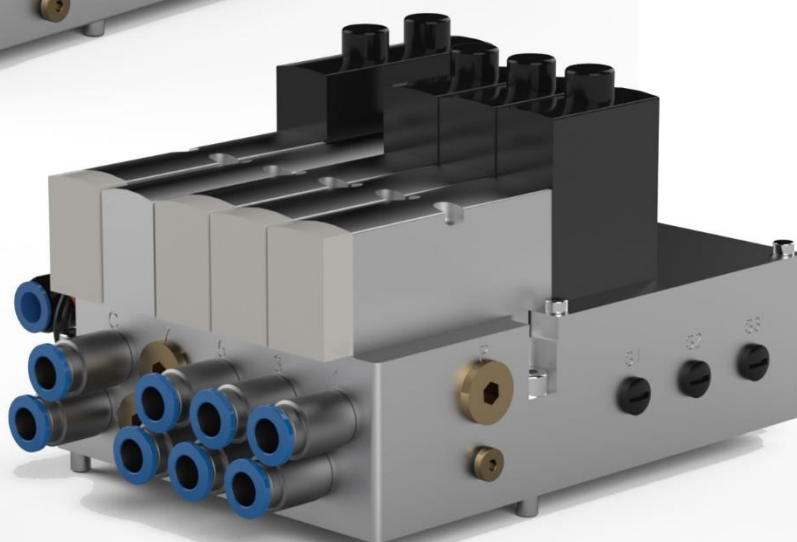
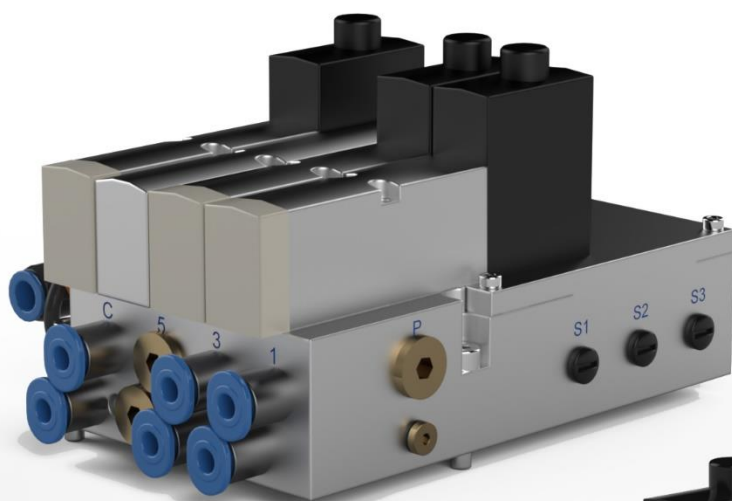


Product Manual

Small valve unit

M0001-1

Tool changers | Swivels | Swivel tool changers | Grippers | Hose packages | **Valve units** | Tool systems



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CONTENTS

1 INTRODUCTION	6
1.1 Safety.....	7
1.1.1 General.....	7
1.1.2 Explanation of warnings	7
2 TECHNICAL SPECIFICATIONS	8
2.1 Description of RSP small, and extended, valve units.....	8
2.1.1 Small valve units: P0010A, P0012A and P0013A.....	10
2.1.2 Small valve unit for tool changing and two valves: P0011A.....	11
2.1.3 Small valve unit without valves, no tool changing: P1008	12
2.1.4 Extended small valve units for tool changing: P0026, P0027, P0028 and P0029	13
2.1.5 Extended small valve units: P0035, P0036 and P0037	14
2.2 Pneumatic diagrams.....	15
2.2.1 Pne0214-010 for small valve unit P0010A	16
2.2.2 Pne0214-011 for small valve unit P0011A	17
2.2.3 Pne0214-008 for small valve unit P1008	18
2.2.4 Pne0214-013 for small valve units P0012A and P0013A	19
2.2.5 Pne0214-026 for extended valve unit P0026	20
2.2.6 Pne0214-027 for extended valve units P0027, P0028 and P0029	21
2.2.7 Pne0214-035 for extended valve units P0035 and P0036.....	22
2.2.8 Pne0214-037 for extended valve unit P0037	23
2.3 Internal circuit diagrams	24
2.3.1 E0214-167 for small valve units	24
2.3.2 E0214-222 for extended small valve units	25
3 OPTIONS	26
3.1 Sensor interface, P1033 and P1018 for small valve units	26
3.2 Sensor interface, P1032 for extended small valve unit	27
3.3 Circuit diagram E0214-306 for sensor interface P1033.....	28
3.4 Circuit diagram E0214-263 for sensor interface P1018 and P1032	29
4 INSTALLATION	30
4.1 Tightening torques.....	30
4.2 Recommended tools for installation and replacement of valve units	30
4.3 Arm load parameters	30
4.4 Installation of valve unit on robot	31
4.5 Connect customer cable.....	33
5 MAINTENANCE AND SERVICE	35
5.1 Maintenance chart.....	35
5.1.1 Recommended tools for maintenance	35
5.1.2 Activities and intervals.....	35
5.2 Visual inspection of valve unit.....	35
5.3 Replacement of valve unit	36

6 SPARE PARTS	38
6.1 Valve units without tool change, P0010A, P0012A and P0013A.....	38
6.2 Valve units with tool change, P0011A	39
6.3 Extended units without tool change, P0035, P0036 and P0037.....	40
6.4 Extended units with tool change, P0026, P0027, P0028 and P0029	41
7 DISPOSAL AND RECYCLING.....	42

1 INTRODUCTION

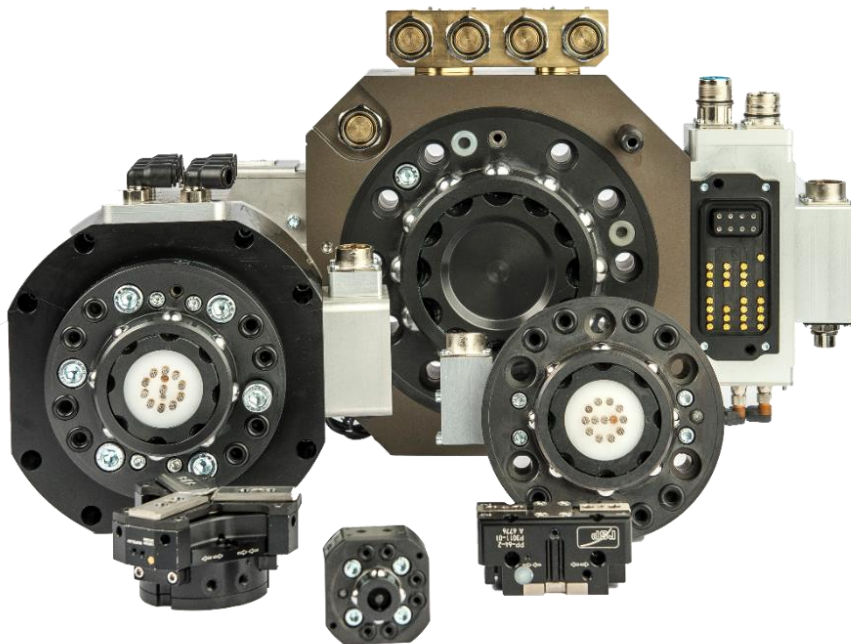
Robot System Products is a front-rank provider of peripheral products for high performance robot applications. We provide complete system solutions for your robot installations, aiming to improve your productivity with the most reliable and cost-effective tooling on the market. Continuously we explore emerging technologies, working with leading edge design.

Robot System Products has a wide range of standard robot peripheral products:

- Tool changers
- Swivels
- Swivel tool changers
- CiRo
- Grippers
- Hose Packages
- Valve units
- Tool systems
- Tool parking systems

Robot System Products' tool changers are constructed to maximize the flexibility and reliability of your robot fleet. Through our patented locking device TrueConnect™ robustness and high safety are combined with low weight and compactness. With our swivels compressed air, water, electrical and data signals as well as weld and servo power are transferred to your tools with robot motion capabilities fully maintained. Our Swivel tool changers unite the TrueConnect™ mechanism with our swivel technology, combining the best out of the two technologies. With RSP's cost-effective CiRo, cables and hoses can be freely selected with high robot flexibility maintained, and space requirements reduced. Our integrated Tool systems are delivered as complete plug-and-play solutions designed for quick and simple installation.

Robot System Products' product lines are available for all major robot brands and come with complete documentation. 3D-models for simulation are available for download at: www.rsp.eu.com.



1.1 Safety

1.1.1 General

The integrator installing the valve unit must follow the safety demands stated in standards and provisions applicable in the country where the valve unit is to be installed.

The user of the Robot System Products valve unit is responsible that law and directives applicable in respective countries, with regards to safety, are followed. The user is also responsible to guarantee that all safety devices are installed correctly.



WARNING!

Never carry out service work on a robot that has not been taken out of operation. See safety information for the robot.



WARNING!

Only perform work on valve units if the air pressure is safely switched off.



WARNING!

Be aware that the valve unit may cause personal injury and equipment damage if dropped.

1.1.2 Explanation of warnings

The warnings in this document are specific to the products in this manual. It is expected that the user also pay attention to certain notifications from the robot manufacturer and/or the manufacturers of other components used in the installation.



WARNING!

The warning sign will make you aware that a situation could result in potential serious injury or damage to equipment.



NOTE!

The note sign will alert you about something important to consider.

2 TECHNICAL SPECIFICATIONS


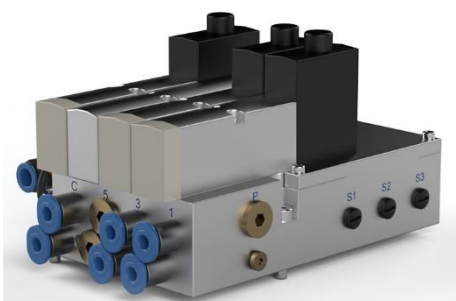

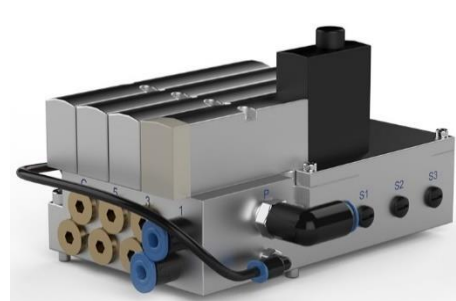
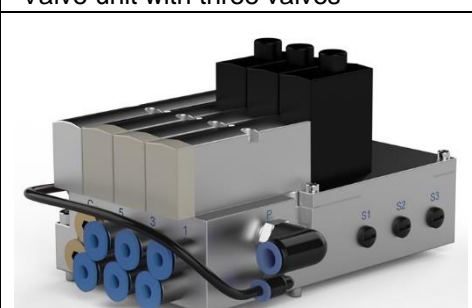
2.1 Description of RSP small, and extended, valve units

This document presents the Robot System Products' small valve and extended small valve units, ready for installation on the robot, available in different versions depending on required function.


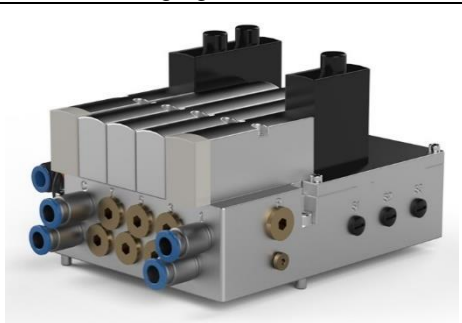
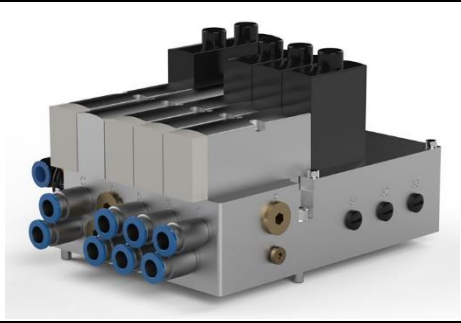
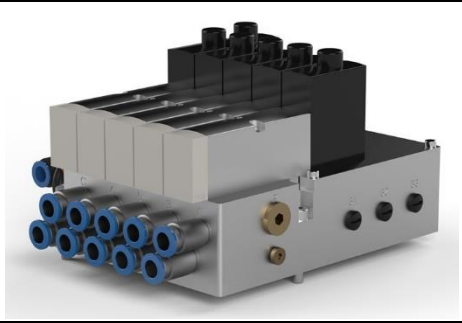
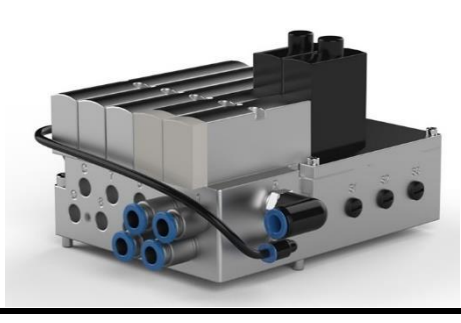
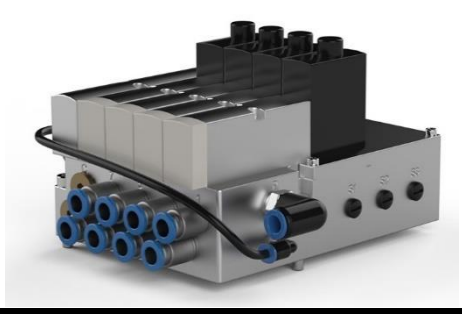
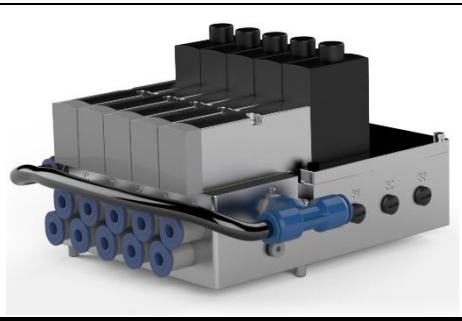
Valve units without tool change functions consists of between one and five electrically controlled monostable 5/2 valves, depending on configuration. With tool changer function one valve is dedicated for tool change. When the tool change valve becomes activated, the other valves are deactivated – which means that the air supply is automatically turned off during tool change and no program instructions are required for turning the air supply on or off.

The valve units includes a terminal block (X2) for customer signals. Optionally, three connectors (P1033, P1018 or P1032) can be mounted on the valve unit.

