

# HSi-CO<sub>2</sub> SERIES

## HORIZONTAL STORAGE INTEGRATED BULK SYSTEM



(Shown with optional skid)

### Ideal Applications

- Wastewater pH Balancing
- Beverage Carbonation Production
- Modified Atmospheric Packaging (MAP)
- Breweries and Brew Houses
- Greenhouse Growing

The HSi-CO<sub>2</sub> Series is engineered for the efficient supply of carbon dioxide gas in any outdoor installation. The key design features are the electrically powered pressure builder and process gas vaporizers, all housed in a protective cabinet for full security. The HSi-CO<sub>2</sub> Series has other standard features along with pre-engineered options to satisfy all your requirements for a complete turnkey installation. For maximum lifetime thermal efficiency, the HSi-CO<sub>2</sub> Series uses an all-welded outer jacket to contain our proprietary Composite Super Insulation™ system and superior vacuum technology, providing:

- An ultra-low heat leak – eliminating the need for a costly refrigeration system in most applications
- No costly downtime to refurbish water-soaked or deteriorated foam insulation

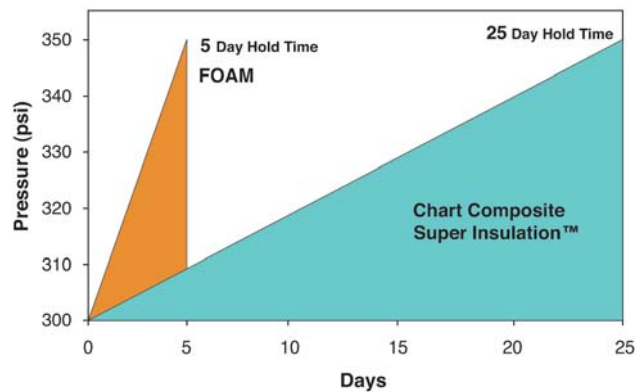
### PRODUCT HIGHLIGHTS

- All-in-one skidded design with protective plumbing cabinet
- Standard electric PB & process gas vaporizers with controls
- Stainless steel inner vessel & piping eliminates dry ice concerns
- Inner vessel designed & built to ASME Section VIII, Div. 1 code
- Backed by a five-year vacuum warranty
- Low horizontal profile eliminates seismic & height concerns
- Control panel with PLC to operate vaporizers, alarms, solenoids & optional refrigeration system
- Adjustable low temperature cutoff switch
- Single field connection for gas use line
- Pressure & liquid level transmitters
- Optional refrigeration system w/ internal vapor condensing coil
- SCADA available via MODBUS TCP/IP

### Vacuum Jacketed vs. Foam CO<sub>2</sub> tanks

- Lowest lifecycle costs for bulk CO<sub>2</sub> storage
- Superior functional performance manages liquid quality
- Hold time is 5 times longer than new foam
- Refrigeration system not required for maintaining heat leak

