

Facts – Data – Advantages

The modular system of variobloc series provides a variety of design options and makes it easy to quickly and individually adjust individual components to changed operating conditions.

The differences are in the details: Whether ease of handling, performance, or longevity - these ewo-qualities bring you benefits.



- ✓ **Safety acc. EN 983 (Machines, equipment and components)**
- ✓ **Modern industrial design**
- ✓ **Robust metal housing**
- ✓ **(Zinc die casting with 2-fold surface protection)**
- ✓ **Thread connection acc. DIN with sealing surface**
- ✓ **Bayonet fixing for the plastic and metal bowl**
- ✓ **Retrofit metal bowl protection for the plastic bowl**
- ✓ **Option semi and fully automatic drain valves**
- ✓ **Two combinable connection possibilities (comfort - compact)**
- ✓ **Comfort connection with adhesive o-rings**
- ✓ **Integrated T-Bracket as connection module**
- ✓ **Direct wall mounting**
- ✓ **High stiffness / stability of the connection**
- ✓ **Optimal regulation characteristics through roll diaphragms**
- ✓ **Lubricator with enhanced flow rate and nebulisation**

Materials used:

Housing, fastening elements	zinc diecasting (Z410)
Cap, head (regulator)	PA6-GF30
Handwheel	POM
Cover	ABS
Seals, diaphragm	NBR
Filter insert	PE sintered
Impact cartridge, cutting wheel	POM
Bowl	polycarbonate
Interlock	POM
Pressure spring	steel galvanized
Gegendruckfeder	stainless steel
Cone, diaphragm plate	brass
Oil regulating valve	spec. PA
Oil regulation	PU
Metal bowl, bezel	zinc diecasting (Z410)
Sighting tube (at metal bowl)	spec. PA
Bowl protection	aluminum

The parts have a material indicator of formal, so they should be disposed of easily and are well recyclable.

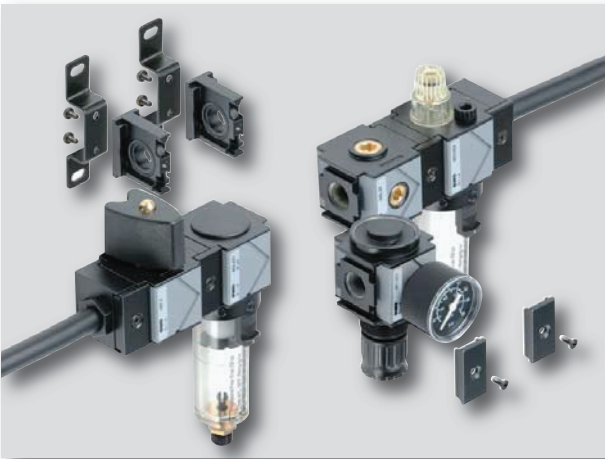
Module fixation

with bracket angle (for regulator) or direct wall mounting (2 screws) for all devices.



Comfort blocking (only size I) –

faster change of components or complete sets with **Connection module** (sealing rings adhesive). Result: A shorter assembling time.



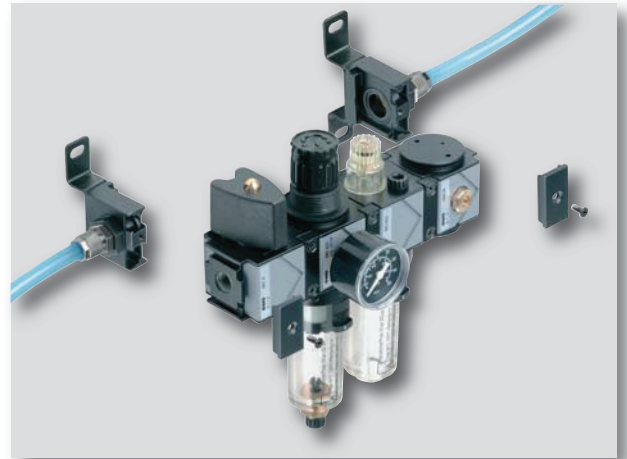
Lockable handwheel

for pressure regulator, battery pressure regulator, filter regulator and service units available.



Thread connecting plate

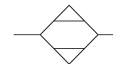
with adhesive sealing rings (also available with bracket) for assembly friendly installation in pipe -or hose systems.



Compact connection

with optional integrated T-bracket.





Filters type 482 - G^{1/4} - G1



482.221 482.231S 482.231M

Cover in individual color available upon request (standard: grey!)

Compressed air filters serve to remove impurities (condensation water, pipe scaling, rust particles) from the air in the working place. The cleansing is done in two stages by means of cycloning (condensation) and PE-Filter-elements (solid contamination).

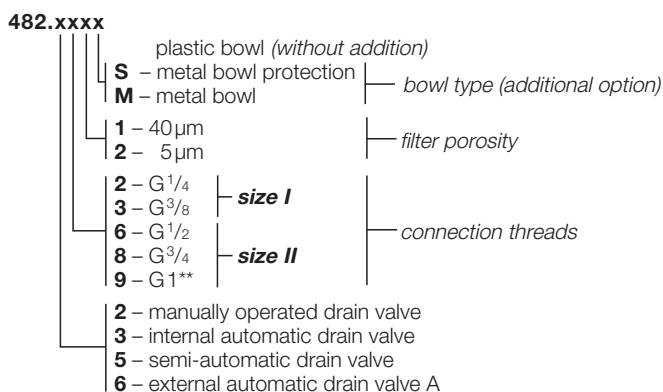
Size I with connection threads G^{1/4} and G^{3/8} and size II with connection threads G^{1/2}, G^{3/4} and G1 available. 3 different models of drain valves are possible: manually operated, semi-automatic or fully-automatic (internal or external) drain valves.

Standard version:

With plastic bowl and manually operated drain valve, filter porosity 40µm

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	482.221	482.231	-	-	-
II	-	-	482.261	482.281	482.291

Order key for all variants:

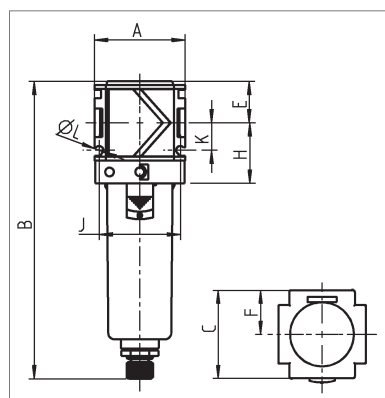


for example:

482.221 - but with internal automatic drain valve and metal bowl = **482.321M**

Spare parts and accessories

	Order No.	
	size I	size II
Metal bowl with manually operated drain valve	480-28	480-213
Plastic bowl with metal bowl protection	480-90	-
Metal bowl protection	480-25	-
Plastic bowl with manually operated drain valve	480-18	480-210
Filter element filter porosity 40µm (mounted)	480-7	480-219
5µm	480-45	480-220



Dimensions [mm]

Size	I	II
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4} G1**
A	48	70 125
B	158	202 202
C	48	70 70
E	22	26 26
F	24	35 35
H	32	44 44
J	43	62 62
K	14,5	18 18
L (ø)	4,4	5,4 5,4

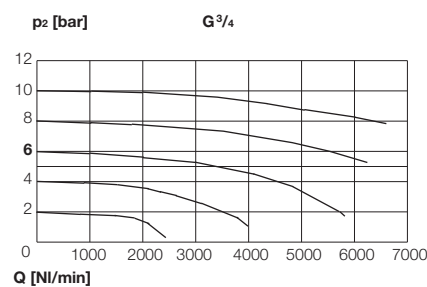
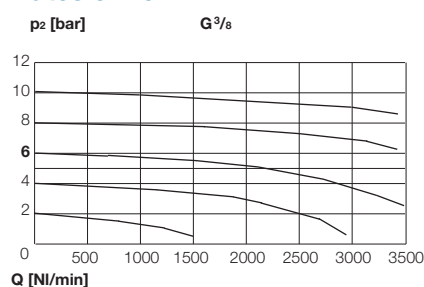
Technical data

	size I		size II		
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	1800	2000	3200	3500	3500
Filter porosity	40µm (optional: 5µm)				
Max. operating pressure (p ₁)	16bar (20bar with metal bowl / 12bar with internal automatic drain valve)				
Max. operating temperature	50°C / 80°C with metal bowl				
Volume of condensate	25 cm ³		85 cm ³		
Drain valve	manually operated (optional: semi-automatic, automatic)				
Material	- housing - bowl		zinc alloy polycarbonate (optional: metal)		
Weight	310g		840g	840g	1300g

* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar

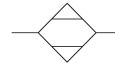
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Drain valves see page 20 and chapter 8

Fixing- and assembly-possibilities see page 20



Micro-filters type 491 - G^{1/4} – G1

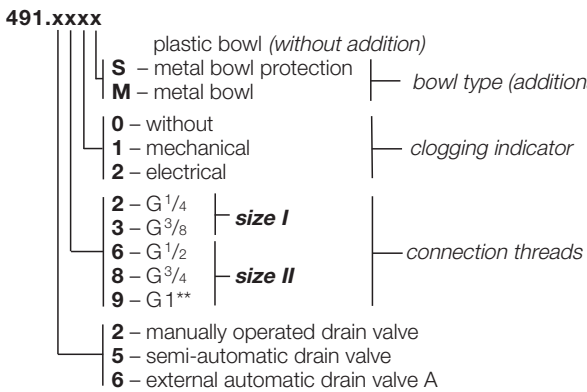
Microborosilicate air filters are suitable for use in all situations in which the required purity of the compressed air is especially high. As the second stage after the standard filter they remove almost without residue the smallest remaining particles of water, oil or dirt to 99,999% (for 0,01 µm). Size I with connection threads G^{1/4} and G^{3/8} and size II available with connection threads G^{1/2}, G^{3/4} and G1.

Standard version:

With plastic bowl and manually operated drain valve, without clogging indicator

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	491.220	491.230	-	-	-
II	-	-	491.260	491.280	491.290

Order key for all variants:



for example:

491.220 – but with external automatic drain valve and metal bowl = 491.620M



Cover in individual color available upon request (standard: grey)!

