



Program Book / Guidelines for Festo Products

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Revision Date	Version No.	Document Name	Revision	Paragraph Affected	Revised By
2015-06-01	4.0	SGMPT-CL-F-Festo-V4.0	<ul style="list-style-type: none"> - replace D series service units with MS series - add safety valve MS-SV - add control block VOFA for safe venting - add Profinet and Profisafe I/O's - add pressure input modules - delete air reservoir - delete function valves - delete SDE1 and SPAW 	2.1.2 to 2.1.10 2.1.8 2.2.18 2.4.1 2.4.1	Thorsten Weiss
2014-05-22	3.0	SGMPT-CL-F-Festo-V3.0	<ul style="list-style-type: none"> - add HE-D-MIDI-LO - add AMTE silencers, suitable for narrow space - replace QS-F with NPQH, absolute replacement of metal fittings - replace VADM with OVEM, functional replacement and expanding - add VN - add SPAW, SDE1 - replace DNC/DNG with DSBC/DSBG, absolute replacement, same size - add DSBC-...-C, to replace clamping cylinder DNC-...-KP - replace DGP with DGC-K, absolute replacement - add DRRD and DHTG, applied onsite - add DHDB, DHDNB and DFSP, expanding of stopper cylinder series - add SDAT, functional expanding - add note with cartridge adapter for pressure regulators - update contact person 	2.1.2 2.2.2 2.2.6 2.2.14 2.2.14 2.2.17 2.3.1 2.3.3 2.3.4 2.3.6 2.3.8 2.3.10 2.4.3 3.0 and 4.0	Thorsten Weiss
2010-07-07	2.1	SGMPT-CL-F-Festo-V2.1	<ul style="list-style-type: none"> - add reclassifier - change gauges to Mpa - breakdown SOPA - delete SDE1 - add timer modules - change from SMT-8F to SMT-8M 	2.1.11 2.2.1 2.2.13 2.1.16 2.3.10	Thorsten Weiss Peter Pappert
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2006-08-16	1.2	SGMPT-CL-F-Festo-V1.2		Page 9, 10, 11, 17, 18	
2006-07-27	1.1	SGMPT-CL-F-Festo-V1.1	- Add lock-out-valve	Page 17	
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1.0 Introduction

1.1 Scope of Document

This document is intended to provide Festo components approved for use on SGM Powertrain programs.

Festo Corporation is an approved SGM Powertrain source for all pneumatic products including cylinders, actuators, valves, filters, regulators, cylinder mounted proximity sensors, Fieldbus Valve/Sensor Manifolds with serial interface, as well as other miscellaneous electro-pneumatic components.

All miscellaneous pneumatic components should be selected according to application needs, under the guidance of the local Festo applications engineer and with the approval of SGMPT.

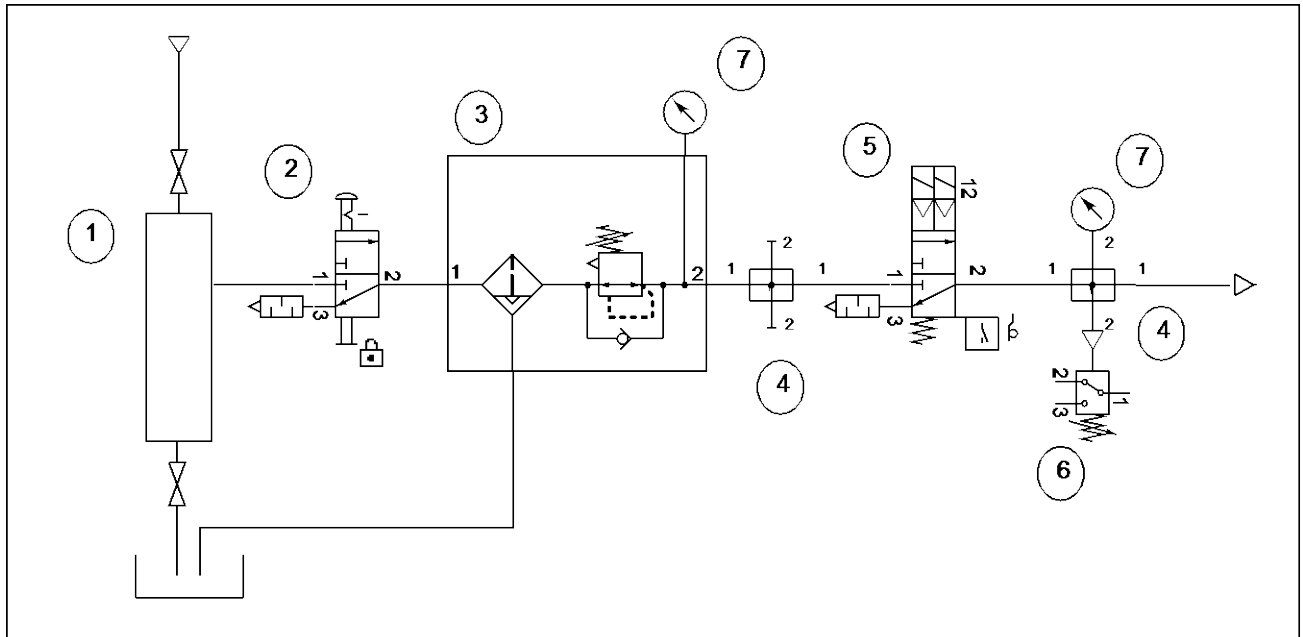
If, for technical reasons, components deviating from this list are required, these have to be chosen preferably from Festo program and a Deviation Request has to be issued. This Deviation Request (data set) has to be approved in advance by Festo and then, for the final approval, to be submitted by e-mail to responsible SGMPT Fluid Power Control Engineers.

