















SMC Products

for Low Temperature Environments













	Model	Web	Minimum operating temperature °F (°C)				Page	
			-4 (-20)	-22 (-30)	-40 (-40)			
Valves	Pilot operated	SY9□20-5YOE- ⁰² / ₀₃ F-X79-Q	—	●			5	
		VFS1120-□DB-01□-X200 (-Q)	—		●		6	
		VFS2120-□DB- ⁰¹ / ₀₂ □-X200 (-Q)	—		●		7	
		VFS2220-□DB- ⁰¹ / ₀₂ □-X200 (-Q)	—		●		8	
		VFS2 ³ / ₄ 20-□DB- ⁰¹ / ₀₂ □-X200 (-Q)	—		●		9	
		VFS3120□-□DB- ⁰² / ₀₃ □-X200 (-Q)	—		●		10	
		VFS3220□-□DB- ⁰² / ₀₃ □-X200 (-Q)	—		●		11	
		VFN3120N-□D ^B / _C -02□-A-X200 (-Q)	—		●		12	
		VFN3220N-□D ^B / _C -02□-A-X200 (-Q)	—		●		13	
		Direct operated	EVS7-6-FG-S-□CV(B)-X200 (-Q)	—		●		14
		EVS7-6-FG-S-JCV(B)-X200 (-Q)	—		●		15	
		EVS7-6-FG-D-JCV(B)-X200 (-Q)	—		●		16	
		VS3115-□□D□-□-X59	—		●		17	
		VS3145-045TP-X59	—		●		18	
		VS4114-005D-X59	—		●		19	
		VS4210-□U-X59	—		●		20	
		VS3135-04□WTBP-□-X76	—		●		21	
		Air operated	VSA3135-□□-□-X200	—		●		22
		VSA3145-□□-□-X200	—		●		23	
		VSA4130-□(-PA)-□-X200	—		●		24	
		VSA4140-□-□-X200	—		●		25	
		VSA4240-□-□-X200	—		●		26	
		VSA4 ³ / ₄ 40-□-□-X200	—		●		27	
		EVSA7-6-FG-S-2□-X200	—		●		28	
		EVSA7-10-FG- ^S / _D -2□-X200	—		●		29	
		EVSA7-10-F ^H / _I G-D-2□-X200	—		●		30	
		Mechanical Valves	VM130-01-00-L	—		●		31
		VM131-01-00-L	—		●		32	
		VM230-02-00-X44	—		●		33	
		EVM830-F01-14-X9	—		●		34	
		Hand Valves	VSH4210C-03-X59	—		●		35
		VSH4 ³ / ₄ 1□ ^A / _B -□□-X59	—		●		36	

* Some products are not standard stock items.
Please consult your nearest sales branch regarding their delivery times and prices.

	Model	Web	Minimum operating temperature °F (°C)				Page
			-4 (-20)	-22 (-30)	-40 (-40)		
Air Cylinders 	CJP2 (Standard model no.) -XB7					●	37
	CJ2 (Standard model no.) -XB7					●	
	CM2 (Standard model no.) -XB7					●	
	CG1 (Standard model no.) -XB7					●	
	CU (Standard model no.) -XB7					●	
	CQS (Standard model no.) -XB7					●	
	CQ2 (Standard model no.) -XB7					●	
	C75 (Standard model no.) -XB7					●	
	C76 (Standard model no.) -XB7					●	
	C85 (Standard model no.) -XB7					●	
	C96 (Standard model no.) -XB7					●	
	C95SB160-□-DCM3551M	—				●	38
	C95SB200-□-DCL1172L	—		●			39
	C95SB200-□-DCN2072N	—				●	40
	MXP10-10CN-X1354	—				●	41
	MXP12-25CN-X1354	—				●	42
Air Grippers 	MHZ2-10 ^D _{DN} -X4275	—	●				43
	MHZ2-16D-X5748	—				●	44
	MHF2-16D-X4324	—				●	45
	MHL2-10D2-X4638	—				●	46
	MHKL2-16D□-X4771	—				●	47
	MHS4-16D-X3918	—				●	48
Rotary Actuator 	CRA1BS80-90Z-DIR00337					●	49













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Valves
Air Cylinders
Air Grippers
Rotary Actuator
F.R.L. AL AR AF AW
Pressure Control Equipment
Flow Control Equipment
Fittings and Tubing
Port Valves for Fluid Control
Pneumatic Instrumentation Equipment

	Model	Web	Minimum operating temperature °F (°C)			Page
			-4 (-20)	-22 (-30)	-40 (-40)	
 F.R.L.	Filter Regulator	AW30 to 40-X2622			●	50
		AW20-F02-2-X2257	—		●	51
		AW30-F03-2-X2220	—		●	52
		AW40-F04-2-X2515	—		●	53
		AW30 to 60-2-X430			●	54
		AW30 to 40-□□ (B, H) -2 (J, N, R) -X2023	—		●	55
	Filter	AF30 to 60-2-X430			●	56
		AF20-F01 to F02 (B) -2 (R) -X2213	—		●	57
		AF30 to 60-N□□ (B) -2 (J, R) -X2023	—		●	58
	Regulator	AR625-N06 to 10BG1-L	—		●	59
		AR825- (F, N) 12 to 14 (G1) -L (-R) AR835- (F, N) 12 to 14 (G1) -L (-R)	—		●	60
		AR935-20G1- L (-R)	—		●	61
		AR25 to 60-X430			●	62
		AR25 to 40-F□□ (B, H) (-N, R) -X2023 AR50 to 60-F□□ (B) (-N, R) -X2023	—		●	63
		ARJ210-M5 (-1) -X250	—		●	64
Lubricator		AL404- (N) 02 to 04 (B) -2 (3) -L (-R) -X351	—		●	65
 Pressure Control Equipment	IW21□-02-L			●	66	
	IW21□-02-L-X203	—		●	67	
	IR2□□0 to 3□□0-L			●	68	
 Flow Control Equipment	AS420/500 to 900-L			●	69	
	AS3000 to 5000-L			●	70	
	AS3000-F02-X422	—		●	71	
	AQ2000 to 5000-L			●	72	
	AK4000-N02 to N04-X288	—		●	73	
	AK6000-N06 to N10-X288	—		●	74	
	AK-DPJ00300	—		●	75	
	AK-DPI00324	—		●	76	
	AK4000-02-DPH00875	—		●	77	
	AK4000-04-DPH00876	—		●	78	

* Some products are not standard stock items.

Please consult your nearest sales branch regarding their delivery times and prices.

	Model	Web	Minimum operating temperature °F (°C)			Page
			-4 (-20)	-22 (-30)	-40 (-40)	
 Flow Control Equipment	AK6000-06-DPH00262	—		●		79
	AK6000-10-DPH00287	—		●		80
	XTO-674-02L to 04L XTO-674-N02L to N04L	—		●		81
	XTO-674-□06L	—		●		82
	XTO-2571-02 to 03-L	—		●		83
	XTO-1719-06 to 10-L	—		●		84
 Fittings and Tubing	Series H/DL/L/LL		●			85
	Series KF□B			●		86
	Series KFG2			●		87
	Series KP		●		(Can be used at -85°F (-65°C))	88
	Series T/TIA				●	89
Port Valves for Fluid Control (Air Operated Valves)	VX230LZ2EAX410	—		●		91
	VXF23A□□□□X39	—		●		92
	VXF25A□□□□X39	—		●		93
	VXFA25B□□X41	—		●		94
	VXF26A□□□□X39	—		●		95
 Pneumatic Instrumentation Equipment	IP5□00-□□□L□-□			●		96
	IP8□00-0□0-□-X14-L			●		97
	IP5000-030□□-DIN00015	—		●		98
	□-IP5100-031□□-DIL00505	—		●		99
	52-IP8□01-0□4-□-X414	—		●		100
	IL201/211/220-□02□-L			●		102
	IL100-□02/03□-L			●		103
	IL100-□□□-L-DIO00047	—		●		104
	XT240-1-X18	—		●		105
	IL201-□02□-L-DIO00048	—		●		106
	IL211-□02□-L-DIQ00154	—		●		107
	IL220-F02□-L-DIP00520	—		●		108

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Please consult your nearest sales branch regarding their delivery times and prices.

Valves
Air Cylinders
Air Grippers
Rotary Actuator
F.R.L. AL AR AF AW
Pressure Control Equipment
Flow Control Equipment
Fittings and Tubing
Port Valves for Fluid Control
Pneumatic Instrumentation Equipment

FIGURE 1. SPECIFICATIONS

	SY9120	SY9320
VALVE TYPE	5-PORT 2-POSITION SINGLE SOLENOID PILOT OPERATED VALVE	5-PORT 3-POSITION DOUBLE SOLENOID PILOT OPERATED VALVE
TYPE OF ACTUATION FLUID	SINGLE SOLENOID AIR	DOUBLE SOLENOID CLOSED CENTER
OPERATING PRESSURE RANGE	0.15 TO 1.0MPa	0.2 TO 1.0MPa
AMBIENT & OPERATING FLUID TEMPERATURE	-20 TO 50°C (NON FREEZING)	-20 TO 50°C (NON FREEZING)
VOLTAGE TOLERANCE	-10 TO +10%	-10 TO +10%
ELECTRICAL ENTRY	DIN CONNECTOR(Y)	DIN CONNECTOR(Y)

FLOW SPECIFICATIONS

SY9120		SY9320	
PASSAGE (P→A/B)	1-4/2 (P→A/B)	PASSAGE (P→A/B)	1-4/2 (P→A/B)
C [dm ³ /(s·bar)]	7.0	C [dm ³ /(s·bar)]	6.7
b	0.33	b	0.37
CV	1.7	CV	1.7

RATED VOLTAGE: 24VDC(0.9W)

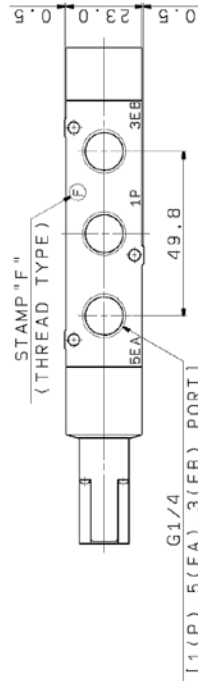
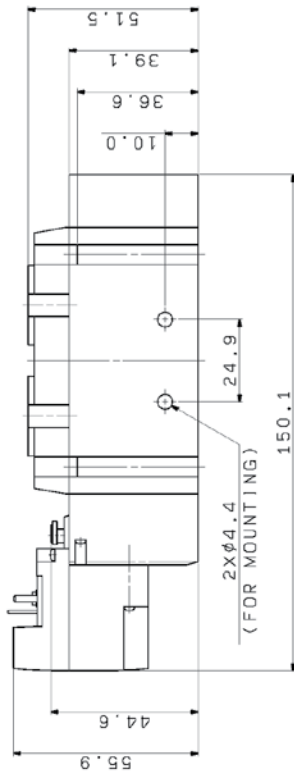
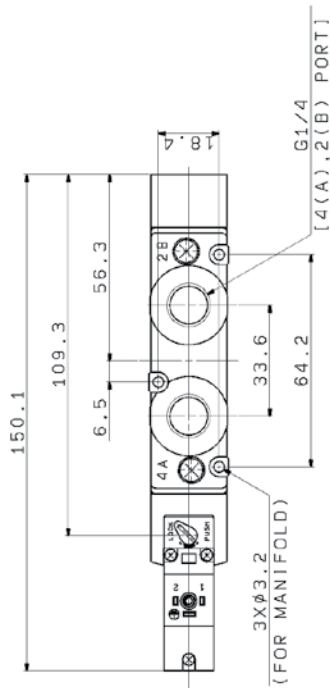
SPECIAL REQUIREMENT

1. AMBIENT & OPERATING FLUID TEMPERATURE: -20°C TO 50°C (NON FREEZING)
2. LIFE CYCLE OF 5 MILLIONS.
3. OPERATING PRESSURE RANGE: PLEASE REFER TO FIGURE 1.
4. CE MARKING DECLARED

NOTES

1. THIS DRAWING SHOWS THE CASE OF "SY9120-5YOE-02F-X79-Q".
2. DIMENSIONS ARE IN MILLIMETERS.

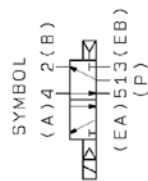
Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



MODEL NO.
SY9□20-5YOE-02F-X79-Q

A, B PORT SIZE
02: G1/4
03: G3/8

TYPE OF ACTUATION
1 : SINGLE SOLENOID
3 : CLOSED CENTER



CE
We hereby declare that this product conforms with following directives
EMC Directive 89/336/EEC
The relevant technical files are available.

HOW TO ORDER

VFS1120-□DB-01□-X200(-Q)

- COIL RATED VOLTAGE
- 1 100 VAC, 50/60HZ
 - 2 200 VAC, 50/60HZ
 - 3 110 TO 120 VAC, 50/60HZ
 - 4 220 VAC, 50/60HZ
 - 5 24 VDC
 - 6 12 VDC
 - 7 240 VAC, 50/60HZ
 - A 12 VAC, 50/60HZ
 - B 24 VAC, 50/60HZ
 - F 32 VAC, 50/60HZ
 - H 42 VAC, 50/60HZ
 - V 6 VDC
 - P 100 VDC
 - Z 110 VDC

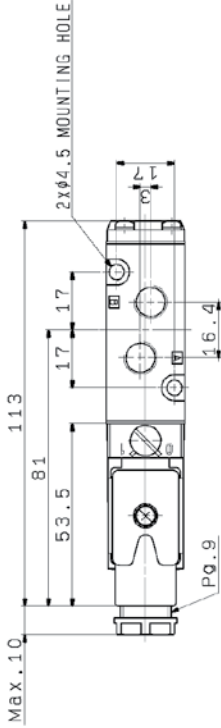
EUROPEAN STANDARD COMPLIANCE PRODUCTS

- THREAD TYPE
- NIL
 - RC
 - N NPT
 - T NPTF
 - G

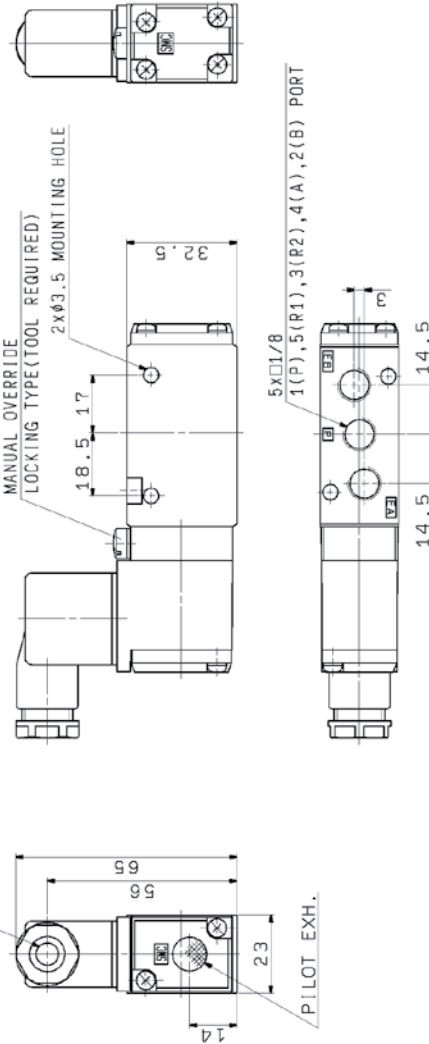
- PORT SIZE
- 01 1/8

- PILOT VALVE MANUAL OVERRIDE
- B LOCKING TYPE (TOOL REQUIRED)

DIN TERMINAL



APPLICABLE HEAVY-DUTY CORD
O.D. φ6 TO φ8



SPECIFICATIONS	
FLUID	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40 TO +50°C (NOTE1)
LUBRICATION	NON-LUBE (NOTE2)
PILOT VALVE MANUAL OVERRIDE LOCKING TYPE (TOOL REQUIRED)	
SHOCK/VIBRATION RESISTANCE	150/50 m/s ² (NOTE3)
ENCLOSURE	DUST PROOF (NOTE4)
COIL RATED VOLTAGE	REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130°C) (NOTES)
APPARENT POWER	INRUSH 5.6VA/50HZ, 5.0VA/60HZ (POWER CONSUMPTION) AC HOLDING 3.4VA(2.1W)/50HZ, 2.3VA(1.5W)/60HZ
ELECTRICAL ENTRY	DC 1.8W
TERMINAL	DIN TERMINAL

NOTE1) USE DRY AIR AT LOW TEMPERATURES. IF LUBRICATED, NO MALFUNCTION OCCURRED WHEN IT IS TESTED WITH A DROP TESTER IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE IN BOTH ENERGIZED AND DE-ENERGIZED STATES EVERY ONCE FOR EACH CONDITION. NO MALFUNCTION OCCURRED IN A ONE-SWEEP TEST BETWEEN 45 AND 2000 Hz. TEST WAS PERFORMED AT BOTH ENERGIZED AND DE-ENERGIZED STATES IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE.

NOTE2) BASED ON JIS G 6889.
NOTE3) BASED ON JIS G 4883.

SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE SPECIFICATION (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR G ASSISTANT)
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



-40°F (-40°C)

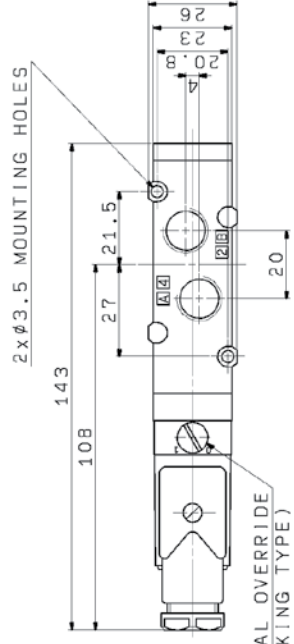
5 Port Solenoid Valve

VFS 2120-DB-02-X200(-Q)

HOW TO ORDER

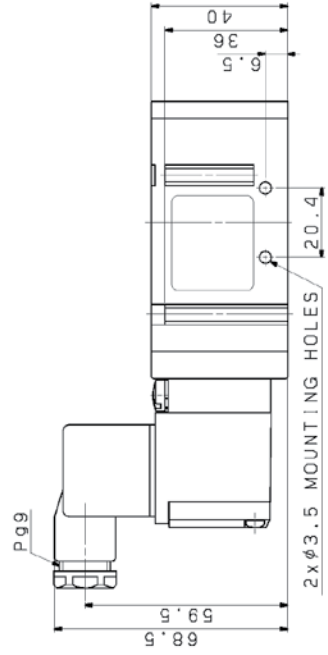
VFS 2120-DB-02-X200(-Q)

- COIL RATED VOLTAGE
- 1 100 VAC, 50/60HZ
 - 2 200 VAC, 50/60HZ
 - 3 110 TO 120 VAC, 50/60HZ
 - 4 220 VAC, 50/60HZ
 - 5 24 VDC
 - 6 12 VDC
 - 7 240 VAC, 50/60HZ
 - A 12 VAC, 50/60HZ
 - B 24 VAC, 50/60HZ
 - F 32 VAC, 50/60HZ
 - H 42 VAC, 50/60HZ
 - V 6 VDC
 - Y 48 VDC
 - P 100 VDC
 - Z 110 VDC
- EUROPEAN STANDARD COMPLIANCE PRODUCTS
- THREAD TYPE
- NIL RC
 - N NPT
 - T NPTF
 - F G
- PORT SIZE
- 01 1/8
 - 02 1/4
- PILLOT VALVE MANUAL OVERRIDE (LOCKING TYPE REQUIRED)
- DIN TERMINAL



MANUAL OVERRIDE (LOCKING TYPE)

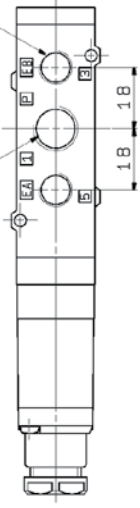
APPLICABLE CABTIRE CORD CABLE φ6 TO φ8 DIA



PILOT EXH.

