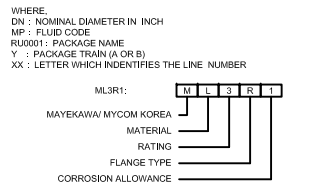


INSTRUMENT NUMBERS
 EACH INSTRUMENT HAS BEEN NAMED AS SHOWN BELOW IN THE DOCUMENTATION:
 TAG-RU0001X-AA
 WHERE:
 X: ONE DIGITS, WHICH IDENTIFY THE REFRIGERANT PACKAGE TRAIN (A OR B)
 TAG: INSTRUMENT TAG (ATTACHMENT: P&ID SYMBOLS)
 AA: TWO DIGITS, WHICH IS THE PROGRESSIVE ITEM NUMBER IN THE UNIT FROM 01 TO 99.

MOTOR INSTRUMENT NUMBERS
 IF AN INSTRUMENT OR A FUNCTION IS INSTALLED ON AN ELECTRIC DRIVER OF A MACHINERY WHICH NAME IS TAG-RU0001X-AA, THE INSTRUMENT NAME IS: TAG-RU0001X-AA

PIPE LINE NUMBERING
 DN=AMP-RU0001YXX-ML3R1-C
 WHERE:
 DN: NOMINAL DIAMETER IN INCH
 MP: FLUID CODE
 RU0001: PACKAGE NAME
 Y: PACKAGE TRAIN (A OR B)
 XX: LETTER WHICH INDENTIFIES THE LINE NUMBER



Rating:
 1=150 CLASS
 3=300 CLASS
 6=600 CLASS
 9=900 CLASS
 15=1500 CLASS

MATERIAL:
 C: CARBON STEEL
 L: LOW TEMPERATURE CARBON STEEL
 S: STAINLESS STEEL
 I: INSTRUMENT AIR STAINLESS STEEL

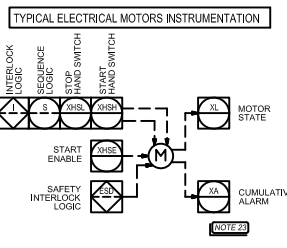
FLANGE TYPE:
 R = RAISED FACE
 F = FLAT FACE
 R = RING TYPE FEMALE
 J = LARGE MALE/ FEMALE
 S = SMALL TONGUE/GROOVE

CORROSION ALLOWANCE:
 0 = 0 mm
 1 = 1.5 mm
 2 = 3.0 mm

FLUID CODE:	DESCRIPTION
AV	Atmospheric Vent
CWS	Cooking Water Supply
CWR	Cooking Water Return
FWG	Flare/Vent gas
IA	Instrument Air
OI	Hydraulic Oil
ST	Styrene
PR	Propane

Instrument line and function symbols			
HARDWARE		SOFTWARE	
Symbol	Denomination	Symbol	Denomination
	Locally mounted		Field mounted, shared display, shared control
	Mounted on back panel		Function normally inaccessible to operator and installed in main control room
	Mounted in main control room		Function normally accessible to operator and installed in main control room
	Mounted on back panel in auxiliary control room or on local panel		Function normally inaccessible to operator and installed in auxiliary control room or on local panel
	Mounted on panel in auxiliary control room or on local panel		Function normally accessible to operator and installed in auxiliary control room or on local panel
	Filled relay		Sequential logic function
	Back panel relay in auxiliary control room or on local panel		Safety interlock logic
	Mounted on back panel		Package Control System PLC
	Star indicated that the instrument is supplied by package manufacturer		
	SIGNAL LIGHT		
	Foundation Fieldbus		
	Differential between two value + Upper Value - Lower Value		

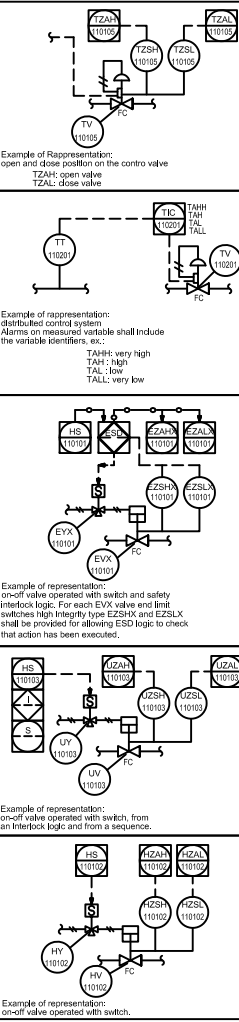
INSULATION AND TRACING CODES	
A	: ACOUSTIC INSULATION
H	: HOT INSULATION
C	: COLD INSULATION
P	: PERSONNEL PROTECTION (FROM 60°C AND ABOVE)
FS	: FIRE SAFE PROTECTION
T	: STEAM TRACING
TW	: HOT OIL TRACING
TC	: HOT WATER TRACING
ET	: ELECTRICAL TRACING
JT	: TOTAL JACKETED LINE
JR	: REDUCED JACKETED LINE
JP	: PARTIAL JACKETED LINE
F	: ANTI FREEZING
D	: DUAL INSULATION
B	: SOLAR PROTECTION
K	: ANTI CONDENSATION
AC	: COLD AND ACOUSTIC INSULATION
AH	: HOT AND ACOUSTIC INSULATION
N	: NOT INSULATED
W	: TAPE WRAPPED (UNDERGROUND LINES)



