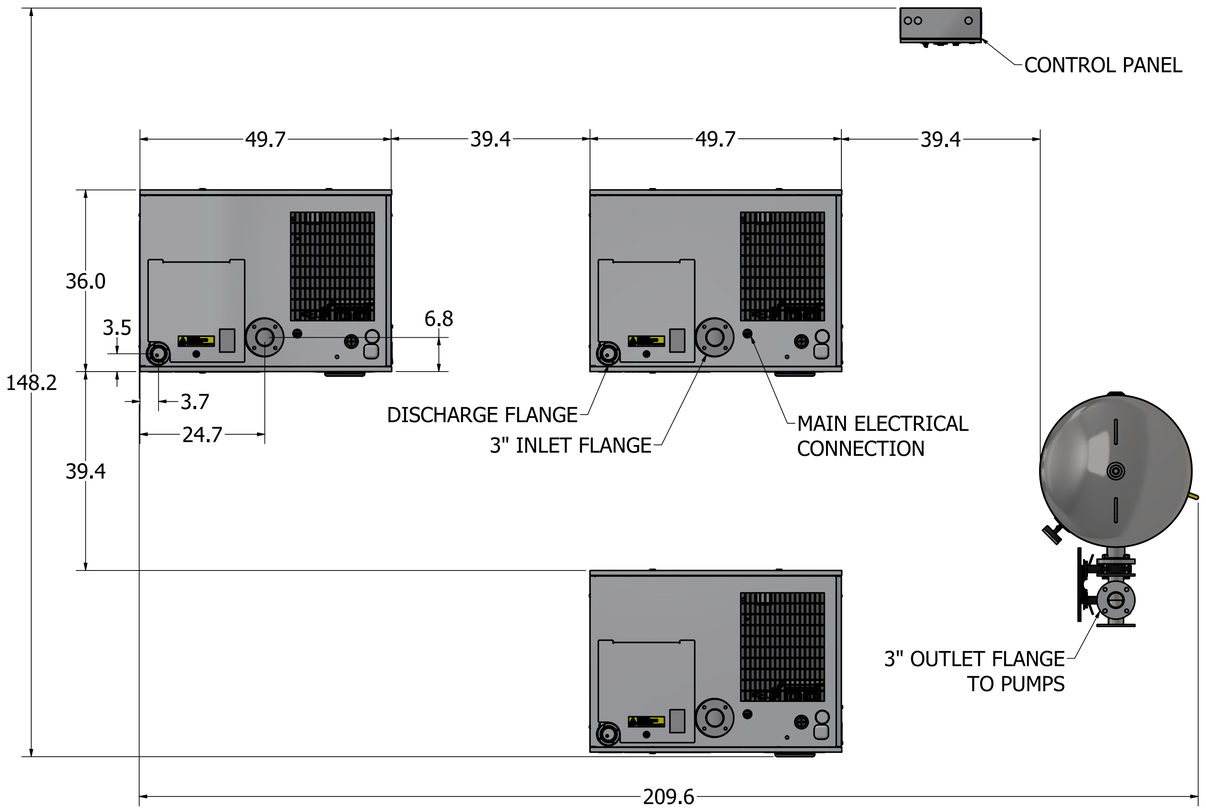
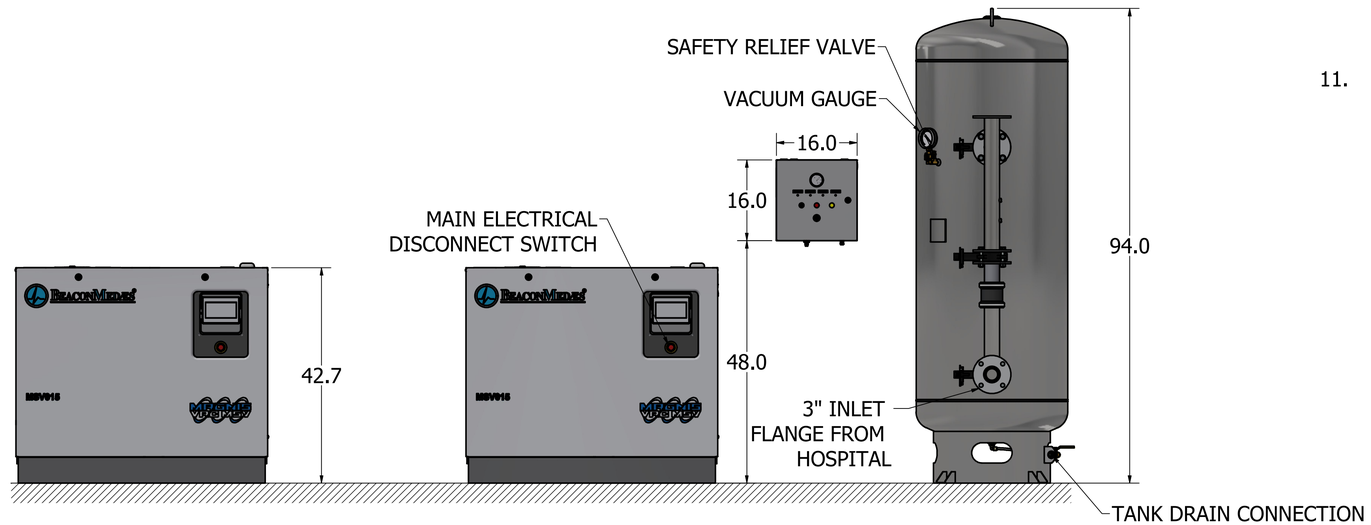




