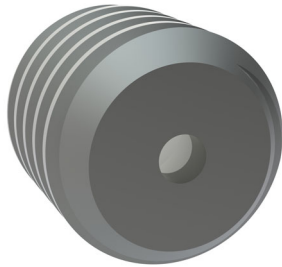


Precision Orifices

Set-screw type, Series G



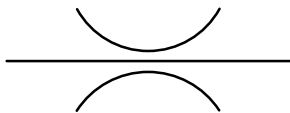
- high flow accuracy
- calibrated orifice diameter
- marked with orifice diameter

1 Description

Precision orifices from Bucher Hydraulics are manufactured with close tolerances (+0.02/-0.01) and thus guarantee high flow accuracy. Each orifice is marked with its re-

spective orifice diameter. The orifices are used for throttling and controlling oil flows in all hydraulic applications.

2 Symbol



3 Technical data

General characteristics	Unit	Description, value
Designation		Orifice, type G
Material		Free-cutting steel 11 SmnPb30+C (1.0718)
Thread size		M3 ... M6
Dimensions		See table Dimensions in section 5
Mounting attitude		unrestricted
Operating pressure range	bar	up to 420
Flow rate Q_{max}		see Orifice table in section 4, Performance graphs
Fluid		HL and HLP hydraulic oils to DIN 51524 (for other fluids please contact Bucher Hydraulics)

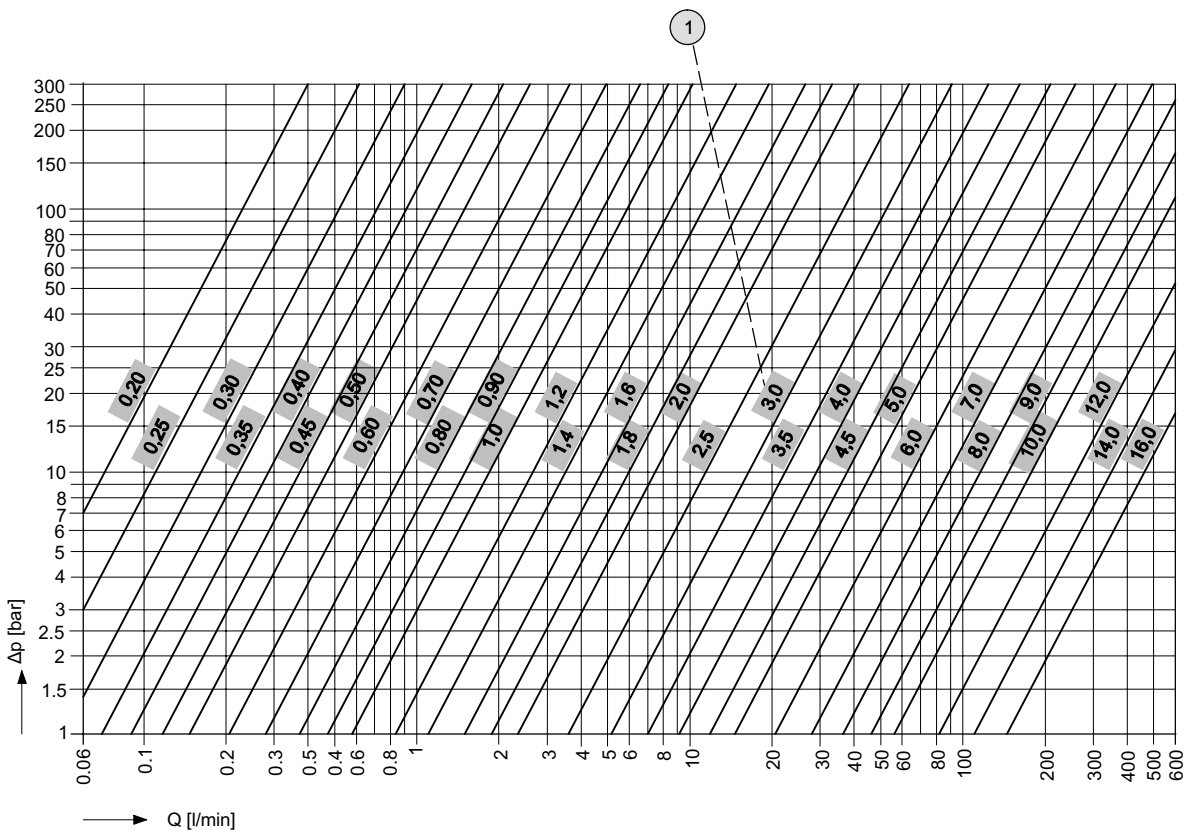
General characteristics	Unit	Description, value
Viscosity range	mm ² /s [cSt]	10 ... 500
Minimum fluid cleanliness		ISO 4406, code 20/18/15 or NAS 1638, class 9 (see section 8)