Piping and relevant components			
Piping		Valves	
Symbol	Denomination	Symbol	Denomination
	Main process		Female Connection
	Secondary process		Male Connection
	Utility		Flange Connection
	Jacket		Manhole
	Electrical Heat Tracing (Insulated)		Female nitrogen service
	Hydraulic System Tubing (1/2" SS)		Male nitrogen service
	Electrical Heat Tracing Tubing (Insulated)		Cone Type strainer
	Blind flange		Temporary strainer
	Cap (butt weld)		Y-Strainer
	Reducer (Bottom flat)		T-Strainer
	Reducer (Top flat)		Ring spade
	Reducer (Concentric)		Spectacle blind - normally closed
	Sample connection		Spectacle blind - normally open
	Sample Point		Ring spacer
	Gate or generic inline valve		Process vent and drains
	Check Valve		With gate or generic valve
	Globe or disc Valve		
	Bellows Valve		With flame trap
	Butterfly Valve		Discharge to atmosphere
	Needle Valve		With dumper or silencer
	Plug Valve		Downward
	Ball Valve (FULL BORE)		Upward
	Ball Valve (REDUCED BORE)		Lateral
	Three-way Valve		Expansion joint
	Spring Valve		Locked Close Valve
			Locked Open Valve
			Normally open valve
			Normally closed valve
			Car seal open valve
			Car seal closed valve
			Tight Shut Off Valve
			Sight glass
			Pipe line class change

Instrument Identification	
Symbol	Denomination
	Instrument tap on line
	Pressure tap with manifold valve
	Pressure tap with generic valves
	Pressure tap diaphragm type
	Fixed restriction orifice
	Primary flow element with transmitter
	Automatic regulator with integral flow indication
	Handheld for automatic valves (valve with actuators)
	Diaphragm spring-opposed
	spring-opposed double-acting
	Cylinder spring-opposed double-acting
	Rotary motor
	Solenoil
	Solenoil valve with manual reset
	Hand actuator
	Butterfly Valve
	Pressure relief or safety valve
	Temperature relief or safety valve
	Two-Way Valve Fail Open
	Two-Way Valve Fail Close
	Two-way valve fail indeterminate
	three-way valve fail open to path A-C
	MAGNETIC LEVEL GAUGE
	LEVEL TRANSMITTER WITH DIAPHRAGM SEPARATOR WITH EXTENSION
	Open
	Close

FLOW INSTRUMENTS			
	SIGHT FLOW GLASS		FLOW TURBINE TYPE
	ORIFICE PLATE WITH TRANSMITTER		METER RUN
	ROTAMETER		INTEGRAL FLOW ORIFICE ASSEMBLY
	VENTURI		FLOW POSITIVE DISPLACEMENT TYPE
	FLOW NOZZLE		PITOT OR ANUBAR WITH TRANSMITTER
	TYPICAL FOR MAGNETIC DRIVEN PUMP		FLOW RESTRICTION ORIFICE
	TRANSMITTER MAGNETIC		THERMAL FLOWMETER
	TRANSMITTER VORTEX		
	TRANSMITTER CORIOLIS		
	TRANSMITTER ULTRASONIC		