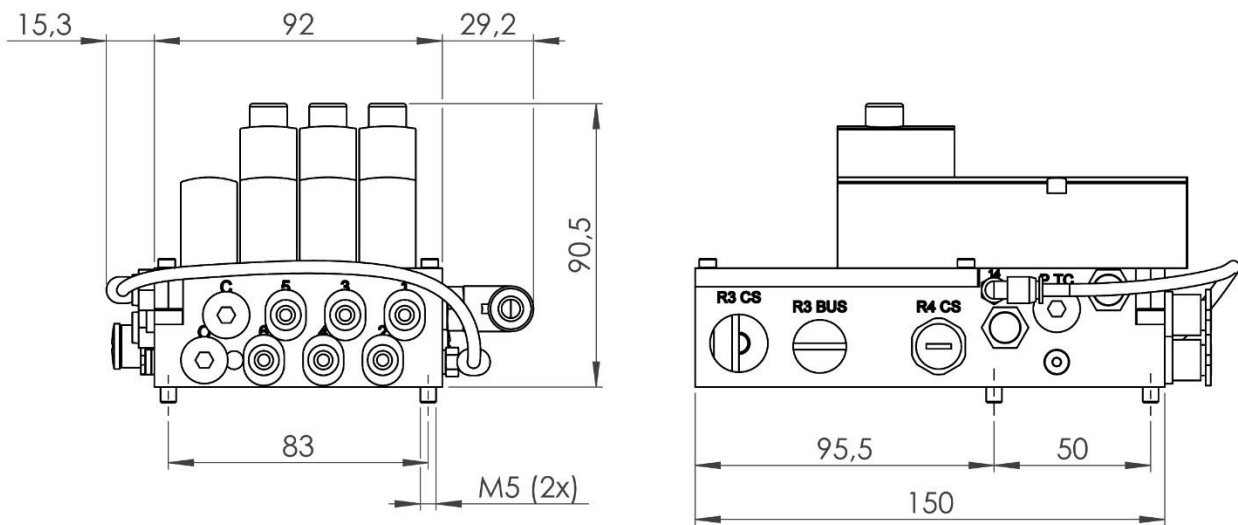
Product overview small valve units

Article number	P0010A (section 2.1.1)	P0011A (section 2.1.2)
Description	Unit without valves, prepared for tool changing	For tool changing and two valves
		
Article number	P1008 (section 2.1.3)	P0012A (section 2.1.1)
Description	Unit without valves, no tool changing	Valve unit with one valve
		
Article number	P0013A (section 2.1.1)	
Description	Valve unit with three valves	
		

Product overview extended small valve units

Article number	P0026 (section 2.1.4)	P0027 (section 2.1.4)
Description	Valve unit without valves	For tool changing and one valve
		
Article number	P0028 (section 2.1.4)	P0029 (section 2.1.4)
Description	For tool changing and three valves	For tool changing and four valves
		
Article number	P0035 (section 2.1.5)	P0036 (section 2.1.5)
Description	Valve unit with two valves	Valve unit with four valves
		
Article number	P0037 (section 2.1.5)	
Description	Valve unit with five valves	
		

2.1.1 Small valve units: P0010A, P0012A and P0013A



Technical data

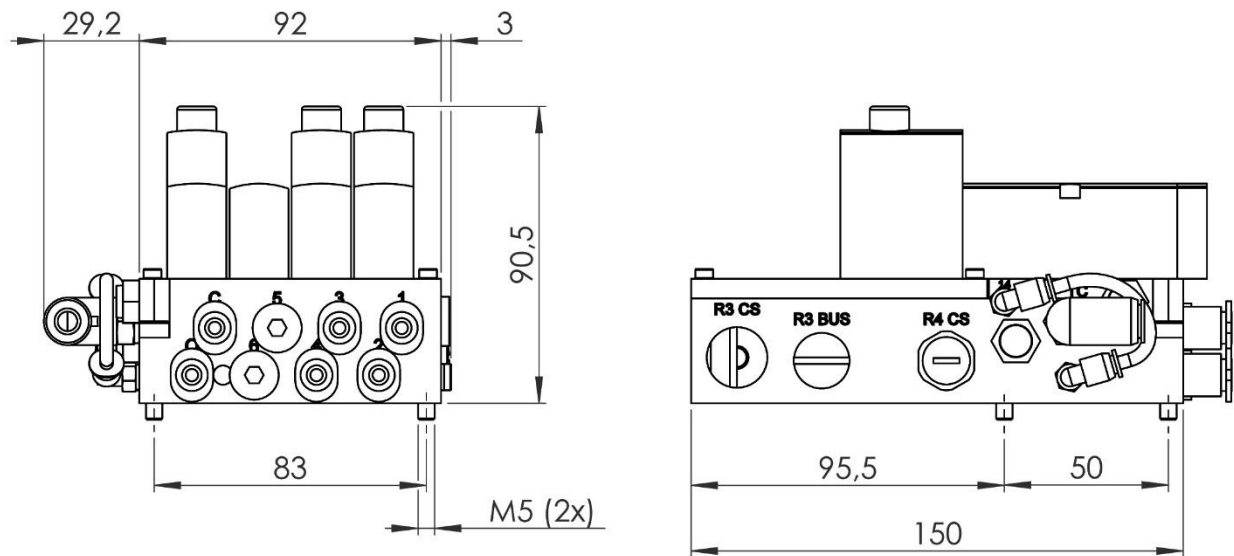
Article number		P0010A	P0012A	P0013A
Working temperature		+10°C--+50°C		
Weight		0.8 kg	1.0 kg	1.1 kg
Air channels	Tool change valve	-		
	Directional valves	-	1	3
	Valve size	ISO02 18 mm IE, (ISO15407-2)		
	Outlet channels	max 8	2	6
	Inlet channels	max 2	1	
	Max air pressure	10 bar		
	Air flow	-	550 l/min for each valve	
	Connection, inlet	8 mm hose		
	Connection, outlet	G 1/8"	6 mm hose	
	Air quality	Oil-clean and waterless filtered air, with max 25 µm particle content.		
Electrical signals	Circuit diagram	E0214-167 (section 2.3.1)		
	Signals, robot side	24V, 0V, 8 x valve control, 6 x (24V, 2A)		
	Signals, tool side	24V, 0V, 6 x (24V, 2A)		
	Connection, robot side	M20x1,5 hole for cable gland, M16x1,5 hole for cable gland		
	Connection, tool side	M12 contact with 8 sockets		
Connection kits tool side (opt.)	I1110 (connector)	M12 8P A-coded CM		
	I0322 (cable)	M12 8P A-coded – M12 8S (2 meter)		
	I0650 (cable)	M12 8P A-coded – M12 8S (3 meter)		
	I0219 (cable)	M12 8P A-coded – (2 meter, 0.25 mm ² , open end)		



NOTE!

P0010A is prepared for one tool change valve and up to three directional valves.

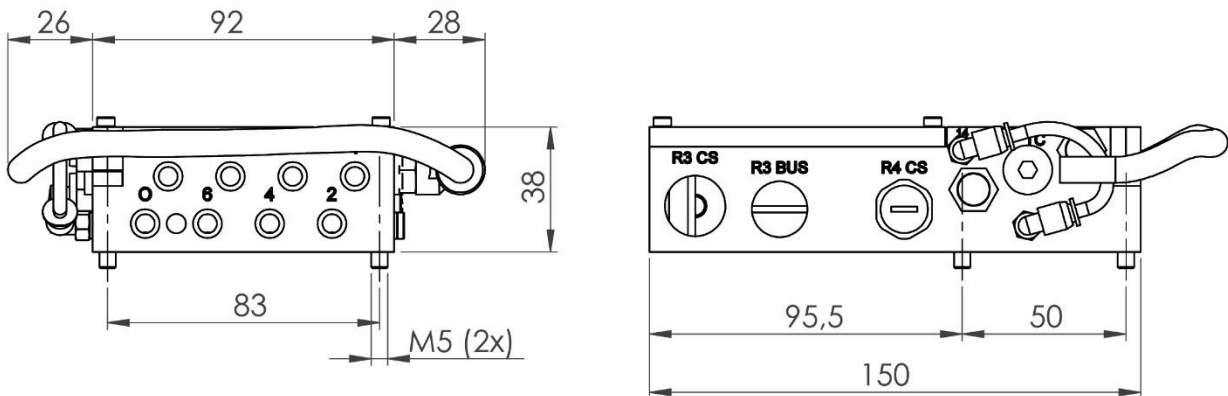
2.1.2 Small valve unit for tool changing and two valves: P0011A



Technical data

Article number		P0011A
Working temperature		+10°C–+50°C
Weight		1.1 kg
Air channels	Tool change valve	1
	Directional valves	2
	Valve size	ISO02 18 mm IE, (ISO15407-2)
	Outlet channels	6
	Inlet channels	1
	Max air pressure	10 bar
	Air flow	550l /min for each valve
	Connection, inlet	8 mm hose
	Connection, outlet	6 mm hose
	Air quality	Oil-clean and waterless filtered air, with max 25µm particle content.
Electrical signals	Circuit diagram	E0214-167 (section 2.3.1)
	Signals, robot side	24V, 0V, 8 x valve control, 6 x (24V, 2A)
	Signals, tool side	24V, 0V, 6 x (24V, 2A)
	Connection, robot side	M20x1,5 hole for cable gland, M16x1,5 hole for cable gland
	Connection, tool side	M12 contact with 8 sockets
Connection kits tool side (opt.)	I1110 (connector)	M12 8P A-coded CM
	I0322 (cable)	M12 8P A-coded – M12 8S (2 meter)
	I0650 (cable)	M12 8P A-coded – M12 8S (3 meter)
	I0219 (cable)	M12 8P A-coded – (2 meter, 0.25 mm ² , open end)

2.1.3 Small valve unit without valves, no tool changing: P1008



Technical data

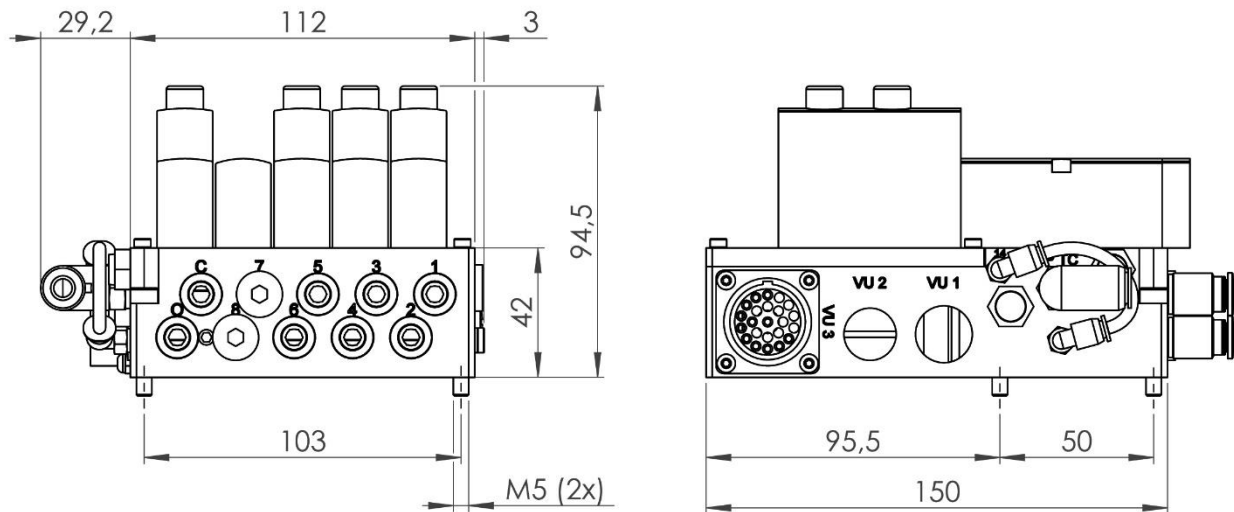
Article number		P1008
Working temperature		+10°C–+50°C
Weight		0.9 kg
Air channels	Tool change valve	-
	Directional valves	-
	Valve size	ISO02 18 mm IE, (ISO15407-2)
	Outlet channels	max 8
	Inlet channels	1
	Max air pressure	10 bar
	Air flow	550 l/min for each valve
	Connection, inlet	8 mm hose
	Connection, outlet	G 1/8"
	Air quality	Oil-clean and waterless filtered air, with max 25µm particle content.
Electrical signals	Circuit diagram	E0214-167 (section 2.3.1)
	Signals, robot side	24V, 0V, 8 x valve control, 6 x (24V, 2A)
	Signals, tool side	24V, 0V, 6 x (24V, 2A)
	Connection, robot side	M20x1,5 hole for cable gland, M16x1,5 hole for cable gland
	Connection, tool side	M12 contact with 8 sockets
Connection kits tool side (opt.)	I1110 (connector)	M12 8P A-coded CM
	I0322 (cable)	M12 8P A-coded – M12 8S (2 meter)
	I0650 (cable)	M12 8P A-coded – M12 8S (3 meter)
	I0219 (cable)	M12 8P A-coded – (2 meter, 0.25 mm ² , open end)



NOTE!

P1008 is prepared for up to four directional valves (without tool change).

