

GENERAL TECHNICAL DATA Skillair®

The superior technology of Skillair® FRL units is the expression of Metal Work innovation. The FRL system is the brainchild of a joint study by Metal Work engineers and researchers from the Department of Mechanics in Turin. The integration of metal alloys and super-resistant techno-polymers is the result of co-operation between CESAP (European Centre for the Development of Plastic Applications) and leading international companies such as Du Pont, EMS Chemie and Hoechst. The installation of advanced processing and quality control systems guarantees the reliability of Skillair® FRLs.

Technical features

The Skillair® units incorporate very interesting technological features:

- Compactness: with the same flow capacity our unit is one of the smallest on the market.
- Modularity: various elements such as filters, reducers, lubricators, 3-way valves, progressive actuators and air take-offs can be combined at will. With the modular system the FRL units can be removed without disturbing the pipes.
- Easy maintenance: Any of the elements or the entire unit can be removed without disturbing the remaining part or pipes.



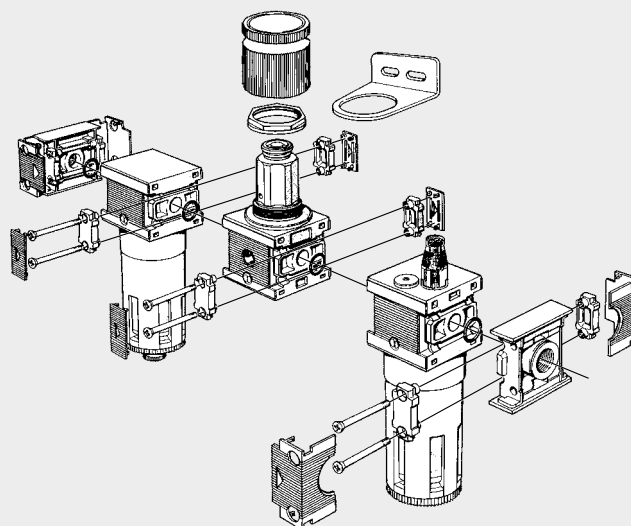
UNITS

GENERAL TECHNICAL DATA Skillair®

TECHNICAL DATA	SK 100		SK 200			SK 300			SK 400			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Threaded port												
Degree of filtration	µm											
Degree of purification	µm											
Setting range	bar											
Max. input pressure	MPa											
	bar											
	psi											
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	NI/min											
ΔP 0.5 bar (0.05 MPa to 7 psi)												
Fluid	Lubricated or unlubricated compressed air											
Temperature range at 1 MPa; 10 bar; 145 psi	°C											
	°F											
Elements comprising the range	Filter, Depurator, Regulator, Pilot operated regulator, In-series Regulator, Filter-regulator, Lubricator with various lubricant filling systems, Circuit Shut-off Valve, Progressive Actuator.											
Compatibility with oils	See chapter Z1											

Skillair® MODULARITY

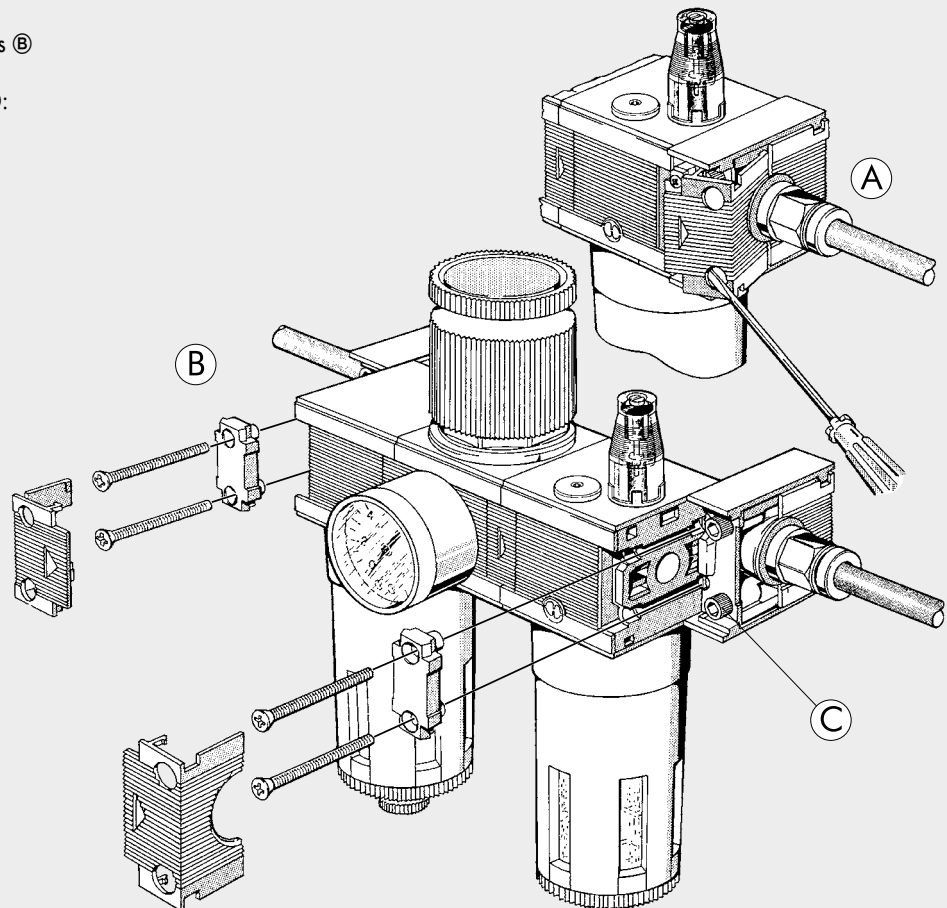
The FRL units can be removed from the system without disturbing the pipes. This can be done with a single element or with the entire system. Assemble the unit so that the air flows in the direction marked by the arrows.



DISASSEMBLING THE UNIT – WALL FIXING

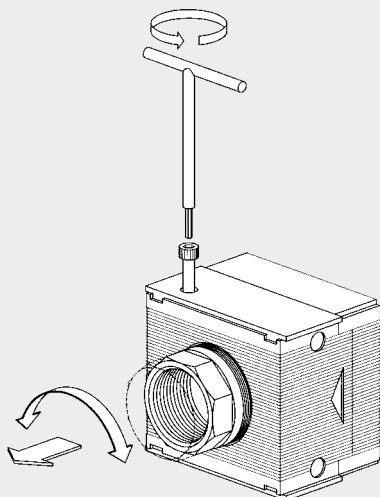
How to disassemble Skillair® end plates:

- Remove the plate **A**.
- Unscrew the screws and remove the cams **B** to disassemble the unit.
- Screws to fix the end plates to the wall **C**:
Series 100: M4x50
Series 200: M5x60
Series 300: M5x70
Series 400: M6x110



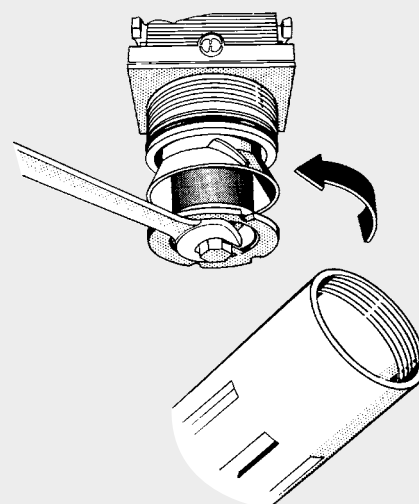
Skillair® 400 - ROTARY SLIDING JOINT

The series 400 comes with a patented system with a rotary sliding end joint to allow the unit to be adapted to the pipe cutting distance. For correct assembly and disassembly, loosen the screw in the end plate before screwing in or unscrewing the bush.



CLEANING AND/OR REPLACING THE FILTER ELEMENTS

Before unscrewing the bowl to replace the filter elements, check that the line is no longer pressurized.
Replace as shown in the diagram.

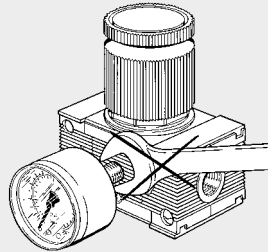


GENERAL RULES FOR USE AND MAINTENANCE

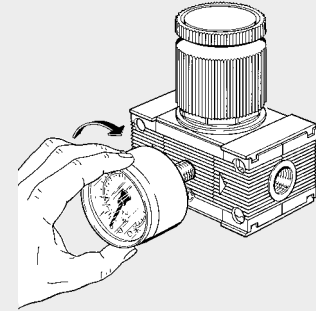
MOUNTING THE PRESSURE GAUGE

- ① Do not use a spanner.
- ② The gauge must be mounted by hand. Use liquid sealants only. Do not use Teflon.

①



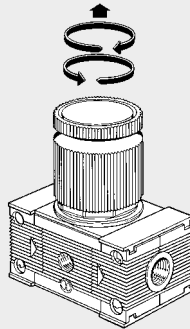
②



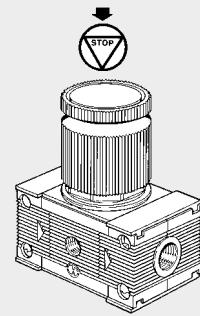
SETTING THE PRESSURE

- ③ **N.B.: the pressure in standard regulators must always be set upwards.** Before setting the pressure, check that the knob is raised.
- ④ When the required pressure has been reached, press the knob downwards.

③



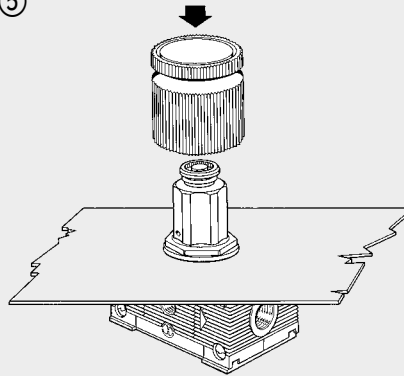
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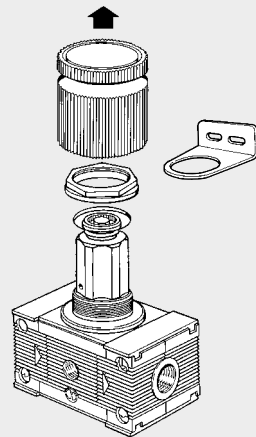
MOUNTING THE REGULATOR AND FILTER-REGULATOR

- ⑤ Panel mounting: remove the knob and lock the regulator with the ring nut.
- ⑥ Wall mounting: use a suitable bracket (see Skillair® accessories).

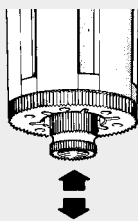
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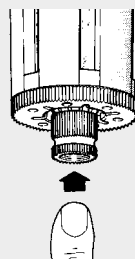
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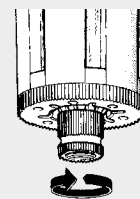
SEMI-AUTO CONDENSATE DRAIN FOR FILTER, FILTER-REGULATOR AND DEPURATOR



The semi-auto condensate drain is the normally open type. When there is pressure in the bowl, the drain closes. When there is no pressure in the bowl, it opens and the condensate drains out.



If necessary, it is possible to drain the condensate whilst the bowl is pressurised. The simple manual operation of "pushing up the valve" will allow the condensate to drain.



When rotating the button clockwise, the valve becomes in locked position, and can only work when the button is returned to the central position.

Skillair® FILTER



The Job of the filter is to remove any solid or liquid impurities from the air generated by the compressor. Incoming air is rotated by the centrifuge unit. The heaviest liquid and solid particles are projected against the walls of the container and forced to adhere to it. As they accumulate they form drops that deposit on the bottom by gravity. The remaining solid particles are held back by the porous element depending on the filtering threshold. The accumulated condensate is drained out through the drain - automatically when there is no pressure in the filter, or by hand pressing the button. An automatic drain is available. It automatically eliminates condensate from the container whenever necessary, whatever the pressure. The transparent windows allow to view the level of condensation at 360°.

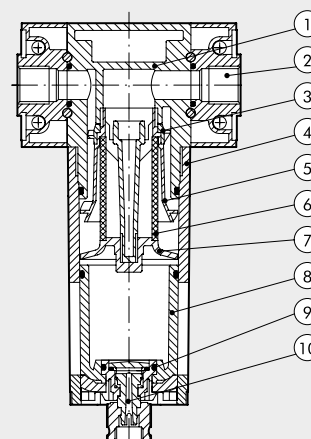


TECHNICAL DATA	FIL 100		FIL 200			FIL 300			FIL 400			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Threaded port												
Degree of filtration	µm 5 - 20 - 50		µm 5 - 20 - 50			µm 5 - 20 - 50			µm 5 - 20 - 50			
Max. input pressure	MPa 1.5		MPa 1.3			MPa 1.3			MPa 1.3		MPa 1.3	
	bar 15		bar 13			bar 13			bar 13		bar 13	
	psi 217		psi 188			psi 188			psi 188		psi 188	
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	NL/min 1400		NL/min 2400			NL/min 3800			NL/min 16500		NL/min 20000	
ΔP 0.5 bar (0.05 MPa to 7 psi)	scfm 50		scfm 85			scfm 135			scfm 590		scfm 710	
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	NL/min 2000		NL/min 3100			NL/min 5300			-		-	
ΔP 1 bar (0.1 MPa to 14 psi)	scfm 71		scfm 110			scfm 188			-		-	
Max temperature at 1 MPa; 10 bar; 145 psi	°C 50		°C 50			°C 50			°C 50		°C 50	
	°F 122		°F 122			°F 122			°F 122		°F 122	
Weight	kg 0.4		kg 0.7			kg 1.4			kg 5.2		kg 6	
Wall fixing screws	M4 x 50		M5 x 60			M5 x 70			M6 x 110		M6 x 110	
Bowl capacity	cm³ 22		cm³ 45			cm³ 75			cm³ 270		cm³ 270	
Mounting position	Vertical		Vertical			Vertical			Vertical		Vertical	
Drain	RMSA - SAC		RMSA - SAC - RA			RMSA - RA			RMSA - RA		RMSA - RA	
Fluid	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs. Compressed air.											
Notes on use	The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 10 bar.											

