...mm C.A.

GAS FLOW RATES: ... m3/d

LIQUID FLOW RATES: ... m3/h

DUTIES: ... kW

MOTOR POWER: ... kW @ V/φ/Hz

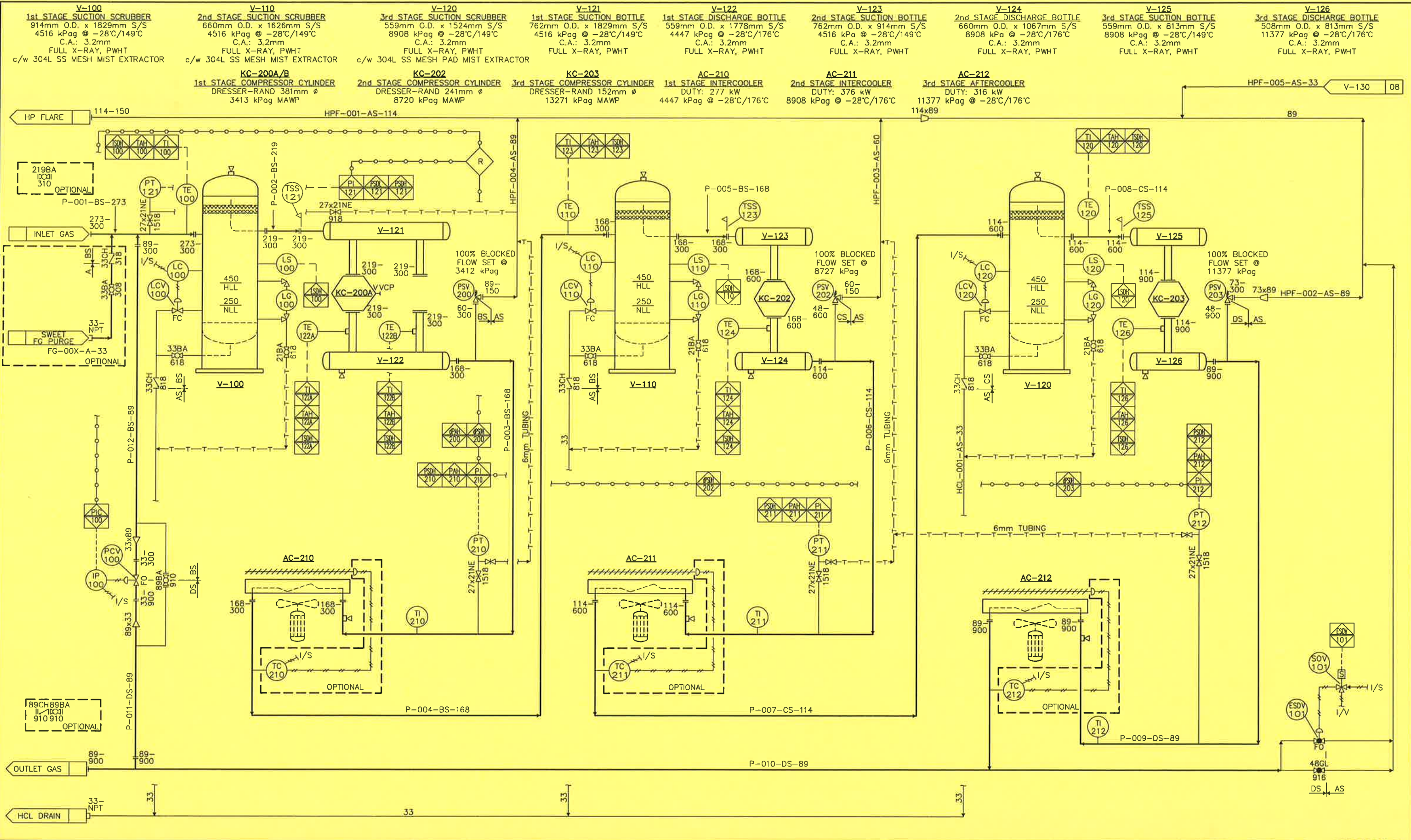
STRESS RELIEVING AND X-RAY: S.R.: YES/NO, X-RAY: FULL/100%/SPOT

MAKE AND MODEL:

GENERAL NOTES		GENERAL NOTES		APPROVED		DRAWN		LEGEND	
1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03	TK	TK	J. LINANTUD	DEC. 10/99	MECHANICAL FLOWSHEET	
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	PJD	PJD	T. KELLER	FEB. 03/00	DWG. No.: D-MFS-99420-100 SHT. 2 OF - REV. 1	
No.	REVISION	BY	DATE	CKD	ENG	SCALE			

**PROPAC**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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- 1. USE XXH NIPPLE ON NPT CONNECT FOR "DS", "CS" & "BS"
- 2. USE SCH 160 NIPPLE ON NPT CONNECT FOR "AS"

GENERAL NOTES	
No.	REVISION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

GENERAL NOTES	
No.	REVISION
1	ISSUED FOR CONSTRUCTION
A	ISSUED FOR APPROVAL

BY	DATE	CKD	ENG
J. LINA	00/02/03	TK	TK
J. LINA	99/12/10	PJD	PJD

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
ELECTRICAL	BY	T. KELLER	
DATE	DATE	FEB. 03/00	
PROJECT	T. KELLER		
DATE	FEB. 03/00		
	SCALE		

