



**Precision Air Drilling Services**

**Equipment Information & Specifications**





# Joy Booster Specifications



## Joy WB-12 Specifications



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## Engine Specifications:

Item Description:	Item Specification:
Manufacturer:	Caterpillar
Model:	C-16
Description:	4 cycle, 6 cylinder, 15.8 liter displacement, turbocharged, air-to-air after-cooled, and electronically injected diesel.
RPM:	2100 RPM for this application HP: 630 HP
Bell Housing:	SAE #0
Starter:	Electric 24V, also turbine style air start
Alternator:	24V
Battery System:	24V, two Caterpillar 12V 8D, maintenance free
Radiator:	By Caterpillar
Turbo-after-cooler:	By Caterpillar, air-to-air after-cooled
Fan:	By Caterpillar, blower type
Air Cleaner:	By Caterpillar, radial flow, with inner and outer elements
Accessories:	Air shut-off by Cat

## Compressor Specifications:

Item Description:	Item Specification:
Manufacturer:	Joy (now part of Gardner-Denver)
Condition:	NEW
Model:	WB-12, 7" stroke, 1.625" compressor rods,
RPM:	700 RPM
Rod Load:	GD limit of 15,000 lbs, CLS limit of 22500 lbs backed by CLS,



## First Stage Cylinder Specifications:

Item Description:	Item Specification:
Model:	7 1/2" Bore
Suction Valve:	370
Discharge Valve:	371
Rod:	1.625" NEW
Capacity Control:	Head and crank end removable plugs
Inlet & Outlet:	4" 600#
Max. Operating Pressure:	1200 psig
Max Relief Valve setting:	800 psig

## Second Stage Cylinder Specifications:

Item Description:	Item Specification:
Model:	5" Bore
Suction Valve:	370
Discharge Valve:	371
Rod:	1.625" new with tail Rod
Inlet & Outlet:	3" 900# RF
Max. Operating Pressure:	1850 psig
Max Relief Valve setting:	1850 psig

## Gear Reduction Unit Specifications:

Item Description:	Item Specification:
Manufacturer:	Cotta or RJ Link equivalent
Model:	GR1600A-48, hardened & ground gears
Reduction	3:1
Clutch:	3 plate, 18" TWIN DISC, standard clutch material
Outlet:	Shaft to Coupling



## Compressor Coupling Specifications:

Item Description:	Item Specification:
Manufacturer:	Dodge
Model:	PX240

## Flywheel Specifications:

Item Description:	Item Specification:
Flywheel:	Included

## Skid Specifications:

Item Description:	Item Specification:
Dimensions:	Narrow 7' 2"x 22' Skid standard, 8'6" x 22' available for additional cost, overall width of unit 8'6" approx due to cylinders and guards.
Runners:	(4) W12x39lb/ft
Crossmembers:	W8x28
Deck:	Seal Welded, with checkered plate
Containment:	Yes, with 1" drip rail and drains
Ends:	5" Drawbar with ears, sloped front
Lifting Rack:	Yes, designed for four-point lift, load testing included.



## Piping Specifications:

Item Description:	Item Specification:
Size:	Primarily 3" and 2", schedule as required to meet pressures, welded, MTR's on pipe and 100% X-Ray and Hydro-tested on all 2" and 3" INCLUDED. Code certified welders used for piping.
Connections:	3" hammer unions
Discharge Relief Setting:	1850 psig, certification papers available
Valves:	All new with proper tags and certification papers available
Configuration:	Piping designed to allow unit to be used in 1 or 2 stage configuration by opening or closing ball valves. Unit bypass valves included at no extra charge. These valves allow the booster to be bypassed without disconnection the unit.

## Vessel Specifications:

Item Description:	Item Specification:
Suction Scrubbers:	One per stage, with mesh pad, mounted directly to cylinder
Discharge Pulsation Bottles:	One per stage, mounted directly to cylinder
Certification:	ASME code, National Board registered, code papers provided at no charge, testing per code requirements, sizes and pressures appropriate for performance shown. Vessels are properly tagged.

