

Suction Control Module Type SMG45

Application

- Screw compressors with electric motor which are pressurized on shutdown*
- for capacity control: full load/idling/stop
 - for system pressure control at start, idling and stop.

Functions

- Suction control valve with non-return valve, normally closed, for 2-point control: full load / idling / stop
- Control valve for start-up and idling pressure control
- Venting valve for start/stop
- Actuating valve (solenoid valves) inclusive, respectively to flange from client

⚠ Attention! Never attempt to disassemble a cylinder whilst under pressure!

Example of installation

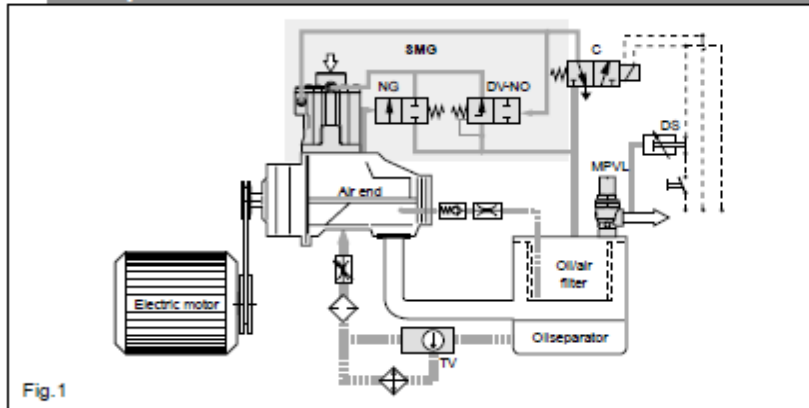


Fig. 1



Schematic figure

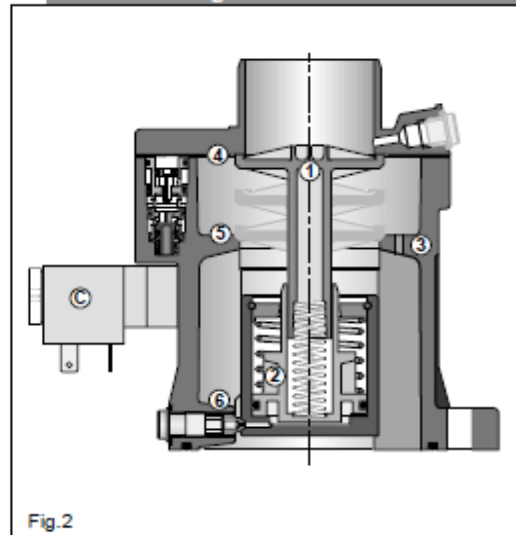


Fig. 2

Functions

Com-pressor	Electric motor	El. equipment: Switches S, DS	Oil separator	Suction Control Valve	SMG Module
Shutdown	Shutdown	S open DS open /closed	Vented	Non-return valve closed, valve disc (1) on valve seat (4)	Solenoid valve C (NC) idle, venting valve NC open from last stop, DV-NO closed
Start-up	Star connection	S open DS closed	Controlled at idling pressure	Valve disc (1) is drawn to idling seat (5), compressor draws air through idling jet (3)	Solenoid valve C idle, venting valve NC closes, control valve DV-NO controls oil separator pressure
Full load operation	Delta connection	S closed DS closed	Fast pressure rise to adjusted final pressure	Valve opens through pressure on cylinder (2), valve discs (1) in full load (central) position	Solenoid valve C receives current and release signal pressure, control valve DV-NO closes, venting valve NC closed
Idling	Delta connection	S closed DS open	Pressure is quickly reduced to idling pressure by control valve DV-NO	Cylinder (2) vented, valve discs (1) on idling seat (5), Compressor draws air through idling jet (3)	Solenoid valve C idle, control valve DV-NO controls oil separator pressure, venting valve NC closed
Shutdown from idling	Shutdown	S open DS open	Vented via venting valve NG into air intake	Non-return valve closes fast and tight, Valve disc (1) on valve seat (4)	Solenoid valve C idle, venting valve NC opens control valve DV-NO closes
Shutdown from full load/emergency stop	Shutdown	S open DS closed	Pressure drops rapidly down to idling pressure. Venting valve NG vents oil separator	Non-return valve closes fast and tight, Valve disc (1) on valve seat (4)	Solenoid valve C idle, control valve DV-NO opens Venting valve NC opens control valve DV-NO closes under idling pressure
Shutdown through fault	Anyhow	Anyhow	Venting valve NG vents oil separator	SMG emergency function: Non-return valve closes fast and tight, Valve disc (1) on valve seat (4)	SMG emergency function: Venting valve NC opens if excess pressure develops at the air end's suction flange

