Technical Support

Subject
Blowdown Cap Operation and Troubleshooting

System or Parts affected

Underhood VR70 and DTM	Underhood VR150	PREDATAIR
Blowdown Cap P/N# 9200437	Blowdown Cap P/N# 9210028	Blowdown Cap P/N# 9400059

Index

Overview

The blowdown cap, located at the discharge end of the Air/Oil Separator Tank (AOST), depressurizes the compressor system when it is shut down. This is done to reduce the chance that the system will restart while there is air pressure in the system as this will cause premature wear to the clutch.

Symptoms of Blowdown Cap malfunction

- Oil out the sintered muffler
- Premature clutch wear
- Blowdown does not vent after compressor shut down
- Blowdown constantly venting during compressor operation
- System takes a long time to blow down

Components

- **200 PSI Pressure Relief Valve**: a safety valve, used to protect the system from over pressurizing resulting in damaged components or tools.
- **Blowdown Muffler**: Diffuses blowdown air and lowers the noise level when the system depressurizes.
- **3/16" Pressure Control Line**: Supplies system air pressure to the regulator in the inlet.
- **1/4" Scavenge Line**: Used to route scavenged oil from the "dry side" of the AOST back to the compressor.

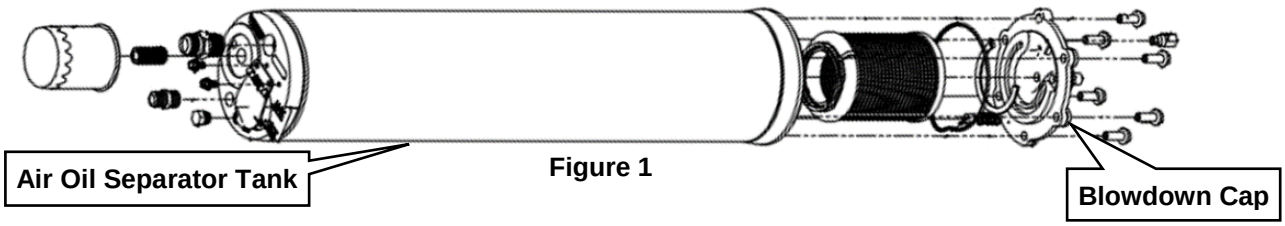

Figure 1

NOTE ***If the system is equipped with Pressure Control and Scavenge lines that are constructed of braided rubber and steel, part number A700153 PTFE Tube retrofit kit will be needed when replacing a Blowdown Cap.***

Document	Version	Department	Revision Details	Revised by	Tech	Engineering	Implemented
EXT-ALL-006	B	Tech	Note Added	BDJ 11Sept2018	DSB11Sept2018	N/A	11Sept20108

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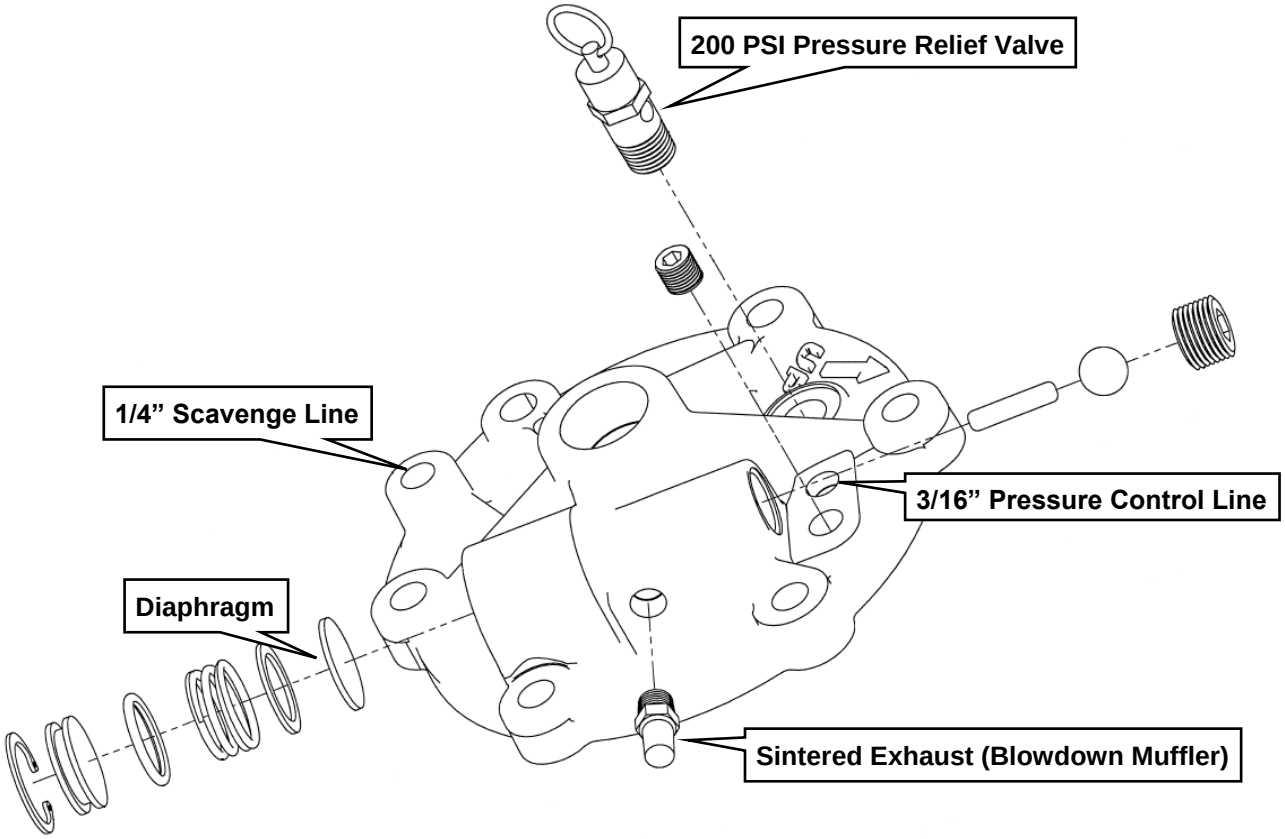

