

# **Service unit**

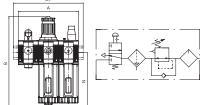
»SYNTESI« series

## PLUS

Art. No. 144981

Type No. 5612V10B24L102





Exemplary illustration

Three-part maintenance units consisting of shut-off valve, filter regulator and lubricator of the »SYNTESI« series. For all information on the relevant properties, please refer to the data sheets of the individual components.

The shut-off valve is the manual version with 3.5 mm hole for padlocks.

Silencer not included in delivery!

Pressure gauge not included in delivery!



#### **Technical data**

Series	Syntesi
Size	1
Max. input pressure	15 bar
Temperature range	-10 to 50 °C
Control range	0 - 8 bar
Input	G 1/4
Output	G 1/4
Front and back port thread	G 1/8
Flow rate measurement 1	at $P_1 = 10$ bar, $P_2 = 6.3$ bar and pressure drop $\Delta_p = 0.5$ bar
Flow rate 1	250 NI/min
Flow rate measurement 2	at $P_1 = 10$ bar, $P_2 = 6.3$ bar and pressure drop $\Delta_p = 1$ bar
Flow rate 2	1050 NI/min
Filter rating	20 μm
Condensate drain	RMSA semi-automatic
Output air purity class according to ISO	0
8573-1	
Medium	Compressed air or other neutral gases
Housing	Technopolymer
Sealant	NBR
Diaphragms	NBR 60 Shore (hardness) with polyester fabric insert
Bowl	Technopolymer
Sight dome	Brass
Spring bonnet	Technopolymer
A	126.0 mm
A1	- mm
В	198.0 mm
N	122.2 mm

### **Commercial data**

Customs tariff number	84811005
Country of origin	IT
eCl@ss 5.1.4	27292890
eCl@ss 9.0	27292890
UNSPSC_Code_v190501	27131604
UNSPSC_CodeDesc_v190501	Pneumatic lubricators



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# V3V + FR + LUB SUNTESi.

For full details and list of components refer to the sections about shut-off valve, filter-regulator and lubricator.



V3V + FR + LUB Syntesi®

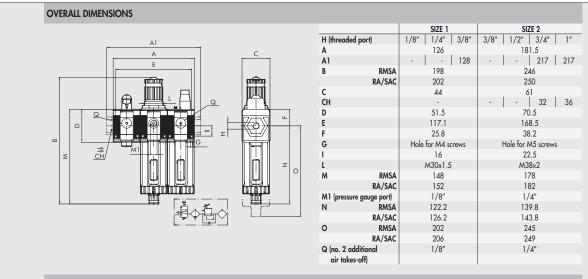
TECHNICAL DATA		V3V + FR + LUB SY1	V3V + FR + LUB SY2
Threaded port		1/8' 1/4" 3/8"	3/8" 1/2" 3/4" 1"
Degree of filtration	μm		air purity class ISO8573-1: 3.7
			air purity class ISO8573-1: 4.7
		50 (blue) - output	air purity class ISO8573-1: 5.7
Max. inlet pressure	bar	15	13
	MPa	1.5	1.3
	psi	217	188
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7 psi)	NI/min	250	1200
(P In=10 bar)	scfm	9	42.5
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	NI/min	1050	4000
(P In=10 bar)	scfm	37	141.5
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	NI/min	70	100
	scfm	2.5	3.5
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50	From -10 to +50
Full outflow with zero inlet pressure		Included	Included
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	NI/min	500	2000
	scfm	18	71
Padlockable knob		Included wi	th both V3V and regulator
Upstream pressure compensation			ed, via balanced valve
Weight	g	598 593 584	1479   1452   1448   1436
Fluid			ed air or other inert gases
Mounting position		Vertical	Vertical
Additional air take-off, for pressure gauges or fittings	) II / )	1/8", front and rear	1/4", front and rear
Additional air take-off flow rate at 6.3 bar	NI/min	500 (V3V) - 500 (FR) - 450 (LUB)	1500 (V3V) - 1400 (FR) - 800 (LUB)
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	scfm	18 (V3V) - 18 (FR) - 16 (LUB)	53 (V3V) - 49.5 (FR) - 28 (LUB)
Filter bowl capacity	cm <sup>3</sup>	30	70
Quantity of filled oil	cm <sup>3</sup>	60	130
Condensate drain			discharge and automatic discharge at zero pressure
			e discharge, independent of pressure and flow rate.
			the pipe having internal diameter 6 mm in the lower port.
			e. Operates by pressure drop – requires variable air take-offs.
Recommended oils			ure for the RA version must not exceed 10 bar
Recommended oils		_	O and UNI FD22
WILE:			Spinesso; Mobil DTE; Tellus oil)
Wall fixing screws		No. 2 M4 screws	No. 2 M5 screws

