BIJUR DELIMON INTERNATIONAL

Operating instructions

Spray nozzle SDU

INDEX

1. General

Prior to start up, we recommend to read these operating instructions carefully as we do not assume any liability for damages and operating troubles which result from the nonobservance of these operating instructions!
Any use beyond the applications described in these operating instructions is considered to be not in accordance with the product's intended purposes. The manufacturer is not to be held responsilbe for any damages resulting from this: the user alone bears the corresponding risk.
As to figures and indications in these operating instructions we reserve the right to make technical changes which might become necessary for improvements.

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2. Safety

These operating instructions contain fundamental instructions which are to be observed during erection, operation and maintenance. Therefore it is absolutely necessary for the fitter and the competent qualified staff/user to read these operating instructions before installation and start-up. The operating instructions must be available at all times at the place of use of the machine/system.
Not only the general safety instructions stated under this main point "safety" are to be observed, but also the other specific safety instructions stated under the other main points.

2.1 Identification of safety warnings in the operating instructions

The safety warnings contained in these operating instructions which, if not observed, may cause dangers to people, are specially marked with general danger symbols

safety sign according to DIN 4844, warning about a danger spot ,

in case of warning about electric voltage with

safety sign according to DIN 4844, warning about dangerous electric voltage.

In case of safety instructions which, if not observed, may cause damage to the machine and its function, the word

ATTENTION

is inserted.

Instructions that are directly attached to the machine, as for example

- rotational direction arrow
- identifications for fluid connections

must be observed at all events and maintained in a fully legible condition.

- Note: There is an increased skid risk in case of spilled/leaked out lubricants. They are to be removed at once properly.

Safety sign according to DIN 4844, warning about skid risk.

2. Safety (continuation)

2.2 Personnel qualification and training

The operating, maintaining, inspecting and erecting personnel must have the appropriate qualification for such work. Area of responsibility, competence and supervision of the personnel have to be regulated by the user. If the personnel do not have the necessary knowledge, they have to be trained and given instructions. This can be effected, if necessary, by the manufacturer/supplier on behalf of the user of the machine. Furthermore, the user has to make sure that the contents of the operating instructions are fully understood by the personnel.

2.3 Dangers in case of nonobservance of the safety instructions

The nonobservance of the safety instructions may result in hazards to persons, to the environment and to the machine. The nonobservance of the safety instructions may lead to the loss of any claims for damages.
In detail, the nonobservance may for instance lead to the following hazards:

- Failure of important functions of the machine/system
- Failure of prescribed methods for maintenance and repair
- Harzard to persons by electrical, mechanical and chemical influences
- Hazard to the environment by the leakage of dangerous substances

2.4 Safety conscious working

The safety instructions stated in these operating instructions, the existing national regulations as to the accident preventation as well as possible internal working, operating and safety rules of the user are to be observed.

2.5 Safety instructions for the user/operator

- If hot or cold machine parts lead to dangers, these parts have to be protected against touch.
- Protection against touch for moving parts (e. g. coupling) must not be removed when the machine is in operation.
- Leakages (e. g. from the shaft seal) of hazardous goods to be delivered (e. g. explosive, toxic, hot) are to be removed in such a way that there is no danger to persons and environment. Legal rules are to be ovserved. .
- Hazards caused by electrial power are to be excluded (for details please refer for instance to the rules of the VDE and the local power supply companies).

2.6 Safety instructions for maintenance, inspection and installation work

The user has to take care that all the maintenance, inspection and installation work is executed by authorized and qualified skilled personnel who have informed themselves adequately by thoroughly studying the operating instructions.
Basically, work on the machine is only to be carried out during shut-down. It is obligatory to observe the shut-down procedure described in the operating instructions .
Pumps or pump aggregates that deliver media being hazardous to health have to be decontaminated. Immediately after completion of the work, all safety and protective equipments have to be reinstalled and/or reactivated.

- Advice: When working with compressed air, do wear glasses.

(DIN 4844 – Use breathing mask)

- Advice: Observe EC-Safety Data Sheet for materials of consumption and additives used and use personal protective equipment.

(DIN 4844 – Use breathing mask)

Before recommissioning, observe the points stated in section “initial start-up“.

2.7 Unauthorized conversion and manufacture of spare parts

Conversion or modifications to the machine are only permitted when agreed with the manufacturer. Original spare parts and accessories authorized by the manufacturer serve to ensure safety. The use of other parts may render the liability for consequencial losses null and void.

2. Safety (continuation)

2.8 Unacceptable modes of operation

The operational reliability of the machine supplied is only guaranteed if the machine is used in accordance with its intended purposes as per section 1 - General - of the operating instructions. The limiting values specified in the data sheet must on no account be exceeded.