2xφ1/8, 1/4 1(P), 4(A), 2(B) PORT

2xφ1/8 5(R1), 3(R2) PORT



SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE SPECIFICATION (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR G ASSISTANT)
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SPECIFICATIONS	AIR OR INERT GAS
FLUID	
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40 TO +50°C (NOTE1)
LUBRICATION	NON-LUBE (NOTE2)
PILLOT VALVE MANUAL OVERRIDE	LOCKING TYPE (TOOL REQUIRED)
SHOCK/VIBRATION RESISTANCE	150/50 m/s ² (NOTES)
ENCLOSURE	DUST PROOF (NOTE4)
COIL RATED VOLTAGE	REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130°C) (NOTES)
APPARENT POWER	AC INRUSH 5.6VA/50HZ, 5.0VA/60HZ
(POWER CONSUMPTION)	AC HOLDING 3.4VA(2.1W)/50HZ, 2.3VA(1.5W)/60HZ
ELECTRICAL ENTRY	DC 1.8W
NOTE1) USE DRY AIR AT LOW TEMPERATURES.	
NOTE2) USE TURBINE OIL CLASS 1 (ISO VG32). IF LUBRICATED, NO MALFUNCTION OCCURRED WHEN IT IS TESTED WITH A DROP TESTER IN THE AXIAL DIRECTION AND DE-ENERGIZED STATES EVERY ONCE FOR EACH COILIZATION.	
NOTE3) SHOCK RESISTANCE..... NO MALFUNCTION OCCURRED IN A ONE-SWEEP TEST BETWEEN 45 AND 2000 Hz. TEST WAS PERFORMED AT BOTH ENERGIZED AND DE-ENERGIZED STATES IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE.	

NOTE4) BASED ON JIS C 8863.



HOW TO ORDER

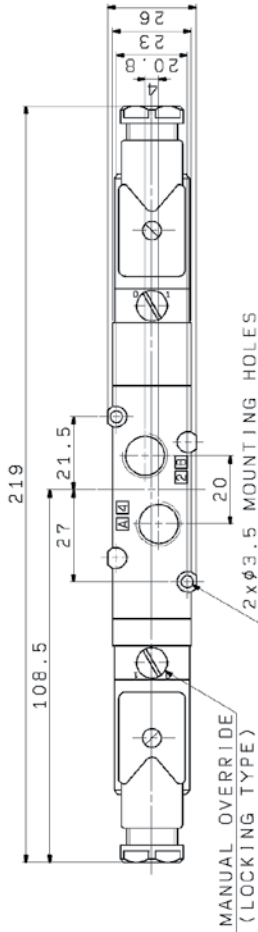
VFS2220-□DB-□-X200(-Q)

COIL RATED VOLTAGE	
1	100 VAC, 50/60HZ
2	200 VAC, 50/60HZ
3	110 TO 120 VAC, 50/60HZ
4	220 VAC, 50/60HZ
5	24 VDC
6	12 VDC
7	240 VAC, 50/60HZ
A	12 VAC, 50/60HZ
B	24 VAC, 50/60HZ
F	32 VAC, 50/60HZ
H	42 VAC, 50/60HZ
V	6 VDC
Y	48 VDC
P	110 VDC
Z	110 VDC

EUROPEAN STANDARD COMPLIANCE PRODUCTS	
THREAD TYPE	
N	NIL
R	R
C	C
N	NPT
T	NPTF
F	G

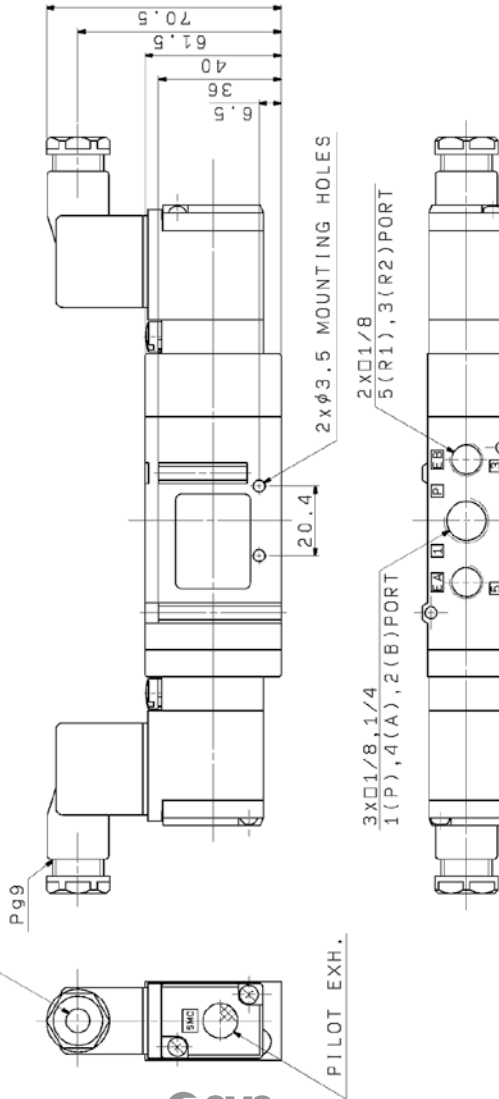
PORT SIZE	
01	1/8
02	1/4

PILOT VALVE MANUAL OVERRIDE
B LOCKING TYPE(TOOL REQUIRED)
DIN TERMINAL



MANUAL OVERRIDE (LOCKING TYPE)

APPLICABLE CABTIRE CORD CABLE #6 TO #8 DIA



PILOT EXH.

SPECIFICATIONS

	AIR OR INERT GAS
FLUID	1.0MPa
MAX. OPERATING PRESSURE	0.2MPa
MIN. OPERATING PRESSURE	1.5MPa
PROOF PRESSURE	
AMBIENT AND FLUID TEMPERATURE	-40 TO +50 °C (NOTE1)
LUBRICATION	NON-LUBE (NOTE2)
PILOT VALVE MANUAL OVERRIDE	LOCKING TYPE (TOOL REQUIRED)
SHOCK/VIBRATION RESISTANCE	150/50 m/s ² (NOTE3)
ENCLOSURE	DUST PROOF (NOTE4)
COIL RATED VOLTAGE	REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130°C) (NOTES)
APPARENT POWER	AC INRUSH 5.6VA/50HZ, 5.0VA/60HZ
(POWER CONSUMPTION)	AC HOLDING 3.4VA(2.1W)/50HZ, 2.3VA(1.5W)/60HZ
ELECTRICAL ENTRY	DC
PILOT VALVE MANUAL OVERRIDE	DIN TERMINAL
NOTE1 USE DRY AIR AT LOW TEMPERATURES.	
NOTE2 USE TURBINE OIL CLASS 1 (ISO VG32), IF LUBRICATED.	
NOTE3 SHOCK RESISTANCE..... NO MALFUNCTION OCCURRED WHEN IT IS TESTED WITH A DROP TESTER IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE IN BOTH ENERGIZED AND DE-ENERGIZED STATES EVERY ONCE FOR EACH CONDITION.	
NOTE4 VIBRATION RESISTANCE..... NO MALFUNCTION OCCURRED AT 45 AND 2000 RPM TESTS MADE AT 45 AND 90 DEGREES AND DE-ENERGIZED STATES IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE.	

NOTES BASED ON J18 & J889.

SPECIAL SPECIFICATION

1) LOW TEMPERATURE SPECIFICATION (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR G ASSISTANT)
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SYMBOL

-40°F (-40°C)

5 Port Solenoid Valve

VFS2⁴₅20-□DB-⁰¹₀₂□-X200(-Q)

HOW TO ORDER

VFS2 20-□DB-□-X200(-Q)

- SYMBOL
- 1 POSITION CLOSED CENTER
 - 2 POSITION EXHAUST CENTER
 - 3 POSITION EXHAUST CENTER
 - 4 POSITION PRESSURE CENTER
 - 5 POSITION PRESSURE CENTER

COIL RATED VOLTAGE

- 1 100 VAC, 50/60HZ
- 2 200 VAC, 50/60HZ
- 3 110 TO 120 VAC, 50/60HZ
- 4 220 VAC, 50/60HZ
- 5 24 VDC
- 6 12 VDC
- 7 240 VAC, 50/60HZ
- A 12 VAC, 50/60HZ
- B 24 VAC, 50/60HZ
- F 32 VAC, 50/60HZ
- H 42 VAC, 50/60HZ
- V 6 VDC
- Y 48 VDC
- P 100 VDC
- Z 110 VDC

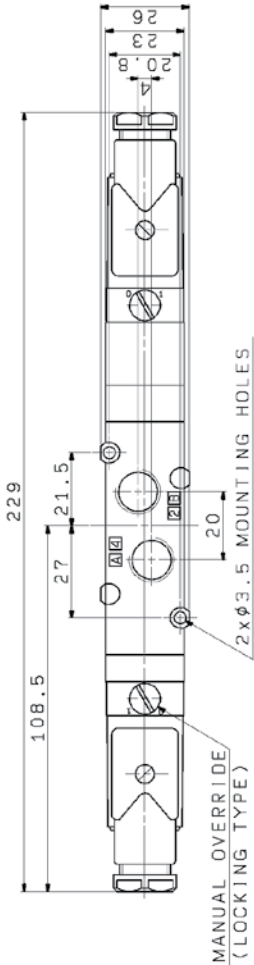
THREAD TYPE

- NIL RC
- N NPT
- T NPTF
- F G

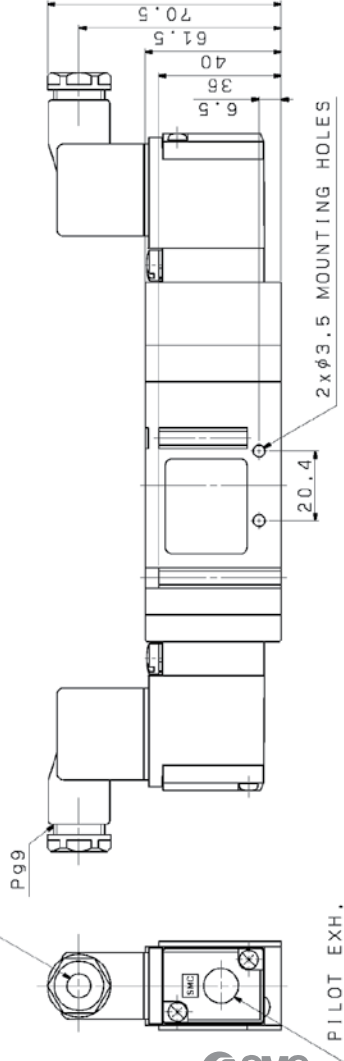
PORT SIZE

- 01 1/8
- 02 1/4

- PILOT VALVE MANUAL OVERRIDE
- LOCKING TYPE (TOOL REQUIRED)
- DIN TERMINAL

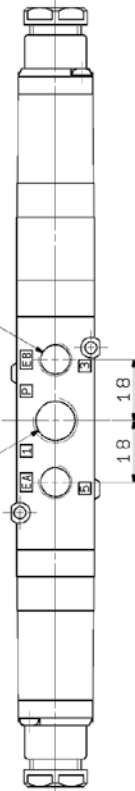


APPLICABLE CABTIRE CORD CABLE φ6 TO φ8 DIA



3xφ1/8, 1/4
1(P), 4(A), 2(B)PORT

2xφ1/8
5(R1), 3(R2)PORT



SPECIAL SPECIFICATION
 1) LOW TEMPERATURE SPECIFICATION
 (AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR G ASSISTANT)
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



VF52320



VF52420



VF52520

SPECIFICATIONS

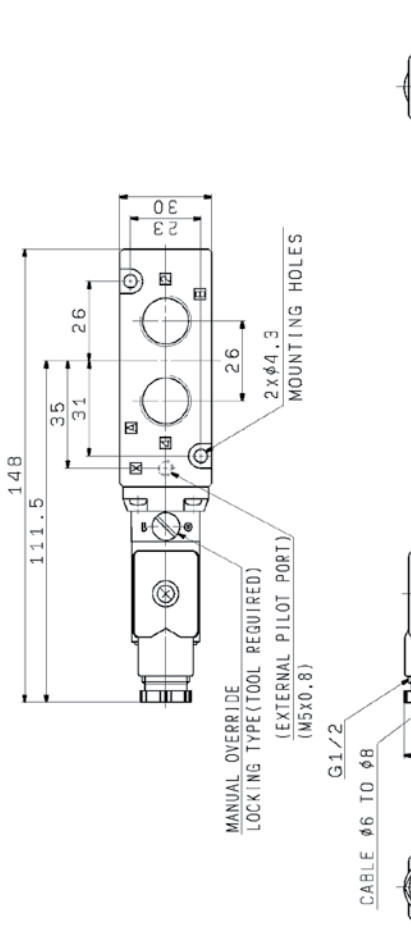
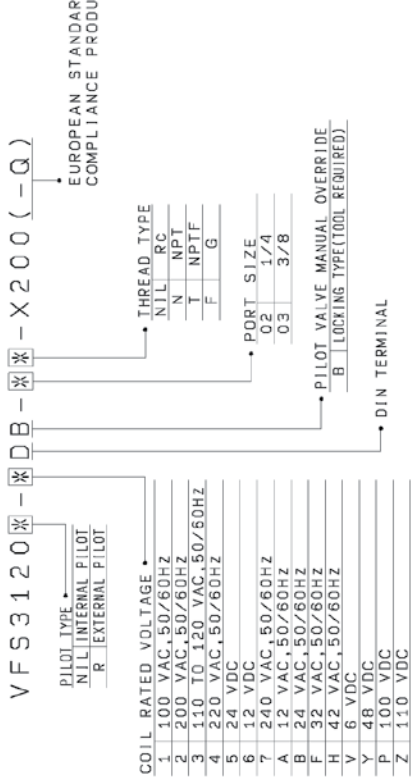
	AIR OR INERT GAS
FLUID	
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40 TO +50 °C (NOTE1)
LUBRICATION	NON-LUBE (NOTE2)
PILOT VALVE MANUAL OVERRIDE	LOCKING TYPE (TOOL REQUIRED)
SHOCK/VIBRATION RESISTANCE	150/50 m/s ² (NOTE3)
ENCLOSURE	DUST PROOF (NOTE4)
COIL RATED VOLTAGE	REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130℃) (NOTE5)
APPARENT POWER	AC INRUSH 5.6VA/50HZ, 5.0VA/60HZ
(POWER CONSUMPTION)	AC HOLDING 3.4VA(2.1W)/50HZ, 2.3VA(1.5W)/60HZ
ELECTRICAL ENTRY	DC 1.8W
DIN TERMINAL	

NOTE1) USE DRY AIR AT LOW TEMPERATURES.
 NOTE2) USE TURBINE OIL, CLASS 1 (ISO VG32). IF LUBRICATED, IT IS TESTED WITH A DROP TESTER IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES.
 NOTE3) SHOCK RESISTANCE: 150 m/s² (X, Y AND Z) AND 50 m/s² (RANDOM).
 NOTE4) DE-ENERGIZED STATES EVERY ONCE FOR EACH OPERATION.
 NOTE5) VIBRATION RESISTANCE: 10 m/s² (X, Y AND Z) AND 5 m/s² (RANDOM).
 AND DE-ENERGIZED STATES IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE.

NOTES BASED ON JIS C 4863.

5 Port Solenoid Valve **VFS3120-□-□DB-⁰²₀₃□-X200 (-Q)** -40°F (-40°C)

HOW TO ORDER



SPECIFICATIONS

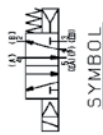
FLUID	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40 TO +50 °C (NOTE1)
LUBRICATION	NON-LUBE (NOTE2)
PILOT VALVE MANUAL OVERRIDE LOCKING TYPE (TOOL REQUIRED)	
SHOCK/VIBRATION RESISTANCE	150/50 (M/S ² NOTE3)
ENCLOSURE	DUST PROOF (NOTE4)
COIL RATED VOLTAGE	REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130°C) NO APPARENT POWER
APPARENT POWER	AC INRUSH 5.6VA/50HZ, 5.0VA/60HZ (POWER CONSUMPTION) AC HOLDING 3.4VA(2.1W)/50HZ, 2.3VA(1.5W)/60HZ
ELECTRICAL ENTRY	DC
DIAGNOSTIC	DIN TERMINAL
NOTE1 USE DRY AIR AT LOW TEMPERATURES. IF LUBRICATED, NO MALFUNCTION OCCURRED WHEN IT IS TESTED WITH A DR0 TESTER IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLE TO THE MAIN VALVE AND ARMATURE IN BOTH ENERGIZED AND DE-ENERGIZED STATES EVERY ONCE FOR EACH CONDITION 45 AND 2000 HZ. TEST WAS PERFORMED AT BOTH ENERGIZED AND DE-ENERGIZED STATES IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE	
NOTE2 VIBRATION RESISTANCE... (BASED ON JIS C 9820.)	
NOTE3 VIBRATION RESISTANCE... (BASED ON JIS C 4600.)	