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KEY		

56	1	1	٧	10	В	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
6 Syntesi X Syntesi anti-corrosion	1 Size 1  2 Size 2	1 1/8" port 2 1/4" port 3 3/8" port 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port	<b>V</b> V3V	10 Manual with Ø3.5 hole for padlocks 11 Manual with Ø7 hole for padlock	B Filter- regulator	• 10 5 µm, RMSA, 0 to 2 bar • 20 20 µm, RMSA, 0 to 2 bar • 30 50 µm, RMSA, 0 to 2 bar • 40 5 µm, RA, 0 to 2 bar • 50 20 µm, RA, 0 to 2 bar • 50 20 µm, RA, 0 to 2 bar • 11 5 µm, SAC, 0 to 2 bar • 11 5 µm, SAC, 0 to 2 bar • 12 120 µm, SAC, 0 to 2 bar • 13 50 µm, SAC, 0 to 2 bar • 14 25 µm, RMSA, 0 to 4 bar • 12 5 µm, RMSA, 0 to 4 bar • 12 50 µm, RA, 0 to 4 bar • 13 50 µm, RA, 0 to 4 bar • 14 5 µm, RA, 0 to 4 bar • 15 20 µm, RA, 0 to 4 bar • 15 5 µm, SAC, 0 to 4 bar • 16 50 µm, RA, 0 to 8 bar • 17 50 µm, RMSA, 0 to 8 bar • 18 50 µm, RMSA, 0 to 8 bar • 19 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RMSA, 0 to 8 bar • 10 50 µm, RA, 0 to 8 bar • 10 50 µm, RA, 0 to 8 bar • 10 50 µm, RA, 0 to 8 bar • 10 50 µm, RA, 0 to 8 bar • 10 50 µm, RA, 0 to 8 bar • 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	L Lubricator	10 Manual filling from the top	1 1/8" port 2 1/4" port 3 3/8" port 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port
A: automatic o	ersion availa manual cond Irain with co		, independen	t of pressure and	flow rate.	35 50 μm, SAC, 0 to 8 bar 16 5 μm, RMSA, 0 to 12 bar 26 20 μm, RMSA, 0 to 12 bar 36 50 μm, RMSA, 0 to 12 bar 46 5 μm, RA, 0 to 12 bar			

variable air take-offs

SAC:

the lower port.
automatic drain with condensate discharge. Operates by pressure drop – requires