UNITS
Skillair® FILTER

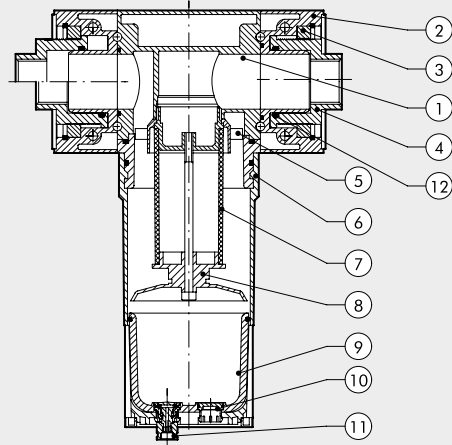
COMPONENTS FIL 100 - 200 - 300

- ① Technopolymer body
- ② Zamak end plate
- ③ Technopolymer centrifuge
- ④ Bowl: technopolymer for FIL 100 and FIL 200, metal for FIL 300
- ⑤ Technopolymer baffle
- ⑥ Sintered HDPE filter cartridge
- ⑦ Technopolymer screen
- ⑧ Clear technopolymer glass
- ⑨ NBR gaskets
- ⑩ Drain (RMSA)



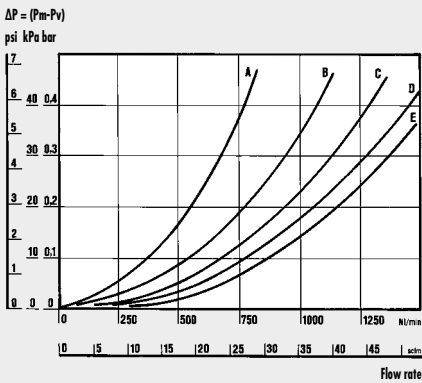
COMPONENTS FIL 400

- ① Aluminium body
- ② Aluminium end plate
- ③ OT58 brass retaining ring
- ④ Anodized aluminium threaded bush, axial adjustment
- ⑤ Technopolymer centrifuge
- ⑥ Aluminium bowl
- ⑦ Sintered bronze filter cartridge
- ⑧ Aluminium screen
- ⑨ Clear technopolymer glass
- ⑩ Technopolymer plug
- ⑪ Drain (RMSA)
- ⑫ NBR gaskets

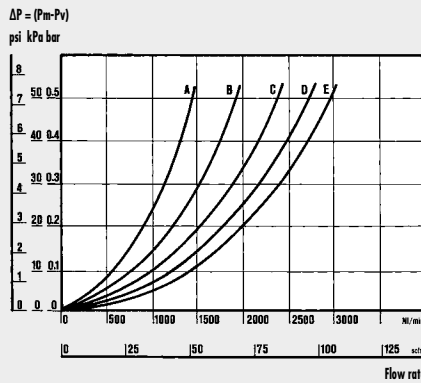


FLOW CHARTS

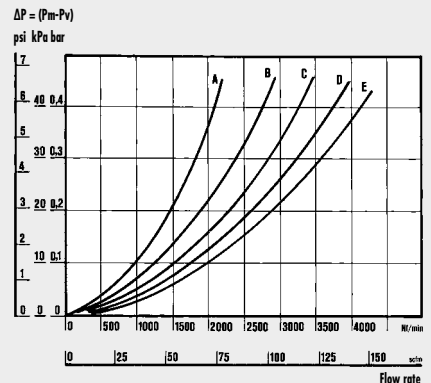
FIL 100 1/4 - 3/8



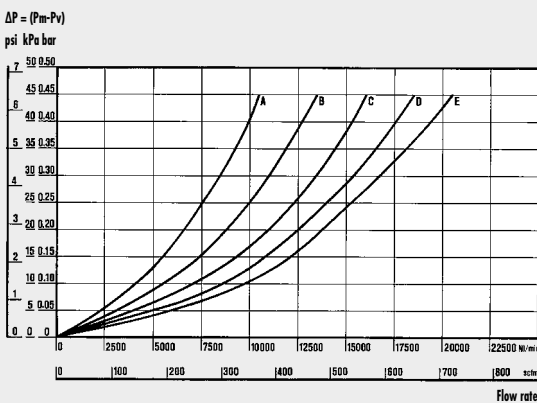
FIL 200 1/4 - 3/8 - 1/2



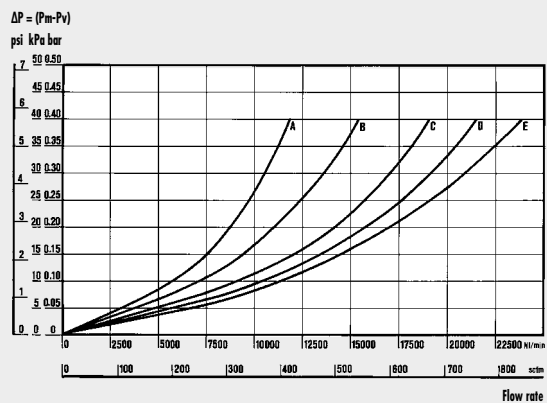
FIL 300 1/2 - 3/4 - 1



FIL 400 1"

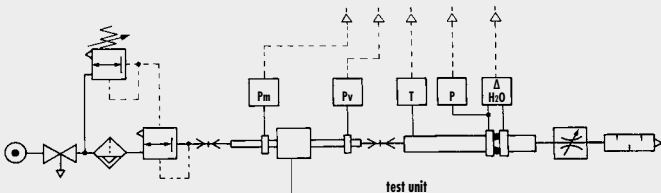


FIL 400 2"



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

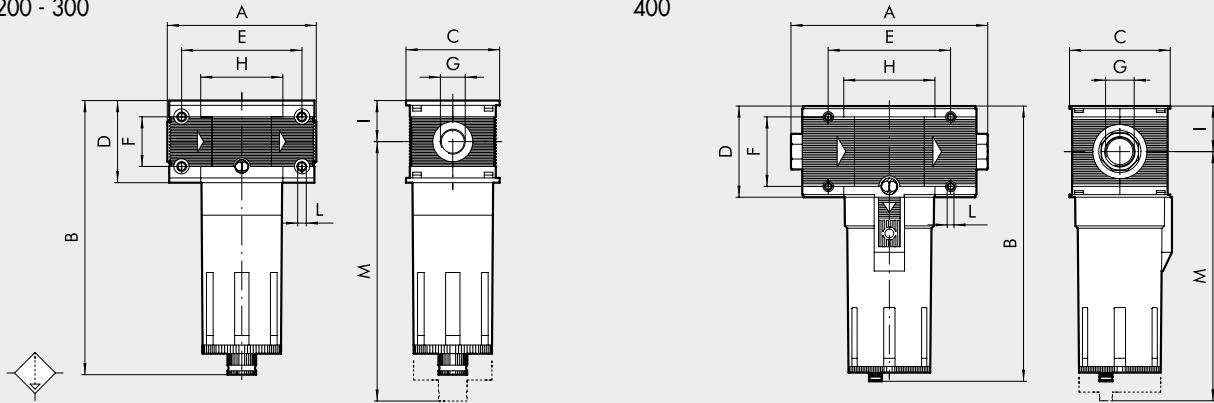
- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi



DIMENSIONS

100 - 200 - 300

400



	FIL 100		FIL 200			FIL 300			FIL 400			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Threaded port G												
A	78			93.5		110		112		225 to 255		283 to 313
B	RMSA 144			175			195			320		
	RA -			179			199			324		
	SAC 148			179			-			-		
C	50			63			72			118		
D	43			55			65			105		
E	63			78.5			92			141.4		
F	26			36			42			80		
H	43			55.5			65			105.4		
I	21.5			27.5			32.5			52.5		
L	Hole for M4 screws		Hole for M5 screws			Hole for M5 screws			Hole for M6 screws			
M	RMSA 137			196			215			378		
	RA -			200			219			382		
	SAC 141			200			-			-		

NOTES

SYNOPTIC, SIZES AND VERSIONS

FIL ELEMENT	100 SIZE	1/4 THREADED PORT	20 DEGREE OF FILTRATION	RMSA TYPE OF DRAIN
FIL.	100	1/4	5 = 5 µm 20 = 20 µm 50 = 50 µm	RMSA
		3/8		SAC
	200	1/4	50 = 50 µm	RMSA
		3/8		SAC
		1/2		RA*
	300	1/2		RMSA
		3/4		RA
	400	1		
		1 1/4		
		1 1/2		
		2		

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.
 (for size 100 and 200)
 * For Skillair® 200 with RA, please contact our sales assistance department.

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 FILTER		Skillair® 300 FILTER		Skillair® 400 FILTER	
3280001A	FIL 100 5 RMSA without end plates	4480001A	FIL 300 5 RMSA without end plates	6180001A	FIL 400 5 RMSA without end plates
3280007A	FIL 100 5 SAC without end plates	4480002A	FIL 300 20 RMSA without end plates	6180002A	FIL 400 20 RMSA without end plates
3280002A	FIL 100 20 RMSA without end plates	4480003A	FIL 300 50 RMSA without end plates	6180003A	FIL 400 50 RMSA without end plates
3280008A	FIL 100 20 SAC without end plates	4480004A	FIL 300 5 RA without end plates	6180004A	FIL 400 5 RA without end plates
3280003A	FIL 100 50 RMSA without end plates	4480005A	FIL 300 20 RA without end plates	6180005A	FIL 400 20 RA without end plates
3280009A	FIL 100 50 SAC without end plates	4480006A	FIL 300 50 RA without end plates	6180006A	FIL 400 50 RA without end plates
3280001	FIL 100 1/4 5 RMSA	4480001	FIL 300 1/2 5 RMSA	6180001	FIL 400 1 5 RMSA
3280007	FIL 100 1/4 5 SAC	4480002	FIL 300 1/2 20 RMSA	6180002	FIL 400 1 20 RMSA
3280002	FIL 100 1/4 20 RMSA	4480003	FIL 300 1/2 50 RMSA	6180003	FIL 400 1 50 RMSA
3280008	FIL 100 1/4 20 SAC	4480004	FIL 300 1/2 5 RA	6180004	FIL 400 1 5 RA
3280003	FIL 100 1/4 50 RMSA	4480005	FIL 300 1/2 20 RA	6180005	FIL 400 1 20 RA
3280009	FIL 100 1/4 50 SAC	4480006	FIL 300 1/2 50 RA	6180006	FIL 400 1 50 RA
3380001	FIL 100 3/8 5 RMSA	4580001	FIL 300 3/4 5 RMSA	6280001	FIL 400 1 1/4 5 RMSA
3380007	FIL 100 3/8 5 SAC	4580002	FIL 300 3/4 20 RMSA	6280002	FIL 400 1 1/4 20 RMSA
3380002	FIL 100 3/8 20 RMSA	4580003	FIL 300 3/4 50 RMSA	6280003	FIL 400 1 1/4 50 RMSA
3380008	FIL 100 3/8 20 SAC	4580004	FIL 300 3/4 5 RA	6280004	FIL 400 1 1/4 5 RA
3380003	FIL 100 3/8 50 RMSA	4580005	FIL 300 3/4 20 RA	6280005	FIL 400 1 1/4 20 RA
3380009	FIL 100 3/8 50 SAC	4580006	FIL 300 3/4 50 RA	6280006	FIL 400 1 1/4 50 RA
Skillair® 200 FILTER		4680001	FIL 300 1 5 RMSA	6380001	FIL 400 1 1/2 5 RMSA
3480001A	FIL 200 5 RMSA without end plates	4680002	FIL 300 1 20 RMSA	6380002	FIL 400 1 1/2 20 RMSA
3480007A	FIL 200 5 SAC without end plates	4680003	FIL 300 1 50 RMSA	6380003	FIL 400 1 1/2 50 RMSA
3480002A	FIL 200 20 RMSA without end plates	4680004	FIL 300 1 5 RA	6380004	FIL 400 1 1/2 5 RA
3480008A	FIL 200 20 SAC without end plates	4680005	FIL 300 1 20 RA	6380005	FIL 400 1 1/2 20 RA
3480003A	FIL 200 50 RMSA without end plates	4680006	FIL 300 1 50 RA	6380006	FIL 400 1 1/2 50 RA
3480009A	FIL 200 50 SAC without end plates			6480001	FIL 400 2 5 RMSA
3480001	FIL 200 1/4 5 RMSA			6480002	FIL 400 2 20 RMSA
3480007	FIL 200 1/4 5 SAC			6480003	FIL 400 2 50 RMSA
3480002	FIL 200 1/4 20 RMSA			6480004	FIL 400 2 5 RA
3480008	FIL 200 1/4 20 SAC			6480005	FIL 400 2 20 RA
3480003	FIL 200 1/4 50 RMSA			6480006	FIL 400 2 50 RA
3480009	FIL 200 1/4 50 SAC				
3580001	FIL 200 3/8 5 RMSA				
3580007	FIL 200 3/8 5 SAC				
3580002	FIL 200 3/8 20 RMSA				
3580008	FIL 200 3/8 20 SAC				
3580003	FIL 200 3/8 50 RMSA				
3580009	FIL 200 3/8 50 SAC				
3680001	FIL 200 1/2 5 RMSA				
3680007	FIL 200 1/2 5 SAC				
3680002	FIL 200 1/2 20 RMSA				
3680008	FIL 200 1/2 20 SAC				
3680003	FIL 200 1/2 50 RMSA				
3680009	FIL 200 1/2 50 SAC				

UNITS

Skillair® FILTER

Skillair® DEPURATOR



The role of the depurator is to separate the liquid and solid particles contained in the compressed air with a high degree of efficiency. This separation is carried out using a special filtering element called a "coalescence cartridge".

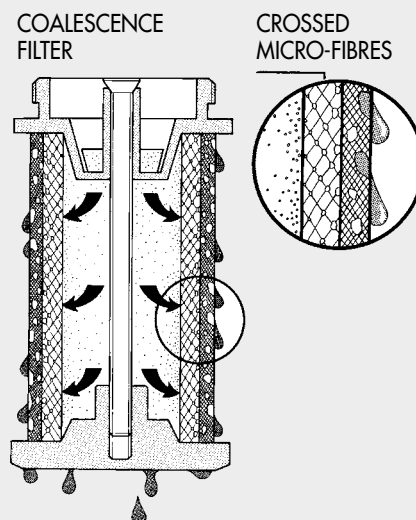


TECHNICAL DATA	DEP 100		DEP 200			DEP 300			DEP 400			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Threaded port	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of purification	99.97% at 0.01 µm		99.97% at 0.01 µm			99.97% at 0.01 µm			99.97% at 0.01 µm			
Max. inlet pressure	MPa	1.5	1.3			1.3			1.3		1.3	
	bar	15	13			13			13		13	
	psi	217	188			188			188		188	
Suggested flow at 6 bar	Nl/min	230	360			500			2300		2250	
Maximum suggested flow rate		See next page										
Max temperature at: 1 MPa; 10 bar; 145 psi	°C	50	50			50			50		50	
	°F	122	122			122			122		122	
Weight	kg	0.4	0.9			1.4			4.2		5	
Wall fixing screws		M4 x 50	M5 x 60			M5 x 70			M6 x 110		M6 x 110	
Bowl capacity	cm³	22	45			75			270		270	
Mounting position		Vertical	Vertical			Vertical			Vertical		Vertical	
Drain		RMSA	RMSA			RMSA - RA			RMSA - RA		RMSA - RA	
Fluid		5 µm filtered air										
Notes on use		It is advisable to mount a 5 µm pre-filter in order to separate the solid particles first. The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 10 bar.										