4 variobloc

Spare parts and accessories

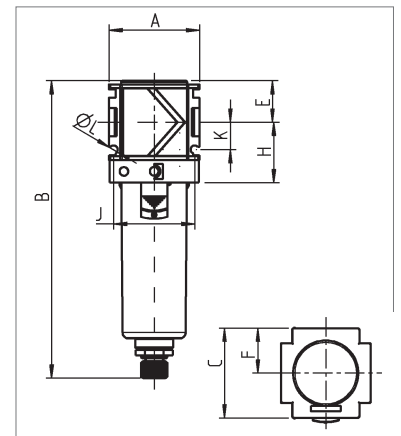
	Order No.	
	size I	size II
Metal bowl with manually operated drain valve	480-28	480-213
Metal bowl protection	480-25	480-216
Pressure switch for electrical output, differential pressure 0,7 bar	491-5	491-5
Plastic bowl with manually operated drain valve	491-13	491-108
Mikro-filter element with seal	491-4	491-103

Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	370	420	1000	1100	1100
Particle separation	99,999%, related to 0,01 µm (prefiltration necessary at 5µm!)				
Residual oil content	0,01 mg/m ³				
Air quality to ISO 8573.1	Class 1 dirt, Class 1 oil				
Max. operating pressure (p ₁)	16bar / 20bar with metal bowl				
Max. operating temperature	50°C / 80°C with metal bowl				
Volume of condensate	10cm ³		30cm ³		
Drain valve	manually operated (opt.: semi-automatic, automatic)				
Material - housing	zinc alloy				
Material - bowl	polycarbonate (optional: metal)				
Weight	310g		870g	870g	1330g

* Measured at 7 bar pre-pressure (p₁) and Δp = 0,1 bar

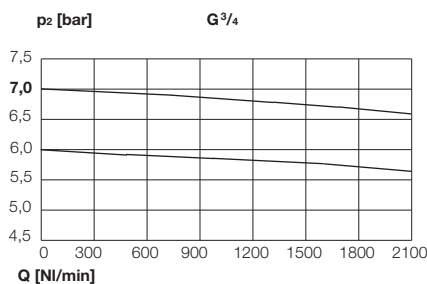
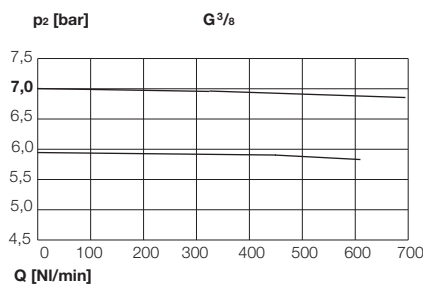
** Inlet and outlet only with mounting plates set G1 (included, see page 20)



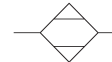
Dimensions [mm]

Size	I	II	
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1**
A	48	70	125
B	158	202	202
C	48	70	70
E	22	26	26
F	24	35	35
H	32	44	44
J	43	62	62
K	14,5	18	18
L (ø)	4,4	5,4	5,4

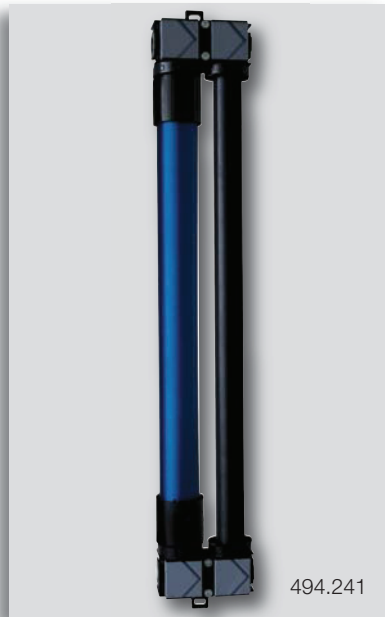
Rates of flow



Drain valves see page 20 and chapter 8
Fixing- and assembly-possibilities see page 20



Membrane air dryers type 494 - G^{1/4} - G1



Membrane dryer for efficient removal of water vapor from the air. It contributes significantly to process security. The high demands to the air quality are implemented into highest reliability by this membrane dryer of our variobloc series. Guaranteed drying, in any case reduced moisture. Low pressure loss. Maintenance-free, since there are no wearing parts in the dryer. No electrical energy required. No environment polluting desiccant necessary. No condensation, as this is blown into the atmosphere with the drying flow. Easy combination with all variobloc filters.

For proper function and a long lifetime, it is absolutely necessary to pre-filter the compressed air! We recommend our pre-filter model 482 and micro-filter model 491.

Available in several dimensions for different degrees of drying power, from 50 NI/min up to 734 NI/min.

Application range: Automotive, metal-processing, wood craft, body shops, all industrial usage-based drying, instrument air drying, pneumatic controls, medical air, analyzer, air control panels, etc.

Standard version:

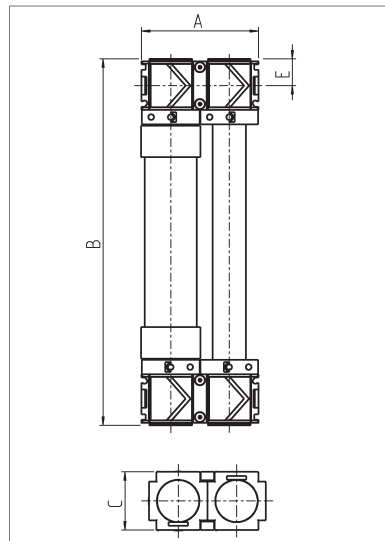
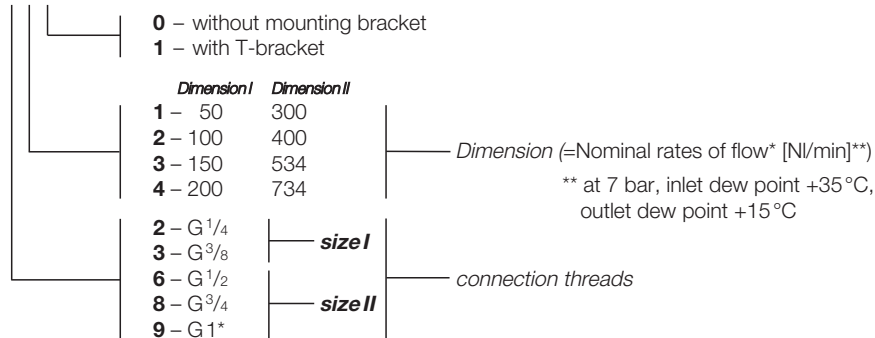
Drying power: 200NI/min (size I) or 734NI/min

(size II), with T-bracket

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1*
I	494.241	494.341	-	-	-
II	-	-	494.641	494.841	494.941

Order key for all variants:

494.x x x



Dimensions [mm]

Size	I			
Dimension	1	2	3	4
A	96			
B	298	396	498	578
C	48			
E	22			
Size	II			
Dimension	1	2	3	4
A	140			
B	406	470	559	686
C	70			
E	26			

Technical data

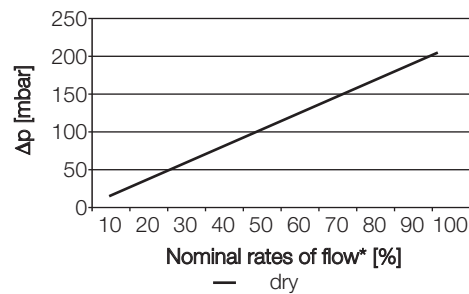
	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1*
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1*
Operating pressure (p ₁)	0-12 bar				
Operating temperature	1,5-60°C				
Differential pressure	200mbar				
Air quality to ISO 8573.1	Class 1 dirt, Class 1 oil				
Material	- membrane fiber PES - membrane shell aluminium - housing zinc alloy - seals NBR				
Weight (kg)	Dimensions 1-4: 4,2 / 4,4 / 4,6 / 4,8		Dimensions 1-4: 5,2 / 5,4 / 5,6 / 5,8		

* Inlet and outlet only with mounting plates set G1 (included, see page 20)

Performance

Nominal rates of flow* [NI/min]					
Dimension I	1	50	37	23	17
		2	100	72	47
	3	150	107	72	52
	4	200	142	95	68
Dimension II	1	300	213	142	103
	2	400	283	188	137
	3	534	427	283	207
	4	734	568	378	273
Inlet dew point (°C)	15 3 -20 -40				
Purge air consumption (%)	10 14 21 29				
Water removal (%)	69,70 86,53 98,20 99,77				

At 7 bar and inlet dew point +35°C.
Data refers to inlet flow capacity.



Correction factors:

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor.

CORRECTED CAPACITY = NOMINAL FLOW CAPACITY* x C_{oP}

[bar]	4	5	6	7	8	9	10	11	12
C _{oP}	0,41	0,56	0,76	1	1,22	1,48	1,76	1,86	2,22

Fixing- and assembly-possibilities see page 20

Activated charcoal-filters type 493 - G^{1/4} – G1

Activated charcoal-filters serve to remove oil vapours and other organic pollutants from pressurised air. The active charcoal fibre (the adsorption capacity of which is sufficient for approx. 1,000 hours of operation) is positioned between two stainless-steel nettings. The air at the inflow opening should be dry and free of particles; this is why the prior attachment of a micro-filter is categorically recommended. **Caution!** Some hazardous substances are either not at all or only slightly adsorbent, therefore non-removable with active charcoal! Such substances are i.e., carbon dioxide, carbon monoxide, ammonia.

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	493.02	493.03	-	-	-
II	-	-	493.06	493.08	493.09

Order key for additional options:

493.xxx
 M – metal bowl
 S – metal bowl protection

for example:
493.02 with metal bowl protection = 493.02S



Cover in individual color available upon request (standard: grey)!

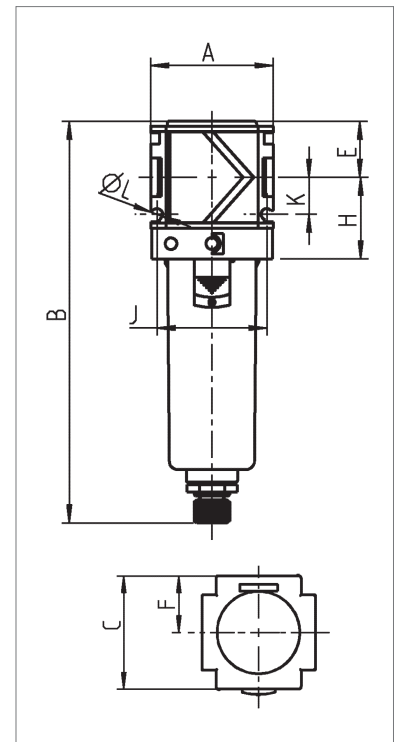
Spare parts and accessories

	Order No.	
	size I	size II
Metal bowl	480-10	480-113
Metal bowl protection	480-25	480-216
Plastic bowl	493-7	491-110
Activated-charcoal filter element with seal	493-2	493-102

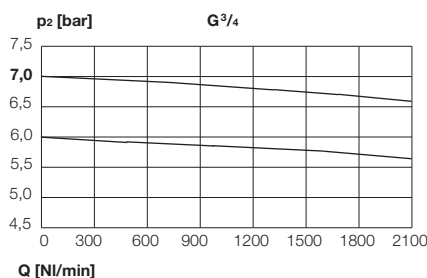
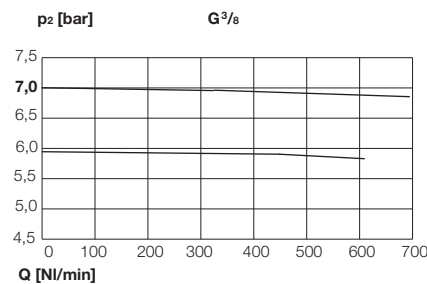
Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	800	1000	1200	1300	1300
Residual oil content	0,003mg/m ³				
Air quality to ISO 8573.1	Class 1 dirt, Class 1 oil				
Max. operating pressure (p ₁)	16bar/20bar with metal bowl				
Max. operating temperature	50°C/80°C with metal bowl				
Material	- housing - bowl		zinc alloy polycarbonate		
Weight	320g	320g	900g	900g	1400g

* Measured at 7 bar pre-pressure (p₁) and Δp = 0,1 bar
 ** Inlet and outlet only with mounting plates set G1 (included, see page 20)



Rates of flow



Dimensions [mm]

Size	I	II
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}
A	48	70
B	142	193
C	48	70
E	22	26
F	24	35
H	32	44
J	43	62
K	14,5	18
L (∅)	4,4	5,4



Pressure regulators type 481 - G^{1/4} - G1



481.233 481.233D 481.233A

Cover in individual color available upon request (standard: grey)!

Note: Gauge (self-sealing) added loosely

Pressure regulators (diaphragm type) of compact block design in two sizes. Facilities on both sides for flange mounting of further units. Panel mounting, direct mounting or bracket mounting on housing or cover. These units are, of course, fitted with a secondary exhaust (self-relieving) and are largely unaffected by fluctuations in primary pressure. Three pressure ranges are available, up to 6, 10 or 16 bar; regulators are also available without pressure gauges. Simple locking of setting by pressing in handwheel. Version available with keylockable handwheel. Pressure gauge can be mounted on either side. Important: Use of filter always recommended.