## Cooler Specifications:

Item Description:	Item Specification:
Manufacturer:	FIN-X
Model:	VS48-6, with intercooler (IC) and after-cooler (AC) sections
IC MAWP:	1000 PSI (limit of 900 series flange at 350F)



AC MAWP:	2000 PSI
Performance:	See attached performance with 100F ambient at sea level, max discharge pressures.
Fan:	ECS 48" Blower fan, mounted between pillow block bearings by CLS
Fan Drive:	Belt Driven off of coupling is standard
Louvers:	Manual Louvers provided to control compressor cooler outlet temperatures.

## Control Specifications:

Item Description:	Item Specification:
Panel:	Full panel with pressure and temperature gauges, shutdown system, ignition key, engine oil pressure, jacket water temp, hour meter, tachometer, voltmeter, blowdown controls.
Throttle:	Electronic toggle switch (by Cat) to increase or decrease rpm.
Shutdowns:	As provided by Caterpillar, plus scrubber high liquid level, suction pressure, discharge temp and pressure each stage, low lubricator box oil level, local and remote emergency stop, available at no extra charge
Gauges:	Locally mounted pressure and temperature gauges
Blowdown Valve:	Automatic (manual valve also included) blowdown valve that is open at start up, and in emergency shutdown. OPTIONAL

## Lubrication System:

Item Description:	Item Specification:
Frame:	New Tuthill
Cylinders:	3 Premier lubricator pumps manifolded together feeding a divider block assembly that sends oil to each of the required cylinder and packing lubrication point. Failure of one lubricator pump does not result in damage at any point.
Cylinder Oil Capacity:	4 gallon CLS heavy duty tank included.
Cotta:	By Cotta, with tube and shell cooler by Young



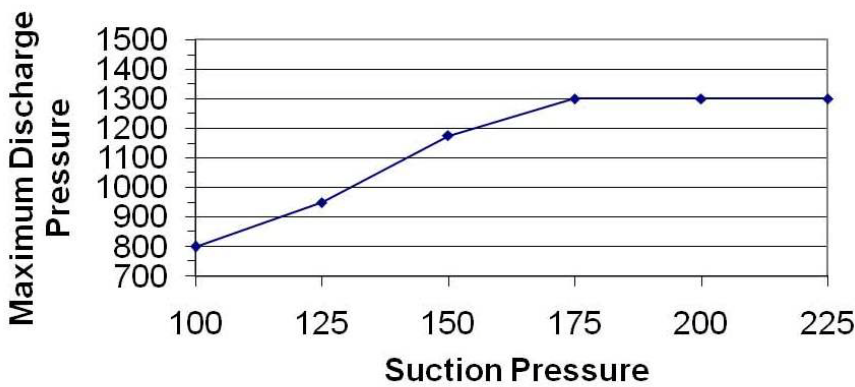


## Fuel Tank:

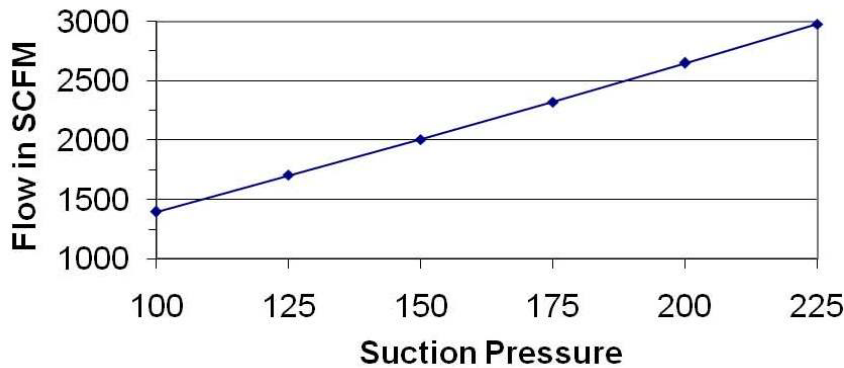
Item Description:	Item Specification:
Capacity:	Roughly 24 gallons
Feed Requirements:	One gravity fed line, fuel cooler for engine is installed in compressor air plenum, with cold weather bypass.

## Sample Performance:

**Maximum Discharge Pressure vs Suction Pressure  
2-Stage**



**Flow in SCFM vs Suction Pressure  
With Maximum Discharge Pressure 2-Stage**





## Dimensions & Weight:

<b>Item Description:</b>	<b>Item Specification:</b>
Size:	22' long approx, 7' 2" wide skid, 8'-3" overall (cylinders)
Weight:	Approximately 35,500 lbs