UNITS
Skillair® DEPURATOR

HOW THE COALESCENCE CARTRIDGE WORKS

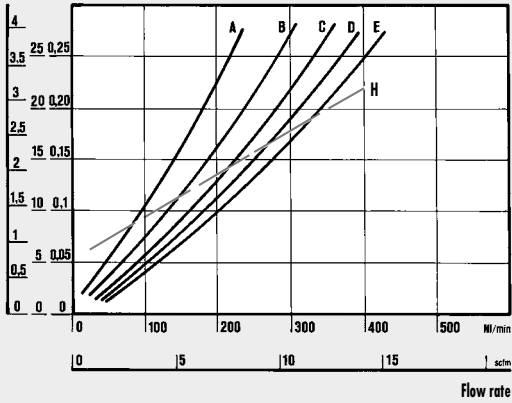
Air from the mains – full of impurities – flows into the coalescence cartridge and then passes through the crossed micro-fibres that make up the cartridge. During this movement the liquid particles come into contact with the crossed micro-fibres and adhere to them. Due to the air pressure and gravity they join up with other micro-drops at each cross-over point and gradually increase in volume, leading to the physical phenomenon called coalescence. When they stop moving, the drops deposit on the outside of the cartridge, from which they detach and drop to the bottom. Since the volume of liquid leaving the cartridge is exactly the same as the drops arriving, the coalescence cartridge ought to work indefinitely. Solid particles are caught with the same efficiency but, unlike drops, they are not drained out and clog the cartridge. To get round this problem, it is necessary to mount a 5 µm pre-filter before the fine oil filter to separate the solid particles first.



FLOW CHARTS

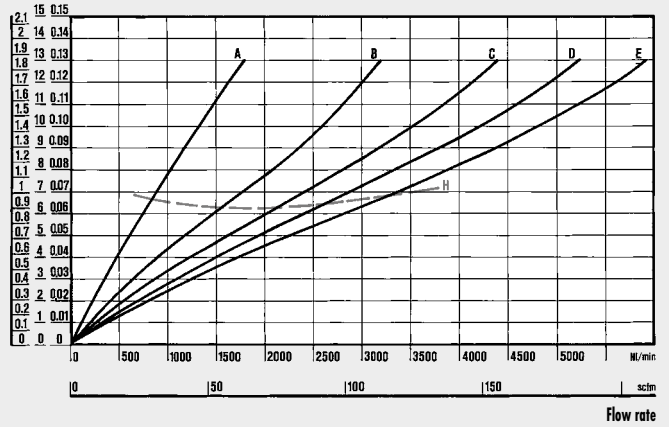
DEP 100 1/4 - 3/8

$\Delta P = (P_m - P_v)$
psi kPa bar



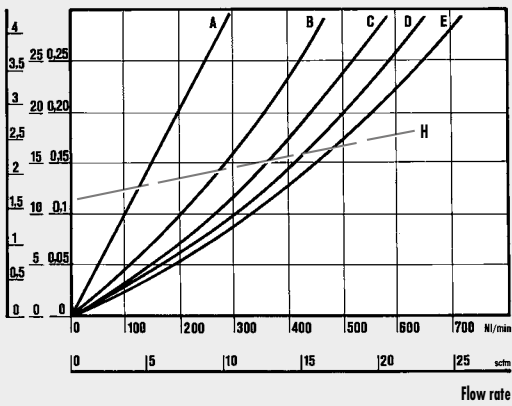
DEP 400 1"

$\Delta P = (P_m - P_v)$
psi kPa bar



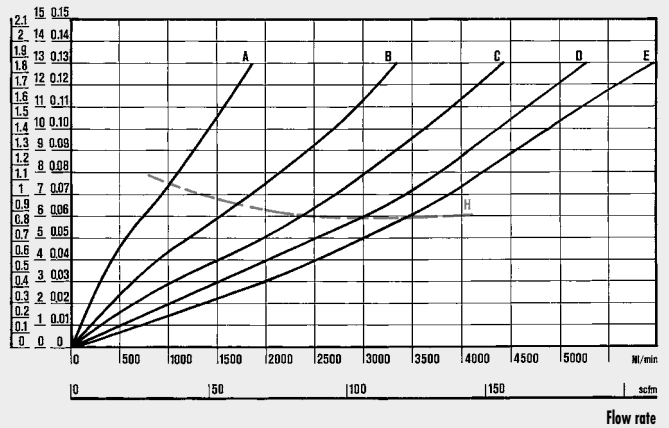
DEP 200 1/4 - 3/8 - 1/2

$\Delta P = (P_m - P_v)$
psi kPa bar



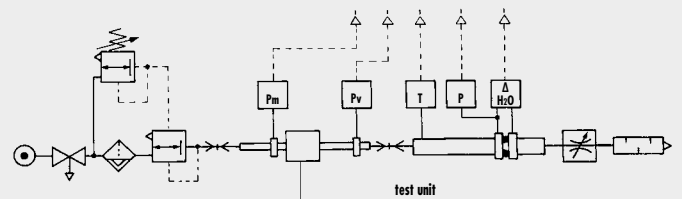
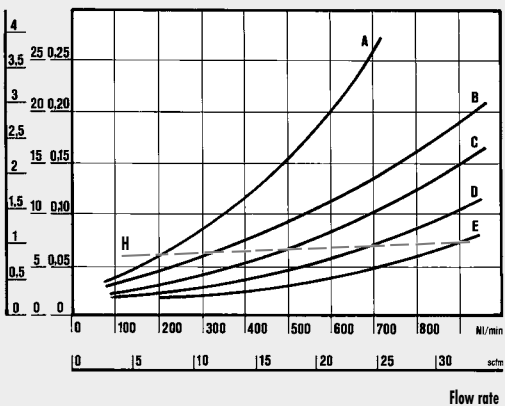
DEP 400 2"

$\Delta P = (P_m - P_v)$
psi kPa bar



DEP 300 1/2 - 3/4 - 1

$\Delta P = (P_m - P_v)$
psi kPa bar



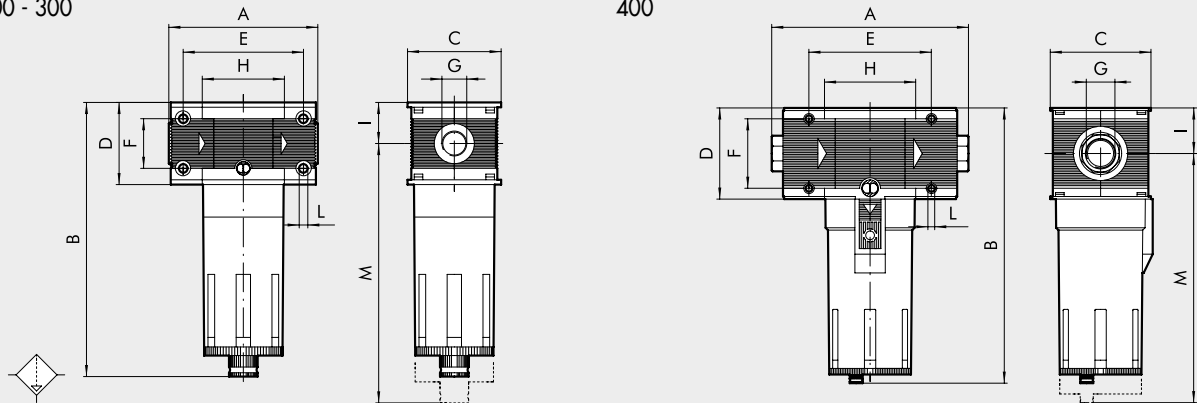
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi
- (H) = maximum flow rate recommended for optimal operation

DIMENSIONS

100 - 200 - 300

400



	DEP 100		DEP 200			DEP 300			DEP 400			
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	78		93.5			110		112	225 to 255			
B	RMSA	144	175			195		320				
	RA	-	-			199		324				
C	50		63			72		118				
D	43		55			65		105				
E	63		78.5			92		141.4				
F	26		36			42		80				
H	43		55.5			65		105.4				
I	21.5		27.5			32.5		52.5				
L	Hole for M4 screws		Hole for M5 screws			Hole for M5 screws		Hole for M6 screws				
M	RMSA	137	196			215		378				
	RA	-	-			219		382				

SYNOPTIC, SIZES AND VERSIONS

DEP	100	1/4	RMSA	
ELEMENT	SIZE	THREADED PORT	TYPE OF DRAIN	
DEP	100	1/4	RMSA	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
	200	3/8		
	300	1/2	RMSA	
	400	3/4	RA	
		1		
		1		
		1 1/4		
		1 1/2		
		2		

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 DEPURATOR		Skillair® 300 DEPURATOR		Skillair® 400 DEPURATOR	
3288001A	D 100 RMSA without end plates	4488001A	D 300 RMSA without end plates	6188001A	D 400 RMSA without end plates
3288001	D 100 1/4 RMSA	4488002A	D 300 RA without end plates	6188002A	D 400 RA without end plates
3388001	D 100 3/8 RMSA	4488001	D 300 1/2 RMSA	6188001	D 400 1 RMSA
		4488002	D 300 1/2 RA	6188002	D 400 1 RA
		4588001	D 300 3/4 RMSA	6288001	D 400 1 1/4 RMSA
		4588002	D 300 3/4 RA	6288002	D 400 1 1/4 RA
		4688001	D 300 1 RMSA	6388001	D 400 1 1/2 RMSA
		4688002	D 300 1 RA	6388002	D 400 1 1/2 RA
				6488001	D 400 2 RMSA
				6488002	D 400 2 RA

Skillair® ACTIVE CARBON FILTER

Active carbon filtering systems are the most efficient in the industry as they eliminate all traces of oils, solvents and hydrocarbons, and remove unpleasant odours from the air.

The operating principle is based on active carbon's ability to absorb the majority of the polluting particles in the air thanks to the presence of tiny passages inside the carbon granules.

The incoming air must be filtered (5 µm) and purified (0.01 µm) to increase the duration and efficiency of the cartridge.

The cartridge must be replaced at set intervals since there is no difference in load loss between an efficient cartridge and a saturated one.

N.B. To maintain the same performance and duration specified on the data sheet, the load loss (ΔP) must not exceed 75 mbar.



UNITS

Skillair® ACTIVE CARBON FILTER

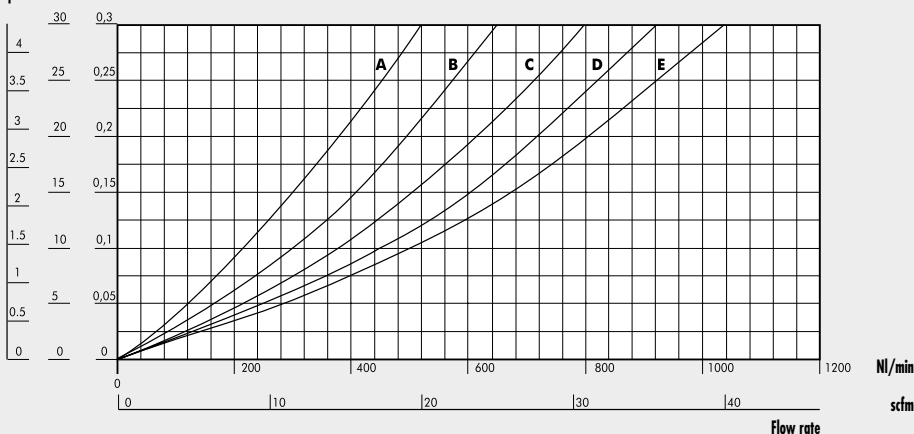
TECHNICAL DATA		AC 100		AC 200			AC 300			AC 400			
Threaded port		1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Residual oil at 20°C *	mg/m ³	0.003		0.003			0.003			0.003			
Duration of cartridge *	hours	4000		4000			4000			1000			
Max. inlet pressure	MPa	1.5		1.3			1.3			1.3			
	bar	15		13			13			13			
	psi	217		188			188			188			
Max temperature at: 1 MPa; 10 bar; 145 psi	°C	50		50			50			50			
	°F	122		122			122			122			
Weight	kg	0.4		0.9			1.4			4.2		5	
Wall fixing screws		M4 x 50		M5 x 60			M5 x 70			M6 x 110			
Mounting position		In any position.											
Fluid		0.01 µm filtered and dehydrated air.											
Notes on use		Upstream it's necessary to mount a coalescence filter dehydrator of 0.01 µm.											
* if the load loss of 75 mbar is not exceeded													

FLOW CHARTS

AC 100 1/4 - 3/8

ΔP = (Pm-Pv)

psi kPa bar



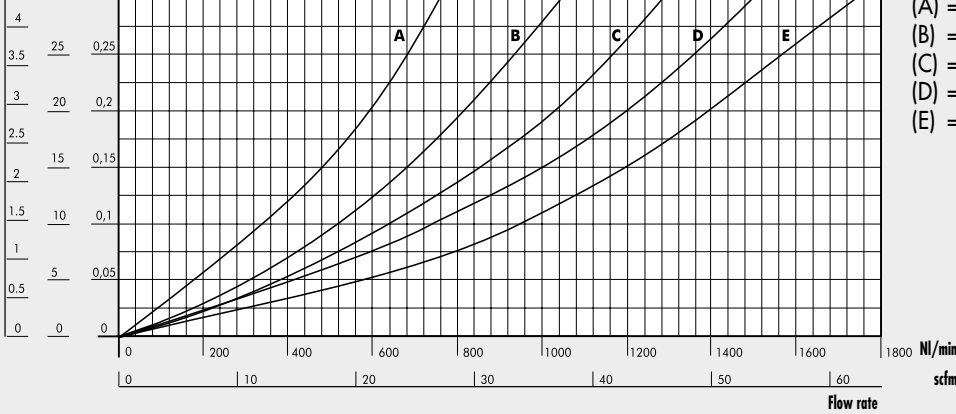
- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