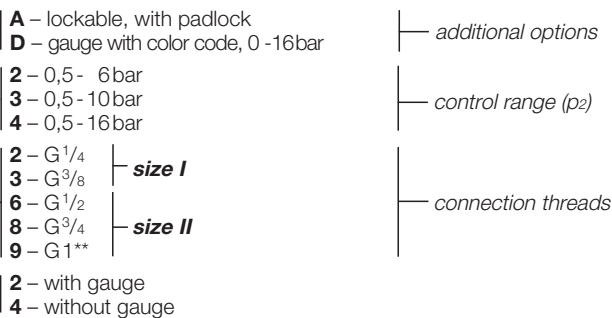
Standard version:

Control range (p₂) 0,5-10bar, with gauge

Size	Order No.			
	Connection threads			
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}
I	481.223	481.233	-	-
II	-	-	481.263	481.283
				481.293

Order key for all variants:

481.xxxx

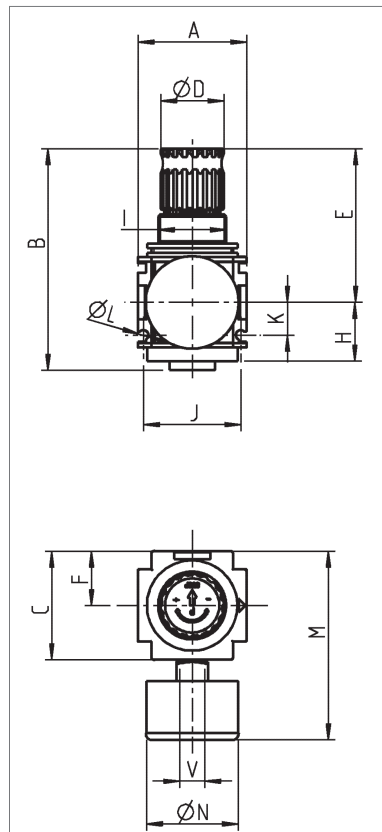


for example:

481.223 – but **without gauge** = 481.423

Spare parts

	Order No.	
	size I	size II
Gauge horizontal, scales: 0 - 10 bar (for p ₂ up to 6 bar)	723	55
ø40 (size I) 0 - 16 bar (for p ₂ up to 10 bar)	734	85
ø50 (size II) 0 - 25 bar (for p ₂ up to 16 bar)	745	96
Diaphragm complete with slip ring	480-92	480-263
Seal cone complete	481-17	480-218



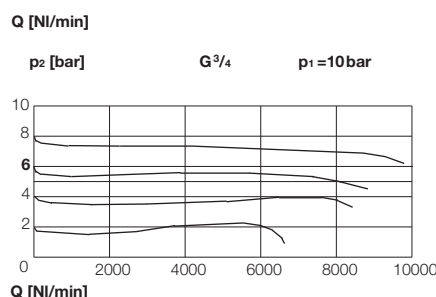
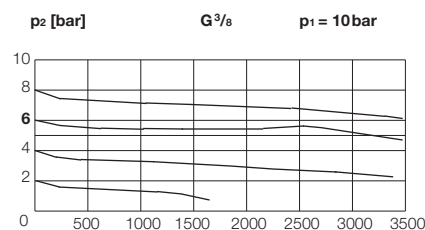
Technical data

	size I		size II		
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	2000	3200	7000	8000	8000
Max. operating pressure (p ₁)	25 bar				
Secondary pressure (p ₂) max.	10 bar (opt. 6, 16 bar)				
Max. operating temperature	80°C				
Material	- housing: zinc alloy - seals: NBR				
Weight (without gauge)	390g		950g	950g	1410g

* Measured at 10 bar pre-pressure (p₁), 6bar secondary pressure (p₂) and Δp = 1 bar acc. to DIN ISO 6953

** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Dimensions [mm]

Size	I	II	
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1**
A	48	70	125
B	98	134	134
C	48	70	70
D (ø)	28	39	39
E	68	98	98
F	24	35	35
H	26	33	33
I	M30x1,5	M42x1,5	M42x1,5
J	43	62	62
K	14,5	18	18
L (ø)	4,4	5,4	5,4
M	84	106	106
N (ø)	40	50	50
V	G ^{1/4}	G ^{1/4}	G ^{1/4}

Fixing- and assembly-possibilities see page 20

Precision pressure regulators type 495 - G^{1/4} - G1



Pressure regulator with a **precise regulation for highest demands**. It is suitable for all processes that require a precise regulation of compressed air. Pressure regulators as "diaphragm type" do regulate changing line pressure in the air system (inlet pressure p_1) independent of pressure fluctuations and air consumption. It is mostly constant at a working pressure set (secondary pressure p_2). This guarantees optimal and economical operation of the system. This type has an exceptional little **air consumption of 1,5l/min** – this is almost unique. The built-in excess pressure valve (secondary venting) allows a reduction of the secondary pressure (= exhaust) without air extraction. At the same time compressed air escapes into the atmosphere, as soon as the pressure on the secondary side exceeds the set value. To avoid contamination or loss, there should be a *micro-filter* pre-connected.

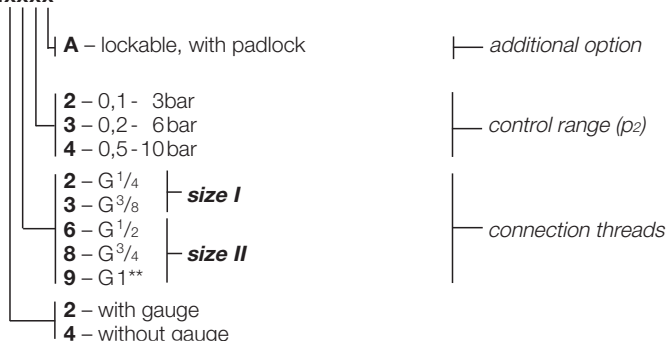
Standard version:

Control range (p_2) 0,5-10bar, with gauge

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	495.224	495.234	-	-	-
II	-	-	495.264	495.284	495.294

Order key for all variants:

495.xxxx



for example:

495.223 – but **without gauge** = 495.423



495.224

Cover in individual color available upon request (standard: grey)!

Note: Gauge (self-sealing) added loosely

Spare parts

	Order No.	
	size I	size II
Gauge horizontal, scales:		
ø40 (size I)	0- 4bar (for p_2 up to 3bar)	401 501
ø50 (size II)	0- 6bar (for p_2 up to 6bar)	402 502
	0- 10bar (for p_2 up to 10bar)	403 503
Diaphragm complete with slip ring	495-101	495-201
Seal cone complete	481-17	480-218

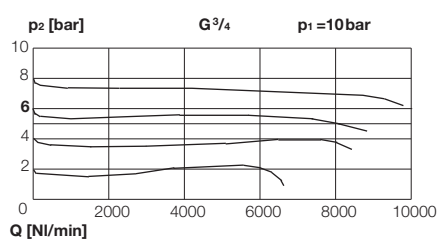
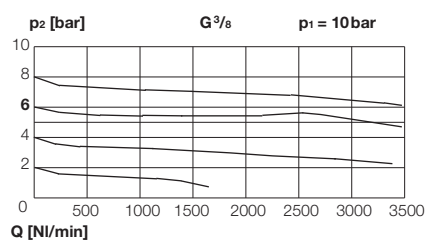
Technical data

	size I		size II		
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	2000	3200	7000	8000	8000
Max. operating pressure (p_1)	25bar				
Secondary pressure (p_2) max.	10bar (opt. 3,6bar)				
Max. operating temperature	-10 up up to +60 °C				
Flow direction of flow	see arrow				
Dependence upon pre-pressure	< 3 %				
Reversing control hysteresis	< 0,1 bar				
Air consumption (measured at 10 bar pre-pressure (p_1))	< 1,0 l/min				
Material	- housing - seals		zinc alloy NBR		
Weight (without gauge)	390g		950g	950g	1410g

* Measured at 10 bar pre-pressure (p_1), 6bar secondary pressure (p_2) and $\Delta p = 1$ bar acc. to DIN ISO 6953

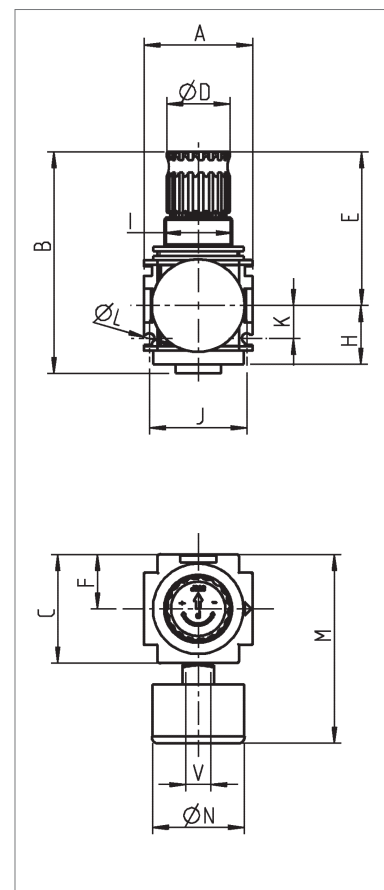
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Dimensions [mm]

Size	I	II	
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1**
A	48	70	125
B	98	134	134
C	48	70	70
D (ø)	28	39	39
E	68	98	98
F	24	35	35
H	26	33	33
I	M30x1,5	M42x1,5	M42x1,5
J	43	62	62
K	14,5	18	18
L (ø)	4,4	5,4	5,4
M	84	106	106
N (ø)	40	50	50
V	G ^{1/4}	G ^{1/4}	G ^{1/4}





Battery regulators type 490 - G^{1/4} – G¹



490.223

490.223D

Cover in individual color available upon request (standard: grey)!

Note: Gauge (self-sealing) added loosely

These kind of regulators are equipped with a continuous pressure supply. The pressure inlet can be selected on left or right side, so it can be used for "battery mounting". The attached regulators offer independent and different pressure adjustments because the supply pressure is existing on both sides of the unit (connection no. 1). The working pressure (secondary pressure), which is kept almost constantly, regardless of pressure fluctuations (inlet pressure) in the system and air consumption, is available on the backside connection (connection no. 2).

The regulator (diaphragm type) is fitted with a secondary exhaust (self-relieving) to reduce the working pressure without air extraction. Contamination and damage can be avoided if a filter model 482 is installed. We recommend to use the units G^{3/8} or G^{3/4} as they have the higher flow capacity.

Important: Use of filter always recommended.