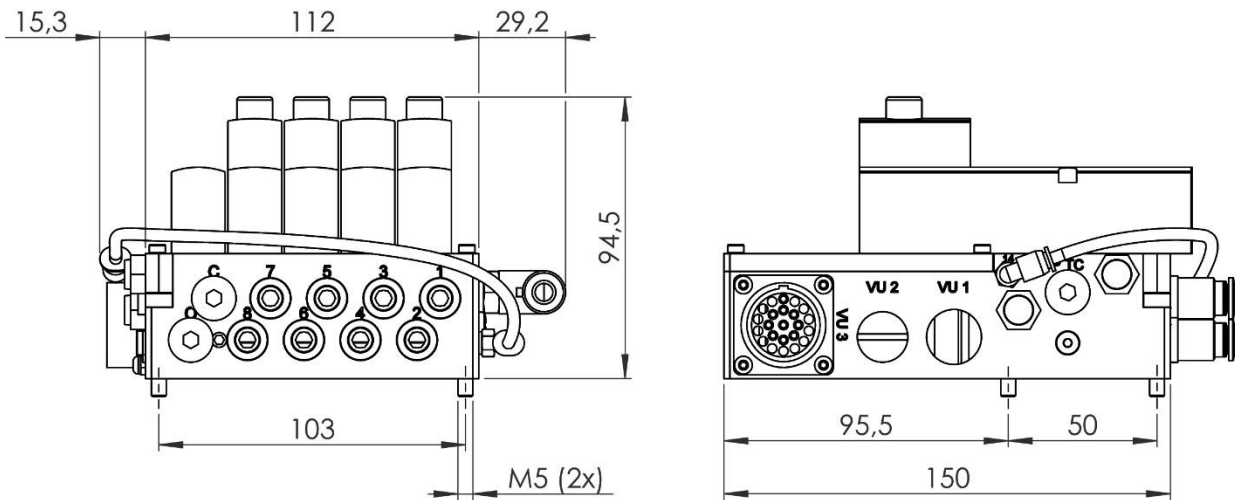
2.1.4 Extended small valve units for tool changing: P0026, P0027, P0028 and P0029



Technical data

Article number		P0026	P0027	P0028	P0029
Working temperature		+10°C--+50°C			
Weight		1.1 kg	1.4 kg	1.5 kg	1.5 kg
Air channels	Tool change valve	-	1		
	Directional valves	-	1	3	4
	Valve size	ISO02 18mm IE, (ISO15407-2)			
	Outlet channels	max 10	2	6	8
	Inlet channels	1			
	Max air pressure	10 bar			
	Air flow	-	550l/min for each valve		
	Connection, inlet	8 mm hose			
	Connection, outlet	G 1/8"	6 mm hose		
	Air quality	Oil-clean and waterless filtered air, with max 25µm particle content.			
Electrical signals	Circuit diagram	E0214-222 (section 2.3.2)			
	Signals, robot side	24V, 0V, 10 x valve control, 6 x (24V, 2A)			
	Signals, tool side	24V, 0V, 10 x (24V, 2A)			
	Connection, robot side	M20x1,5 hole for cable gland, M16x1,5 hole for cable gland			
	Connection, tool side	Souriau 23S (UT001823SH)			
Connection kits tool side (opt.)	P8001 (connector) P8001-1 (connector)	Souriau 23P (straight) Souriau 23P (angled)			

2.1.5 Extended small valve units: P0035, P0036 and P0037



Technical data

Article number		P0035	P0036	P0037
Working temperature		+10°C–+50°C		
Weight		1.4 kg	1.5 kg	1.5 kg
Air channels	Tool change valve	-		
	Directional valves	2	4	5
	Valve size	ISO02 18mm IE, (ISO15407-2)		
	Outlet channels	4	8	10
	Inlet channels	1		
	Max air pressure	10 bar		
	Air flow	550l/min for each valve		
	Connection, inlet	8 mm hose		
	Connection, outlet	6 mm hose		
	Air quality	Oil-clean and waterless filtered air, with max 25µm particle content.		
Electrical signals	Circuit diagram	E0214-222 (section 2.3.2)		
	Signals, robot side	24V, 0V, 10 x valve control, 6 x (24V, 2A)		
	Signals, tool side	24V, 0V, 10 x (24V, 2A)		
	Connection, robot side	M20x1,5 hole for cable gland, M16x1,5 hole for cable gland		
	Connection, tool side	Souriau 23S (UT001823SH)		
Connection kits tool side (opt.)	P8001 (connector) P8001-1 (connector)	Souriau 23P (straight) Souriau 23P (angled)		

2.2 Pneumatic diagrams



NOTE! “T” stands for installed tool change valve and “D” for installed directional valves, “t” stands for slots intended for tool change valves, “d” for slots intended for directional valve while “t/d” stands for slots which can be used for either a tool change or a directional valve.

Installed valves in small valve units

Small valve unit	Installed valves				Pneumatic diagram
	Valve V1	Valve V2	Valve V3	Valve V4	
P0010A	d	d	d	t	Pne0214-010 (section 2.2.1)
P0011A	D	D	-	T	Pne0214-011 (section 2.2.2)
P1008	d	d	d	d	Pne0214-008 (section 2.2.3)
P0012A	D	-	-	-	Pne0214-013 (section 2.2.4)
P0013A	D	D	D	-	



NOTE! Valves are not included in P0010A and P1008. P0010A are intended for installation of up to three directional valves and one tool change valve. P1008 are intended for installation of four valves when no tool change function is required.

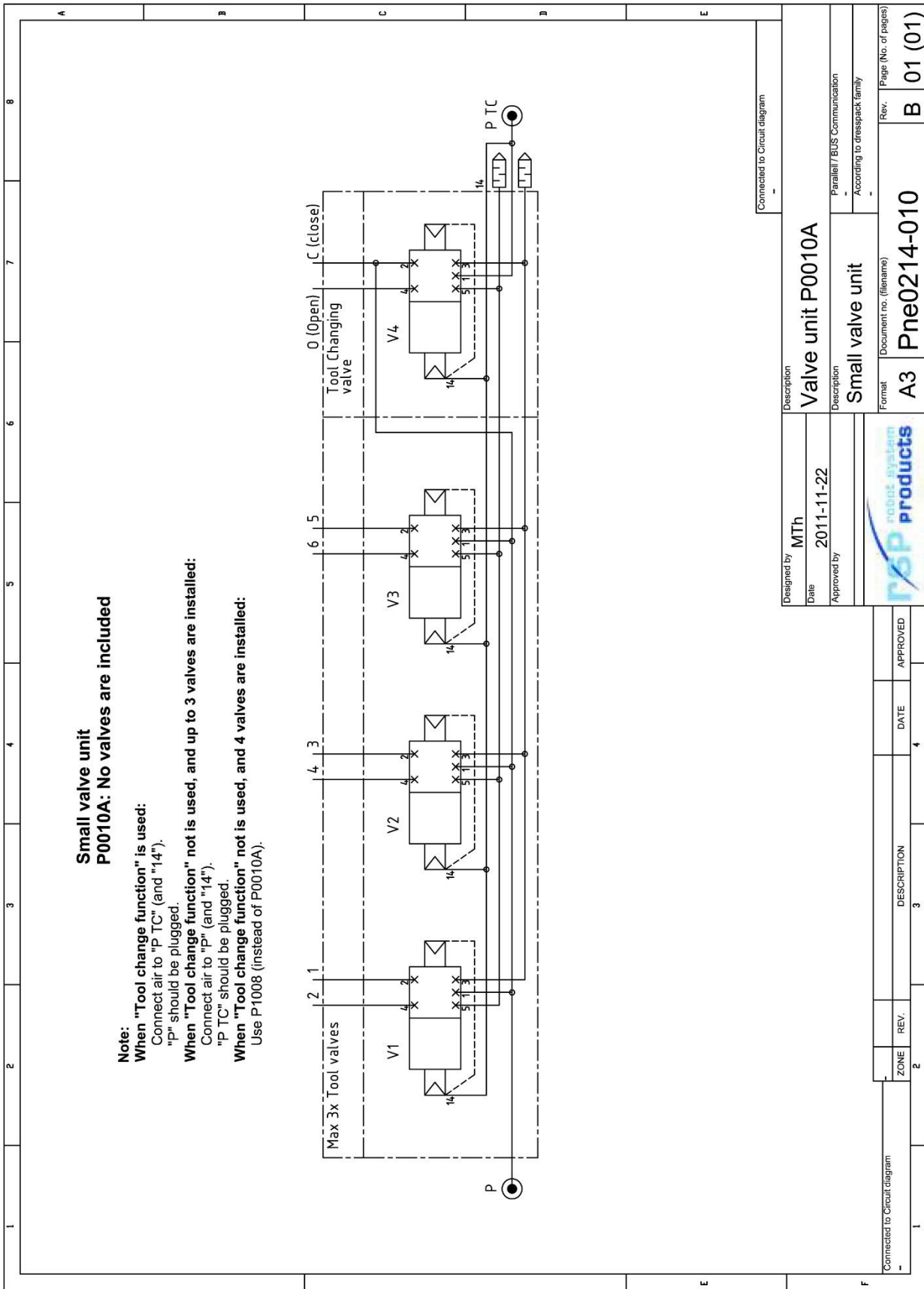
Installed valves in extended small valve units

Extended valve unit	Installed valves					Pneumatic diagram
	Valve V1	Valve V2	Valve V3	Valve V4	Valve V5	
P0026	d	d	d	d	t/d	Pne0214-026 (section 2.2.5)
P0027	D	-	-	-	T	Pne0214-027 (section 2.2.6)
P0028	D	D	D	-	T	
P0029	D	D	D	D	T	
P0035	D	D	-	-	-	Pne0214-035 (section 2.2.7)
P0036	D	D	D	D	-	
P0037	D	D	D	D	D	Pne0214-037 (section 2.2.8)



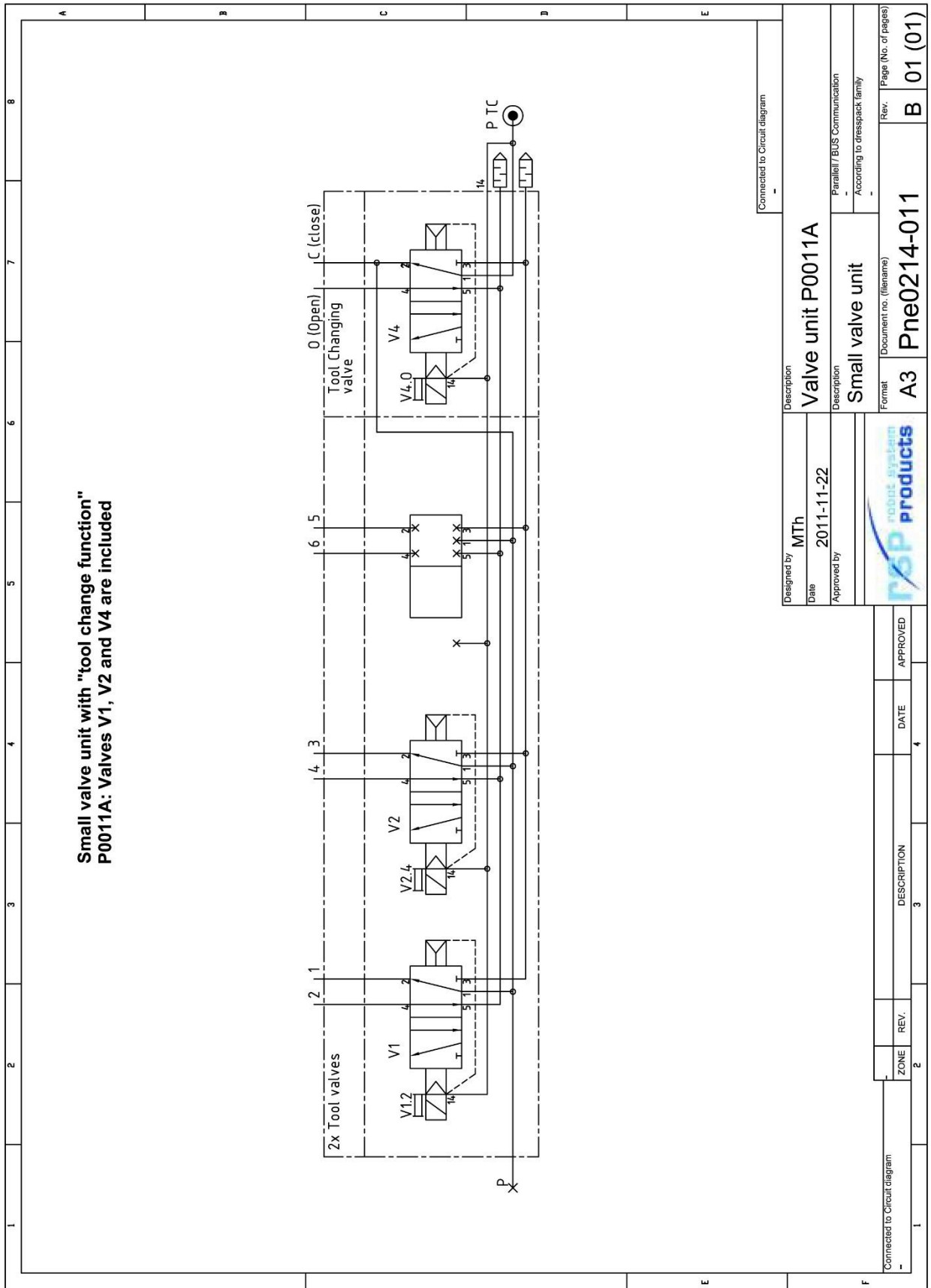
NOTE! Valves are not included in P0026. It is intended for installation of up to five valves out of which one can be a tool change valve.

2.2.1 Pne0214-010 for small valve unit P0010A



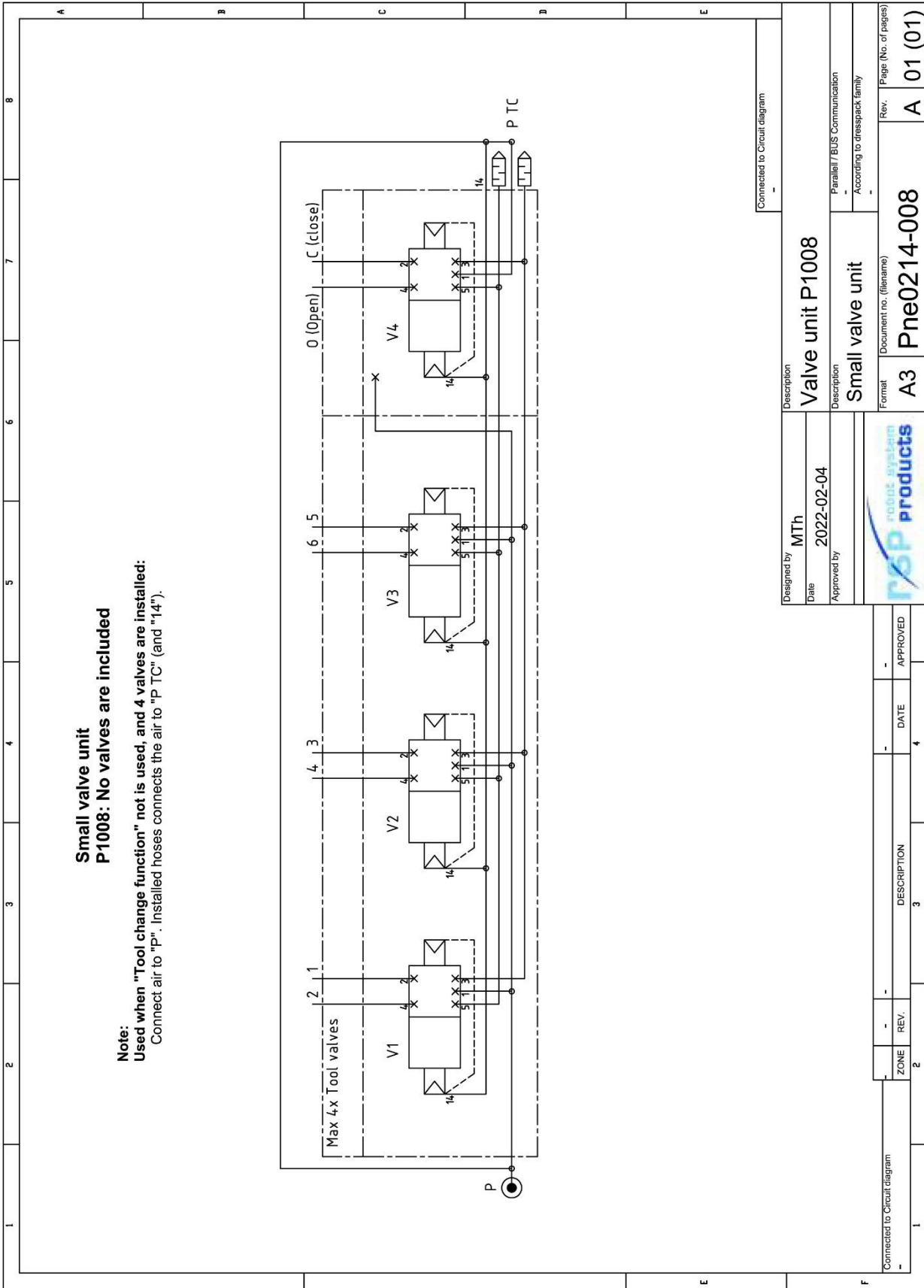
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2.2.2 Pne0214-011 for small valve unit P0011A



