CATALOGUE

Needle valves

walvoil
HYDRAULIC CONTROL SYSTEMS

WARNING!

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General Information

Fluid:best use mineral oil with viscosity ranging between 10 and 200 cSt.
Filter:dirty oil is the main reason for failure and troubles of hydraulic parts and systems.
The table below contains **OLEOSTAR S.p.A.** recommendations about the minimum oil contamination level according to individual specifications of different items. For further safety of your hydraulic equipment and of all valves assembled on it, we either recommend use suction filters (rather than return filters) or separated filter lines.

TYPE OF EQUIPMENT - TYPE OF VALVE	CONTAMINATION LEVEL According to ISO 4406
- Heavy duty equipment - Equipment running at 210-350 bar *(3050-5100 psi)* working pressure - Equipment using proportional controls - Equipment with high frequency cycles	-/16/13
- Equipment running up to 210 bar *(3050 psi)* working pressure - Spool-type valves - Valves with calibrated ports	-/18/14
- Equipment running at low working pressure - Pilot plants and equipment - Equipment with low frequency cycles	-/19/15

Installation:make sure to provide suitable gasket lubrication with clean oil before screwing the cartridge on the valve body . Also make sure to screw the cartridge manually in to reach against the gaskets in the valve body.
Material:internal components made out of high grade steel duly treated and fabricated.
For more information please ask our technical office .
Working temperature:min. -25°C *(-13°F)* max. 90°C *(194°F)* with standard BUNA N gaskets
min. -20°C *(-4°F)* max. 200°C *(392°F)* with optional VITON gaskets
Rating diagrams:all rating diagrams of this catalogue are measured with mineral oil of 46 cSt viscosity at 40° *(104°F)* temperature.
All drawings dimensions are defined as $\frac{mm}{in}$

Index

Index

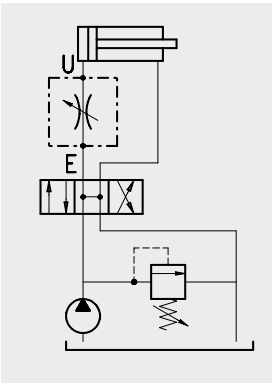
Adjustments

Valves bodies

Cavities, tool and tap

Operation

The valve capacity can be adjusted by variation of the oil flow section.



Performance

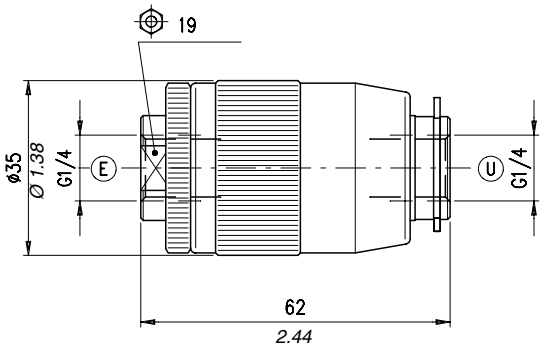
Body Valves

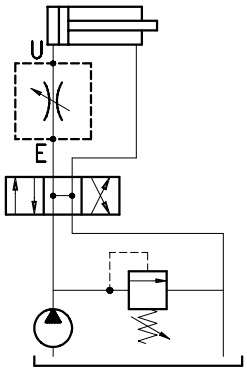
Type	Max. flow		Max. pressure		Weight	
	l/min.	*US gpm*	bar	*psi*	kg	*lb*
VSRB 14	25	*6.6*	450	*6500*	0,30	*0,66*
VSRB 38	40	*11*	400	*5800*	0,51	*1.12*
VSRB 18						
VSRB 12	60	*16*	350	*5100*	0,72	*1.59*
VSRB 34	100	*26*	300	*4350*	1,18	*2.60*
VSRB 100	150	*40*	250	*3600*	1,95	*4.30*
VSRB 114	250	*66*			2,95	*6.50*
VSRB/FF/14./P. VL	25	*6.6*	350	*5100*	0,22	*0.48*
VSRB/FF/38./P. VL	40	*11*			0,37	*0.81*
VSRB/FF/12./P. VL	60	*16*			0,74	*1.63*

Cartridges

Type	Max. flow		Max. pressure		Cavities and tools	Weight	
	l/min.	*US gpm*	bar	*psi*		kg	*lb*
NB08A	15	*3.9*	350	*5100*	see cavity SAE 8-2 page 45	0,18	*0.40*
NB10A	30	*7.9*			see cavity SAE 10-2 page 45	0,20	*0.44*
NB12A	60	*16*			see cavity SAE 12-2 page 45	0,28	*0.62*
NB16A	100	*26*			see cavity SAE 16-2 page 45	0,5	*1.10*

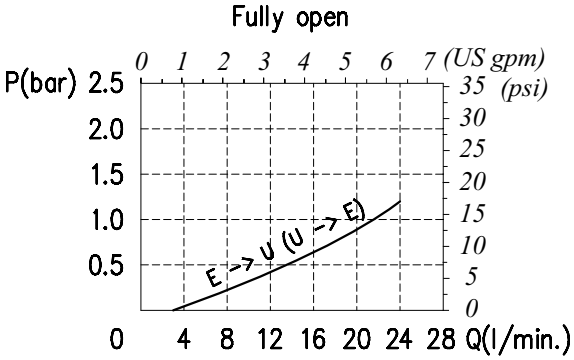
Dimensions and hydraulic circuit





Rating diagrams

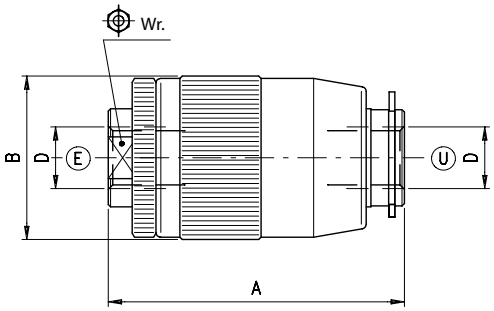
Typical pressure drop vs. flow characteristics

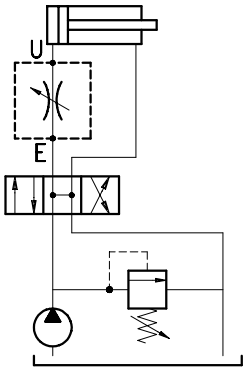


Order code

VSRB 14

Dimensions and hydraulic circuit



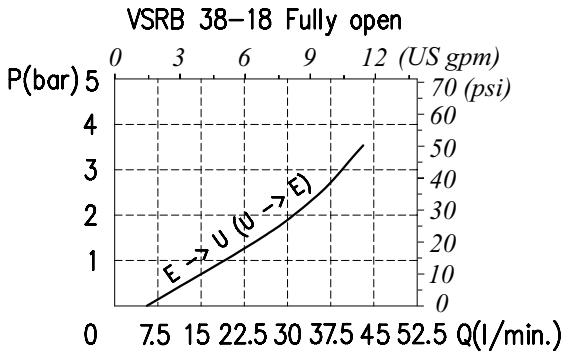


VSRB	D	A	B	Wr.
38	G 3/8	72- *2.83*	42 - *1.65*	24 - *0.94*
18	M18x1.5	72- *2.83*	42 - *1.65*	24 - *0.94*
12	G 1/2	80- *3.15*	48 - *1.89*	30 - *1.18*

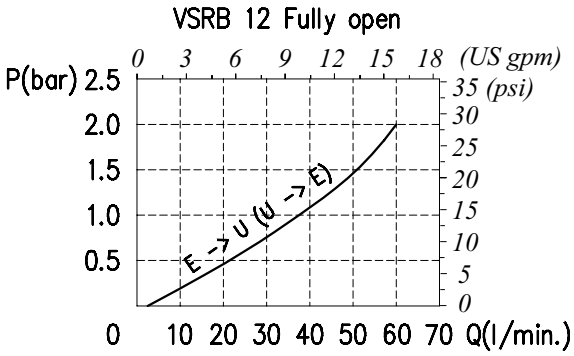
dimensions are in mm-*in*

Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



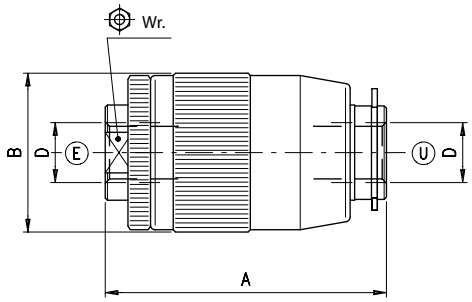
Order code

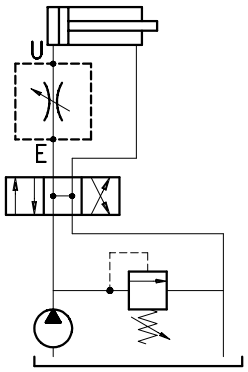
VSRB □□

Port size

38) G 3/8
18) M18x1,5
12) G 1/2

Dimensions and hydraulic circuit



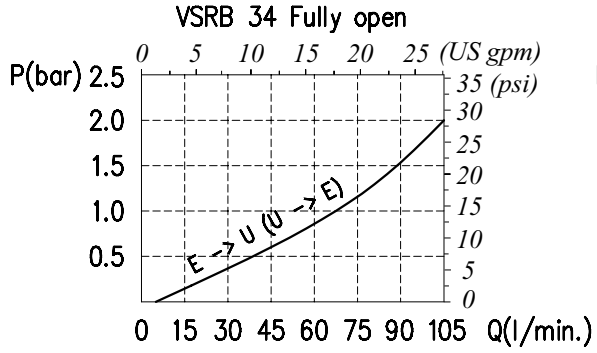


VSRB	D	A	B	Wr.
34	G 3/4	100 - *3.94*	55 - *2.16*	36 - *1.42*
100	G 1"	122 - *4.80*	65 - *2.56*	41 - *1.61*

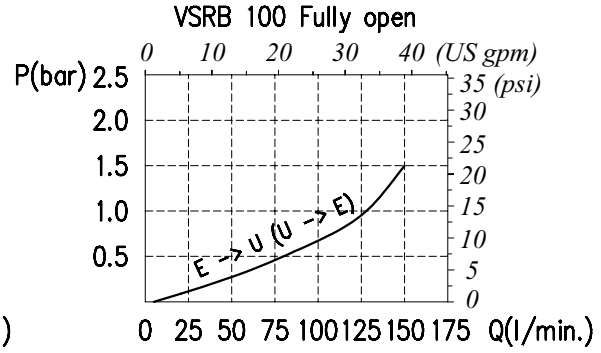
dimensions are in mm-*in*

Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



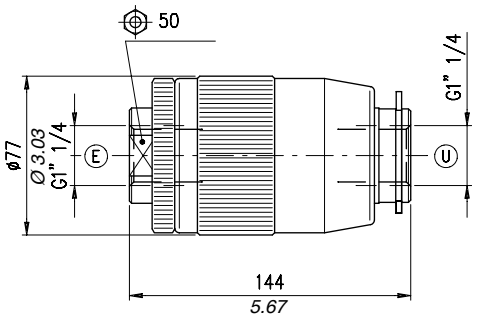
Order code

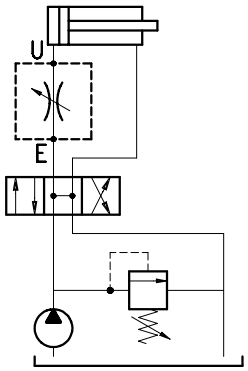
VSRB ☐☐

Port size

34) G 3/4
100) G 1

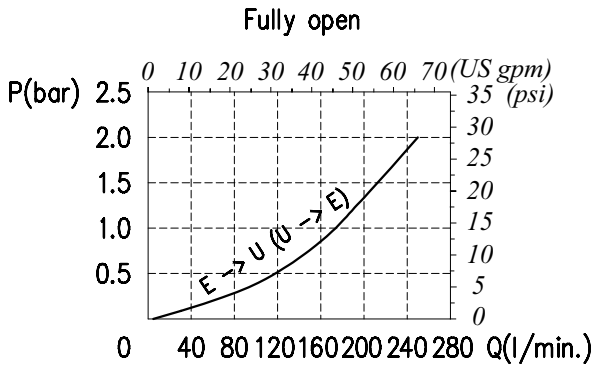
Dimensions and hydraulic circuit





Rating diagrams

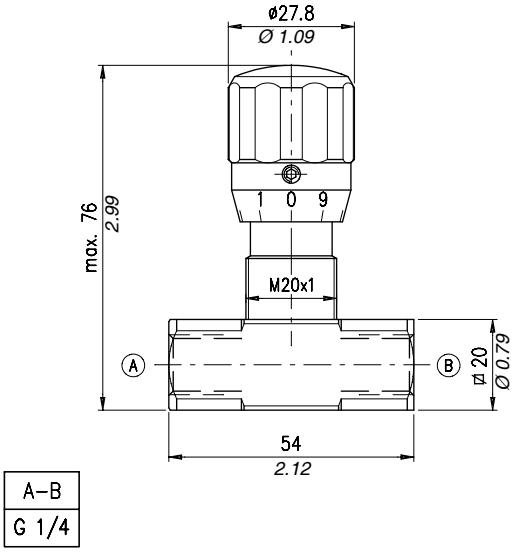
Typical ressure drop vs. flow characteristics