FLOW CHARTS

AC 200 1/4 - 3/8 - 1/2

$\Delta P = (P_m - P_v)$

psi kPa bar

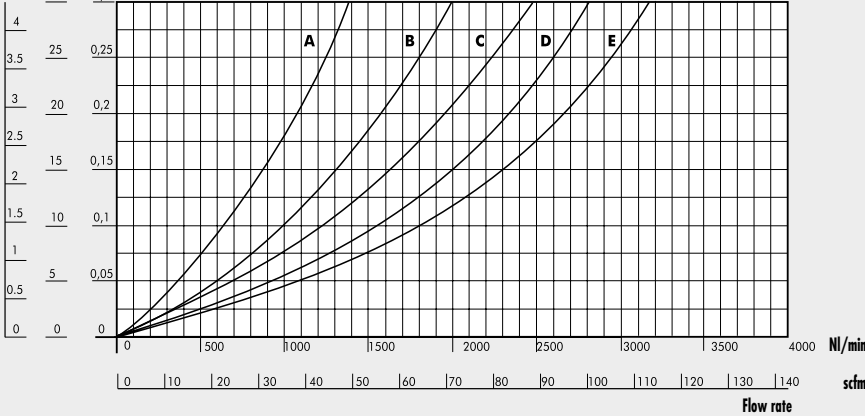


- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

AC 300 1/2 - 3/4 - 1

$\Delta P = (P_m - P_v)$

psi kPa bar

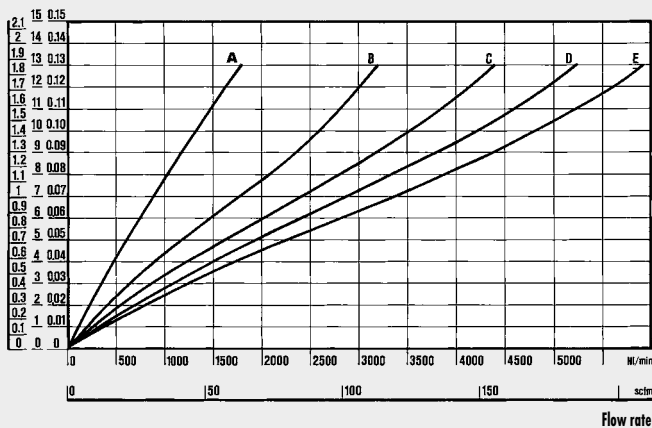


- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

AC 400 1

$\Delta P = (P_m - P_v)$

psi kPa bar

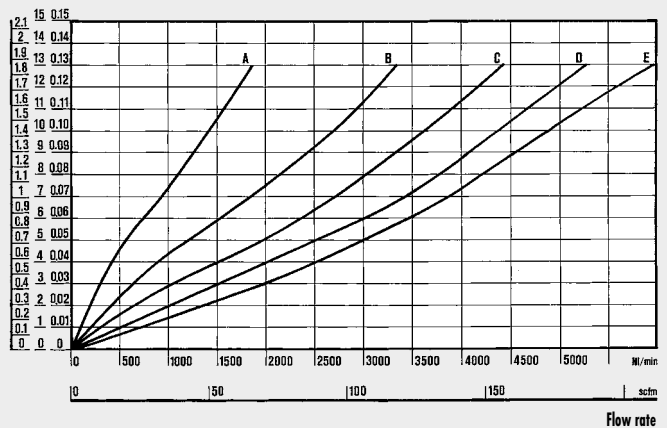


- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

AC 400 2

$\Delta P = (P_m - P_v)$

psi kPa bar

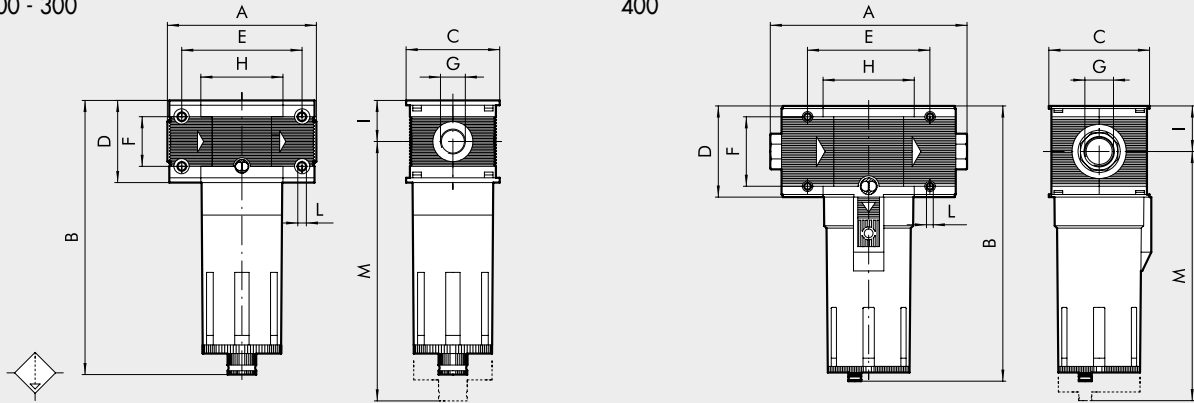


- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

DIMENSIONS

100 - 200 - 300

400



	AC 100		AC 200			AC 300			AC 400			
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	78			93.5		110		112	225 to 255			283 to 313
B	144			175		195			320			
C	50			63		72			118			
D	43			55		65			105			
E	63			78.5		92			141.4			
F	26			36		42			80			
H	43			55.5		65			105.4			
I	21.5			27.5		32.5			52.5			
L	Hole for M4 screws		Hole for M5 screws			Hole for M5 screws			Hole for M6 screws			
M	137		196			215			378			

SYNOPTIC, SIZES AND VERSIONS

AC ELEMENT	100 SIZE	1/4 THREADED PORT	RMSA TYPE	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
AC = Active carbon	100	1/4	RMSA	
	200	3/8		
	300	1/4		
	400	3/8		
		1/2		
		3/4		
		1		
		1 1/4		
		1 1/2		
		2		

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 ACTIVE CARBON FILTER		Skillair® 300 ACTIVE CARBON FILTER		Skillair® 400 ACTIVE CARBON FILTER	
3288003A	FIL AC 100 RMSA without end plates	4488003A	FIL AC 300 RMSA without end plates	6188003A	FIL AC 400 RMSA without end plates
3288003	FIL AC 100 1/4 RMSA	4488003	FIL AC 300 1/2 RMSA	6188003	FIL AC 400 1 RMSA
3388003	FIL AC 100 3/8 RMSA	4588003	FIL AC 300 3/4 RMSA	6288003	FIL AC 400 1 1/4 RMSA
		4688003	FIL AC 300 1 RMSA	6388003	FIL AC 400 1 1/2 RMSA
Skillair® 200 ACTIVE CARBON FILTER				6488003	FIL AC 400 2 RMSA
3488003A	FIL AC 200 RMSA without end plates				
3488003	FIL AC 200 1/4 RMSA				
3588003	FIL AC 200 3/8 RMSA				
3688003	FIL AC 200 1/2 RMSA				

DIAPHRAGM DRIER SERIES DRY 100 Skillair®



Skillair® diaphragm driers are used to reduce the air's moisture content by lowering the dew point, i.e. the temperature at which condensate starts to form. They use diaphragms with a new cross-fibre system that guarantees a lower consumption of regenerated air and hence power. This is an all-in-one unit complete with a filter, purifier, air intake and drier. The air intake uses air that has been filtered and purified, but not dried, and sends it to utilities not requiring dry air. This is a much more efficient system as only the required quantity of compressed air is dried. An alternative proposal is the drier by itself. As the Skillair® system is modular, it can be inserted in any type of assembly. It is important, however, to remember that only properly filtered and purified air must be supplied to the drier. It's advisable that the drier should be used at the highest pressure as possible.



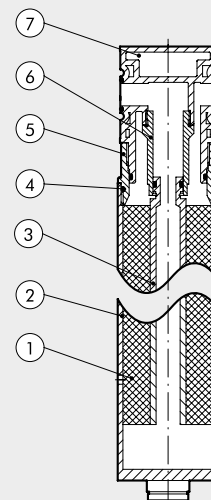
TECHNICAL DATA	DRY 100	FIL + DEP + PA + DRY 100
Threaded port	1/4" - 3/8"	
Max. inlet pressure	1.3 MPa / 13 bar / 188 psi	
Suggested flow rate at 6.3 bar (0.63 MPa, 91 psi)	Nl/min scfm	230 8
Consumption of compressed air for regeneration at 6.3 bar	Nl/min scfm	20 0.7
Minimum temperature	2°C / 35°F	
Maximum temperature at 1MPa; 10 bar; 145 psi	50°C / 122°F	
Noise level	dB(A)	< 45
Weight	kg	0.84 1.24
Wall fixing screws	M4 x 50	
Mounting position	In any position	Vertical
Drain	-	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure SAC: automatic drain with condensate discharge. Operates by pressure drop - requires variable air take-offs.
Filter bowl and purification bowl capacity	cm³	22
Fluid	Compressed air without condensate max solid particle size: 1 µm max oil residue: 0.01mg/m³	Compressed air
Important note	The drier must always be preceded by a 5 µm filter and a purifier	

UNITS

DIAPHRAGM DRIER SERIES DRY 100 Skillair®

COMPONENTS

- ① Body: painted anodized aluminium
- ② Diaphragm: poliester sulfone resin
- ③ Inner tube: salt-water resistant aluminium
- ④ O-Ring seals: NBR
- ⑤ Adapter: anodized aluminium
- ⑥ Flanges: brass
- ⑦ Skillair® body: technopolymer



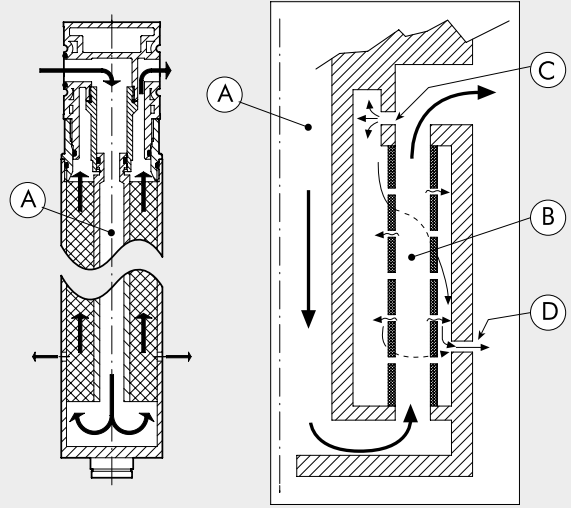
OPERATING PRINCIPLE

The drying element is comprised of cross-fibre diaphragms arranged around an inner tube. The compressed air passes through the tube (A) and flows back through the hollow diaphragms (B). At the same time, the regeneration air required for drying is tapped from the outlet port, expands as it passes through a nozzle (C), which reduces the relative humidity, and flows back along the outer side of the fibres. This allows moist compressed air to flow through the diaphragms and the dry regeneration air outside.

The difference in moisture content causes the water to pass from the compressed air to the regeneration air, which is drained through holes (D) at the bottom of the drier.

ADVANTAGES

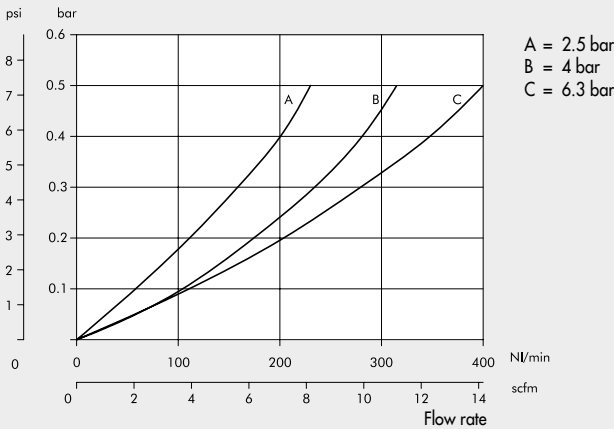
- Drying is guaranteed as all the moisture is removed
- Minimum consumption of regeneration air
- Reduce drier maintenance as none of the components are subject to wear
- Environmentally friendly drying process.



FLOW CHARTS

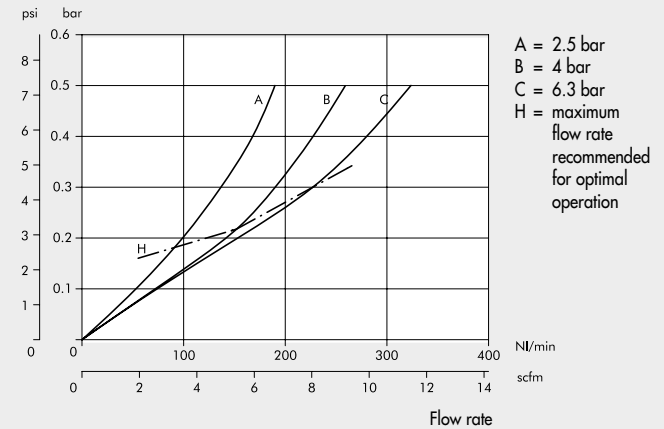
DRY 100

$\Delta P = (P_m - P_v)$



FIL (5 µm) + DEP + PA + DRY 100

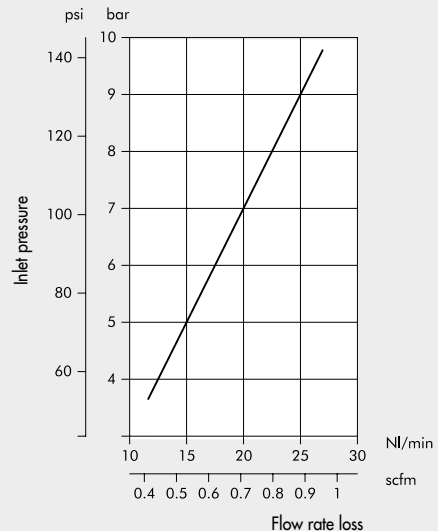
$\Delta P = (P_m - P_v)$



REGENERATION AIR

Thanks to the cross-fiber system, the flow rate loss is much lesser than in traditional linear-fibre systems. In the diagram on the right is indicated the drop-in air flow according to the operating pressure.

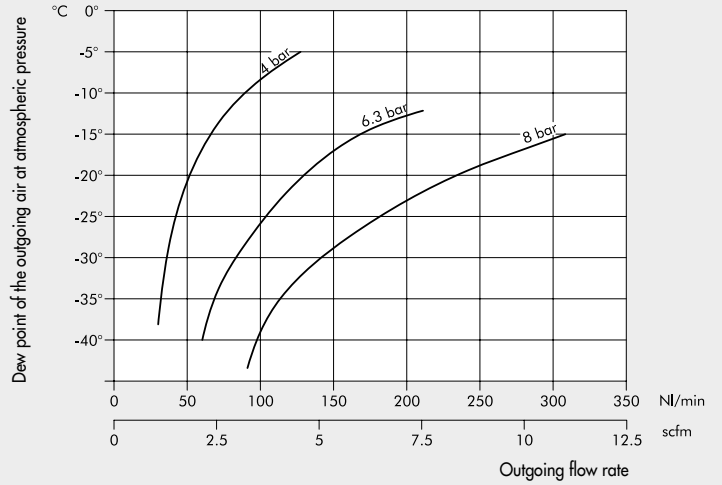
N.B.: for the best drying efficiency the highest pressure possible is required, though this implies an increase of the regeneration air.



