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## **PS175 Pipeline Service Compressor Specifications**

### **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 will draw pipeline pressure down to 250 psi
- At 250 psi automated ball valves will reconfigure the flow path for series operation. Inlet flowing to screw compressor, screw compressor discharge flowing to reciprocating compressor.
- A pressure reducing valve will limit screw compressor inlet to 70 psi
- PLC will control compressor speed to maintain maximum flow throughout operation
- Compression will stop upon reaching operator selected final pressure

**Pig Pushing – Supply large volume of gas at low differential pressure**

**Discharge pressure up to 1500 psi**

- Operator selects operating pressure limits (upper and lower) and speed (if desired)
- The Compressor will operate with inlet connected directly to the reciprocating compressor
- Screw compressor will be left offline and isolated from pressure
- PLC will control compressor speed to stay within operational limits

### **Screw Compressor**

Type	Oil flooded rotary screw gas compressor
Model	Gardner Denver Enduro 25
Suction P	70 psi maximum
Discharge P	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 P	1500 psi maximum
Discharge P	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

## Controls and Instrumentation

### PLC

- Siemens S7-1200

### Shutdowns

- Low suction pressure
- High suction pressure
- Low discharge pressure
- High discharge pressure
- High compressor discharge temperature
- Low engine oil pressure
- High engine coolant temperature
- ESD

### Warnings

- Compressor oil filter differential pressure
- Oil coalescing element differential pressure

### Indicators

- PLC – Web HMI
- Engine rpm
- Hour meter
- Engine oil pressure
- Engine fuel pressure
- Inlet pressure
- Screw Suction pressure
- Inter-stage Pressure
- Discharge pressure
- Compressor discharge temperature
- Oil coalescing element differential pressure
- Separator level
- Engine oil level
- Engine glycol level
- Engine vacuum pressure
- Engine glycol temperature

## 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

### 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)