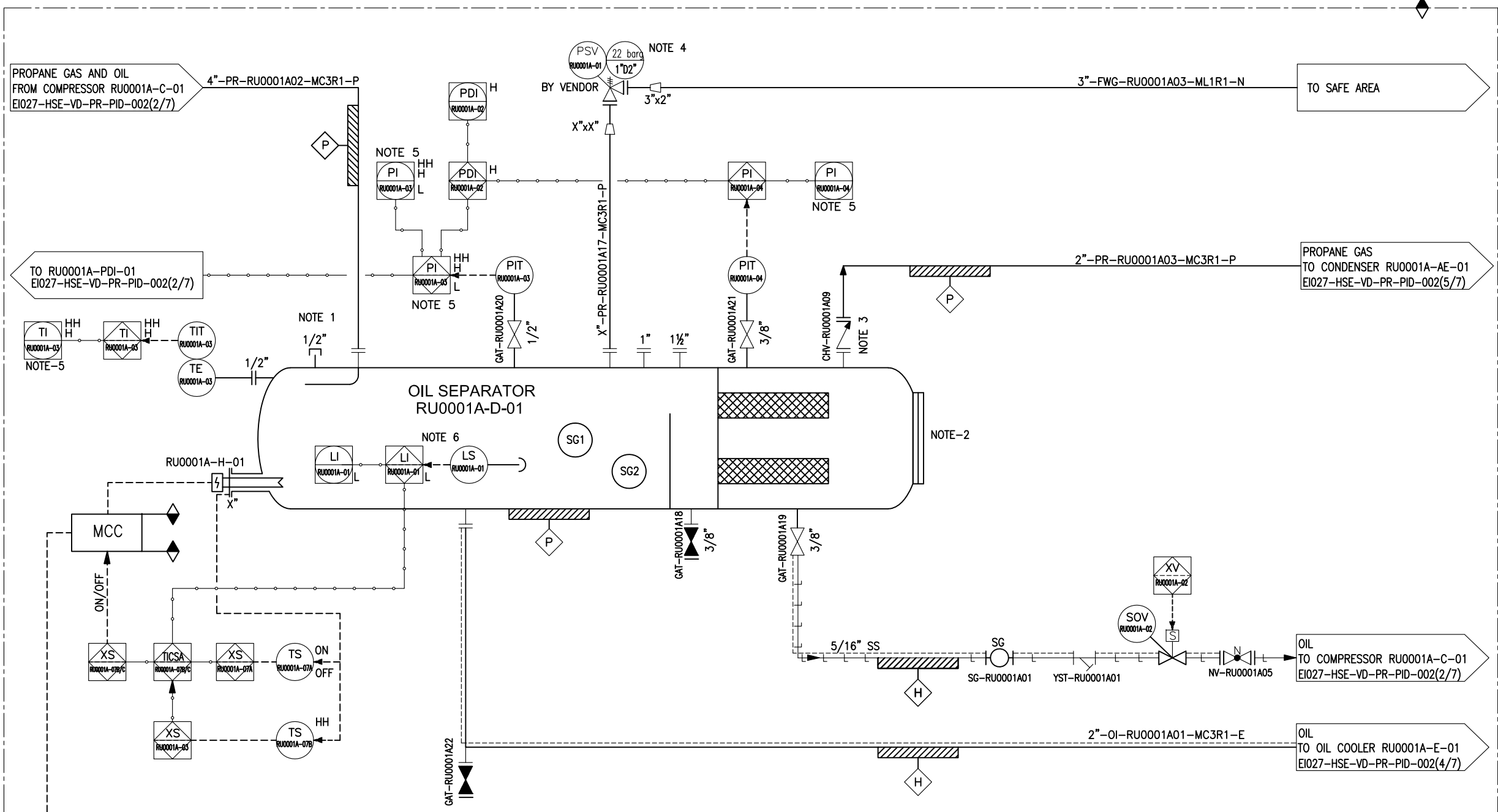
Symbol	Denomination	Abbreviation
	CARTRIDGE Filter	FT
	Basket Filter	FT
	Surion Element	TST
	Coalescer	D
	Decanter	C
	Compressor Screw	C
	Vertical Shell & Tube Exchanger	E
	Pump Reciproc	P
	Ejector	EJ
	Aircooler	AE

REMOVABLE SPOOL PIECE		TYPICAL INSTALLATION FOR PI-PPT	
	INSULATION KIT		PI
	Utility fluid code for P&ID		PI
	Steam trap		PI
	FREE DRAINING		PI
	Jacketed lines: they are marked with a double identification, one regarding the jacketed line and the other regarding the jacket.		PI
	Supply battery limit		PI
	INDICATED ON P&ID		PI
	ACTUAL		PI