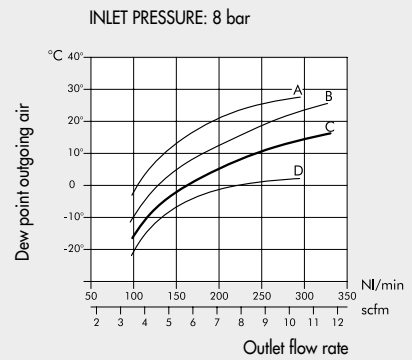
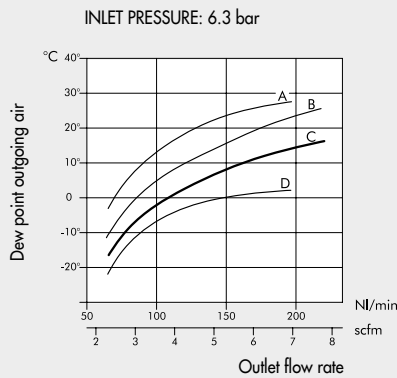
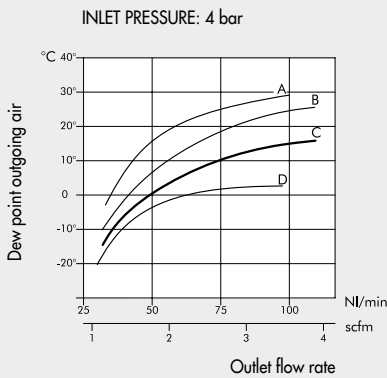
DRYING

Dew point of the outgoing air in nominal reference conditions:

- Dew point referred to atmospheric pressure
- Incoming air with dew point at 25°C (i.e. saturated at 25°C)



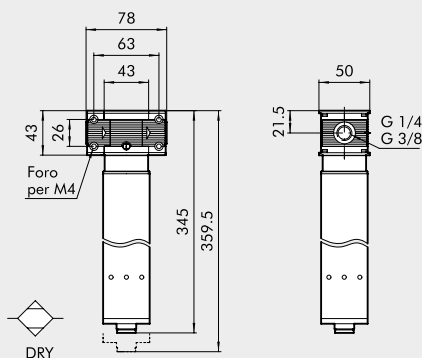
In the diagram below is indicated the dew point of the outgoing compressed air for various input air dew points, depending on the rate of flow of compressed air.



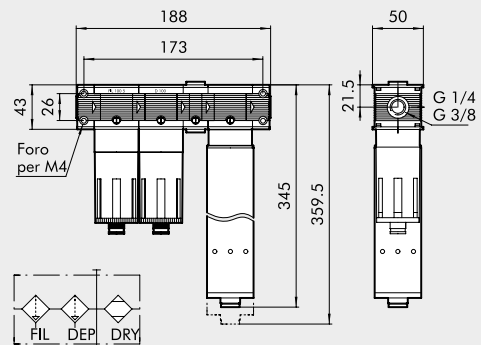
- A: Incoming air with dew point at 45°C
- B: Incoming air with dew point at 35°C

- C: Incoming air with dew point at 25°C
- D: Incoming air with dew point at 15°C

DRY 100 DIMENSIONS



FIL + DEP + PA + DRY 100 DIMENSIONS



Code	Description
3290001A	DRY 100 without end plates
3290001	DRY 100 1/4"
3390001	DRY 100 3/8"

Code	Description
3291001	F+D+PA+DRY 100 1/4" RMSA-RMSA
3291005	F+D+PA+DRY 100 1/4" SAC-RMSA
3291006	F+D+PA+DRY 100 1/4" SAC-SAC
3391001	F+D+PA+DRY 100 3/8" RMSA-RMSA
3391005	F+D+PA+DRY 100 3/8" SAC-RMSA
3391006	F+D+PA+DRY 100 3/8" SAC-SAC

Skillair® REGULATOR

Each system served by the air supply mains (e.g. actuators and general appliances) requires its own constant operating pressure. It is necessary to use a regulator to regulate the pressure within a set range by means of regulating springs, with the pressure never exceeding the mains pressure.

The new Skillair® regulator uses a rolling diaphragm which gives a much better performance than the flat version.

Advantages of this system:

- Increased stroke, increased valve opening and hence higher flow rate.
- Decreased dynamic and inrush friction; prompt, more sensitive operation.
- Reduced working stress and hence longer life allowing the use of thinner diaphragms (0.45 mm versus 1.5 mm for a flat one) which increases regulator sensitivity and prompt action.
- Increased accuracy in maintaining the set pressure with both variable flow rates and different feed pressures.
- Downstream overpressures relieved quickly.

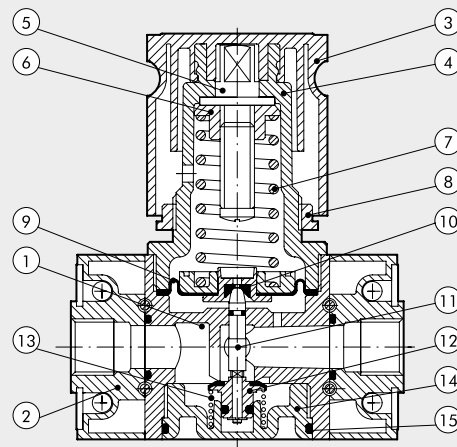


TECHNICAL DATA

	REG 100		REG 200			REG 300			REG 400 PILOT OPERATED*			
Threaded port	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Setting range	bar		0 to 2 - 0 to 4 - 0 to 8 - 0 to 12						Depending on the pilot operated regulator			
Max. input pressure	MPa		1.5		1.5		1.3		1.3		1.3	
	bar		15		15		13		13		13	
	psi		217		217		188		188		188	
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	NL/min		1100		2500		3500		18000		20000	
ΔP 0.5 bar (0.05 MPa to 7 psi)	scfm		39		88		124		363		707	
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	NL/min		1600		3500		7000		-		-	
ΔP 1 bar (0.1 MPa to 14 psi)	scfm		57		124		247		-		-	
Max temperature at 1 MPa; 10 bar; 145 psi	°C		50		50		50		50		50	
	°F		122		122		122		122		122	
Weight	kg		0.4		0.7		1.4		4.8		5.6	
Wall fixing screws	M4 x 50		M5 x 60		M5 x 70		M6 x 110		M6 x 110		M6 x 110	
Pressure gauge port	1/8"		1/8"		1/8"		1/8"		1/4"		1/4"	
Mounting position	In any position											
Fluid	Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.											
Notes on use	The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.											
	Do not take air from pressure gauge ports.											
	*Supplied without a pilot regulator.											

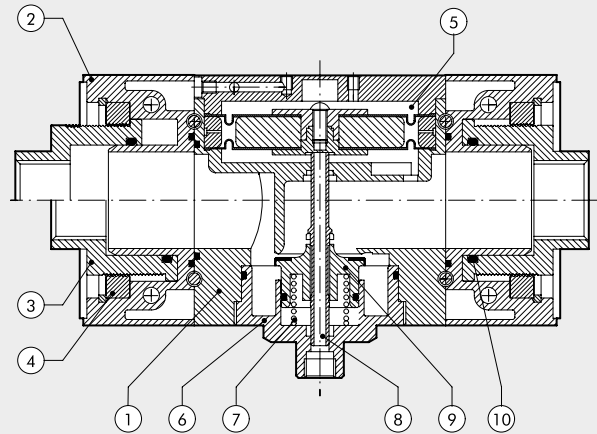
COMPONENTS REG 100 - 200 - 300

- ① Technopolymer body
- ② Zamak end plate
- ③ Technopolymer knob
- ④ Technopolymer bell
- ⑤ OT58 brass adjusting screw
- ⑥ OT58 brass scroll
- ⑦ Steel adjusting spring
- ⑧ Technopolymer ring nut
- ⑨ Rolling diaphragm
- ⑩ NBR relieving gaskets
- ⑪ OT58 brass stem
- ⑫ Valve with NBR vulcanized gasket
- ⑬ Stainless steel valve spring
- ⑭ Technopolymer plug
- ⑮ NBR gaskets



COMPONENTS REG 400 PILOT OPERATED

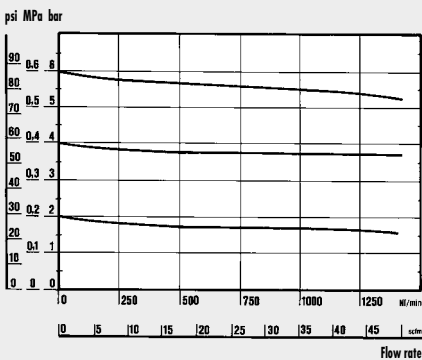
- ① Aluminium body
- ② Aluminium end plate
- ③ Anodized aluminium threaded bush, axial adjustment
- ④ OT58 brass retaining ring
- ⑤ Rolling diaphragm
- ⑥ Anodized aluminium plug
- ⑦ Stainless steel valve spring
- ⑧ OT58 brass stem with air relief hole
- ⑨ Valve with NBR vulcanized gasket
- ⑩ NBR gaskets



FLOW CHARTS

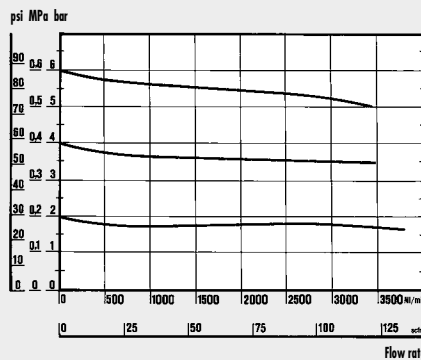
REG 100 1/4 - 3/8

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



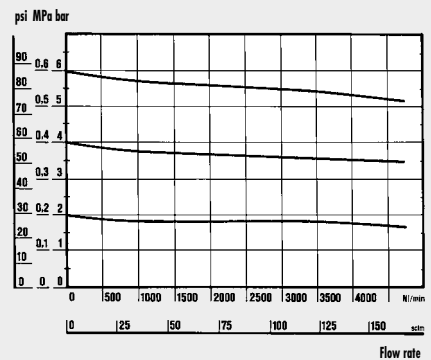
REG 200 1/4 - 3/8 - 1/2

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



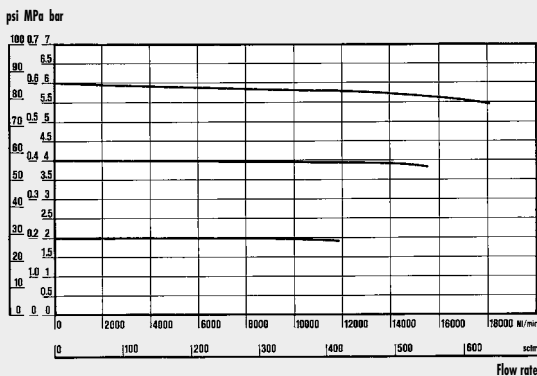
REG 300 1/2 - 3/4 - 1

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



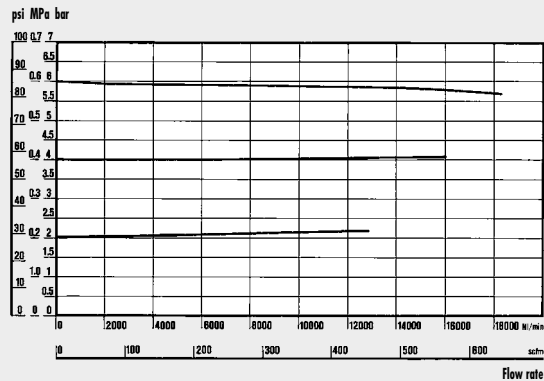
REG 400 1"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi

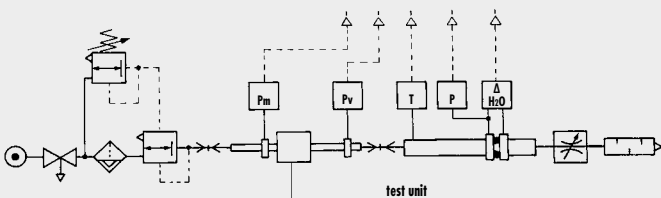


REG 400 2"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



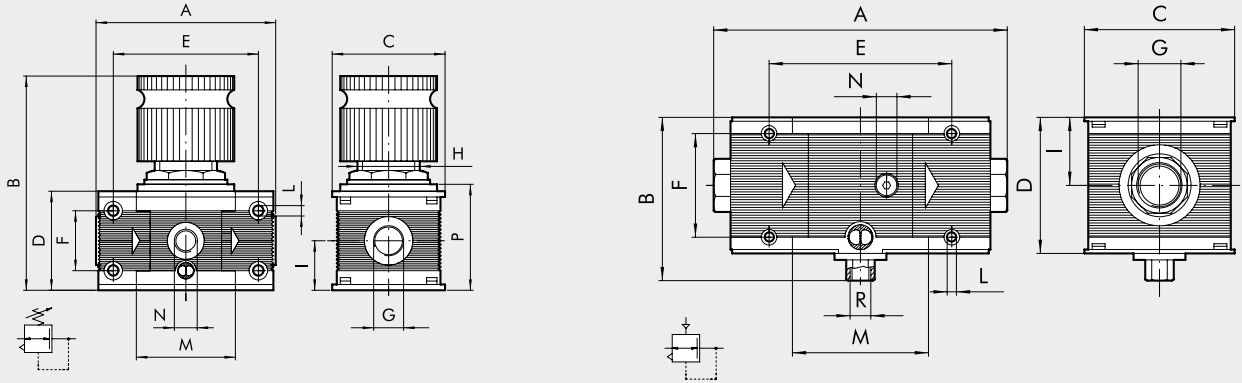
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.