2.0 Product Overview

Air preparation module Diagram

2.1 Air Preparation

Main Air Preparation Unit



1. Drip Leg with Ball Valves
2. Manual Lockout Valve
3. Filter-Regulator 5 μ m
4. Branching Module
5. Safety Soft-Start / Quick-Exhaust Valve
6. Pressure Switch IFM PN5004
7. Pressure Gauge Red / Green

2.1.1 Drip Leg

PART NUMBER	TYPE CODE	DESCRIPTION
534059	DNC-100-3/8-SA-203603	Filter to remove large pollutants, G3/8 ISO port
534427	DNC-100-1/2-SA-203603	Filter to remove large pollutants, G1/2 ISO port
534428	DNC-100-3/4-SA-203603	Filter to remove large pollutants, G3/4 ISO port
534429	DNC-100-1-SA-203603	Filter to remove large pollutants, G1 ISO port



2.1.2 Manual Lock-Out Valve

PART NUMBER	TYPE CODE	DESCRIPTION
197133	HE-G3/8-LO	Manual operated Lock-Out valve, G3/8 ISO port
197134	HE-G1/2-LO	Manual operated Lock-Out valve, G1/2 ISO port
197135	HE-G3/4-LO	Manual operated Lock-Out valve, G3/4 ISO port
197136	HE-G1-LO	Manual operated Lock-Out valve, G1 ISO port
571429 *	MS6-EM1-1/2-R-SA-241043C	On-Off Valve, flow 8700 l/min, G 1/2
1542176 *	MS9-EM-G-VS-R-SA-244130A	On-Off Valve, flow 18000 l/min, G 1
571521 *	MS12-EM-G-GR-SA-242625A	On-Off Valve, flow 25000 l/min, G 2



* For single applications all yellow/red Lock-out valves could be combined with each size of connecting/end plates.

2.1.3 Filter-Regulator

without Pressure Gauge - order Pressure Gauge separately, see 2.2.1

0.3 - 7 Bar Pressure Regulator Unit, Regulators with high reverse flow function, metal filter bowl and automatic drain

PART NUMBER	TYPE CODE	DESCRIPTION
526489	MS4-LFR-1/8-D6-C-U-V-A8	Filter Regulator, G 1/8, 5 Micron, Auto Drain
526489	MS4-LFR-1/4-D6-C-U-V-A8	Filter Regulator, G 1/4, 5 Micron, Auto Drain
526490	MS6-LFR-1/4-D6-C-U-V-A4	Filter Regulator, G 1/4, 5 Micron, Auto Drain
526490	MS6-LFR-1/2-D6-C-U-V-A4	Filter Regulator, G 1/2, 5 Micron, Auto Drain
562531	MS9-LFR-AGD-D6-C-U-V-DI-A4	Filter Regulator, G 1/2, 5 Micron, Auto Drain
562531	MS9-LFR-AGF-D6-C-U-V-DI-A4	Filter Regulator, G 1, 5 Micron, Auto Drain
562531	MS9-LFR-AGH-D6-C-U-V-DI-A4	Filter Regulator, G 1 1/2, 5 Micron, Auto Drain
535022	MS12-LFR-AGH-D6-C-U-V-A4-LD	Filter Regulator, G 1 1/2, 5 Micron, Auto Drain
535022	MS12-LFR-AGI-D6-C-U-V-A4-LD	Filter Regulator, G 2, 5 Micron, Auto Drain



Replacement Filter Elements

PART NUMBER	TYPE CODE	DESCRIPTION
534501	MS4-LFP-C	Filter Cartridge, 5 Micron, Fits All MS4 Filters
534499	MS6-LFP-C	Filter Cartridge, 5 Micron, Fits All MS6 Filters
570309	MS9-LFP-C	Filter Cartridge, 5 Micron, Fits All MS9 Filters
537143	MS12-LFP-C	Filter Cartridge, 5 Micron, Fits All MS12 Filters

2.1.4 Filter

5 Micron fine filters

Filters with Metal Bowls and Auto Drains

PART NUMBER	TYPE CODE	DESCRIPTION
527695	MS4-LF-1/8-C-U-V	Filter, flow 1000 l/min, G 1/8
527695	MS4-LF-¼-C-U-V	Filter, flow 1300 l/min, G ¼
527668	MS6-LF-¼-C-U-V	Filter, flow 2000 l/min, G ¼
529613	MS6-LF-½-CUV	Filter, flow 3200 l/min, G ½
562532	MS9-LF-AGD-C-U-V	Filter, flow 6000 l/min, G ½
562532	MS9-LF-AGF-C-U-V	Filter, flow 9500 l/min, G 1
562532	MS9-LF-AGH-C-U-V	Filter, flow 9500 l/min, G 1 ½
535023	MS12-LF-AGH-C-U-V	Filter, flow 13500 l/min, G 1 ½
535023	MS12-LF-AGI-C-U-V	Filter, flow 14000 l/min, G 2



Replacement Filter Elements

PART NUMBER	TYPE CODE	DESCRIPTION
534501	MS4-LFP-C	Filter Cartridge, 5 Micron, Fits All MS4 Filters
534499	MS6-LFP-C	Filter Cartridge, 5 Micron, Fits All MS6 Filters
570309	MS9-LFP-C	Filter Cartridge, 5 Micron, Fits All MS9 Filters
537143	MS12-LFP-C	Filter Cartridge, 5 Micron, Fits All MS12 Filters

1 Micron fine filters

Filters with Metal Bowls and Auto Drains, with differential pressure display

PART NUMBER	TYPE CODE	DESCRIPTION
527697	MS4-LFM-1/8-B-U-V-DA	Filter, flow 360 l/min, G 1/8
527697	MS4-LFM-¼-B-U-V-DA	Filter, flow 360 l/min, G ¼
527670	MS6-LFM-¼-B-U-V-HF-DA	Filter, flow 3000 l/min, G ¼
552925	MS6-LFM-½-B-U-V-HF-DA	Filter, flow 3000 l/min, G ½
552978	MS9-LFM-¾-BUV-HF-DA	Filter, flow 3000 l/min, G ¾
553052	MS9-LFM-1-BUV-HF-DA	Filter, flow 10000 l/min, G 1
552940	MS9-LFM-AGH-B-U-V-DA	Filter, flow 10000 l/min, G 1 ½
535042	MS12-LFM-AGH-B-U-V-DA	Filter, flow 23000 l/min, G 1 ½
535042	MS12-LFM-AGI-B-U-V-DA	Filter, flow 23000 l/min, G 2



Replacement filter Elements

PART NUMBER	TYPE CODE	DESCRIPTION
162677	MS4/D-MINI-LFM-B	Filter Cartridge, 1 Micron, Fits All MS4 Filters
552092	MS6-LFM-B-HF	Filter Cartridge, 1 Micron, Fits All MS6 Filters
552945	MS9-LFM-B-HF	Filter Cartridge, 1 Micron, Fits All MS9 Filters
537145	MS12-LFM-B	Filter Cartridge, 1 Micron, Fits All MS12 Filters