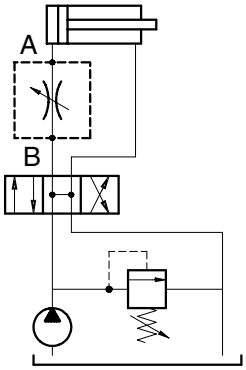


Order code

VSRB 114

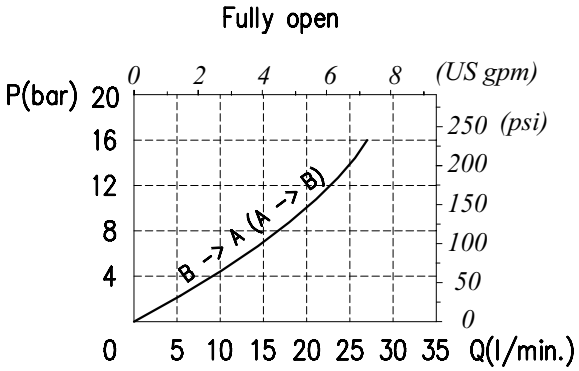
Dimensions and hydraulic circuit





Rating diagrams

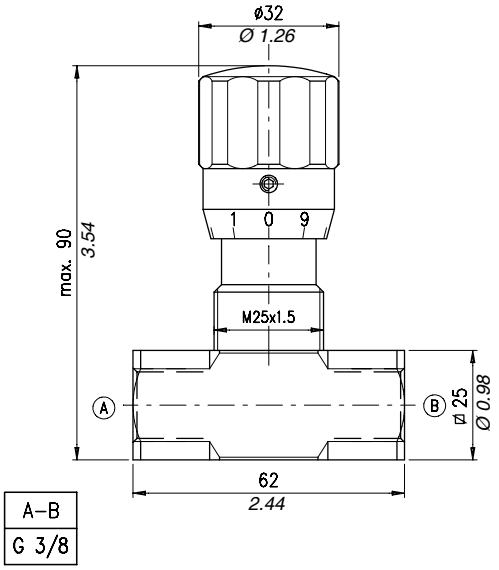
Typical pressure drop vs. flow characteristics

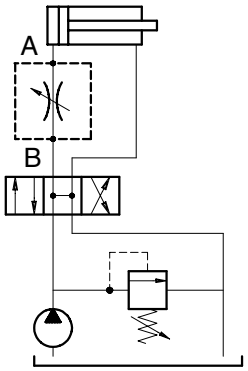


Order code

VSRB /FF /14 /P .VL

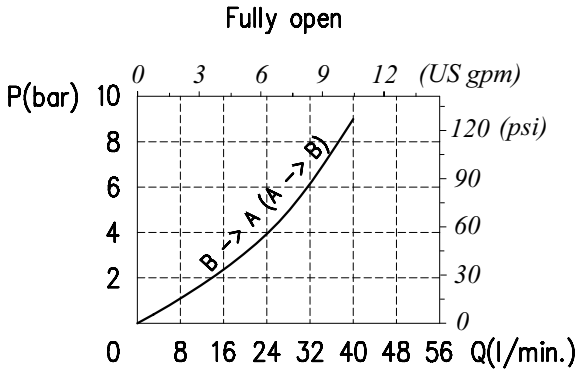
Dimensions and hydraulic circuit





Rating diagrams

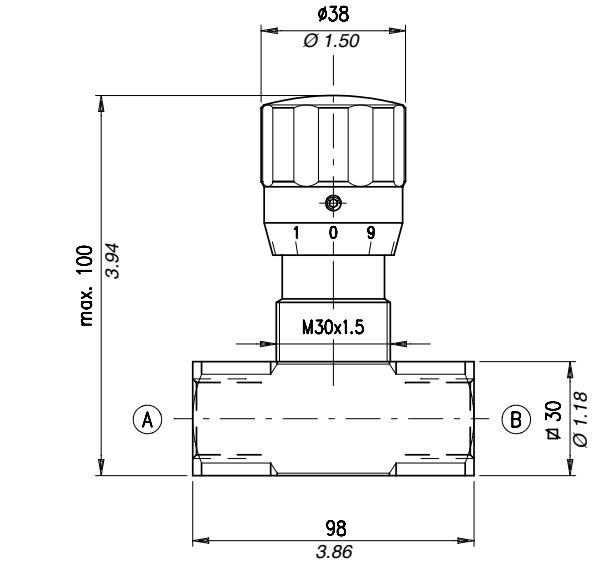
Typical pressure drop vs. flow characteristics

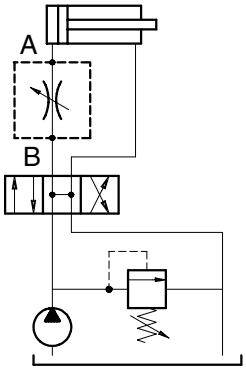


Order code

VSRB /FF /38 /P .VL

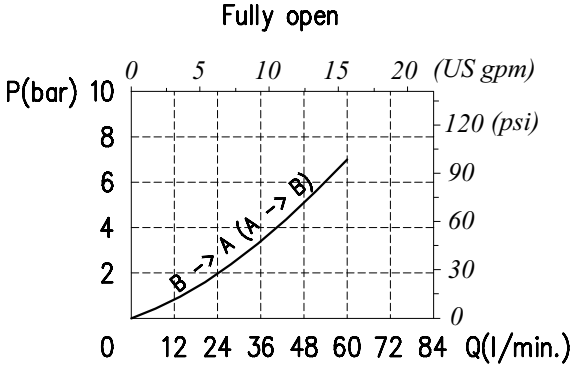
Dimensions and hydraulic circuit





Rating diagrams

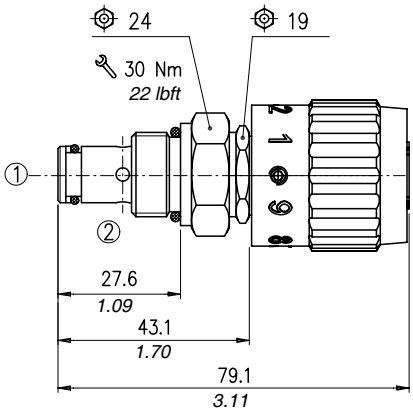
Typical pressure drop vs. flow characteristics

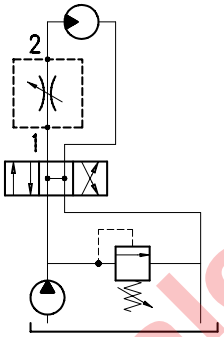


Order code

VSRB /FF /12 /P .VL

Dimensions and hydraulic circuit





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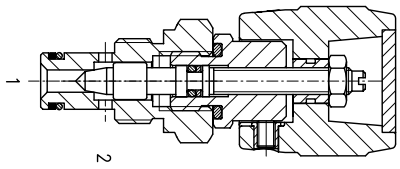
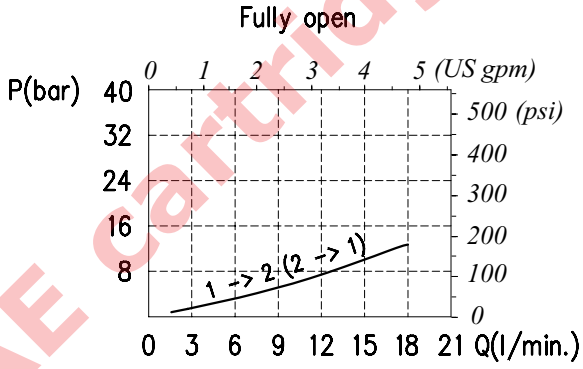


Rating diagrams

Typical pressure drop vs. flow characteristics



Order code

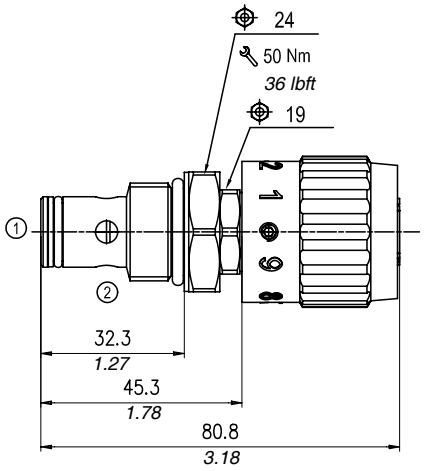
NB08A / A -☐ -0 -☐

Adjustments
(see page 38)
- **S** *(screw)*
- **M** *(copped adjustment)*
- **W** *(handknob calibrated)*

Seals
- **B)** Buna
- **V)** Viton

see SAE cartridges catalogue

Dimensions and hydraulic circuit



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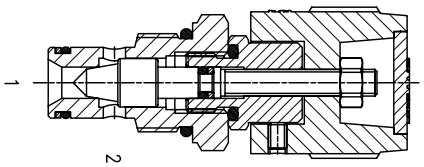
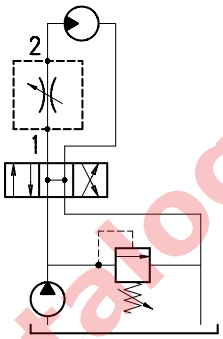
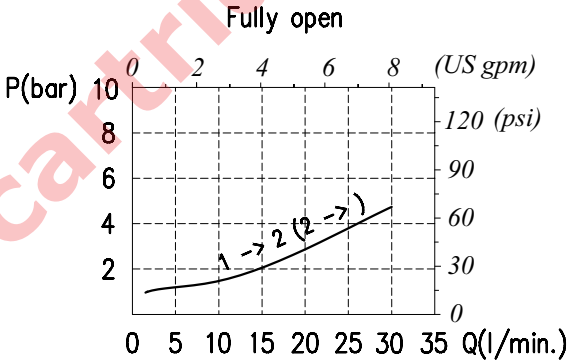




Rating diagrams

Typical pressure drop vs. flow characteristics



Order code

NB10A / A -□ -0 -□

Adjustments
(see page 38)

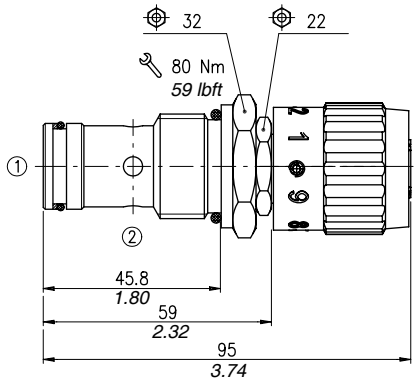
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