NOTES:

GENERAL

1. ALL ACCESSORIES, INTERCONNECTING PIPE AND FITTINGS BEYOND INLET AND DISCHARGE PORTS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

2. EQUIPMENT LAYOUT IS DIAGRAMMATIC ONLY. FINAL ARRANGEMENT WILL BE SITE SPECIFIC. CONTRACTOR WILL BE RESPONSIBLE FOR FIELD VERIFICATION AND COORDINATING ACTUAL LOCATION WITH ALL OTHER TRADES.

3. EQUIPMENT, INSTALLATION, AND TESTING OF THE MEDICAL VACUUM SYSTEM SHALL COMPLY WITH NFPA 99, MSV PUMP MANUALS AND ALL STATE AND LOCAL CODES OR ORDINANCES.

4. ALWAYS CONSIDER SURROUNDING OCCUPANCIES FOR ALL ROTATING EQUIPMENT. ADDITIONAL ISOLATION/VIBRATION TRANSLATION REQUIREMENTS DUE TO SYSTEM LOCATION SHOULD BE DETERMINED AND PROVIDED BY OTHERS.

5. ALLOW AT LEAST 1 METER (39.4 INCHES) AROUND EACH PUMP AND IN FRONT OF CONTROL PANEL FOR MAINTENANCE AND VENTILATION.

6. RECOMMENDED MINIMUM CLEARANCE BETWEEN TOP OF EQUIPMENT AND OVERHEAD PIPING/CEILING IS 1 METER (39.4 INCHES) FOR PROPER VENTILATION.

7. ALL EQUIPMENT SHOULD BE INSTALLED ON A LEVEL FLOOR THAT IS CLEAN, VIBRATION FREE, WELL VENTILATED, HAS SUFFICIENT LIGHTING AND SUPPORTS THE WEIGHT OF THE PUMP. THE COMPLETE LENGTH OF THE FRAME BASE MUST BE SUPPORTED. NO SPECIAL FOUNDATION OR INERTIA PAD IS REQUIRED (HOUSEKEEPING PAD IS OPTIONAL). NO VIBRATION PADS ARE NECESSARY.

VENTILATION

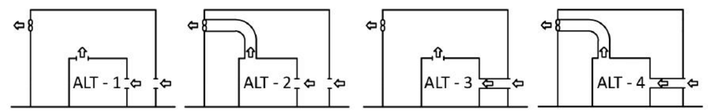
8. REFERENCE MSV PUMP MANUAL FOR PROPER LOCATION OF MODULES TO ENSURE ADEQUATE AIR FLOW ACROSS THE UNITS.

9. THE ROOM REQUIRES DEDICATED MECHANICAL VENTILATION WITH AN ALLOWABLE TEMPERATURE VARIANCE OF 32° TO 115°. (FOR HIGHER AMBIENTS, CONSULT FACTORY).

