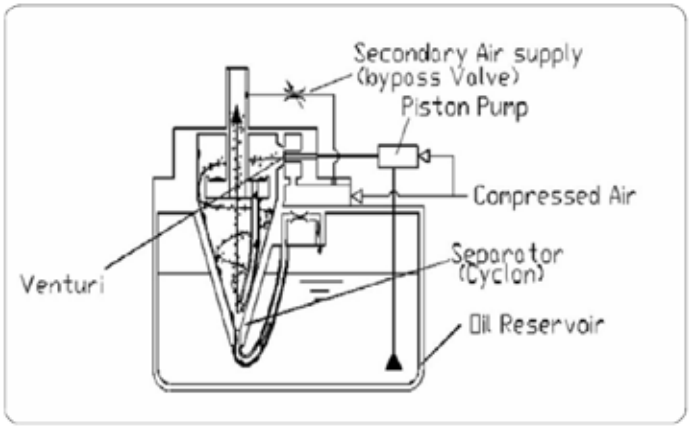
Oil Mist Lubrication: Oil Micron Unit



The Oil Micron Unit generates & delivers lubrication oil in minimum and precise quantities as oil mist. Combined with a good cooling effect by the air, higher machining speeds for machining tools and special machines alike are possible.

Overview

A piston pump delivers oil from the lubricant reservoir to a Venturi nozzle. In the Venturi nozzle the oil is atomized by compressed air into micro-sized droplets, which are then transported to a cyclone. Inside the cyclone, the oil droplets are separated by centrifugal force into small and large droplets. Small droplets are being transported to the outlet of the unit, while larger droplets are returned into the lubricant reservoir.

There is no restriction in the number of lubrication points providing that one unit can supply the necessary amount of compressed air and oil mist.

Ideally, the machine parts are being lubricated by a very thin oil film. Too much oil results in higher friction and consequently in a temperature raise at the lubrication point.

High oil consumption also pollutes the environment. On the other hand, insufficient oil supply leads to wear at the lubrication point.

Characteristics

- Increase of machining performance & lifetime

The Oil Micron Unit delivers oil mist in an optimum and precise quantity, keeping the temperature at the lubrication point low, resulting in an increase of machining performance as well as lifetime increase of the machine.

- Also applicable for horizontal machines

Oil Micron continuously delivers oil mist under air pressure to the lubrication points. Since the oil drops generated by the Oil Mist Unit are very small, no dripping of the oil occurs. This reduces the oil consumption and also keeps the environment clean.

- Cooling effect from the air

The oil mist is delivered under low pressure. Inside the nozzle, the oil mist condenses and accelerates. It is then sprayed to the lubrication point together with the air, which in turn cools the lubrication point.

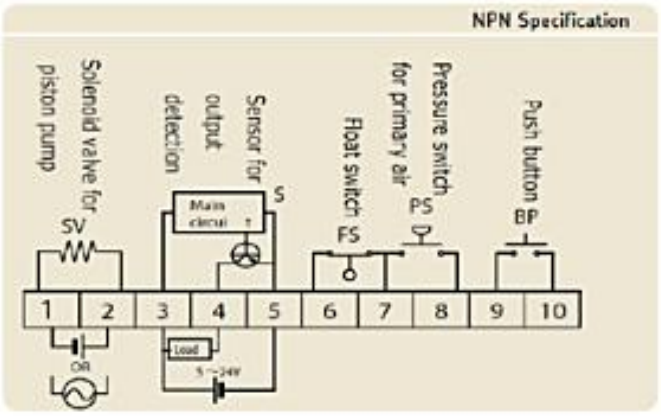
- No ingress by coolant & contamination

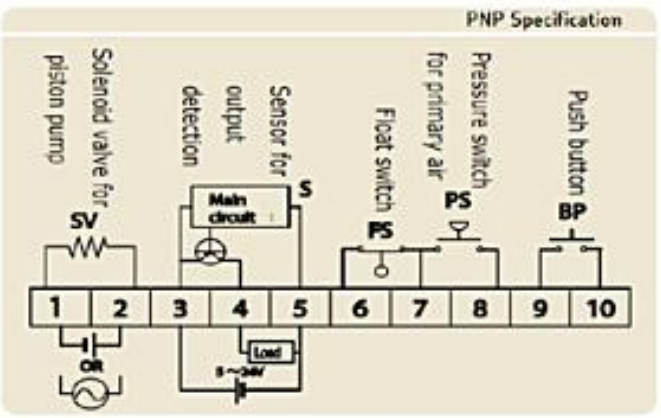
The air shields the lubrication point preventing ingression by coolant or contamination.