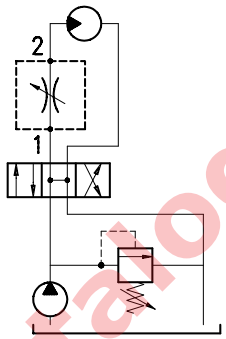
Seals

B) Buna
V) Viton

see SAE cartridges catalogue

Dimensions and hydraulic circuit





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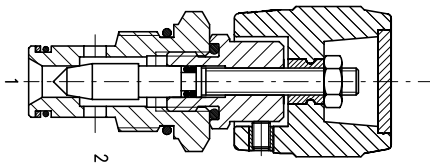
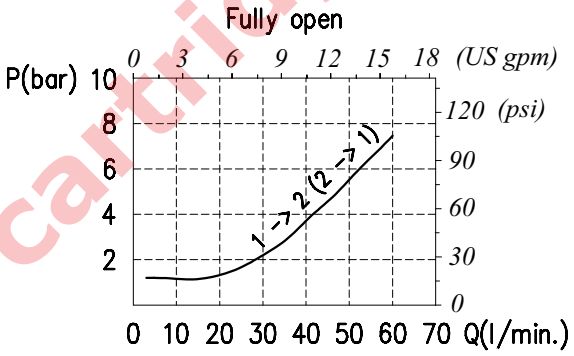


Rating diagrams

Typical pressure drop vs. flow characteristics



Order code

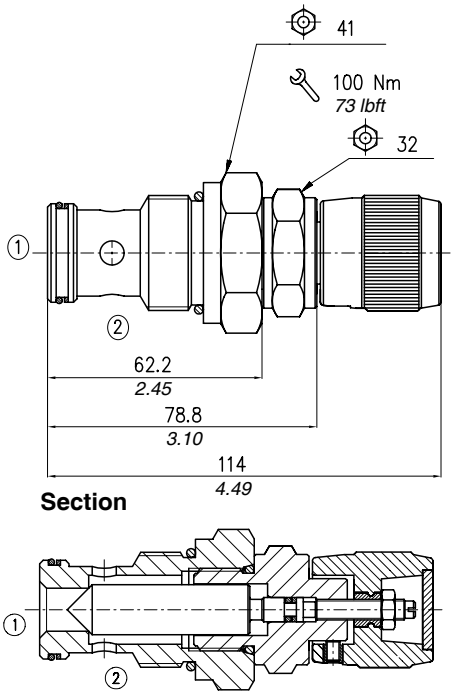
NB12A / A -□ -0 -□

Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Seals
B) Buna
V) Viton

see SAE cartridges catalogue

Dimensions and hydraulic circuit



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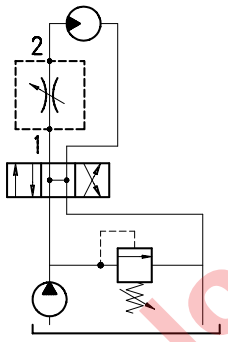
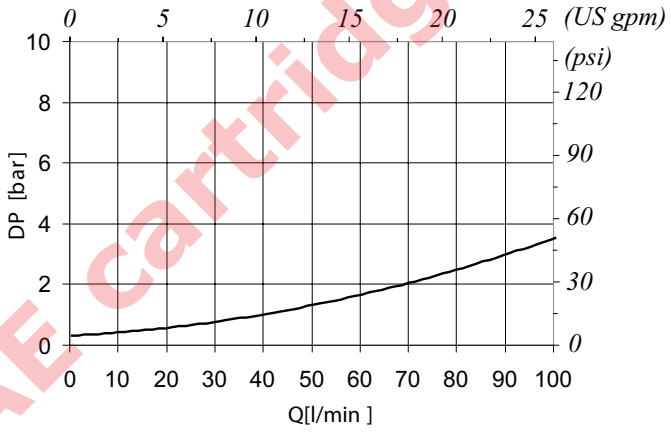


Rating diagrams

Typical pressure drop vs. flow characteristics



Order code

NB16A / A -☐ -0 -☐

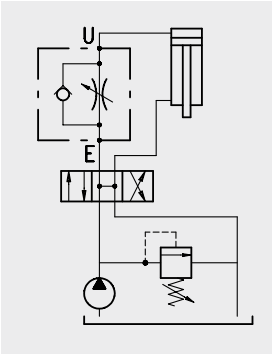
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Seals
B) Buna
V) Viton

see SAE cartridges catalogue

Operation

The oil flow is free from U (A) to E (A1) and capacity is adjusted during reverse flow by variation of the oil flow section.
For cartridges the ports are 1 and 2. 1 coincides with port E and 2 coincides with port U.



Performance

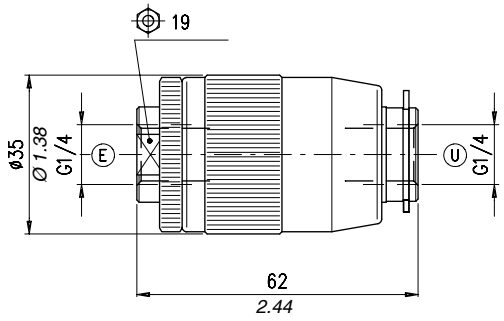
Body Valves

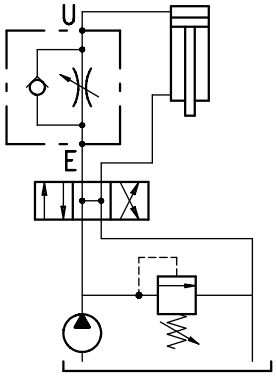
Type	Max. flow		Max. pressure		Opening pressure between U (A) and E (A1)	Weight	
	l/min	*US gpm*	bar	*psi*		kg	*lb*
VSRU 14	25	*6.6*	450	*6500*	see performance graphs	0,31	*0.68*
VSRU 38	40	*11*	400	*5800*		0,52	*1.15*
VSRU 18							
VSRU 12	60	*16*	350	*5100*		0,75	*2.20*
VSRU 34	100	*26*	300	*4350*		1,18	*2.60*
VSRU 100	150	*40*	250	*3600*		1,95	*4.30*
VSRU/C 14	25	*6.6*	450	*6500*		0,32	*0.70*
VSRU/C 38	40	*11*	400	*5800*		0,52	*1.15*
VSRU/C 18							
VSRU/C 12	60	*16*	350	*5100*		0,75	*2.20*
VSRU/C 34	100	*26*	300	*4350*		1,19	*2.62*
VSRU/C 100	150	*40*	250	*3600*		1,95	*4.30*
VSRU/C 114	250	*66*	250	*3600*		3,12	*6.88*
VSRU/FF/14/P.VL	25	*6.6*	350	*5100*		0,27	*0.59*
VSRU/FF/38/P.VL	40	*11*				0,45	*0.99*
VSRU/FF/12/P.VL	60	*16*				0,74	*1.63*

Cartridges

Tipo	Max flow		Max. pressure		Opening pressure from 2 to 1 with closed regulator	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*US gpm*			kg	*lb*
NT08A	15	*3.9*	350	*5100*	see performance graphs	see cavity SAE 8-2 page 45	0,24	*0.53*
NT10A	30	*7.9*				see cavity SAE 10-2 page 45	0,29	*0.64*
NT12A	60	*16*				see cavity SAE 12-2 page 45	0,40	*0.88*

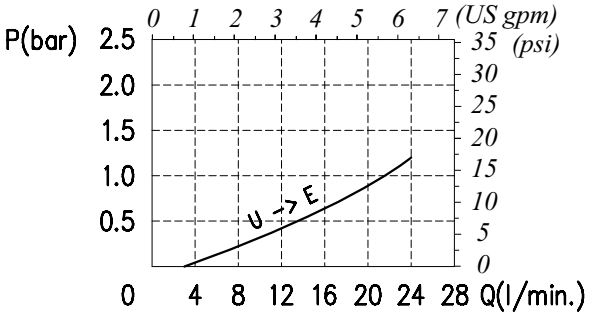
Dimensions and hydraulic circuit





Rating diagrams

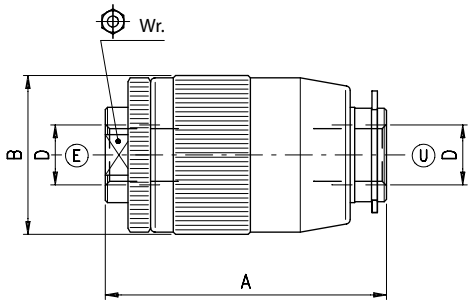
Typical pressure drop vs. flow characteristics

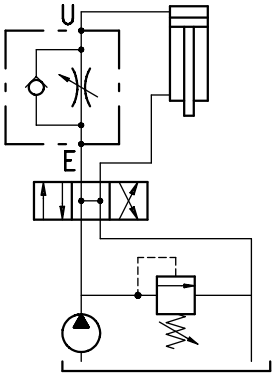


Order code

VSRU 14

Dimensions and hydraulic circuit





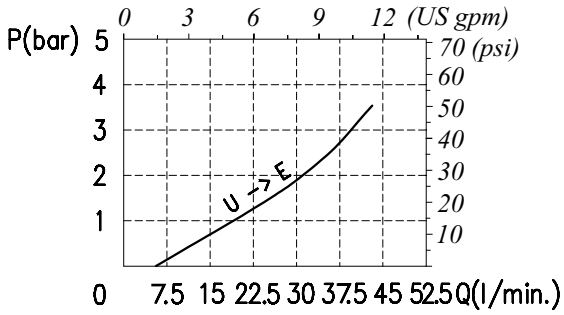
VSRU	D	A	B	Wr.
38	G 3/8	72 - *2.83*	42 - *1.65*	24 - *0.94*
18	M18x1.5	72 - *2.83*	42 - *1.65*	24 - *0.94*
12	G 1/2	80 - *3.15*	48 - *1.89*	30 - *1.18*

dimensions are in mm-*in*

Rating diagrams

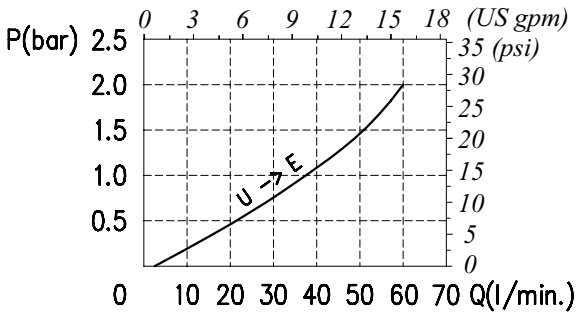
Typical pressure drop vs. flow characteristics

VSRU 38 – 18



Typical pressure drop vs. flow characteristics

VSRU 12



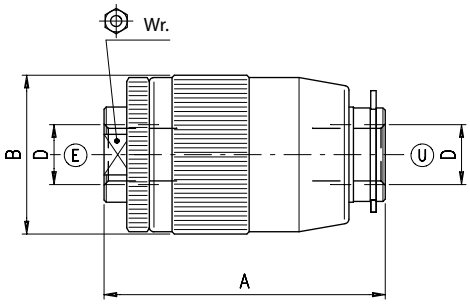
Order code

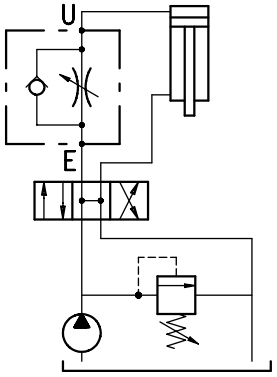
VSRU □□

Port size

38) G 3/8
18) M18x1,5
12) G 1/2

Dimensions and hydraulic circuit





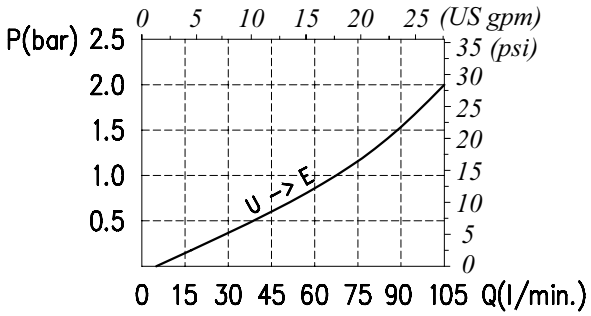
VSRU	D	A	B	Wr.
34	G 3/4	100 - *3.94*	55 - *2.16*	36 - *1.42*
100	G 1"	122 - *4.80*	65 - *2.56*	41- *1.61*

dimensions are in mm-*in*

Rating diagrams

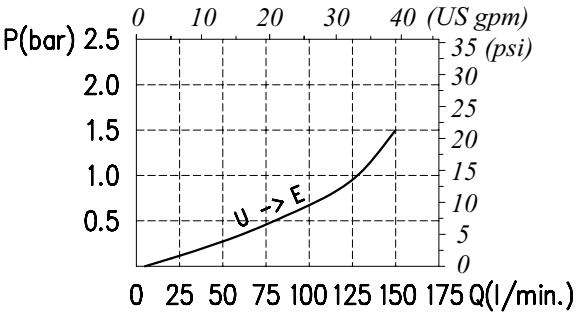
Typical pressure drop vs. flow characteristics