**COMPRESSOR MECHANICAL FLOWSHEET**  
 DWG. No.: D-MFS-99420-100 SHT. 3 OF - REV. 1

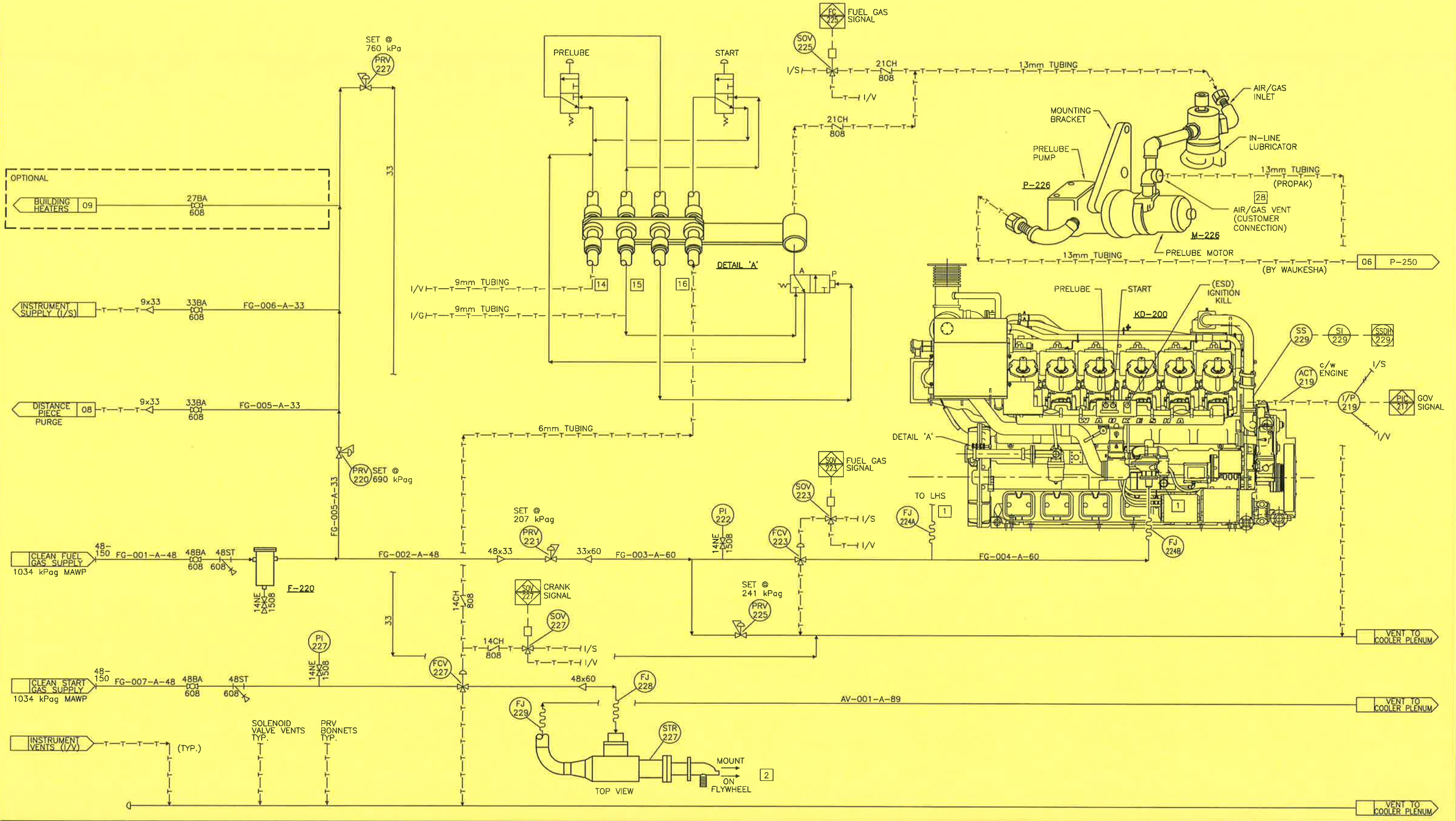
**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

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**F-220**  
FUEL GAS FILTER  
HEAD LINE 380-AP-70C-1"  
c/w 70-C FILTER ELEMENT

**P-226/M226**  
ENGINE PRELUBE PUMP  
GAS DRIVEN MOTOR  
c/w ENGINE

**KD-200**  
COMPRESSOR DRIVER  
WAUKESHA 5794GSI  
1380 BHP @ 1200 RPM



GENERAL NOTES		GENERAL NOTES	
1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03
A	ISSUED FOR APPROVAL	J. LINA	99/12/10
No.	REVISION	BY	DATE

BY	DATE	CKD	ENG
J. LINA	00/02/03	TK	TK
J. LINA	99/12/10	PJD	PJD

APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 10/99
ELECTRICAL	CHECKED	DATE	FEB. 03/00
PROJECT	T. KELLER	DATE	FEB. 03/00
DATE	FEB. 03/00	SCALE	

**ENGINE FUEL AND START GAS MECHANICAL FLOWSHEET**

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

DWG. No.: D-MFS-99420-100 SHT. 4 OF - REV. 1

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AC-220  
ENGINE JW COOLER  
102 kPag MAWP