SPECIAL SPECIFICATION

- LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

- EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR Q ASSISTANT)
- UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



-40°F (-40°C)

5 Port Solenoid Valve

VFS 3220 - DB-03 - X200 (-Q)

HOW TO ORDER

VFS3220 - DB - - X200 (-Q)

EUROPEAN STANDARD COMPLIANCE PRODUCTS

PILOT TYPE
NIL INTERNAL PILOT
R EXTERNAL PILOT

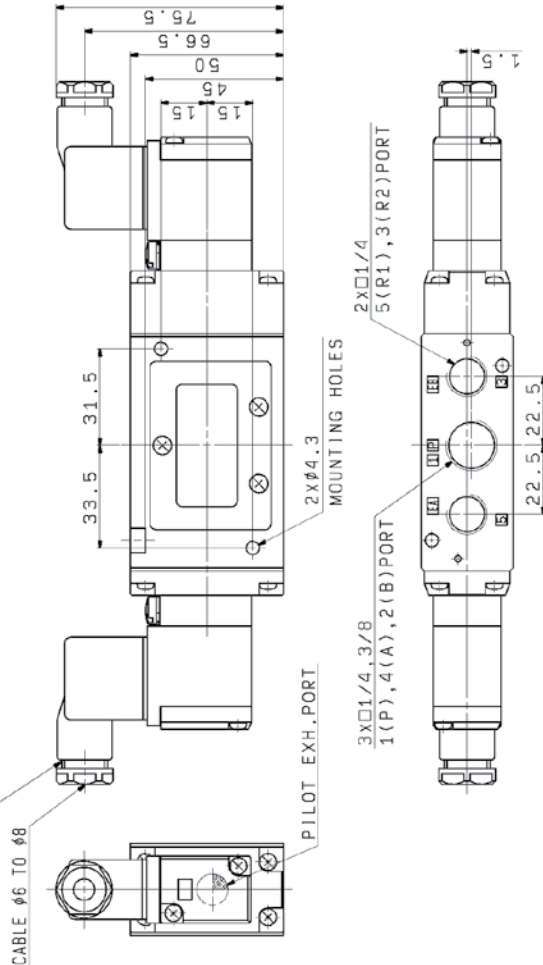
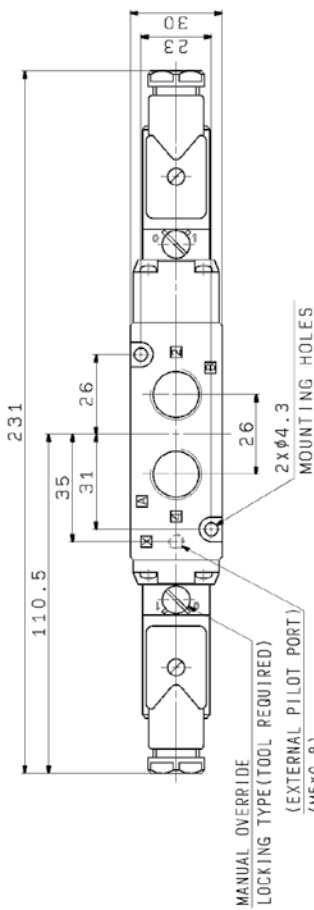
THREAD TYPE
NIL RC
N NPT
T NPTF
F G

PORT SIZE
02 1/4
03 3/8

PILOT VALVE MANUAL OVERRIDE
B LOCKING TYPE (TOOL REQUIRED)

DIN TERMINAL

COIL RATED VOLTAGE	
1	100 VAC, 50/60HZ
2	200 VAC, 50/60HZ
3	110 TO 120 VAC, 50/60HZ
4	220 VAC, 50/60HZ
5	24 VDC
6	12 VDC
7	240 VAC, 50/60HZ
A	12 VAC, 50/60HZ
B	24 VAC, 50/60HZ
F	32 VAC, 50/60HZ
H	42 VAC, 50/60HZ
V	6 VDC
Y	48 VDC
P	100 VDC
Z	110 VDC



SPECIFICATIONS

	AIR OR INERT GAS
FLUID	1.0MPa
MAX. OPERATING PRESSURE	0.2MPa
MIN. OPERATING PRESSURE	1.5MPa
PROOF PRESSURE	-40 TO +50°C (NOTE1)
AMBIENT AND FLUID TEMPERATURE	NON-LUBE (NOTE2)
LUBRICATION	LOCKING TYPE (TOOL REQUIRED)
PILOT VALVE MANUAL OVERRIDE	150/50 m/s ² (NOTE3)
SHOCK/VIBRATION RESISTANCE	DUST PROOF (NOTE4)
ENCLOSURE	COIL RATED VOLTAGE REFERRING HOW TO ORDER
ALLOWABLE VOLTAGE FLUCTUATION	-15% TO +10% OF RATED VOLTAGE
COIL INSULATION TYPE	CLASS B OR EQUIVALENT (130°C) (NOTES)
APPARENT POWER	AC INRUSH 5.6VA/50HZ, 4.5.0VA/60HZ
POWER CONSUMPTION	AC HOLDING 3.4VA (2.1W)/50HZ, 2.3VA (1.5W)/60HZ
ELECTRICAL ENTRY	1.1-BW
TEMPERATURE RANGE	DIN TERMINAL
NOTES: USE TURBINE COIL CLASS (150 VFS2). IF LUBRICATED, NO MALFUNCTION OCCURRED WHEN IT IS TESTED WITH A DROP TESTER IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE IN BOTH ENERGIZED AND DE-ENERGIZED STATES EVERY ONCE FOR EACH CONDITION. ANGLES TESTS WAS PERFORMED IN A ONE-SWEEP TEST BETWEEN 0 AND 90 DEGREES TESTS IN THE AXIAL DIRECTION AND AT THE RIGHT ANGLES TO THE MAIN VALVE AND ARMATURE.	

VIBRATION RESISTANCE...
NOTES BASED ON JIS C 8859.

SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR G ASSISTANT)
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



5 Port Solenoid Valve **VFN3120N-□D_C^B-02□-A-X200 (-Q) -40°F (-40°C)**

HOW TO ORDER

VFN3120N-□D_C^B-02□-A-X200 (-Q)

EUROPEAN STANDARD COMPLIANCE PRODUCTS

THREAD TYPE

NIL RC
F G
N INPT

MANUAL OVERRIDE
B LOCKING TYPE(TOOL REQUIRED)
C LOCKING TYPE(LEVER)

ELECTRICAL ENTRY
D DIN TERMINAL

RATED VOLTAGE	1	2	3	4	5	6	7	8	A									
100VAC 50/60HZ	B	24VAC 50/60HZ	C	115VAC 50/60HZ	F	32VAC 50/60HZ	H	142VAC 50/60HZ	J	230VAC 50/60HZ	P	100VDC 50/60HZ	V	6VDC 50/60HZ	Y	48VDC 50/60HZ	Z	110VDC 50/60HZ

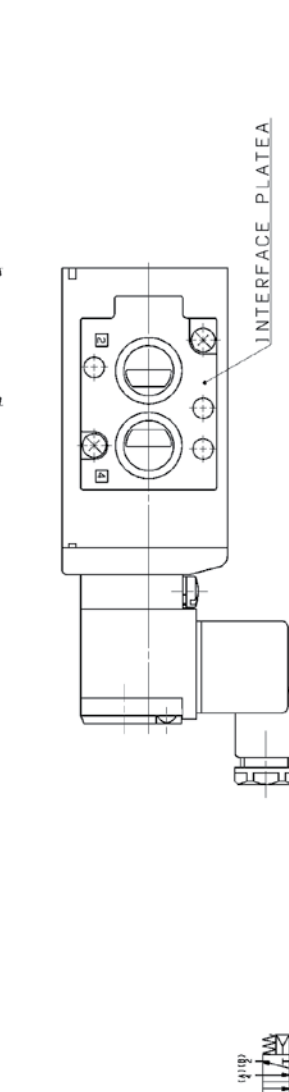
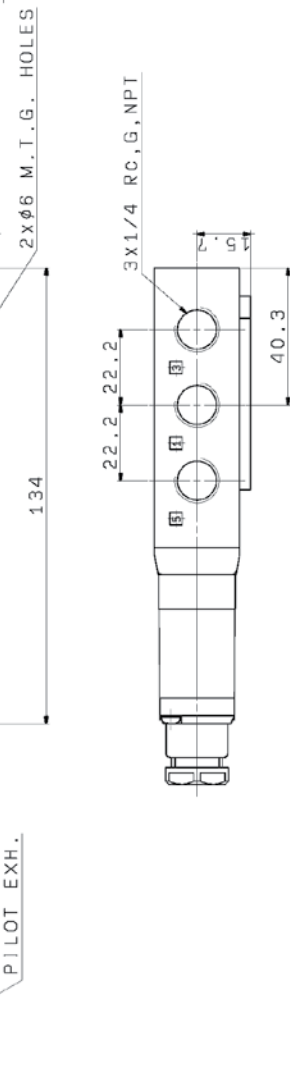
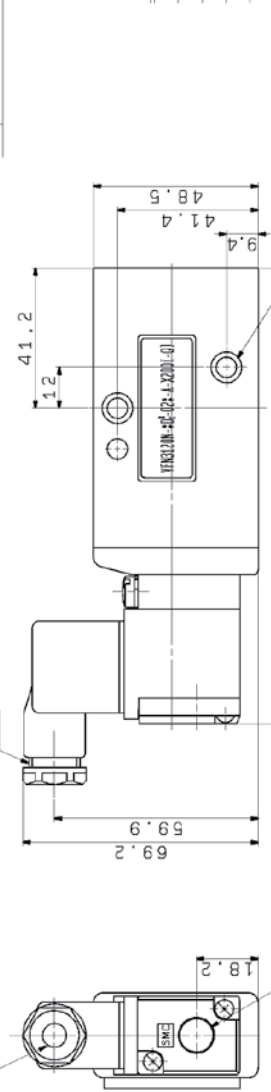
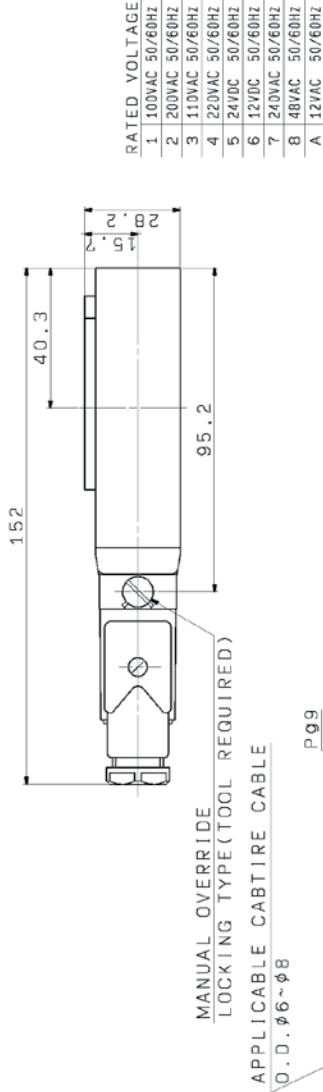
SPECIAL SPECIFICATION

1) LOW TEMPERATURE
(AMBIENT AND FLUID TEMPERATURE: -40~+50℃)

NOTE

1) EUROPEAN STANDARD COMPLIANCE PRODUCTS.
(-FOR Q ASSISTANT)

2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



SYMBOL

-40°F (-40°C)

5 Port Solenoid Valve

VFN3220N-□DC^B-02□-A-X200 (-Q)

HOW TO ORDER

VFN3220N-□DC^B-02□-A-X200(-Q)

RATED VOLTAGE

1	110VAC	50/60HZ	B	24VAC	50/50HZ
2	200VAC	50/60HZ	C	115VAC	50/50HZ
3	110VAC	50/60HZ	F	32VAC	50/50HZ
4	220VAC	50/60HZ	H	42VAC	50/50HZ
5	24VDC	50/60HZ	J	230VAC	50/50HZ
6	12VDC	50/60HZ	P	110VDC	50/50HZ
7	24VDC	50/60HZ	V	5VDC	50/50HZ
8	40VAC	50/60HZ	Y	40VDC	50/50HZ
A	12VAC	50/60HZ	Z	110VDC	50/50HZ

EUROPEAN STANDARD COMPLIANCE PRODUCTS

• **THREAD TYPE**

- NIL RC
- F G
- N NPT

• **MANUAL OVERRIDE**

- B LOCKING TYPE(TOOL REQUIRED)
- C LOCKING TYPE(LEVER)

• **ELECTRICAL ENTRY**

- D DIN TERMINAL

SPECIFICATION

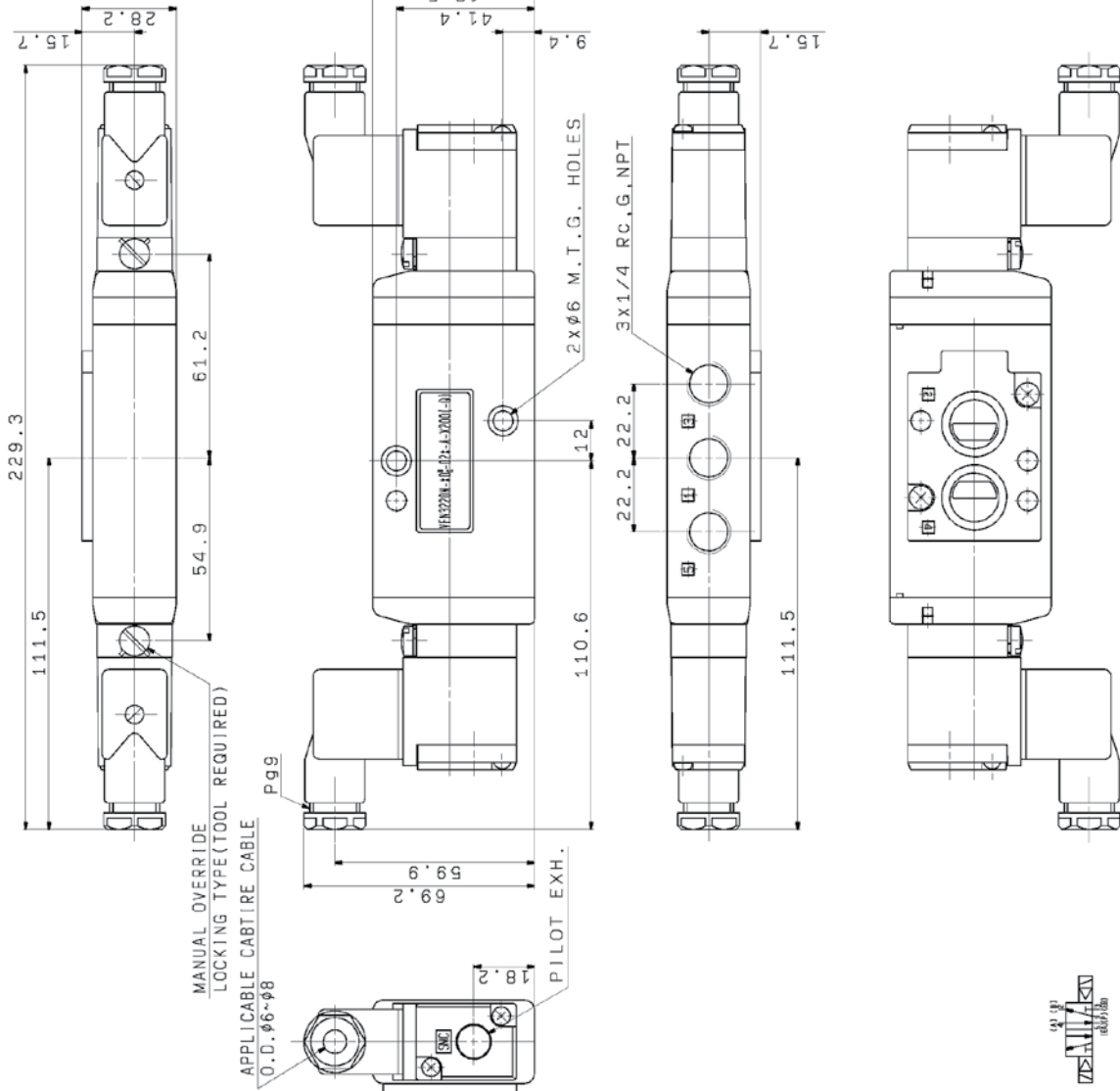
MEDIA	AIR OR INERT GAS
WORKING PRESSURE RANGE	0.2~1.0MPa
AMBEINT & FLUID TEMP.	-40~+50 °C
RATED VOLTAGE	REFER TO "RATED VOLTAGE" ON HOW TO ORDER.
PORT SIZE	1/4

SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40~+50°C)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR Q ASSISTANT)
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



SYMBOL

SPECIFICATIONS

MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50℃
MANUAL OVERRIDE	NON-LOCKING FLUSH TYPE
LUBRICATION	NOT REQUIRED
	REQUIRED: ISO VG32
APPLICABLE SUB PLATE	VS7-1 (ISO SIZE 1)
RATED VOLTAGE	100VAC(50/60Hz) 200VAC(50/60Hz) 24VDC 12VDC
INRUSH CURRENT	A 0.084/0.046 0.027/0.023
HOLDING CURRENT	A 0.036/0.027 0.018/0.014
ALLOWABLE VOLTAGE RANGE	-15 to +10% OF RATED VOLTAGE
INSULATION	CLASS B OR EQUIVALENT(130℃)

HOW TO ORDER

EVS7-6-FG-S-□CV(B)-X200(-Q)

COIL VOLTAGE

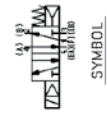
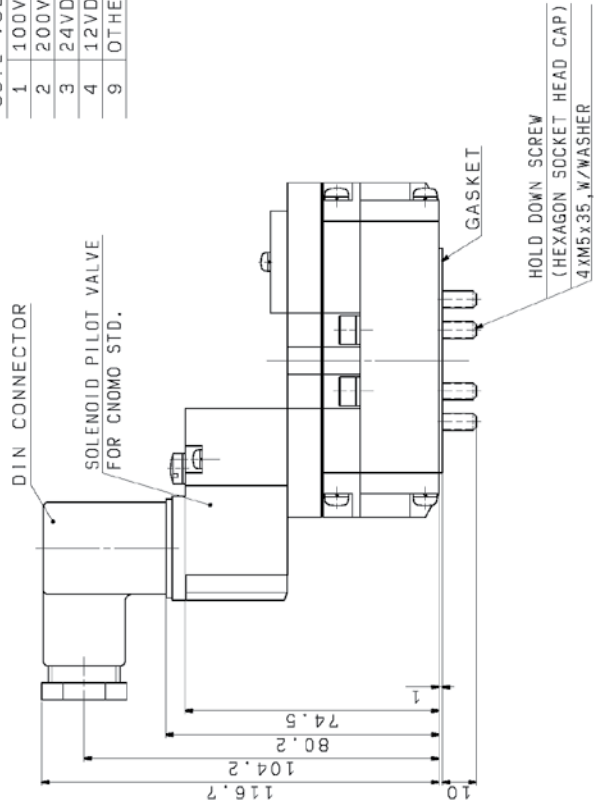
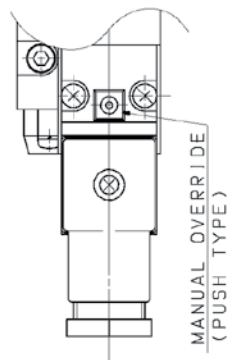
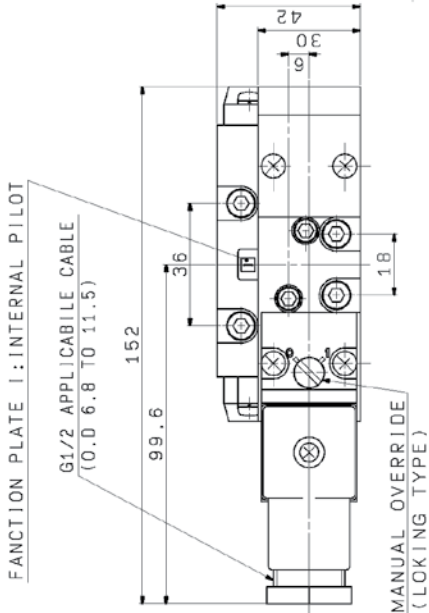
1	100VAC(50/60HZ)
2	200VAC(50/60HZ)
3	24VDC
4	12VDC
9	OTHERS

•MANUAL
 NIL PUSH TYPE(NON LOCKING)
 B LOCKING TYPE

EUROPEAN STANDARD COMPLIANCE PRODUCTS

SPECIAL SPECIFICATION

- LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)
- NOTE**
- EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR Q ASSISTANT)
 - UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

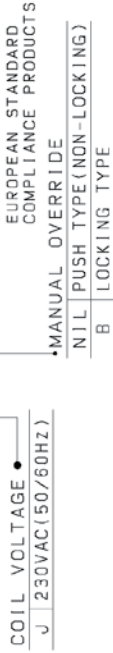


-40°F (-40°C) Solenoid Valve **EVS7-6-FG-S-JCV (B)-X200 (-Q)**

SPECIFICATIONS	
MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50℃
MANUAL OVERRIDE	NON-LOCKING FLUSH TYPE NOT REQUIRED
LUBRICATION	REQUIRED: ISO VG32
APPLICABLE SUB PLATE	V57-1 (ISO SIZE 1)
RATED VOLTAGE	230VAC
APPARENT POWER (CONSUMPTION)	50HZ 5.6VA
	60HZ 5.0VA
HOLDING POWER (CONSUMPTION)	50HZ 3.4VA(2.1W)
	60HZ 2.4VA(1.5W)
ALLOWABLE VOLTAGE RANGE	-15 to +10% OF RATED VOLTAGE
INSULATION	CLASS B OR EQUIVALENT(130℃)