VSRU 34



Typical pressure drop vs. flow characteristics

VSRU 100



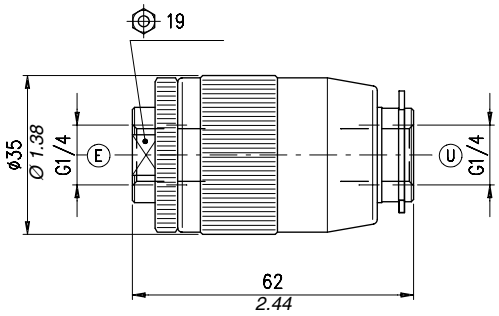
Order code

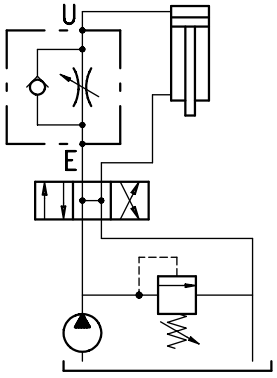
VSRU □□

Port size

34) G 3/4
100) G 1

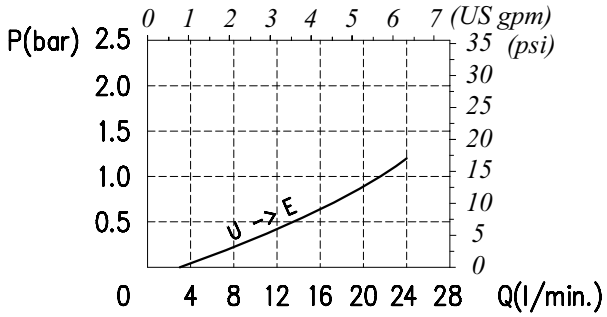
Dimensions and hydraulic circuit





Rating diagrams

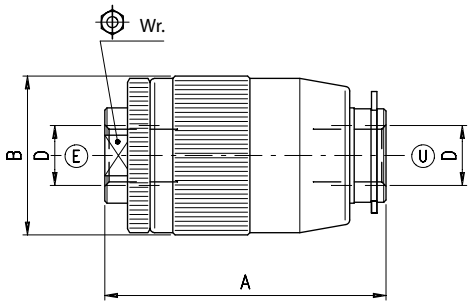
Typical pressure drop vs. flow characteristics

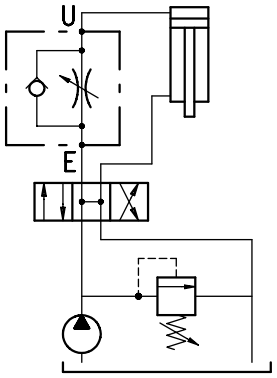


Order code

VSRU/C 14

Dimensions and hydraulic circuit



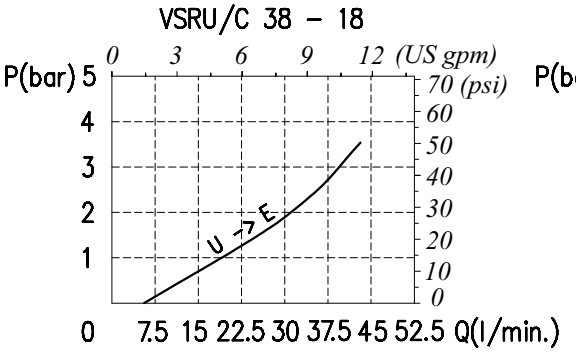


VSRU/C	D	A	B	Wr.
38	G 3/8	72 - *2.83*	42 - *1.65*	24 - *0.94*
18	M18x1.5	72 - *2.83*	42 - *1.65*	24 - *0.94*
12	G 1/2	80 - *3.15*	48 - *1.89*	30 - *1.18*

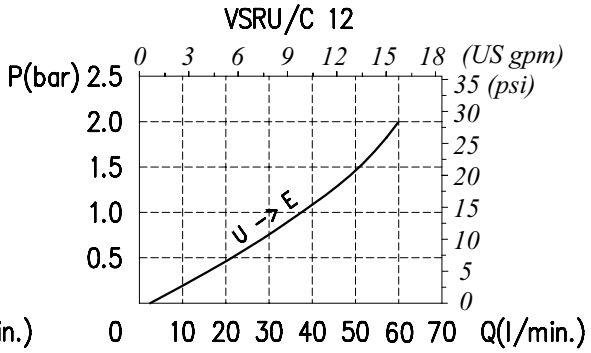
dimensions are in mm-*in*

Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



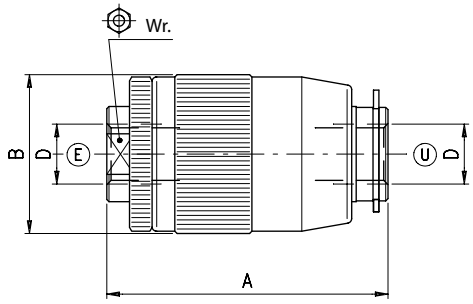
Order code

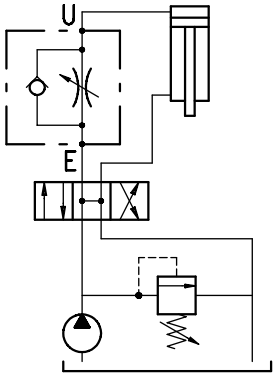
VSRU /C □□

Port size

38) G 3/8
18) M18x1,5
12) G 1/2

Dimensions and hydraulic circuit



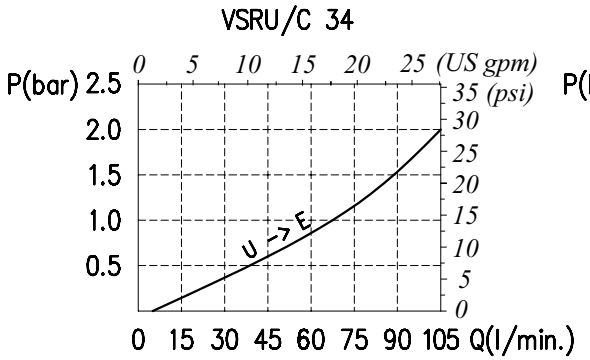


VSRU/C	D	A	B	Wr.
34	G 3/4	100- *3.94*	55- *2.16*	36- *1.42*
100	G 1"	122- *4.80*	65- *2.56*	41- *1.61*

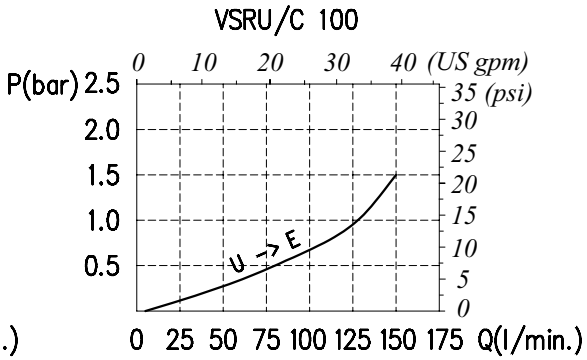
dimensions are in mm-*in*

Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



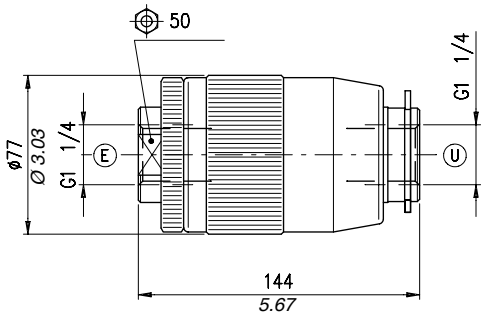
Order code

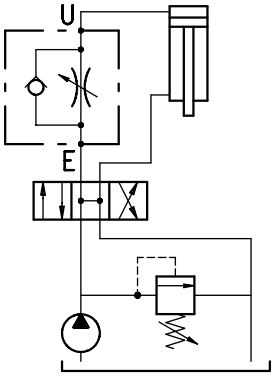
VSRU /C □□

Port size

34) G 3/4
100) G 1

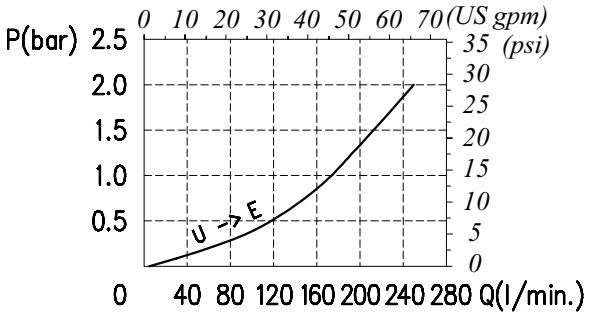
Dimensions and hydraulic circuit





Rating diagrams

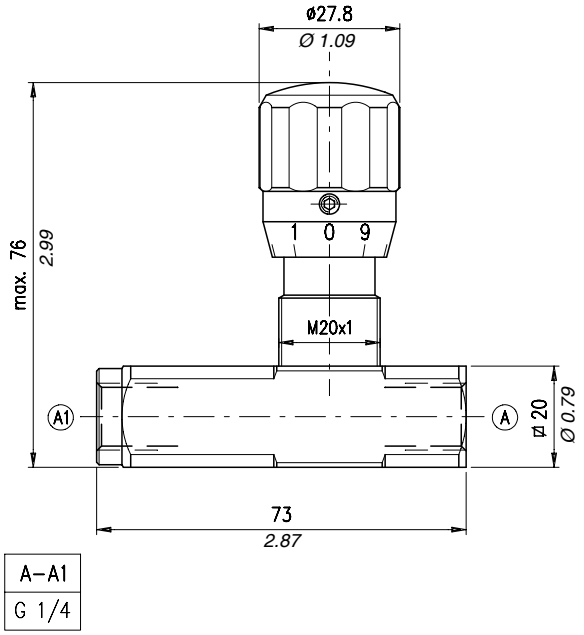
Typical pressure drop vs. flow characteristics

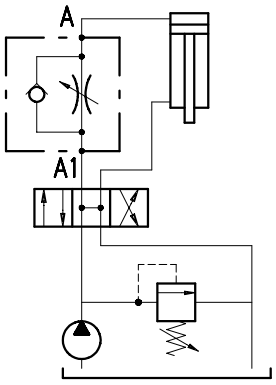


Order code

VSRU C/114

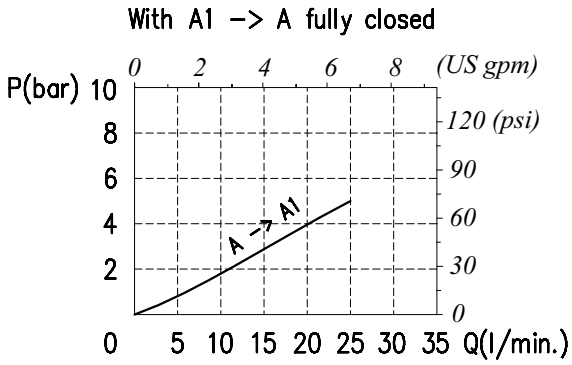
Dimensions and hydraulic circuit





Rating diagrams

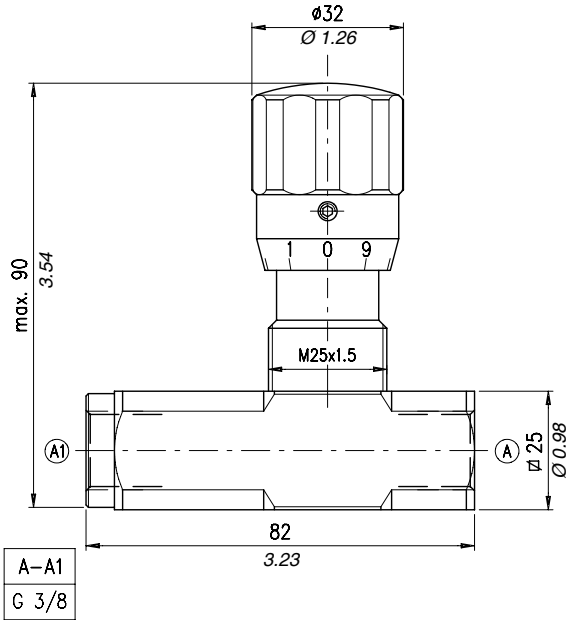
Typical pressure drop vs. flow characteristics