0.01 Micron Micro filters

Filters with Metal Bowls and Auto Drains, with differential pressure display

PART NUMBER	TYPE CODE	DESCRIPTION
527697	MS4-LFM-1/8-A-U-V-DA	Filter, flow 360 l/min, G 1/8
537214	MS4-LFM-1/4-AUV-DA	Filter, flow 360 l/min, G 1/4
527670	MS6-LFM-1/4-A-U-V-HF-DA	Filter, flow 2500 l/min, G 1/4
552926	MS6-LFM-1/2-AUV-HF-DA	Filter, flow 2500 l/min, G 1/2
552974	MS9-LFM-3/4-AUV-HF-DA	Filter, flow 7800 l/min, G 3/4
553048	MS9-LFM-1-AUV-HF-DA	Filter, flow 7800 l/min, G 1
552940	MS9-LFM-AGH-A-U-V-DA	Filter, flow 7800 l/min, G 1 1/2
535042	MS12-LFM-AGH-A-U-V-DA	Filter, flow 23000 l/min, G 1 1/2
535042	MS12-LFM-AGI-A-U-V-DA	Filter, flow 23000 l/min, G 2



Replacement filter Elements

PART NUMBER	TYPE CODE	DESCRIPTION
162674	MS4/D-MINI-LFM-A	Filter Cartridge, 0.01 Micron, Fits All MS4 Filters
552093	MS6-LFM-A-HF	Filter Cartridge, 0.01 Micron, Fits All MS6 Filters
552944	MS9-LFM-A-HF	Filter Cartridge, 0.01 Micron, Fits All MS9 Filters
537146	MS12-LFM-A	Filter Cartridge, 0.01 Micron, Fits All MS12 Filters

2.1.5 Regulators and Precision regulators

without Pressure Gauge - order Pressure Gauge separately, see 2.2.1

0.3 - 7 Bar Pressure Regulator Unit, Regulators with high reverse flow function

PART NUMBER	TYPE CODE	DESCRIPTION
543519	MS4-LR-1/8-D6-A8	Pressure Regulator, G 1/8
527690	MS4-LR-1/4-D6-A8	Pressure Regulator, G 1/4
527663	MS6-LR-1/4-D6-A4	Pressure Regulator, G 1/4
527663	MS6-LR-1/2-D6-A4	Pressure Regulator, G 1/2
562530	MS9-LR-AGD-D6-DI-A4	Pressure Regulator, G 1/2
562530	MS9-LR-AGF-D6-DI-A4	Pressure Regulator, G 1
562530	MS9-LR-AGH-D6-DI-A4	Pressure Regulator, G 1 1/2
535021	MS12-LR-AGH-D6-A4-LD	Pressure Regulator, G 1 1/2
535021	MS12-LR-AGI-D6-A4-LD	Pressure Regulator, G 2



Precision pressure regulators

0.05 – 0.7 bar Pressure Range

PART NUMBER	TYPE CODE	DESCRIPTION
538028	MS6-LRP-¼-D2-A4	Precision Pressure Regulator, G ¼
538028	MS6-LRP-½-D2-A4	Precision Pressure Regulator, G ½



0.05 – 2.5 bar Pressure Range

PART NUMBER	TYPE CODE	DESCRIPTION
538028	MS6-LRP-¼-D4-A4	Precision Pressure Regulator, G ¼
538028	MS6-LRP-½-D4-A4	Precision Pressure Regulator, G ½

0.3– 4 bar Pressure Range

PART NUMBER	TYPE CODE	DESCRIPTION
538028	MS6-LRP-¼-D5-A4	Precision Pressure Regulator, G ¼
538028	MS6-LRP-½-D5-A4	Precision Pressure Regulator, G ½

Pilot Operated, 0.1 – 12 Bar Pressure Range

PART NUMBER	TYPE CODE	DESCRIPTION
538028	MS6-LRP-¼-PO-A4	Precision Pressure Regulator, G ¼
538028	MS6-LRP-½-PO-A4	Precision Pressure Regulator, G ½



2.1.6 Electrical On-Off Valves

PART NUMBER	TYPE CODE	DESCRIPTION
542580	MS4-EE-1/8-10V24	On-Off Valve, G 1/8
542578	MS4-EE-¼-10V24	On-Off Valve, G ¼
542584	MS6-EE-¼-10V24	On-Off Valve, G ¼
542582	MS6-EE-½-10V24	On-Off Valve, G ½
562177	MS9-EE-AGD-V24-VS	On-Off Valve, G ½
562177	MS9-EE-AGF-V24-VS	On-Off Valve, G 1
562177	MS9-EE-AGH-V24-VS	On-Off Valve, G 1 ½
535032	MS12-EE-AGH-V24	On-Off Valve, G 1 ½
535032	MS12-EE-AGI-V24	On-Off Valve, G 2
188024	MSSD-EB-M12-MONO	Socket for On-Off-valves, M12x1



2.1.7 Soft Start Valves

PART NUMBER	TYPE CODE	DESCRIPTION
529533	MS4-DL-1/8	Soft-Start Valve, G 1/8
529531	MS4-DL-¼	Soft-Start Valve, G ¼
529819	MS6-DL-¼	Soft-Start Valve, G ¼
529817	MS6-DL-½	Soft-Start Valve, G ½
535033	MS12-DL-AGF	Soft-Start Valve, G 1
535033	MS12-DL-AGH	Soft-Start Valve, G 1 ½
535033	MS12-DL-AGI	Soft-Start Valve, G 2



If soft-start-function is needed with size MS9, please use MS9-SV-C valve!

2.1.8 Safety soft-start/quick exhaust valve to EN ISO 13849-1 without Pressure Gauge - order Pressure Gauge separately, see 2.2.1

PART NUMBER	TYPE CODE	DESCRIPTION
Performance level E, category 4		
548713	MS6-SV-1/2-E-10V24-SO-A4	Safety valve, flow 4300 l/min, G ½, 24VDC, performance level E Kat. 4, with silencer
548713	MS6-SV-AGB-E-10V24-SO-A4	Safety valve, flow 4300 l/min, G ¼, 24VDC, performance level E Kat. 4, with silencer
548713	MS6-SV-AGD-E-10V24-SO-A4	Safety valve, flow 4300 l/min, G ½, 24VDC, performance level E Kat. 4, with silencer
Performance level D, category 3 Need approval from SGMPT!		
548713	MS6-SV-1/2-D-10V24-2M12-SO-A4	Safety valve, flow 5700 l/min, G ½, 24VDC, performance level D Kat. 3, with silencer
548713	MS6-SV-AGB-D-10V24-2M12-SO-A4	Safety valve, flow 5700 l/min, G ¼, 24VDC, performance level D Kat. 3, with silencer
548713	MS6-SV-AGD-D-10V24-2M12-SO-A4	Safety valve, flow 5700 l/min, G ½, 24VDC, performance level D Kat. 3, with silencer
Electrical adapter		
573695	NECA-S1G9-P9-MP5	Multi-pin plug socket, Operating voltage range DC 21,6 ... 26,4 V, protection class IP65