- Easy maintenance

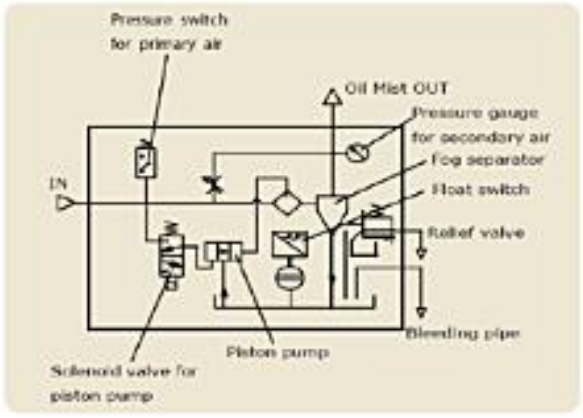
The oil metering as well as air pressure and oil supply volume regulation are done centrally from the Oil Micron Unit, which makes maintenance and serviceability fairly easy.

Electric Connection





Hydraulic Connection



Technical Data

Type:	VCM-KW2
Air:	compressed air (*1)
Inlet pressure:	0.15 – 0.35MPa
Outlet pressure:	0.05 – 0.25MPa
Number of outlets:	1
Tube connection size:	air inlet: Rc3/8 ; Outlet:Rc1/2
Average mist particle size:	1.6µm (depends on oil sort)
Max. air consumption:	500L/min (*2)
Viscosity range operation oil:	ISO VG 32 – 68 (*3)
Operation frequency of piston pump:	max. 20 shots / min (0.05cm3 / shots)
Operation voltage of piston pump:	DC24V, AC100V and AC200V
Reservoir volume:	effective volume = 1.1 litre

(*1) should be filtered with 0.3µm

(*2) depends on number of nozzles, their diameter and the secondary pressure

(*3) Please note that some oils in the range of ISO VG 32 – 68 are not very suitable for mist lubrication

Mist manifold (option)