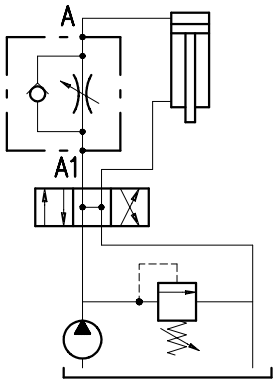


Order code

VSRU /FF /14 /P .VL

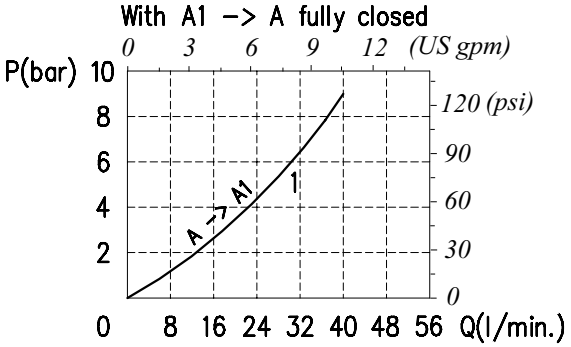
Dimensions and hydraulic circuit





Rating diagrams

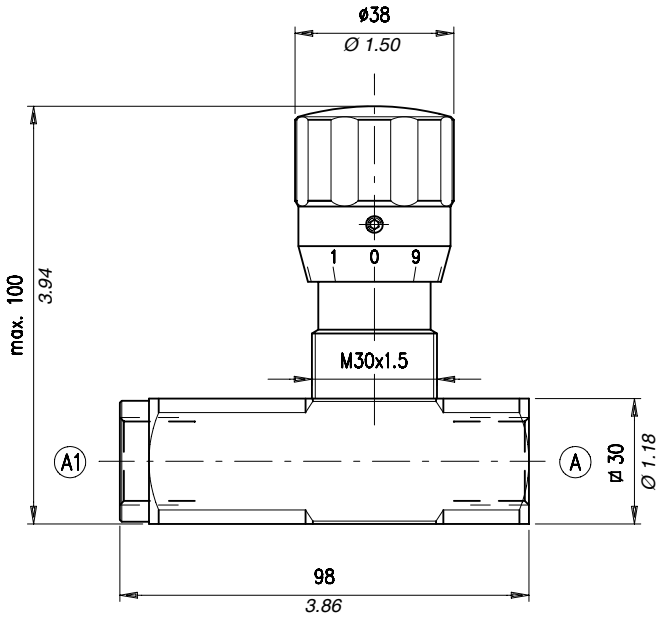
Typical pressure drop vs. flow characteristics

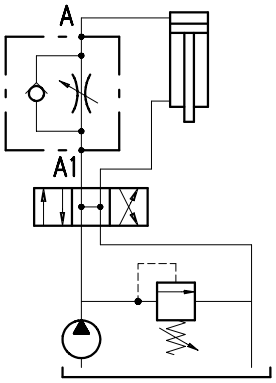


Order code

VSRU /FF /38 /P .VL

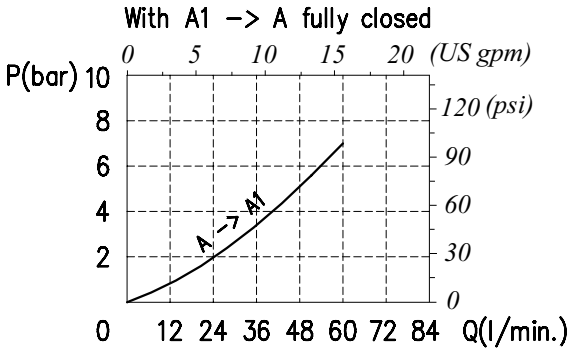
Dimensions and hydraulic circuit





Rating diagrams

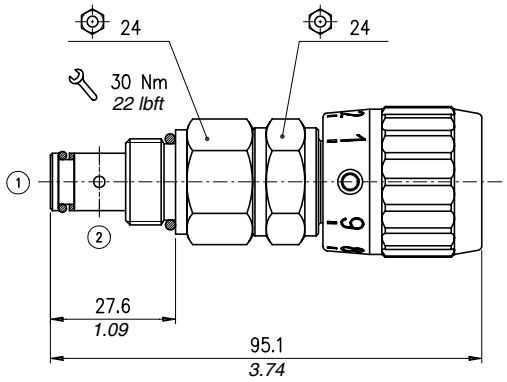
Typical pressure drop vs. flow characteristics

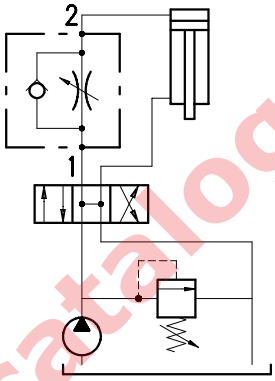


Order code

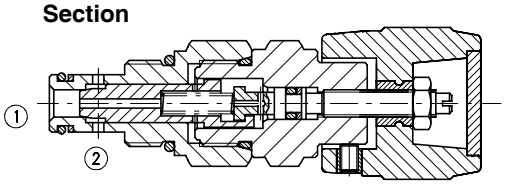
VSRU /FF /12 /P .VL

Dimensions and hydraulic circuit





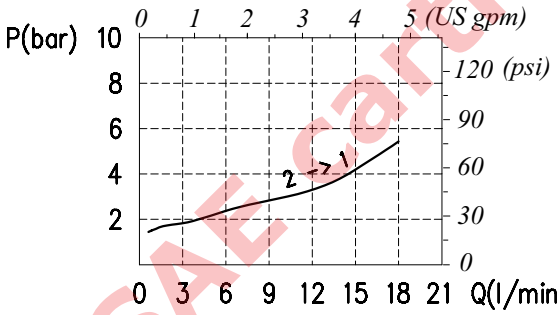
Section



Rating diagrams

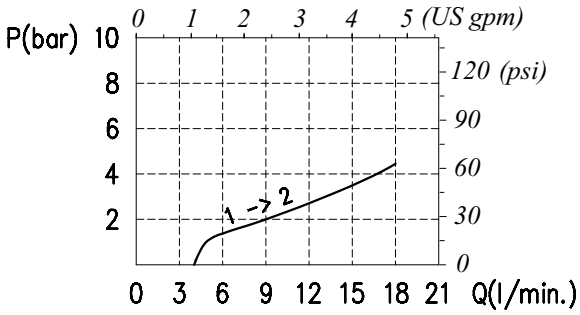
Typical pressure drop vs. flow characteristics

With 1 –> 2 fully closed



Typical pressure drop vs. flow characteristics

Fully open



Order code

NT08A / A -□ -□ -□

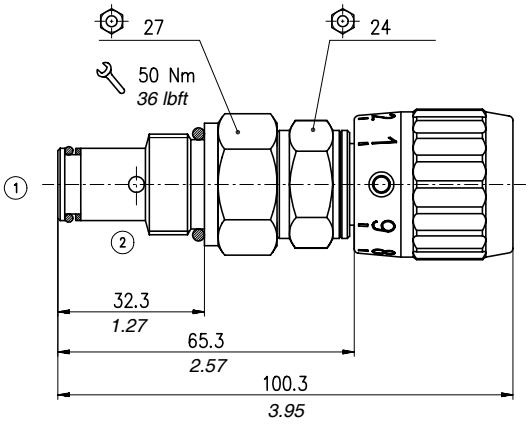
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

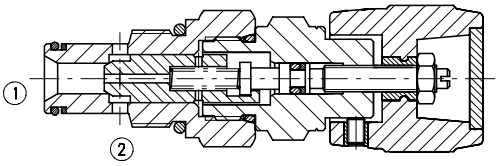
Seals
B) Buna
V) Viton

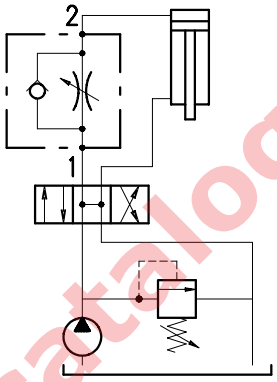
see SAE cartridges catalogue

Dimensions and hydraulic circuit



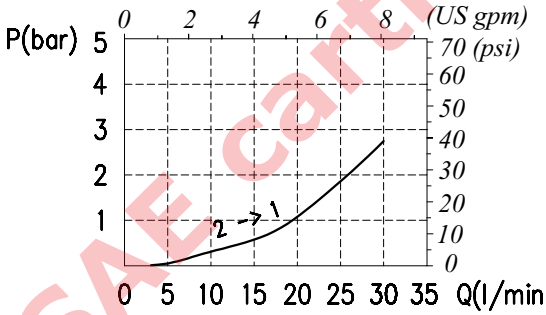
Section



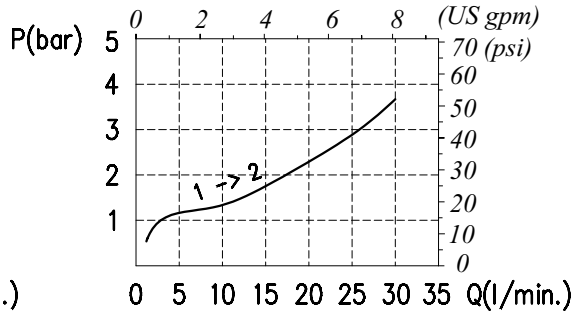


Rating diagrams

Typical ressure drop vs. flow characteristics
With 1 –> 2 fully closed



Typical ressure drop vs. flow characteristics
Fully open



Order code

NT10A / A -□ -□ -□

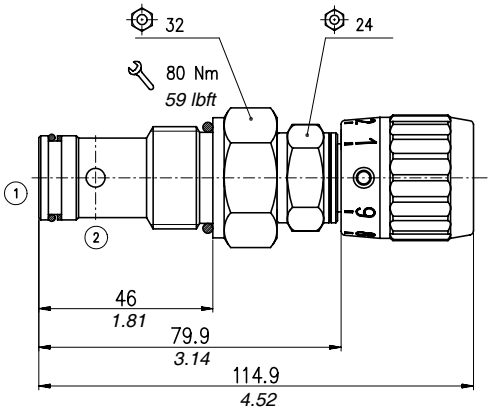
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

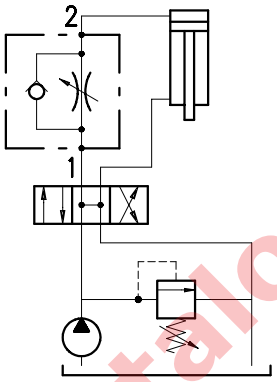
Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

Seals
B) Buna
V) Viton

see SAE cartridges catalogue

Dimensions and hydraulic circuit





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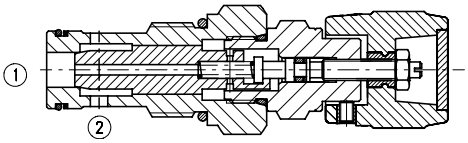
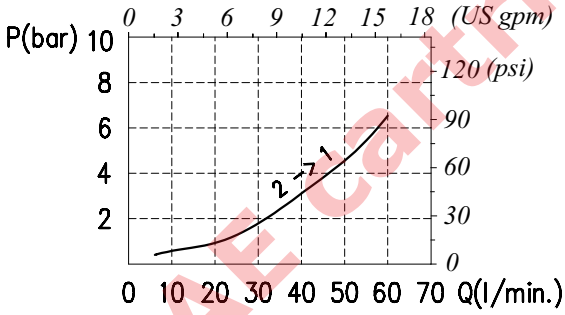


Rating diagrams

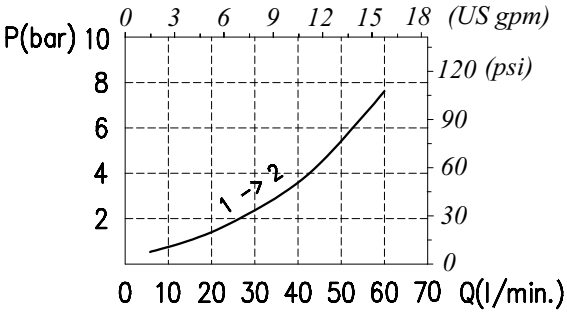
Typical pressure drop vs. flow characteristics

With 1 –> 2 fully closed



Typical pressure drop vs. flow characteristics

Fully open



Order code

NT12A / A -□ -□ -□

Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

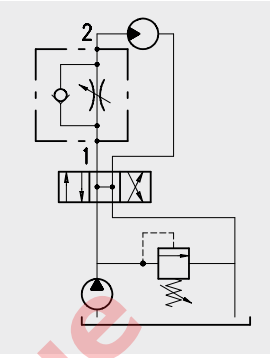
Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

Seals
B) Buna
V) Viton

see SAE cartridges catalogue

Operation

The flow is free from 1 to 2 and capacity is adjusted during reverse flow by variation of the oil flow section.