2.1.9 Distribution Module

PART NUMBER	TYPE CODE	DESCRIPTION
529559	MS4-FRM-1/8	Branching Module, Supply Ports G 1/8, Working Ports G ¼
529555	MS4-FRM-¼	Branching Module, Supply Ports G ¼, Working Ports G ¼
529857	MS6-FRM-¼	Branching Module, Supply Ports G ¼, Working Ports G ½
529853	MS6-FRM-½	Branching Module, Supply Ports G ½, Working Ports G ½
562534	MS9-FRM-AGD-VS	Branching Module, Supply Ports G ½, Working Ports G 1
562534	MS9-FRM-AGF-VS	Branching Module, Supply Ports G 1, Working Ports G 1
562534	MS9-FRM-AGH-VS	Branching Module, Supply Ports G 1 ½, Working Ports G 1
535035	MS12-FRM-AGH	Branching Module, Supply Ports G 1 ½, Working Ports G 1 & G 2
535035	MS12-FRM-AGI	Branching Module, Supply Ports G 2, Working Ports G 1 & G 2
541681	MS12-FRM-G	Branching Module, Supply Ports not threaded, Working Ports G 1 & G 2



Small Profile Distribution Modules

PART NUMBER	TYPE CODE	DESCRIPTION
549336	MS4-FRM-FRZ	Distributor Block, G ¼
549337	MS6-FRM-FRZ	Distributor Block, G ½



2.1.10 Air preparation connectors and mounts

Module Connectors with Standard Length Wall Mounts

PART NUMBER	TYPE CODE	DESCRIPTION
532184	MS4-WP	For connecting MS4 components / Mounting Bracket
532195	MS6-WP	For connecting MS6 components / Mounting Bracket
552947	MS9-WP	For connecting MS9 components / Mounting Bracket
537133	MS12-WP	For connecting MS12 components / Mounting Bracket



Module Connectors with Extended Length Wall Mounts

PART NUMBER	TYPE CODE	DESCRIPTION
526063	MS4-WPB	For connecting MS4 components / Mounting Bracket
526074	MS6-WPB	For connecting MS6 components / Mounting Bracket
552949	MS9-WPB	For connecting MS9 components / Mounting Bracket



Module Connectors without Wall Mount

PART NUMBER	TYPE CODE	DESCRIPTION
532798	MS4-MV	For connecting MS4 components / Module Connector
532799	MS6-MV	For connecting MS6 components / Module Connector
552950	MS9-MV	For connecting MS9 components / Module Connector
537134	MS12-MV	For connecting MS12 components / Module Connector



Module Connectors to Increase Module Size without Wall Mount

PART NUMBER	TYPE CODE	DESCRIPTION
543489	MS4-6-AMV	For connecting MS4 components To MS6 Components
552951	MS6-9-ARMV	For connecting MS6 components To MS9 Components
552953	MS9-12-ARMV	For connecting MS9 components To MS12 Components



2.1.11 Reclassifier

PART NUMBER	TYPE CODE	DESCRIPTION
539132	LFU-1/4	Reclassifier, filter silencer, G1/4 ISO ports
539133	LFU-3/8	Reclassifier, filter silencer, G3/8 ISO ports
10494	LFU-1/2	Reclassifier, filter silencer, G1/2 ISO ports
10495	LFU-1	Reclassifier, filter silencer, G1 ISO ports



2.2 Accessories

2.2.1 Gauges

PART NUMBER	TYPE CODE	DESCRIPTION
526778	MA-40-1,0-R1/8-MPA-E-RG	Pressure Gauge, 0-1,0 Mpa, 1/8" Red/Green Indication
526779	MA-40-1,6-R1/8-MPA-E-RG	Pressure Gauge, 0-1,6 Mpa, 1/8" Red/Green Indication
526780	MA-50-0,25-R1/4-MPA-E-RG	Pressure Gauge, 0-0,25 Mpa, 1/4" Red/Green Indication
526781	MA-50-1,0-R1/4-MPA-E-RG	Pressure Gauge, 0-1,0 Mpa, 1/4" Red/Green Indication
526782	MA-50-1,6-R1/4-MPA-E-RG	Pressure Gauge, 0-1,6 Mpa, 1/4" Red/Green Indication
563736	PAGN-26-1M-P10	Pressure Gauge, 0-1,0 Mpa, Cartridge connection (For use with VTSA ISO 15407-2 Sandwich Regulators)



2.2.2 Silencers

PART NUMBER	TYPE CODE	DESCRIPTION
6841	U-1/8-B	Silencer 1/8" BSPT
6842	U-1/4-B	Silencer 1/4" BSPT
6843	U-3/8-B	Silencer 3/8" BSPT
6844	U-1/2-B	Silencer 1/2" BSPT
6845	U-3/4-B	Silencer 3/4" BSPT
151990	U-1-B	Silencer 1" BSPT
Short Version, Only Used In Narrow Space		
1206621	AMTE-M-H-M5 20	Silencer M5, short version
1206622	AMTE-M-H-G18 20	Silencer 1/8", short version
1206623	AMTE-M-H-G14 20	Silencer 1/4", short version
1206624	AMTE-M-H-G38 10	Silencer 3/8", short version
1206625	AMTE-M-H-G12	Silencer 1/2", short version
1205858	AMTE-M-LH-M5 20	Silencer M5, long version
1205860	AMTE-M-LH-G18 20	Silencer 1/8", long version
1205861	AMTE-M-LH-G14 20	Silencer 1/4", long version
1205862	AMTE-M-LH-G38 10	Silencer 3/8", long version
1205863	AMTE-M-LH-G12 10	Silencer 1/2", long version
1205864	AMTE-M-LH-G34 10	Silencer 3/4", long version
1205865	AMTE-M-LH-G1	Silencer 1", long version



2.2.3 Pressure Booster

Application shall be approved by SGMPT fluid power control engineer.