AC-230  
ENGINE AW COOLER  
102 kPag MAWP

I-235A/B  
ENGINE JW/AW SURGE TANK  
125/45 L  
102 kPag MAWP

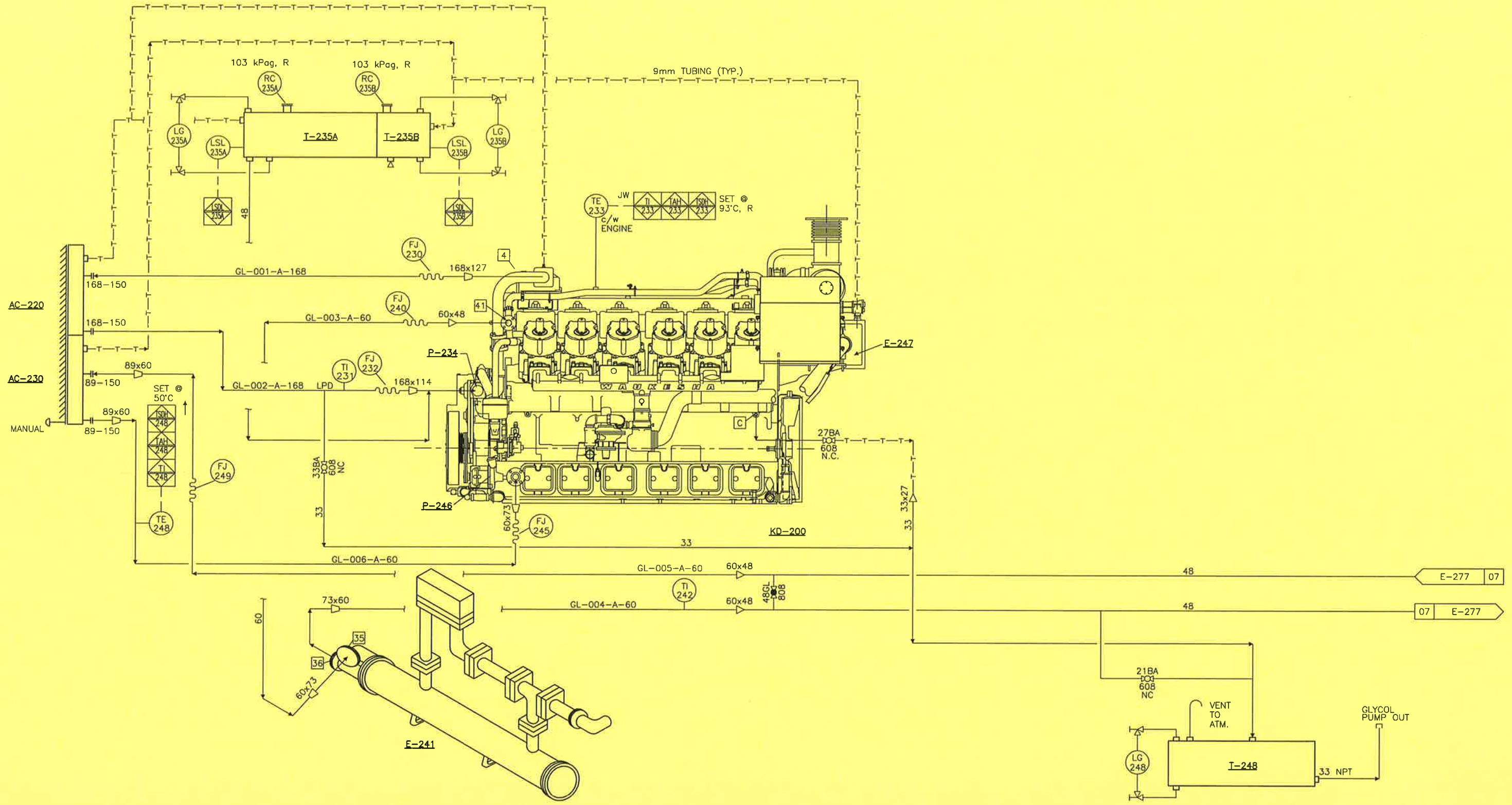
P-246  
ENGINE AW PUMP  
c/w ENGINE

E-241  
ENGINE OIL COOLER  
c/w ENGINE

P-234  
ENGINE JW PUMP  
c/w ENGINE

E-247  
ENGINE TURBO AFTERCOOLER  
c/w ENGINE

I-248  
WASTE GLYCOL  
WESTEEL 1137 L



1							
2	ENGINE CONNECTION INDEX SEE						
	MFS-98147-100-P. 10,						
<b>GENERAL NOTES</b>							
DATE: 2000.02.07 3:19pm FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-05.dwg							

<b>GENERAL NOTES</b>		1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03	TK	TK
		A	ISSUED FOR APPROVAL	J. LINA	99/12/10	PJD	PJD
No.			<b>REVISION</b>	BY	DATE	CKD	ENG

<b>APPROVED</b>		<b>DRAWN</b>	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
<b>ELECTRICAL</b>		<b>CHECKED</b>	
DATE	BY	T. KELLER	
PROJECT	DATE	FEB. 03/00	
DATE	FEB. 03/00	SCALE	

GLYCOL COOLING K-200/KD-200 MECHANICAL FLOWSHEET	
DWG. No.: D-MFS-99420-100	SHT. 5 OF -
REV. 1	

**PROPAK**  
440 East Lake Road,  
Postal Bag #2  
Airdrie, Alberta  
Canada T4B 2C3

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**F-253**  
ENGINE OIL FILTER  
c/w ENGINE  
SHIPLOOSE

**F-241**  
ENGINE OIL COOLER  
c/w ENGINE  
SHIPLOOSE

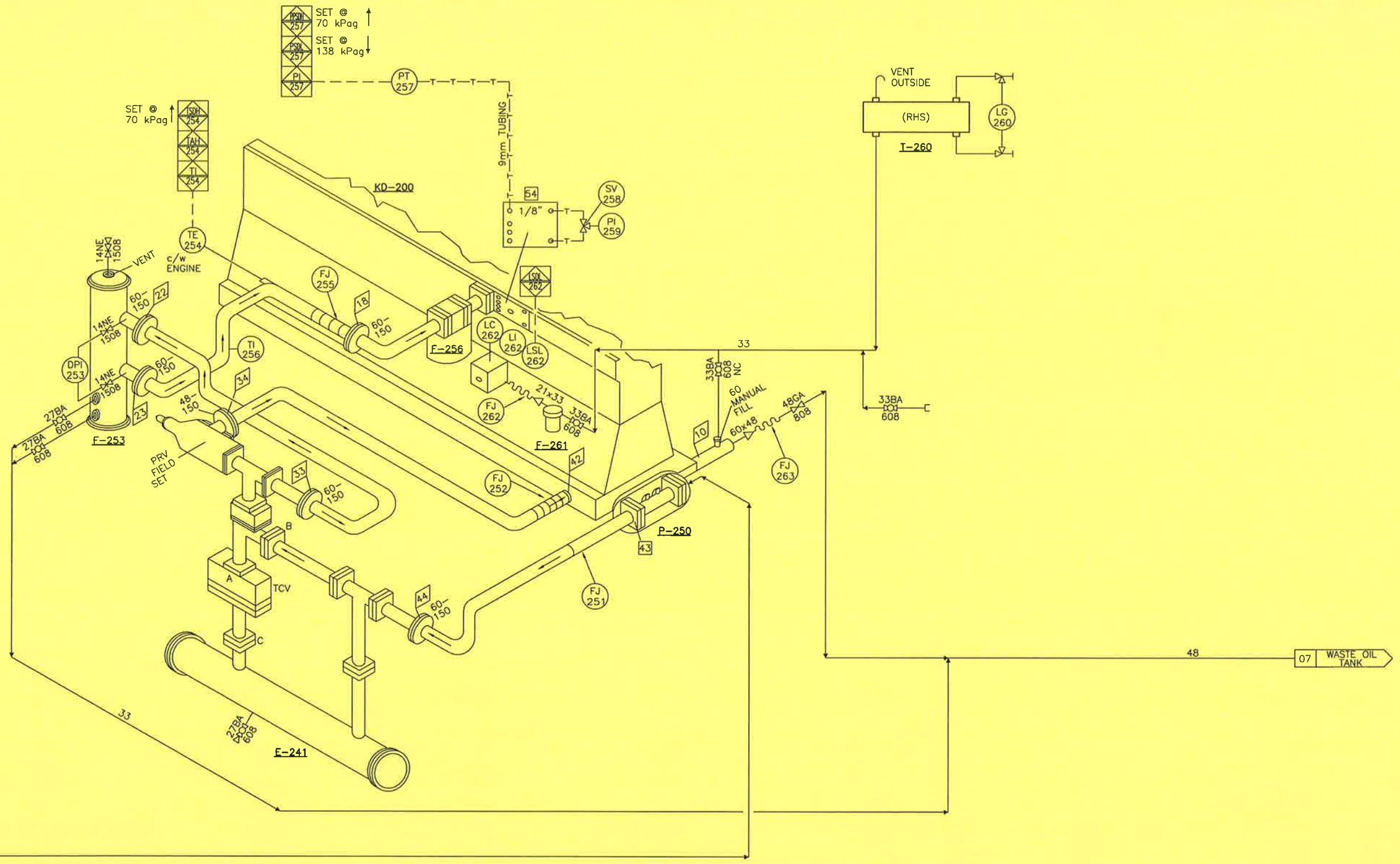
**KD-200**  
COMPRESSOR DRIVE  
WAUKESHA 5794GSI  
1380 HP @ 1200 RPM