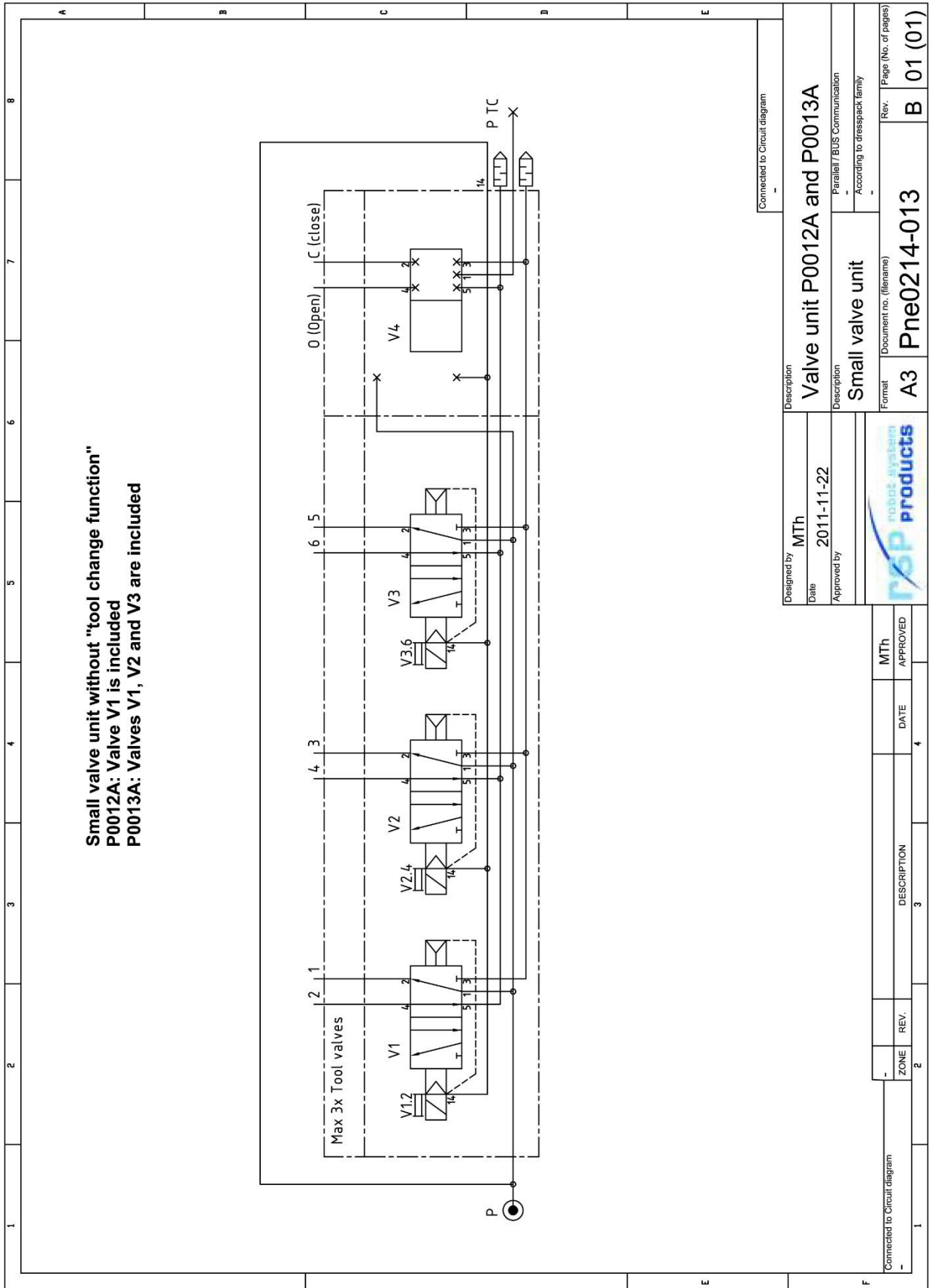
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2.2.3 Pne0214-008 for small valve unit P1008



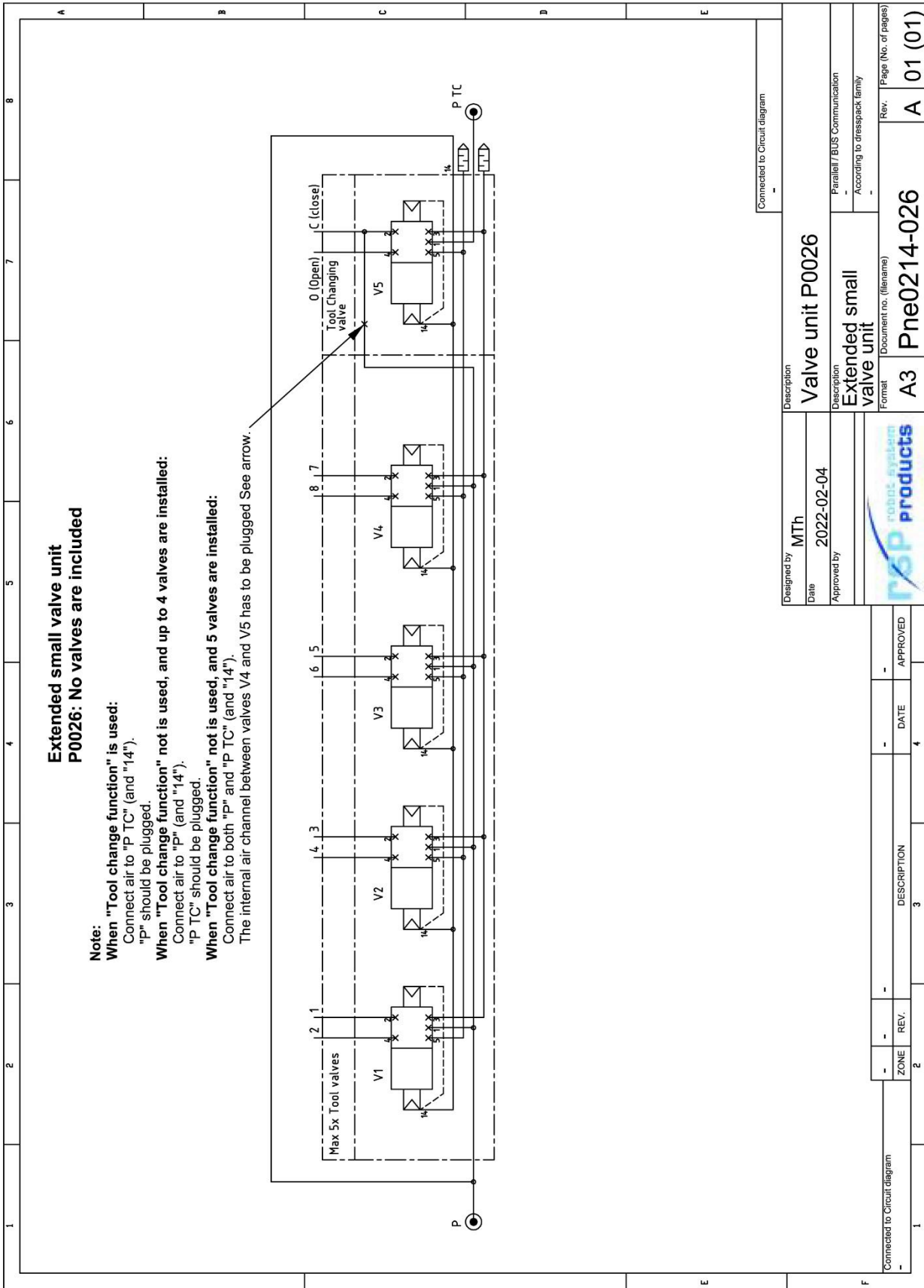
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2.2.4 Pne0214-013 for small valve units P0012A and P0013A



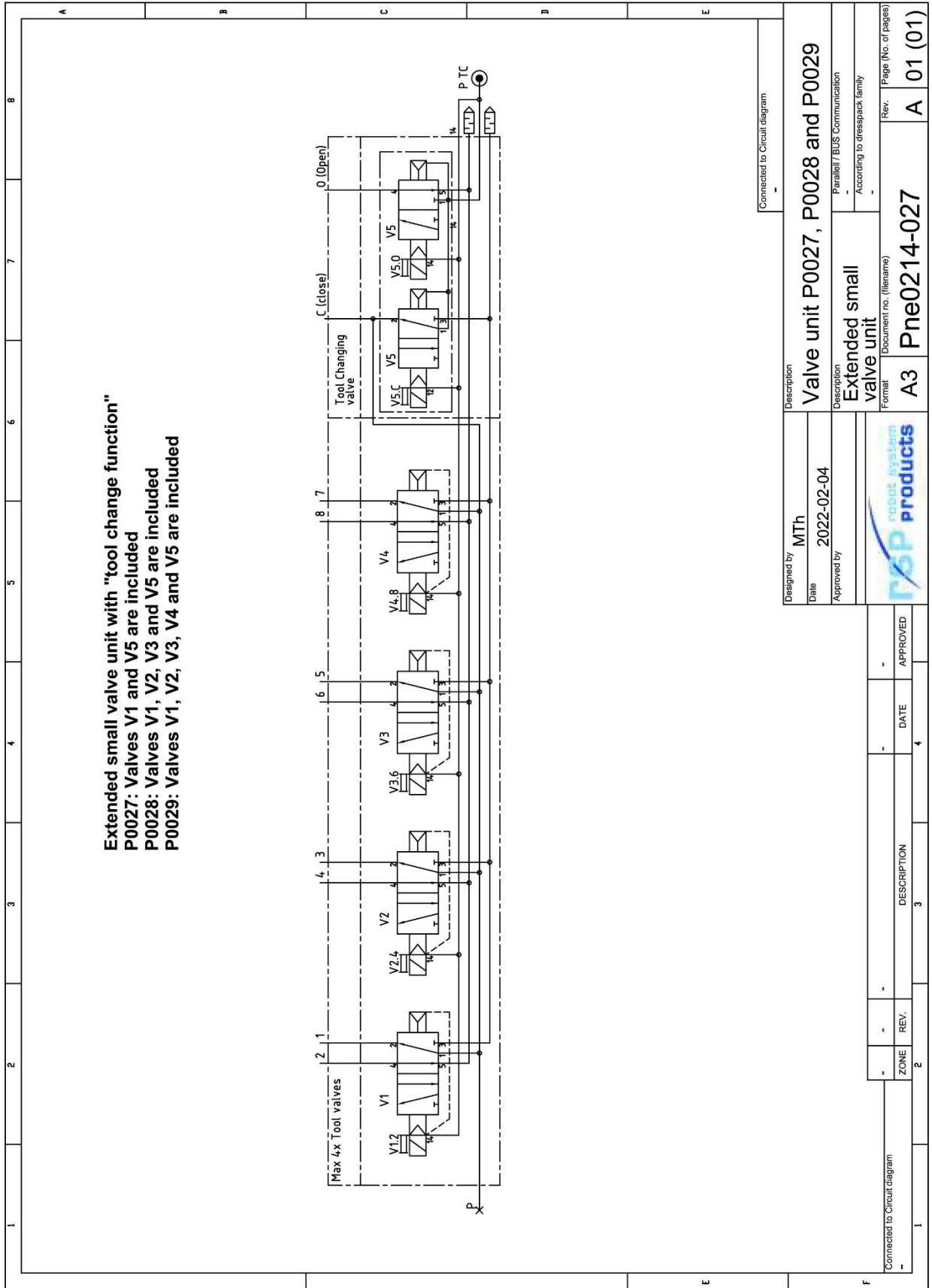
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2.2.5 Pne0214-026 for extended valve unit P0026



