



FLUCOM
ITALY

INFORMATIONS

MAIN FEATURES

01.001

01.13

01

FEATURES :

The features showed on catalogue represent the average value obtained from a series of tests carried out on some valves. It's not possible to assure that all products will have the same performances and a tolerance of $\pm 10\%$, if not different indicated, is allowed.

NOMINAL FLOW AND MAX. FLOW :

The nominal flow showed in all valve's technical sheet, is to be considered as a flow value which can be used continuously. This value may intermittent coincide with max. pressure.

The max. applicable flow, is showed in any chart, as range bottom flow value or as break of performance line.

The max. flow, if exceptionally used, does not compromise the valve working.

Max. pressure never coincides with max. flow.

We remind that sometimes, the max. flow is not the plant feeding pump flow.

On regenerative circuits where accumulators or cylinder high differential are present, the real flows crossing the valves are much more higher.

MAX. PRESSURE :

Has to be considered as an absolute limit that may never be exceeded, even for very short periods.

We suggest to operate with a value under 25% in order to obtain a long lasting live of components.

USE LIMITS :

Some catalogues show, on diagram side, combination values between flow and pressure.

These values are to be considered as max. values which may never be exceeded.

Flucom's product designs and manufacturing facilities have been specifically developed to provide products for commercial, industrial and mobile hydraulic applications and Flucom's products are only warranted for this type of use.

Customer is expressly prohibited from using the products for purposes other than those specified in the offer, catalogues or technical documentation.

Specifically, Flucom Dealers are not authorized to approve the use of Flucom valves for the following applications:

- Any passenger or goods carrying road vehicle or equipment subject to Highway Safety Standards and Directives, such as steering or brake systems;
- Aircraft or space vehicles;
- Ordnance equipment;
- Medical and health products, including life support equipment or vehicles;
- Systems to be used under any Nuclear Regulatory Act or Regulation;
- Systems for use in explosive or otherwise hazardous environments.

If the Customer intends to use the valves supplied for any applications falling into one or more of the above categories, or for any applications other than those expressly described in the documentation, he must require prior specific authorization directly from Flucom and proceed only after such authorization has been issued in writing.

LEAKAGE :

All poppet-type valves test is executed with high precision instruments aid and stiff connections.

This allows to state that all valves passing this test have null leakage. It doesn't prevent working condition from being determining for leakage. Impurity particles present in hydraulic oil, heavy duty service, etc... may change the correct valve working and may influence the seal.

WORKING PRINCIPLE :

In contests at the beginning of each section, each valve is represented in schematic section. Near the valve the allowed directions of flows are showed by arrows. We recommend to respect always these indications.

IDENTIFICATION :

All cartridge valves are stamped with Mark, Valve Code and Date of production.

01_001

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All standard valve bodies are stamped with ports standard numbering and are stamped directly on body itself or on a special label with Mark, Body Code and Date of production. Special Blocks are stamped with Ports Code and, directly on body or on a special label, with Mark, Group Code and Date of production.

SPECIAL AND STANDARD TEST :

All cartridge valve are tested at 100% with a nominal flow and max. pressure. If they are control equipped, they are set, if not otherwise required, at a standard pressure value showed in the choice code of each valve.

By solenoid valves, all coils are tested and the strength and insulation valves are pointed out.

Special integrated blocks are dimensionally tested and, on request, block different functions may be tested.

More over it is possible to customize test, to fix methods and test parameter in accordance with our Customers and on request we grant certifications.

ORDERING CODE :

The choice variants showed in each catalogues allow to combine an ordering code easy to use.

At each available ordering code side, appear the corresponding Code of Complete Group.

SPARE PARTS :

At the end of Complete Group Code of any valves, the external spear Kit seals Code are quoted.

INHIBITING TREATMENT :

All cartridges are zinc plated (without hexavalent chromium); solenoid mechanical parts are protected by phosphatizing.

All aluminium body are anodized; all steel body are galvanized (without hexavalent chromium).

SOLENOIDS USE :

All solenoids are made by high quality material, according to standard VDE 0580.

They are built in three size, 20-30-50 series, different voltage AC-DC, with connections DIN 43650 - KOSTAL M 27x1 - AMP JUNIOR.

Seats for O-Ring seals fitting up in order to protect the tube are foreseer, complete with serigraphy showing the main plate data. The coils can be feed by direct current with standard connectors aid, and by alternating current using connectors provided with incorporated rectifier bridge.

Voltage range +/- 10%.