PART NUMBER	TYPE CODE	DESCRIPTION
184518	DPA-63-10	Pressure Booster Dia. 63mm, 10 bar
184519	DPA-100-10	Pressure Booster Dia. 100mm, 10 bar
193392	DPA-63-16	Pressure Booster Dia. 63mm, 16 bar
188399	DPA-100-16	Pressure Booster Dia 100mm, 16 bar



2.2.4 Tubing – Polyurethane

TUBING SERIES	DESCRIPTION	COLORS / NOTES
PUN	Polyurethane - 4, 6, 8, 10, 12mm OD	Blue, Red (for trapped air)



Polyurethane tubing shall be blue and shall be used only from directional control valve to the pneumatic actuator or pneumatic motor. Red polyurethane tubing shall be used for any applications where any trapped air hazards exists

NOTE: Maximum length of polyurethane tubing is 3-meters or 3-meters plus movable member.

2.2.5 Fittings

SERIES	DESCRIPTION	MATERIAL TYPE
NPQx	Corrosion Resistant Push-Pull Fitting	Nickel Plated Brass



2.2.6 Right Angle Flow Controls (Meter-out)

PART NUMBER	TYPE CODE	DESCRIPTION
151165	GRLA-1/8-B	Right-angle, G1/8 ISO Female Thread , 1/8" BSPT Male Thread
151172	GRLA-1/4-B	Right-angle, G1/4 ISO Female Thread , 1/4" BSPT Male Thread
151178	GRLA-3/8-B	Right-angle, G3/8 ISO Female Thread , 3/8" BSPT Male Thread
151179	GRLA-1/2-B	Right-angle, G1/2 ISO Female Thread , 1/2" BSPT Male Thread



2.2.7 Inline Flow Controls (Meter-out)

PART NUMBER	TYPE CODE	DESCRIPTION
151215	GR-1/8-B	One-way flow control, G1/8 Female Thread
2101	GR-1/4	One-way flow control, G1/4 Female Thread
6308	GR-3/8-B	One-way flow control, G3/8 Female Thread
3720	GR-1/2	One-way flow control, G1/2 Female Thread
2103	GR-3/4	One-way flow control, G3/4 Female Thread



2.2.8 PO Check Valves

PART NUMBER	TYPE CODE	DESCRIPTION
530033	HGL-1/2-B	Non-return valve, controlled
530031	HGL-1/4-B	Non-return valve, controlled
530030	HGL-1/8-B	Non-return valve, controlled
530032	HGL-3/8-B	Non-return valve, controlled
530029	HGL-M5-B	Non-return valve, controlled
184588	HAB-1/2	Manual override for HGL
184586	HAB-1/4	Manual override for HGL
184585	HAB-1/8	Manual override for HGL
184587	HAB-3/8	Manual override for HGL



2.2.9 Ball Valves

PART NUMBER	TYPE CODE	DESCRIPTION
9541	QH-1/4	Ball Valve 1/4
9542	QH-3/8	Ball Valve 3/8
9543	QH-1/2	Ball Valve 1/2
9544	QH-3/4	Ball Valve 3/4
9545	QH-1	Ball Valve 1
6837	QH-1 1/2	Ball Valve 1 1/2



2.2.10 Quick Exhaust Valves

PART NUMBER	TYPE CODE	DESCRIPTION
9688	SE-1/2-B	Rapid exhaust valve
9686	SE-1/4-B	Rapid exhaust valve
9685	SE-1/8-B	Rapid exhaust valve
2280	SE-3/4	Rapid exhaust valve
9687	SE-3/8-B	Rapid exhaust valve
6822	SEU-1/2	Rapid exhaust valve with build-in silencer
6753	SEU-1/4	Rapid exhaust valve with build-in silencer
4616	SEU-1/8	Rapid exhaust valve with build-in silencer
6755	SEU-3/8	Rapid exhaust valve with build-in silencer



2.2.11 Part Seated Module (Seat Checker)

PART NUMBER	TYPE CODE	DESCRIPTION
549902	SOPA-...	Air gap sensor, Distance Measurement Range 2,5 – 5 µm repetition accuracy, up to 4 Modules per Unit, Digital LCD Display, Micro M12 connection
552130	SOPA-CM1H-R1-HQ6-2P-M12	Air gap sensor, Control Module and 1 sensor module, H-rail mounting
552138	SOPA-CM1H-R1-WQ6-2P-M12	Air gap sensor, Control Module and 1 sensor module, wall mounting
552131	SOPA-CM2H-R1-HQ6-2P-M12	Air gap sensor, Control Module and 2 sensor module, H-rail mounting
552139	SOPA-CM2H-R1-WQ6-2P-M12	Air gap sensor, Control Module and 2 sensor module, wall mounting
552132	SOPA-CM3H-R1-HQ6-2P-M12	Air gap sensor, Control Module and 3 sensor module, H-rail mounting
552140	SOPA-CM3H-R1-WQ6-2P-M12	Air gap sensor, Control Module and 3 sensor module, wall mounting
552133	SOPA-CM4H-R1-HQ6-2P-M12	Air gap sensor, Control Module and 4 sensor module, H-rail mounting
552141	SOPA-CM4H-R1-WQ6-2P-M12	Air gap sensor, Control Module and 4 sensor module, wall mounting
552146	SOPA-M1-R1-HQ6-2P-M12	Air gap sensor, Stand alone sensor module



2.2.12 Vacuum

SERIES	DESCRIPTION	GENERAL INFORMATION
OVEM-...	Vacuum Generator	Preferred Product
VN-...	Vacuum Generator	



2.2.13 Ball Valve Drive Unit

SERIES	DESCRIPTION	GENERAL INFORMATION
VZPR-.....	Ball Valve Actuator	Preferred Product



2.2.14 Timer Modules

PART NUMBER	TYPE CODE	DESCRIPTION
177616	PZVT-120-SEC	Timer, delay time 8 to 120 s
158495	PZVT-3-SEC	Timer, delay time 0,2 to 3 s
150239	PZVT-300-SEC	Timer, delay time 20 to 300 s
13988	PZVT-999-SEC-B	Timer, delay time 1 to 999 s
13989	PZVT-99999-MIN-B	Timer, delay time 1 to 99999 min
150238	PZVT-30-SEC	Timer, delay time 2 to 30 s



2.2.15 Control block with safety function conforms to EN ISO 13849-1

Need approval from SGMPT!

PART NUMBER	TYPE CODE	DESCRIPTION
574011	VOFA-L26-T32C-M-G14-1C1-APP	Control block, flow 1050 l/min Safety function: - Security against manipulation - protection against unexpected start-up - Exhausting Use only for safe venting function!
DE_CS.1433969 A	ISO2-BATT. 3/2	Control block, flow 2300 l/min Safety function: - Security against manipulation - protection against unexpected start-up - Exhausting Use only for safe venting function!



