

Pipeline Service Compressor – 175hp



PLC CONTROL SCHEME

PIPELINE EVACUATION

- Draw target volume down to selected pressure
 Discharge pressure up to 1100 psi
- Operator selects desired final pressure and initiates PLC control
 - Operation begins with inlet connected to reciprocating compressor and Screw compressor offline
 - The reciprocating compressor draws pipeline pressure down to 250 psi
 - At 250 psi automated ball valves reconfigures the flow path for series operation. Inlet flowing to screw compressor, screw compressor discharge flowing to reciprocating compressor.
 - A pressure reducing valve limits screw compressor inlet to 70 psi
 - PLC controls compressor speed to maintain maximum flow throughout operation
 - Compression stops upon reaching operator selected final pressure

SCREW COMPRESSOR

Type	Oil flooded rotary screw gas compressor
Model	Gardner Denver Enduro 25
Suction Pressure	70 psi maximum
Discharge Pressure	250 psi maximum
Vi	4.5
Drive	Hydraulic Variable Speed Closed Loop
Oil Filter	Donaldson Duramax c/w diff. P indicator

RECIPROCATING COMPRESSOR

Type	2 Throw single stage reciprocating
Model	Arrow VRC2
Suction Pressure	1500 psi maximum
Discharge Pressure	1500 psi maximum
Drive	Hydraulic Variable Speed Closed Loop
Oil Filter	Spin on

DRIVER

Type	Natural gas fueled
Model	KEM 10.3
Horsepower	175 hp @ 2400 rpm available to compressor
Cylinders	8
Displacement	628 cubic inch
Compression Ratio	10.5:1
Aspiration	Natural
Ignition	Coil near plug
Radiator	Bolted construction
Silencer	Critical Grade
Governor	Electronic
Certification	EPA / CARB

CONTROLS AND INSTRUMENTATION

System Control		PLC Siemens S7-1200
Engine Readout		Multifunction LCD display
Indicators	General	Hour meter Compressor discharge temperature Separator level Pressures: Inlet, screw suction, inter-stage, discharge, and oil coalescing element differential pressures
	Engine	Engine rpm Engine oil, fuel and vacuum pressures Engine oil and glycol levels Engine glycol temperature
Web Enabled Remote Monitoring		Cellular Network IOT system

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SCREW COMPRESSOR COOLING SYSTEM

Type	Aftercooler/oil cooler combination
Model	Global Heat Transfer AOX-100
Rating	250 psi @ 325°F
CRN	AB, BC, SK
Thermostat	Set @ 180°F

RECIPROCATING COMPRESSOR COOLING SYSTEM

Type	Finned Tube
Model	CCI Custom Assembly
Rating	1500 psi @ 350°F

INLET/OUTLET

Inlet Flange	3" 600# RFF
Outlet Flange	3" 600# RFF
Inlet Valve	3" FP ball valve
Discharge Check	2" Piston check

OIL SEPARATOR

Rated Pressure	285 psi @ 250°F
Size	14" diameter
Design Code	ASME Sect VIII, Div I
PSV	285 psi
Corrosion Allowance	1/8"
Sight Glass	Glass 10" viewing length
CRN	AB, BC, SK

PIPING

Process Piping	SA-106B threaded piping
Other Piping	SA-106B threaded spools
Vent Header	Header for PSV's, and auto blow down
All process valves unioned or flanged for easy replacement	

WARNINGS AND SHUTDOWNS

	Warning	Shutdown
Compressor Oil Filter Δ Pressure	✓	
Oil Coalescing Element Δ Pressure	✓	
Suction Pressure Low		✓
Suction Pressure High		✓
Discharge Pressure Low		✓
Discharge Pressure High		✓
Compressor Discharge Temp. High		✓
Engine Oil Pressure Low		✓
Engine Coolant Temperature High		✓
ESD		✓

ENCLOSURE

Dimensions	Length 20', width 8', height 8' (Approximate)
Service Doors	1 - engine, 1 - compressor
Louvers	4 gravity louvers, lockable for transport
Coating	Galvanized steel
Sound Proofing	Critical grade muffler Low speed cooling fans

COMPLIANCE

Process Piping	B31.3
Electrical	CSA C22.1 (Canadian Electrical Code)

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FLEXIBLE • RELIABLE • ECONOMICAL • PORTABLE • OPERATOR FRIENDLY