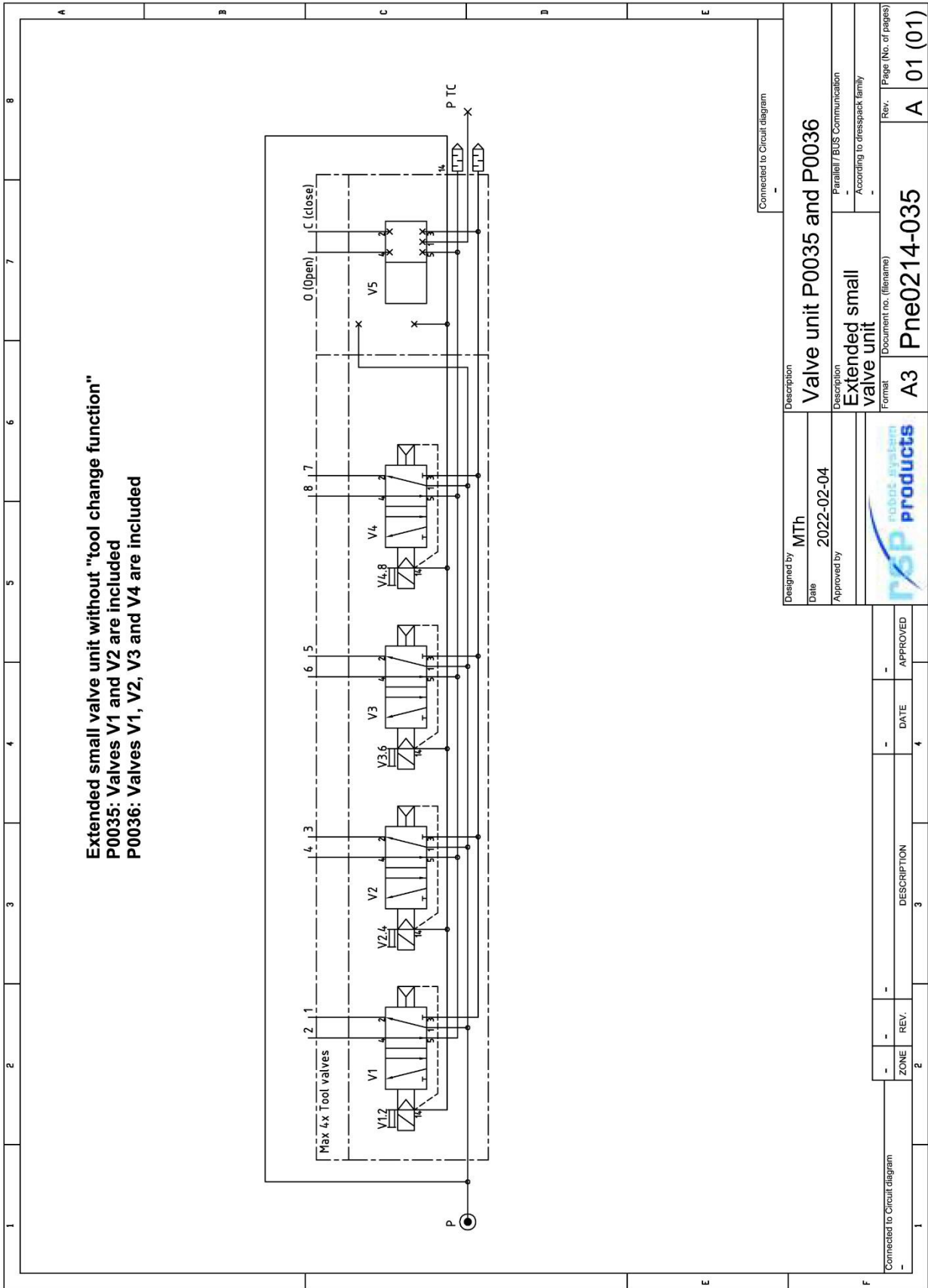
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2.2.6 Pne0214-027 for extended valve units P0027, P0028 and P0029

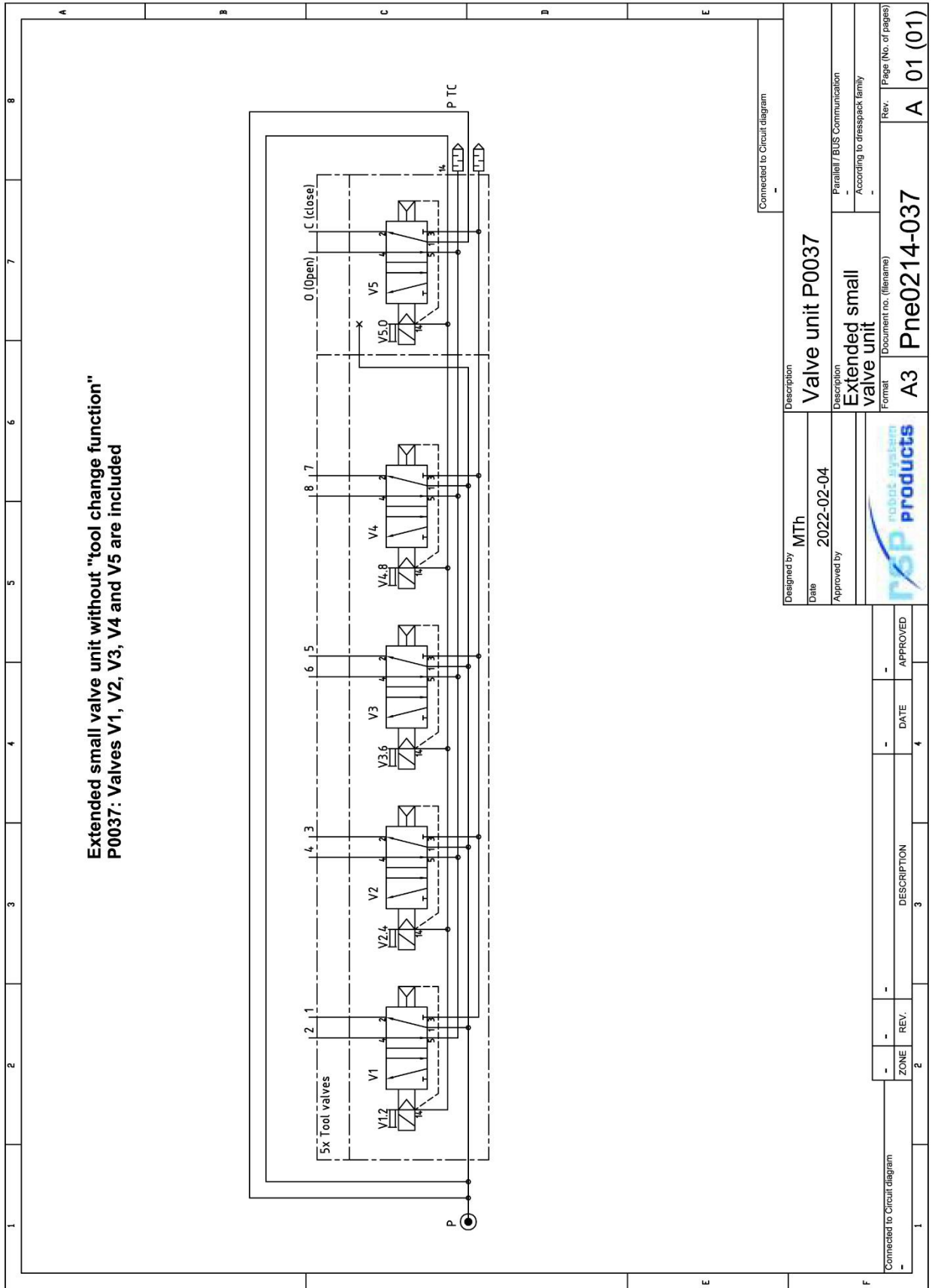


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2.2.7 Pne0214-035 for extended valve units P0035 and P0036



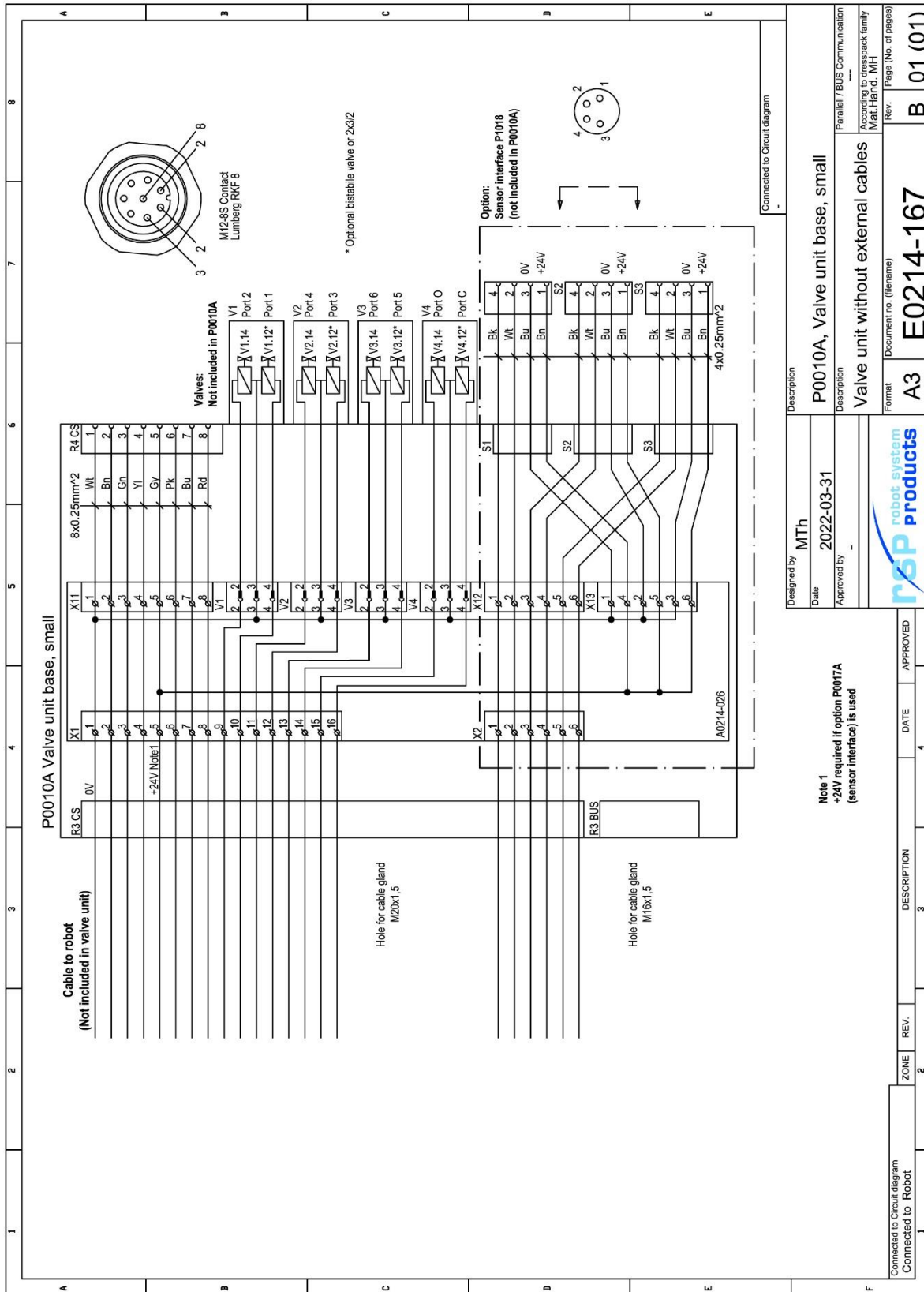
2.2.8 Pne0214-037 for extended valve unit P0037



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2.3 Internal circuit diagrams

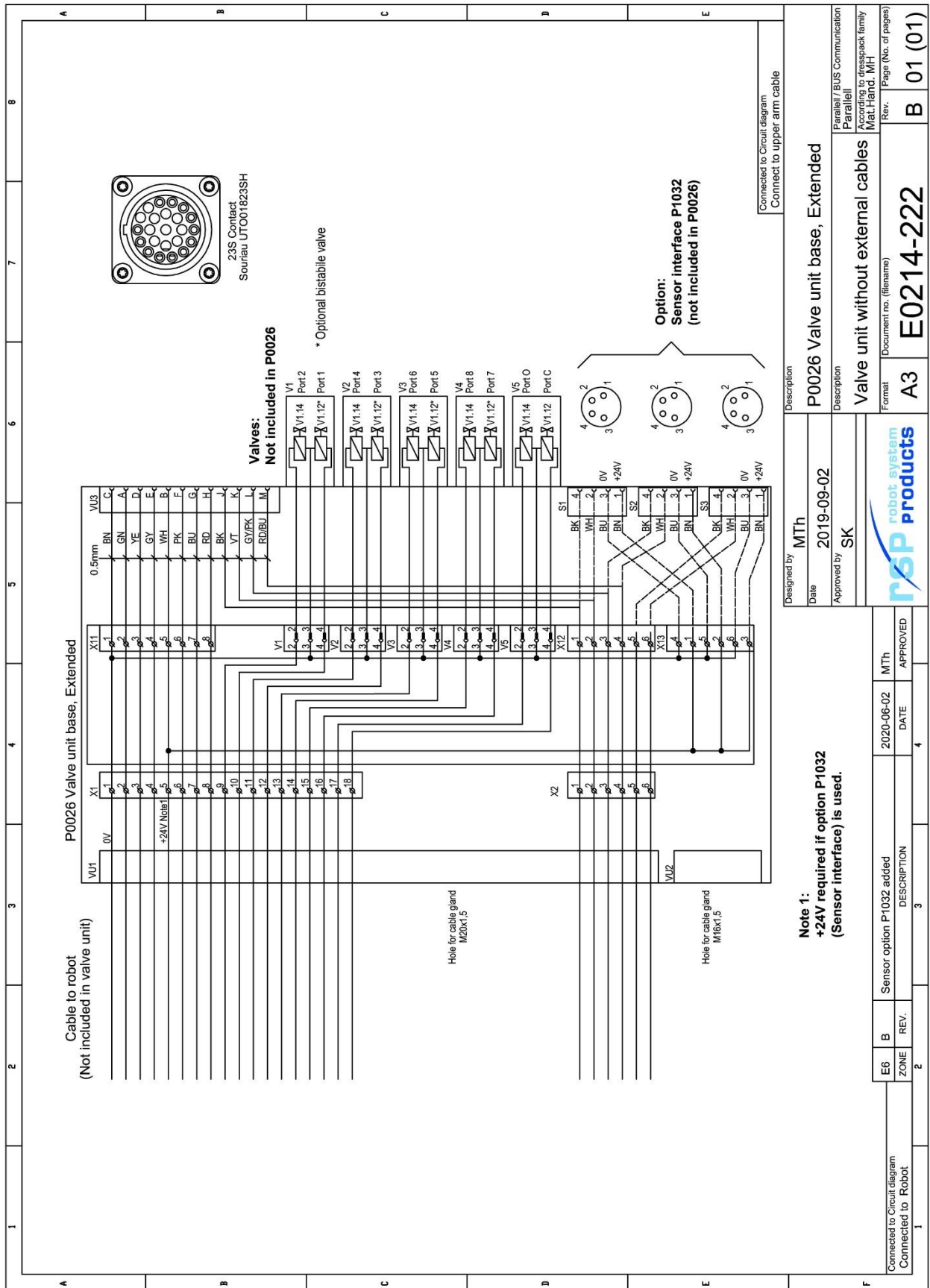
2.3.1 E0214-167 for small valve units



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Designed by	MTh	Description	P0010A, Valve unit base, small
Date	2022-03-31	Description	Valve unit without external cables
Approved by		Format	A3
Note 1 +24V required if option P0017A (sensor interface) is used		Document no. (filename)	E0214-167
ZONE	REV.	DATE	APPROVED
2		3	
1		4	
Connected to Circuit diagram	Connected to Robot	Rev.	Page (No. of pages)
		B	01 (01)

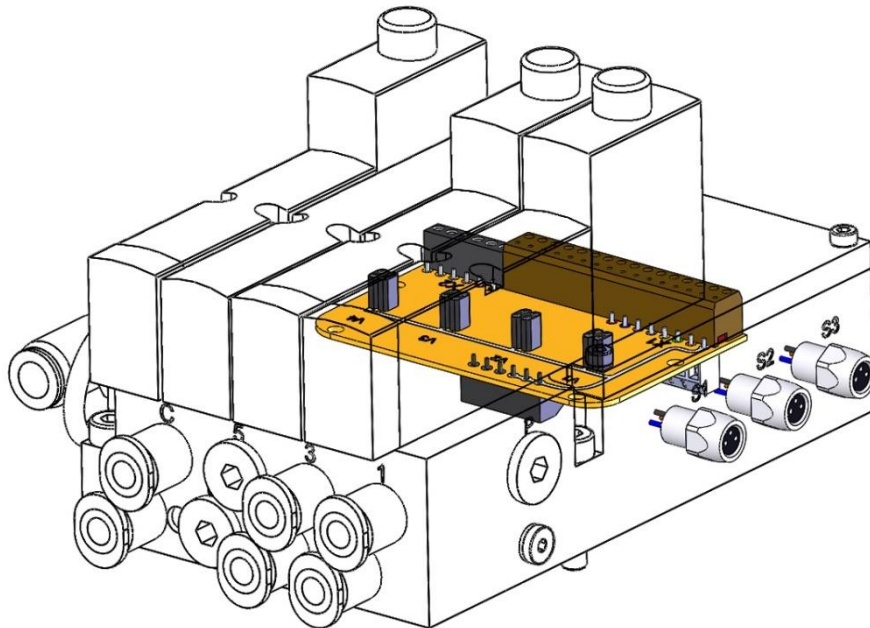
2.3.2 E0214-222 for extended small valve units



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3 OPTIONS

3.1 Sensor interface, P1033 and P1018 for small valve units



Electric interface for transfer of sensor signals to the robot, including three M8 3P or M8 4P contacts, which are added at the side of the valve unit and connected inside the unit.