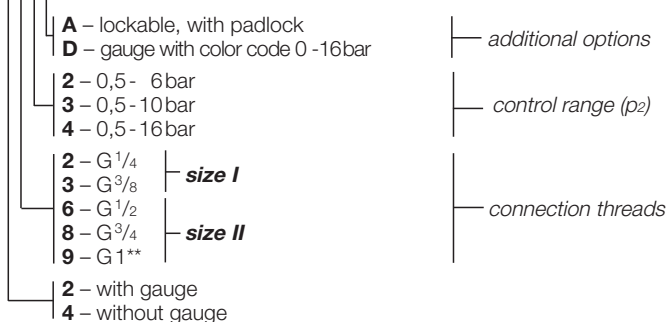
Standard version: :

Control range (p₂) 0,5-10bar, with gauge

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
I	490.223	490.233	-	-	-
II	-	-	490.263	490.283	490.293

Order key for all variants:

490.xxxx

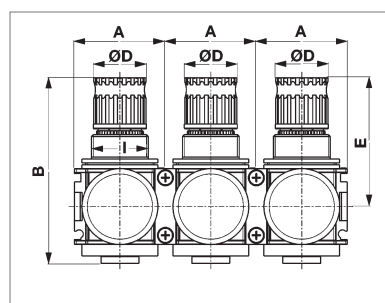


for example:

490.233 – but **without gauge** = 490.433

Spare parts

	Order No.	
	size I	size II
Gauge horizontal, scales: 0 - 10bar (for p ₂ up to 6 bar)	723	55
ø40 (size I)	734	85
ø50 (size II)	745	96
Plug with female hexagon connection threads G ^{1/4}	280-127	280-127
	447-28	-
		424-67
Diaphragm complete with slip ring	480-92	480-263
Seal cone complete	481-17	480-218



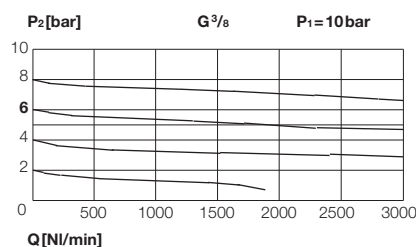
Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Connection 1	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Connection 2	G ^{1/4}	G ^{1/4}	G ^{1/2}	G ^{3/4}	G ^{3/4}
Nominal rates of flow (NI/min)*	1.800	1.800	5.800	6.800	6.800
Max. operating pressure (p₁)	25 bar				
Outlet pressure (p₂) max.	10 bar (opt. 6, 16 bar)				
Max. operating temperature	+80°C				
Material	- housing: zinc alloy - seals: NBR				
Weight (without gauge)	390g	390g	950g	950g	1.410g

* Measured at 10 bar pre-pressure (p₁), 6 bar secondary pressure (p₂) and Δp = 1 bar acc. to DIN ISO 6953

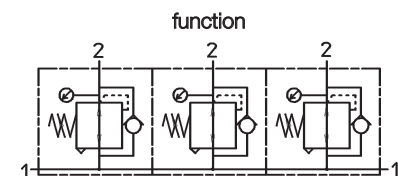
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Dimensions [mm]

Size	I		II
	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G ¹ **
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G ¹ **
A	48	70	125
B	98	134	134
C	48	70	70
D (ø)	28	39	39
E	68	98	98
F	24	35	35
I	M30x1,5	M42x1,5	M42x1,5
M	84	106	106
N (ø)	40	50	50
V	G ^{1/4}	G ^{1/2} + G ^{3/4}	G ^{3/4}



Fixing- and assembly-possibilities see page 20



Lubricators type 483 - G^{1/4} – G 1

Lubricators add a fine oil fog to the compressed air, this effecting a constant and reliable lubrication of pneumatically controlled compressed air tools, valves and cylinders etc... Refilling oil while under pressure is possible. Needle valve for oil adjustment with high drop constancy for long periods of time. Also available with metal sight dome.

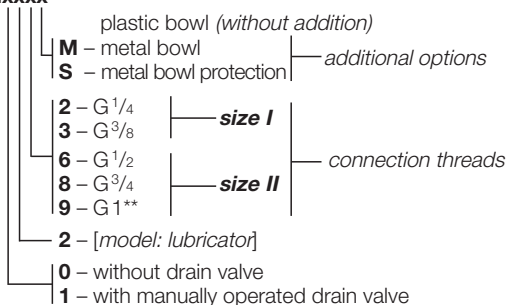
Standard version:

With plastic bowl, without drain valve

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
I	483.022	483.023	-	-	-
II	-	-	483.026	483.028	483.029

Order key for all variants:

483.xxxx



for example:

483.022 – but with manually operated drain valve = 483.122



Cover in individual color available upon request (standard: grey)!

Spare parts and accessories

	Order No.	
	size I	size II
Metal bowl without drain valve	483-10	483-113
Metal bowl with manually operated drain valve	480-28	480-213
Metal bowl protection	480-25	480-216
Plastic bowl with bowl protection	483-24	-
Plastic bowl without drain valve	483-7	483-110
Oil regulating valve, metal	483-21	423-65
Oil regulating valve, plastic	483-6	423-179
Regulation insert	483-3	-

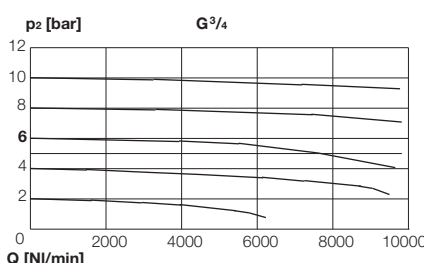
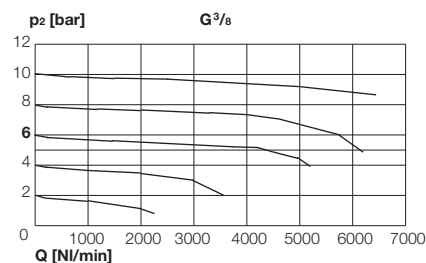
Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
Nominal rates of flow (NI/min)*	3400	4400	4600	7500	7500
Max. operating pressure (p ₁)	16 bar/20 bar with metal bowl				
Max. operating temperature	50 °C (80 °C with metal bowl and oil regulating valve)				
Effective bowl volume	50 cm ³		125 cm ³		
Lubricator function	ab 50 l/min		ab 150 l/min		
Sort of oil	nach DIN 51524 - ISO VG 32				
Material	- housing - bowl - seals		zinc alloy polycarbonate NBR		
Weight	300 g		800 g	800 g	1260 g

* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar acc. to DIN ISO 6953

** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow

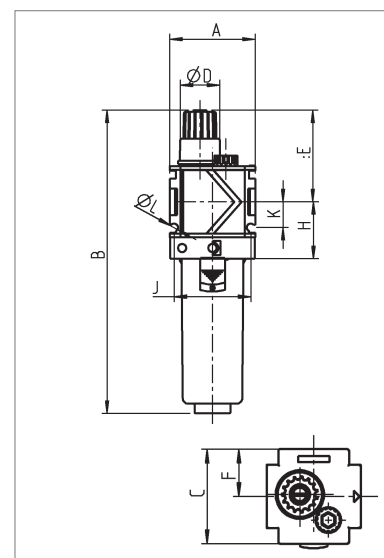


Recommended oil: Oil containers made of plastic (polycarbonate) are attached by oil additives, anti-frost or synthetic oils. We therefore recommend normal lubricating oils of approx. **22 bis 32cSt** at 40°C (in the case of striking tools up to 68 cSt). Metal containers should be used for other oils, especially for low-temperature oils. Also recommended is a metal lubricator adjusting cap.

ewo Compressed air special oil

Oils see chapter 10.

Container	Order No.
Volume 1 liter	583
Volume 5 liter	583.1



Dimensions [mm]

Size	I	II	
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G 1**
A	48	70	125
B	171	224	224
C	48	70	70
D (ø)	22	22	22
E	52	57	57
F	24	35	35
H	32	44	44
J	43	62	62
K	14,5	18	18
L (ø)	4,4	5,4	5,4



Fixing- and assembly-possibilities see page 20



Filter pressure regulators type 480 - G 1/4 – G 1



Cover in individual color available upon request (standard: grey)!

Note: Gauge (self-sealing) added loosely

Filter pressure regulators unique in space-saving model the functions of a filter and a regulator in one piece of equipment. (see single definitions).

Standard version:

Control range (p₂) 0,5-10bar, plastic bowl with manually operated drain valve, with gauge, filter porosity 40µm

Size	Order No.				
	Connection threads				
	G 1/4	G 3/8	G 1/2	G 3/4	G 1**
I	480.223	480.233	-	-	-
II	-	-	480.263	480.283	480.293

Order key for all variants:

480.xxxxx

L – Filter porosity 5 µm (standard: 40µm, without addition)
plastic bowl (without addition)

M – metal bowl
S – metal bowl protection
A – lockable
D – gauge with color code 0 -16 bar

2 – 0,5- 6bar
3 – 0,5-10bar
4 – 0,5-16bar

2 – G 1/4
3 – G 3/8
6 – G 1/2
8 – G 3/4
9 – G 1**

2 – manually operated drain valve, gauge
3 – internal automatic drain valve, gauge
4 – manually operated drain valve, without gauge
5 – semi-automatic drain valve, gauge
6 – external automatic drain valve A, gauge
7 – internal automatic drain valve, without gauge
8 – external automatic drain valve A, without gauge
9 – semi-automatic drain valve, without gauge

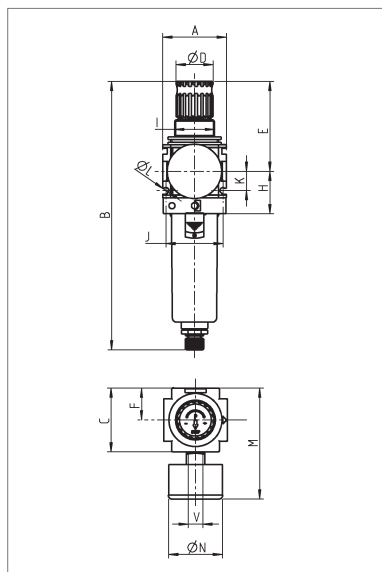
for example:

480.223 – but **without gauge** = 480.423

additional options

control range (p₂)

connection threads



Dimensions [mm]

Size	I	II	
Connection thread	G 1/4, G 3/8	G 1/2, G 3/4	G 1**
A	48	70	125
B	203	273	273
C	48	70	70
D (ø)	28	39	39
E	68	98	98
F	24	35	35
H	32	44	44
I	M30x1,5	M42x1,5	M42x1,5
J	43	62	62
K	14,5	18	18
L (ø)	4,4	5,4	5,4
M	84	106	106
N (ø)	40	50	50
V	G 1/4	G 1/4	G 1/4

Drain valves see page 20 and chapter 8
Fixing- and assembly-possibilities see page 20

Spare parts and accessories

Filter element	filter porosity	Order No.	
		size I	size II
Filter element	filter porosity 40µm (mounted)	480-7	480-219
	5µm (reduced flow rate!)	480-45	480-220
Plastic bowl with metal bowl protection		480-90	-
Metal bowl with manually operated drain valve		480-28	480-213
Metal bowl protection		480-25	480-216
Gauge horizontal, scales:	0 - 10 bar (for p ₂ up to 6 bar)	723	55
	ø 40 (size I) 0 - 16 bar (for p ₂ up to 10 bar)	734	85
	ø 50 (size II) 0 - 25 bar (for p ₂ up to 16 bar)	745	96
Plastic bowl with manually operated drain valve		480-18	480-210
Diaphragm complete with slip ring		480-92	480-263
Seal cone complete		480-48	480-218

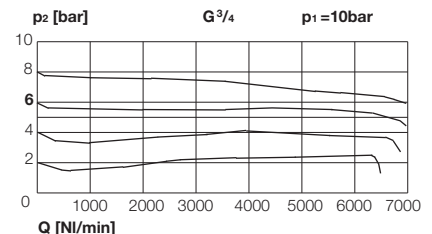
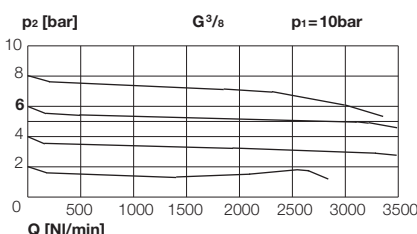
Technical data

Connection threads	size I		size II		
	G 1/4	G 3/8	G 1/2	G 3/4	G 1**
Nominal rates of flow (NI/min)*	2000	3000	5500	6500	6500
Filter porosity	40µm (optional: 5µm)				
Max. operating pressure (p ₁)	16bar (20bar with metal bowl / 12 bar with internal automatic drain valve)				
Secondary pressure (p ₂) max.	10bar (optional: 6, 16bar)				
Max. operating temperature	50°C/80°C with metal bowl				
Volume of condensate	25 cm ³		85 cm ³		
Drain valve	manually operated (opt.: semi-automatic, automatic)				
Material	- housing		zinc alloy		
	- seals		NBR		
	- bowl		polycarbonate		
Weight (g) (without gauge)	460	1150	1150	1610	

* Measured at 10 bar pre-pressure (p₁), 6bar secondary pressure (p₂) and Δp = 1 bar acc. to DIN ISO 6953

** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Two-piece maintenance units type 488 - G^{1/4} - G¹

The number of possible variations which can be created by simple block-mounting of individual units to form air treatment units is naturally countless. We have listed some of the most frequently used versions of a **2-piece maintenance unit**, consisting of **filter regulator** and **lubricator**. For filters there are options for the bowls and drain valves, for filter regulators there is generally a pressure range of up to 10 bar; various reservoir options are available for the lubricators.