REFERENCE DRAWING	DWG NO.	REV.
NOTES :		
1- AN ADDITIONAL "X" AFTER THE INSTRUMENT CODE MEANS THAT INSTRUMENT BELONGS TO ESD SYSTEM.		
2- FOR TEMPERATURE MEASURING INSTRUMENTS WHOSE SIGNAL HAS TO BE ROUTED TO A REMOTE SYSTEM (DCS, PLC), THE TRANSMITTER HAS BEEN ALWAYS INDICATED EVEN IF IT IS STRICTLY REQUIRED ONLY FOR CONTROL LOOPS, PROCESS INTERLOCKS AND SAFETY INTERLOCKS, IN CASE OF TEMPERATURE INDICATOR.		
3- IN ALL THE P&ID, PACKAGES ARE REPRESENTED IN A SIMPLIFIED WAY. IN GENERAL, WHAT IS REPRESENTED IS LICENSOR MINIMUM REQUIREMENT. THE CHARACTERISTICS OF EACH PACKAGE ARE DESCRIBED IN THE RELEVANT DATA SHEET. IN ANY CASE, PACKAGES VENDORS SHALL SUPPLY FINAL P&ID.		
4- FOR PIPES CARRYING THE FOLLOWING FLUIDS : - EB (ETHYLENEZENE) - AN (ACRYLONITRILE) - CD (ORGANIC LIQUID CONDENSATE) - ST (STYRENE) - BD (BUTADIENE) THE NUMBER OF FLANGES SHALL BE MINIMIZED.		
5- INSTALL DRAINS ON THE PIPING CIRCUITS (OR SINGLE LINES) LOWEST POINTS AND VENTS IN THE PIPING CIRCUITS (OR SINGLE LINES) HIGHEST POINTS.		
6- MINIMIZE FLANGED COUPLINGS ON HOT/THERMAL OIL (HO) MAIN DISTRIBUTION HEADER LINES. FOR THERMAL OIL (HO, CO) LINES INSTALLED ON PIPE RACKS, FLANGED COUPLINGS SHALL BE EQUIPPED WITH SAFE-RING OR EQUIVALENT FLANGES JOINTS SPRAY PROTECTION.		
7- WHEN AN INTERLOCK OR A SEQUENCE REQUIRES TO PERFORM AN ACTION, THE INTERLOCK OR SEQUENCE ITSELF SHALL VERIFY IF THE ACTION HAS BEEN DONE. THIS HAS TO BE CONSIDERED AS STANDARD INSTALLATION AND IS NOT REPRESENTED ON P&ID.		
8- IN GENERAL ON P&ID SEQUENCES CHECK PHASE IS NOT REPRESENTED EXCEPT FOR: - ABS PLANT: RUBBER DISSOLUTION SECTION - RUBBER PLANT: REACTION SECTION		
9- THE SIZE OF CONTROL VALVES BY-PASS VALVES WILL BE DEFINED / CONFIRMED ACCORDING TO THE FINAL SIZE OF CONTROL VALVES.		
10- IN CASE DRIP RING IS INDICATED ON P&ID, IT SHALL BE SUPPLIED BY PIPING VENDOR. FOR DRIP RING TYPICAL SEE DOC. J-80/85/88-IN-ST0-1500-0001 "DRIP RING FOR DIAPHRAGM INSTRUMENT TYPICAL".		
11- THE INSTALLATION OF ALL PI-TI-TT REPRESENTED ON P&ID IS INDICATED IN THE TYPICAL.		
12- ALL SIGNALS FROM PLC TO ESD SHALL BE HARD-WIRED (NON-DATALINK)		