DIMENSIONS

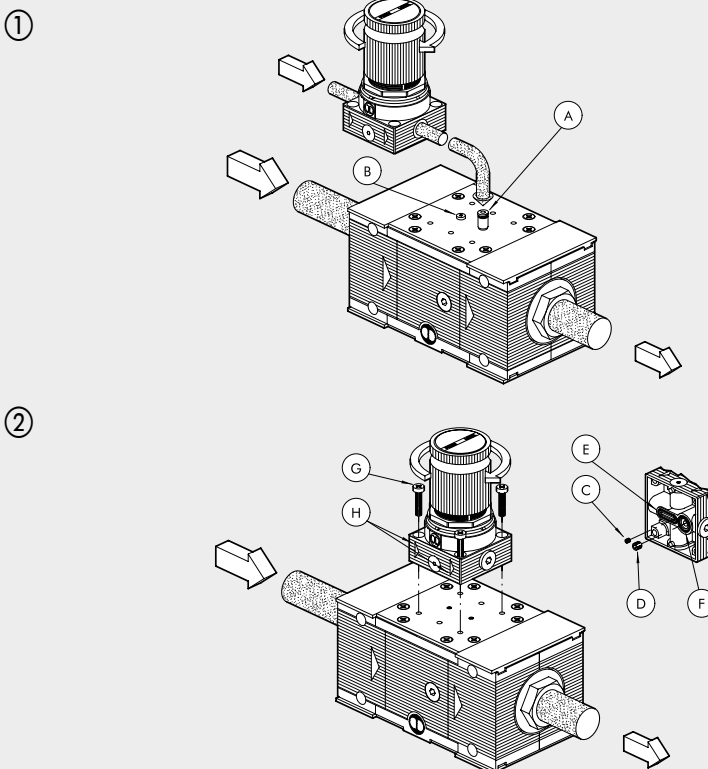
100 - 200 - 300

400



	REG 100		REG 200			REG 300			REG 400			
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	78		93.5			110		112	225 to 255			283 to 313
B	98		125				148		127			
C	50		63				72		118			
D	43		55				65		105			
E	63		78.5				92		141.4			
F	26		36				42		80			
H	30 x 1.5		40 x 1.5			48 x 1.5			-			
I	21.5		27.5			32.5			52.5			
L	Hole for M4 screws		Hole for M5 screws			Hole for M5 screws			Hole for M6 screws			
M	43		55.5			65			105.4			
N (pressure gauge port)	1/8"		1/8"			1/8"			1/4"			
P	46		58			69			-			
R (relief)	-		-			-			1/4"			

INSTRUCTIONS FOR USE REG 400



REMOTE PILOT

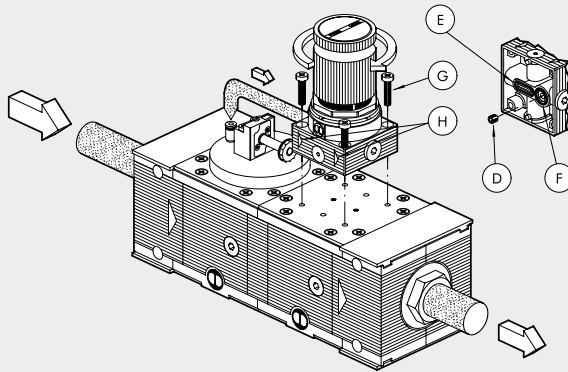
- Fit the A7 M5 plug into the threaded hole ② (close to the entrance).
- Fit the M5 fitting into the threaded hole ① as close to the entrance as possible.
- Connect the downstream circuit of the selected pilot operated regulator to the input ① (R1 fitting).
- Set the required pressure on the pilot operated regulator.

DIRECT PILOT WITH Skillair® PILOT OPERATED REGULATOR

- Remove the pins ③ and ④ under the pilot operated regulator.
- Check that the two gaskets ⑤ and ⑥ under the pilot are in place.
- Fix the pilot operated regulator to the base of the regulator using the self-threading screws ⑦. Make sure the arrows ⑧ point in the same direction as the arrows in relief under the base of the regulator.

INSTRUCTIONS FOR USE REG 400

③



PILOT REGULATOR FOLLOW-UP LINK

This is used when the regulator is mounted downstream of a V3V valve or an APR. The air can be bled from the V3V or APR valves instead of from the regulator relieving system.

- Remove only the stud pin marked with a letter Ⓓ under the pilot regulator.
- Check the two gaskets under the pilot marked Ⓔ and Ⓕ.
- Secure the pilot regulator to the regulator base with the self-tapping screws marked with a letter Ⓖ. Making sure the arrows marked Ⓗ point in the same direction as the arrows in relief under the regulator base.
- Remove the A7 M5 plug from the V3V or APR plate and remount the fitting.
- Connect the pilot regulator supply to the fitting.

SYNOPTIC, SIZES AND VERSIONS

REG ELEMENT	100 SIZE	1/4 THREADED PORT	02 SETTING RANGE
REG	100	1/4	02 = 0 to 2 bar
	200	3/8	04 = 0 to 4 bar
		1/4	08 = 0 to 8 bar
		3/8	012 = 0 to 12 bar
	300	1/2	
		1/2	
		3/4	
	400	1	
		1	Depending on the pilot used
		1 1/4	
		1 1/2	
		2	

The pilot operated regulator is necessary for size 400. See page C3.27

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 REGULATOR		Skillair® 200 REGULATOR		Skillair® 300 REGULATOR	
3202001A	REG 100 02 without end plates	3402001A	REG 200 02 without end plates	4402000A	REG 300 02 without end plates
3202002A	REG 100 04 without end plates	3402002A	REG 200 04 without end plates	4402001A	REG 300 04 without end plates
3202003A	REG 100 08 without end plates	3402003A	REG 200 08 without end plates	4402002A	REG 300 08 without end plates
3202004A	REG 100 012 without end plates	3402004A	REG 200 012 without end plates	4402003A	REG 300 012 without end plates
3202001	REG 100 1/4 02	3402001	REG 200 1/4 02	4402000	REG 300 1/2 02
3202002	REG 100 1/4 04	3402002	REG 200 1/4 04	4402001	REG 300 1/2 04
3202003	REG 100 1/4 08	3402003	REG 200 1/4 08	4402002	REG 300 1/2 08
3202004	REG 100 1/4 012	3402004	REG 200 1/4 012	4402003	REG 300 1/2 012
3302001	REG 100 3/8 02	3502001	REG 200 3/8 02	4502000	REG 300 3/4 02
3302002	REG 100 3/8 04	3502002	REG 200 3/8 04	4502001	REG 300 3/4 04
3302003	REG 100 3/8 08	3502003	REG 200 3/8 08	4502002	REG 300 3/4 08
3302004	REG 100 3/8 012	3502004	REG 200 3/8 012	4502003	REG 300 3/4 012
		3602001	REG 200 1/2 02	4602000	REG 300 1 02
		3602002	REG 200 1/2 04	4602001	REG 300 1 04
		3602003	REG 200 1/2 08	4602002	REG 300 1 08
		3602004	REG 200 1/2 012	4602003	REG 300 1 012
				Skillair® 400 REGULATOR	
				6102001A	REG 400 without end plates
				6102001	REG 400 1
				6202001	REG 400 1 1/4
				6302001	REG 400 1 1/2
				6402001	REG 400 2

Skillair® 100 IN-SERIES REGULATOR

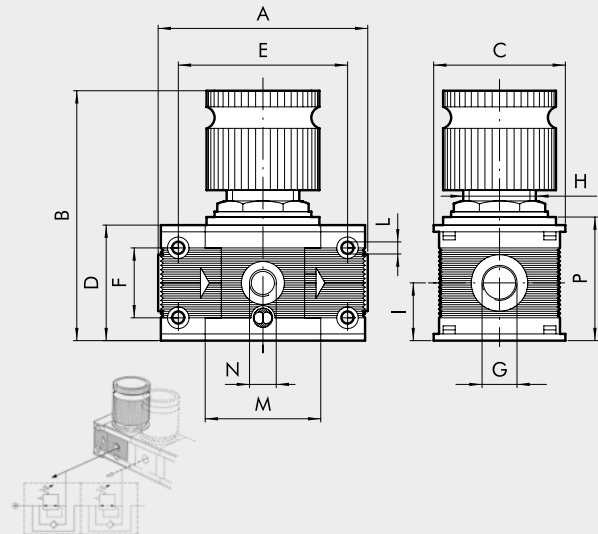
TECHNICAL DATA

Threaded inlet port	1/4" - 3/8"
Threaded user port	G 1/8"
Degree of purification	bar 0 to 2 - 0 to 4 - 0 to 8 - 0 to 12
Max. input pressure	1.5 MPa - 15 bar - 217 psi
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	500 NI/min
ΔP 0.5 bar (0.05 MPa to 7 psi)	18 scfm
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	950 NI/min
ΔP 1 bar (0.1 MPa to 14 psi)	34 scfm
Fluid	Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous
Max temperature at 1 MPa; 10 bar; 145 psi	°C 50 °F 122
Weight	kg 0.4
Wall fixing screws	M4x50
Mounting position	In any position
Pressure gauge port	G 1/8"
Notes on use	The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.



DIMENSIONS

	REG 100	REG 100
Threaded port	1/4"	3/8"
A		78
B		98
C		50
D		43
E		63
F		26
G	1/4"	3/8"
H		30 x 1.5
I		21.5
L		Hole for M4 screws
M		43
N (use)		1/8"
P		46

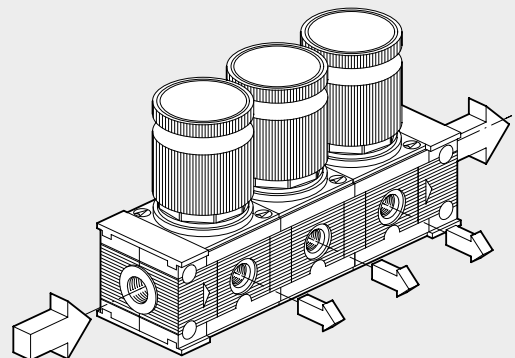


ORDERING CODES

Code	Description
100 IN-SERIES REGULATOR	
3202101A	100 IN-SERIES REG. 0-2 without end plates
3202102A	100 IN-SERIES REG. 0-4 without end plates
3202103A	100 IN-SERIES REG. 0-8 without end plates
3202104A	100 IN-SERIES REG. 0-12 without end plates
3202101	100 IN-SERIES REG. 1/4 0-2
3202102	100 IN-SERIES REG. 1/4 0-4
3202103	100 IN-SERIES REG. 1/4 0-8
3202104	100 IN-SERIES REG. 1/4 0-12
3302101	100 IN-SERIES REG. 3/8 0-2
3302102	100 IN-SERIES REG. 3/8 0-4
3302103	100 IN-SERIES REG. 3/8 0-8
3302104	100 IN-SERIES REG. 3/8 0-12

Several of these Skillair® regulators can be mounted in series, all fed by the same pressure. They can give different set pressures, each independent of the previous regulator.

Operating compressed air can be taken from the pressure gauge ports (G 1/8").



Skillair® PADLOCKABLE REGULATOR



The padlockable regulator has a pin with a hole in it that projects from the top of the knob. When the knob is in the push-lock position, the padlock can be inserted in the hole, preventing the knob from being operated. A padlock and two keys are supplied with the regulator.

The new Skillair® regulator uses a rolling diaphragm which gives a much better performance than the flat version.

Advantages of this system:

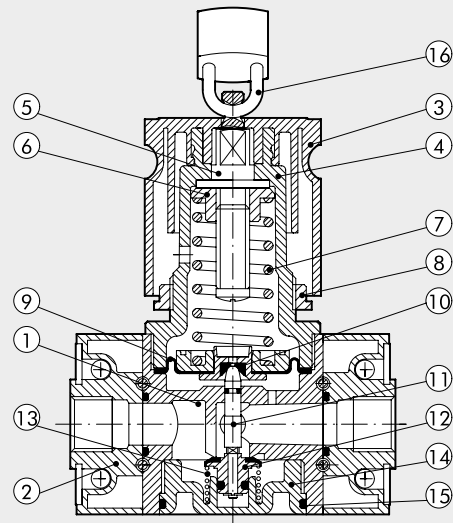
- Increased stroke, increased valve opening and hence higher flow rate.
- Decreased dynamic and inrush friction; prompter, more sensitive operation.
- Reduced working stress and hence longer life allowing the use of thinner diaphragms (0.45 mm versus 1.5 mm for a flat one) which increases regulator sensitivity and prompt action.
- Increased accuracy in maintaining the set pressure with both variable flow rates and different feed pressures.
- Downstream overpressures relieved quickly.

Refer to the regulator for technical data and flow curves.



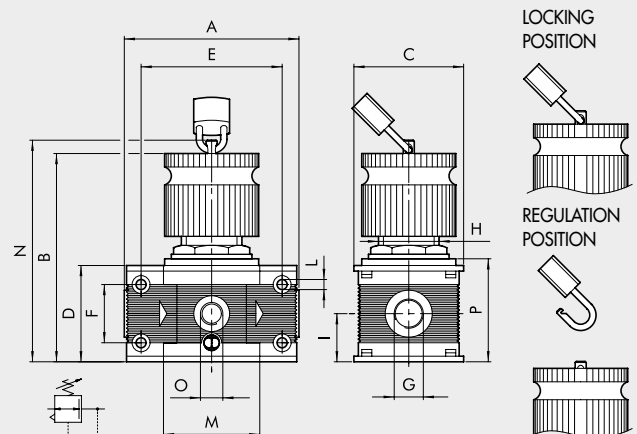
COMPONENTS

- ① Technopolymer body
- ② Zamak end plate
- ③ Technopolymer knob
- ④ Technopolymer bell
- ⑤ Nickel-plated OT58 brass adjusting screw
- ⑥ OT58 brass scroll
- ⑦ Steel adjusting spring
- ⑧ Technopolymer ring nut
- ⑨ Rolling diaphragm
- ⑩ NBR relieving gaskets
- ⑪ OT58 brass stem
- ⑫ Valve with NBR vulcanized gasket
- ⑬ Stainless steel valve spring
- ⑭ Technopolymer plug
- ⑮ NBR gaskets
- ⑯ Padlock



DIMENSIONS

	REG 100 KEY		REG 200 KEY			REG 300 KEY		
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A	78		93.5		110	112		
B	95 to 98		123 to 125		145 to 148			
C	50		63		72			
D	43		55		65			
E	63		78.5		92			
F	26		36		42			
H	30 x 1.5		40 x 1.5		48 x 1.5			
I	21.5		27.5		32.5			
L	Hole for M4 screws		Hole for M5 screws		Hole for M5 screws			
M	43		55.5		65			
N	101		127		151			
O (pressure gauge port)	1/8"		1/8"		1/8"			
P	46		58		69			



SYNOPTIC, SIZES AND VERSIONS

REG ELEMENT	100 SIZE	KEY TYPE	1/4 THREADED PORT	02 SETTING RANGE
REG = Regulator	100	KEY = Padlockable	1/4	02 = 0 to 2 bar 04 = 0 to 4 bar 08 = 0 to 8 bar 012 = 0 to 12 bar
	200		3/8	
	300		1/4 3/8 1/2 1/2 3/4 1	

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 PADLOCKABLE REGULATOR		Skillair® 200 PADLOCKABLE REGULATOR		Skillair® 300 PADLOCKABLE REGULATOR	
3210001A	REG 100 KEY 02 without end plates	3410001A	REG 200 KEY 02 without end plates	4410000A	REG 300 KEY 02 without end plates
3210002A	REG 100 KEY 04 without end plates	3410002A	REG 200 KEY 04 without end plates	4410001A	REG 300 KEY 04 without end plates
3210003A	REG 100 KEY 08 without end plates	3410003A	REG 200 KEY 08 without end plates	4410002A	REG 300 KEY 08 without end plates
3210004A	REG 100 KEY 012 without end plates	3410004A	REG 200 KEY 012 without end plates	4410003A	REG 300 KEY 012 without end plates
3210001	REG 100 KEY 1/4 02	3410001	REG 200 KEY 1/4 02	4410000	REG 300 KEY 1/2 02
3210002	REG 100 KEY 1/4 04	3410002	REG 200 KEY 1/4 04	4410001	REG 300 KEY 1/2 04
3210003	REG 100 KEY 1/4 08	3410003	REG 200 KEY 1/4 08	4410002	REG 300 KEY 1/2 08
3210004	REG 100 KEY 1/4 012	3410004	REG 200 KEY 1/4 012	4410003	REG 300 KEY 1/2 012
3310001	REG 100 KEY 3/8 02	3510001	REG 200 KEY 3/8 02	4510000	REG 300 KEY 3/4 02
3310002	REG 100 KEY 3/8 04	3510002	REG 200 KEY 3/8 04	4510001	REG 300 KEY 3/4 04
3310003	REG 100 KEY 3/8 08	3510003	REG 200 KEY 3/8 08	4510002	REG 300 KEY 3/4 08
3310004	REG 100 KEY 3/8 012	3510004	REG 200 KEY 3/8 012	4510003	REG 300 KEY 3/4 012
		3610001	REG 200 KEY 1/2 02	4610000	REG 300 KEY 1 02
		3610002	REG 200 KEY 1/2 04	4610001	REG 300 KEY 1 04
		3610003	REG 200 KEY 1/2 08	4610002	REG 300 KEY 1 08
		3610004	REG 200 KEY 1/2 012	4610003	REG 300 KEY 1 012

UNITS

Skillair® PADLOCKABLE REGULATOR

Skillair® PILOT REGULATOR



The pilot regulator is used when great accuracy is required in maintaining the set pressure under changing operating conditions.