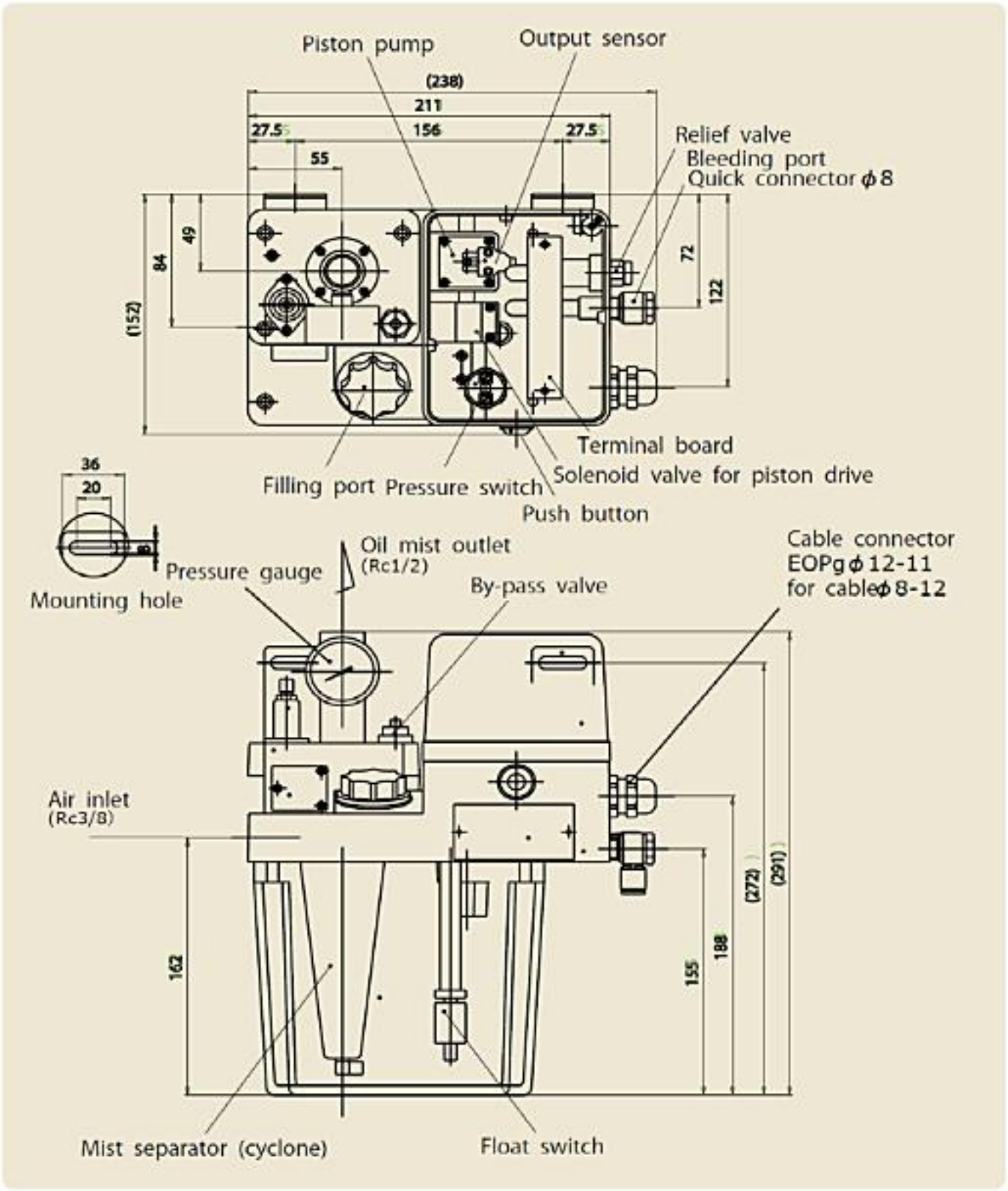
Recommended if more than one lubrication point needs to be supplied with oil mist.

Outlets not needed can be closed by plug screw.

Specification

Parts No.	VCM-FM
Max. air supply	500dm^3/min(ANR)
Inlet size	Rc 1/2
Outlet size	6 x Rc 1/4
Max. operation pressure	0.5 MPa
Weight	0.6 kg

Dimension drawing



How to order

VCM – KW2 – (1) – (2) – (3) – (4)

(1) Sensor for piston pump (NPN or PNP)

Sensor type	Order Code
NPN	blank
PNP	P

(2) Pneumatic accessories (option)

	Order Code
With accessories	S
Without accessories	blank

(3) Pneumatic accessories according to (2)

Type of accessory	Order Code
Filter regulator (5µm)	FR
Filter (5µm)	F1
Filter (0.3µm)	F2
Filter (0.01µm)	F3
Regulator	R
Solenoid valve	S (DC24V) or 100S (AC100V)

(4) Pressure switch air supply

Pressure setting	Order Code
0.20 MPa	A1
0.10 MPa	A2
0.15 MPa	A3
0.25 MPa	A4

Order example:

Unit with PNP sensor, filter regulator and pressure switch for 0.15 MPa

=> VCM – KW2 – P – S – FR – A3

In case of multiple choices, please enter a " – " between markings.

Example: Unit with two filters 0.3µm + 0.01µm + regulator

=> VCM – KW2 – S – F2 – F3 – R – A3

Notes

Order No. LS-0006-EN
Subject to change without notice! 3/2015

Important product usage information

All products from SKF may be used only for their intended purpose as described in this brochure and in any instructions. If operating instructions are supplied with the products, they must be read and followed.

Not all lubricants are suitable for use in centralized lubrication systems. SKF does offer an inspection service to test customer supplied lubricant to determine if it can be used in a centralized system. SKF lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at their maximum permissible temperature.

Hazardous materials of any kind, especially the materials classified as hazardous by European Community Directive EC 67/548/EEC, Article 2, Par. 2, may only be used to fill SKF centralized lubrication systems and components and delivered and/or distributed with the same after consulting with and receiving written approval from SKF.

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