Figure 2

Trouble shooting

Blowdown constantly venting during compressor operation

- Determine if venting air is from the Blowdown Muffler or the 200PSI Pressure Relief Valve.
- Check the ¼" scavenge line for leaks, kinks or obstructions.
- Check ¼" scavenge fittings for leaks, or obstructions.
- Check the scavenge port in the blowdown cap, ensure it is not obstructed.
- Ensure the scavenge screen is not plugged.

Blowdown does not vent

- Plugged muffler: This will prevent the air pressure from venting.
- Ball seized onto seat: Remove cap from tank, and shake the cap. The ball move should move freely inside, like in a paint can.

Oil comes out of Blowdown Muffler

- Blowdown diaphragm is damaged.
- Tank or cap mounted is upside down (Arrow on discharge cap should be pointing upwards).

System takes a long time to Blowdown

- Restricted Blowdown muffler.
- External receiver tank installed without one-way check valve between the AOST and the tank.

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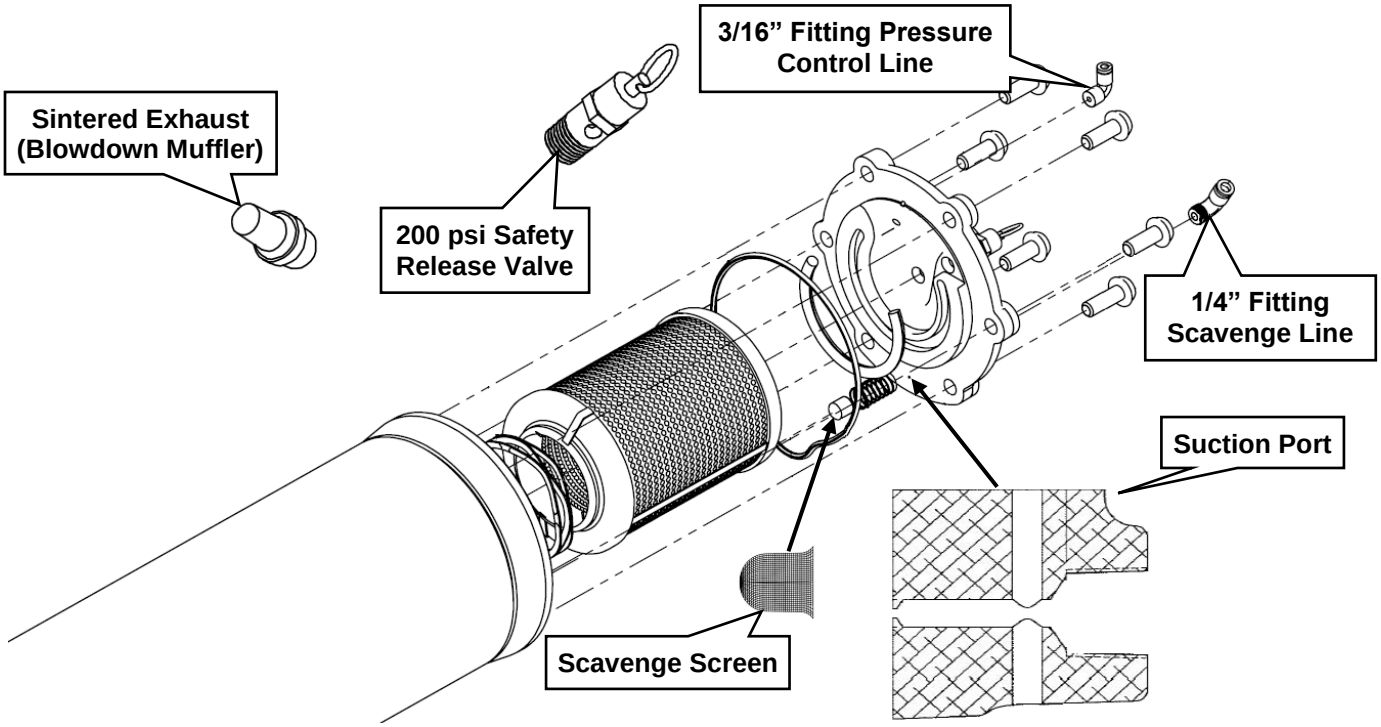