Details

Recommended application		motor power up to 22 kw suction capacity up to 3.5 m ³ /min
Nominal diameter DN	mm	45
Max. work. pressure PS	bar(g)	16
Operating/actuating pressure	bar (g)	3 to 16
Medium		oil pressurized air, filtered - recommended compressed air quality according to DIN ISO 8573-1, class 5. Reference oil: see www.hoerbigerkompresortechnik.de
Operating temperature	°C	+10 to +90 temporary -20 to +120 (at start, stop)
Control valve		seat valve, normally closed, with non-return valve
Control functions		full load, idling, stop (3 valve positions)
K _{VA} -value	m ³ /h	30
Pressure drop at full load		diagram 1
Start up and idling jet		2 mm, other diameters on request
Start and idling pressure control		control valve DV-NO, for oil separator pressure 2 bar (standard) with control spring installed downstream, others on request
Pressure reduction time	s	diagram 2 for SMG standard version and 10 litre pressure volume
Venting time, system unloading	s	diagram 3 for SMG standard version and 10 litre pressure volume
Configuration: standard on request		in-line SMG45 side entry valves and special valve bodies to customer's design
Dimensions, connections		see fig.3
Installation position		optional
Connections		flange 100 x 100 mm, (drilling picture see fig. 3) other drilling pictures on request, standard sleeve 50 mm for air filters others on request air filter and motor rotation direction connections G.U: G 1/8
Materials		body parts: aluminium, zinc plated steel internal parts: anodised aluminum, polyamid, brass, spring steel seals: viton (perbunan on request)
Weight	kg	1.5

Standard version (in)

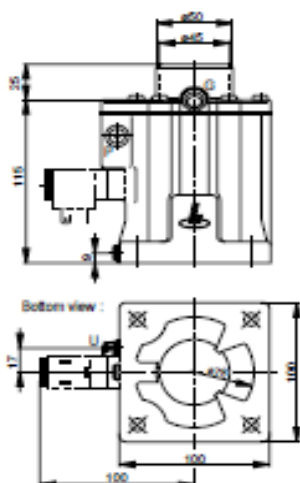


Fig.3

Side entry version

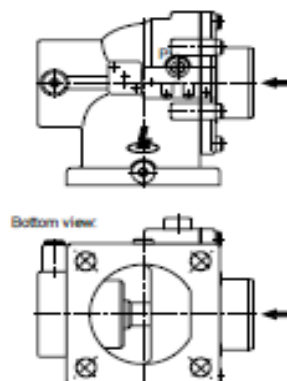


Fig.4

Pressure drop at full load

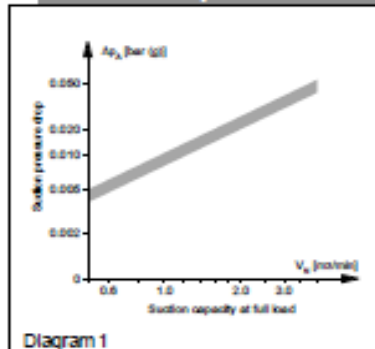


Diagram 1

Pressure reduction at idling

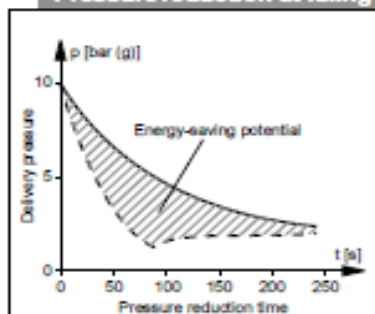


Diagram 2

Venting of oil separator

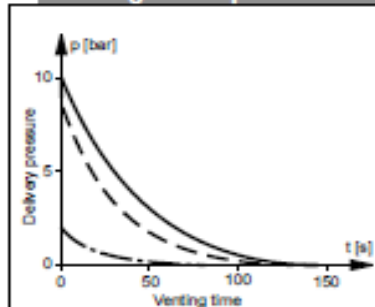


Diagram 3

Installation

On the suction flange of the air end or in the air intake. Use oil-free air from the fine separator (oil/air filter)

Maintenance

The service manual contains information regarding the maintenance intervals. While disassembling the valve for inspection, cleaning or retrofitting purposes, also refer to the respective information contained in the service manual.

Ordering details

Type, article no., or specification: compressor data, connection dimensions required, accessories.