**F-256**  
ENGINE OIL STRAINER  
c/w MAGNETIC FILTER ELEMENT  
(SEE NOTE 1)

**F-261**  
OIL SUPPLY FILTER  
BALDWIN BF914 HOUSING  
c/w BALDWIN BF915 FILTER ELEMENT

**P-250**  
ENGINE OIL PUMP  
c/w ENGINE

**T-260**  
ENGINE LUBE OIL SUPPLY  
TANK INTEGRAL w/ CRANE  
STRUCTURE (425L) (RHS)



04 P-226

1. INSTALL PAPER ELEMENT IN F-256, RUN PRE LUBE PUMP FOR OIL FLUSH PROCEDURE. REPLACE PAPER ELEMENT PRIOR TO FIELD START-UP.

GENERAL NOTES		GENERAL NOTES	
No.	REVISION	No.	REVISION

BY	DATE	CKD	ENG
J. LINA	00/02/03	TK	TK
J. LINA	99/12/10	PJD	PJD

APPROVED		DRAWN	
MECH./STRUCT.	BY	J. LINANTUD	
DATE	DATE	DEC. 10/99	
ELECTRICAL	CHECKED		
DATE	BY	T. KELLER	
PROJECT	DATE	FEB. 03/00	
DATE	SCALE		

COMPRESSOR - ENGINE UTILITIES  
MECHANICAL FLOWSHEET

**PROPAK**  
440 East Lake Road,  
Postal Bag #2  
Airdrie, Alberta  
Canada T4B 2C3

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**F-277**  
**COMPRESSOR LUBE OIL COOLER**  
 c/w COMPRESSOR  
 DUTY: 20.9 kW

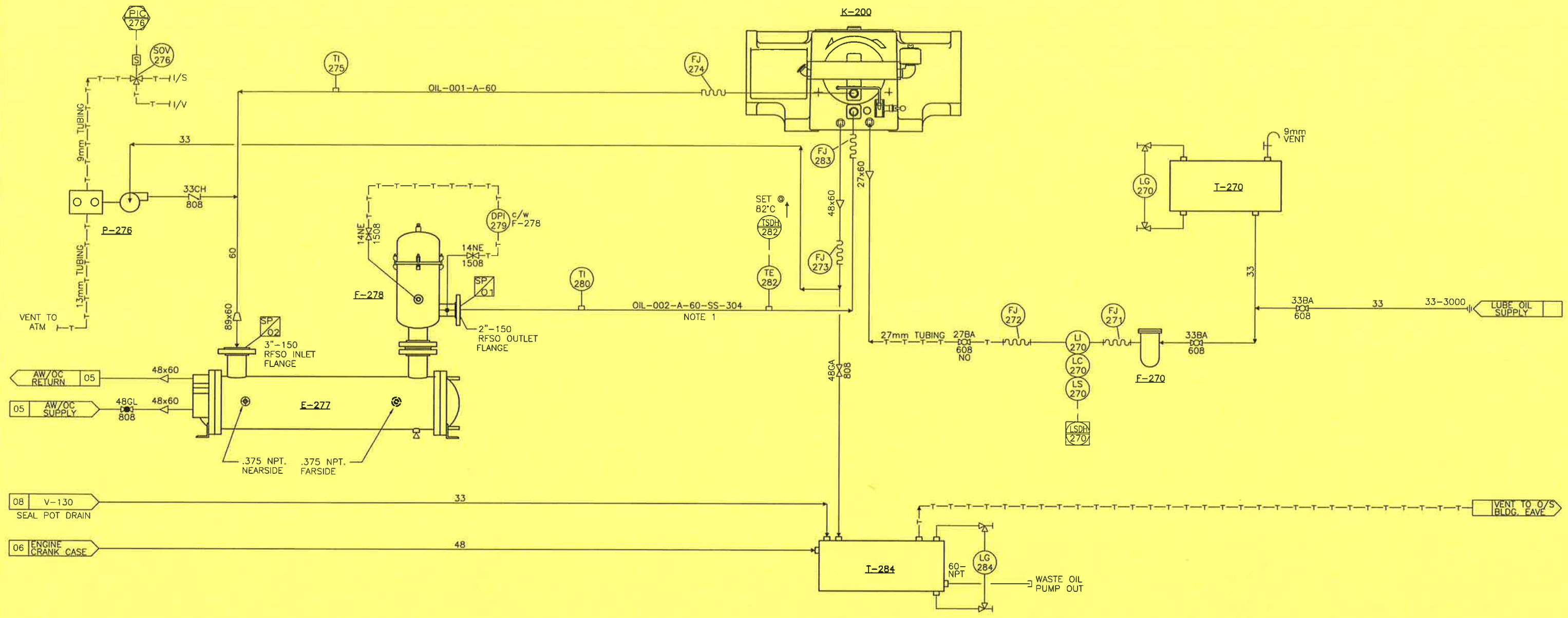
**P-276**  
**COMPRESSOR PRELUBE PUMP**  
 MODEL: WILDEN M2

**F-278**  
**COMPRESSOR OIL FILTER**  
 c/w COMPRESSOR

**I-284**  
**WASTE OIL TANK**  
 INTERNAL TO SKID  
 550 L

**F-270**  
**COMPRESSOR OIL SUPPLY FILTER**  
 BALDWIN BF915 HOUSING  
 c/w BALDWIN BF914 FILTER ELEMENT  
 33NPT, 140 kPag MAWP

**I-270**  
**COMPRESSOR LUBE OIL SUPPLY TANK**  
 INTERNAL TO CRANE RAIL  
 400 L



1. 300 SERIES SS BUTTWELD PIPE TO BE INSTALLED DOWNSTREAM OF COMPRESSOR OIL FILTER.