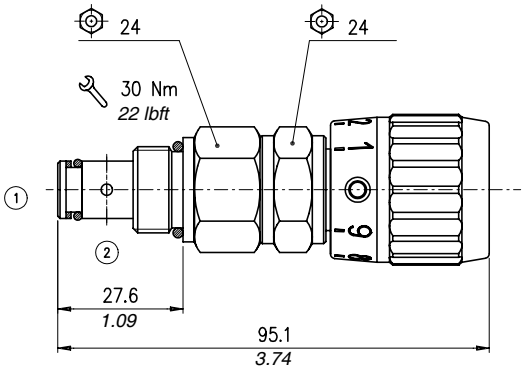
Performance

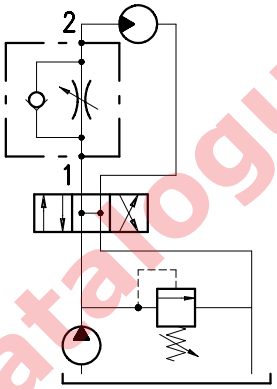
Cartridges

Type	Max. flow		Max. pressure		Opening pressure between 1 to 2 with closed regulator	Cavities and tools	Weight	
	l/min	*US gpm*	bar	*psi*			kg	*lb*
NU08A	15	*3.9*	350	*5100*	see performance graphs	see cavity SAE 8-2 page 45	0,24	*0.53*
NU10A	30	*7.9*				see cavity SAE 10-2 page 45	0,29	*0.64*
NU12A	60	*16*				see cavity SAE 12-2 page 45	0,40	*0.88*
NU16A	100	*26*				see cavity SAE 16-2 page 45	0,55	*1.21*

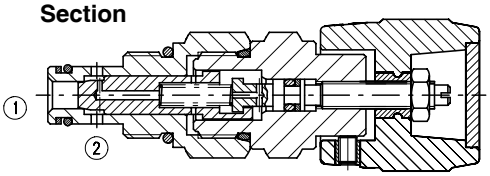
see SAE cartridges catalogue

Dimensions and hydraulic circuit





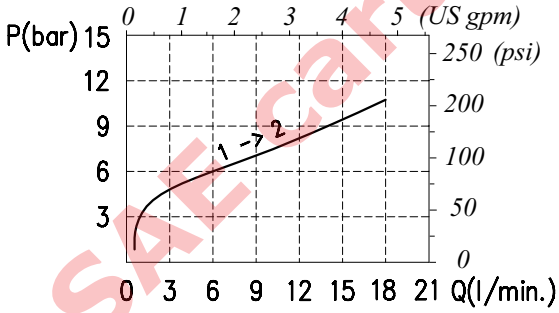
Section



Rating diagrams

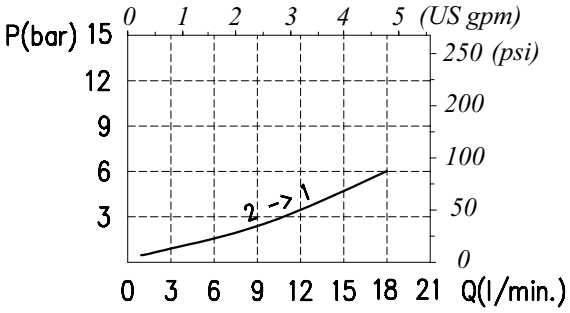
Typical pressure drop vs. flow characteristics

With 2 –> 1 fully closed



Typical pressure drop vs. flow characteristics

Fully open



Order code

NU08A / A -□ -□ -□

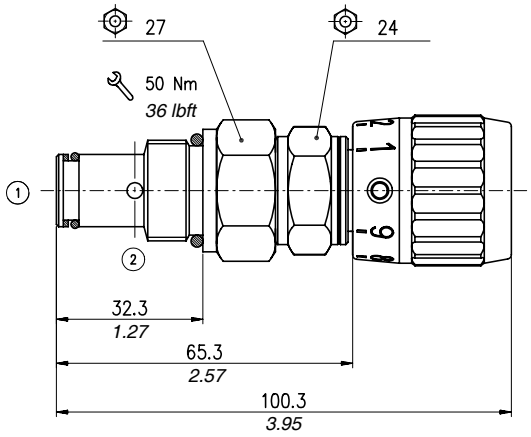
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

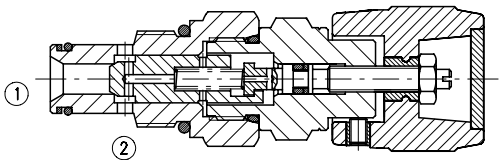
Seals
B) Buna
V) Viton

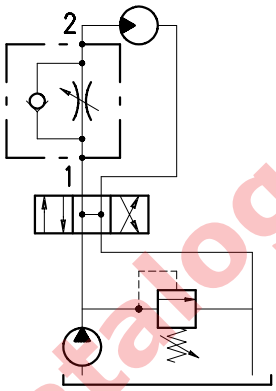
see SAE cartridges catalogue

Dimensions and hydraulic circuit



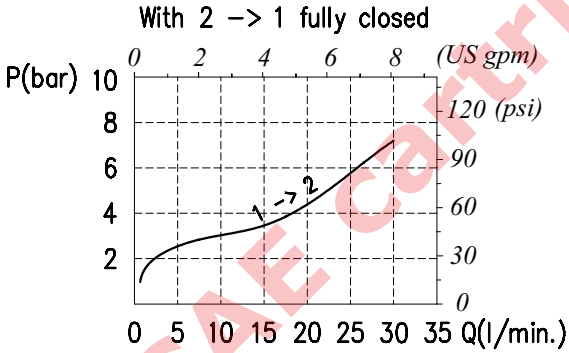
Section



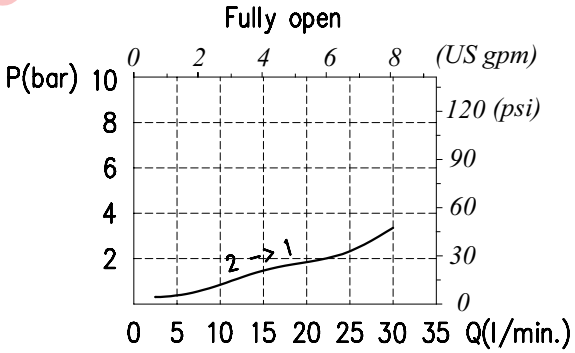


Rating diagrams

Typical ressure drop vs. flow characteristics



Typical ressure drop vs. flow characteristics



Order code

NU10A / A -□ -□ -□

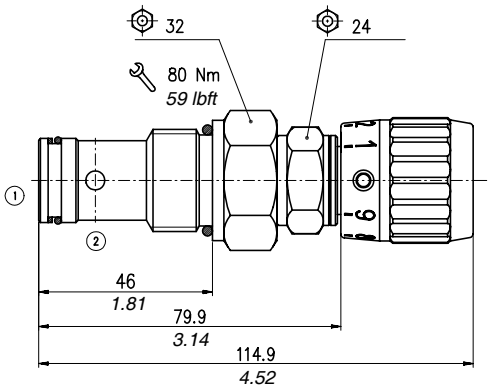
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

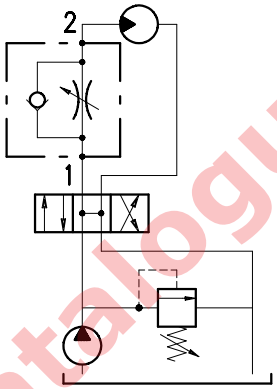
Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

Seals
B) Buna
V) Viton

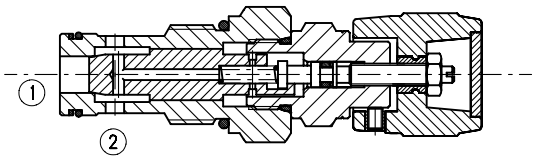
see SAE cartridges catalogue

Dimensions and hydraulic circuit



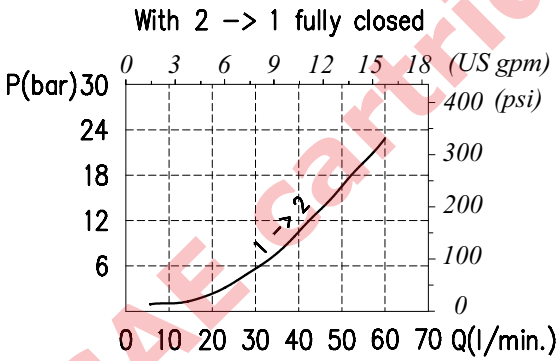


Section

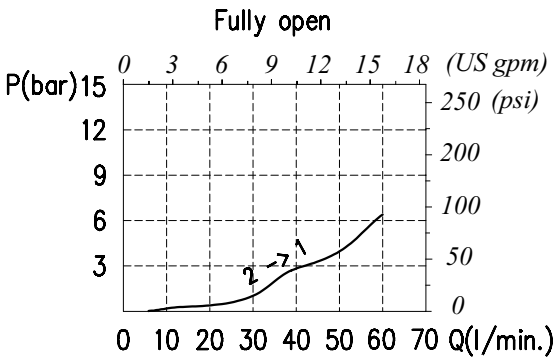


Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



Order code

NU12A / A -□ -□ -□

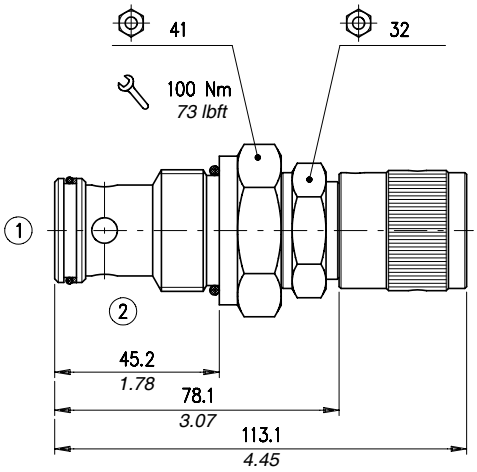
Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