### Thermal Performance Vacuum Jacketed vs. Foam CO<sub>2</sub> Tanks



Innovation. Experience. Performance.™

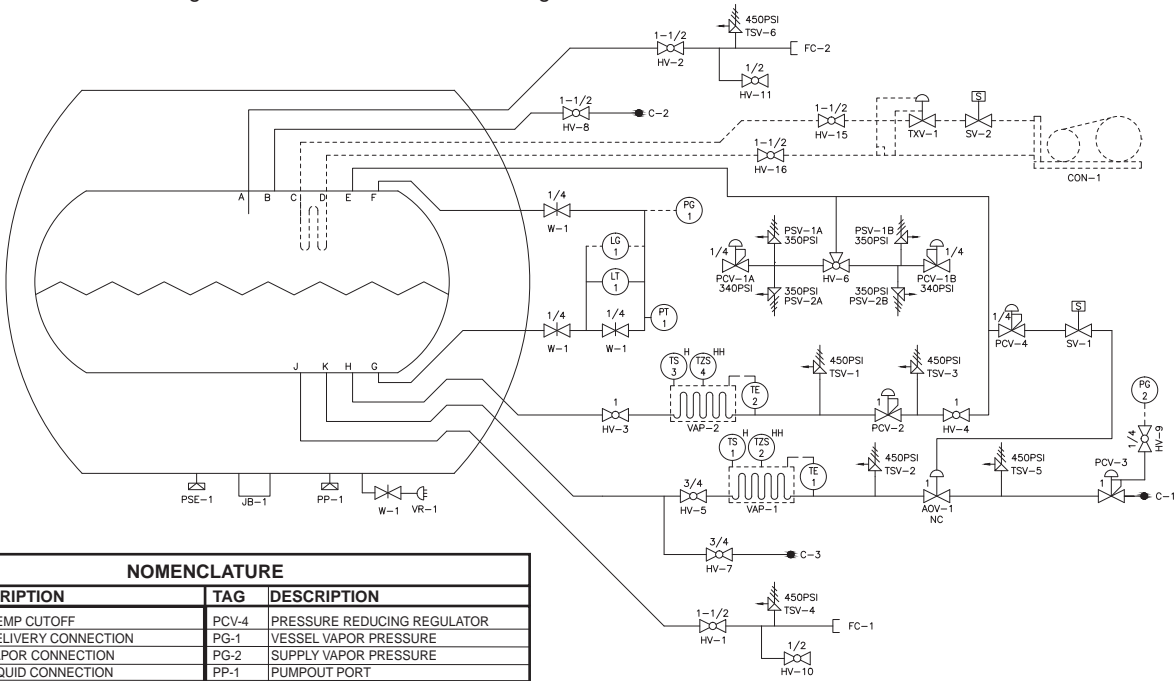
# HSi-CO<sub>2</sub> SERIES

## HORIZONTAL STORAGE INTEGRATED BULK SYSTEM

HORIZONTAL															
Model	Gross Capacity		Net Capacity		MAWP*		Width		Height		Length		Weight**		NER
	Ton	(Tonne)	Ton	(Tonne)	PSIG	(bar)	in	(mm)	in	(mm)	in	(mm)	lbs	kg	%/day in CO <sub>2</sub>
14 Ton	14.3	(13.0)	13.8	(12.5)	350	(24.1)	89	(2,261)	93	(2,362)	272	(6,909)	19,300	(8,754)	.30
30 Ton	30.8	(27.9)	29.3	(26.6)	350	(24.1)	89	(2,261)	93	(2,362)	464	(11,786)	31,400	(14,243)	.21
50 Ton	51.1	(46.4)	48.6	(44.1)	350	(24.1)	89	(2,261)	93	(2,362)	704	(17,882)	46,400	(21,047)	.14
60 Ton	63.4	(57.5)	60.2	(54.6)	350	(24.1)	89	(2,261)	93	(2,362)	848	(21,539)	55,500	(25,174)	.12

\* Maximum Allowable Working Pressure

\*\* Tare weight



### NOMENCLATURE

TAG	DESCRIPTION	TAG	DESCRIPTION
AOV-1	LOW TEMP CUTOFF	PCV-4	PRESSURE REDUCING REGULATOR
C-1	GAS DELIVERY CONNECTION	PG-1	VESSEL VAPOR PRESSURE
C-2	AUX VAPOR CONNECTION	PG-2	SUPPLY VAPOR PRESSURE
C-3	AUX LIQUID CONNECTION	PP-1	PUMPOUT PORT
FC-1	BOTTOM FILL CONNECTION	PSE-1	PRESSURE SAFETY ELEMENT, OUTER
FC-2	VAPOR BALANCE / FULL TRYCOCK	PSV-1A	SAFETY RELIEF 1A
HV-1	BOTTOM FILL	PSV-1B	SAFETY RELIEF 2B
HV-2	VAPOR BALANCE / FULL TRYCOCK	PSV-2A	SAFETY RELIEF 1A
HV-3	PB FEED ISOLATION	PSV-2B	SAFETY RELIEF 2B
HV-4	PB RETURN ISOLATION	PT-1	VESSEL PRESS TRANSMITTER
HV-5	LIQ WITHDRAWAL ISOLATION	SV-1	LOW TEMP PILOT VALVE
HV-6	RELIEF SELECTOR	TS-1	VAP-1 HI TEMP SWITCH
HV-7	AUXILIARY LIQUID	TS-3	VAP-2 HI TEMP SWITCH
HV-8	AUXILIARY VAPOR	TSV-1	THERMAL SAFETY RELIEF
HV-9	GAUGE ISOLATION	TSV-2	THERMAL SAFETY RELIEF
HV-10	BOTTOM FILL HOSE DRAIN	TSV-3	THERMAL SAFETY RELIEF
HV-11	TOP FILL HOSE DRAIN	TSV-4	THERMAL SAFETY RELIEF
HV-12	VAPOR PHASE ISOLATION	TSV-5	THERMAL SAFETY RELIEF
HV-13	LIQUID PHASE ISOLATION	TSV-6	THERMAL SAFETY RELIEF
HV-14	GAUGE EQUALIZATION	TZS-2	VAP-1 HI TEMP SAFETY
JB-1	ELECTRICAL PANEL	TZS-4	VAP-2 HI TEMP SAFETY
LG-1	VESSEL LIQUID LEVEL	TE-1	VAP OUTLET TEMP TC
LT-1	VESSEL LEVEL TRANSMITTER	TE-2	PB OUTLET TEMP TC
PCV-1A	VESSEL REGULATOR A	VR-1	VACUUM GAUGE CONNECTION
PCV-1B	VESSEL REGULATOR B	VV-1	VACUUM GAUGE VALVE
PCV-2	PB REGULATOR	VAP-1	GAS DELIVERY VAPORIZER
PCV-3	FINAL LINE REGULATOR 2	VAP-2	PRESSURE BUILD VAPORIZER

### CONDENSING UNIT COMPONENTS (OPTIONAL)

TAG	DESCRIPTION
CON-1	CONDENSING UNIT
SV-2	CONDENSING SYSTEM VALVE
TXV-1	THERMAL EXPANSION VALVE
HV-15	LIQUID LINE VALVE
HV-16	SUCTION LINE VALVE

### VAPORIZER OPTIONS

PB Capacity lbs CO <sub>2</sub> /hr	Thermax Model PB	Process Gas Vap Capacity lbs CO <sub>2</sub> /hr	Thermax Model Gas
25	H1B1	310	H3
50	H1B2	500	H6A
75	H1B3	1000	H9A
125	H1B5	1250	H9LL

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