For applications outside these parameters, please contact BUCHER HYDRAULICS.

4 Performance graphs

4.1 Orifice table

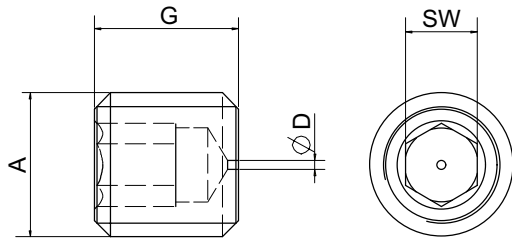
Measured with oil viscosity 33 mm²/s [cSt]



1 Orifice diameter in mm

Pressure loss with turbulent flow in circular orifices as a function of the orifice diameter and the flow rate.

5 Dimensions



	A			
	M3 [mm]	M4 [mm]	M5 [mm]	M6 [mm]
SW	1,5	2,0	2,5	3,0
G	3,5	4,0	5,0	6,0
Ø D	0,3	0,3	0,3	0,3
	0,4	0,4	0,4	0,4
	0,5	0,5	0,5	0,5
	0,6	0,6	0,6	0,6
	0,7	0,7	0,7	0,7
	0,8	0,8	0,8	0,8
	0,9	0,9	0,9	0,9
	1,0	1,0	1,0	1,0
	1,2	1,2	1,2	1,2
		1,3	1,3	1,3
		1,4	1,4	1,4
		1,5	1,5	1,5
		1,6	1,6	1,6
			1,7	1,7
			1,8	1,8
			1,9	1,9
			2,0	2,0
			2,1	2,1
			2,2	2,2
				2,3
			2,4	
			2,5	

6 Ordering code

Orifice type G M6 D 0,8

Orifice type G

Thread type:

M3	M3
M4	M4
M5	M5
M6	M6

Orifice Ø (see table Dimensions in section 5)

Supplied in packing units of 25 pieces.

7 Hydraulic fluid

The oil for these orifices must have a minimum cleanliness level of 20/18/15 to ISO 4406 or class 9 to NAS 1638.

We recommend the use of fluids that contain anti-wear additives for operation with boundary lubrication. Fluids without appropriate additives reduce the service life of the orifices. The user is responsible for maintaining, and regularly checking, the fluid quality. Bucher Hydraulics recommends a DIN 51347-2 Bruggen load capacity of $\geq 30 \text{ N/mm}^2$.

8 Cleanliness classification

Cleanliness class to ISO 4406 and NAS 1638

Code ISO 4406	Number of particles / 100 ml			
	$\leq 4 \mu\text{m}$	$\leq 6 \mu\text{m}$	$\leq 14 \mu\text{m}$	NAS 1638
23/21/18	8000000	2000000	250000	12
22/20/18	4000000	1000000	250000	-
22/20/17	4000000	1000000	130000	11
22/20/16	4000000	1000000	64000	-
21/19/16	2000000	500000	64000	10
20/18/15	1000000	250000	32000	9
19/17/14	500000	130000	16000	8
18/16/13	250000	64000	8000	7
17/15/12	130000	32000	4000	6
16/14/12	64000	16000	4000	-
16/14/11	64000	16000	2000	5
15/13/10	32000	8000	1000	4
14/12/9	16000	4000	500	3
13/11/8	8000	2000	250	2

9 Application notes

Do not exceed the maximum operating pressure, and take any pressure peaks into consideration. Do not exceed the specified nominal flow rate.

Buyers bear the sole responsibility for ensuring that the selected orifices are suitable for their applications. Buyers ultimately establish this by undertaking qualification programs on the test stands, or by evaluating the performance of prototype machines or systems.