2.9 Guidelines & standards

1., 2. and 3. guideline (see data sheet: R&N_2009_1_GB)

3.0 Notes on environmental protection and waste disposal

In correct operation with lubricants, the components are subject to the special requirements set by environmental legislation.
The general requirements for lubricants are specified in the respective safety data sheets.
Used lubricants are hazardous forms of waste and therefore require special supervision in the sense of § 41 paragraph 1 sentence 1 and paragraph 3 no. 1 of KrW-/AbfG (Closed-Loop Waste Management Act).
Used oils must be handled in compliance with AltölV (Waste Oil Ordinance).
The devices or components contaminated with lubricant must be disposed of by a certified waste management company.
Records of proper waste management must be filed in conformance to NachwV (Ordinance on Waste Recovery and Disposal Records).

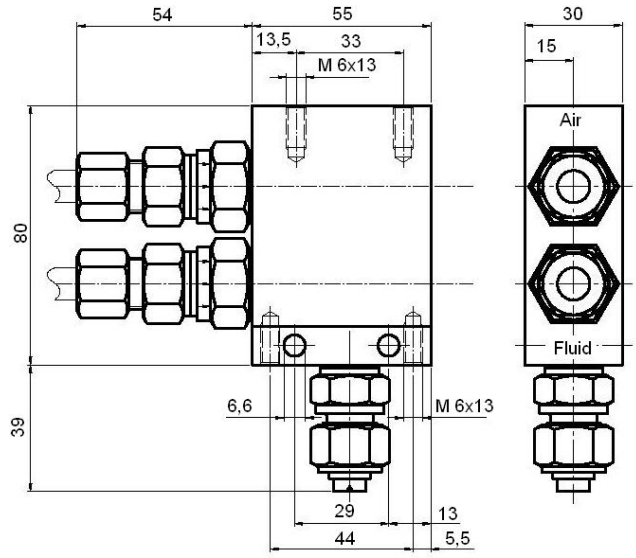
GENERAL PRODUCT CHARACTERISTICS

- Heating
- Media: for grease and oil
- separate monitoring of air and grease

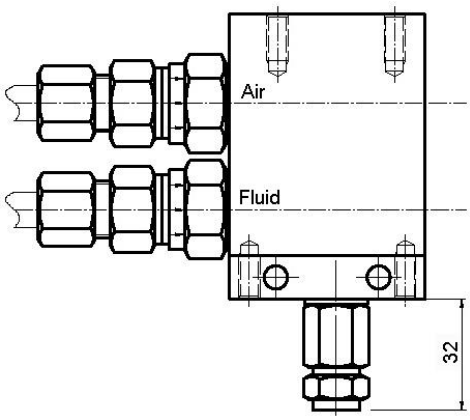
A. NOZZLES TYPE SDU

B. NOZZLES INSERTS

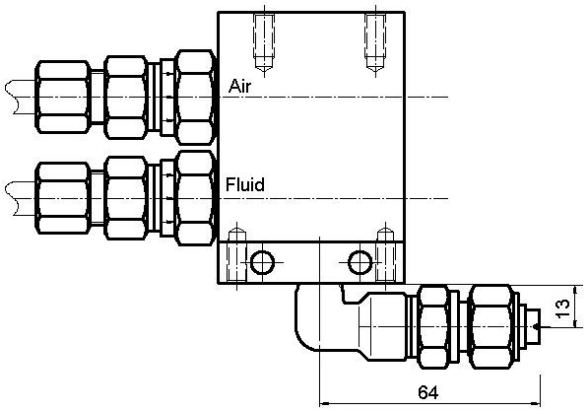
Flat spray nozzle straight
Round spray nozzle straight
Flat spray nozzle 90°
Round spray nozzle 90°