**46** 5 μm, RA, 0 to 12 bar **56** 20 μm, RA, 0 to 12 bar

50 μm, RA, 0 to 12 bar

17 5 μm, SAC, 0 to 12 bar 27 20 μm, SAC, 0 to 12 bar 37 50 μm, SAC, 0 to 12 bar

V3V + FR + LUB Syntesi®



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Code Description	ents composed at your will according to the key to codes.	
	Code Description	
'3V + FR + LUB Syntesi⊚ SY1	V3V + FR + LUB Syntesi⊚ SY2	NOTE
6611V10B24L101 V3V+FR+LUB SY1 1/8 20 08 RMSA	5623V10B24L103 V3V+FR+LUB SY2 3/8 20 08 RMSA	Anti-corrosion version
6611V10B54L101 V3V+FR+LUB SY1 1/8 20 08 RA	5623V10B54L103 V3V+FR+LUB SY2 3/8 20 08 RA	5 <mark>X</mark>
6612V10B24L102 V3V+FR+LUB SY1 1/4 20 08 RMSA	5624V10B24L104 V3V+FR+LUB SY2 1/2 20 08 RMSA	Example
612V10B54L102 V3V+FR+LUB SY1 1/4 20 08 RA	5624V10B54L104 V3V+FR+LUB SY2 1/2 20 08 RA	5X11V10B54L101 V3V+FR+LUB SY1 1/8 20 08 RA
613V10B24L103 V3V+FR+LUB SY1 3/8 20 08 RMSA	5625V10B24L105 V3V+FR+LUB SY2 3/4 20 08 RMSA	anti-corrosion
613V10B54L103 V3V+FR+LUB SY1 3/8 20 08 RA	5625V10B54L105 V3V+FR+LUB SY2 3/4 20 08 RA	
	5626V10B24L106 V3V+FR+LUB SY2 1 20 08 RMSA	
	5626V10B54L106 V3V+FR+LUB SY2 1 20 08 RA	
NOTES		
NOTES		

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V3V + FR + LUB Syntesi®

RIEGLER & Co. KG Schützenstraße 27 72574 Bad Urach Tel. +49 7125 9497-642 technik@riegler.de



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# GENERAL TECHNICAL DATA SUNTESI.

Syntesie is an important milestone achieved by Metal Work, the result of thirty years' experience producing air-treatment units. It has been studied in minute detail to obtain the best possible performance in a reduced space and with limited weight. The capacity is much higher than that of other units of the same size.

This modular unit features a very simple yet effective system that requires no brackets, stay bolts or yoke for assembling the elements. The basic version of Syntesi® incorporates numerous functions that are not provided or are only optional with traditional units. Examples are padlockable knobs, additional pneumatic ports on the front and back, flow options from left to right or vice versa, regulators with compensation system - which are accurate even when the upstream pressure changes, with rapid downstream pressure relief - full indelible marking, automatic condensate drain even in size 1, and 360° visual inspection of oil and condensate levels. The basic materials, technopolymer and nickel-plated brass have excellent corrosion resistance. An anti-corrosion version is available with stainless steel components (screws, plates) or Geomet®-reated ones (regulator springs).



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GENERAL TECHNICAL DATA Syntesi®

TECHNICAL DATA			SIZE	1					SIZE 2	2		
Threaded port		1/8″	1/4"		3/8"	3/8"		1/2"	Т	3/4"		1″
Max. input pressure	bar		15						13			
	MPa		1.5						1.3			
	psi		217						188			
Flow rate					See catal	ogue of the vari	ous ele					
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C		from -10 to			l			n -10 to			
Padlockable knob		T	he knobs of t	he regulo		ators and stando			ves can	all be po	idlocked	
Fluid						ssed air or other						
Mounting position						ogue of the vari						
Direction of flow						ons right to left						
Additional air take-off, for pressure gauges or fittings		1/8", tr	ont and rear,		odules		1/4	4", front ar			odules	
Wall fixing screws			No. 2 M4 s	crews			_		2 M5 s	crews		
Certification for potentially explosive atmosphere				⟨₹	II 3G Ex h	iIC T5 Gc -10°C IIC T100 °C Dc	< Ta <	< 50°C				
according to Atex 2014/34/EU rule				6	△/ 113D Ex h 1	IIC 1100 °C Dc						

#### ANTI-CORROSION VERSION

Differences compared to the standard version:

- stainless steel screws
- stainless steel plate for R, FR, V3V knobs
- Geomet®-treated regulator spring and filter-regulator

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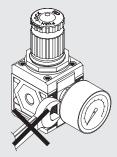
GENERAL TECHNICAL DATA Syntesi®



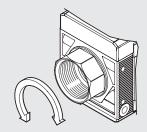


#### **ROTARY BUSHINGS**

#### LASER MARKING







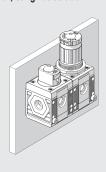


The following is marked indelibly on the body:
- Metal Work trademark

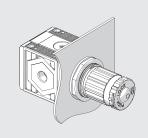
- Code
- Maximum pressure and temperature Degree of filtration or pressure range, where relevant
- Week and year of manufacture
- Atex categoryMade in Italy