HOW TO ORDER

EVS7-6-FG-S-JCV(B)-X200(-Q)

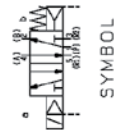
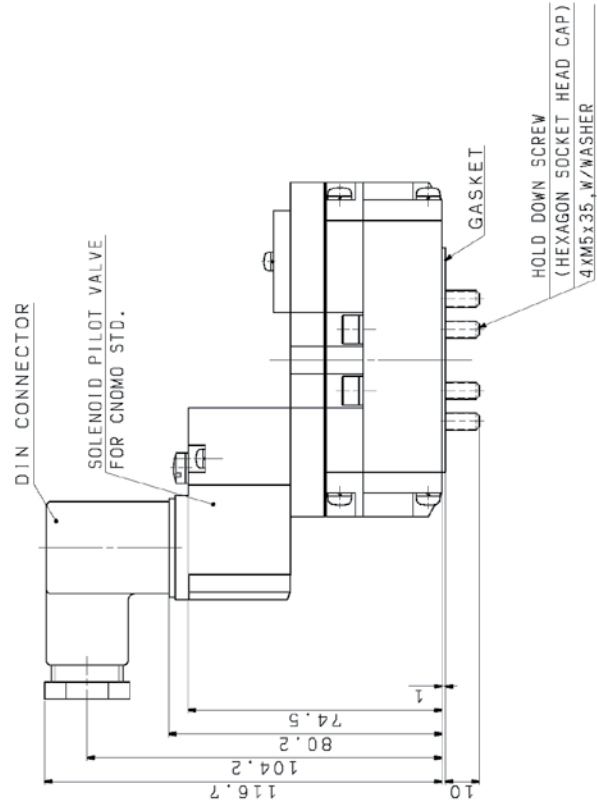
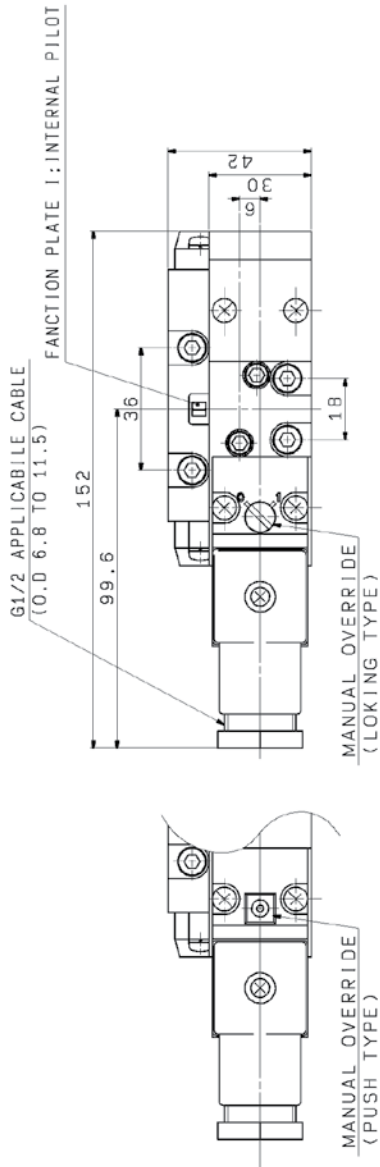


SPECIAL SPECIFICATION

1) LOW TEMPERATURE
 (AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)

NOTE

- 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS.
 (-FOR Q ASSISTANT)
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

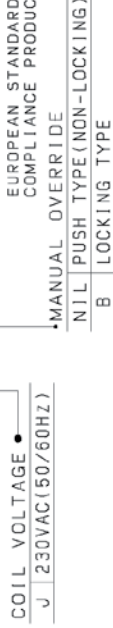


SPECIFICATIONS

MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50℃
MANUAL OVERRIDE	NON-LOCKING FLUSH TYPE
LUBRICATION	NOT REQUIRED
APPLICABLE SUB PLATE	REQUIRED: ISO VG32
RATED VOLTAGE	V57-1 (ISO SIZE 1) 230VAC
APPARENT INRUSH POWER	50HZ 5.6VA
	60HZ 5.0VA
POWER CONSUMPTION	50HZ 3.4VA (2.1W)
	60HZ 2.4VA (1.5W)
ALLOWABLE VOLTAGE RANGE	-15 to +10% OF RATED VOLTAGE
INSULATION	CLASS B OR EQUIVALENT (130℃)

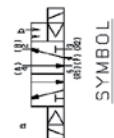
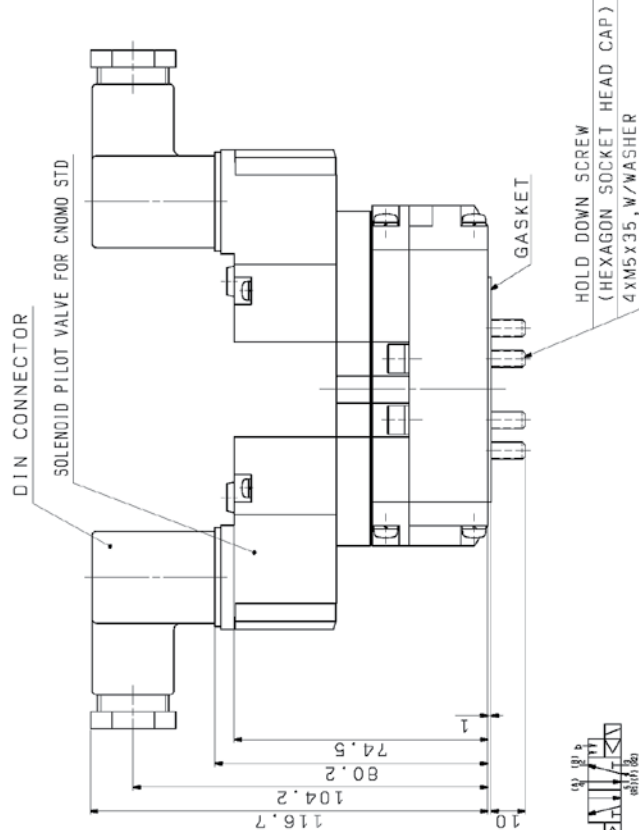
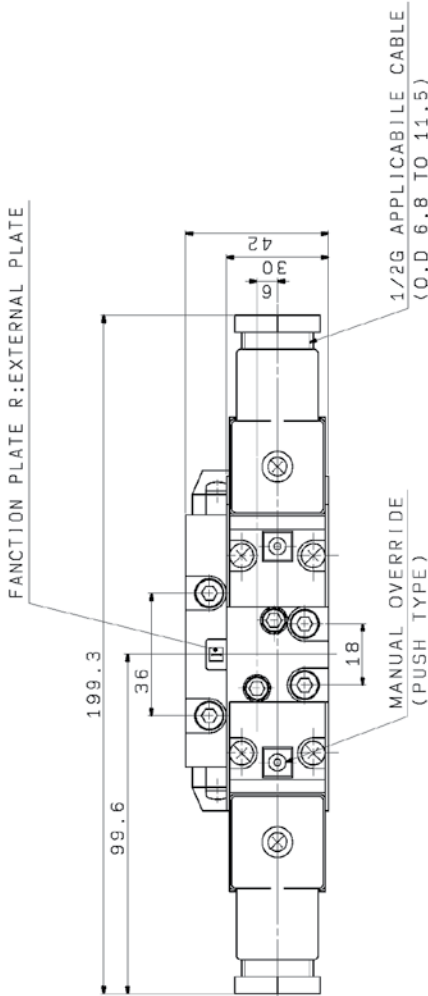
HOW TO ORDER

EVS7-6-FG-D-JCV(B)-X200(-Q)



SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)
- NOTE:
 - 1) EUROPEAN STANDARD COMPLIANCE PRODUCTS. (-FOR Q ASSISTANT)
 - 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-40°F (-40°C)

3 Port Direct Operated Solenoid Valve

VS3115-□□D□-□-X59

SPECIFICATIONS

Fluid	Air, Inert gas	
Operating pressure range	0~1.0MPa	
Proof pressure	1.5MPa	
Ambient and fluid temperature	-40~60°C(No freezing)	
Lubrication	Not required ^{Note1)}	
Manual override	Non-locking	
Enclosure	Dust-proof	
Coil rated voltage	100,200VAC(50/60Hz)	
Allowable voltage	-15~+10% of rated voltage	
Coil insurance	Class B	
Apparent power (VA) (Power consumption(W))	Inrush	50 Hz 51
	AC	60 Hz 45
Holding	50 Hz	17(5.3)
	60 Hz	11(2.9)
Electrical entry	DIN terminal	

Note1) Use turbine oil class 1 ISO VG32, if lubricated.

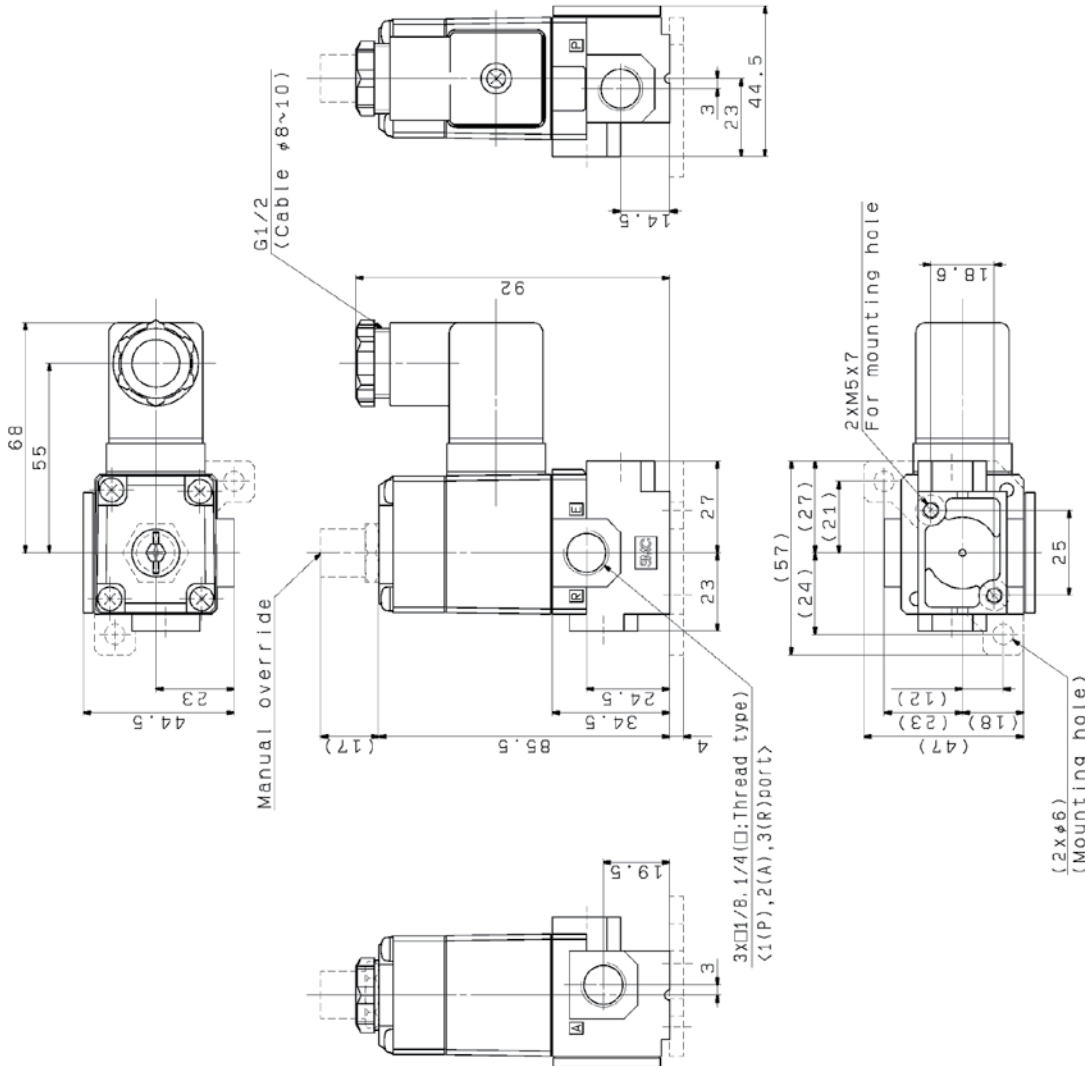
How to order

VS3115-□□D□-□-X59

Port size	• Thread type
01 RC1/8	Nil RC
02 RC1/4	N NPT
	T NPTF
	F G
Coil rated	• with bracket
1 100VAC(50/60Hz)	Nil None
2 200VAC(50/60Hz)	B With bracket
3 110VAC(50/60Hz)	P With manual override
4 220VAC(50/60Hz)	
7 240VAC(50/60Hz)	
8 48VAC(50/60Hz)	
A 12VAC(50/60Hz)	
B 24VAC(50/60Hz)	
F 32VAC(50/60Hz)	

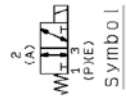
Special specifications

- 1) Low temperature specifications.
Ambient and fluid temperature: -40 ~ +60°C



Note

- 1) Break line: with bracket
- 2) Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



3 Port Direct Operated Solenoid Valve

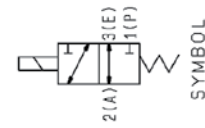
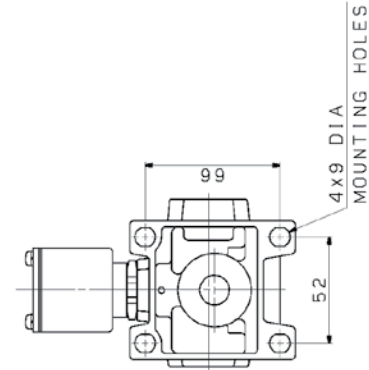
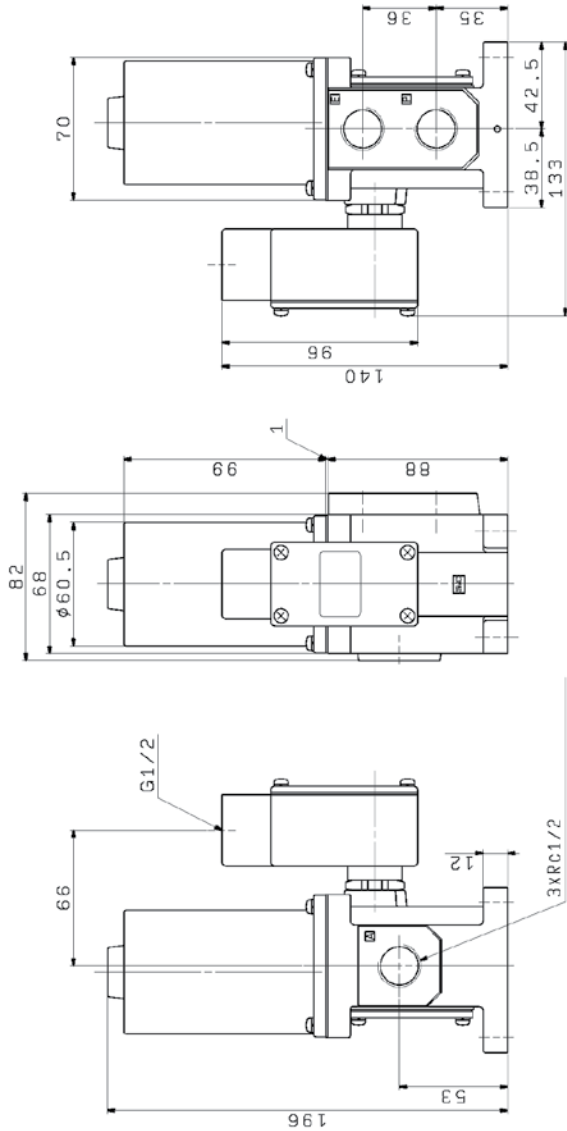
VS3145-045TP-X59

-40°F (-40°C)

Specifications

Fluid	Air/Inert gas	
Proof pressure	1.5MPa	
Operating pressure range	0 to 1.0MPa	
Ambient and fluid temperature	-40 to 60 ^{Note1)}	
Lubrication	Not required ^{Note2)}	
Manual override	Non-locking type	
Electrical entry	Condit terminal	
Coil rated voltage	24VDC	
Allowable voltage fluctuation	-15 to 10% of rated voltage	
Coil insulation type	Class B or equivalent(130°C) ^{Note3)}	
Shock/vibration resistance	150/50m/s ² ^{Note4)}	
Flow characteristics	Cv(dn7/(s-bar))	
	P → A	1.8
	b	0.27
	Cv	4.8
A → E	Cv(dn7/(s-bar))	1.6
	b	0.34
	Cv	4.1

Note1) If it is low temperature, dry air should be used. (No freezing)
Note2) Use turbine oil Class 1(ISO VG32), if lubricated.
Note3) Based on JIS C 4003.
Note4) Impact resistance : No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal is ON and OFF. (Initial valve)
 Vibration resistance: No malfunction from test with 45 to 2000Hz 1 sweep, to axis and right angle directions of main valve, such one time when pilot signal is ON and OFF. (Initial valve)



Special Specification

1) Low temperature specification: Ambient and fluid temperature -40 to 60°C.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-40°F (-40°C)

5 Port Direct Operated Solenoid Valve

VS4114-005D-X59

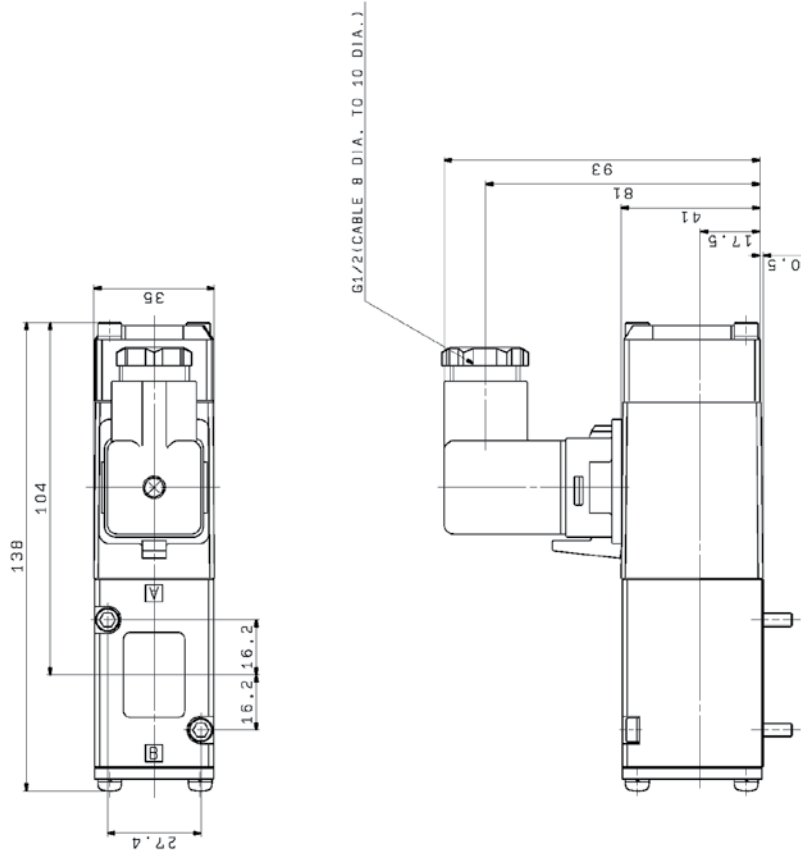
SPECIFICATIONS

MEDIA	AIR OR INERT GAS
OPERATING PRESSURE	0~1.0MPa
PROOF PRESSURE	1.5MPa
MINIMUM AND MAXIMUM TEMPERATURE	-40~+60°C
LUBRICATION	NOT REQUIRED WHEN SUPPLYING OIL-USE TURBINE OIL CLASS 1 (ISO VG32 OR EQUIVALENT)
MANUAL OVERRIDE	NON-LOCKING
ENCLOSURE	DUST PROOF
COIL RATED VOLTAGES	24VDC
VOLTAGE ALLOWANCE	-15%~+10% OF RATED VOLTAGE
INSULATION	B CLASS OR EQUIVALENT (130°C)
ELECTRICAL ENTRY	DIN TERMINAL
OPTION	INDICATOR LIGHT