13- ALL SIGNALS FROM UNIT 88 INSTRUMENTS SHALL BE CONNECTED TO DCS /FCS /ESD OF RUBBER PLANT.		
14- ALL VALVES ON PSV INLET /OUTLET LINES SHALL BE FULL BORE TYPE. GATE VALVE ON FLARE LINE TO BE INSTALLED WITH STEM IN HORIZONTAL POSITION.		
15- FOR SPECIAL PIPING ITEMS LIST REFER TO DOC. J-85-PI-LSC-8501.		
16- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.		
17- ELEVATION SHOWN ARE ABOVE THE HIGHEST POINT OF PAVING.		
18- ALL VALVES ARE LINE SIZE UNLESS OTHERWISE SHOWN.		
19- THIS FLOW DIAGRAM IS DIAGRAMATIC ONLY. DESIGN OF PIPE LINE MUST BE INVESTIGATED FOR PIPING OF GAS AND VAPOR POCKETS IN PIPING AND EQUIPMENT, LOW POINTS IN PIPING, PUMPS AND EQUIPMENT FOR DRAINING AND ACCESSIBILITY OF ALL VALVES, FLANGES AND INSTRUMENTS INCLUDING THERMOCOUPLES ETC.		
20- ALL ELECTRONIC INSTRUMENTATION SHALL BE INSTALLED AWAY FROM STEAM LINES AND HIGH TEMPERATURE HEAT SOURCE.		
21- SAMPLE TAPPING FOR GAS SAMPLES SHALL BE FROM THE TOP OF THE MAIN LINE. FOR LIQUID SAMPLES TAPPING SHALL BE DONE FROM THE SIDE.		
22- EXCEPT FOR PROCESS REASONS, LOW POINT DRAINS AND HIGH POINT VENT ARE NOT SHOWN.		
23- CABLING BETWEEN DCS REMOTE I/O CARDS IN MCC CUBICLE CABINET AND MAIN CONTROL ROOM WILL BE VIA SOFT LINK EXCEPT FOR ESD SIGNALS TO MCC THAT WOULD BE HARD WIRED.		
24- ESDL MEANS EARTHING SWITCH LOW.		
25- SIGNALS OF CURRENT TRANSMITTERS ARE TAKEN FROM MCC.		
26- WHILE PURGING THE EQUIPMENTS, VENTS SHALL BE PROPERLY KEPT OPEN IN ORDER TO AVOID EQUIPMENT PRESSURIZATION ABOVE EQUIPMENT DESIGN/PSV SET PRESSURE. BY MAINTAINING PROPER ADMINISTRATIVE CONTROL, PRESSURE SAFETY VALVES AND RUPTURE DISCS ARE NOT DESIGNED FOR THE MAXIMUM PURGING CONDITION MENTIONED IN THE LICENSOR P&ID DATA.		
HOLDE:		
EQUIPMENT LIST:		
KEY PLAN :		
00	ISSUED FOR APPROVAL (IFA)	A.K. F.SH. A.M
REV. ISSUE DATE	DESCRIPTION	PREPARED CHECKED APPROVED
CLIENT		
 پارس پتروشیمی توسعه پارک صنعتی گوهر آفتاب		
CONSULTING ENGINEER		
PROJECT: STYRENE PARK OFFSITE		
DRAWING TITLE: PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU SYMBOL, ABBREVIATION AND GENERAL NOTES		
DRAWING NO.	REV. SIZE	SCALE SHEET
EI027-HSE-YD-PR-PID-002	00 A3	NTC 1 of 7