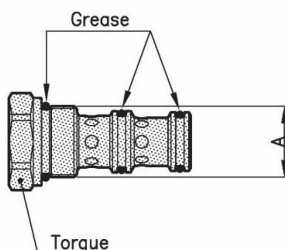
For performances and dimensions see catalogue 09.900 - 09.901 - 09.902 - 09.903 (coils) and catalogue 09.910 (connectors).

All standard coils allow continuous use (ED 100%) and a safety protection range of IP 65.

RECOMMENDED TORQUES :

The schedule represents the recommended torques.

Before to assembly we suggest to grease showed points for seals longlife.



| Series | A | Nm |
|-----------|----------|---------|
| 20 | M 18x1.5 | 35-40 |
| 30 | M 22x1.5 | 50-60 |
| 50 | M 33x2 | 100-120 |
| 70 | M 42x2 | 180-210 |

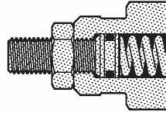
| Series | A | Nm |
|-----------|------------|-------|
| 28 | 3/4-16 UNF | 40-45 |
| 32 | M 20x1.5 | 42-47 |
| 38 | 7/8-14 UNF | 50-60 |
| | | |

Some valves may have different clamping torque. Always verify the exactly value showed on technical schedules.

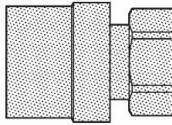
SPECIAL AND STANDARD ADJUSTMENT :

Here are showed the main adjustments available for mainly cartridge valves.

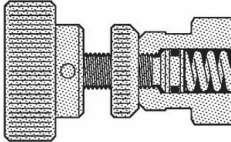
For different solutions please ask our Seals Department. All regulations showed are seal-adjustments.



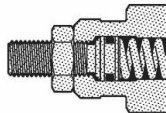
Type **N** Standard adjustment – External screw with lock nut.



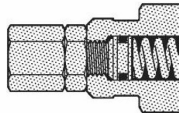
Type **P** Standard adjustment – N type with tamper proof, irremovable after calibration.



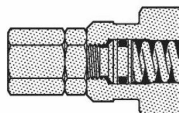
Type **V** Standard adjustment – Handknob with lock ring.



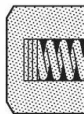
Type **L** Special adjustment – External integral screw with overset protection and lock nut.
(For some valves an air vent-hole in spring-chamber is foreseen)



Type **NB** Special adjustment – N type with prevention cap.

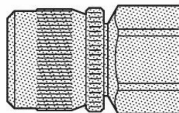


Type **LB** Special adjustment – L type with prevention cap.

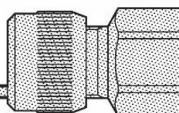


Type **F** Special adjustment – Fixed setting (by factory).

(flow control valves)



Type **HG** Standard adjustment – With lock ring.
The rotation effort keeps unchanged even at high pressure.



Type **HG-G** HG type with graduated handknob.



Type **HF** Standard adjustment – As H type, with lock screw.

Type **HF-G** HF type with graduated handknob.



DRIVES DIRECTIONAL CONTROL VALVES :



Manual drive



Hydraulic pilot

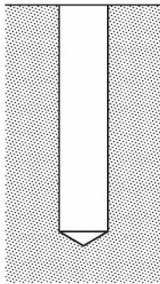


Pneumatic pilot

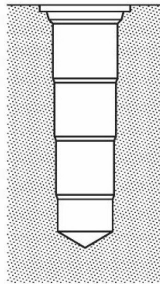
USE OF FORMING TOOLS :

Here are showed the four working phases in order to obtain an unified cavity. We recommend to respect concentricity marked in schedules n. 17.000 – 17.001 – 17.002.

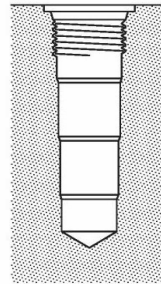
In the under mentioned code-table are marked the cavities code and pre-drilled diameters.