Standard version:

Control range (p₂) 0,5-10bar, plastic bowl with manually operated drain valve, with gauge, filter porosity 40µm, block mounting with compact connection set with integrated T-bracket for wall mounting

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
I	488.221	488.231	-	-	-
II	-	-	488.261	488.281	488.291

Order key for all variants:

488.xxxxx

- V** – filter porosity 5 µm (standard: 40 µm, without addition)
- plastic bowl (without addition)
- M** – metal bowl
- S** – metal bowl protection
- A** – lockable, with padlock
- D** – gauge with color code 0 -16bar
- additional options
- 0** – compact connection set
- 1** – compact connection set with T-bracket
- 2** – comfort connection set (only size I)
- block mounting
- 2** – G^{1/4}
- 3** – G^{3/8}
- 6** – G^{1/2}
- 8** – G^{3/4}
- 9** – G¹**
- size I
- size II
- connection threads
- 2** – manually operated drain valve, gauge
- 3** – internal automatic drain valve, gauge
- 4** – manually operated drain valve, without gauge
- 5** – semi-automatic drain valve, gauge
- 6** – external automatic drain valve A, gauge
- 7** – internal automatic drain valve, without gauge
- 8** – external automatic drain valve A, without gauge
- 9** – semi-automatic drain valve, without gauge

Spare parts and accessories

	Order No.	
	size I	size II
Diaphragm complete with slip ring	480-92	480-263
Seal cone complete	481-17	480-218
Regulation insert	483-3	-

For more spare parts and accessories see single units.

Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Nominal rates of flow (NI/min)*	1500	1800	3400	5000	5000
Filter porosity	40 µm (optional: 5 µm)				
Max. operating pressure (p₁)	16 bar / (20 bar with metal bowl / 12 bar with internal automatic drain valve)				
Secondary pressure (p₂) max.	10 bar (opt. 6, 16 bar)				
Max. operating temperature	50 °C / 80 °C with metal bowl and metal oil regulating valve				
Volume of condensate	25 cm ³		85 cm ³		
Drain valve	manually operated (opt.: semi-automatic, automatic)				
Oil volume	50 cm ³		125 cm ³		
Lubricator function	> 50 l/min		> 150 l/min		
Material	- housing		zinc alloy		
	- bowl		polycarbonate		
	- seals		NBR		
Weight (without gauge)	720g		2070g	2070g	2530g

* Measured at 10 bar pre-pressure (p₁), 6 bar secondary pressure (p₂) and Δp = 1 bar acc. to DIN ISO 6953

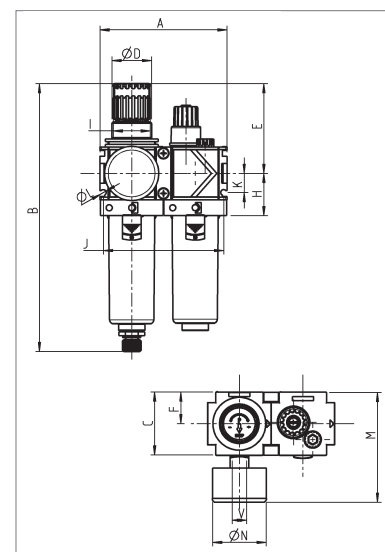
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Recommended oil see page 11.



Cover in individual color available upon request (standard: grey!)

Note: Gauge (self-sealing) added loosely

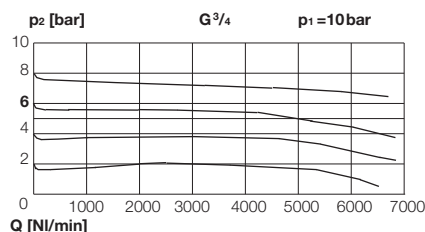
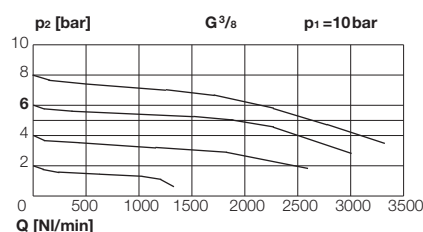


Dimensions [mm]

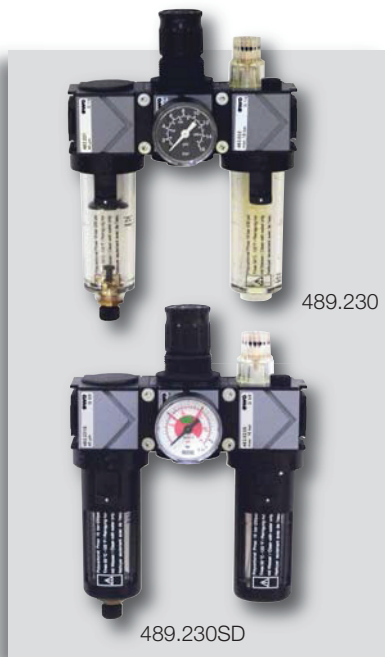
Size	I	II
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}
A	96	140
B	203	273
C	48	70
D (∅)	28	39
E	68	98
F	24	35
H	32	44
I	M30x1,5	M42x1,5
J	91	132
K	14,5	18
L (∅)	4,4	5,4
M	84	106
N (∅)	40	50
V	G ^{1/4}	G ^{1/4}

Drain valves see page 20 and chapter 8
Fixing- and assembly-possibilities see page 20

Rates of flow

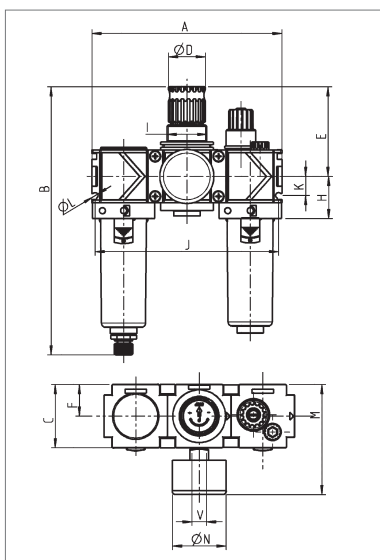


Three-piece maintenance units type 489-G^{1/4}-G¹



Cover in individual color available upon request (standard: grey!)

Note: Gauge (self-sealing) added loosely



Dimensions [mm]

Size	I		II
	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G ¹ **
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G ¹ **
A	144	210	265
B	203	273	273
C	48	70	70
D (ø)	28	39	39
E	68	98	98
F	24	35	35
H	32	44	44
I	M30x1,5	M42x1,5	M42x1,5
J	139	194	194
K	14,5	18	18
L (ø)	4,4	5,4	5,4
M	84	106	106
N (ø)	40	50	50
V	G ^{1/4}	G ^{1/4}	G ^{1/4}

Drain valves see page 20 and chapter 8
Fixing- and assembly-possibilities see page 20

The number of possible variations which can be created by simple block-mounting of individual units to form air treatment units is naturally countless. We have listed some of the most frequently used versions of a **3-piece maintenance unit**, consisting of **filter**, **pressure regulator** and **lubricator**. For filters there are options for the bowls and drain valves, for filter regulators there is generally a pressure range of up to 10 bar; various reservoir options are available for the lubricators.

Standard version:

Control range (p₂) 0,5-10bar, plastic bowl with manually operated drain valve, with gauge, filter porosity 40µm, block mounting with compact connection set with integrated T-bracket for wall mounting

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
I	489.221	489.231	-	-	-
II	-	-	489.261	489.281	489.291

Order key for all variants:

489.xxxxx

- V** – filter porosity 5 µm (standard: 40 µm, without addition)
- plastic bowl (without addition)
- M** – metal bowl
- S** – metal bowl protection
- A** – lockable, with padlock
- D** – gauge with color code 0 -16bar
- 0** – compact connection set
- 1** – compact connection set with T-bracket
- 2** – comfort connection set (only size I)
- 2** – G^{1/4}
- 3** – G^{3/8}
- 6** – G^{1/2}
- 8** – G^{3/4}
- 9** – G¹**
- 2** – manually operated drain valve, gauge
- 3** – internal automatic drain valve, gauge
- 4** – manually operated drain valve, without gauge
- 5** – semi-automatic drain valve, gauge
- 6** – external automatic drain valve A, gauge
- 7** – internal automatic drain valve, without gauge
- 8** – external automatic drain valve A, without gauge
- 9** – semi-automatic drain valve, without gauge

additional options

block mounting

connection threads

Spare parts and accessories

	Order No.	
	size I	size II
Diaphragm complete with slip ring	480-92	480-263
Seal cone complete	481-17	480-218
Regulation insert	483-3	-

For more spare parts and accessories see single units.

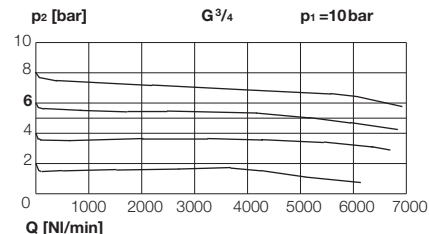
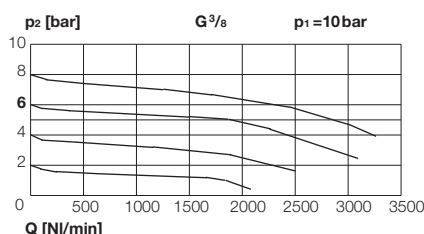
Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G ¹ **
Nominal rates of flow (NI/min)*	1500	1800	3400	5000	5000
Filter porosity	40 µm (optional: 5 µm)				
Max. operating pressure (p₁)	16 bar (20 bar with metal bowl / 12 bar with internal automatic drain valve)				
Secondary-pressure (p₂) max.	10 bar (opt. 6, 16 bar)				
Max. operating temperature	50 °C / 80 °C with metal bowl and metal oil regulating valve				
Volume of condensate	25 cm ³		85 cm ³		
Drain valve	manually operated (opt.: semi-automatic, automatic)				
Oil volume	50 cm ³		125 cm ³		
Lubricator function	> 50l/min		> 150l/min		
Material	- housing		zinc alloy		
	- bowl		polycarbonate		
	- seals		NBR		
Weight (without gauge)	1220g		2800g	2800g	3260g

* Measured at 10 bar pre-pressure (p₁), 6 bar secondary pressure (p₂) and Δp = 1 bar acc. to DIN ISO 6953
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Recommended oil see page 11.

Rates of flow



Portable maintenance units type 489 - G^{1/2} – G1



To ensure optimal conditions in regard to cleaning and lubrication of pneumatic tools directly on site, this portable **portable maintenance unit** designed with components from our variobloc line (only for size II). It consists of filter, pressure regulator and lubricator, who are mounted in a metal frame with carrying handle. Other combinations of maintenance units can be mounted upon request. It should be used everywhere, where air distribution and location routes over 5 meters.

Application ranges:

- Truck workshops
- Machine and plant construction
- Shipbuilding and shipyards

Model

Control range (p₂) 0,5-10bar, plastic bowl with metal bowl protection and manually operated drain valve, with gauge, filter porosity 40µm, block mounting with compact connection set, mounting plates set

	Order No.		
	Connection threads		
	G ^{1/2}	G ^{3/4}	G1
	489.200	489.100	489.000

Spare parts

Diaphragm complete with slip ring

Seal cone complete

Order No.

size II

480-263

480-218

For more spare parts and accessories see single units.