GENERAL NOTES	
No.	REVISION

GENERAL NOTES		REVISION		BY		DATE		CKD		ENG	
1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03	TK	TK						
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	PJD	PJD						

APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 10/99
ELECTRICAL	CHECKED	DATE	
PROJECT	BY T. KELLER	DATE	FEB. 03/00
DATE	FEB. 03/00	SCALE	

DWG. No.:		SHT. 7 OF -		REV.	
D-MFS-99420-100				1	

**PROPAK**  
 440 East Lake Road,  
 Postal Bag #2  
 Airdrie, Alberta  
 Canada T4B 2C3

COMPRESSOR LUBE OIL  
 MECHANICAL FLOWSHEET

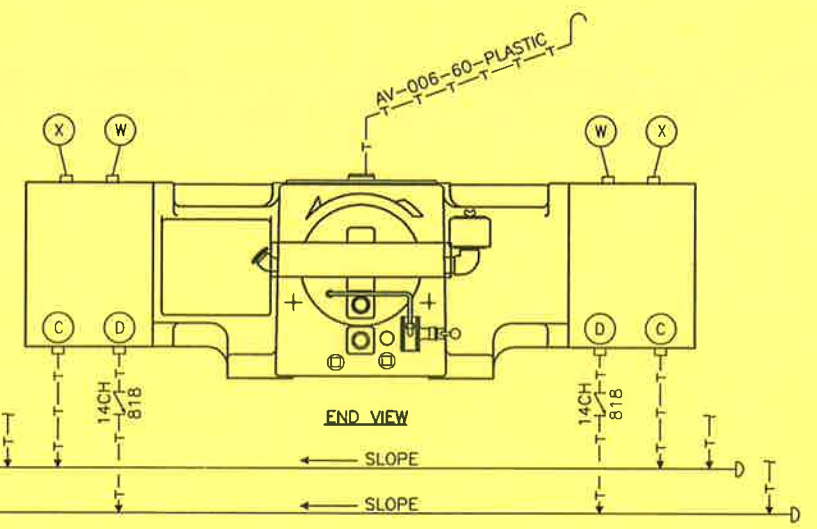
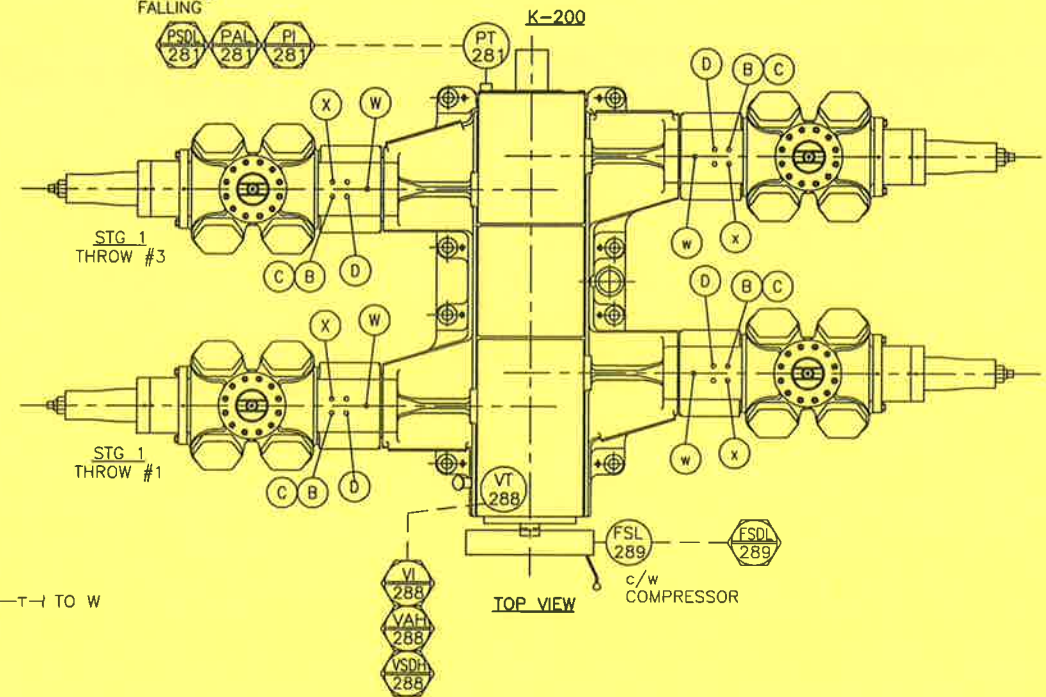


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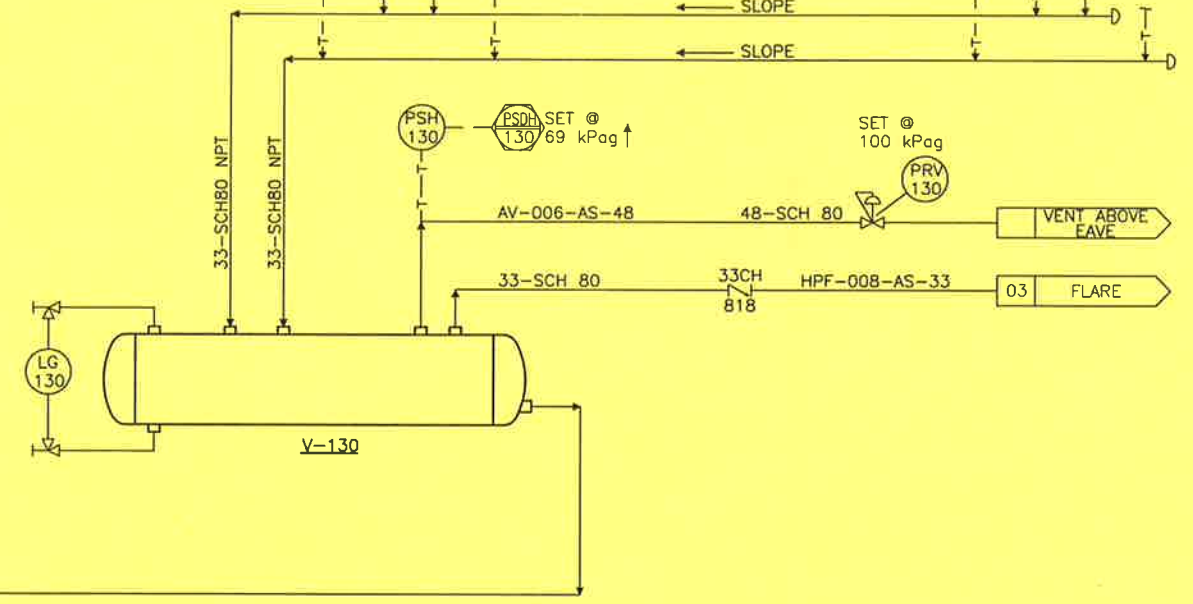
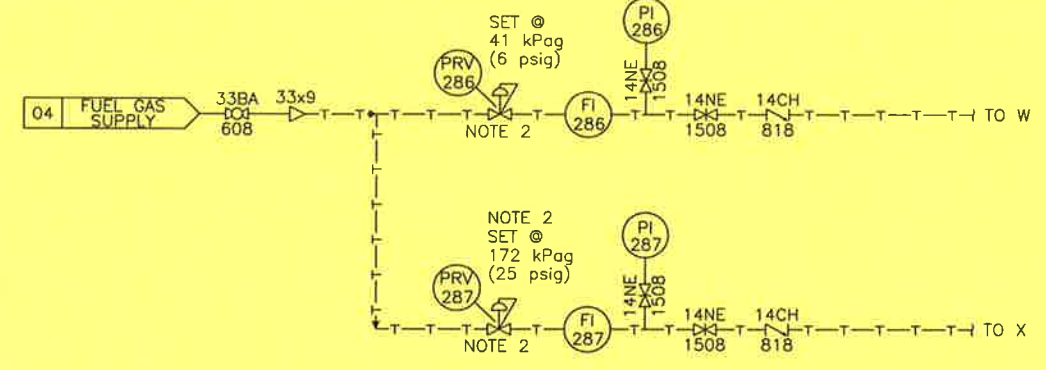
**K-200 COMPRESSOR**  
DRESSER-RAND 6 HOS-3