#### **MOUNTING OPTIONS**

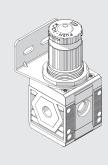
#### On the wall, using two screws



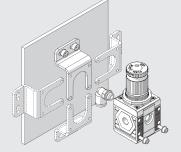
#### On a panel



#### Using knob bracket

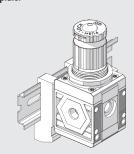


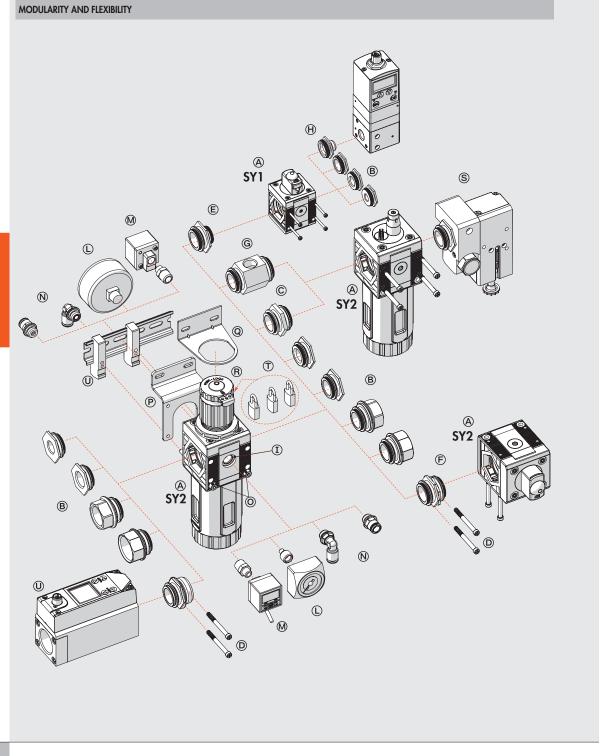
#### Using a bracket



The bracket can be secured in any position, and the fittings can be mounted on the pressure gauge air intake at the back of the unit.

#### On a DIN EN50022 bar with the apposite adaptator





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The various elements of Syntesie (a) can be connected to the air feed and delivery circuit using pneumatic nickel brass or passivated aluminium ports (B) and can be fixed together using nipples ©.

The nipples and ports are easy to remove by unscrewing the two front screws <sup>®</sup>. This solution has numerous advantages:

- Reduced overall dimensions.
- Free composition of multiple elements, without the need for brackets, stay bolts or yoke.
- The threads for the fittings are metallic, allowing high tightening torques, also for tapered threads.

   Maximum flexibility: a unit can be transformed at any time by adding an element or replacing a port with another one, e.g. 1/4" instead of 1/8".

- The air intake port can be the same or different from the outlet port, as desired. Standard Syntesi⊕ ports are: 1/8", 1/4", 3/8" for size 1; 3/8", 1/2", 3/4", 1" for size 2.

It may be necessary to use a vice to insert the bushes into size 2.

The nipples have different functions:

- Nipple © joins two elements of the same size together.
- Size adaptor © can be used to connect an element in the Syntesi® 2 series with one in the Syntesi® 1 series.
- The 90° adaptor (E) can be used to connect two 90° angled elements. For example, it can help directing the regulator knob or the control knob of a sectioning valve towards the user.
- The two-way air intake @ is a simple and cost-effective system which, besides connecting two elements together, has 2 opposing threaded air intakes.

- The adaptor for Regtronic ® can be used to fix the Regtronic 1/4" proportional valve to a Syntesi® size 1 element.

Additional ports ©. On the front and back of ALL Syntesi® elements there is a port (1/8" for size 1, 1/4" for size 2) that can be used for pressure gauges ©, pressure switches @ or, given the high flow rate, as additional air take-off @. These ports are downstream of the element, so, for example, a regulator port can supply air at a set pressure or a filter port can supply filtered air (not valid for activated carbon filter and depurator).