2.3 Actuators

2.3.1 ISO 15552 Cylinders

SERIES	DESCRIPTION	GENERAL INFORMATION
DSBC	ISO 15552 Pneumatic Cylinder, Aluminium Extrusion	32 - 125 mm Bore Sizes 10 - 2800 mm Stroke Lengths
DSBG	ISO 15552 Pneumatic Cylinder, Tie Rod Design	160 - 320 mm Bore Sizes 10 - 2000 mm Stroke Lengths
15092576	DNC-32-...-PPV-A-SK10-SA	for inside of washing machines **
15092577	DNC-40-...-PPV-A-SK10-SA	for inside of washing machines **
15092578	DNC-50-...-PPV-A-SK10-SA	for inside of washing machines **
15092579	DNC-63-...-PPV-A-SK10-SA	for inside of washing machines **
15092580	DNC-80-...-PPV-A-SK10-SA	for inside of washing machines **
15092581	DNC-100-...-PPV-A-SK10-SA	for inside of washing machines **
15092582	DNC-125-...-PPV-A-SK10-SA	for inside of washing machines **



2.3.2 ISO 6432 Cylinders

SERIES	DESCRIPTION	GENERAL INFORMATION
ESNU	ISO 6432 Single-Acting Pneumatic Cylinder	8-63 mm Bore Sizes 1-50 mm Stroke Lengths
DSNU	ISO 6432 Double-Acting Pneumatic Cylinder	8-63 mm Bore Sizes 1-500 mm Stroke Lengths



2.3.3 Locking Cylinder

SERIES	DESCRIPTION	GENERAL INFORMATION
DSBC-...-C-..	ISO 15552 Pneumatic Cylinder	32-125 mm Bore Sizes, 10-2800 mm Stroke Lengths, (Static Locking Only)
DNCKE-...-S	ISO 15552 Pneumatic Cylinder	40, 63, 100 mm Bore Sizes, 10-2000 mm Stroke Lengths, (Dynamic Locking Possible) <i>Note: Using the '-S' Version is absolutely required</i>
15177174	DNC-32-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177175	DNC-40-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177176	DNC-50-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177177	DNC-63-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177178	DNC-80-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177179	DNC-100-X-PPV-A-S6-KP-SA	for inside of washing machines **
15177180	DNC-125-X-PPV-A-S6-KP-SA	for inside of washing machines **



**** Shall have approval from SGMPT prior to use!**

2.3.4 Rodless Cylinders

SERIES	DESCRIPTION	GENERAL INFORMATION
DGC-K	Rodless Cylinder - Mechanically Coupled Without guide	18-80 mm Bore Sizes 10-3000 mm Stroke Lengths
DGC	Rodless Cylinder -With Integrated Guide	8-40 mm Bore Sizes 1-2000 mm Stroke Lengths
DGO: Cylinder Only SLM: Integrated Slide	Rodless Cylinder - Magnetically Coupled	DGO: 12-40 mm Bore, 10-4000mm Stroke SLM: 12-40 mm Bore, 10-1500mm Stroke



2.3.5 Compact/Short Stroke Cylinders

SERIES	DESCRIPTION	GENERAL INFORMATION
AEN ADN	ISO 21287 Compact Cylinder AEN = Single Acting ADN = Double Acting	12-125 mm Bore Sizes 1-500 mm Stroke Lengths



2.3.6 Rotary Actuators

SERIES	DESCRIPTION	GENERAL INFORMATION
DSM	Rotary Vane Actuator	6-40 mm Bore Sizes
DRQD	Rotary Rack & Pinion Actuator	16-32 mm Bore Sizes
DRRD	Semi-rotary drive	16-32 mm Bore Sizes
DHTG	Rotary indexing table	Size 65 - 220



2.3.7 Guided Cylinder

SERIES	DESCRIPTION	GENERAL INFORMATION
DFM	Flat Body Guided Cylinder	12-100 mm Bore Sizes 10-200 mm Stroke Lengths



2.3.8 Stopper Cylinder

Pass on technical data to responsible SGMPT fluid power control engineer

SERIES	DESCRIPTION	GENERAL INFORMATION
DFST	Heavy Duty Stopper Cylinder	50, 63, 80mm Bore Sizes Load capacity up to 800kg Adjustable & Replaceable Shock Absorber
DFSP	Stopper cylinder	16-50 mm Bore Sizes
DHDB	Stopper cylinder, horizontally	50 mm Bore Size, 50 mm Stroke (Preferred Product)
DHDNB	Locking stopper cylinder	50, 63, 80mm Bore Sizes, adjustable shock absorber (Preferred Product)



2.3.9 Guiding Units

PART NUMBER	TYPE CODE	DESCRIPTION
35197	FEN-8/10-...-KF	For ISO Cyl. 6432 Dia. 8/10 max stroke 100m
33481	FEN-12/16-...-KF	For ISO Cyl. 6432 Dia. 12/16 max stroke 100m
33482	FEN-20-...-KF	For ISO Cyl. 6432 Dia. 20 max stroke 100m
33483	FEN-25-...-KF	For ISO Cyl. 6432 Dia. 25 max stroke 100m
	FENG-...-KF	For ISO Cyl. 15552 Dia. 25- 100



2.3.10 Cylinder Sensors

SERIES	DESCRIPTION	GENERAL INFORMATION
SMT-8M	M12x1 plug	Preferred Sensor, PNP output, M12 connector
SMTO-1-PS-...-C	DRQ 40 and larger, DKE	Mounting kit SMB-1, SMB-2-B,SMB-3-B
SIEN-(M5/M8)-PS-S-L	DSR, DSM, DSL	WSR-..., WSM-...
SDAT	DSBC, DNC, DSBG	Position transmitter