**V-130 PACKING VENT & DRAIN SEAL POT**  
273mm O.D. x 813mm S/S  
101 kPag DESIGN

SET @  
172 kPag  
(25 psig)  
FALLING

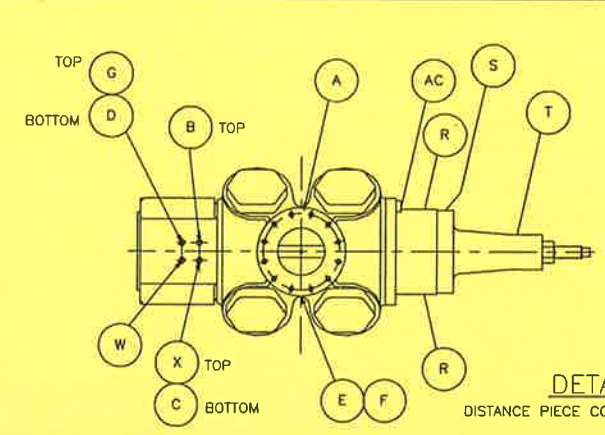


DRIP LIP UNDER ENGINE & COMPRESSOR,  
27 NPT  
27-3000



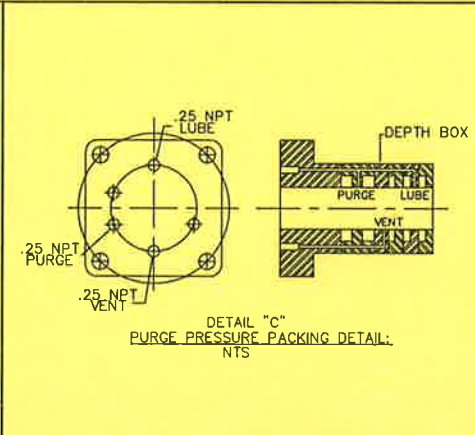
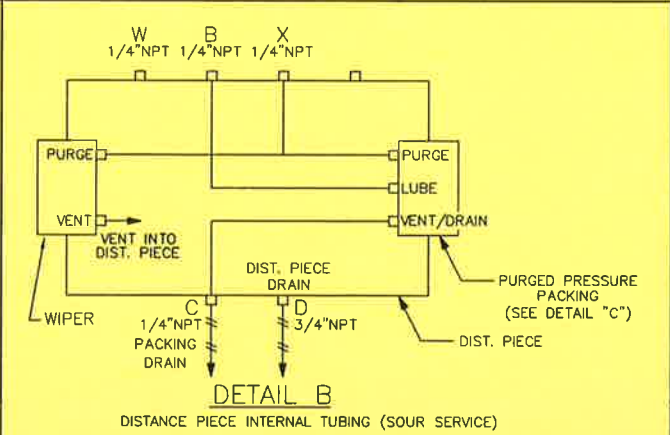
T-284 06  
WASTE OIL TANK

**DISTANCE PIECE EVACUATION SYSTEM**



- A) FLANGE CONN.-INLET TOP & DISCHARGE BOTTOM.
- B) 1/4" NPT PACKING LUBE CONN.-TOP.
- C) 1/4" NPT PACKING VENT/DRAIN CONN.-BOTTOM.
- D) 3/4" NPT DISTANCE PIECE DRAIN CONN.-BOTTOM.
- E) 1/4" NPT CYL BORE LUBE CONN.-TOP.
- F) 1/4" NPT CYL BORE LUBE CONN.-BOTTOM.
- G) 3/4" NPT YOKE VENT CONN.-TOP.
- R) 1/8" NPT WCP HEAD VENT TO NON-HAZARDOUS AREA-TOP OR BOTTOM.
- S) 1/8" NPT WCP ROD PKG. VENT TO NON-HAZARDOUS AREA -TOP OR BOTTOM.
- T) 1/8" NPT GREASE FITTING.
- W) 1/4" NPT DISTANCE PIECE PURGE-TOP.
- X) 1/4" NPT PACKING PURGE CONN.-TOP.

NOTE: PROPAK COMP. SERVICEMAN TO DOUBLE CHECK LOCATIONS OF (A-X) PRIOR TO HOOK-UP.