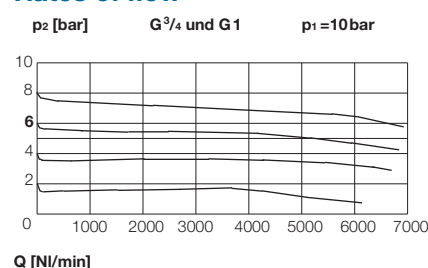
Cover in individual color available upon request (standard: grey)!

Technical data

	size II		
Connection threads	G ^{1/2}	G ^{3/4}	G1
Nominal rates of flow (NI/min)*	3.400NI/min	5.000NI/min	5.000NI/min
Max. operating pressure (p ₁)	16bar		
Control range (p ₂)	0,5 - 10bar		
Max. operating temperature	50°C		
Filter porosity	40µm		
Drain valve	manually operated (opt.: semi-automatic, automatic)		
Volume of condensate	85cm ³		
Oil volume	125cm ³		
Lubricator function	from 150l/min		
Material	- housing - bowl/bowl protection - seals - side parts - feet	zinc alloy polycarbonate/steel NBR painted steel rubber	

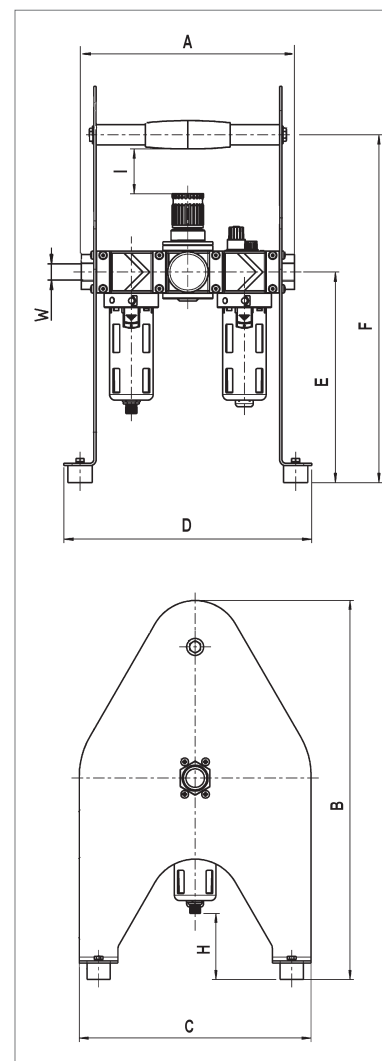
* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar

Rates of flow



Dimensions [mm]

Size	II	
Connection thread	G ^{1/2} , G ^{3/4}	G1
A	269	264
B	491	491
C	300	300
D	307	307
E	261	261
F	431	431
H	85,5	85,5
I	55,5	55,5



Fixing- and assembly-possibilities see page 20



Ball valves type 487 - G^{1/4} – G 1



Ball valves with exhaust (3/2 directional control valves) for flange-mounting to variobloc maintenance units are particularly suitable for use at the start of these as main shut-off valves. Actuation by 90 ° rotation of lever, marked clearly with switching position: Lever in transverse direction - valve closed, outlet exhausted (narrower nominal size). Lever in lengthwise: Valve open, exhaust closed. With silencer to reduce exhaust noise. Two sizes with connection threads from G^{1/4} to G 1 available. Direct mounting or bracket mounting on the housing is possible. Lockable in both final positions with a regular padlock ø 4,5mm (or as additional option with padlock (2 versions) available). According to EN983.

Version with pneumatic gear (only size II) enables the application in danger of explosion areas as remote control. The swing construction warrants a high starting linge moment and so a high forming energy (necessary after a long period of down time).

Lockable (without padlock ø 4,5 mm)

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
I	487.2	487.3	-	-	-
II	-	-	487.6	487.8	487.9

Order key for additional options:

487.xx

- A – with padlock ø4,5mm
- D – with padlock ø8,0mm
- P – with pneumatic gear (only for size II)

for example:

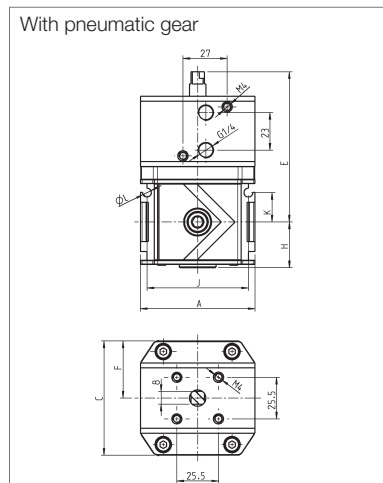
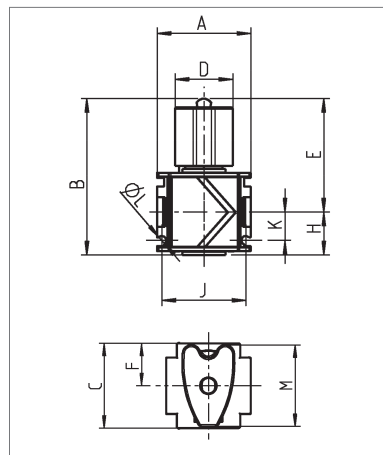
487.3 with padlock ø 8,0
= **487.3D**

Cover in individual color available upon request (standard: grey)!



Spare parts and accessories

	Order No.
Padlock ø4,5mm	487-17
Padlock ø8,0mm	487-26



Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G 1**
Nominal rates of flow (NI/min)*	4.300	4.400	9.000	11.000	11.000
Max. operating pressure (p ₁)	25 bar				
Max. operating temperature	80 °C				
Material - housing	zinc alloy				
Weight	295 g	-	840 g	840 g	1.300 g
Weight (with pneumatic gear)	-	-	1.100 g	1.100 g	1.560 g
Pressure range (with pneumatic gear)	-	-	5,6 - 7,4 bar		

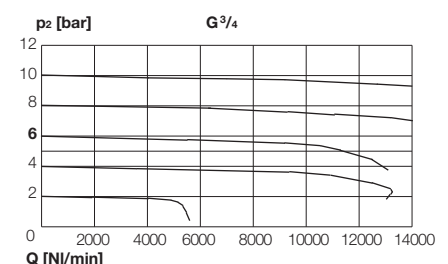
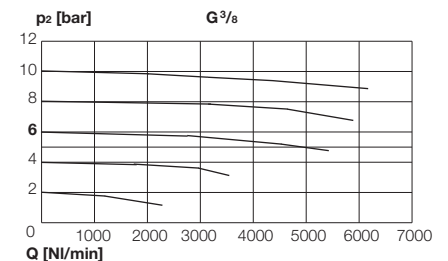
* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar

** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Dimensions [mm]

Size	I			II	
	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G 1	G ^{1/2} , G ^{3/4}	G 1**
Connection thread				with pneum. gear	
A	48	70	125	70	125
B	80	92	92	120	120
C	48	70	70	70	70
D	30	30	30	-	-
E	58	64	64	92	92
F	24	35	35	35	35
H	22	28	28	28	28
J	43	62	62	62	62
K	14,5	18	18	18	18
L (ø)	4,4	5,4	5,4	5,4	5,4
M	45	45	45	-	-

Rates of flow



Fixing- and assembly-possibilities see page 20

3/2-Way starting valves, electrical, type 485 - G^{1/4} – G1

3/2-way starting valves in modular design for flange-mounting to variobloc-maintenance units. The **magnetic valve** at the inlet thread or the maintenance unit is for main service valve with fast air relieve. The valve is power-free. Without electrical power – valve closed, with manual emergency-operation. Port sizes G^{1/4} up to G1. Acc. to EN983.

Standard version:

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	485.24	485.34	-	-	-
II	-	-	485.64	485.84	485.94

Order key for all variants:

485.xx				
1 – 24V / 50Hz			manual override bistable, DIN43650	
2 – 220V / 50Hz				
3 – 110V / 50Hz				
4 – 24V / =				
5 – 24V / =				manual override monostable, M12
2 – G ^{1/4}			connection threads	
3 – G ^{3/8}				size I
6 – G ^{1/2}				
8 – G ^{3/4}				size II
9 – G1**				

Spare parts

		Order No.	
		size I	size II
Magnetic coil	24 V=		447-76
	24 V/50 Hz		447-130
	220V/50 Hz		447-74
	110V/50 Hz		447-75
	24 V= (M12)		447-133
Magnetic valve as shut-off valve with speed exhaust. Combination with a starting valve is recommended.	24 V=		485-16
	24 V/50 Hz		485-17
	220V/50 Hz		485-18
	110V/50 Hz		485-19
	24 V= (monostable)		485-20
Female connector DIN 43650			447-120

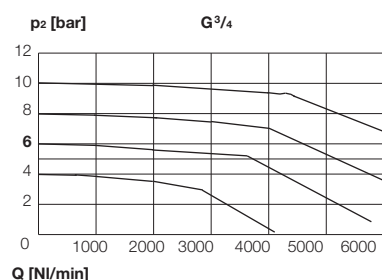
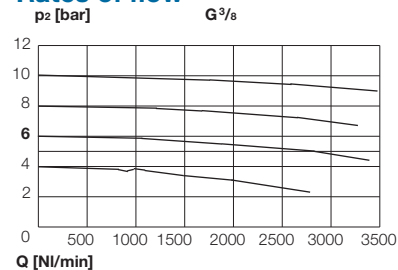
Technical data

	size I		size II		
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	2200	2600	3300	3800	3800
Working pressure range**	3 - 10 bar (higher pressures available upon request)				
Max. operating temperature	50°C				
Protection class	IP65 to DIN 40050				
Rated voltage	24V= (optional 24V/50Hz, 110V/50Hz, 220V/50Hz)				
Electrical thread	female connector acc. to DIN43650, form B ind. PG9				
Material housing	zinc alloy				
Weight	445 g		980 g	980 g	1440 g
Waste electrical and electronic equipment	WEEE-Reg.-No.: DE51604370				

* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar

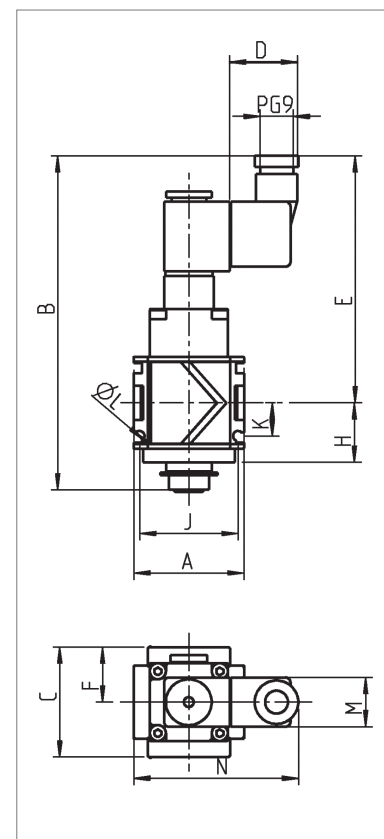
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



Dimensions [mm]

Size	I		II
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1
A	48	70	125
B	46	157	157
C	48	70	70
D (∅)	30	30	30
E	108	113	113
F	24	35	35
H	26	33	33
J	43	62	62
K	14,5	18	18
L (∅)	4,4	5,4	5,4
M	22	22	22
N	72	82	82



Cover in individual color available upon request (standard: grey)!