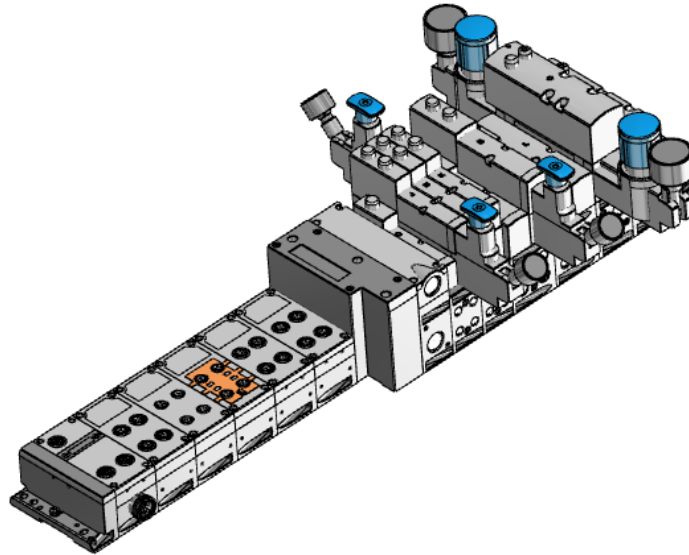


2.4 Directional Valves

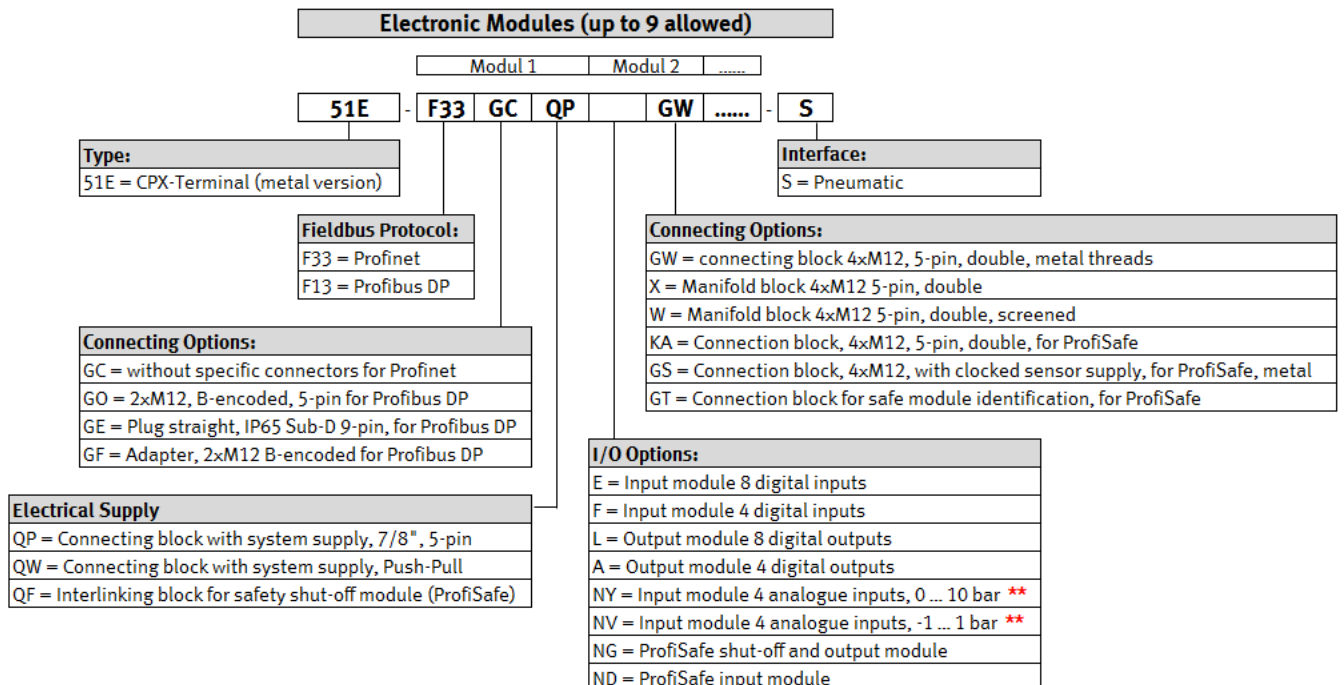
2.4.1 ISO 15407-2

ISO 15407 series Directional control valves shall be given consideration as first choice
Fieldbus Manifold: 539217 VTSA-FB

NOTE: Verify proper configuration by using Festo Online Configuration tool.

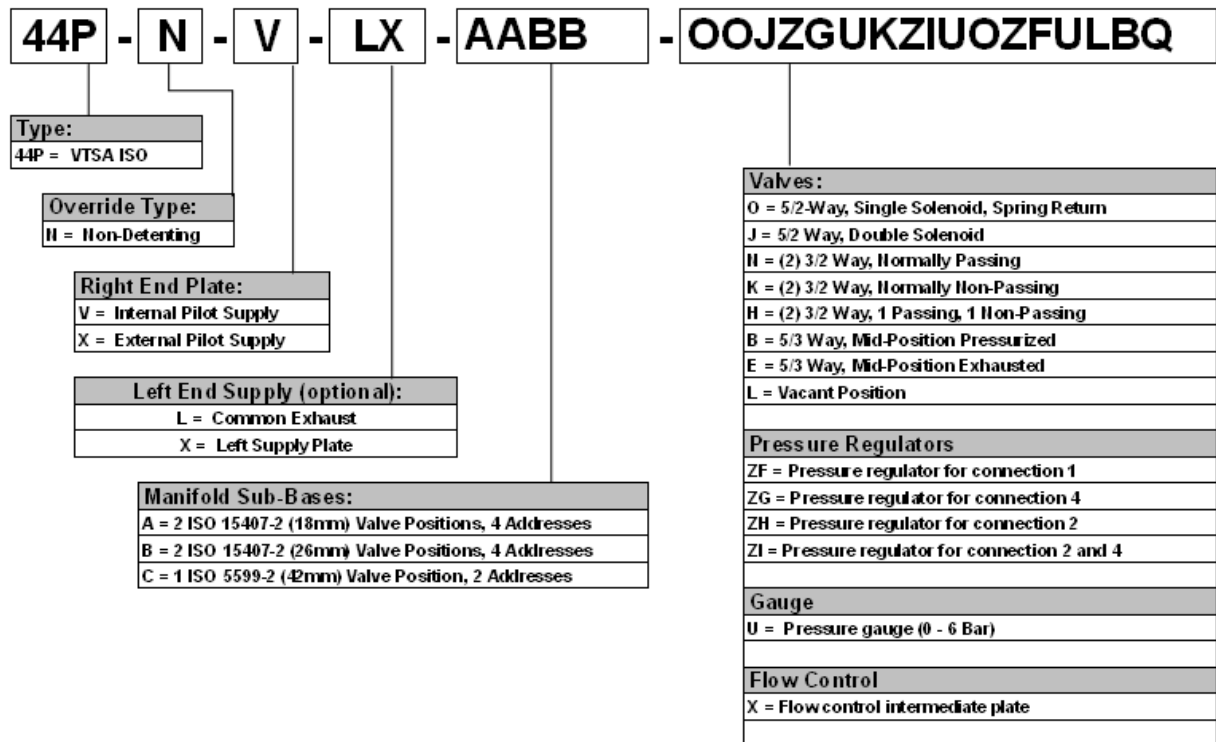


Electrical Order Code:



**** Only for dual safety channel circuit for vertical axis!**

Pneumatic Order Code for Fieldbus protocol:



2.4.2 VTSA Directional Control Valves -15407-2 (Sizes 01)

PART NUMBER	TYPE CODE	DESCRIPTION
539159	VSVA-B-M52-MZD-A1-1T1L	ISO Size 01 (26mm) 5/2 Valve Single Solenoid Mechanical Spring Return
539156	VSVA-B-B52-ZD-A1-1T1L	ISO Size 01 (26mm) 5/2 Valve Double Solenoid Pilot
539161	VSVA-B-P53E-ZD-A1-1T1L	ISO Size 01 (26mm) 5/3 Valve Double Solenoid Exhausted Center
539162	VSVA-B-P53C-ZD-A1-1T1L	ISO Size 01 (26mm) <i>Need approval.</i> 5/3 Valve Double Solenoid Closed Center
539160	VSVA-B-P53U-ZD-A1-1T1L	ISO Size 01 (26mm) 5/3 Valve Double Solenoid Pressurized Center
539152	VSVA-B-T32U-AZD-A1-1T1L	ISO Size 01 (26mm) 2x3/2 Valve Normally Open
539150	VSVA-B-T32C-AZD-A1-1T1L	ISO Size 01 (26mm) 2x3/2 Valve Normally Closed
539154	VSVA-B-T32H-AZD-A1-1T1L	ISO Size 01 (26mm) 2x3/2 Valve 1x Normally Open, 1 x Normally Non-Closed



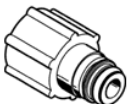
2.4.3 VTSA ISO 15407-2 Accessories

PART NUMBER	TYPE CODE	DESCRIPTION
539721	VABF-S4-1-A2G2-G14	ISO Size 01, 90° Connection Plate, G1/4 ISO Thread
540175	VABF-S4-1-F1B1-C	ISO Size 01 Sandwich Flow Control
540154	VABF-S4-1-R1C2-C-10	ISO Size 01 Sandwich Regulator, P (1) Port, 0-10 Bar
540158	VABF-S4-1-R3C2-C-10	ISO Size 01 Sandwich Regulator, A (4) Port, 0-10 Bar
540162	VABF-S4-1-R2C2-C-10	ISO Size 01 Sandwich Regulator, B (2) Port, 0-10 Bar
540166	VABF-S4-1-R4C2-C-10	ISO Size 01 Dual Sandwich Regulator, A/B (2/4) Port, 0-10 Bar
540152	VABF-S4-1-R1C2-C-6	ISO Size 01 Sandwich Regulator, P (1) Port, 0-6 Bar
540156	VABF-S4-1-R3C2-C-6	ISO Size 01 Sandwich Regulator, A (4) Port, 0-6 Bar
540160	VABF-S4-1-R2C2-C-6	ISO Size 01 Sandwich Regulator, B (2) Port, 0-6 Bar
540164	VABF-S4-1-R4C2-C-6	ISO Size 01 Dual Sandwich Regulator, A/B (2/4) Port, 0-6 Bar
546253	VABF-S4-1-R7C2-C-10	ISO Size 01 Sandwich Regulator, A (4) Port, 0-10 Bar
546249	VABF-S4-1-R7C2-C-6	ISO Size 01 Sandwich Regulator, A (4) Port, 0-6 Bar
539212	VABB-S4-1-WT	ISO Size 01 Blanking Plate



NOTE: In case only 1 or not so many pressure regulator plates in combination with some valve places without a Pressure regulator plate, a cartridge adapter 565811 can be used to adapt diameter 40mm pressure gauges.

It can be used if the valve places can be mixed so that there is only on each second place a pressure regulator.



Cartridge adapter 565811 QSP10-G1/8

2.4.4 VSVA Directional Control Valves -15407-1 (Sizes 01)

PART NUMBER	TYPE CODE	DESCRIPTION
534556	VSVA-B-M52-MH-A1-1R5L	5/2, single solenoid
534546	VSVA-B-M52-MZH-A1-1R5L	5/2, single solenoid, external
534557	VSVA-B-B52-H-A1-1R5L	5/2, double solenoid
534547	VSVA-B-B52-ZH-A1-1R5L	5/2, double solenoid, external
534561	VSVA-B-P53U-H-A1-1R5L	5/3-way, pressurised
534551	VSVA-B-P53U-ZH-A1-1R5L	5/3-way, pressurised, external
534559	VSVA-B-P53C-H-A1-1R5L	5/3-way, closed
534549	VSVA-B-P53C-ZH-A1-1R5L	5/3-way, closed, external
534560	VSVA-B-P53E-H-A1-1R5L	5/3-way, exhausted
534550	VSVA-B-P53E-ZH-A1-1R5L	5/3-way, exhausted, external
534552	VSVA-B-T32C-AH-A1-1R5L	2 x 3/2-way, closed
534542	VSVA-B-T32C-AZH-A1-1R5L	2 x 3/2-way, closed, external
534553	VSVA-B-T32U-AH-A1-1R5L	2 x 3/2-way, open
534543	VSVA-B-T32U-AZH-A1-1R5L	2 x 3/2-way, open, external
534554	VSVA-B-T32H-AH-A1-1R5L	2 x 3/2-way, 1 open, 1 closed
534544	VSVA-B-T32H-AZH-A1-1R5L	2 x 3/2-way, 1 open, 1 closed, external



2.4.5 ISO 15407-1 Individual Sub bases

PART NUMBER	TYPE CODE	DESCRIPTION
161109	NAS-1/4-01-VDMA	Individual sub-base
161102	NAW-1/4-01-VDMA	Manifold sub-base
161104	NEV-01-VDMA	End plate kit
161107	NDV-01-VDMA	Blanking plate
161105	NSC-1/2-01-VDMA	Isolating disc Port 1,2,3
161106	NSC-1/8-01-VDMA	Isolating disc Port 12 and 14



3.0 Service & support

Technical support

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4.0 Ordering / Project / Sales information

ORDERING INSTRUCTIONS

All orders must be placed directly through the nearest Authorized Festo Sales Representative.

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