ALL TAG NUMBERS INDICATED SHALL BE PRECEDED BY 2 FOR THIS UNIT. (e.g. V-100 SHALL BE UNDERSTOOD TO BE V-2100 ON THIS UNIT).	DISTANCE PIECE AS POSSIBLE ON EACH CYLINDER.						
1. CHECK VALVES TO BE ADDED TO 'C' AND 'D' CYLINDER CONNECTION POINTS AS CLOSE TO GENERAL NOTES	2. PRV-286 & PRV-287 REQUIRE VENTABLE BONNETS.						
3. INTERNAL TUBING TO BE INSPECTED BY PROPAK SERVICE, PRIOR TO HOOKING UP.							
DATE: 2000.02.07 3:08pm	FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-08.dwg						

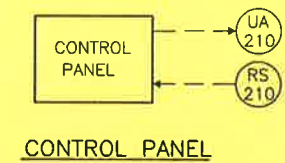
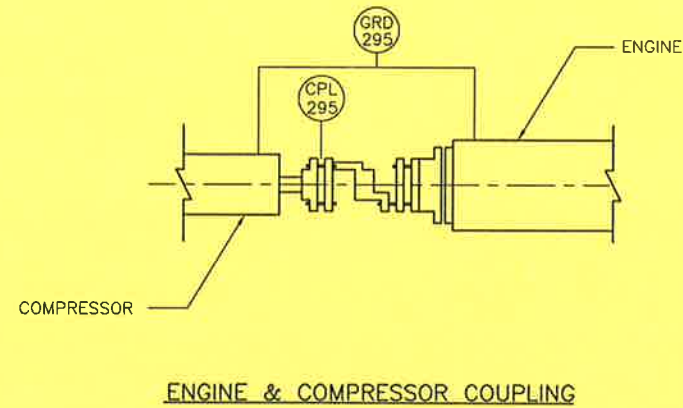
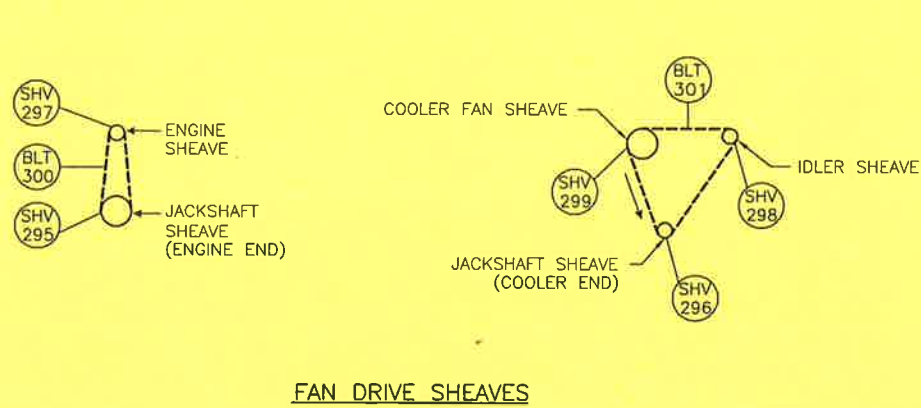
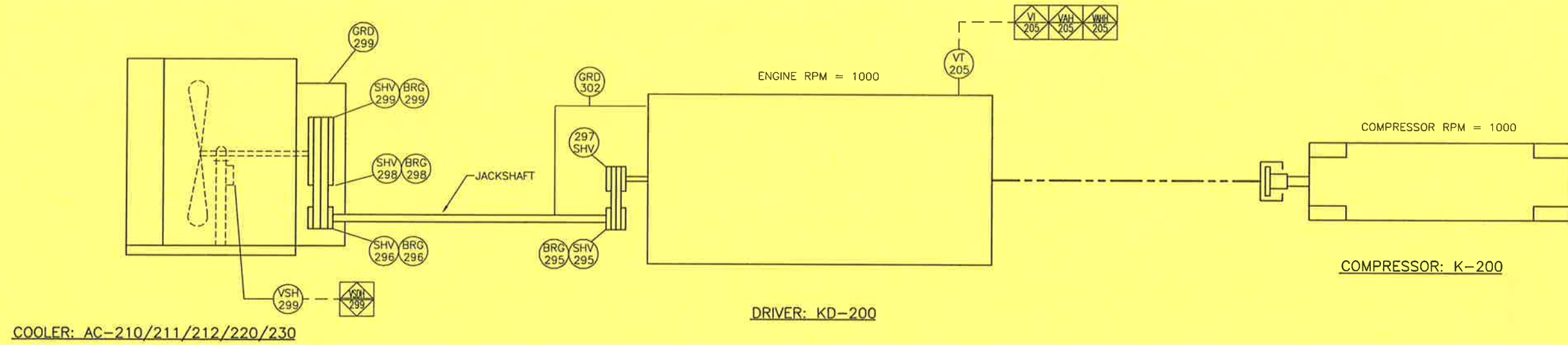
No.	REVISION	BY	DATE	CKD	ENG
1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03	TK	TK
A	ISSUED FOR APPROVAL	J. LINA	99/12/10	PJD	PJD

APPROVED		DRAWN	
MECH./STRUCT.	DATE	BY	J. LINANTUD
ELECTRICAL	DATE	DATE	DEC. 10/99
DATE		BY	T. KELLER
PROJECT	T. KELLER	DATE	FEB. 03/00
DATE	FEB. 03/00	SCALE	

CYLINDER & PACKING LUBRICATION MECHANICAL FLOWSHEET	
DWG. No.:	D-MFS-99420-100
SHT.	8 OF -
REV.	1

**PROPAK**  
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Airdrie, Alberta  
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 THIS DRAWING AND