TAG NO.	RU0001A-D-01
SERVICE	OIL SEPARATOR
DESIGN PRESS. (BARG)	22
DESIGN TEMP. (°C)	-29/100
ID x L (mm)	590 x 2250

REFERENCE DRAWING	DWG NO.	REV.
NOTES :		
1- OIL TOP UP & VACUUM CONNECTION.		
2- INSPECTION HOLE.		
3- STOP CHECK VALVE FOR PREVENT SPIN BACK.		
4- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.		
5- SIGNAL ROUT TO DCS.		
6- IN CASE OF LOW OIL LEVEL, THE OIL HEATER TO BE TRIPPED.		
7- SET TEMPERATURE FOR ELECTRICAL TRACING IS 30°C.		



HOLDE:

EQUIPMENT LIST:

KEY PLAN :

00	ISSUED FOR APPROVAL (IFA)	A.M.	F.SH.	A.M.	
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

CLIENT



CONSULTING ENGINEER

PROJECT: **STYRENE PARK OFFSITE**

DRAWING TITLE: **PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EIO27-HSE-VD-PR-PID-002	00	A3	NTC	3 of 7

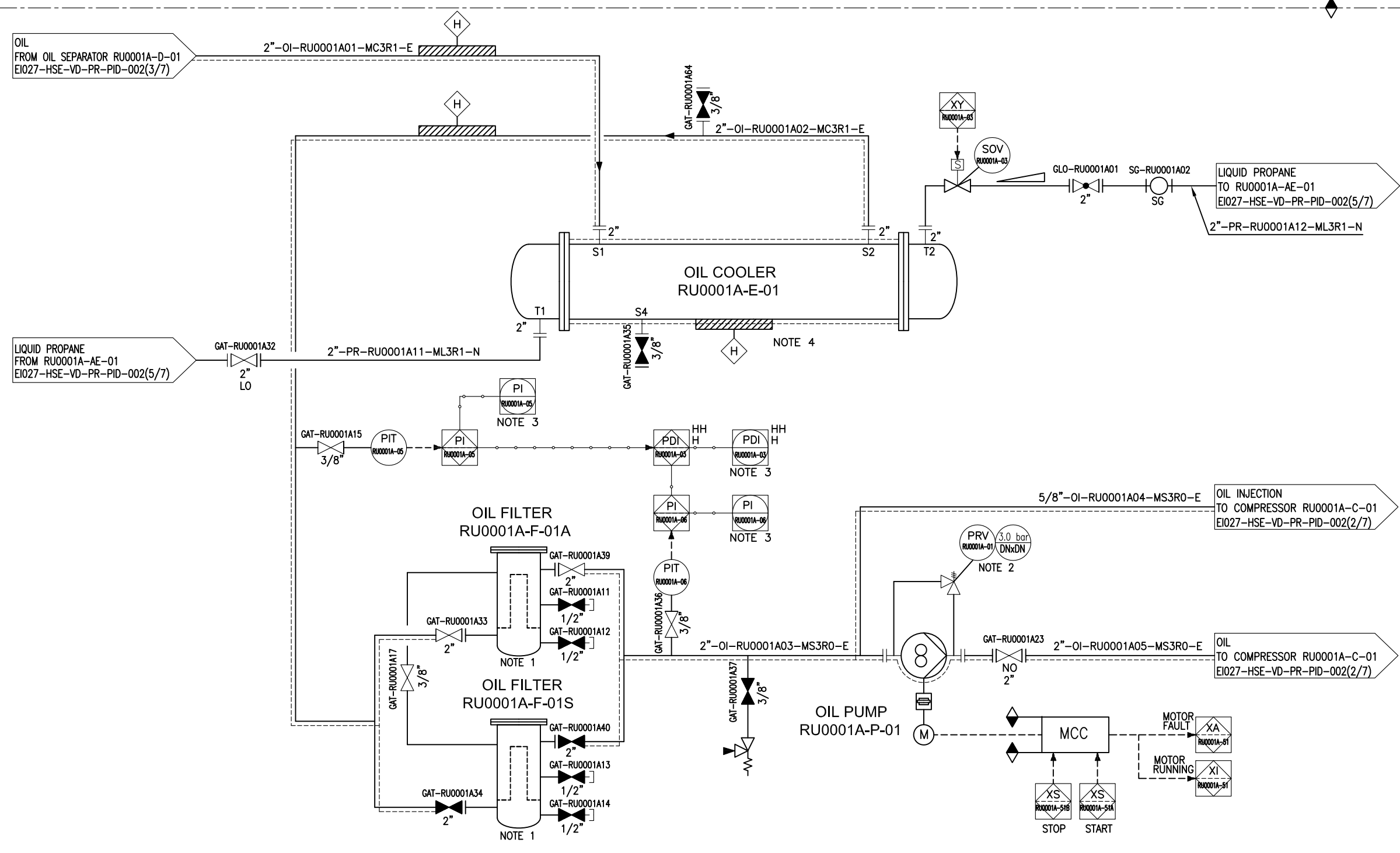
TAG NO.	RU0001A-E-01
SERVICE	OIL COOLER
DESIGN PRESS. (BARG)	S: 30, T:30
DESIGN TEMP. (°C)	S:5/100, T:-45/100
DESIGN DUTY (kW)	24.7
ID x L (mm)	139.7 x 2200
TYPE	AEH

TAG NO.	RU0001A-P-01
SERVICE	OIL PUMP
TYPE	SCREW PUMP
DESIGN PRESS. (BARG)	23
DESIGN TEMP. (°C)	5 / 100
RATED POWER (kW)	2.5

TAG NO.	RU0001A-F-01A/S
SERVICE	OIL FILTER
DESIGN PRESS. (BARG)	23
DESIGN TEMP. (°C)	5/100
ID x L (mm)	MAYEKAWA

REFERENCE DRAWING	DWG NO.	REV.
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- NOTES :
- 1- ONE OPERATING / ONE STAND-BY.
 - 2- DP=3 BAR.
 - 3- SIGNAL ROUT TO DCS.
 - 4- HEAT TRACING TO BE TURNED OFF DURING COMPRESSOR START.
 - 5- SET TEMPERATURE FOR ELECTRICAL TRACING IS 30°C.



HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT

CONSULTING ENGINEER

PROJECT: **STYRENE PARK OFFSITE**

DRAWING TITLE: **PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	4 of 7

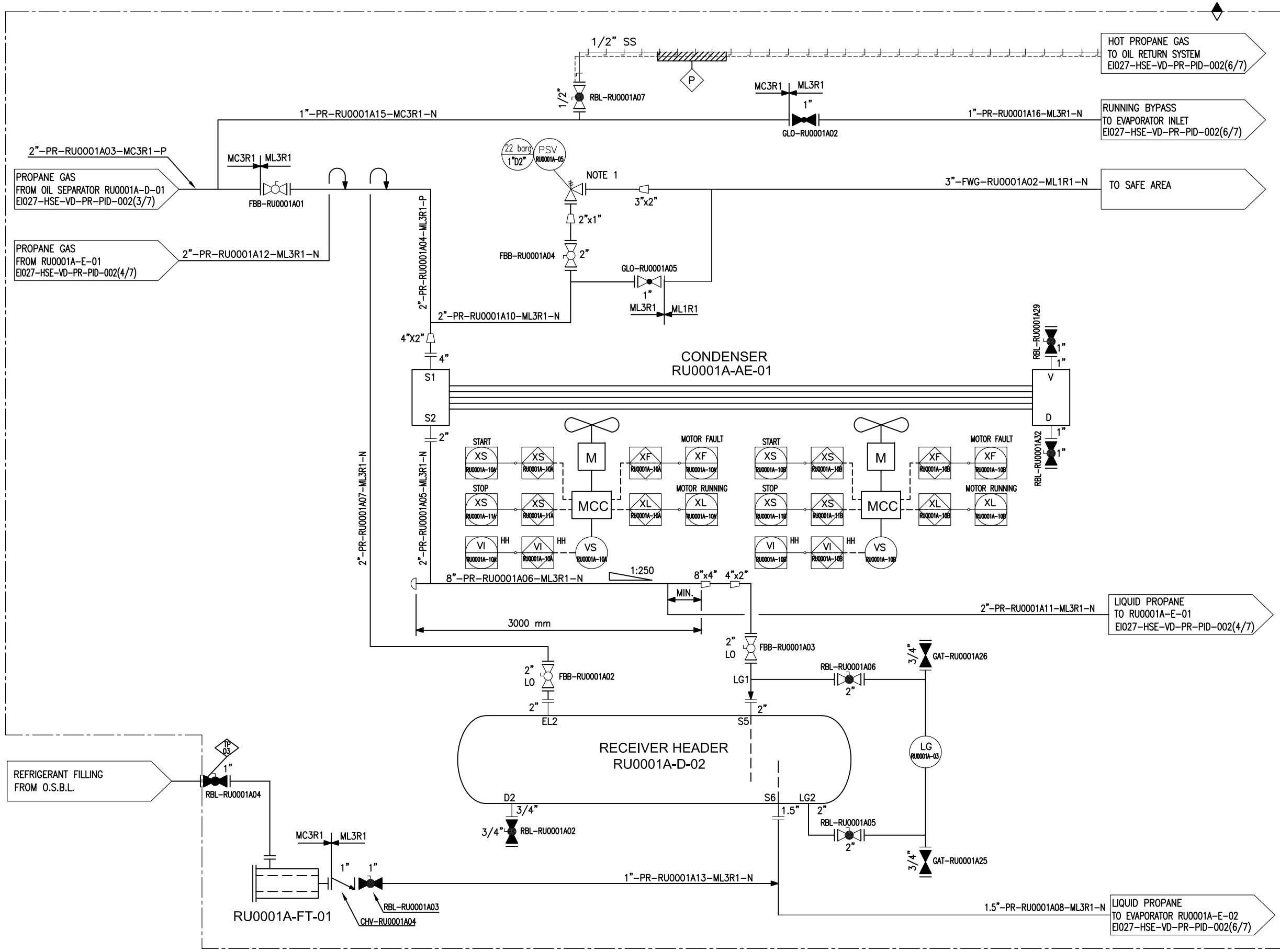
TAG NO.	RU0001A-AE-01
SERVICE	CONDENSER
DESIGN PRESS. (BARG)	22.0+FV
DESIGN TEMP. (°C)	-45/120
DESIGN DUTY (kW)	257

TAG NO.	RU0001A-D-02
SERVICE	RECEIVER HEADER
DESIGN PRESS. (BARG)	22.0+FV
DESIGN TEMP. (°C)	-45/120
ID x L (mm)	335x5050

REFERENCE DRAWING	DWG NO.	REV.
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NOTES :

- 1- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.
- 2- MANUAL FAN PITCH HAS BEEN CONSIDERED FOR EACH FAN.
- 3- SET TEMPERATURE FOR ELECTRICAL INSULATIONS IS 30°C.



HOLDE:

EQUIPMENT LIST:

KEY PLAN :

OO	ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.	
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

