

SOLIDSVAC

SOLIDS PUMPING SYSTEMS



Solidsvac Pumps SV20-SP Operations Manual

Version 1 - Doc.SV20SP-13122018



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WARNING

Compressed air can be dangerous. Correctly rated hoses and piping should be used in conjunction with the appropriate fittings and safety devices on all connections.

The unit is not designed to operate above 785kPa (114psi).

SAFETY FIRST

CAUTIONS AND GENERAL SAFETY

This manual contains important information concerning the installation, operation and maintenance of the Solidsvac Pump, Model SV20-SP. To prevent injury to personnel or equipment damage, this manual should be read and understood by those responsible for the installation, operation and maintenance of the equipment.

- Isolate, tag out and disconnect the air supply to the unit prior to working on any part of the system
- Lift the equipment only at the lifting points provided
- The pump should be installed in a safe level area, which provides adequate access for operating the equipment
- Ensure all hoses are in good condition, correctly rated and certified for the service in which they are to be used
- Inspect the unit regularly for damaged or worn components
- All covers must be fitted prior to operation
- Air Pressure should NEVER exceed the rated pressure
- Tie down points (if fitted) must NOT be used as lifting points

CAUTION: Be aware of retained material in the tank increasing total weight

PRIOR TO OPERATING THE Solidsvac Pump

- a. Ensure optimum air supply is 100cfm @ 690 kPa (100 psi)
- b. It is recommended that a 25 mm (1") i.d. air hose is used for compressed air supply to the pump
- c. The pump-out discharge line should be a minimum of 50 mm (2") diameter

WARNING: The pump-out line MUST be secured at the exit point

1. Operational Overview

The **Solidsvac SV20-SP** operates as a shuttle system alternately discharging, then loading a wide range of flowable materials

Operation is fully automatic and the **Solidsvac SV20-SP** features no internal workings, high vacuum and pressure discharge where suction of up to 50 metres and discharges of up to 350 metres are achievable.

2. Design Registration

The **Solidsvac SV20-SP** has a Certificate of Plant Design Registration from Workcover NSW, Australia. A copy of which may be obtained by contacting **Solidsvac Pumps**.

DESIGN REGISTRATION # PV-6-198163/16

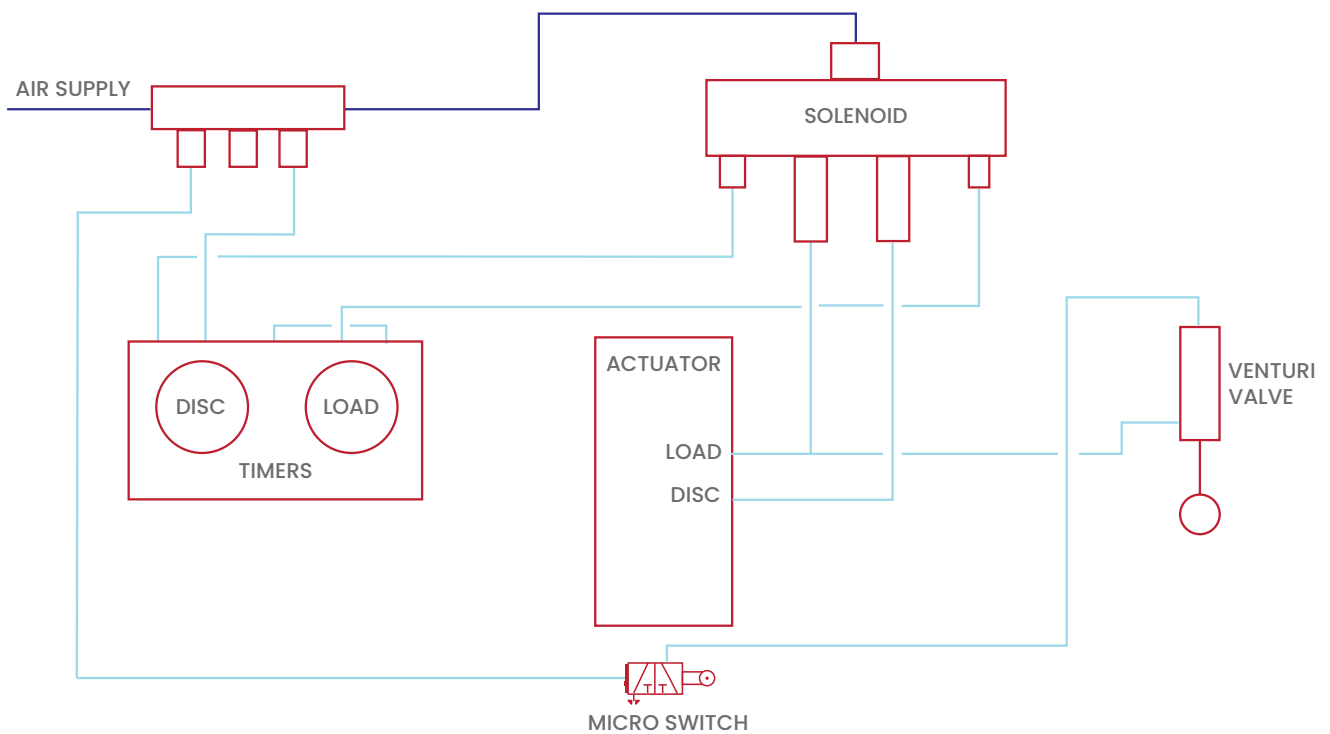
Technical Standards

- AS2971-2007 Serially Produced Pressure Vessels
- AS4343-2005 Pressure Equipment – Hazard Levels
- AS1210-1210 Pressure Vessels