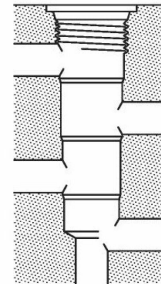
Pre-drilled hole



Forming tool



Tapping



Radial holes

| Cavity type | Cavity code | Pre-drilled hole | Forming tool code | Tap type |
|-------------|-------------|------------------|-------------------|------------|
| 20 2 way | S 20/2 | ∅ max. 14 | 89 328 101 | M 18x1.5 |
| 20 3 way | S 20/3 | ∅ max. 13 | 89 328 102 | |
| 20 4 way | S 20/4 | ∅ max. 12 | 89 328 103 | |
| 29 2 way | S 29/2 | ∅ max. 14 | 89 328 140 | 3/4-16 UNF |
| 28 2 way | S 28/2 | ∅ max. 11 | 89 328 113 | |
| 28 3 way | S 28/3 | ∅ max. 13 | 89 328 141 | |
| 28 4 way | S 28/4 | ∅ max. 11 | 89 328 142 | |
| 30 2 way | S 30/2 | ∅ max. 18 | 89 328 104 | M 22x1.5 |
| 30 3 way | S 30/3 | ∅ max. 17 | 89 328 105 | |
| 30 4 way | S 30/4 | ∅ max. 16 | 89 328 106 | |
| 50 2 way | S 50/2 | ∅ max. 27 | 89 328 107 | M 33x2 |
| 50 3 way | S 50/3 | ∅ max. 26 | 89 328 108 | |
| 50 4 way | S 50/4 | ∅ max. 25 | 89 328 109 | |
| 70 2 way | S 70/2 | ∅ max. 37 | 89 328 110 | M 42x2 |
| 70 3 way | S 70/3 | ∅ max. 35 | 89 328 111 | |
| 70 4 way | S 70/4 | ∅ max. 33 | 89 328 112 | |

SEALS :

On all standard valves are used special polyurethane seals which do not require back-up rings and grant an effective seal till static pressure of 600 bar.

Seals used on thread are in accordance with ISO 6149 and are manufactured with compounding Buna N 70 or 90 Shore A. Standard seals bear a temperature range from -35 °C to +110 °C.

On request seals with different compounding may be assembled; please ask our Technical Department.

FLUIDS AND FILTRATION :

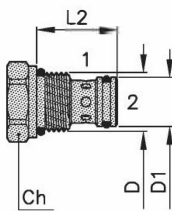
Standard seals are suitable for being used with usual hydraulic oils with mineral base type HM and HV according to ISO 6074. On technical schedules of each valve are showed the beared viscosity range as well as the required filtration level.

We recommend to respect these limits in order to obtain an high reliability and a long lasting life of components.

Sizes:

This page represents the four Standard Size, the Special Versions and the Ports number.

2 way

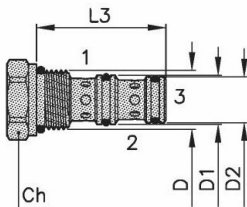


| Size | Dimensions (mm) | | | |
|------|-----------------|------|----|------|
| | D | D1 | Ch | L2 |
| Ⓝ 20 | M 18x1.5 | 15 | 22 | 24.5 |
| Ⓢ 28 | 3/4-16 UNF | 12.7 | 24 | 27 |
| Ⓢ 29 | 3/4-16 UNF | 15.8 | 24 | 26.5 |
| Ⓝ 30 | M 22x1.5 | 19 | 27 | 28 |
| Ⓢ 32 | M 20x1.5 | 15 | 24 | 25 |
| Ⓝ 50 | M 33x2 | 28 | 38 | 39 |
| Ⓝ 70 | M 42x2 | 38 | 50 | 48 |

Ⓝ Standard Flucom sizes (ISO 6149)

Ⓢ Other sizes

3 way

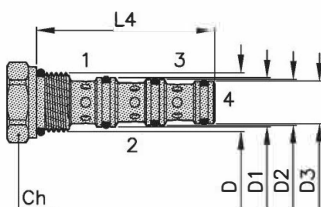


| Size | Dimensions (mm) | | | | |
|------|-----------------|------|------|----|------|
| | D | D1 | D2 | Ch | L3 |
| Ⓝ 20 | M 18x1.5 | 15 | 14 | 22 | 39.5 |
| Ⓢ 28 | 3/4-16 UNF | 15.8 | 14.2 | 24 | 40.5 |
| Ⓝ 30 | M 22x1.5 | 19 | 18 | 27 | 46 |
| Ⓝ 50 | M 33x2 | 28 | 27 | 38 | 63 |
| Ⓝ 70 | M 42x2 | 38 | 36 | 50 | 79 |

Ⓝ Standard Flucom sizes (ISO 6149)

Ⓢ Other sizes

4 way



| Size | Dimensions (mm) | | | | | |
|------|-----------------|------|------|------|----|------|
| | D | D1 | D2 | D3 | Ch | L4 |
| Ⓝ 20 | M 18x1.5 | 15 | 14 | 13 | 22 | 54.5 |
| Ⓢ 28 | 3/4-16 UNF | 15.8 | 14.2 | 12.7 | 24 | 55 |
| Ⓝ 30 | M 22x1.5 | 19 | 18 | 17 | 27 | 64 |
| Ⓝ 50 | M 33x2 | 28 | 27 | 26 | 38 | 88 |
| Ⓝ 70 | M 42x2 | 38 | 36 | - | 50 | - |

Ⓝ Standard Flucom sizes (ISO 6149)

Ⓢ Other sizes