Special specifications

Low temperature specifications

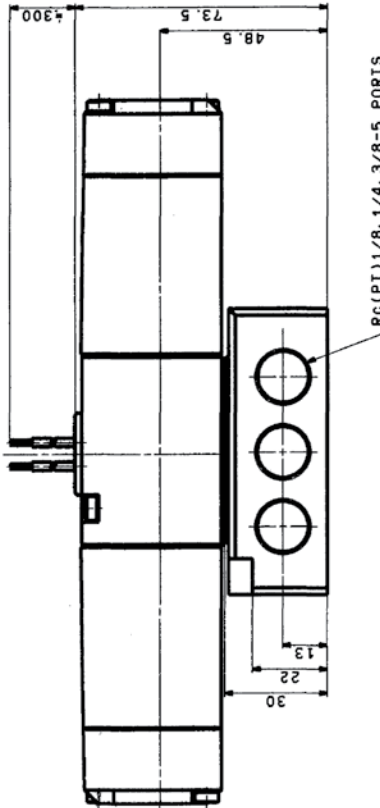
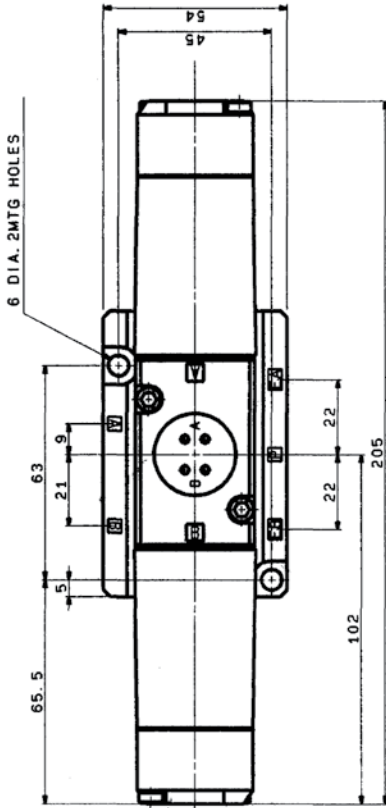
Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



5 Port Direct Operated Solenoid Valve

VS4210-□U-X59

-40°F (-40°C)



SPECIFICATIONS	
MEDIA	AIR, INERT GAS
OPERATING PRESSURE	0~1.0MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+60° C
LUBRICATION	NON-OIL
MANUAL OVERRIDE	NON-LOCKING
ENCLOSURE	DUST PROOF
COIL RATED VOLTAGES	24VDC
VOLTAGE ALLOWANCE	-15~+10% OF RATED VOLTAGE
INSULATION	B CLASS OR EQUIVALENT(130°C)
POWER CONSUMPTION(DC)	5.5W
ELECTRICAL ENTRY	GROMMET
WEIGHT	1.1kg

PIPE SIZE & EFFECTIVE ORIFICE	
PART NUMBER	EFFECTIVE ORIFICE (CV FACTOR)
VS4210-01	RC 1/8 14.4mm ² (0.8)
VS4210-02	RC 1/4 18.0mm ² (1.0)
VS4210-03	RC 3/8 18.0mm ² (1.0)

SPECIAL SPECIFICATIONS
 1) AMBIENT AND FLUID TEMPERATURE: -40°C~60°C

PART NUMBER	PORT SIZE	VOLTAGE
VS4210-035U-X59	RC3/8	24VDC
VS4210-025U-X59	RC1/4	24VDC
VS4210-015U-X59	RC1/8	24VDC



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



SPECIFICATIONS

Fluid	Air, Inert gas
Operating pressure range	0~1.0MPa
Proof pressure	1.5MPa
Ambient and fluid temperature	-40~60℃(No freezing)
Lubrication	Not required (1)
Manual override	Locking type
Enclosure	Drip-proof
Coil rated voltage	100,200,110,220VAC(50/60Hz)
Allowable voltage	-15~+10% of rated voltage
Coil insurance	Class B
Electrical entry	Dripproof conduit terminal

Note) Use turbine oil class 1 ISO VG32, if lubricated.

How to order

VS3135-□-□WTBP-□-X76

PORT SIZE	• THREAD TYPE
04 1/2	NIL RC
06 3/4	N NPT
	T NPTF
	F G

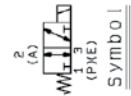
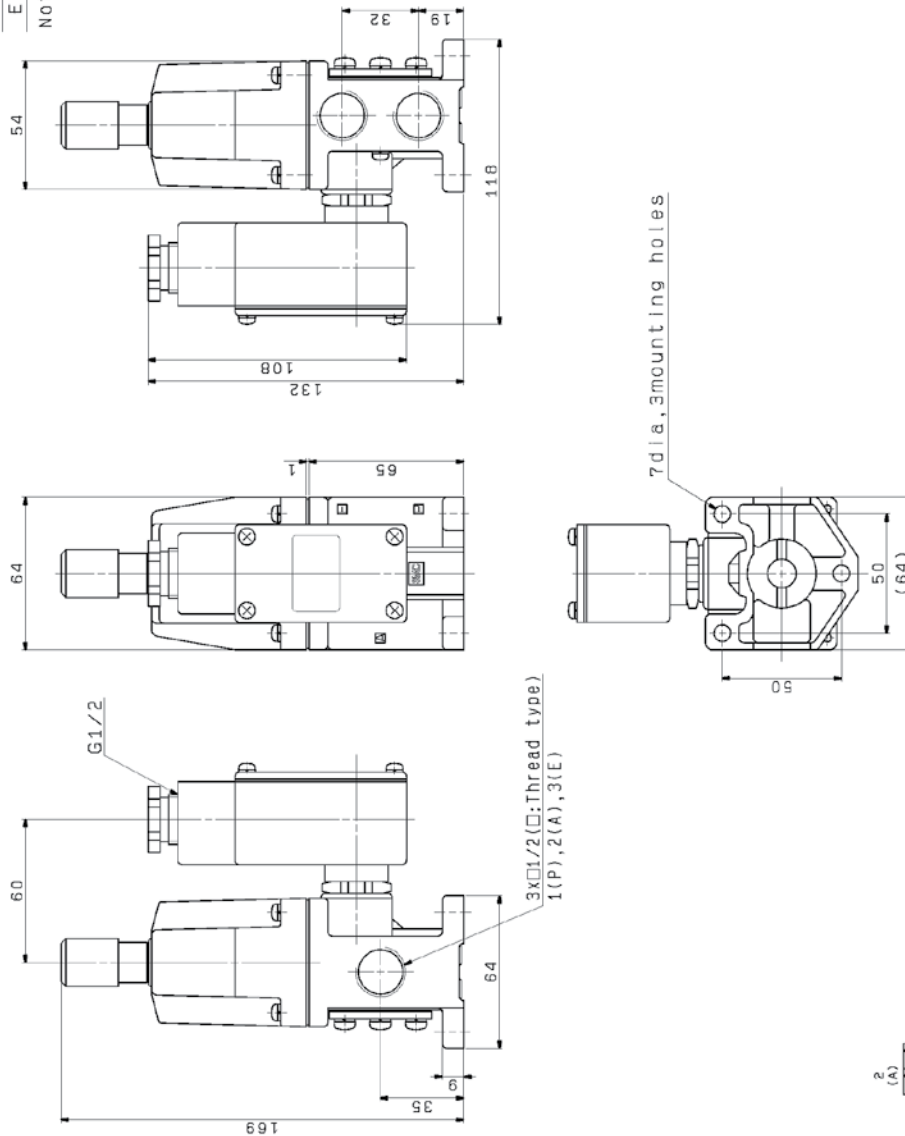
Coil rated	•
1	100VAC(50/60Hz)
2	200VAC(50/60Hz)
3	110VAC(50/60Hz)
4	220VAC(50/60Hz)
7	240VAC(50/60Hz)
B	48VAC(50/60Hz)
A	12VAC(50/60Hz)
F	32VAC(50/60Hz)

Special specifications

- 1) Low temperature specifications.
Ambient and fluid temperature: -40 ~ +60℃
- 2) Manual override packing is used piston packing.

Note

1) Unless otherwise noted along with a separate contract or agreement within the Product specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales Office for further details.



4/5 Port Air Operated Valve **VSA3135-□□-□-X200** **-40°F (-40°C)**

SPECIFICATIONS

MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2~1.0MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50℃
LUBRICATIONS	NOT REQUIRED
ENCLOSURE	DUST PROOF

HOW TO ORDER

VSA3135-□□-□-X200

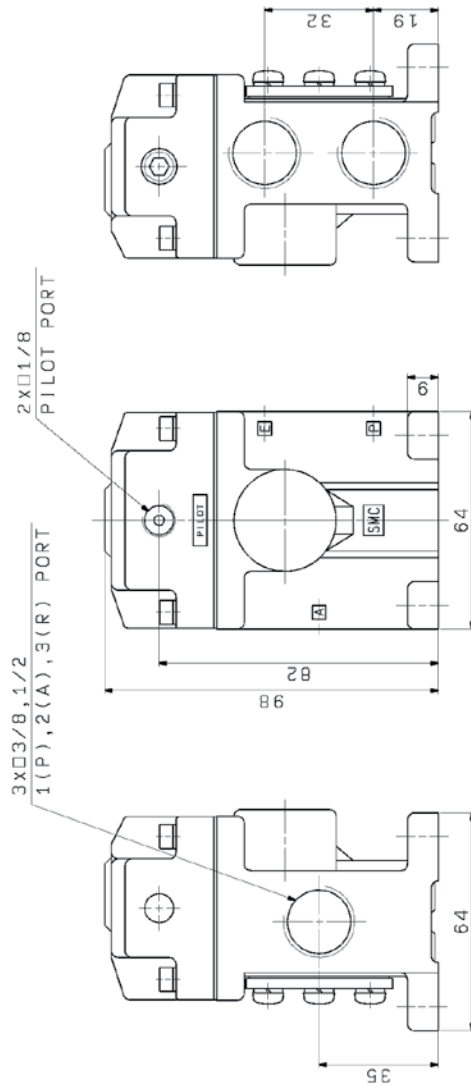
PORT SIZE	THREAD TYPE
03 3/8	NIL RC
04 1/2	N NPT
	F NPTF
	T G

SPECIAL SPECIFICATION

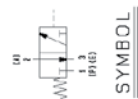
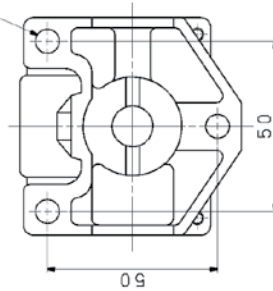
1) LOW TEMPERATURE
(AMBIENT AND FLUID TEMPERATURE: -40~+50℃)

NOTE

1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



3xØ7 MOUNTING HOLES



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-40°F (-40°C) 4/5 Port Air Operated Valve VSA3145-□□-□-X200

SPECIFICATIONS

MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2~1.0MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50℃
LUBRICATIONS	NOT REQUIRED
ENCLOSURE	DUST PROOF

HOW TO ORDER

VSA3145-**-**-**-X200

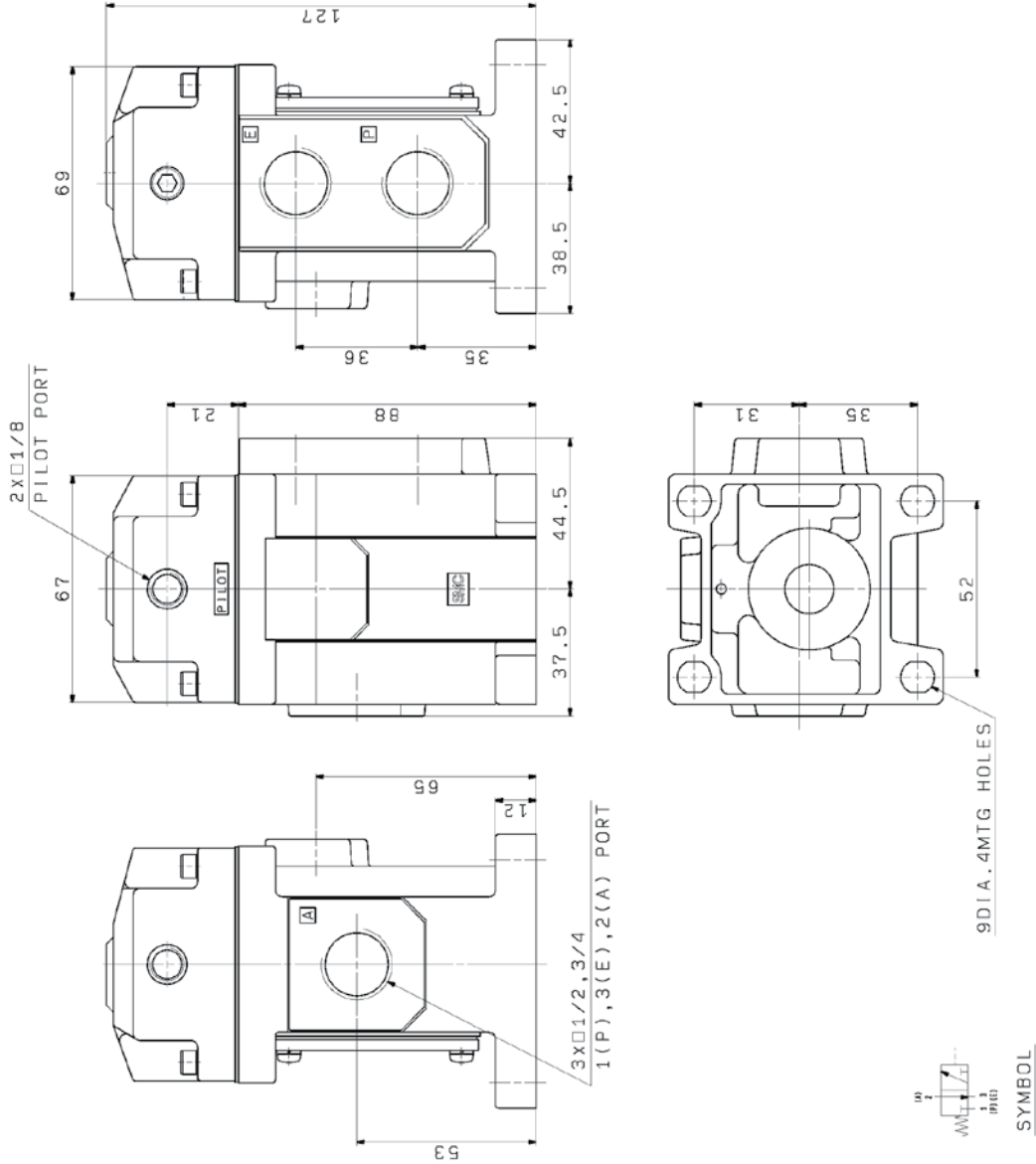
PORT SIZE	THREAD TYPE
04 1/2	None RC
06 3/4	N NPT
	F NPTF
	T G
	G G

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
(AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)

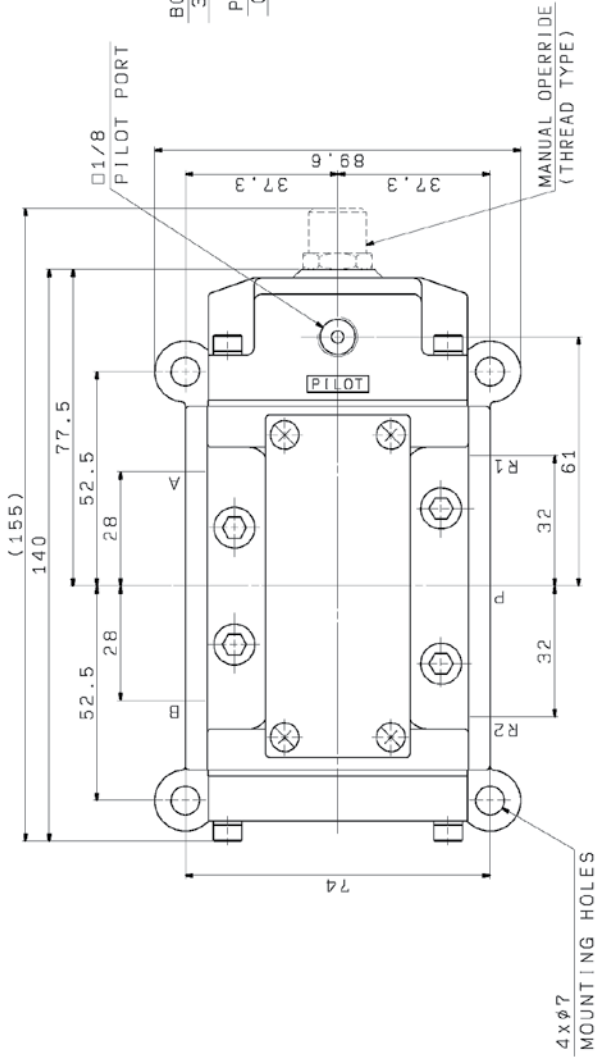
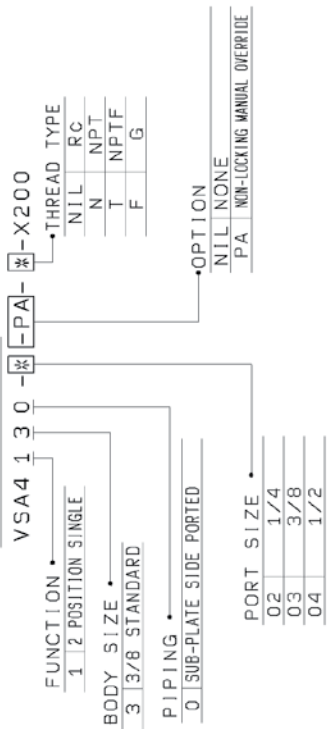
NOTE

1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



4/5 Port Air Operated Valve **VSA4130-□(-PA)-□-X200** -40°F (-40°C)