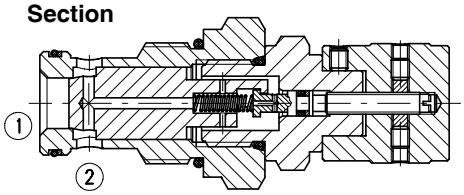
Seals
B) Buna
V) Viton

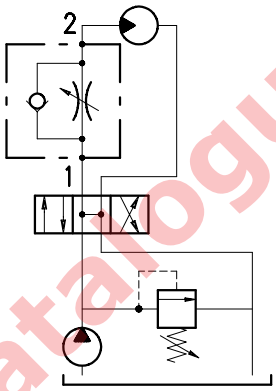
see SAE cartridges catalogue

Dimensions and hydraulic circuit



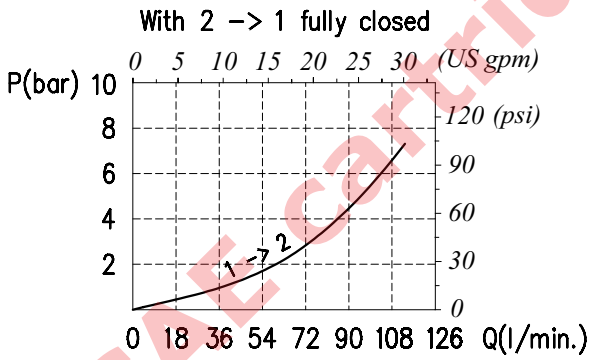
Section



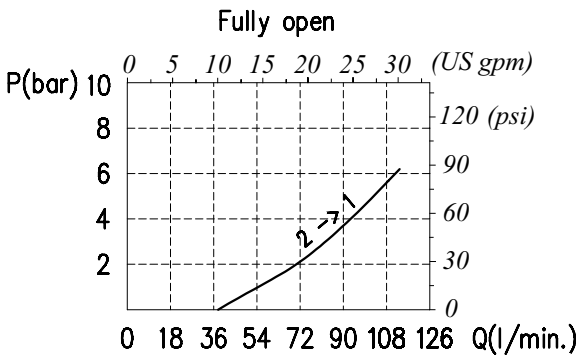


Rating diagrams

Typical pressure drop vs. flow characteristics



Typical pressure drop vs. flow characteristics



Order code

NU16A / A -□ -□ -□

Adjustments
(see page 38)
S *(screw)*
M *(copped adjustment)*
W *(handknob calibrated)*

Opening pressure check valve from 1 to 2
1) 0,5 bar *(7.3 psi)*

Seals
B) Buna
V) Viton

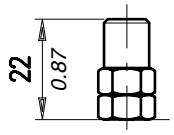
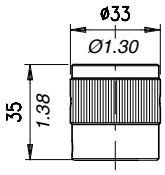
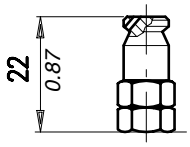
see SAE cartridges catalogue

Adjustments

Operation

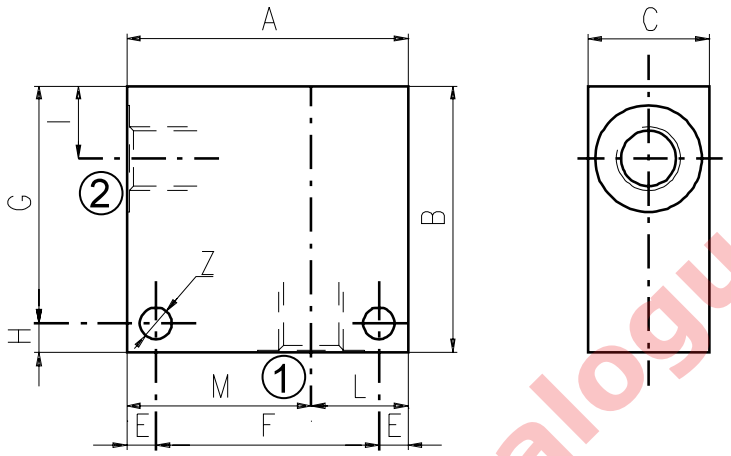
This chapter show main adjusting devices for the valves listed in this catalog.
These regulations are used to adjust flow rate between inlet and working ports.

Performance

	**Screw “S”**		**Handknob calibrated “M”**
	**Copped adjustment “W”**		

Dimensions

Material	Max. pressure	
	bar	*psi*
Aluminium	210	*3050*
Steel	350	*5100*



Cavity	Ports		A	B	C	E	F	G	H	I	L	M	Z
SAE 8/2	G 1/2	mm	70	65	35	7	56	53	12	14,5	35	35	6,5
		in	*2.75*	*2.56*	*1.38*	*0.27*	*2.20*	*2.09*	*0.47*	*0.57*	*1.38*	*1.38*	*0.25*
	G 1/4	mm	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
	G 3/8	mm	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
	SAE6	mm	50	50	30	6	38	44	6	14,8	20	30	6,5
		in	*1.97*	*1.97*	*1.18*	*0.24*	*1.50*	*1.73*	*0.24*	*0.58*	*0.79*	*1.18*	*0.25*
SAE 10/2	G 1/4	mm	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	G 3/8	mm	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	G 1/2	mm	60	60	35	6	48	54	6	18,8	25	35	6,5
		in	*2.36*	*2.36*	*1.38*	*0.24*	*1.89*	*2.12*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	SAE8	mm	60	70	35	6	48	64	6	18,8	25	35	6,5
		in	*2.36*	*2.75*	*1.38*	*0.24*	*1.89*	*2.52*	*0.24*	*0.74*	*0.98*	*1.38*	*0.25*
	SAE10	mm	70	70	35	6	58	64	6	18,5	35	35	6,5
		in	*2.75*	*2.75*	*1.38*	*0.24*	*2.28*	*2.52*	*0.24*	*0.73*	*1.38*	*1.38*	*0.25*
	SAE12	mm	70	70	40	8	54	62	8	22	30	40	8.5
		in	*2.75*	*2.75*	*1.57*	*0.31*	*2.12*	*2.44*	*0.31*	*0.87*	*1.18*	*1.57*	*0.33*
SAE 12/2	G 1/2	mm	70	80	40	8	54	72	8	25	30	40	8,5
		in	*2.75*	*3.15*	*1.57*	*0.31*	*2.12*	*2.83*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	G 3/4	mm	70	90	40	8	54	82	8	25	30	40	8,5
		in	*2.75*	*3.54*	*1.57*	*0.31*	*2.12*	*3.23*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	SAE10	mm	70	85	40	8	54	77	8	25	30	40	8,5
		in	*2.75*	*3.35*	*1.57*	*0.31*	*2.12*	*3.03*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*
	SAE12	mm	70	85	40	8	54	77	8	25	30	40	8,5
		in	*2.75*	*3.35*	*1.57*	*0.31*	*2.12*	*3.03*	*0.31*	*0.98*	*1.18*	*1.57*	*0.33*

see SAE cartridges catalogue

2, 3 and 4 Valves Bodies

Dimensions

Cavity	Ports		A	B	C	E	F	G	H	I	L	M	Z
SAE 16/2	G 1/2	mm	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	G 3/4	mm	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	G 1	mm	85	100	60	10	65	90	10	23,5	40	45	10,5
		in	*3.35*	*3.94*	*2.36*	*0.39*	*2.56*	*3.54*	*0.39*	*0.92*	*1.57*	*1.77*	*0.41*
	SAE12	mm	80	90	50	10	60	80	10	25	35	45	10,5
		in	*3.15*	*3.54*	*1.97*	*0.39*	*2.36*	*3.15*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*
	SAE16	mm	80	100	50	10	60	90	10	25	35	45	10,5
		in	*3.15*	*3.94*	*1.97*	*0.39*	*2.36*	*3.54*	*0.39*	*0.98*	*1.38*	*1.77*	*0.41*

Order code

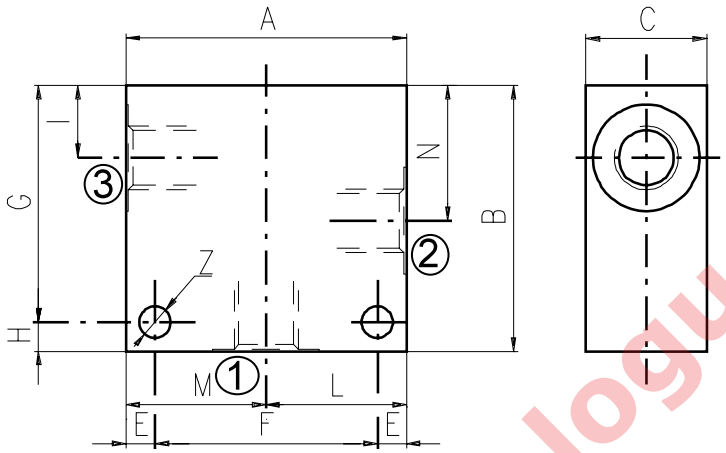
3/CC /- □ □ /20/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	
	F) G 1	

see SAE cartridges catalogue

Dimensions

Material	Max. pressure bar	
	bar	*psi*
Aluminium	210	*3050*
Steel	350	*5100*



Cavity	Ports		A	B	C	E	F	G	H	I	L	M	N	Z
SAE 8/3	G 1/4	mm	60	60	30	7	46	48	12	14,8	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.58*	*1.18*	*1.18*	*1.14*	*0.25*
	G 3/8	mm	60	60	30	7	46	48	12	14,5	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.57*	*1.18*	*1.18*	*1.14*	*0.25*
	G 1/2	mm	70	65	35	7	56	53	12	14,5	35	35	29,1	6,5
		in	*2.75*	*2.56*	*1.38*	*0.27*	*2.20*	*2.09*	*0.47*	*0.57*	*1.38*	*1.38*	*1.14*	*0.25*
	SAE6	mm	60	60	30	7	46	48	12	14,5	30	30	29,1	6,5
		in	*2.36*	*2.36*	*1.18*	*0.27*	*1.81*	*1.89*	*0.47*	*0.57*	*1.18*	*1.18*	*1.14*	*0.25*
SAE 10/3	G 1/4	mm	60	65	35	6	48	59	6	18	30	30	34,5	7
		in	*2.36*	*2.56*	*1.38*	*0.24*	*1.89*	*2.32*	*0.24*	*0.70*	*1.18*	*1.18*	*1.36*	*0.27*
	G 3/8	mm	60	65	35	6	48	59	6	18,8	30	30	34,5	7
		in	*2.36*	*2.56*	*1.38*	*0.24*	*1.89*	*2.32*	*0.24*	*0.74*	*1.18*	*1.18*	*1.36*	*0.27*
	G 1/2	mm	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
	SAE6	mm	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
	SAE8	mm	65	70	35	6	53	64	6	18,8	32,5	32,5	34,5	7
		in	*2.56*	*2.75*	*1.38*	*0.24*	*2.09*	*2.52*	*0.24*	*0.74*	*1.28*	*1.28*	*1.36*	*0.27*
SAE 12/3	G 1/2	mm	70	100	40	8	54	92	8	25	35	35	53,5	8,5
		in	*2.75*	*3.94*	*1.57*	*0.31*	*2.12*	*3.6*	*0.31*	*0.98*	*1.38*	*1.38*	*2.10*	*0.33*
	G 3/4	mm	90	100	50	10	70	90	10	25,1	45	45	53,5	10,5
		in	*3.54*	*3.94*	*1.97*	*0.39*	*2.75*	*3.54*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE10	mm	80	100	40	8	64	92	8	25	40	40	53,5	8,5
		in	*3.15*	*3.94*	*1.57*	*0.31*	*2.52*	*3.6*	*0.31*	*0.98*	*1.57*	*1.57*	*2.11*	*0.33*
	SAE12	mm	80	100	45	8	64	92	8	25	40	40	53,5	8,5
		in	*3.15*	*3.94*	*1.57*	*0.31*	*2.52*	*3.6*	*0.31*	*0.98*	*1.57*	*1.57*	*2.11*	*0.33*
SAE 16/3	G 3/4	mm	90	100	50	10	70	90	10	25,1	45	45	53,5	10,5
		in	*3.54*	*3.94*	*1.97*	*0.39*	*2.75*	*3.54*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE12	mm	90	105	50	10	70	95	10	25,1	45	45	53,5	10,5
		in	*3.54*	*4.13*	*1.97*	*0.39*	*2.75*	*3.74*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*
	SAE16	mm	90	105	50	10	70	95	10	25,1	45	45	53,5	10,5
		in	*3.54*	*4.13*	*1.97*	*0.39*	*2.75*	*3.74*	*0.39*	*0.99*	*1.77*	*1.77*	*2.11*	*0.41*