It is ideal for use as:

- a precision regulator for flow rates < 100 NI/min.
- a pilot in general - typically for large size regulators (see REG 400).

The system's high operating accuracy and low hysteresis are determined by the virtually total lack of friction.

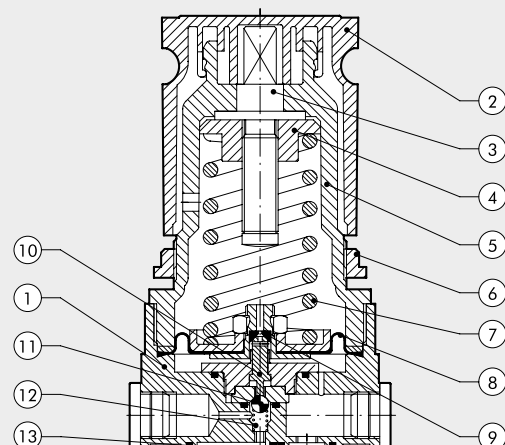
The presence of a slight air leak is necessary for the regulator to operate properly - it is not a malfunction. It is advisable to use filtered air.



TECHNICAL DATA		PILOT REGULATOR	
Threaded port			1/4"
Setting range	bar		0 to 2 - 0 to 4 - 0 to 8 - 0 to 12
Max. input pressure	MPa		1.3
	bar		13
	psi		188
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7 psi)			120 NI/min - 4.3 scfm
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14 psi)			140 NI/min - 5 scfm
Fluid			Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.
Max temperature at 1 MPa; 10 bar; 145 psi	°C		50
	°F		122
Weight	kg		0.6
Mounting position			In any position
Pressure gauge port			G 1/8"
Notes on use			The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from the pressure gauge ports. Mount directly on REG 400.

COMPONENTS

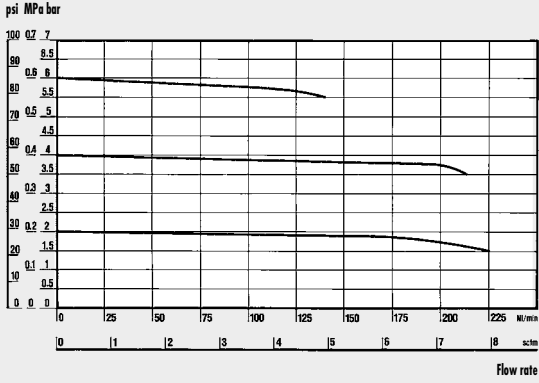
- ① Aluminium body
- ② Technopolymer knob
- ③ OT58 brass adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Technopolymer ring nut
- ⑦ Steel adjusting spring
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Stainless steel ball valve
- ⑫ Stainless steel valve spring
- ⑬ NBR gaskets



FLOW CHARTS

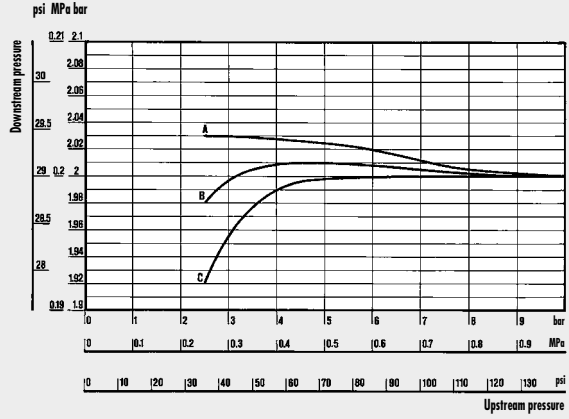
FLOW FEATURES REG. P 1/4"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



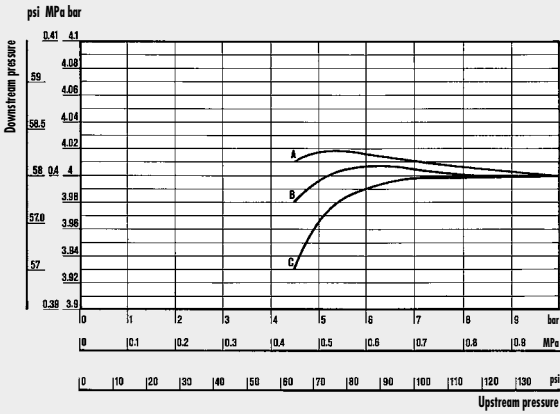
REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 Nl/min = 0 scfm -
B = 25 Nl/min = 0.88 scfm - C = 50 Nl/min = 1.76 scfm



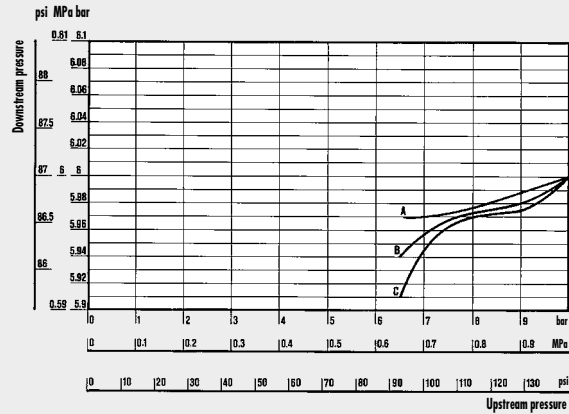
REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 Nl/min = 0 scfm
B = 25 Nl/min = 0.88 scfm - C = 50 Nl/min = 1.76 scfm



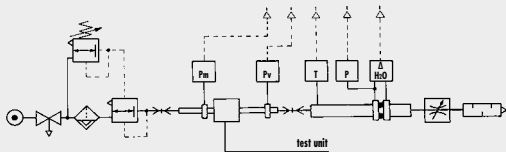
REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 Nl/min = 0 scfm
B = 25 Nl/min = 0.88 scfm - C = 50 Nl/min = 1.76 scfm



UNITS

SKILLAIR® PILOT REGULATOR

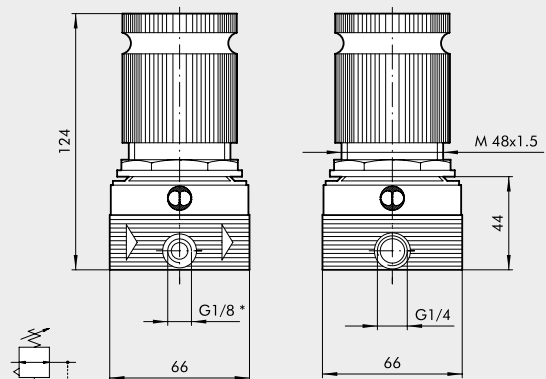


• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

* Pressure stability adjusted according to changes in upstream pressure.

DIMENSIONS

Code	Description
3206001	REG. P 1/4" O2
3206002	REG. P 1/4" O4
3206003	REG. P 1/4" O8
3206004	REG. P 1/4" O12



*Pressure gauge port

Skillair® PILOT PADLOCKABLE REGULATOR



The pilot regulator is used when great accuracy is required in maintaining the set pressure under changing operating conditions.

It is ideal for use as:

- a precision regulator for flow rates < 100 NI/min.
- a pilot in general - typically for large size regulators (see REG 400).

The system's high operating accuracy and low hysteresis are determined by the virtually total lack of friction. The presence of a slight air leak is necessary for the regulator to operate properly - it is not a malfunction.

It is advisable to use filtered air.

The pilot padlockable regulator has a pin with a hole in it that projects from the top of the knob. When the knob is in the push-lock position, the padlock can be inserted in the hole, preventing the knob from being operated.

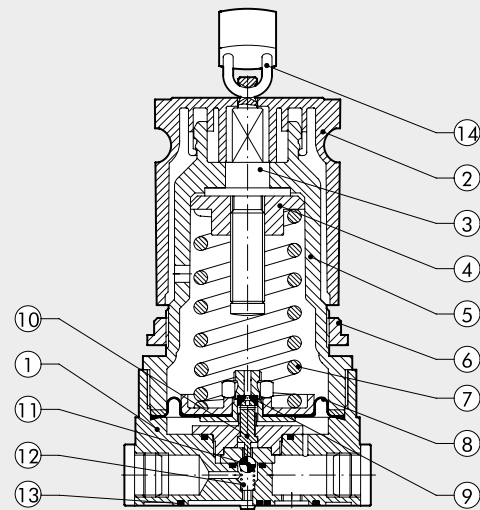
A padlock and two keys are supplied with the regulator.

Refer to the pilot regulator for technical data and flow curves.



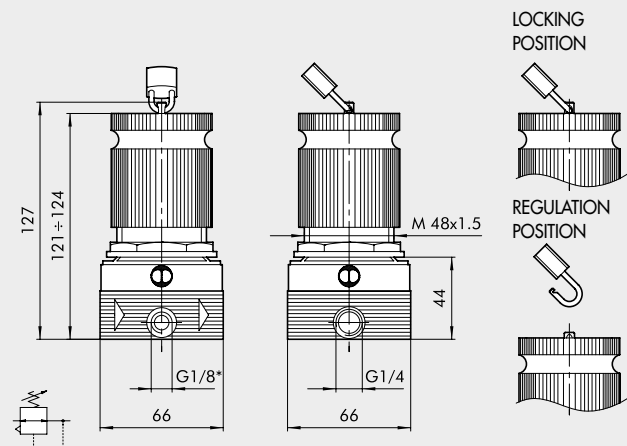
COMPONENTS

- ① Aluminium body
- ② Technopolymer knob
- ③ Nickel-plated brass OT58 adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Technopolymer ring nut
- ⑦ Steel adjusting spring
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Stainless steel ball valve
- ⑫ Stainless steel valve spring
- ⑬ NBR gaskets
- ⑭ Padlock



DIMENSIONS

Code	Description
3208001	REG. P KEY 1/4" 02
3208002	REG. P KEY 1/4" 04
3208003	REG. P KEY 1/4" 08
3208004	REG. P KEY 1/4" 012



*Pressure gauge port

Skillair® 300 PILOT OPERATED REGULATOR

- Pilot-operated or servo-piloted regulator.
- Twin rolling diaphragm to ensure improved opening and hence greater flow rate.
- Low load losses
- Excellent precision in pressure setting.
- Excellent sensitivity during relieving.



UNITS

Skillair® 300 PILOT OPERATED REGULATOR

TECHNICAL DATA

Threaded port	
Setting range	
Max. input pressure	MPa
	bar
	psi
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7 psi)	NI/min
	scfm
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14 psi)	NI/min
	scfm
Fluid	
Max temperature at 1 MPa; 10 bar; 145 psi	°C
	°F
Weight	kg
Wall fixing screws	
Mounting position	
Pressure gauge port	
Notes on use	

300 PILOT OPERATED REG

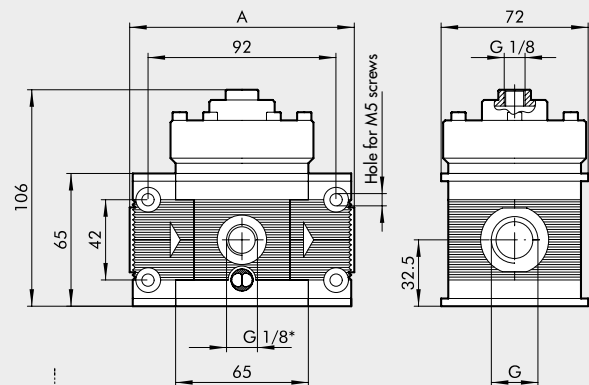
	1/2"	3/4"	1"
Setting range	Depending on the pilot regulator		
Max. input pressure		1.3	
		13	
		188	
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7 psi)		4500	
		160	
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14 psi)		7000	
		247	
Fluid	Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.		
Max temperature at 1 MPa; 10 bar; 145 psi		50	
		122	
Weight		1.3	
Wall fixing screws		M5 x 70	
Mounting position		In any position	
Pressure gauge port		1/8"	
Notes on use	The regulator pressure must always be set upwards. Do not take air from the pressure gauge ports.		

DIMENSIONS

Threaded port G	REG 300		
	1/2"	3/4"	1"
A	110	110	112

ORDERING CODES

Code	Description
4403003A	300 pilot operated reg without end plates
4403003	300 1/2" pilot operated reg
4503003	300 3/4" pilot operated reg
4603003	300 1" pilot operated reg



*Pressure gauge port

Skillair® FILTER REGULATOR



This device combines a filter and a pressure regulator in a single unit. It has the dual function of filtering and regulating air from the compressor. As the filter regulator is made up of the same elements as the regulator and the filter, the performance is the same.

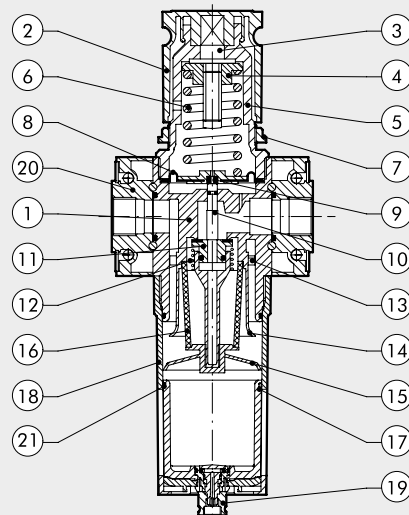
- High flow rates with low load loss.
- Special rolling diaphragm - higher flow rate, greater stability, improved sensitivity.
- Rapid relief of downstream overpressures.
- Stability of the regulated pressure as the mains pressure fluctuates.
- Maximum degree of condensate separation.
- 360° condensate level display.
- Condensate drain with manual/semi-automatic or automatic function.