HOW TO ORDER



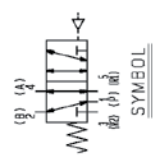
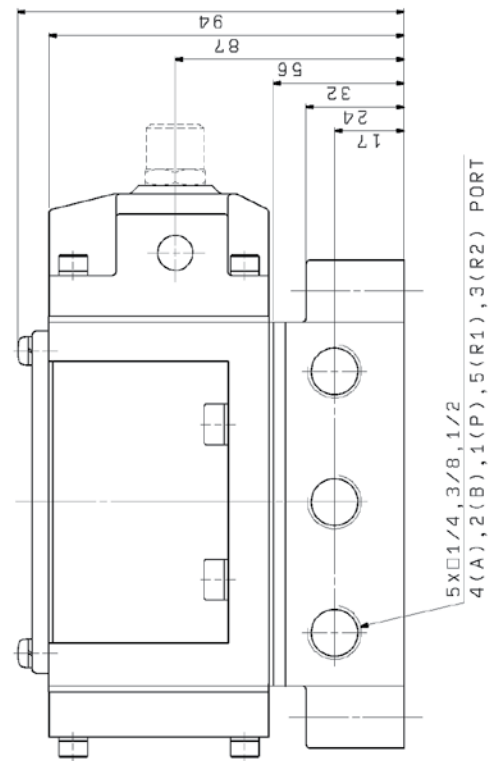
SPECIFICATIONS	
MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50°C
LUBRICATION	NOT REQUIRED

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
(AMBIENT AND FLUID TEMPERATURE: -40~+50°C)

NOTE

1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-40°F (-40°C) 4/5 Port Air Operated Valve VSA4140-□□-□-X200

HOW TO ORDER
VSA 1 4 0 - □ - □ - X200
 FUNCTION •
 1 2 POSITION SINGLE
 BODY SIZE •
 4 1/2 STANDARD
 PIPING •
 0 SUB-PLATE SIDE PORTED
 THREAD
 NIL
 N
 T
 F

PORT SIZE

03	3/8
04	1/2
06	3/4

SPECIFICATIONS

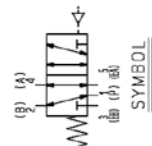
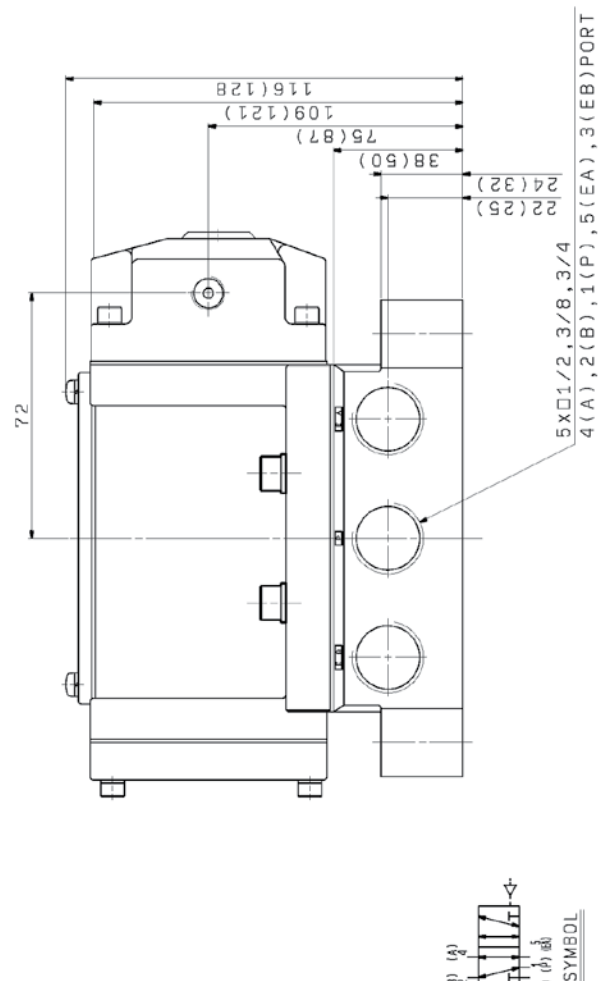
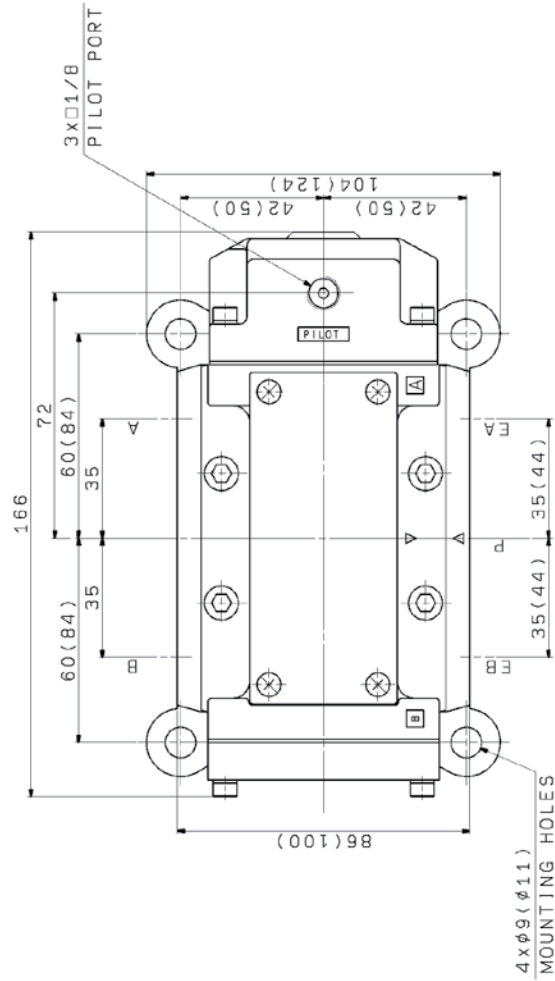
MEDIA	AIR OR INER
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50*
LUBRICATION	NOT REQUI

SPECIAL SPECIFICATION

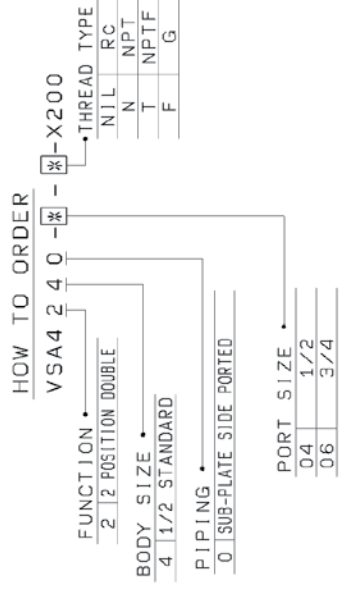
1) LOW TEMPERATURE
 (AMBIENT AND FLUID TEMPERATURE: -40

NOTE

- 1) THE SIZE INDICATES THE CASE OF VSA4140-01
- 2) UNLESS OTHERWISE NOTED ALONG WITH A CONTRACT OR AGREEMENT WITHIN THE P SPECIFICATIONS, THE SAFETY INSTRUCT SPECIFIED IN THE PRODUCT CATALOG ARE PLEASE CONTACT YOUR LOCAL SMC SALE FOR FURTHER DETAILS.



4/5 Port Air Operated Valve **VSA4240-□-□-X200** -40°F (-40°C)



SPECIFICATIONS

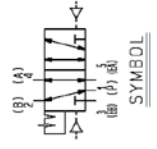
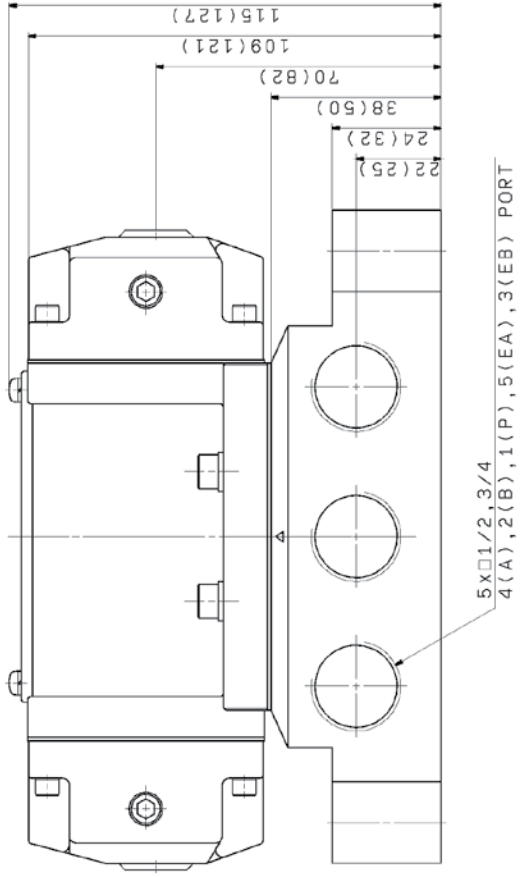
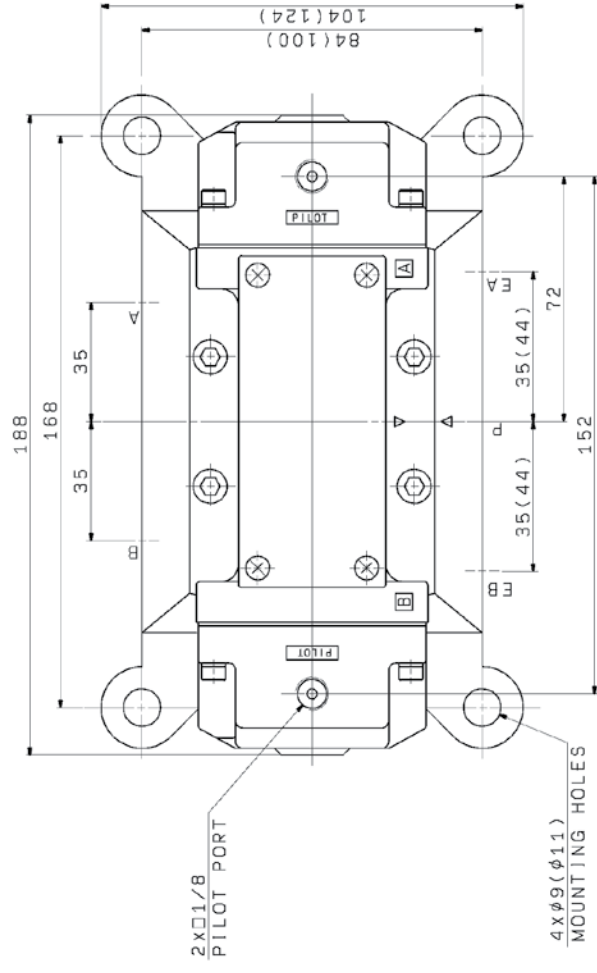
MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50 °C
LUBRICATION	NOT REQUIRED

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
(AMBIENT AND FLUID TEMPERATURE: -40~+50℃)

NOTE

1) () THE SIZE INDICATES THE CASE OF VSA4240-06-2--X200.
2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-40°F (-40°C) 4/5 Port Air Operated Valve VSA4³40-□-□-X200

HOW TO ORDER
VSA4³40-□-□-X200

FUNCTION • 2 | 2 POSITION DOUBLE
 BODY SIZE • 4 | 1/2 STANDARD
 PIPING • 0 | SUB-PLATE SIDE PORTED

THREAD TYPE
 NTL RC
 N NPT
 T NPTF
 F G

PORT SIZE

04	1/2
06	3/4

SPECIFICATIONS

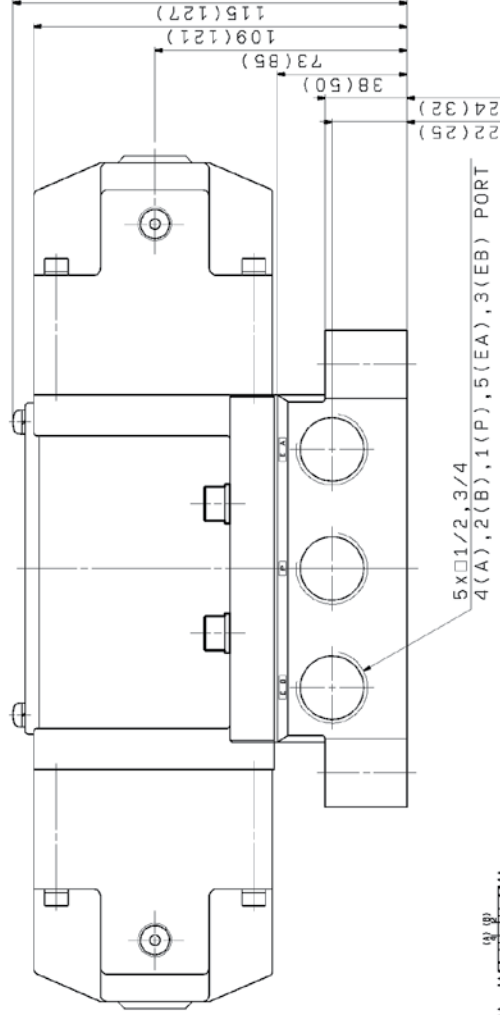
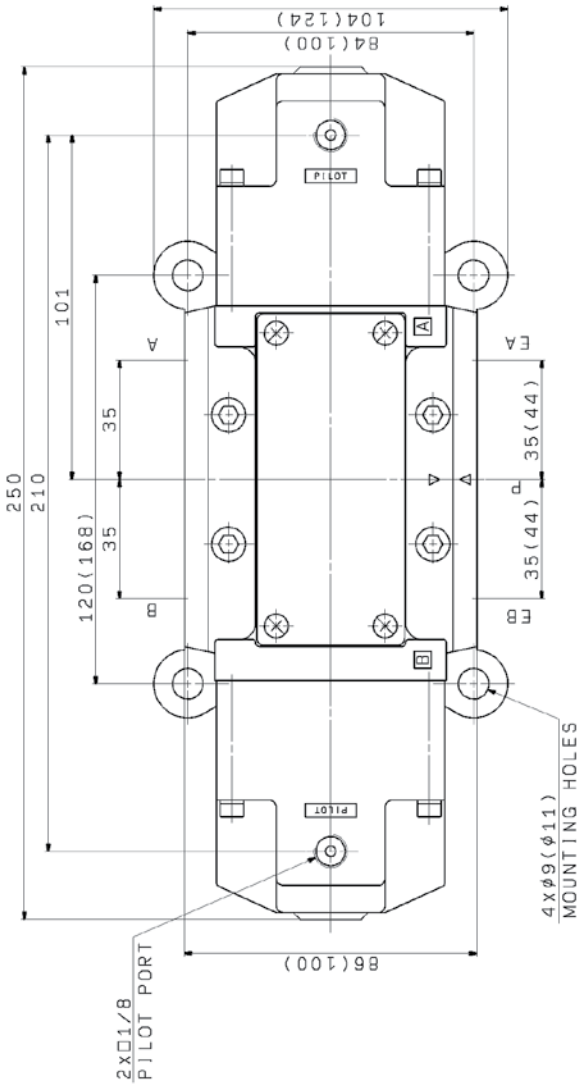
MEDIA	AIR OR INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
PILOT PRESSURE RANGE	0.2MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~+50 °C
LUBRICATION	NOT REQUIRED

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
 (AMBIENT AND FLUID TEMPERATURE: -40~+50°C)

NOTE

- 1) THE SIZE INDICATES THE CASE OF VSA4³40-05-□-□-X200.
- 2) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



Air Operated Valve **EVSA7-6-FG-S-2** \square -X200 **-40°F (-40°C)**

SPECIFICATIONS	
FLUID	AIR/INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
AMBIENT AND FLUID TEMPERATURE	NOTE2) -40 TO 50°C (HOWEVER, DO NOT FREEZE.)
LUBRICATION	NOT REQUIRED
PILOT AIR OPERATED PRESSURE	0.2 TO 1.0MPa
	1-4/2 (P-A/B) C(107/16-1071) 4.1
	b 0.10
FLOW CHARACTERISTICS	CV 0.9
	4/2-5/3 C(107/16-1071) 5.2
	b 0.07
	CV 1.1

NOTE1) MIN. OPERATING PRESSURE=PILOT SUPPLY PRESSURE
 NOTE2) USE DRY AIR AT LOW TEMPERATURES.

HOW TO ORDER

EVSA7-6-FG-S-2 * -X200

• LOW TEMPERATURE SPECIFICATION

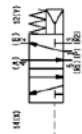
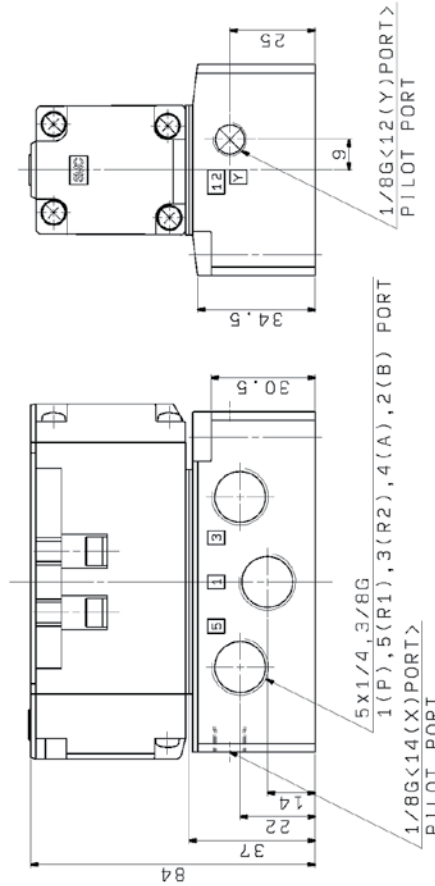
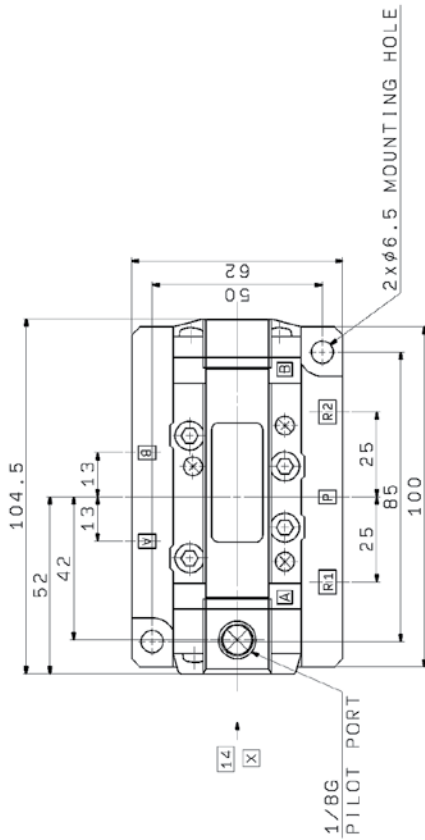
PIPING
 NIL W/O SUB PLATE
 A02 SIDE PORT 1/4G *
 A03 SIDE PORT 3/8G
 B02 BOTTOM PORT 1/4G *
 B03 BOTTOM PORT 3/8G
 *R PORT: 3/8G

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
 (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE

1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



SYMBOL



SPECIFICATIONS

FLUID	AIR/INERT GAS
MAX. OPERATING PRESSURE	1.0MPa
MIN. OPERATING PRESSURE	0.2MPa
AMBIENT AND FLUID TEMPERATURE	NOTE1) -40 TO 50°C(HOWEVER, DO NOT FREEZE.)
LUBRICATION	NOT REQUIRED
PILOT AIR OPERATED PRESSURE	0.15 TO 1.0MPa
	Cv
	1-4/2
	(P-A/B)
	b
	0.10
	Cv
	3.0
	Cv
	4/2-5/3
	(A/B-R1/R2)
	b
	0.10
	Cv
	4.0

NOTE1) MIN. OPERATING PRESSURE=PILOT SUPPLY PRESSURE
 NOTE2) USE DRY AIR AT LOW TEMPERATURES.

