

PIPING SYMBOLS	
	RIGHT FLAG
	LEFT FLAG
	EXIST. FLAG
	REDUCER
	FLOW ARROW
	METALFLEX
	NOZZLE WITH FLANGE
	FLANGES
	FLEXIBLE HOSE
	DRAIN
	RESTRICTION ORIFICE
	SPADE (CLOSED)
	SPADE (OPEN)
	FLOW METER
	LINE SPECIFICATION SPEC CHANGE
	CAP
	CAP
	VCR CONNECTION
	SWAGELOCK CONNECTION
	WELD CONNECTION
	FLARETEK CONNECTION
	PETE'S PLUG
	HIGH PURITY FILTER
	DRAIN SYPHON
	UNION
	SPIRAL
	DAMPER
	TEE
	DOUBLE CONTAINMENT
	AGITATOR
	FLOW CONTROL
	MAGNEHELIC DIFFERENTIAL PRESSURE GAGE
	PRESSURE INDICATOR
	VAC. GATE VALVE
	CONNECTION TO VAC. PUMP
	VACUUM CONNECT.
	IN LINE GAS FILTER
	NOTE NUMBER
	VACUUM WAND
	TOXIC GAS MONITOR

PIPING SYMBOLS	
	QUICK CONNECTOR
	MEASURE PORT
	PIPE CAP
	PIPE EXISTING
	TUBE COUPLING
	UNION
	UNION, FLANGED
	FLOW IN DIRECTION SHOWN
	TYP. STATION PCWS/Rj PVj UPWS/Rj CDA or GAS STICK
	LINE
	INSULATED LINE
	DOUBLE CONTAINMENT LINE
	GN2 (NITROGEN) 1/4" gun

EQUIPMENT SYMBOLS	EQUIPMENT NAME
	VPU-XXXX-XX VACUUM PUMP FOR HIGH VACUUM LINE
	VHI1000 VACUUM PUMP
	VPU-XXXX-XX VACUUM PUMP
	MUN-XXXX-XX EQUIP. TOOL MAIN UNIT

PIPING SYMBOLS	
	CONNECTION TO EQUIP.
	CONNECTION TO EQUIP.
	VAC. PIPE CONNECT.
	EXH. VAC. PUMP CONNECT.


VALVES SYMBOLS	
	BALL VALVE
	GATE VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	THREE WAY VALVE
	GLOBE VALVE
	ROTATING VALVE
	DIAPHRAGM VALVE
	EXISTING BALL VALVE
	PNEUMATIC
	PRESSURE REGULATED

LINES	
	BY TOOL INSTALL CONTRACTOR
	COMMUNICATION LINE
	BY BASE BUILD
	BY VENDOR

PIPE LINE NUMBERING SYSTEM	
XXXX - XX - XX - XXX	LINE NUMBER
	PIPING SPEC
	LINE SIZE (INCH)
	SERVICE

NOTES:	
1	INSTALL FLOW METER VERTICALLY.
2	INSTALL BY PASS AS CLOSE AS POSSIBLE TO ISOLATING VALVES.
3	KEEP MINIMUM DEAD LEG.
4	PURGE VALVE FOR QUALITY INSPECTION. VCR END CONNECTION WITH VCR CAPS.
5	FLEX CONNECTION ONLY IF NECESSARY.
6	DAMPER FOR GENERAL, SOLVENT ACID EXHAUST SPEC S3
7	
8	TEST PORT - INSTALL AT LEAST 4 DIAMETERES FROM DAMPER OR ANY BEND.
9	FLEXIBLE HOSE NO LONGER THAN 0.5 m'.
10	STUB IN BY TOOL HOOK UP.
11	NOT NEEDED IF BASE BUILD VALVE IS LESS THAN 6m.
12	ONE REGULATOR IS REQUIRED IF ALL INLETS HAS THE SAME PRESSURE.
13	O3, CO STAINLESS STEEL GASKET ONLY.
14	INSTALL SAMPLING VALVE MIN. DISTANCE.
15	ONLY IF TOOL DON'T HAVE PV FAILURE ALARM.
16	KEEP LINE BETWEEN TVB TO TOOL AS SHORT AS POSSIBLE.
17	TVX SHALL BE INSTALLED VERTICALLY, NO LEAK SENSOR IS NEEDED, SEE MTIS.
18	
19	SOLVENT TVB SHALL BE MADE FROM St.St. ENCLOSURE
20	STICK TYPE SHALL BE DEFINED BY GAS APPLICATION AND TYPE.
21	TO USE FLARE CONNECTORS ONLY.
22	LOCATE AT HIGHEST POINTS.
23	USE REDUCING T ON ALL PCW SPLITS.

LEGEND:	
	FLOW DIAGRAM NOTES:
	VMB-GAS STICK
	VMB-GAS STICK
	PEDESTAL
	BELOW THE TOOL METAL PEDESTAL
	MINI LATERAL

0	AFC	14.2.2024	Y.B		A.G
REV.	DESCRIPTION	DATE	DRAWN	CHECK.	APPROV.
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DESIGNED BY	A.G.	17.04.2023			
CHK BY					
ISSUE DATE					
APPROVED BY					
APPR. REV. BY					
DIMENSIONS ARE IN : MILLIMETERS					
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