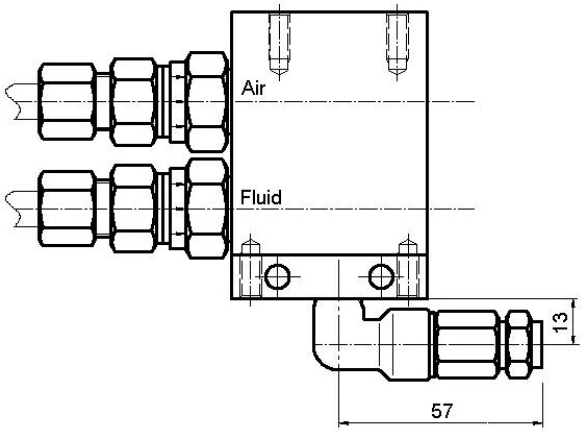
Flat spray nozzle straight



Round spray nozzle straight



Flat spray nozzle 90° ***)**



Round spray nozzle 90° ***)**

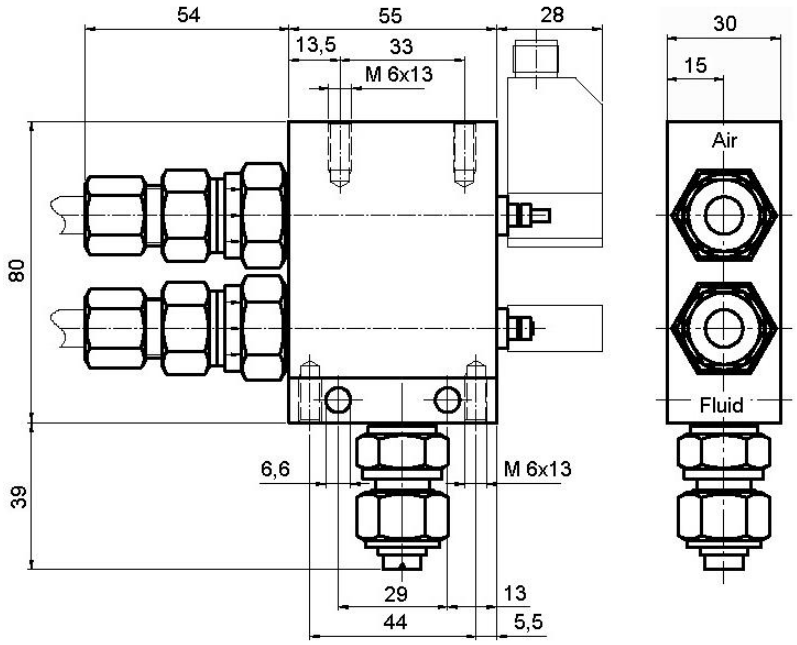
***)** Delivery conditions ex works are as shown in the pictures above. The spraying direction is adjustable within an angle of 360° if required. After changing of the spraying direction you have to fix the nozzle again by gluing with the housing.

C. REVISION

Status A

D. MONITORING

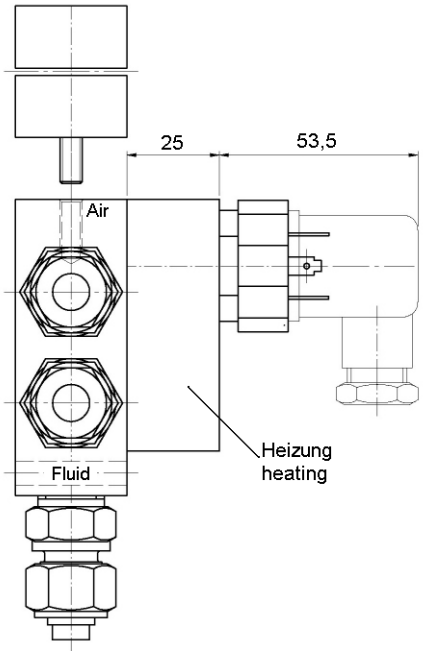
without
Grease
Compressed air
Grease and compressed air



Nozzle with monitoring

E. HEATING

without
with



F. ACCESSORIES

without
Fastening clamp (Ø 6 - 20 mm possible)

3. Application

The nozzle is made for spraying of lubricant on sliding surfaces.

4. Design

… with heating
The design of the nozzle body is as mentioned before.
There is an additional thermodynamic heating mounted on the side of the housing. The heating performance is 200 Watt.
A thermostate controls the temperature 70 ±5°C.

… without monitoring
The spray nozzle is a mixing block in which grease or oil together with air are blown out through a nozzle. Lubricant and compressed-air are fed by tubes with 10 mm diameter. A non-return valve serves as the supply with an opening pressure of 1 bar. Different types of nozzles are available.

… with monitoring
The design is similar to the nozzle without monitoring.
For monitoring there is an additional piston in the duct for the lubricant or airstream integrated. A motion indicator activates the monitoring switch.

5. Principle of operation

According the viscosity of the lubricant the nozzle is usable without heating. In case of high-viscosity oils or low temperatures a heating is necessary.
The nozzle in combination with the heating is able to spray oils at a surrounding temperature of 20°C with viscosities up to 200.000 mm²/s at + 20°C.

6. Function

Lubricant is fed to the nozzle through a pump joined to the lubricant connection point, whereby a spring-loaded piston is pushed, which on reaching its end position activates a connected monitoring switch, which sends a signal to an electric control. This signal is active as long as the lubricant is flowing into the nozzle. If the volume flow is interrupted, the spring presses the piston into its initial position again. This is possible because the lubricant can be forced through boreholes and an annular gap on the piston into the mixing chamber. It is essential for the function of monitoring the supply of grease that a volume flow of min. 0.28cm³ per second is maintained.

Compressed air is now fed through the air connection to the nozzle to blow out the lubricant that is in the mixing chamber, whereby a spring-loaded piston is pushed, which on reaching its end position activates a connected monitoring switch and accordingly sends a signal to an electric control. This signal is active as long as the compressed air is flowing into the nozzle.

If on account of the ambient conditions or the consistency of the lubricant, a heating is built onto the nozzle, this will heat the nozzle as long as a temperature of 70°C is maintained constantly and electric power is supplied to this heating.

7. Technical data

Air consumption : ..... nozzle- and pressure dependent
Grease : ..... up to NLGI class 3
Oil : ..... up to 200.000 mm²/s at 20°
Heating : ..... 200 watt, 115/230 V AC
Thermostate : ..... 70 ±5°C
Protection class : ..... IP 65
Sealings : ..... FPM
Material for housing : ..... Aluminium seawater resistant
Monitoring switch : ..... technical data see data sheet 66925 P1_GB

Maintenance:
Disassembling and cleaning with petroleum.

8. Plates

Type plate 26 x 52 mm (75511-1311)