Fixing- and assembly-possibilities see page 20



Distributors type 486 - G^{1/4} – G1



486.30

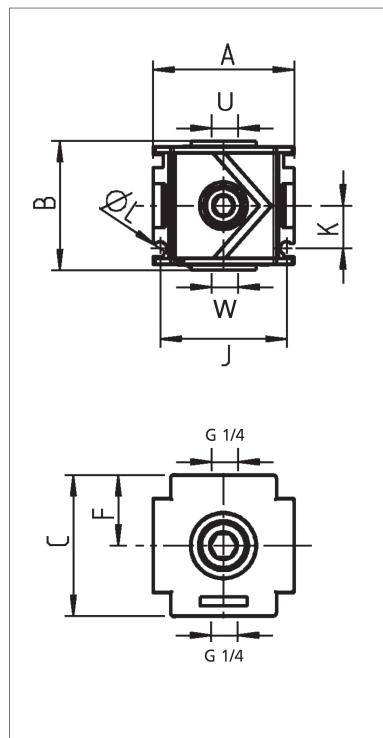
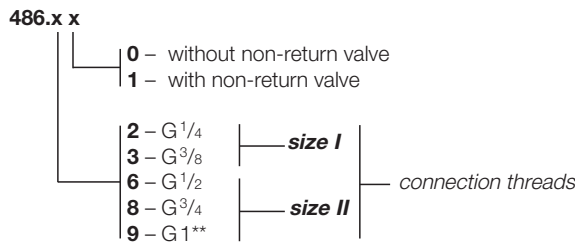
Cover in individual color available upon request (standard: grey)!

Standard version:
Without non-return valve

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	486.20	486.30	-	-	-
II	-	-	486.60	486.80	486.90

Order No.					
Connection threads					
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	486.20	486.30	-	-	-
II	-	-	486.60	486.80	486.90

Order key for all variants:



Technical data

	size I		size II		
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Dispatches top / down	G ^{3/8}		G ^{3/8} / G ^{1/2}		
front + rear	G ^{1/4}		G ^{1/4}		
Nom. rates o. flow without RV (NI/min)*	4200	5000	9000	11000	11000
Nom. rates o. flow with RV (NI/min)*	900	900	4000	5000	5000
Max. operating pressure (p₁)	25 bar				
Max. operating temperature	80 °C				
Material housing	zinc alloy				
Weight	290g		780g	780g	1240g

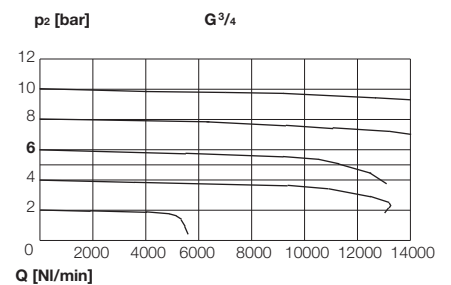
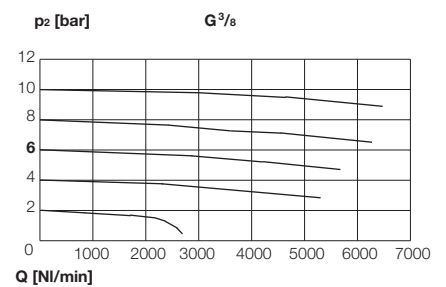
* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar.

** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Dimensions [mm]

Size	I		II	
	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1**	
A	48	70	125	
B	46	56	56	
C	48	70	70	
F	24	35	35	
J	43	62	62	
K	14,5	18	18	
L (ø)	4,4	5,4	5,4	
U	G ^{3/8}	G ^{3/8}	G ^{3/8}	
W	G ^{3/8}	G ^{1/2}	G ^{1/2}	

Rates of flow



Pneumatic starting valves type 484 - G^{1/4} – G1



Starting valves and filling valves in modular block design serve to raise the pressure gradually in pneumatic systems when they are being started, for example after emergency shut-off. When switched on, throttles release at first only a small orifice. Only when the pressure has reached about 60% of operating pressure is the full orifice opened. In the opposite direction (relieving) the full orifice is opened by means of a non-return valve. In combination with ewo-equipment such as the 3/2-way valve, ball valve or solenoid valve a complete on-and-off unit can be assembled. Connection threads from G^{1/4} to G1. Acc. to EN983.

Only suitable for closed systems!

Air regulator adjustable

Size	Order No.				
	Connection threads				
	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
I	484.20	484.30	-	-	-
II	-	-	484.60	484.80	484.90



484.30

Cover in individual color available upon request (standard: grey)!

4 variobloc

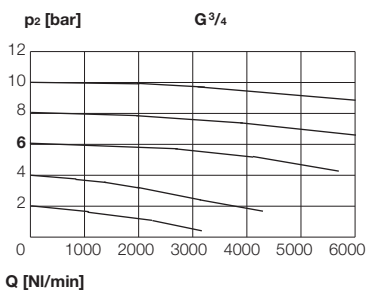
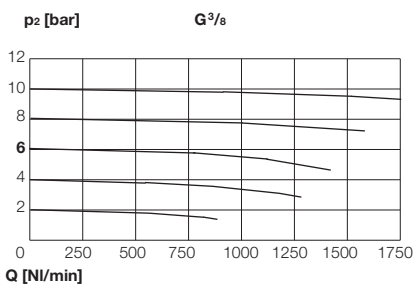
Technical data

	size I		size II		
Connection threads	G ^{1/4}	G ^{3/8}	G ^{1/2}	G ^{3/4}	G1**
Nominal rates of flow (NI/min)*	1200	1400	3800	4200	4200
Point of dispatch (profile completely opened)	env. 0,6 x working pressure				
Working pressure range	2 bis 25 bar				
Max. operating temperature	50°C				
Material housing	zinc alloy				
Weight	295g		730g	730g	1190g

* Measured at 6 bar pre-pressure (p₁) and Δp = 1 bar

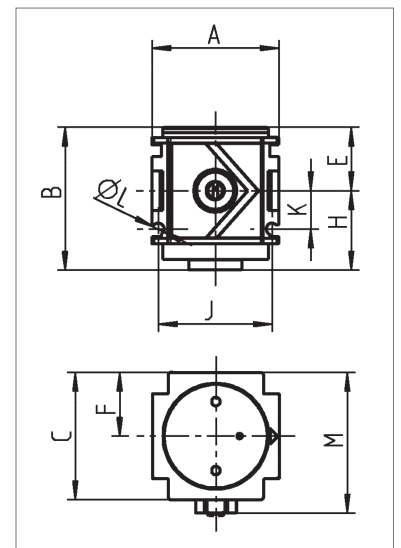
** Inlet and outlet only with mounting plates set G1 (included, see page 20)

Rates of flow



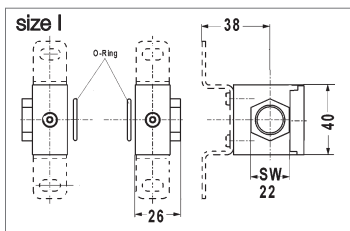
Dimensions [mm]

Size	I		II
Connection thread	G ^{1/4} , G ^{3/8}	G ^{1/2} , G ^{3/4}	G1**
A	48	70	125
B	54	72	72
C	48	70	70
E	24	36	36
F	24	35	35
H	30	36	36
J	43	62	62
K	14,5	18	18
L (∅)	4,4	5,4	5,4
M	53	75	75



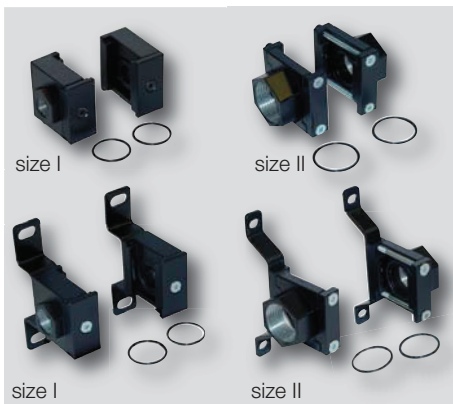
Middle modules for block mounting, mounting set for the piping

"Plug and Work" - this is the motto where you can choose your preferred combination from the variety for block mounting, for piping (inlet and outlet) and wall mounting.



Thread mounting plates set

For the piping. Self-adhesive seals. With or without T-bracket for wall mounting.

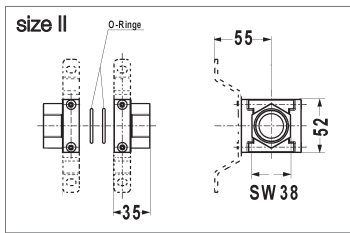


Without T-bracket

Size	Connection threads	Order No.
I	G 1/4	480-75
	G 3/8	480-37
II	G 1/2	480-283
	G 3/4	480-282
	G1	480-271

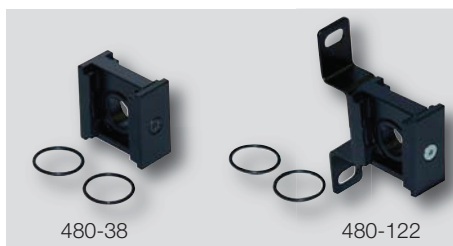
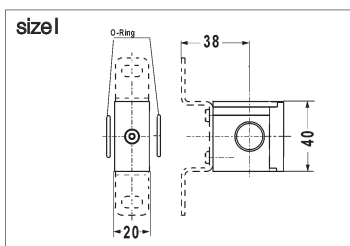
With T-bracket

Size	Connection threads	Order No.
I	G 1/4	480-120
	G 3/8	480-121
II	G 1/2	480-287
	G 3/4	480-288
	G1	480-289



Comfort connection set (middle module)

For block mounting. Individual modules can be easily removed without having to remove the entire unit. Self-adhesive seals. With or without T-bracket for wall mounting.



Without T-bracket

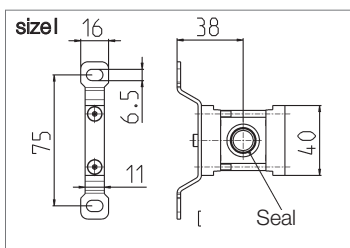
Size	Connection threads	Order No.
I	G 1/4	480-38
	G 3/8	

With T-bracket

Size	Connection threads	Order No.
I	G 1/4	480-122
	G 3/8	

Compact connection set (middle module)

For block mounting. Sealing set included. With or without T-bracket for wall mounting.



Without T-bracket

Size	Connection threads	Order No.
I	G 1/4	480-570
	G 3/8	480-360
II	G 1/2	480-238
	G 3/4	480-237

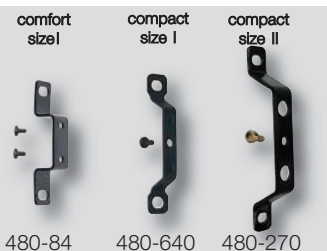
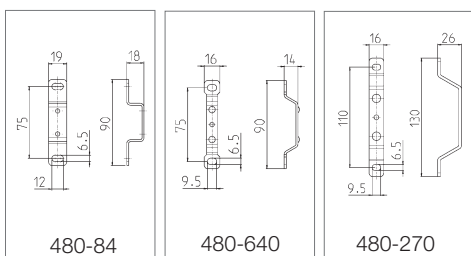
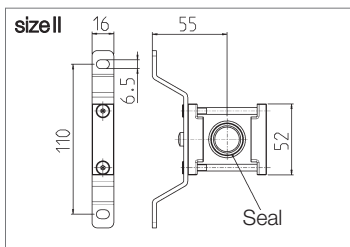
With T-bracket

Size	Connection threads	Order No.
I	G 1/4	480-560
	G 3/8	480-350
II	G 1/2	480-264
	G 3/4	480-265

Sealing set for compact connection set

Sleeve + o-ring.

Size	Connection threads	Order No.
I	G 1/4	480-85
	G 3/8	480-11
II	G 1/2	480-267
	G 3/4	480-268



T-bracket (single)

For wall mounting.