HOW TO ORDER

EVSA7-10-FG-S-2*-X200

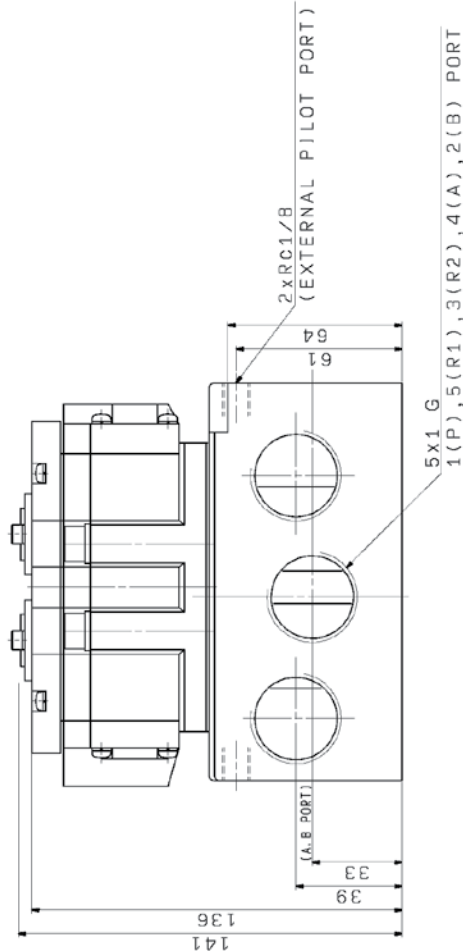
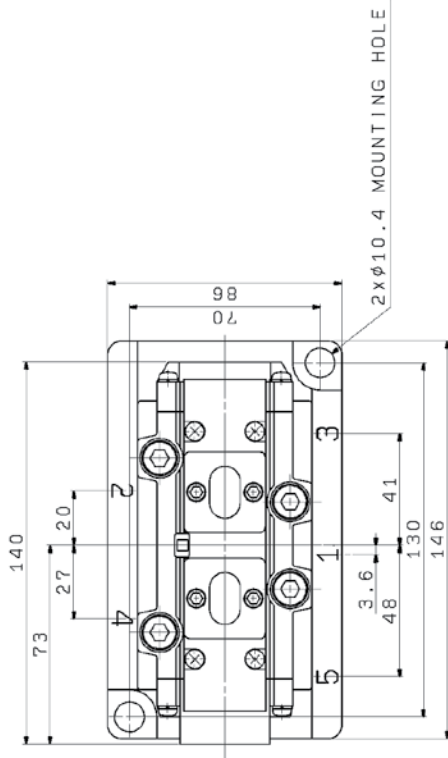
TYPE OF ACTUATION	LOW TEMPERATURE SPECIFICATION
S 2 POSITION SINGLE	
D 2 POSITION DOUBLE	
PIPING	
N11 W/O SUB PLATE	
A06 SIDE PORT 3/4 G	
A10 SIDE PORT 1 G	
B06 BOTTOM PORT 3/4 G	

SPECIAL SPECIFICATION

1) LOW TEMPERATURE
 (AMBIENT AND FLUID TEMPERATURE: -40℃~50℃)

NOTE

1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



EVSA7-10-FG-S EVSA7-10-FG-D

SYMBOL

Air Operated Valve **EVSA7-10-F^HJ-G-D-2** □ -X200 -40°F (-40°C)

SPECIFICATIONS		AIR/INERT GAS
FLUID		AIR/INERT GAS
MAX. OPERATING PRESSURE		1.0 MPa
MIN. OPERATING PRESSURE		0.2 MPa
AMBIENT AND FLUID TEMPERATURE	NOTE1)	-40 TO 50°C (HOWEVER, DO NOT FREEZE.)
LUBRICATION		NOT REQUIRED
PILOT AIR OPERATED PRESSURE		0.15 TO 1.0 MPa
	1-4/2 (P-A/B)	
	0	0.10
	CV	3.0
FLOW CHARACTERISTICS	4/2-5/3 (A/B-4/1/R2)	
	0	0.10
	CV	4.0

NOTE1) MIN. OPERATING PRESSURE ≤ PILOT SUPPLY PRESSURE
 NOTE2) USE DRY AIR AT LOW TEMPERATURES.

HOW TO ORDER

EVSA7-10-F^HJ-G-D-2 □ -X200

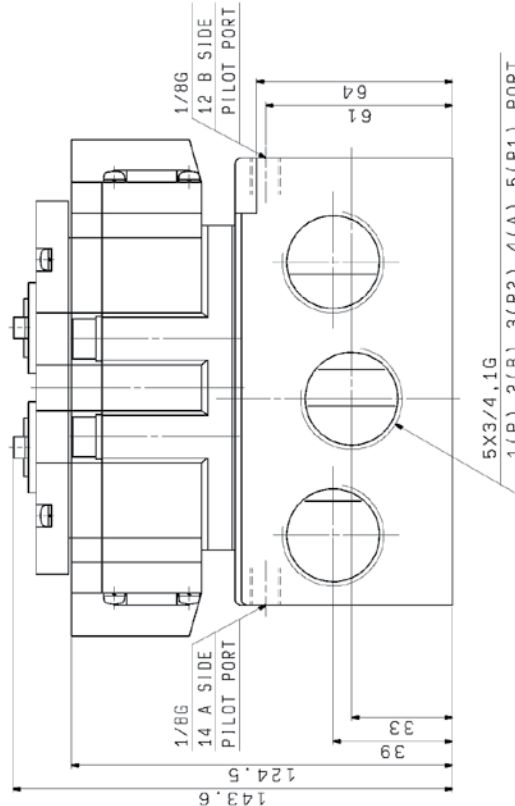
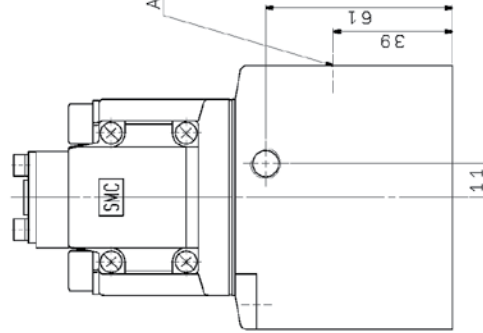
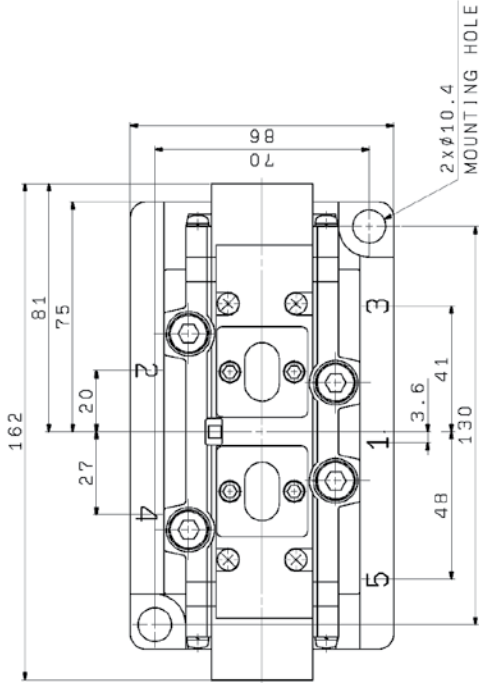
- LOW TEMPERATURE SPECIFICATION
- PIPING
 - Nil W/O SUB PLATE
 - A06 SIDE PORT 3/4 G
 - A10 SIDE PORT 1 G
 - B06 BOTTOM PORT 3/4 G

SPECIAL SPECIFICATION

- 1) LOW TEMPERATURE (AMBIENT AND FLUID TEMPERATURE: -40°C ~ 50°C)

NOTE


- 1) UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



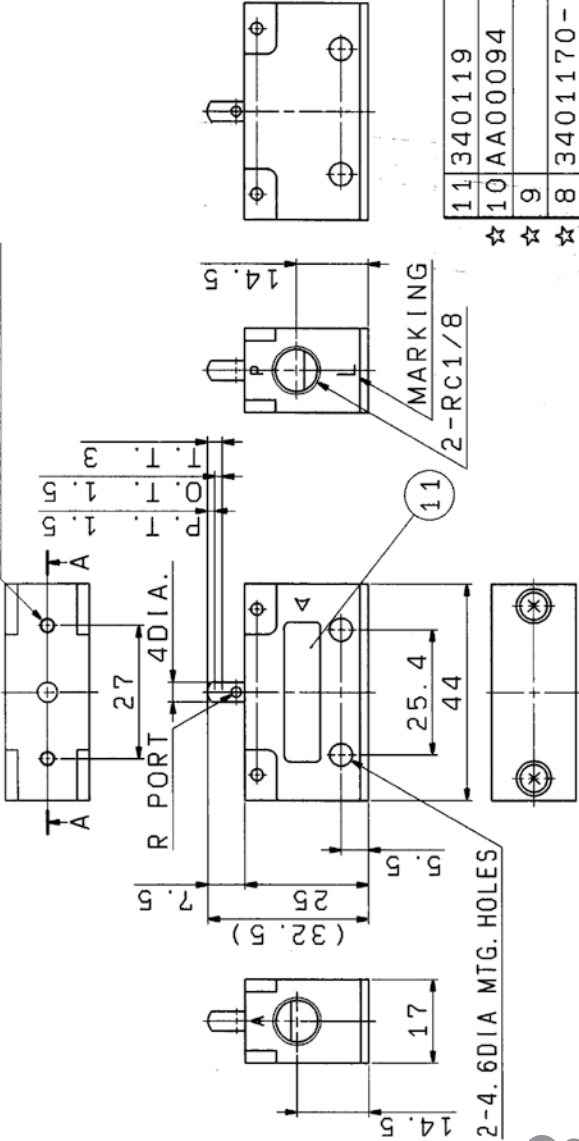
SYMBOL



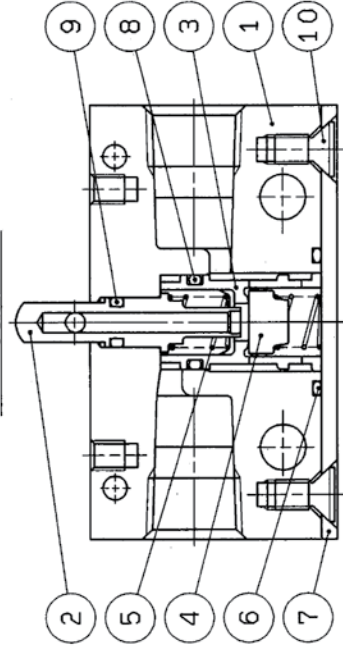
SPECIFICATION

1	SYMBOL	
2	FLUID	AIR
3	MAX. PRESSURE	1 MPa
4	MIN. PRESSURE	-100kPa
5	AMBIENT TEMP. AND OPERATING AIR TEMP (NO FREEZING)	-40 TO 60°C
6	EFFECTIVE AREA	2.5mm ²
7	PRETRAVEL(P.T.)	1.5mm
8	OVER TRAVEL(O.T.)	1.5mm
9	TOTAL TRAVEL(T.T.)	3 mm
10	TOTAL TRAVEL FORCE(F.O.F.)	20N(at 0.5MPa)
11	WEIGHT	95g

2-M3×0.5
MTG. THREADS FOR ACTUATOR



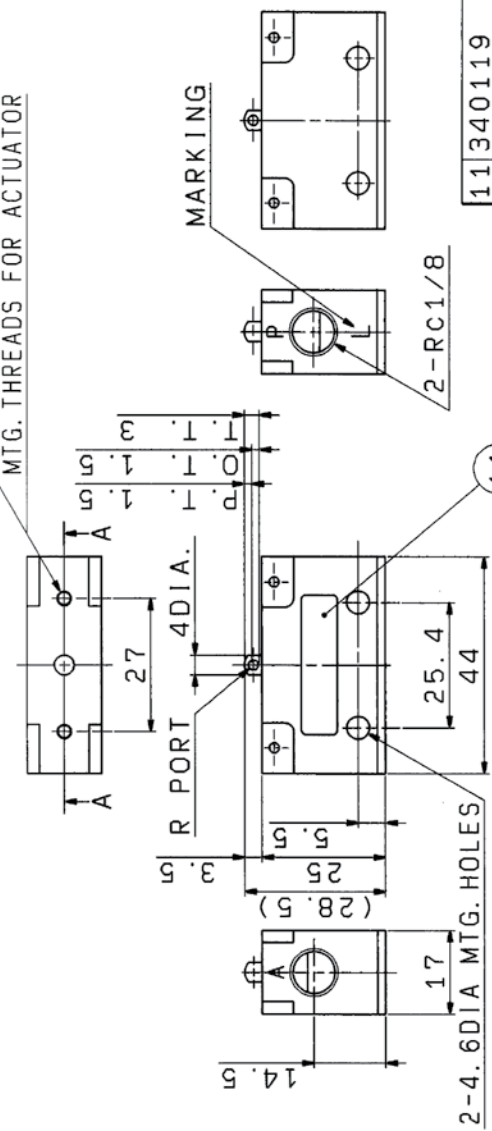
ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
11	340119	NAME PLATE(B)	POLYESTER	1	
10	AA00094	CROSS-RECESSED AND FLAT HEAD MACHINE SCREW	STEEL WIRE	2	M3×6 NI. PLATED
9		*O'RING	CR	1	5×3×1
8	3401170-1	*O'RING	CR	1	
7	3401172	END RETAINING PLATE	STEEL PLATE	1	
6		*O'RING	CR	1	12×1.2
5	3401169	SPRING	STAINLESS STEEL WIRE	2	
4	3401168-1	VALVE	CR	1	
3	3401167	VALVE SEAT	POM	1	
2	3401163	PUSH ROD	POM	1	
1	3401161-1	BODY	ALUMINUM	1	



- NOTE
1. ASTERISKED PARTS IN THE LIST ARE THOSE DIFFERING FROM STANDARD PARTS(VM130-01-00) AT LOW TEMPERATURE TYPE.
 2. VALVE BODY IS MADE OF ALUMINUM ALLOY INSTEAD OF ZDC.
 3. MATERIAL OF PACKING WAS CHANGED TO CR FROM NBR.
 4. SILICONE GREASE IS APPLIED.
 5. ASSEMBLED AND INSPECTED IN THE SAME WAY AS THE STANDARD.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

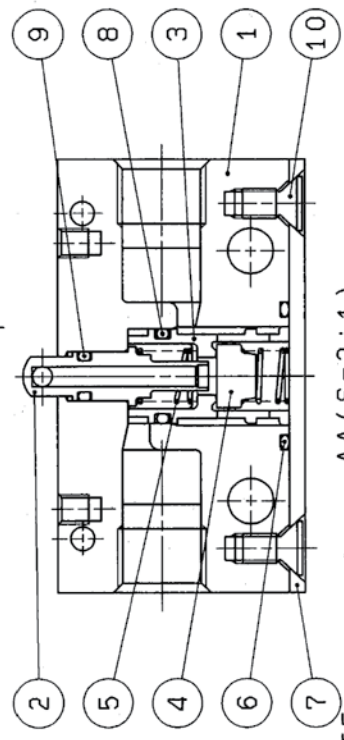
2-M3×0.5 MTG.
MTG. THREADS FOR ACTUATOR



SPECIFICATION

1	SYMBOL	
2	FLUID	AIR
3	MAX. PRESSURE	1 MPa
4	MIN. PRESSURE	-100kPa
5	AMBIENT TEMP. AND OPERATING AIR TEMP (NO FREEZING)	-40 TO 60°C
6	EFFECTIVE AREA	2.5mm ²
7	PRETRAVEL(P.T.)	1.5mm
8	OVER TRAVEL(O.T.)	1.5mm
9	TOTAL TRAVEL(T.T.)	3 mm
10	TOTAL TRAVEL FORCE(F.O.F.)	20N(at 0.5MPa)
11	WEIGHT	95g

11	340119	NAME PLATE(B)	POLYESTER	1	
★	10	AA00094	CROSS-RECESSED AND FLAT HEAD MACHINE SCREW	2	M3×6 NI. PLATED
★	9		"O" RING	1	5×3×1
★	8	3401170-1	"O" RING	1	
★	7	3401172	END RETAINING PLATE	1	
★	6		"O" RING	1	12×1.2
★	5	3401169	SPRING	2	STAINLESS STEEL WIRE
★	4	3401168-1	VALVE	1	CR
★	3	3401167	VALVE SEAT	1	POM
★	2	3401164	PUSH ROD	1	POM
★	1	3401161-1	BODY	1	ALUMINUM
ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS

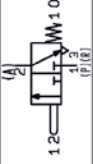


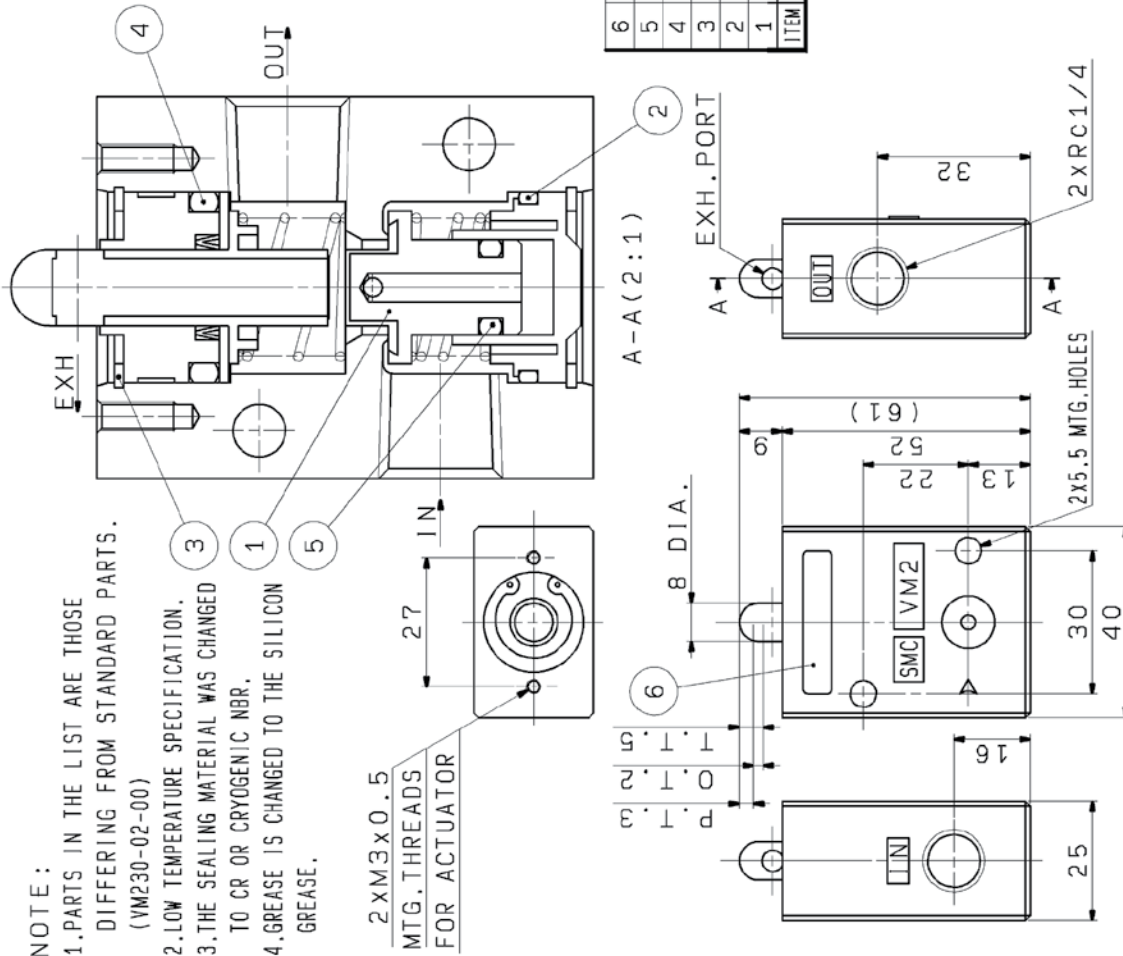
NOTE
AA(S=2:1)