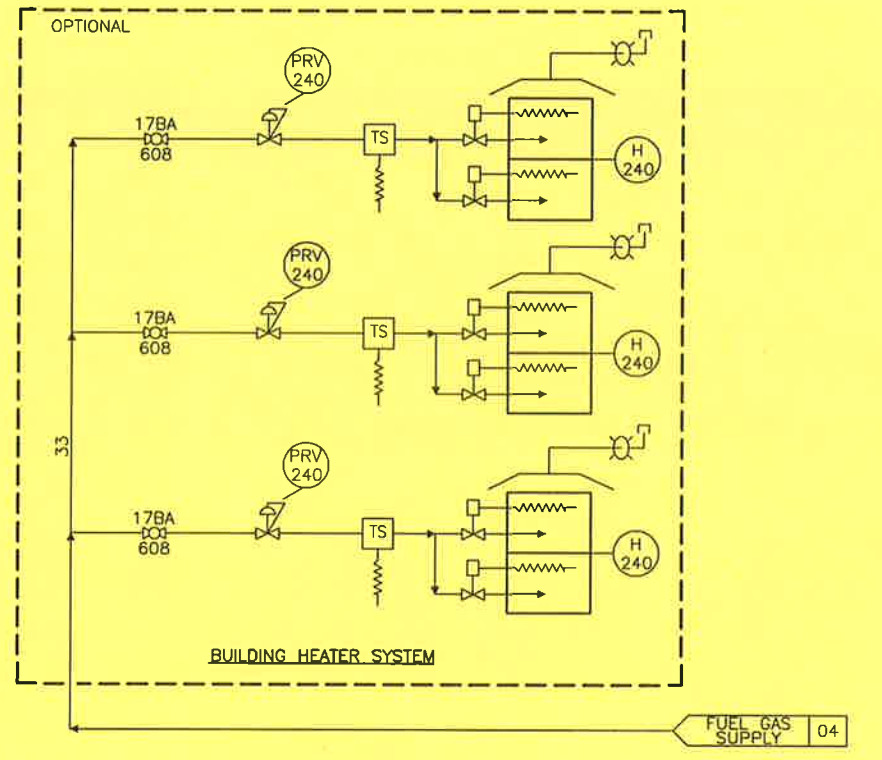
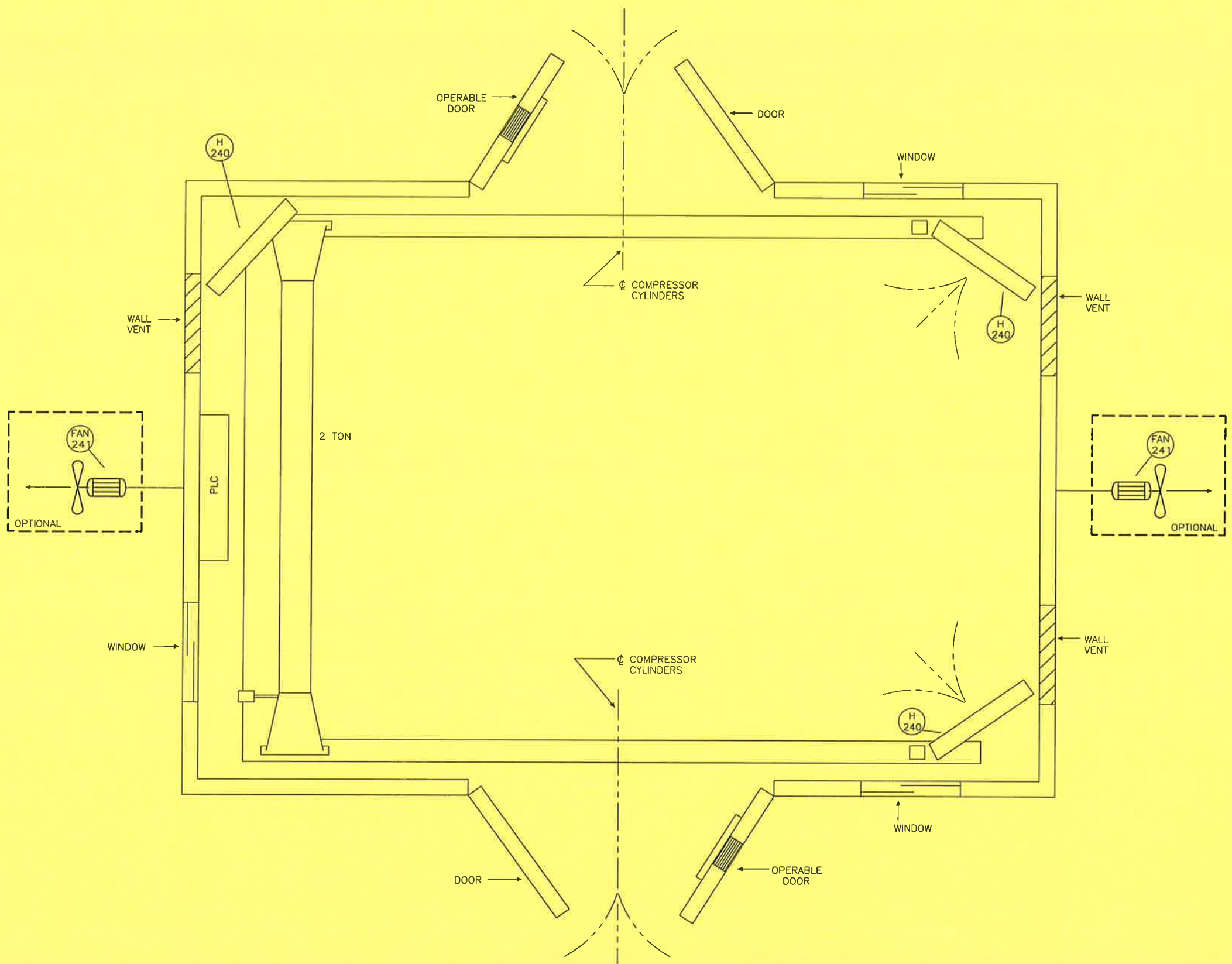


DATE: 2000.02.07 3:07pm		FILE NAME: J:\jobs99\DWG\99420\FLW\MFS-99420-100-09.dwg		No.		REVISION		BY		DATE		CKD		ENG		APPROVED		DRAWN		CYLINDER & PACKING LUBRICATION MECHANICAL FLOWSHEET		DWG. No.: D-MFS-99420-100		SHT. 9 OF -		REV. 1	
GENERAL NOTES		GENERAL NOTES		1		ISSUED FOR CONSTRUCTION		J. LINA		00/02/03		TK		TK		MECH./STRUCT.		BY J. LINANTUD				440 East Lake Road,					
				A		ISSUED FOR APPROVAL		J. LINA		99/12/10		PJD		PJD		DATE		DATE DEC. 10/99				Postal Bag #2					
																PROJECT T. KELLER		BY T. KELLER				Airdrie, Alberta					
																DATE FEB. 03/00		DATE FEB. 03/00				Canada T4B 2C3					
																SCALE											

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H-240 (OPTIONAL)  
 CATALYTIC HEATERS, CATADYNE  
 24"x36" 33750 BTU 24VDC START



GENERAL NOTES		GENERAL NOTES			
1	ISSUED FOR CONSTRUCTION	J. LINA	00/02/03 TK TK		
A	ISSUED FOR APPROVAL	J. LINA	99/12/10 PJD PJD		
No.	REVISION	BY	DATE	CKD	ENG

APPROVED		DRAWN	
MECH./STRUCT.	BY J. LINANTUD	DATE	DEC. 10/99
ELECTRICAL	CHECKED	BY	T. KELLER
DATE	DATE	DATE	FEB. 03/00
PROJECT	T. KELLER	SCALE	
DATE	FEB. 03/00		

BUILDING UTILITIES MECHANICAL FLOWSHEET		DWG. No.: D-MFS-99420-100	SHT. 10 OF -	REV. 1
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