TECHNICAL DATA	FR 100		FR 200			FR 300		
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Threaded port	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Setting range	bar 0 to 2 - 0 to 4 - 0 to 8 - 0 to 12		0 to 2 - 0 to 4 - 0 to 8 - 0 to 12			0 to 2 - 0 to 4 - 0 to 8 - 0 to 12		
Degree of filtration	µm 5 - 20 - 50		5 - 20 - 50			5 - 20 - 50		
Max. input pressure	1.5 MPa - 15 bar - 217 psi		1.3 MPa - 13 bar - 188 psi			1.3 MPa - 13 bar - 188 psi		
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	Nl/min	1100	1600			3500		
ΔP 0.5 bar (0.05 MPa to 7psi)	scfm	39	57			125		
Flow rate at 6.3 bar (0.63 MPa to 91 psi)	Nl/min	1600	3000			5600		
ΔP 1 bar (0.1 MPa to 14 psi)	scfm	57	71			200		
Max temperature	°C	50	50			50		
at: 1 MPa; 10 bar; 145 psi	°F	122	122			122		
Weight	kg	0.5	1			1.8		
Wall fixing screws	M4 x 50		M5 x 60			M5 x 70		
Mounting position	Vertical		Vertical			Vertical		
Pressure gauge port	1/8"		1/8"			1/8"		
Bowl capacity	cm ³	22	45			75		
Drain	RMSA - SAC		RMSA - SAC - RA			RMSA - RA		
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs. Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous. The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from pressure gauge ports. The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 10 bar.								
Fluid								
Notes on use								

COMPONENTS

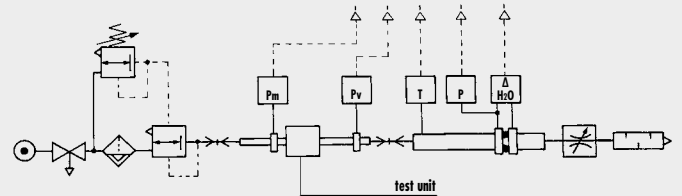
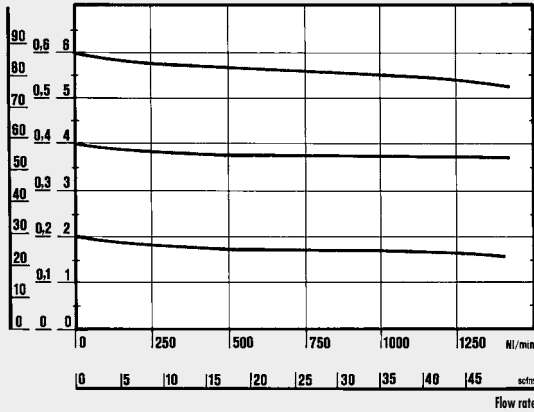
- ① Technopolymer body
- ② Technopolymer knob
- ③ OT58 brass adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Steel adjusting spring
- ⑦ Technopolymer ring nut
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Valve with NBR vulcanized gasket
- ⑫ Stainless steel valve spring
- ⑬ Technopolymer centrifuge
- ⑭ Technopolymer baffle plug
- ⑮ Technopolymer screen
- ⑯ Sintered HDPE filter cartridge
- ⑰ Clear technopolymer glass
- ⑱ Bowl: technopolymer for FR100 and FR200, metal for FR 300
- ⑲ Drain (RMSA)
- ⑳ Zamak end plate
- ㉑ NBR gaskets



FLOW CHARTS

FR 100 1/4 - 3/8

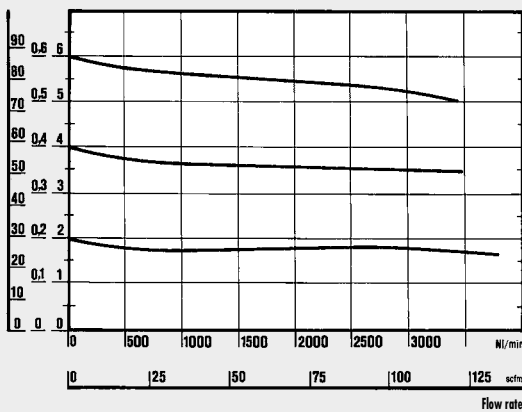
Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi
psi MPa bar



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

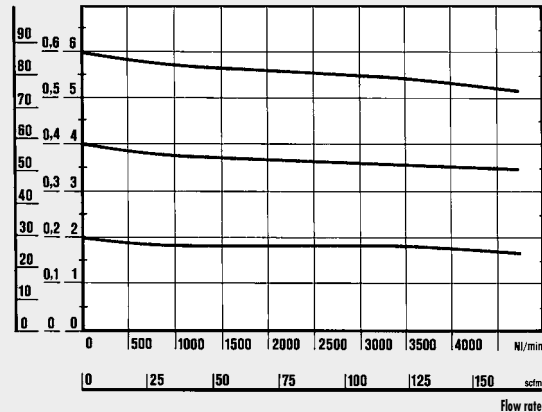
FR 200 1/4 - 3/8 - 1/2

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi
psi MPa bar



FR 300 1/2 - 3/4 - 1

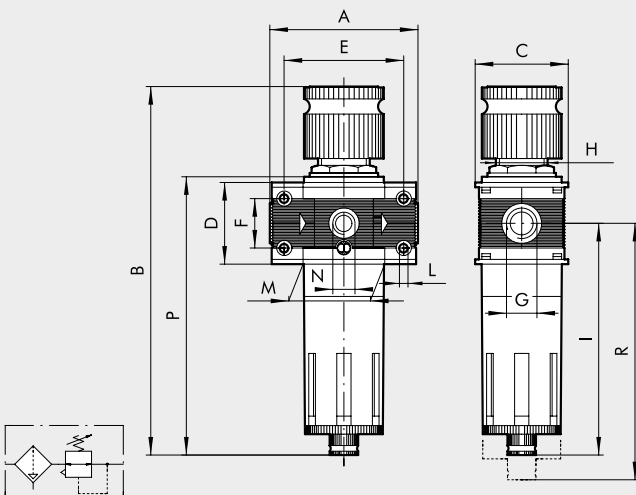
Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi
psi MPa bar



UNITS

Skillair® FILTER REGULATOR

DIMENSIONS



	FR 100		FR 200			FR 300		
Threaded port G	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A	78		93.5			110		112
B	RMSA		199					278
	RA		-					282
	SAC		203					282
C	50		63					72
D	43		55					65
E	63		78.5					92
F	26		36					42
H	30 x 1.5		40x1.5					48 x 1.5
I	122.5		147.5					162.5
L	Hole for M4		Hole for M5					Hole for M5
	screws		screws					screws
M	43		55.5					65
N (pressure gauge port)	1/8"		1/8"					1/8"
P	RMSA		147					200
	RA		-					204
	SAC		151					204
R	RMSA		137					215
	RA		-					219
	SAC		141					219

SYNOPTIC, SIZES AND VERSIONS

FR ELEMENT	100 SIZE	1/4 THREADED PORT	5 DEGREE OF FILTRATION	02 SETTING RANGE	RMSA TYPE OF DRAIN
FR	100	1/4	5 = 5 µm 20 = 20 µm 50 = 50 µm	02 = 0 to 2 bar 04 = 0 to 4 bar 08 = 0 to 8 bar 012 = 0 to 12 bar	RMSA
		3/8			SAC
		1/4			RMSA
	200	3/8			SAC
		1/2			RA*
		1/2			RMSA
	300	3/4			RA
		1			

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400).
 Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.
 (for size 100 and 200)
 * For Skillair® 200 with RA, please contact our sales assistance department.

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 FILTER REGULATOR					
3283007A	FR 100 5 08 RMSA without end plates	3483007A	FR 200 5 08 RMSA without end plates	4483004A	FR 300 5 08 RMSA without end plates
3283008A	FR 100 20 08 RMSA without end plates	3483008A	FR 200 20 08 RMSA without end plates	4483005A	FR 300 20 08 RMSA without end plates
3283009A	FR 100 50 08 RMSA without end plates	3483009A	FR 200 50 08 RMSA without end plates	4483006A	FR 300 50 08 RMSA without end plates
3283010A	FR 100 5 012 RMSA without end plates	3483010A	FR 200 5 012 RMSA without end plates	4483007A	FR 300 5 012 RMSA without end plates
3283011A	FR 100 20 012 RMSA without end plates	3483011A	FR 200 20 012 RMSA without end plates	4483008A	FR 300 20 012 RMSA without end plates
3283012A	FR 100 50 012 RMSA without end plates	3483012A	FR 200 50 012 RMSA without end plates	4483009A	FR 300 50 012 RMSA without end plates
3283031A	FR 100 5 08 SAC without end plates	3483031A	FR 200 5 08 SAC without end plates	4483013A	FR 300 5 08 RA without end plates
3283032A	FR 100 20 08 SAC without end plates	3483032A	FR 200 20 08 SAC without end plates	4483014A	FR 300 20 08 RA without end plates
3283033A	FR 100 50 08 SAC without end plates	3483033A	FR 200 50 08 SAC without end plates	4483015A	FR 300 50 08 RA without end plates
3283034A	FR 100 5 012 SAC without end plates	3483034A	FR 200 5 012 SAC without end plates	4483016A	FR 300 5 012 RA without end plates
3283035A	FR 100 20 012 SAC without end plates	3483035A	FR 200 20 012 SAC without end plates	4483017A	FR 300 20 012 RA without end plates
3283036A	FR 100 50 012 SAC without end plates	3483036A	FR 200 50 012 SAC without end plates	4483018A	FR 300 50 012 RA without end plates
3283007	FR 100 1/4 5 08 RMSA	3483007	FR 200 1/4 5 08 RMSA	4483004	FR 300 1/2 5 08 RMSA
3283008	FR 100 1/4 20 08 RMSA	3483008	FR 200 1/4 20 08 RMSA	4483005	FR 300 1/2 20 08 RMSA
3283009	FR 100 1/4 50 08 RMSA	3483009	FR 200 1/4 50 08 RMSA	4483006	FR 300 1/2 50 08 RMSA
3283010	FR 100 1/4 5 012 RMSA	3483010	FR 200 1/4 5 012 RMSA	4483007	FR 300 1/2 5 012 RMSA
3283011	FR 100 1/4 20 012 RMSA	3483011	FR 200 1/4 20 012 RMSA	4483008	FR 300 1/2 20 012 RMSA
3283012	FR 100 1/4 50 012 RMSA	3483012	FR 200 1/4 50 012 RMSA	4483009	FR 300 1/2 50 012 RMSA
3283031	FR 100 1/4 5 08 SAC	3483031	FR 200 1/4 5 08 SAC	4483013	FR 300 1/2 5 08 RA
3283032	FR 100 1/4 20 08 SAC	3483032	FR 200 1/4 20 08 SAC	4483014	FR 300 1/2 20 08 RA
3283033	FR 100 1/4 50 08 SAC	3483033	FR 200 1/4 50 08 SAC	4483015	FR 300 1/2 50 08 RA
3283034	FR 100 1/4 5 012 SAC	3483034	FR 200 1/4 5 012 SAC	4483016	FR 300 1/2 5 012 RA
3283035	FR 100 1/4 20 012 SAC	3483035	FR 200 1/4 20 012 SAC	4483017	FR 300 1/2 20 012 RA
3283036	FR 100 1/4 50 012 SAC	3483036	FR 200 1/4 50 012 SAC	4483018	FR 300 1/2 50 012 RA
3383007	FR 100 3/8 5 08 RMSA	3583007	FR 200 3/8 5 08 RMSA	4583004	FR 300 3/4 5 08 RMSA
3383008	FR 100 3/8 20 08 RMSA	3583008	FR 200 3/8 20 08 RMSA	4583005	FR 300 3/4 20 08 RMSA
3383009	FR 100 3/8 50 08 RMSA	3583009	FR 200 3/8 50 08 RMSA	4583006	FR 300 3/4 50 08 RMSA
3383010	FR 100 3/8 5 012 RMSA	3583010	FR 200 3/8 5 012 RMSA	4583007	FR 300 3/4 5 012 RMSA
3383011	FR 100 3/8 20 012 RMSA	3583011	FR 200 3/8 20 012 RMSA	4583008	FR 300 3/4 20 012 RMSA
3383012	FR 100 3/8 50 012 RMSA	3583012	FR 200 3/8 50 012 RMSA	4583009	FR 300 3/4 50 012 RMSA
3383031	FR 100 3/8 5 08 SAC	3583031	FR 200 3/8 5 08 SAC	4583013	FR 300 3/4 5 08 RA
3383032	FR 100 3/8 20 08 SAC	3583032	FR 200 3/8 20 08 SAC	4583014	FR 300 3/4 20 08 RA
3383033	FR 100 3/8 50 08 SAC	3583033	FR 200 3/8 50 08 SAC	4583015	FR 300 3/4 50 08 RA
3383034	FR 100 3/8 5 012 SAC	3583034	FR 200 3/8 5 012 SAC	4583016	FR 300 3/4 5 012 RA
3383035	FR 100 3/8 20 012 SAC	3583035	FR 200 3/8 20 012 SAC	4583017	FR 300 3/4 20 012 RA
3383036	FR 100 3/8 50 012 SAC	3583036	FR 200 3/8 50 012 SAC	4583018	FR 300 3/4 50 012 RA
		3683007	FR 200 1/2 5 08 RMSA	4683004	FR 300 1 5 08 RMSA
		3683008	FR 200 1/2 20 08 RMSA	4683005	FR 300 1 20 08 RMSA
		3683009	FR 200 1/2 50 08 RMSA	4683006	FR 300 1 50 08 RMSA
		3683010	FR 200 1/2 5 012 RMSA	4683007	FR 300 1 5 012 RMSA
		3683011	FR 200 1/2 20 012 RMSA	4683008	FR 300 1 20 012 RMSA
		3683012	FR 200 1/2 50 012 RMSA	4683009	FR 300 1 50 012 RMSA
		3683031	FR 200 1/2 5 08 SAC	4683013	FR 300 1 5 08 RA
		3683032	FR 200 1/2 20 08 SAC	4683014	FR 300 1 20 08 RA
		3683033	FR 200 1/2 50 08 SAC	4683015	FR 300 1 50 08 RA
		3683034	FR 200 1/2 5 012 SAC	4683016	FR 300 1 5 012 RA
		3683035	FR 200 1/2 20 012 SAC	4683017	FR 300 1 20 012 RA
		3683036	FR 200 1/2 50 012 SAC	4683018	FR 300 1 50 012 RA

UNITS
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