CLIENT



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صنعتی گوهر آفتاب

CONSULTING ENGINEER

PROJECT: **STYRENE PARK OFFSITE**

DRAWING TITLE: **PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU**

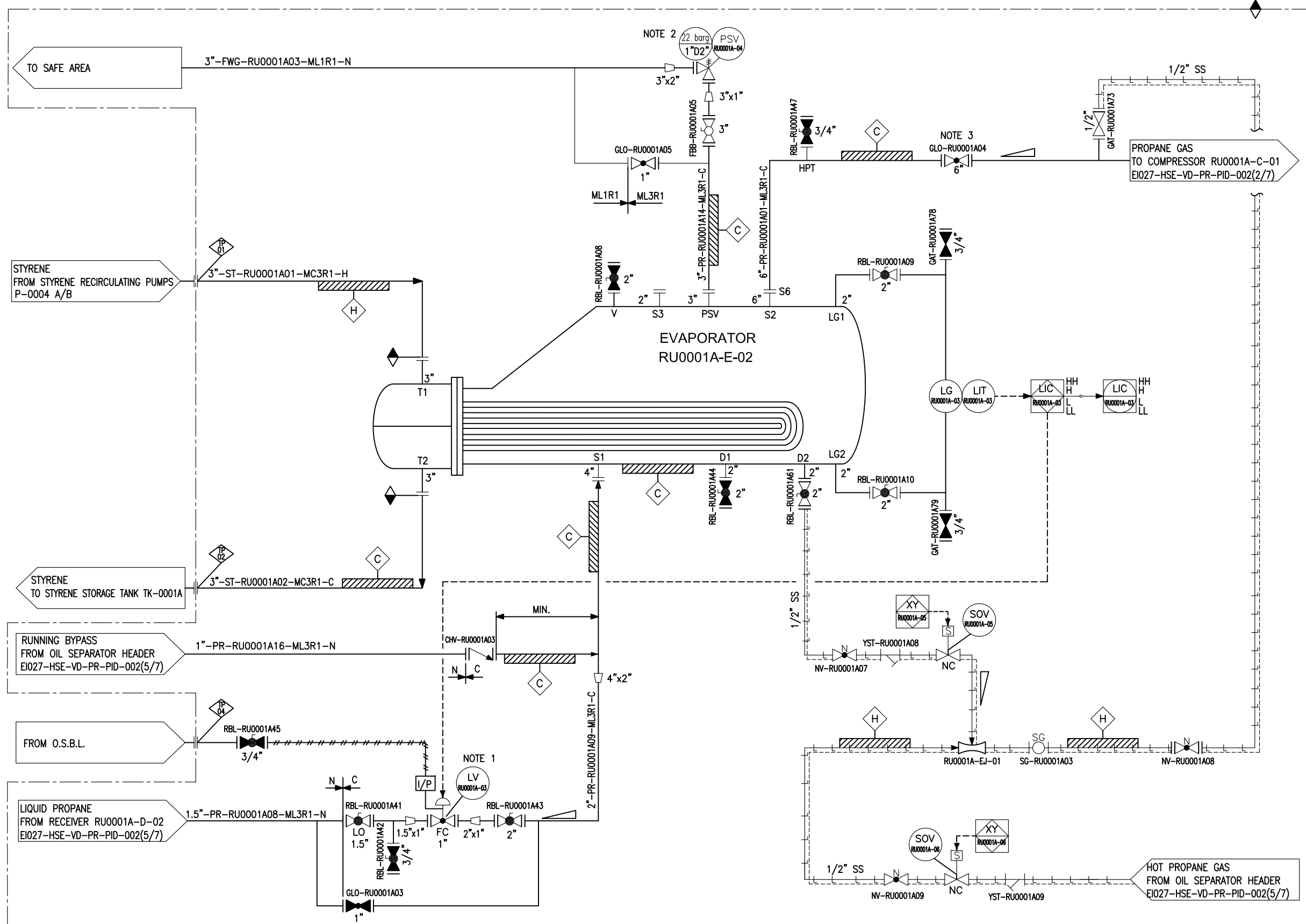
DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	5 of 7

TAG NO.	RU0001A-E-02
SERVICE	EVAPORATOR
DESIGN PRESS. (barg)	S: 22.0+FV, T: 6.8+FV
DESIGN TEMP. (°C)	S: -45/120, T: 85
DESIGN DUTY (kW)	166.6
SHELL ID x TUBE L (mm)	600-925 x 2300
TEMA TYPE	BKU

REFERENCE DRAWING DWG NO. REV.

NOTES :

- 1- TRAVEL DOWN BLOCK TO BE SET AND LOCKED AT MINIMUM OPENING DURING COMMISSIONING (2 ~ 5%).
- 2- SIZE OF PSV WILL BE FINALIZED ON NEXT STAGE.
- 3- AT STAND STILL CONDITION, VALVE NEEDS TO BE CLOSED COMPLETELY DURING START-UP VALVE TO BE OPENED SMOOTHLY.
- 4- SET TEMPERATURE FOR ELECTRICAL INSULATIONS IS 30°C.



HOLDE:

EQUIPMENT LIST:

KEY PLAN :

REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00		ISSUED FOR APPROVAL (IFA)	A.K.	F.SH.	A.M.

CLIENT



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صنعتی گوهر افق

CONSULTING ENGINEER

PROJECT: **STYRENE PARK OFFSITE**

DRAWING TITLE: **PROCESS & INSTRUMENTATION DIAGRAM (P&ID)-RU**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
EI027-HSE-VD-PR-PID-002	00	A3	NTC	6 of 7