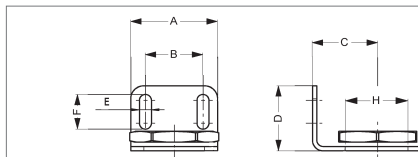
Suitable for middle module...	Size	Order No.
Comfort connection	I	480-84
Compact connection	I	480-640
	II	480-270

Wall fasteners

Bracket-set for mounting on cap (handwheel thread)

Content: Bracket + nut.

Suitable for	Order No.
size I	443-36
size II	443-104



Dimensions (mm)							
size	A	B	C	D	E	F	H
I	40	26,5	30	30	5,5	16	30,5
II	55	35	42,5	40	7	20	43



Nut (single)

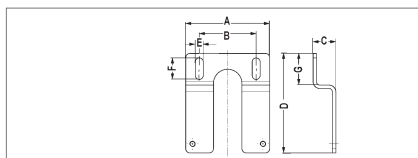
For mounting on control panel.

Suitable for	Dimensions	Material	Order No.
size I	M30x1,5	PA6	381-32
size II	M42x1,5	Ms	443-106

Bracket-set for mounting on unit body

Content: Bracket + 2 screws.

Suitable for	Order No.
size I	480-67
size II	480-252



Dimensions (mm)							
Size	A	B	C	D	E	F	G
I	50	34	15	71	5,5	16	25
II	74	50	20	88	7	19	28

Screw set (2 pieces)

For direct mounting of single units.

Suitable for	Dimensions	Order No.
size I	2 x M4x40	480-83
size II	2 x M5x60	480-266

Spare parts and accessory



480-7 491-4 493-2

Filter inserts

Size	Type	Order No.
I	PE-filter element 40µm	480-7
	PE-filter element 5µm	480-45
	Micro-filter cartridge, complete	491-4
	Activated carbon filter cartridge, complete	493-2
II	PE-filter element 40µm	480-219
	PE-filter element 5µm	490-220
	Micro-filter cartridge, complete	491-103
	Activated carbon filter cartridge, complete	493-102



480-18 480-28 480-25

Bowl options

Model	Type	Order No.	
		size I	size II
Plastic bowl	With manually operated drain valve	480-18	480-210
	With semi-automatic drain valve	480-78	480-255
	With internal automatic drain valve	480-79	480-256
	With external automatic drain valve A	480-95	480-257
	Without drain valve, for oiler	483-7	483-110
Metal bowl	With manually operated drain valve (up to 20bar)	480-28	480-213
	With semi-automatic drain valve (up to 20bar)	480-80	480-258
	With internal automatic drain valve (up to 12bar)	480-81	480-259
	With external automatic drain valve A (up to 16bar)	480-96	480-260
	Without drain valve, for oiler (up to 20bar)	483-10	483-113
Metal bowl protection	For plastic bowl	480-25	480-216

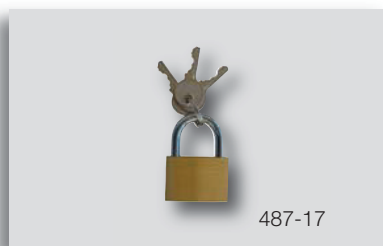


423-110 495-100
5370.4
441.1 441.1

Drain valves (selection)

Model	Material	Connect. thread	Dispatch	Order No.
Drain bolt, plastic		G ¹ / ₈ a	-	423-110
Semi-automatic drain valve With insert for plastic and metal bowl		ø14	G ¹ / ₈ i	495-100
External automatic drain valve A (4-16bar) For external mounting to e.g. a micro-filter	housing + cap brass housing polyamide	G ¹ / ₈ a	G ¹ / ₈ i	5370.3 5370.4
External automatic drain valve B (1-12bar) An internal automatic drain valve in a housing for external mounting		G ¹ / ₈ a	LW5	441.11
Internal automatic drain valve (1-12bar) For bowl with borehole ø14		ø14	LW5	441.1

All drain valves see chapter 8



487-17

Padlocks

Suitable for	Hanger-ø	Order No.
Pressure regulator and filter pressure regulator size I and II	3,0mm	480-430
Ball valve model 487.xA	4,5mm	487-17
Ball valve model 487.xD	8,0mm	487-26



723

746

Gauges (selection)

Horizontal. Brass thread, plastic panel. Class 2,5. Tmax 60 °C.

Type	Suitable for	Color (face)	Scale	Order No.
ø40	size I	white on black	0-10bar	723
			0-16bar	734
			0-25bar	745
ø50	size II	white on black	0-10bar	55
			0-16bar	85
			0-25bar	96
With color code, ø40	size I	black on white	0-16bar	746
With color code, ø50	size II	(with red/green color code)		105

Alle gauges see chapter 10, page 53 seq.

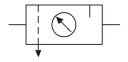


Compressed Air Preparation - combibloc

Combined maintenance unit (3 in 1)

Size I and II

2 + 3



Combined maintenance unit - G^{1/4} – G 1



Combined maintenance unit (3 in 1) consisting of a filter, pressure regulator and lubricator, united in one device in extremely space-saving design!

Components:

Double bowl for filter condensate and oil supply out of plastic (polycarbonate), optionally with bowl protection or metal bowl. **Drain valves** for condensate either as manually-operated, semi-automatic, fully-automatic internal or fully-automatic external drain valve. **Filter elements** out of sintered bronze available with two different pore diameters. **Pressure regulator** with three different pressure ranges. Adjustment can be locked by pressing the handwheel. Version with **lockable handwheel** in arrested state is also available. Bracket mounting possible. Gauge can be mounted on back or front. **Filling oil** under pressure is possible (use a spray oilcan). Available in 2 sizes with connecting threads of G^{1/4} to G 1.

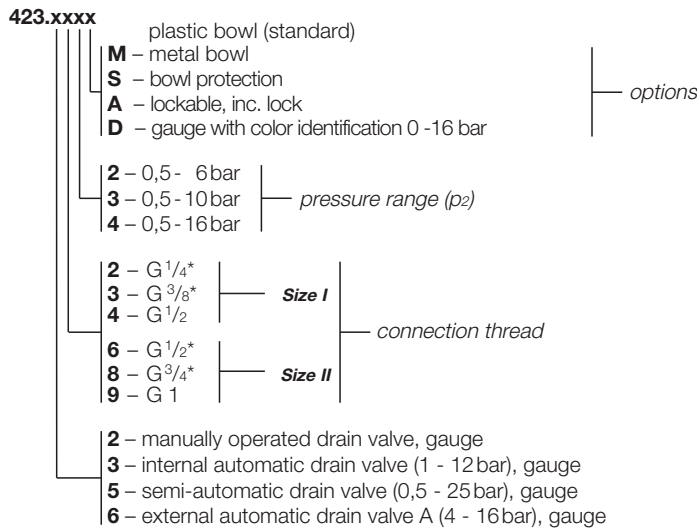
Standard versions:

With plastic bowl and manually operated drain valve, with gauge

Pressure range p ₂	Order No.					
	Connection thread size I			Connection thread size II		
	G ^{1/4} *	G ^{3/8} *	G ^{1/2}	G ^{1/2} *	G ^{3/4} *	G 1
0,5 - 6bar	423.222	423.232	423.242	423.262	423.282	423.292
0,5 - 10bar	423.223	423.233	423.243	423.263	423.283	423.293
0,5 - 16bar	423.224	423.234	423.244	423.264	423.284	423.294

* Inlet and outlet reduced

Order key for all variants:



Accessories

	Order No.	
	Size I	Size II
Bracket mounting for attachment to the housing	423-60	423-102
Bowl protection	423-107	423-108
Metal bowl with seal and		
manually operated drain valve	423-296	423-297
semi-automatic drain valve	423-298	423-299
external automatic drain valve A	423-300	423-301
Oil regulating valve out of		
plastic	423-179	423-179
metal	423-65	423-65
Reductions		
G ^{1/2} x G ^{3/8} **	423-57	-
G ^{1/2} x G ^{1/4} **	423-58	-
G 1 x G ^{3/4} **	-	423-99
G 1 x G ^{1/2} **	-	423-100

** Upon request also with NPTF-thread

Main spare parts

Plastic bowl with seal and	manually operated drain valve	423-282	423-283
	internal automatic drain valve	423-288	423-289
	semi-automatic drain valve	423-284	423-285
	external automatic drain valve A	423-290	423-291
Gauges , horizontal	display range:		
ø 50: Size I	0 - 10bar	55	214
	0 - 16bar	85	215
ø 63: Size II	0 - 25bar	96	216
Filter element	filter porosity		
	40 µm (mounted)	394-6	394-16
	5 µm (reduced flow rate!)	394-40	394-37
Valve complete with stem		423-342	423-79
Diaphragm complete with gliding ring		480-92	423-77

Technical data

	Size I	Size II
Nominal rates of flow	1400NI/min	3400NI/min
Max. operating pressure (p₁)	- plastic bowl - metal bowl	16bar (PN16) 25bar (PN25)
Operating pressure	- plastic bowl - metal bowl	0°C up to +50°C 0°C up to +90°C
Effective bowl volume	- filter - lubricator	25cm ³ 75cm ³ 75cm ³ 150cm ³
Mounting position		vertical
Direction of flow		arrow
Nominal width	DN8	DN15
Dependency upon supply pressure	< 3%	< 2%
Reversing control hysteresis		~ 1 bar
Weight	1255g	2690g
Material		NBR zinc alloy sintered bronze polycarbonate
	- seals - housing - filter element - plastic bowl	

Recommended oil

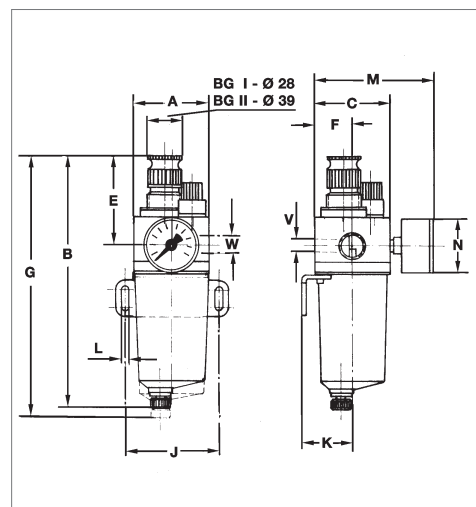
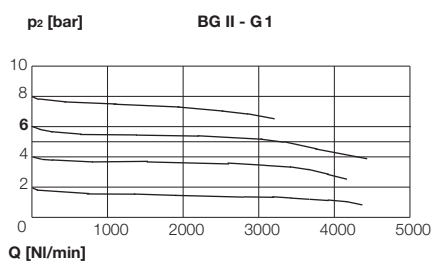
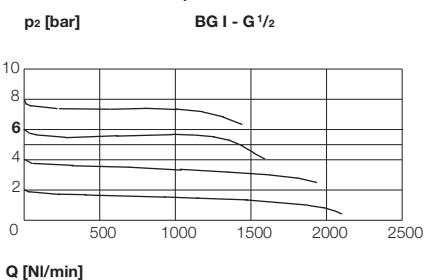
Oil containers made of plastic (polycarbonate) are attacked by oil additives, anti-frost or synthetic oils. We therefore recommend normal lubricating oils of approx. **22 to 32cSt** at 40°C (in the case of striking tools up to 68 cSt). Metal containers should be used for other oils, especially for low-temperature oils. Also recommended is a metal lubricator adjusting cap.

Dimensions [mm]

Size	A	B**	C	E	F	G	J	K	L	M
I	66	200	69	65	34,5	220	82	43	6,5	105
II	93	295	96	105	48	325	112	61	9	135

** with internal automatic drain valve: +10mm
with semi-automatic drain valve: +10mm
with external automatic drain valve A: + 90mm

Rates of flow p₁ = 10bar



ewo Compressed air special oil

Oils see chapter 10.

Container	Order No.
Volume 1 liter	583
Volume 5 liter	583.1



Drain valves, see chapter 8