10. THE INLET GRID(S) AND VENTILATION FAN SHOULD BE INSTALLED IN SUCH A WAY THAT ANY RECIRCULATION OF COOLING AIR TO THE PUMPS IS AVOIDED. THE AIR VELOCITY TO THE GRID(S) HAS TO BE LIMITED TO 5 m/s.

11. IF COOLING AIR DUCTS ARE USED, MAXIMUM PERMITTED PRESSURE DROP BEFORE OR AFTER THE PUMP IS 10 Pa.

VENTILATION PROPOSALS



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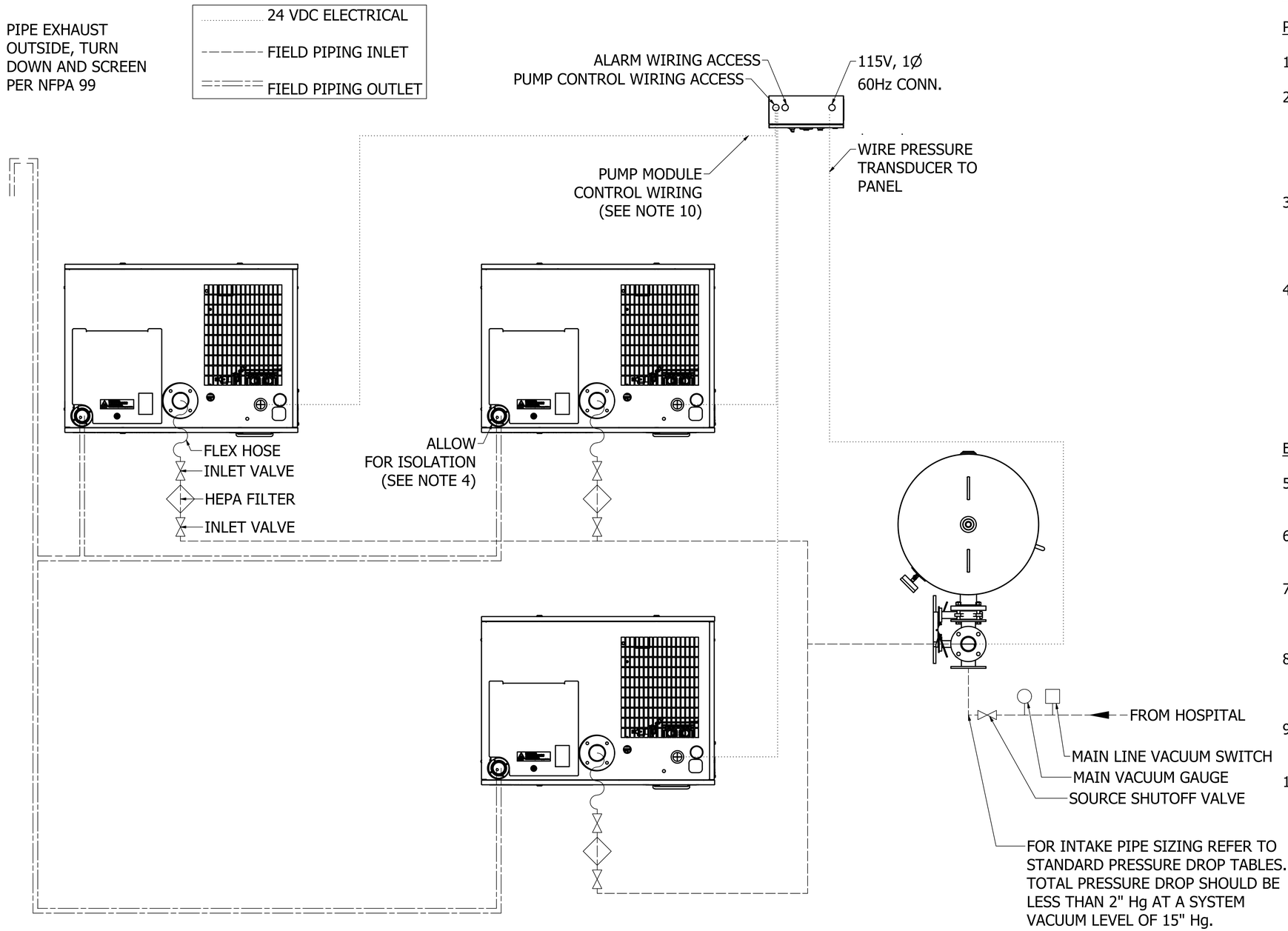
Description: MSV020T-240-HCV 20HP TX VAC INSTALLATION DIAGRAM		Part Number: 4107 8580 50	
		DN: HOP250142	Rev: 00
		Sheet 1 of 2	DO NOT SCALE THIS DOCUMENT