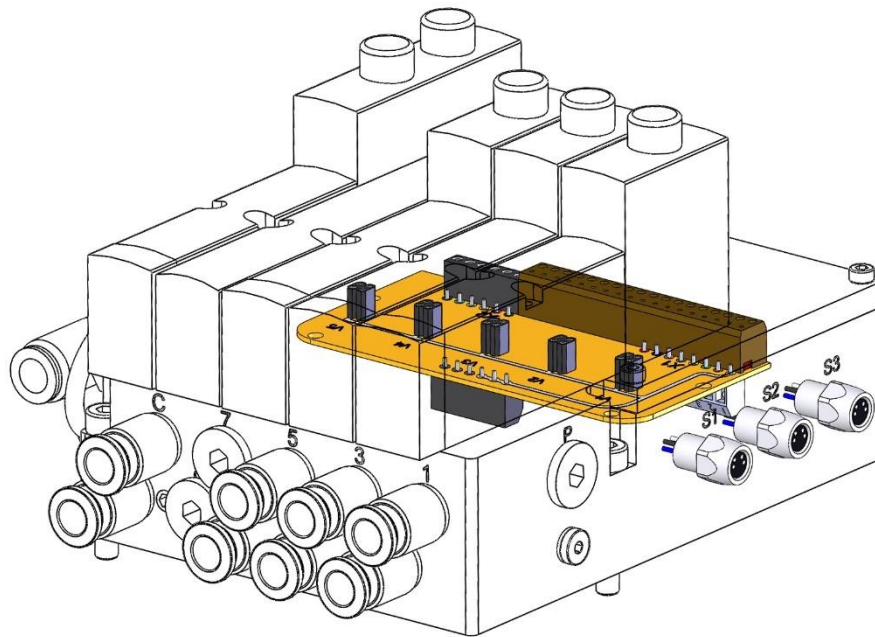


NOTE! The sensor interfaces P1033 or P1018 shall be ordered at the same time as the small valve unit and will pre-mounted on delivery.

Technical data

Working temperature		10°C–+50°C
Sensor signals P1033	Circuit diagram 3 x M8 3-pole, socket	E0214-306 (section 3.3) 24V, 0V, 3 x (60V, 4A)
Sensor signals P1018	Circuit diagram 3 x M8 4-pole, socket	E0214-263 (section 3.4) 24V, 0V, 6 x (60V, 4A)

3.2 Sensor interface, P1032 for extended small valve unit



Electric interface for transfer of sensor signals to the robot, including three M8 4P contacts, which are added at the side of the valve unit and connected inside the unit.

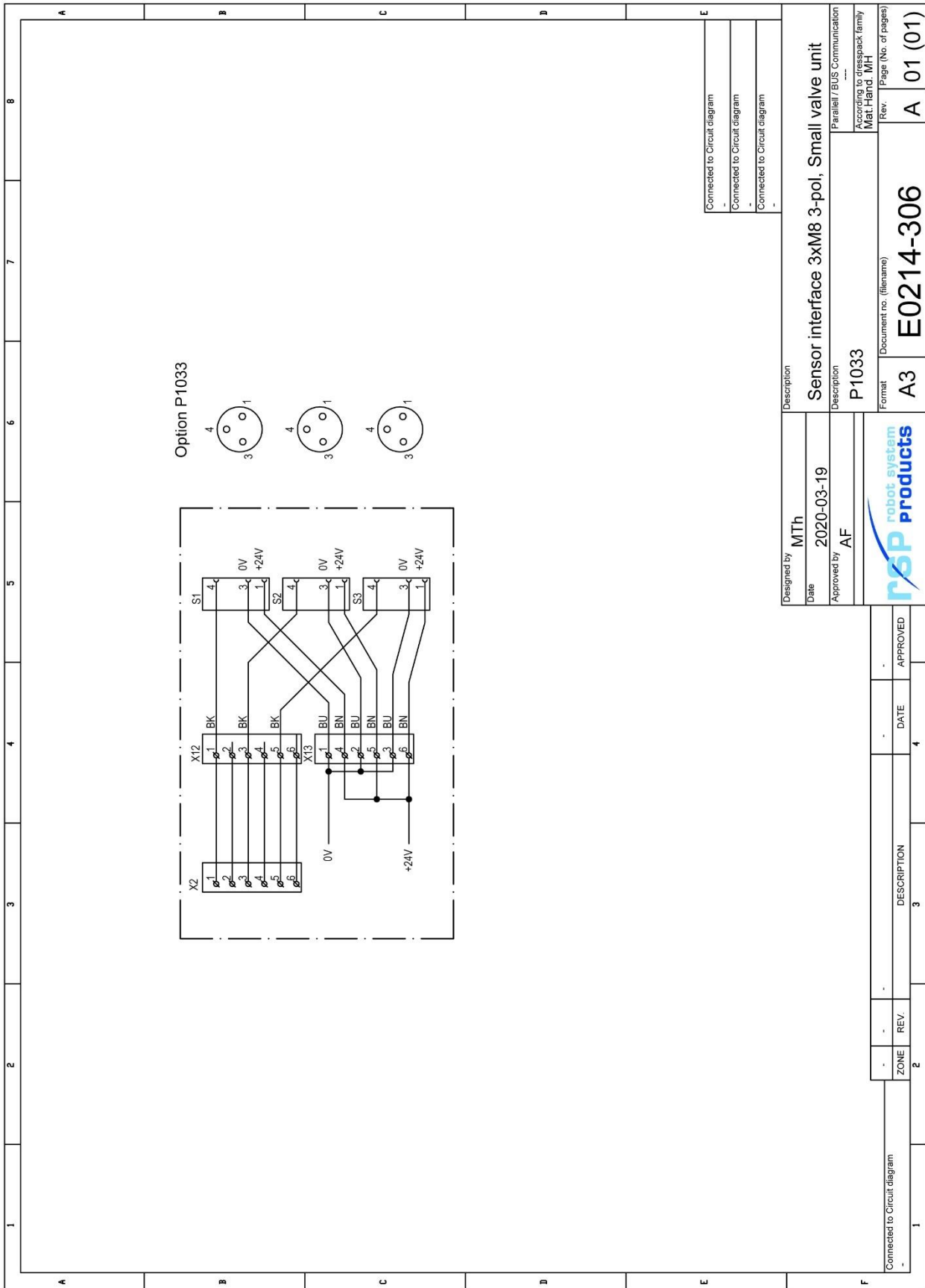


NOTE! The sensor interface P1032 shall be ordered at the same time as the extended small valve unit and will pre-mounted on delivery.

Technical data

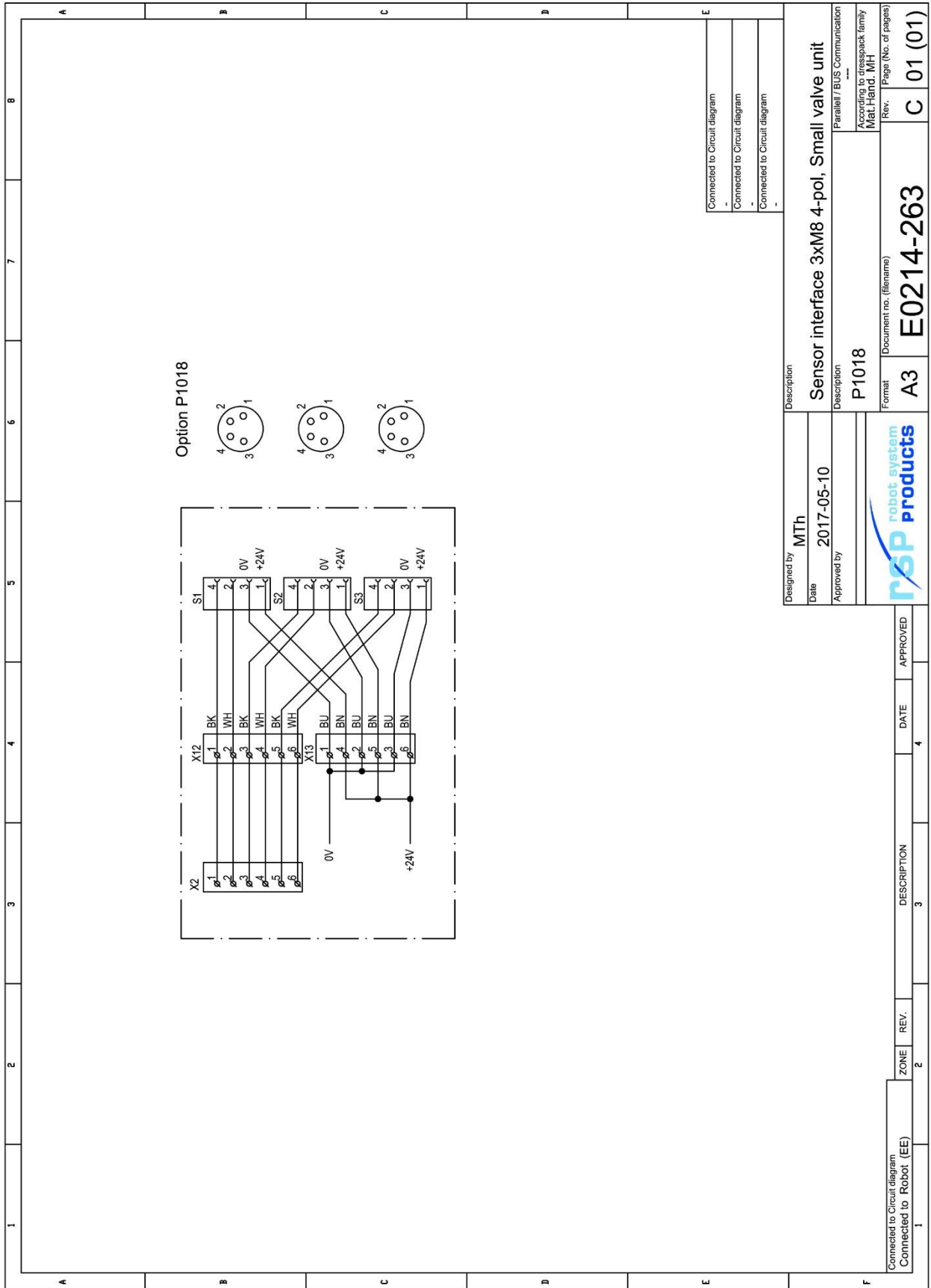
Working temperature		10°C–+50°C
Sensor signals	Circuit diagram	E0214-263 (section 3.4)
P1032	3 x M8 4-pole, socket	24V, 0V, 3 x 2 x (60V, 4A)

3.3 Circuit diagram E0214-306 for sensor interface P1033



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3.4 Circuit diagram E0214-263 for sensor interface P1018 and P1032



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4 INSTALLATION

4.1 Tightening torques

Tightening torques for mounting (screw class 8.8)

Dimension	Torque
M4	3 Nm
M5	6 Nm
M6	10 Nm
M8	24 Nm
M10	47 Nm
M12	82 Nm
M16	200 Nm

4.2 Recommended tools for installation and replacement of valve units

Tools	Applications
Complete set of Allen keys	For dismounting and mounting.
Torque wrench	For all socket head cap screws

4.3 Arm load parameters




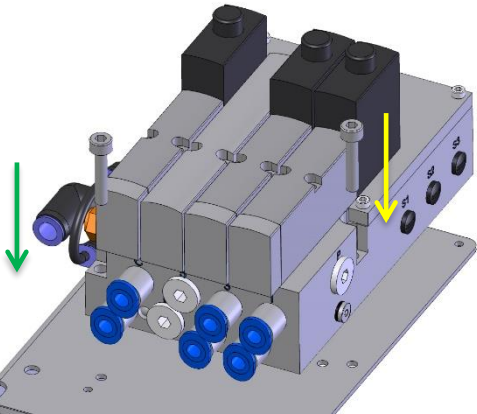
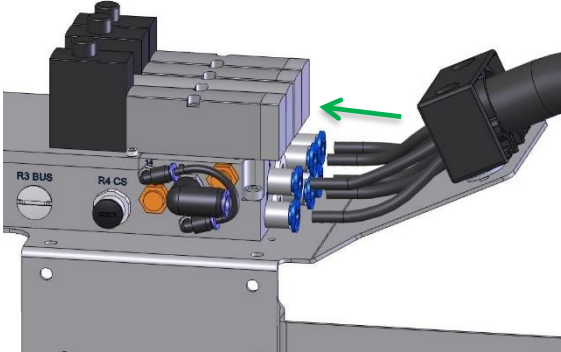
The valve unit is adding load to the robot. If the load is not stated correctly during programming it may affect the behaviour and wear of the robot and robot peripherals.