see SAE cartridges catalogue

Order code

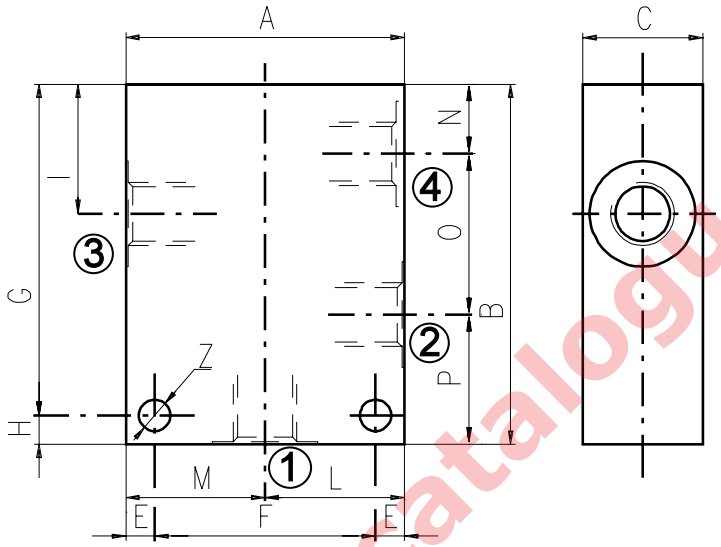
3/CC /- □ □ /30/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	

see SAE cartridges catalogue

Dimensions

Material	Max pressure	
	bar	*psi*
Aluminium	210	*3050*
Steel	350	*5100*



Cavity	Ports		A	B	C	E	F	G	H	I	L	M	N	O	P	Z
SAE 8/4	G 1/4	mm	60	75	30	7	46	63	12	29,1	30	30	14,8	29,1	31,1	6,5
		in	*2.36*	*2.95*	*1.18*	*0.27*	*1.81*	*2.48*	*0.47*	*1.14*	*1.18*	*1.18*	*0.58*	*1.14*	*1.22*	*0.25*
	SAE6	mm	60	75	30	7	46	63	12	29,1	30	30	14,8	29,1	31,1	6,5
		in	*2.36*	*2.95*	*1.18*	*0.27*	*1.81*	*2.48*	*0.47*	*1.14*	*1.18*	*1.18*	*0.58*	*1.14*	*1.22*	*0.25*
SAE 10/4	G 3/8	mm	60	85	35	6	48	79	6	34,5	30	30	18,8	31,7	34,5	7
		in	*2.36*	*3.35*	*1.38*	*0.24*	*1.89*	*3.11*	*0.24*	*1.36*	*1.18*	*1.18*	*0.74*	*1.25*	*1.36*	*0.27*
	G 1/2	mm	70	85	35	6	58	79	6	34,5	35	35	18,8	31,7	34,5	7
		in	*2.75*	*3.35*	*1.38*	*0.24*	*2.28*	*3.11*	*0.24*	*1.36*	*1.38*	*1.38*	*0.74*	*1.25*	*1.36*	*0.27*
	SAE6	mm	60	85	35	6	48	79	6	34,5	30	30	18,8	31,7	34,5	7
		in	*2.45*	*3.35*	*1.38*	*0.24*	*1.89*	*3.11*	*0.24*	*1.36*	*1.18*	*1.18*	*0.74*	*1.25*	*1.36*	*0.27*
	SAE8	mm	70	85	35	6	58	79	6	34,5	35	35	18,8	31,7	34,5	7
		in	*2.75*	*3.35*	*1.38*	*0.24*	*2.28*	*3.11*	*0.24*	*1.36*	*1.38*	*1.38*	*0.74*	*1.25*	*1.36*	*0.27*
SAE 12/4	G 1/2	mm	80	115	40	8	64	107	8	44	40	40	22	44,5	48,5	8,5
		in	*3.15*	*4.53*	*1.57*	*0.31*	*2.52*	*4.21*	*0.31*	*1.73*	*1.57*	*1.57*	*0.87*	*1.75*	*1.9*	*0.33*
	SAE10	mm	80	115	40	8	64	107	8	44	40	40	22	44,5	48,5	8,5
		in	*3.15*	*4.53*	*1.57*	*0.31*	*2.52*	*4.21*	*0.31*	*1.73*	*1.57*	*1.57*	*0.87*	*1.75*	*1.9*	*0.33*
SAE 16/4	G 3/4	mm	100	130	50	10	80	120	10	53,5	50	50	25,1	56,9	48	10,5
		in	*3.94*	*5.12*	*1.97*	*0.39*	*3.15*	*4.72*	*0.39*	*2.11*	*1.97*	*1.97*	*0.99*	*2.24*	*1.89*	*0.41*

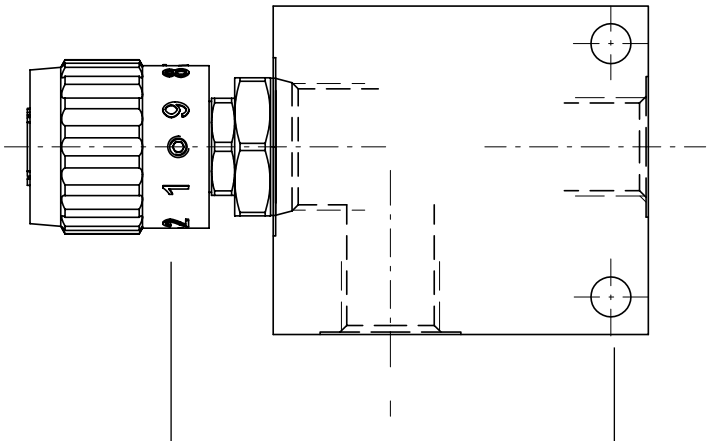
see SAE cartridges catalogue

Order code

3/CC /- □ □ /40/□- □-1

Cavity	Ports	Materials
08	**B)** G 1/4	**1)** Aluminium
10	**C)** G 3/8	**2)** Steel
12	**D)** G 1/2	
16	**E)** G 3/4	

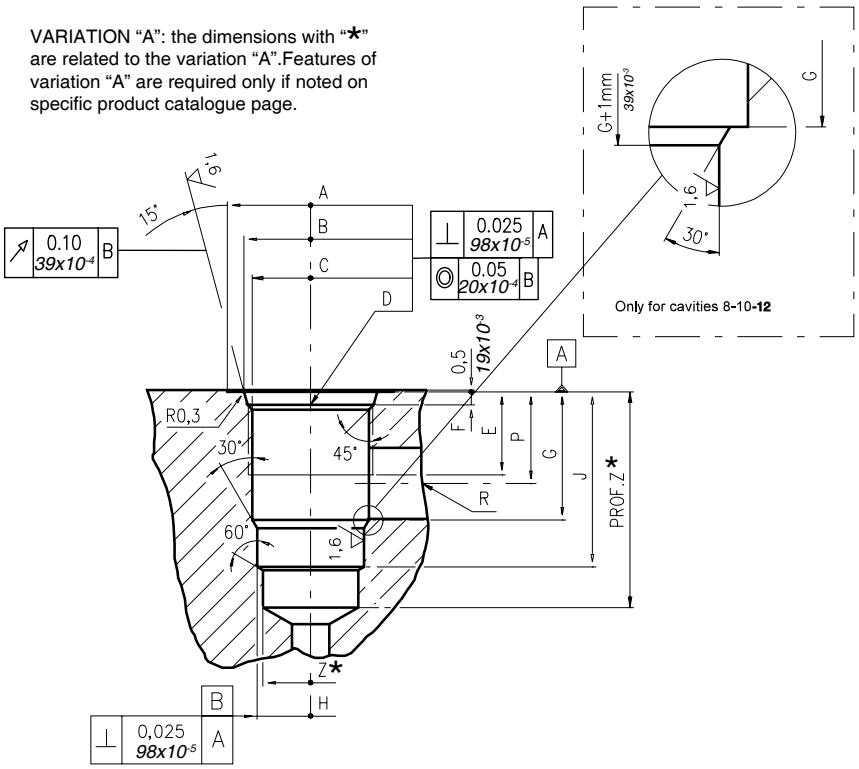
How to order valves with body



Cavity	Ports	Materials
08	B) G 1/4	1) Aluminium
10	C) G 3/8	
12	D) G 1/2	
16	E) G 3/4	
	F) G 1	
	J) SAE 6	2) Steel
	K) SAE 8	
	L) SAE 10	
	M) SAE 12	
	N) SAE 16	

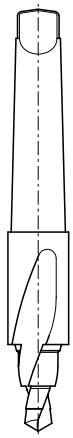
Dimensions

VARIATION "A": the dimensions with "*" are related to the variation "A".Features of variation "A" are required only if noted on specific product catalogue page.



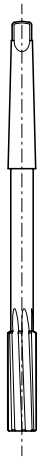
\		A	B ±0,05	C ±0,05	D	E	F	G	H ±0,02	J	K ±0,02	L	M ±0,02	N	P	R øMAX	S	T øMAX	U	V øMAX	X øMAX	Z øMIN*	Prof.Z MIN*
08/2	mm	27	20,66	17,42	3/4 -16 UNF	12,50	2,50	18,20	12,72	29,50	-	-	-	-	14,00	8,00	-	-	-	-	-	12,00	39
	in	*1.06*	*0.81*	*0.68*		*0.49*	*0.10*	*0.72*	*0.50*	*1.16*					*0.55*	*0.31*						*0.47*	*1.53*
10/2	mm	30	24,00	20,62	7/8 -14 UNF	16,00	2,80	24,00	15,90	33,50	-	-	-	-	18,30	11,00	-	-	-	-	-	14,50	40
	in	*1.18*	*0.94*	*0.81*		*0.63*	*0.11*	*0.94*	*0.62*	*1.32*					*0.72*	*0.43*						*0.57*	*1.57*
12/2	mm	38	29,23	24,73	1 1/16 -12 UNF	19,00	3,50	34,15	22,25	46,80	-	-	-	-	24,50	19,00	-	-	-	-	-	21,50	60
	in	*1.50*	*1.15*	*0.97*		*0.75*	*0.14*	*1.34*	*0.87*	*1.84*					*0.96*	*0.75*						*0.85*	*2.36*
16/2	mm	45	35,58	31,34	1 5/16 -12 UNF	22,00	3,50	34,00	28,62	47,00	-	-	-	-	24,50	19,00	-	-	-	-	-	25,50	70
	in	*1.77*	*1.40*	*1.23*		*0.87*	*0.14*	*1.34*	*1.13*	*1.85*					*0.96*	*0.75*						*1,00*	*2.75*

Rougher tool



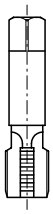
Cavity	Code number
08/2	3UT00053190
10/2	3UT00056610
12/2	3UT00054090
16/2	3UT00054510

Finisher tool



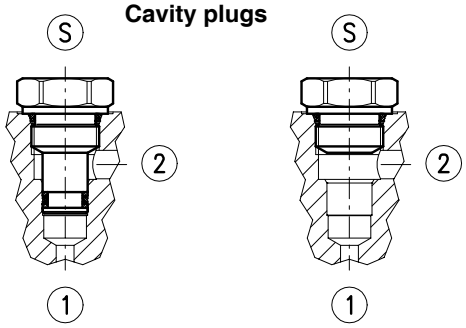
Cavity	Code number
08/2	3UT06A1270N
10/2	3UT00054580
12/2	3UT00054670
16/2	3UT00054520

Tap



Cavity	Code number
08/2	3UT03416UNF
10/2	3UT07814UNF
12/2	3UT0111612UN
16/2	3UT0151612UN

Cavity plugs



Cavity	Code number	①	②	Ⓢ
08/2	3XTP3533700	X	X	X
	3XTP1531900	0	0	X
10/2	3XTP3544200	X	X	X
	3XTP1542300	0	0	X
12/2	3XTP3555400	X	X	X
	3XTP1552900	0	0	X
16/2	3XTP3575500	X	X	X
	3XTP1572900	0	0	X

X=Closed 0=Open

Notes

1st edition May 2010

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