Figure 3

How it works

When the Compressor is Turned On

Suction from the ¼” scavenge line pulls on the diaphragm, against the spring, allowing the blowdown pin to move with the diaphragm. System air pressure forces the blowdown ball against the internal seat which stops any air from flowing through to the blowdown muffler. (Figure 4)

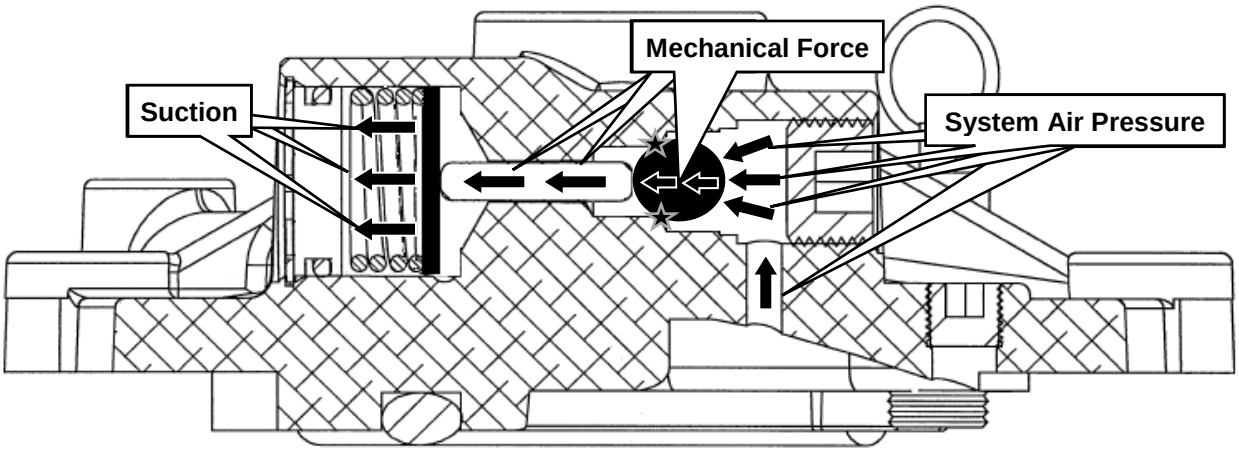

Figure 4

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When the Compressor is Turned Off

System air pressure is applied to the blowdown diaphragm (suction only occurs when the compressor is turning). While the pressure is dropping in the ball chamber it allows the diaphragm and spring pressure to move the ball off its seat allowing air to bypass the ball seat where it vents out through the muffler. (Figure 5)

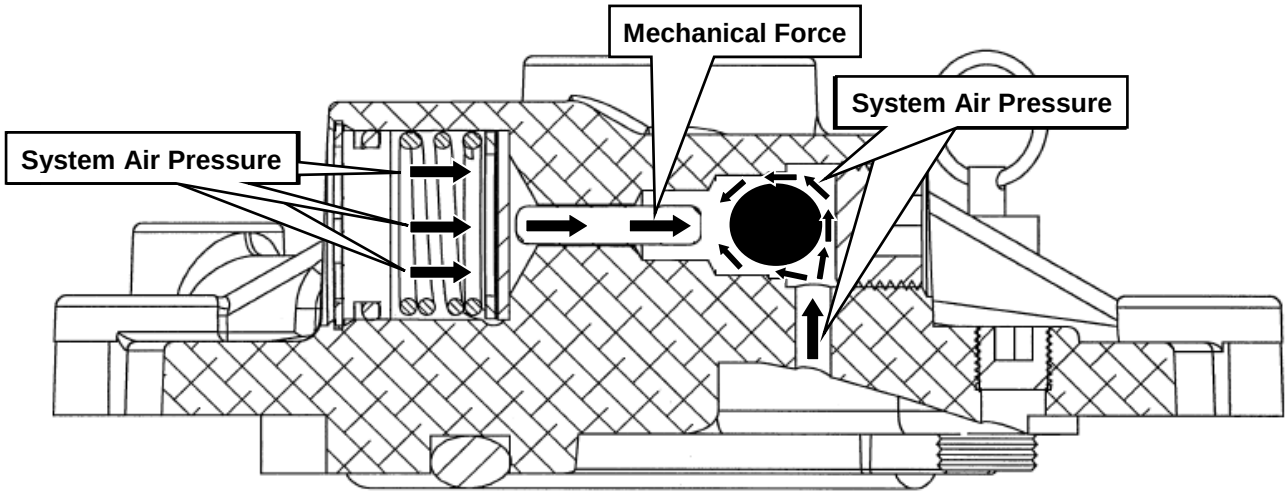

Figure 5

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