TECHNICAL DATA	METRIC	US IMPERIAL
Height	920 mm	36"
Width	550 mm	22"
Length	1000 mm	40"
Weight	45 kg	1b
Air inlet	13 mm	1/2" BSP
Suction inlet	50 mm	2"
Discharge outlet	50 mm or 75 mm	2" or 3"
Suction lift	6.5 m @ 50 cfm	21'3" @ 50 cfm
	8.0 m @ 100 cfm	26'2" @ 100 cfm
Air consumption options	1.4 m ³ Jet Pack	50 cfm Jet Pack
	2.8 m ³ Jet Pack	100 cfm Jet Pack
Delivery	300+ m	1150+ ft
Displacement cycle	17 ltr	4.5 gal
Operating pressure	7 bar (max) @ 690 kPa	105 psi (max)
	4.5 bar (min) @ 448 kPa	65 psi (min)
Maximum solids	35 mm	1-1/2"
Measured water throughput	200 lpm	53 gpm

- Vessel and valves manufactured in 316 stainless steel
- Individually adjustable load and discharge cycles

4. SV20-SP Schematic



5. Accessories

Suction Wand – Attaches to the suction hose allowing the operator to stand upright

Large Capacity Strainer – attaches to the suction hose to prevent blockages

Delivery Carousel – Discharge to multiple skips

Hoses – A complete range of high quality suction and discharge hoses

Duck Bill Vacuum Head – Helps focus the vacuum and is ideal for recovering spilled oil, drill mud or similar from the rig floor or tank bottoms.

Dropbox – Delivery to skip or conveyor

Tool Kit – Contains all you need for basic maintenance on your pump

Service Kit – Contains all you need for basic maintenance on your pump



6. Pump Set-up

Before commencing operation, BULLSEYE PUMPS recommends that a site based Risk Assessment of the pumping operation is undertaken. Any recommendations arising from the Risk Assessment would be additional to the following.

Before operating the SOLIDSVAC SV20-SP check:

- a. The unit and all hoses and fittings are undamaged and in good working order.
- b. All covers are fitted and closed.
- c. Clean compressed air at a minimum working pressure of 550 kPa (80 psi) at 50 cfm is available.
- d. An 18 mm (3/4") air hose is available.
- e. The discharge area has suitable warnings to protect personnel are in place.
- f. The correct PPE is available and worn for operating compressed air equipment.

NOTE: The Solidsvac Pump requires NO lubrication

1. Set the Solidsvac Pump up in a safe, level location near the material to be pumped.
2. Attach both suction and discharge hoses along with any accessories (Suction Wand, Drop Box, Delivery Carousel) as required and ensure safety clips are in place.

***Always position hoses out of walkways where possible**

3. Ensure the main air valve is in the off position and attach the 18 mm (3/4") air hose to the Solidsvac Pump and fit appropriate safety clips.
4. The pump is now ready for use.

7. Operation

Turn the air supply valve on at the source followed by the valve on the pump. The pump will now commence operation.

Operation is automatic and the pump can be left running unattended indefinitely.

NOTE: The Solidsvac Pump certified lifting point should be used as the units Earthing Point if required.

Solidsvac Pumps recommend checking the pump out-line to ensure it remains correctly anchored at the exit.

NOTE: Dry operation will not damage the pump.

- a. When pumping is complete, isolate the air at the pump and then the source.
- b. To release pressure from the air supply line turn on the pump air valve. (The pump will cycle till there is insufficient air to operate.)
- c. Select pump air valve to off.

8. Maintenance

In use, the **Solidsvac SV20-SP** requires no maintenance. However the following procedures are recommended in the event of any loss of vacuum when operating in either in-line or ETA (Exhaust to Atmosphere) mode.

Prior to commencing each pumping operation:

1. Check that all fittings and connections are serviceable
2. Regular visual inspection of the units polyurethane check discs are recommended.

Regular visual inspection of the Polyurethane Check Discs are recommended.

3. A small in-line filter (right) prevents foreign objects entering the venturi nozzle via the air supply line, Solidsvac Pumps recommend periodic inspection and cleaning as required, replacement filters and seals are available from your Solidsvac Pumps supplier.



SAFETY FIRST

Prior to commencing any work on the unit, the air supply valve MUST be isolated and the control system tested dead.

9. Adjusting the LOAD and DISCHARGE cycles

Adjusting the Load and Discharge cycles may be required depending on material being transferred and the distances involved etc. Turning the upper flow restrictor to negative will decrease the loading time, similarly rotating it to positive will increase the load time.

The Pressure Relief Valve can be manually operated via the lever as indicated below.

Caution: It is recommended that only a quarter turn adjustment is made at a time.



10. Main Components



Model Number

Serial Number

Date of Manufacture

Inspected by



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