NOTES:

PIPING

1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 99.
2. THE RECEIVER DRAIN VALVE IS SUPPLIED WITH THE RECEIVER TANK. EACH PUMP HAS A DRIP LEG PORT WHICH MUST BE CONNECTED TO THE DRAIN LINE. THE VALVE FOR EACH DRIP LEG PORT AND ALL DRAIN LINES SHALL BE SUPPLIED AND INSTALLED BY OTHERS AND RUN TO THE APPROPRIATE WASTE DRAIN.
3. WHEN DETERMINING THE TOTAL PIPE LENGTH, ADD ALL THE STRAIGHT LENGTHS OF PIPE TOGETHER IN ADDITION TO THE NUMBER OF ELBOWS TIMES THE EFFECTIVE PIPE LENGTH FOR THE PIPE SIZE.
4. THE CONTRACTOR SHALL PROVIDE A MEANS TO ISOLATE EACH PUMP FROM THE CENTRALIZED EXHAUST PIPING FOR MAINTENANCE OR REPAIR, PER NFPA 99. THIS SHOULD BE ACHIEVED BY PROVIDING A MEANS TO REMOVE THE EXHAUST PIPING FORM THE PUMP, SO THAT A TECHNICIAN CAN INSTALL A BLIND FLANGE OR CAP TO THE EXHAUST PIPING. TO PREVENT PUMP DAMAGE THROUGH OPERATOR ERROR, SHUTOFF VALVES AND CHECK VALVES SHOULD NOT BE USED.

ELECTRICAL

5. ALL ELECTRICAL COMPONENTS AND WIRING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 99.
6. REFER TO MSV WIRING DIAGRAM SHIPPED WITH CONTROL MODULE UNIT FOR CONNECTIONS IN THE PANEL.
7. CONTRACTOR SHALL VERIFY MOTOR VOLTAGE, PHASE, AND AMP RATINGS BEFORE STARTING ELECTRICAL INSTALLATION; AND MAKE CERTAIN THE VOLTAGE SUPPLIED BY THE HOSPITAL IS THE SAME.
8. ELECTRICAL POWER SHOULD BE SUPPLIED FROM THE EQUIPMENT SYSTEM BRANCH OF THE ESSENTIAL ELECTRICAL SYSTEM (EMERGENCY POWER).
9. WIRE LAG PUMP RUNNING ALARM REMOTE CONTACTS IN THIS CONTROL SYSTEM AS REQUIRED BY NFPA 99.
10. PUMP MODULE CONTROL WIRING IS LOW VOLTAGE WIRING (24VDC). LOW VOLTAGE WIRING MUST BE ROUTED SEPARATELY FROM HIGH VOLTAGE WIRING (115-480VAC). SEPARATION OF LOW VOLTAGE AND HIGH VOLTAGE WIRING MUST ALSO BE MAINTAINED INSIDE THE PUMP CONTROL PANELS AND CENTRAL CONTROLLER. 24VDC LOW VOLTAGE FIELD WIRING TO BE A MINIMUM OF 22 GAUGE, 75 DEG C COPPER WIRE.

EFFECTIVE PIPE LENGTH FOR ELBOWS			
PIPE SIZE (IN)	4.00" NPT	5.00" NPT	6.00" NPT
EFF. PIPE LENGTH (FT)	12.6	15.0	17.3

EXHAUST PIPE SIZE TABLE (SEE NOTE 3)					
UNIT SIZE	PIPE LENGTH				
	0 - 100'	101' - 200'	201'-300'	301'-400'	401' - 500'
TPX 020	4.00"	5.00"	5.00"	6.00"	6.00"

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