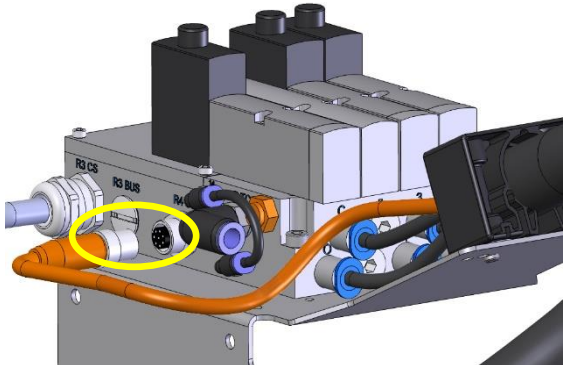
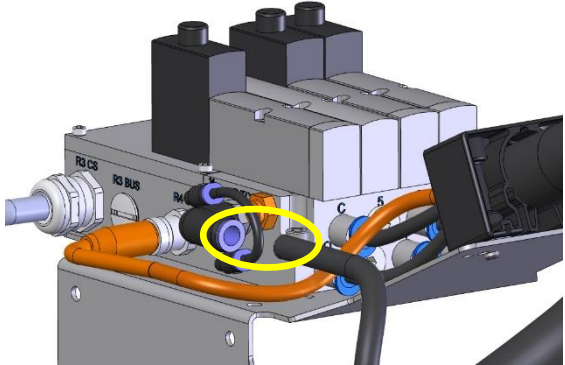
NOTE!

The extra weight of the valve unit will affect the arm load data and the performance of the robot.

4.4 Installation of valve unit on robot

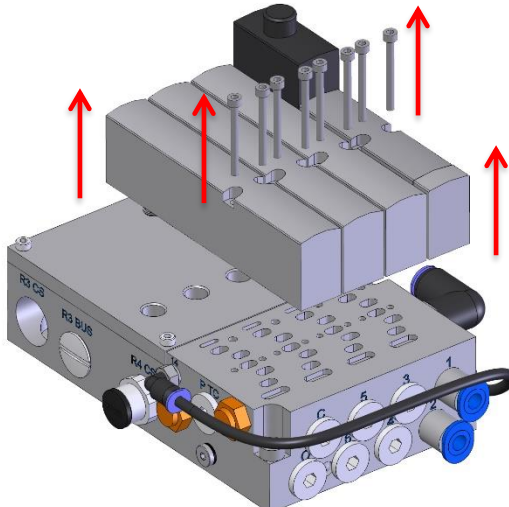
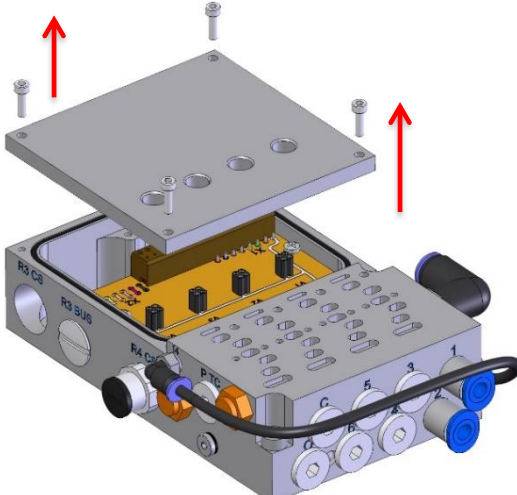
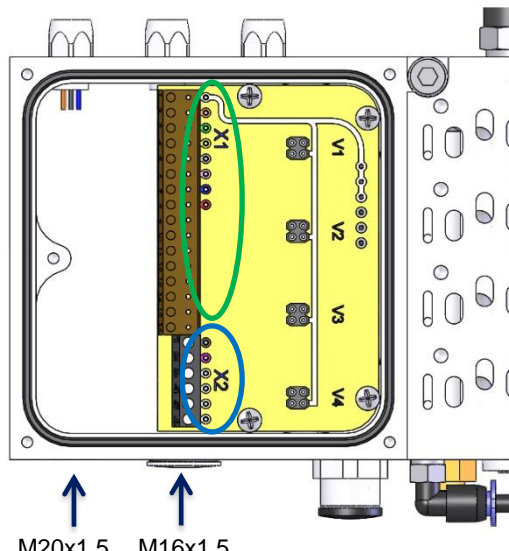
	Action	Note
	1 Safety	Read the safety section 1.1.
	2 Service position	Place the robot in service position.
	3 Power off	Switch the power off and lock the circuit breaker. NOTE! Read the safety chapter for the robot.
	4 Pneumatic air off	Switch the pneumatic air off. NOTE! The pressure in the pneumatic system must be released before mounting begins.
	5 Connect robot cable	If the cable connecting the valve unit and the robot is not supplied and preinstalled by RSP see section 4.5 Connect customer cable below. NOTE! If the cable is supplied by RSP it is already preinstalled on the valve unit.
	6 Mount valve unit on mounting plate 	Mount the valve unit on the mounting plate, installed on the robot, with the two enclosed M5-screws.
	7 Connect air hoses 	Connect the air hoses between the valve unit and the tool according to pneumatic diagram (section 2.2). Use 6 mm hoses. NOTE! Ensure that hoses are connected at the correct positions. Mark hoses in both ends.



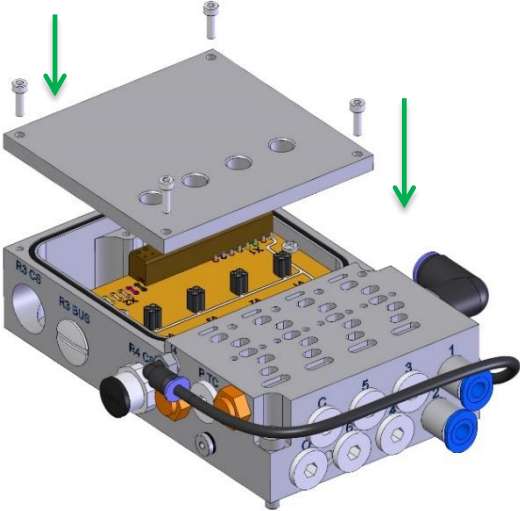
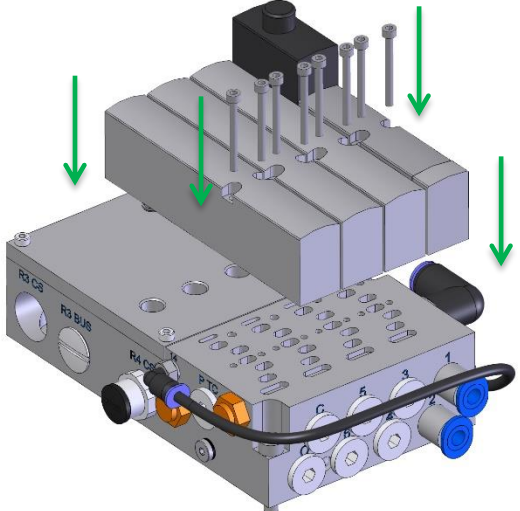
8	Connect cables on tool side 	Connect the electrical cable between the valve unit and the tool according to circuit diagram (sections 2.3.1 or 2.3.2). NOTE! If complete cable and hose packages are supplied by RSP the electrical cable on the tool side is preinstalled by RSP on the valve unit.
9	Connect air supply hose 	Connect the air supply hose according to pneumatic diagram (section 2.2). Use an 8 mm hose.
10	Connect robot cable	Connect the cable between the valve unit and the robot.
11	Strap cables and hoses	NOTE! Ensure that cables and hoses are not strapped tight at sharp corners.
12	Pneumatic air on	Switch on the pneumatic air.
13	Power on	Unlock circuit breaker and switch power on.



4.5 Connect customer cable

	Action	Note
1	<p>Remove all valves.</p> 	<p>Unscrew the, eight or ten, M3x30 screws holding the valves. Remove all valves and cover plates.</p>
2	<p>Remove cover</p> 	<p>Unscrew the four M3x10 screws holding the cover and remove it. Terminals X1 and X2 are now available for connection.</p>
3	<p>Connect cables</p> 	<p>Connect cables to the valve unit according circuit diagram.</p> <p>Use cable glands to the cable/cables. The valve unit has two threaded holes, one M20x1.5 and one M16x1.5, for cable glands.</p> <p>NOTE! X1 connections are marked in green and X2 in blue.</p>



<p>4</p>	<p>Mount cover</p> 	<p>Remount the cover with the four M3x10 screws. Check that the O-ring is in right position before tightening the screws.</p>
<p>5</p>	<p>Mount valves</p> 	<p>Remount the valves. Ensure that there is no leakage at the valves.</p>

5 MAINTENANCE AND SERVICE

5.1 Maintenance chart

The valve units must be maintained regularly to ensure proper function. The specified intervals are approximate and valid under normal conditions. Under extreme conditions, such as dirty environments or extreme robot movements, the intervals should be shortened. Consider the table as a guide and update as the production experience of each system increases.



NOTE!

Valve units must only be dismantled and repaired by Robot System Products during the warranty period. Otherwise, the warranty will not be valid.

5.1.1 Recommended tools for maintenance

Tools	Applications
Complete set of Allen keys	For dismounting and mounting.
Torque wrench	For all socket head cap screws

5.1.2 Activities and intervals

Maintenance activity	Equipment	Interval	Description
Inspection	Valve unit	2 weeks	Visual inspection of Valve unit.

5.2 Visual inspection of valve unit

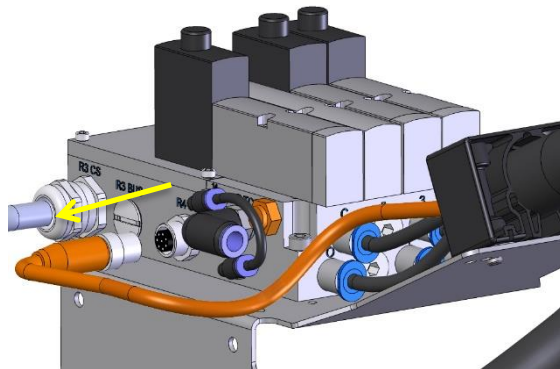
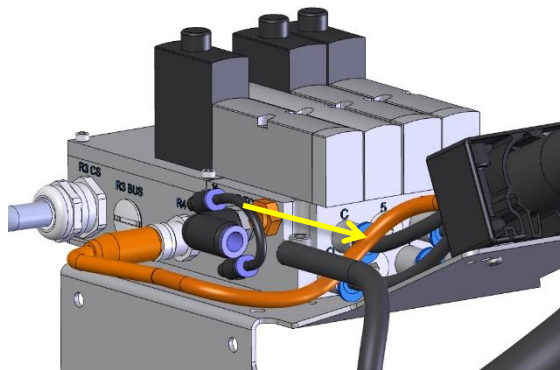
Visually check the following:

Check	Note
Cables to Valve unit	Not damaged or dirty
Hose to Valve unit	Not damaged or dirty
Hoses from Valve unit	Not damaged or dirty
All parts	No wear, not damaged or dirty

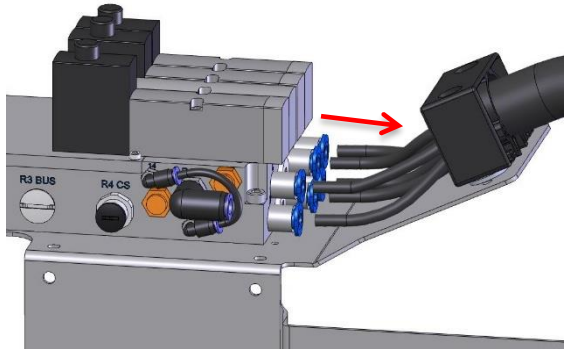
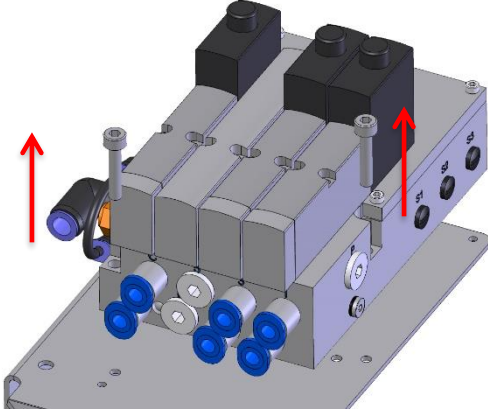
5.3 Replacement of valve unit



	Action	Note
1	Safety	Read the safety section 1.1.
2	Service position	Place the robot in service position.
3	Power off	Switch the power off and lock the circuit breaker. NOTE! Read the safety chapter for the robot.
4	Pneumatic air off	Switch the pneumatic air off. NOTE! The pressure in the pneumatic system must be released before mounting begins.
5	Disconnect robot cable	Disconnect the cable between the valve unit and the robot.
6	Disconnect air supply hose	Disconnect the air supply hose at the valve unit. Ensure that no dirt will enter into the hose or hose connections.
7	Disconnect cables on tool side	Disconnect the electrical cable between the valve unit and the tool. NOTE! Handle contacts with care, they are sensitive to mechanical damage. Make sure that no dirt enters the contacts.