Wall fixing. Only two through screws @ are needed. No bulky brackets or additional flanges are required. The bracket @ can be used to separate

the unit from the fixing wall, e.g. to mount a fitting to the rear port.

Fixing on a DIN EN50022 bar. Can be done using the bracket kit ①.

Regulator fixing bracket ②. Regulators and filter-regulators can also be fixed using a steel bracket ③ that embraces the bell.

Padlockable knob ®. The knobs of regulators, filter-regulator and sectioning valves can all be padlocked. The steel plate is included in the supply. You can insert up to two 3 mm diameter padlocks ® on size 1 and three padlocks on size 2. As an alternative, the sectioning valve can have a steel plate suitable for a single 6 mm diameter padlock.

Safety valve (S). The unit can incorporate a series 70 SAFE AIR® safety valve.

Flowmeter series FLUX 1-2 (1). The unit can incorporate a series FLUX 1 or FLUX 2 flow meter.

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UNITS

Syntesi® KEY TO CODES

# SUNTESI: KEY TO CODES

KEY TO CODES S	SINGLE ELEMEN	NT			
56	1	1	F	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
56 Syntesi 5X Syntesi anti-corrosion	1 Size 1 2 Size 2	O Without bushing 1 1/8" port 2 1/4" port 3 3/8" port O Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter-regulator L Lubricator ● V Shur off valve A A Progressive starter A S Pressure switches P Air take-off	Varies from element to element	O Without bushing 1 1/8" port 2 1/4" port 3 3/8" port O Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port

- The anti-corrosion version of this element is only available with manual actuation.
   Not available in the anti-corrosion version.

KEY TO CODES UNIT CO	MPOSED OF TWO	OR THREE ELEME	ENTS					
56 1	1	٧	10	В	24	L	10	1
SYNTESI SIZE	THREADED INPUT CONNECTION	ELEMENT 1	TYPE	ELEMENT 2	TYPE	ELEMENT 3	TYPE	THREADED OUTPUT CONNECTION
56 Syntesi Syntesi onti-corrosion 2 Size	2 1/4" port 3 3/8" port	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter regulator L lubricator ● V Shut off valve A Progressive starter A S Pressure switches P Air Take-off	Varies from element to element	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter regulator L lubricator ● V Shut off valve A Progressive starter A S Pressure switches P Air Take-off	Varies from element to element	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter- regulator L lubricator ● V Shut off valve A A Progressive starter A S Pressure switches P Air Take-of	Varies from element to element	1 1/8" port 2 1/4" port 3 3/8" port 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port

- The anti-corrosion version of this element is only available with manual actuation.
   Not available in the anti-corrosion version.



#### **Accessories**

	Art. No.	Type No.	
Bowl, size 1, RA fully automated	145612	9210101	
Bowl, size 1, SAC fully automated	145613	9210102	
Filter element, size 1, 5 µm	145619	9210150	
Filter element, size 1, 50 µm	145621	9210152	
Valve poppet for filter regulator, size 1, 5 μm	145651	9210211	
Valve poppet for filter regulator, size 1, 50 μm	145653	9210213	
Mounting bracket, size 1, standard and anti-corr.	145658	9200716X	
Adapter for DIN rail, size 1 and size 2	145660	9200718X	
Pressure gauge, G1/8 rear centric, 0-12 bar, Ø40mm	145470	9700101	
Pressure gauge, G1/8 rear centric, 0-12 bar, Ø50mm	145472	9800101	
Pressure gauge, G1/8 rear cent., 0-4 bar, 40x40mm	145475	9700109	
Connecting nipple kit, size 1	144695	9210000	
Connecting element 90°,, size 1	145502	9210009	
Size adapter, size 1 - size 2, incl. 4 screws	145504	9210006	
Assembly key for bowl size 1, »bit«	145505	9170601	
Fastening screw, size 1	145507	9210030	
Padlock	145509	9062401	

## **Spareparts**

Art. No.	Type No.
145611	9210100
145617	9210110
145620	9210151
145629	9210180
145631	9210181
145635	9210192
145643	9210202
145652	9210212
144689	9210002
	145611 145617 145620 145629 145631 145635 145643 145652