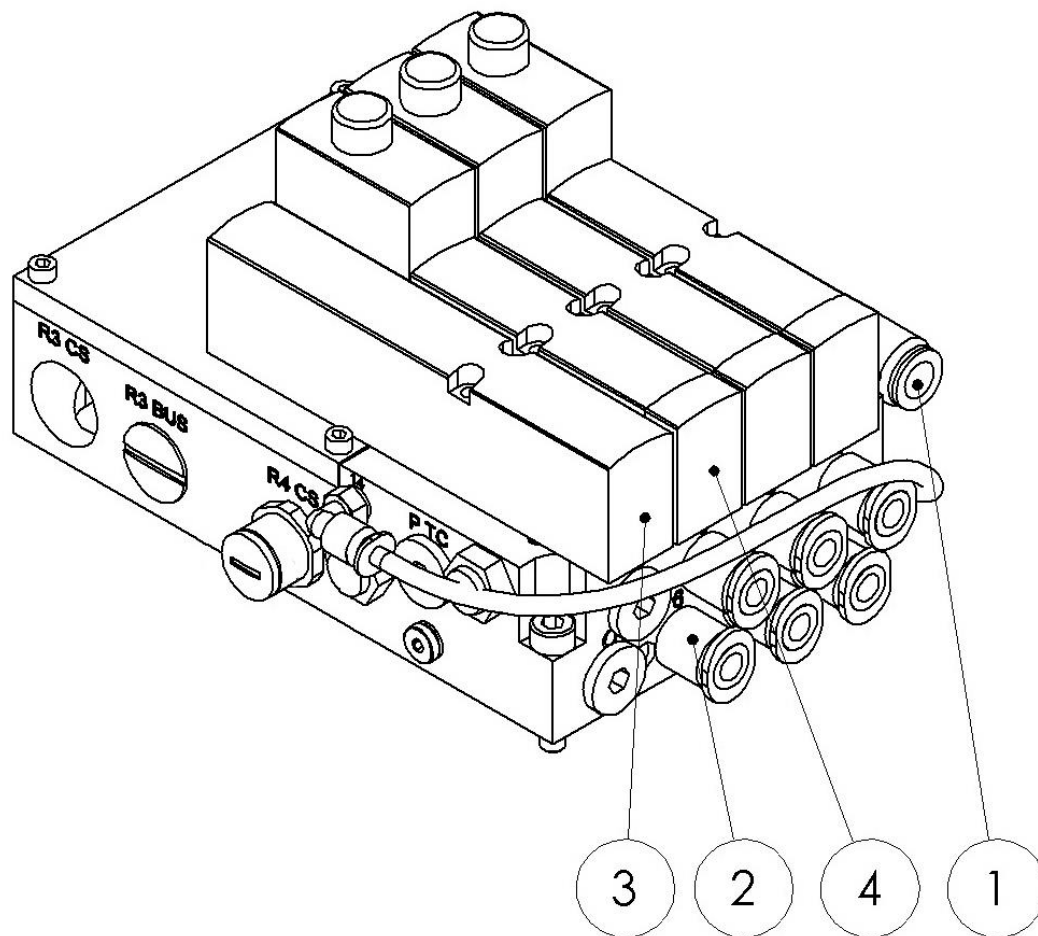




8	Disconnect air hoses at tool side 	Disconnect the air hoses between the valve unit and the tool. NOTE! Check that hoses are marked according to connections at the valve unit in both ends. NOTE! Ensure that no dirt enters the hoses or connectors.
9	Dismount the valve unit 	Unscrew the two M5-screws fully and remove the valve unit from the mounting plate.
10	Mount replacement valve unit	Follow instructions in section 4.4.

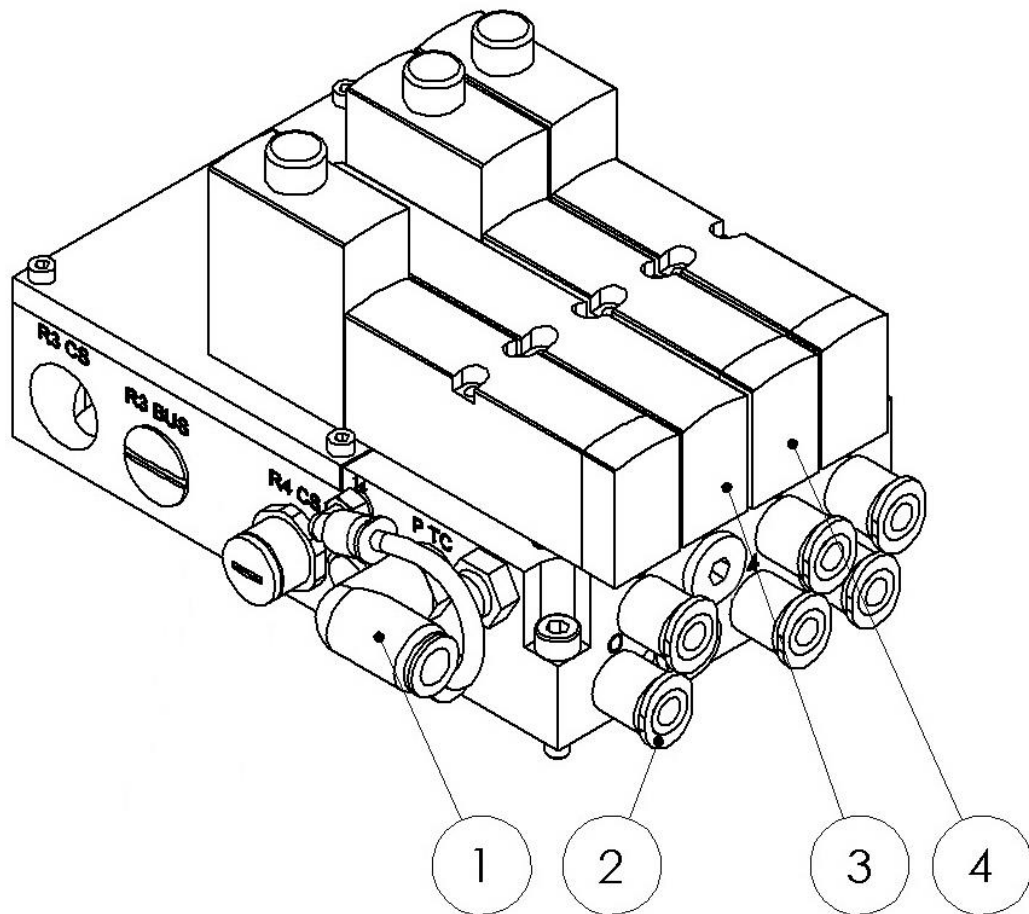
6 SPARE PARTS

6.1 Valve units without tool change, P0010A, P0012A and P0013A



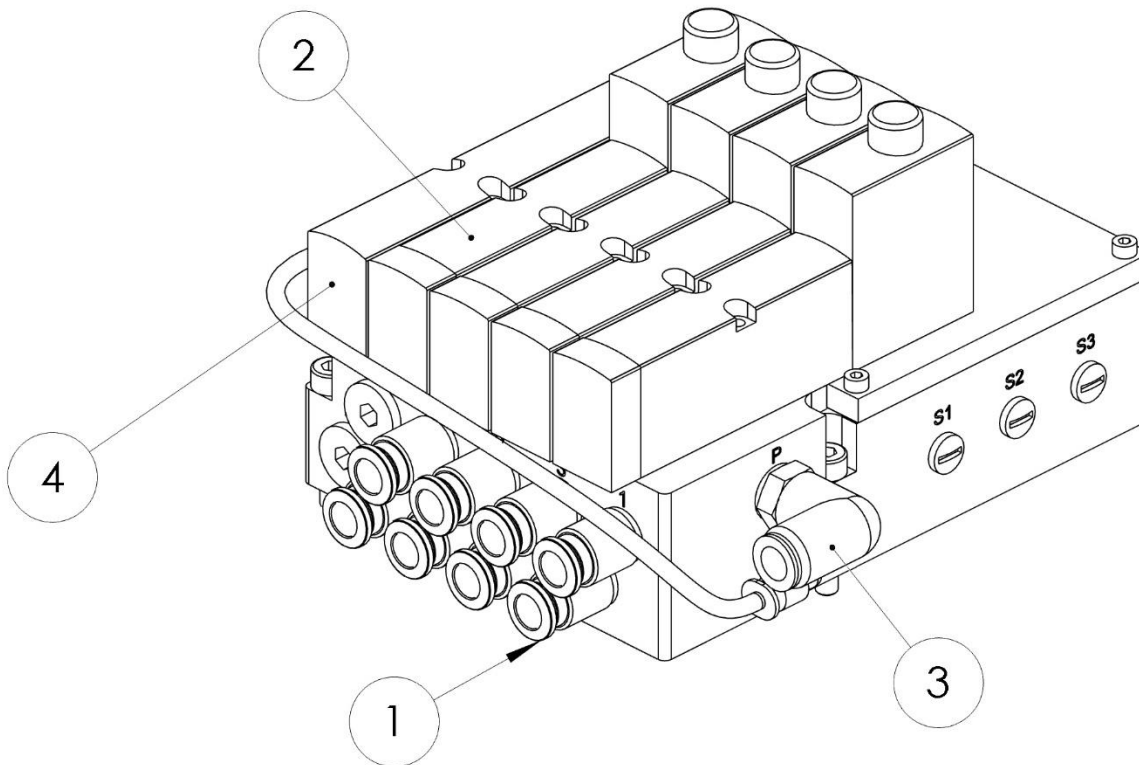
Item	Description	Part number	Pcs
1	Hose connection 8 mm angled	I0314	1
2	Hose connection 6 mm straight (P0012A only)	I0354	2
2	Hose connection 6 mm straight (P0013A only)	I0354	6
3	Cover plate (P0012A only)	I0492	3
3	Cover plate (P0013A only)	I0492	1
4	Valve 5/2 monostable (P0012A only)	I0520	1
4	Valve 5/2 monostable (P0013A only)	I0520	3

6.2 Valve units with tool change, P0011A



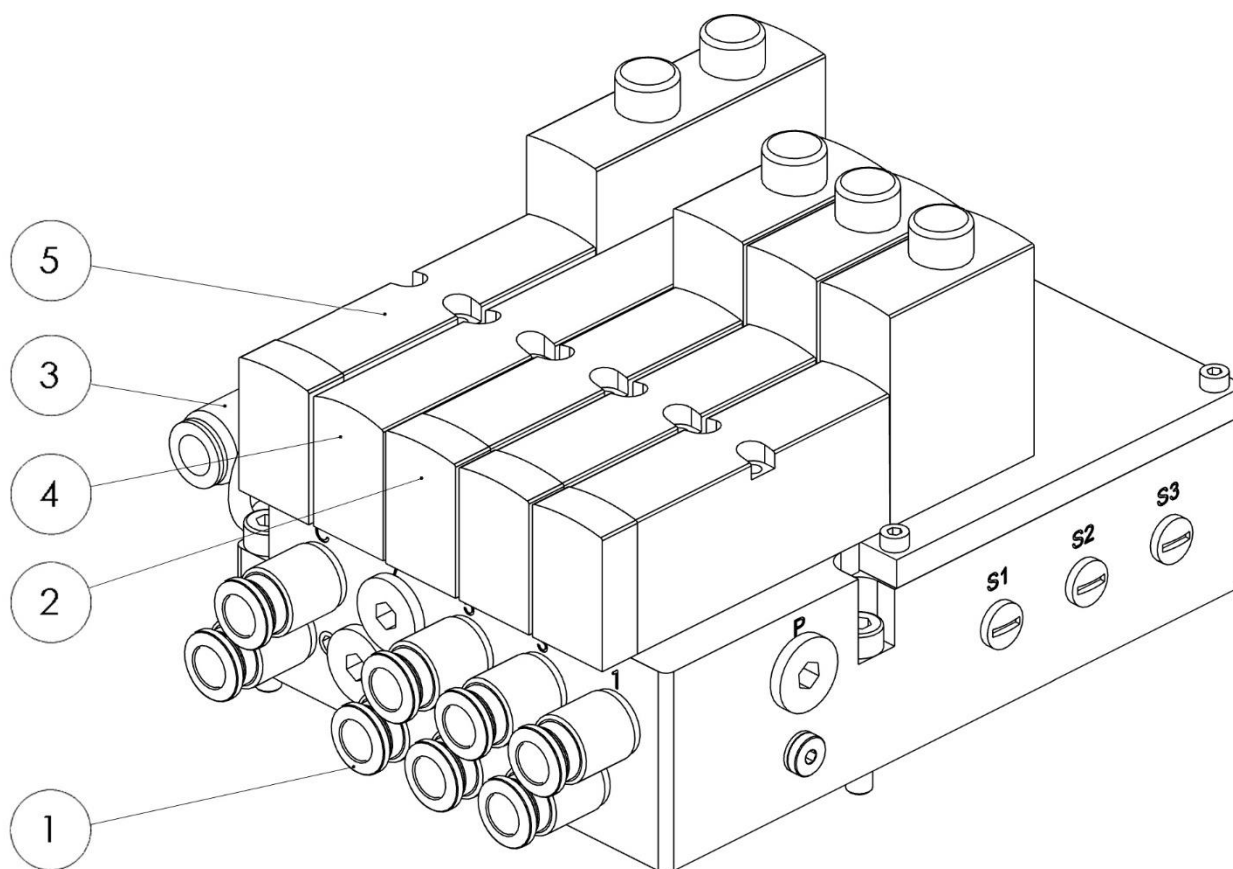
Item	Description	Part number	Pcs
1	Hose connection 8 mm angled	I0314	1
2	Hose connection 6 mm straight	I0354	6
3	Cover plate	I0492	1
4	Valve 5/2 monostable	I0520	3

6.3 Extended units without tool change, P0035, P0036 and P0037



Item	Description	Part number	Pcs
1	Hose connection 8 mm straight (P0035 only)	I0371	4
1	Hose connection 8 mm straight (P0036 only)	I0371	8
1	Hose connection 8 mm straight (P0037 only)	I0371	10
2	Valve 5/2 monostable (P0035 only)	I0520	2
2	Valve 5/2 monostable (P0036 only)	I0520	4
2	Valve 5/2 monostable (P0037 only)	I0520	5
3	Hose connection 8 mm angled	I0314	1
4	Cover plate (P0035 only)	I0492	3
4	Cover plate (P0036 only)	I0492	1

6.4 Extended units with tool change, P0026, P0027, P0028 and P0029



Item	Description	Part number	Pcs
1	Hose connection 8 mm straight (P0027 only)	I0371	4
1	Hose connection 8 mm straight (P0028 only)	I0371	8
1	Hose connection 8 mm straight (P0029 only)	I0371	10
2	Valve 5/2 monostable (P0027 only)	I0520	1
2	Valve 5/2 monostable (P0028 only)	I0520	3
2	Valve 5/2 monostable (P0037 only)	I0520	4
3	Hose connection 8 mm angled	I0314	1
4	Cover plate (P0027 only)	I0492	3
4	Cover plate (P0028 only)	I0492	1
5	Valve 2x3/2 open/closed monostable	I0521	1

7 DISPOSAL AND RECYCLING

Taking care of spent equipment

Used equipment must be taken care of in an environmentally-friendly way.

When disposed of, a major share of the material, or its energy content, can be recycled. The quantities possible to recycle vary depending on technical resources and practises in respective country. Non-recyclable components shall be handed over to an authorized environmental waste treatment facility for destruction or disposal.

Electronics

Electronic equipment shall be sent to an authorized recycling company or sorted into different component materials and treated as such.

Metals

Metals can, in general, be melted down, recycled and used in new products. They shall be sorted according to type and surface coating and handed over to an authorized recycling facility.

Metal components of steel and aluminium are substantial in size and easy to identify. Copper and brass are primarily used in transmission of electric power and in water/air modules. Brass may include small alloy of lead. Silver or gold plating of contact surfaces may occur.

Plastics

Thermoplastics can, in general, be re-heated and recycled without any major loss of quality. They shall be handed over to an authorized recycling facility. POM occurs in swivel housings, etc. PTFE in some sealings.

Rubber

Rubber shall be handed over to an authorized environmental waste treatment facility either for recycling, disposal or destruction. Rubber occurs in O-rings.

Other material

All other material shall be sorted and handed to an authorized environmental waste treatment facility in accordance with national legislation.