1. ASTERISKED PARTS IN THE LIST ARE THOSE DIFFERING FROM STANDARD PARTS(VM131-01-00)
2. LOW TEMPERATURE TYPE.
3. VALVE BODY IS MADE OF ALUMINUM ALLOY INSTEAD OF ZDC.
4. MATERIAL OF PACKING WAS CHANGED TO CR FROM NBR.
5. SILICONE GREASE IS APPLIED.
6. ASSEMBLED AND INSPECTED IN THE SAME WAY AS THE STANDARD.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATION

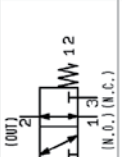
1	SYMBOL	
2	MEDIUM	AIR
3	MAX. PRESSURE	1 MPa
4	MIN. PRESSURE	0 MPa
5	AMBIENT TEMP. AND OPERATING AIR TEMP. (NO FREEZING)	-30 TO 60 °C
6	EQUIVALENT SECTIONAL AREA	18mm ²
7	PRETRAVEL (P.T.)	3mm
8	OVER TRAVEL (O.T.)	2mm
9	TOTAL TRAVEL (T.T.)	5mm
10	TOTAL TRAVEL FORCE (F.O.F.)	52N (at 0.5MPa)
11	WEIGHT	111g



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
6	3402157-1	NAME PLATE	POLYESTER FILM	1	
5		"O" RING	CRYOGENIC NBR	1	JIS B 2401 P7
4		"O" RING	CRYOGENIC NBR	1	JIS B 2401 P16
3	FG00050	RETAINING RING	STEEL WIRE	2	RTW-20
2	3402174-X44	"O" RING	CRYOGENIC NBR	1	
1	34026-X44	VALVE	BRASS BAR, CR	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS

1	SYMBOL	
2	MEDIUM	AIR
3	MAX. PRESSURE	1 MPa
4	MIN. PRESSURE	0 MPa
5	AMBIENT TEMP. AND OPERATING AIR TEMP. (NO FREEZING)	-30 ~ 60 °C
6	EQUIVALENT SECTIONAL AREA	6mm ²
7	PRETRAVEL (P.T.)	20°
8	OVER TRAVEL (O.T.)	30°
9	TOTAL TRAVEL (T.T.)	50°
10	TOTAL TRAVEL FORCE(F.O.F.)	※5.4N
11	WEIGHT	276g

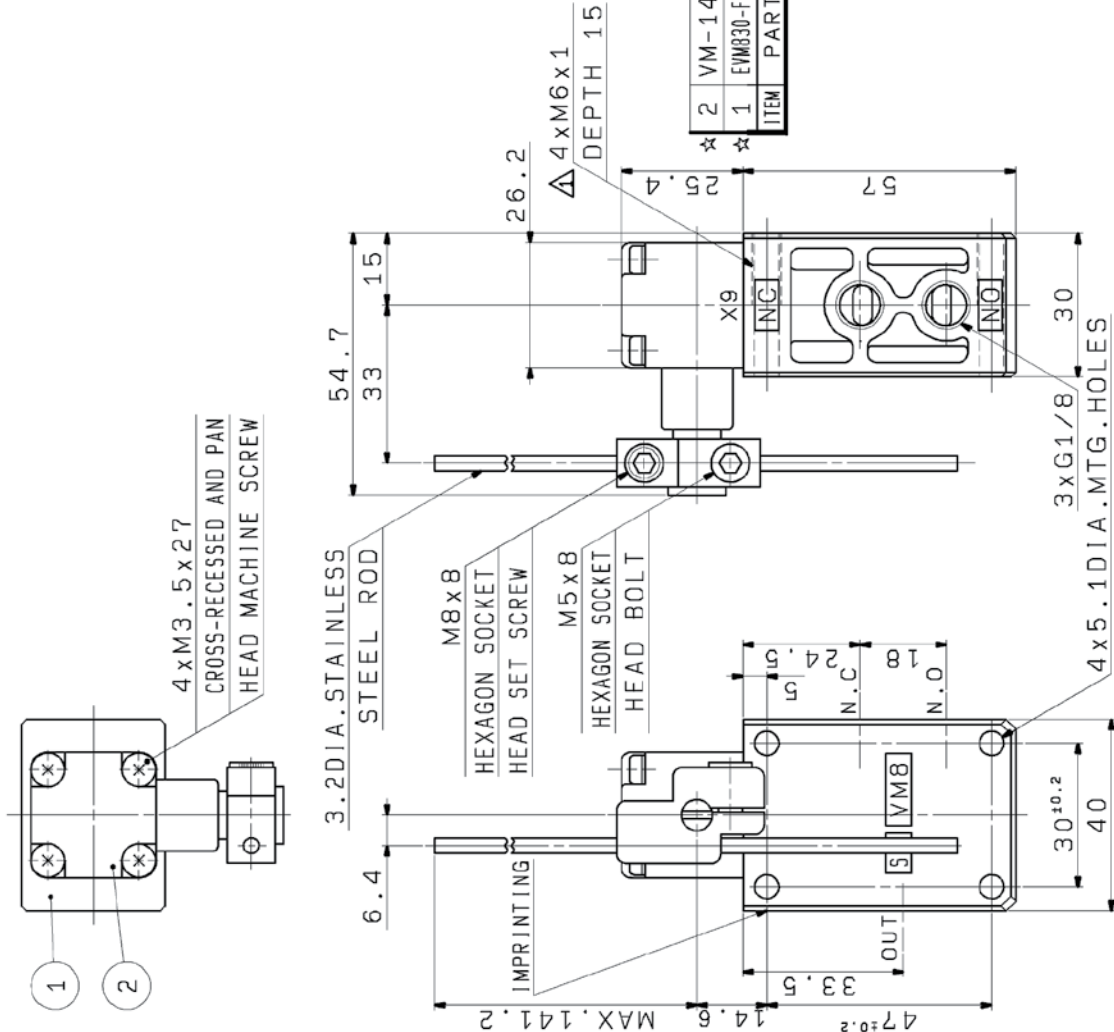
※THE LEVER LENGTH IS 141.2mm

NOTE

1. ASTERISKED PARTS IN THE LIST ARE THOSE DIFFERING FROM STANDARD PARTS(EVM830-F01-14)
2. LOW TEMPERATURE SPECIFICATION.
3. "X9" IS STAMPED ON THE BODY.

★ 2	VM-14F-X9	ADJUSTABLE ROLLER LEVER HEAD	-	1	
★ 1	EVM830-F01-00-X9	3-PORT VALVE	-	1	
ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L.			Rotary Actuator	Air Grippers	Air Cylinders	Valves
					AL	AR	AW				



SPECIFICATIONS

FLUID	AIR, INERT GASES
OPERATING PRESSURE RANGE	0~1.0MPa
PILOT PRESSURE	0.15~1.0MPa
PROOF PRESSURE	1.5MPa
AMBIENT AND FLUID TEMPERATURE	-40~60°C NOTE 1)
LUBRICATION	NON LUBRICATION NOTE 2)
ENCLOSURE ANGLE	40°
ENCLOSURE	DIST PROOF

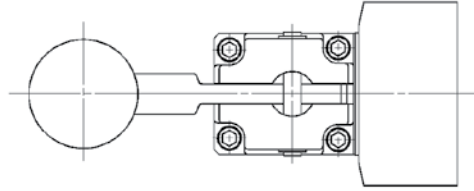
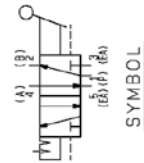
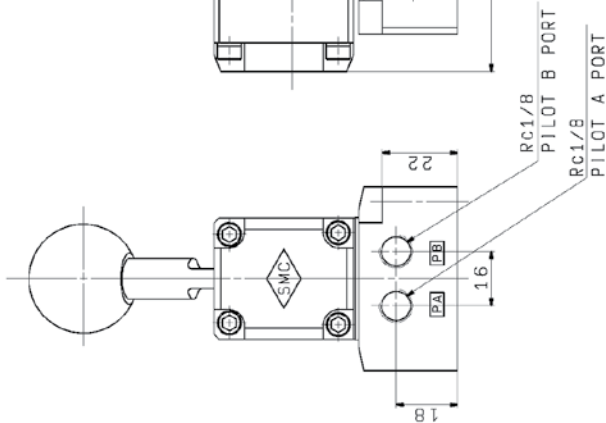
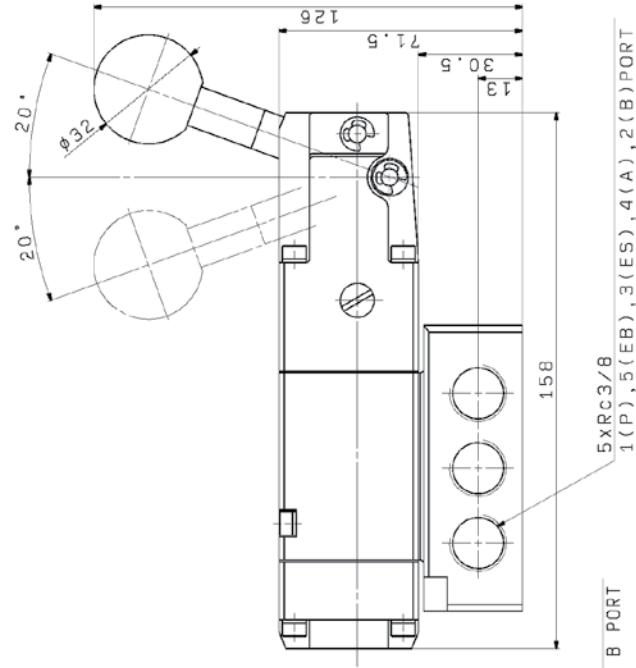
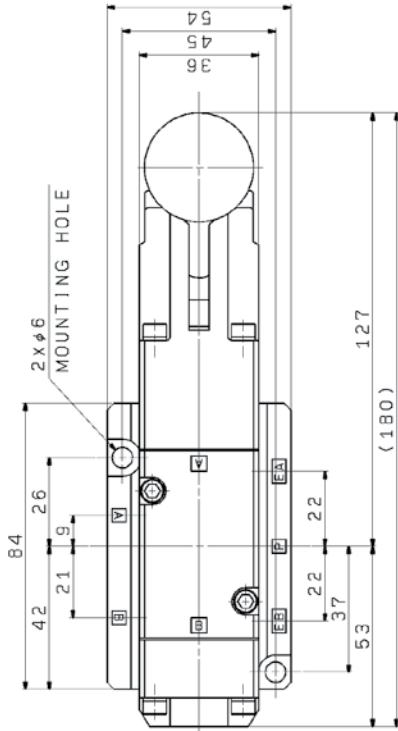
NOTE 1) USE DRY AIR AT LOW TEMPERATURE.
NOTE 2) USE TURBINE OIL CLASS 1 (ISO VG32), IF LUBRICATED.

FLOW RATE CHARACTERISTICS

PORT SIZE	1-4/2 (P→A/B)		4/2-5/3 (A/B→EA/EB)	
	b	Cv	b	Cv
Rc3/8	4.1	0.19	0.96	1.0

SPECIAL SPECIFICATIONS

1) AMBIENT AND FLUID TEMPERATURE: -40°C~60°C



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Hand Valve **VSH4³ 1□^A/_B-□□-X59** -40°F (-40°C)

SPECIAL SPECIFICATIONS

1) AMBIENT AND FLUID TEMPERATURE: -40 to ~60 °C

SPECIFICATIONS

FLUID	AIR, INERT GASES
OPERATING PRESSURE RANGE	0 ~ 1.0 MPa
PROOF PRESSURE	1.5 MPa
AMBIENT AND FLUID TEMPERATURE	-40 ~ 60 °C (NOTE 1)
LUBRICATION	NON LUBRICATION (NOTE 2)
ENCLOSURE	DUST PROOF

NOTE 1) USE DRY AIR AT LOW TEMPERATURE.

NOTE 2) USE TURBINE OIL CLASS 1 (ISO VG32), IF LUBRICATED.

FLOW RATE CHARACTERISTICS

PORT NUMBER	PORT SIZE	1-4/2 (P-A/B)			4/2-5/3 (A/B-EA/EB)		
		b	CV	C	b	CV	C
VSH431*	RC1/8	3.1	0.37	0.80	3.2	0.35	0.82
	RC1/4	3.8	0.23	0.89	3.6	0.33	0.89
	RC3/8	4.2	0.23	1.00	3.8	0.32	0.99
VSH441*	RC1/8	3.1	0.28	0.77	3.0	0.28	0.75
	RC1/4	3.9	0.22	0.94	3.5	0.27	0.84
	RC3/8	4.0	0.26	1.00	3.7	0.32	0.94

HOW TO ORDER

VSH4 3 1 □ A □ - X59

SYMBOL

- 3 3 POSITION CLOSED CENTER
- 4 3 POSITION EXHAUST CENTER

THREAD TYPE

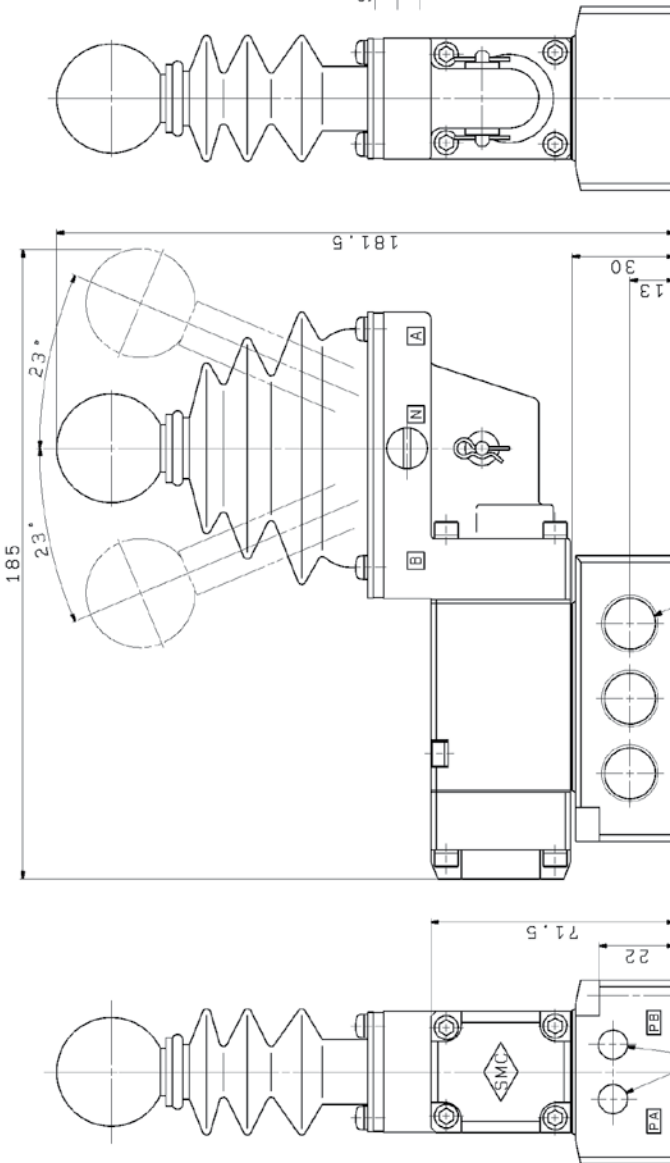
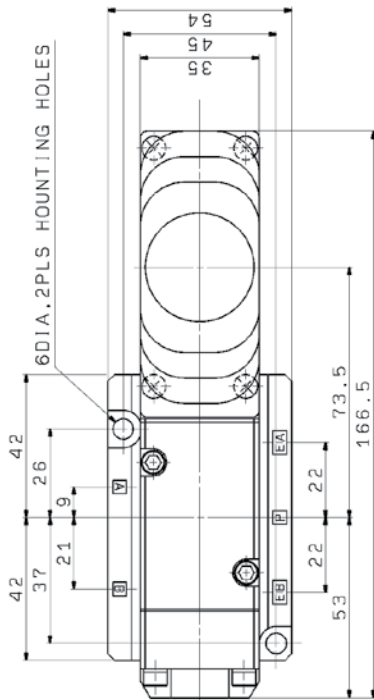
- 00 WITHOUT SUB BASE
- 01 RC1/8
- 02 RC1/4
- 03 RC3/8

SUB BASE

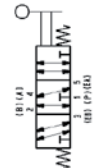
- 0 WITH SUB BASE (SIDE PORTS)
- 4 WITHOUT SUB BASE

RETURN FUNCTION

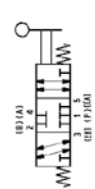
- A HAND OPERATE
- B HAND OPERATE



5X RC1/8, 1/4, 3/8
4(A), 2(B), 1(P), 5(EA), 3(EB) PORT



VSH441*



VSH431* SYMBOL

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



-40°F
-40°C












Cold Resistant Cylinder (-40 to 158°F [-40 to 70°C])

WEB

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 2

- Air cylinder which changed the seal material and grease, so that it could be used even at lower temperature down to -40°F (-40°C).

Applicable Series

Series	Description	Model	Action	Note
 CJP2	Pin cylinder	CJP2	Double acting, Single rod	Except clevis, trunnion style, with auto switch, ø4. Packing set (7)
 CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion, auto switch
		CJ2W	Double acting, Double rod	Except with air cushion, auto switch
 CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion, auto switch
		CM2W	Double acting, Double rod	Except with air cushion, auto switch
	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion, auto switch
 CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.
		CG1W	Double acting, Double rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.
 CU	Free mount cylinder	CU	Double acting, Single rod	Except with auto switch
	Non-rotating rod type	CUK	Double acting, Single rod	Except with auto switch
	Long stroke	CU	Double acting, Single rod	Except with auto switch
	Long stroke, Non-rotating rod	CUK	Double acting, Single rod	Except with auto switch
 CQS	Compact cylinder	CQS	Double acting, Single rod	Except with auto switch, with rubber bumper, with bracket
		CQSW	Double acting, Double rod	Except with auto switch, with rubber bumper, with bracket
 CQ2	Compact cylinder	CQ2	Double acting, Single rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket
		CQ2W	Double acting, Double rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket
 C75	ISO cylinder	C75	Double acting, Single rod	Except with air cushion, auto switch
 C76	ISO cylinder	C76	Double acting, Single rod	Except with air cushion, auto switch
 C85	ISO cylinder	C85	Double acting, Single rod	ø20 to ø25. Except with auto switch, air cushion
		C85W	Double acting, Double rod	ø20 to ø25. Except with auto switch, air cushion
 C96	ISO cylinder	C96S	Double acting, Single rod	Except with auto switch. Mounting bracket is available with basic only. Minimum operating pressure 0.2 MPa

How to Order

Standard model no.

-XB7

Cold resistant cylinder ●

Specifications

Ambient temperature range	-40 to 158°F (-40 to 70°C)
Seals material	Low nitrile rubber
Grease	Cold resistant grease
Auto switch	Not mountable
Dimensions	Same as standard type
Additional specifications	Same as standard type

Note1) Operate without lubrication from a pneumatic system lubricator.

Note2) Use dry air which is suitable for heatless air dryer etc. not to cause the moisture to be frozen.

Note3) Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

Note4) Mounting auto switch is impossible.

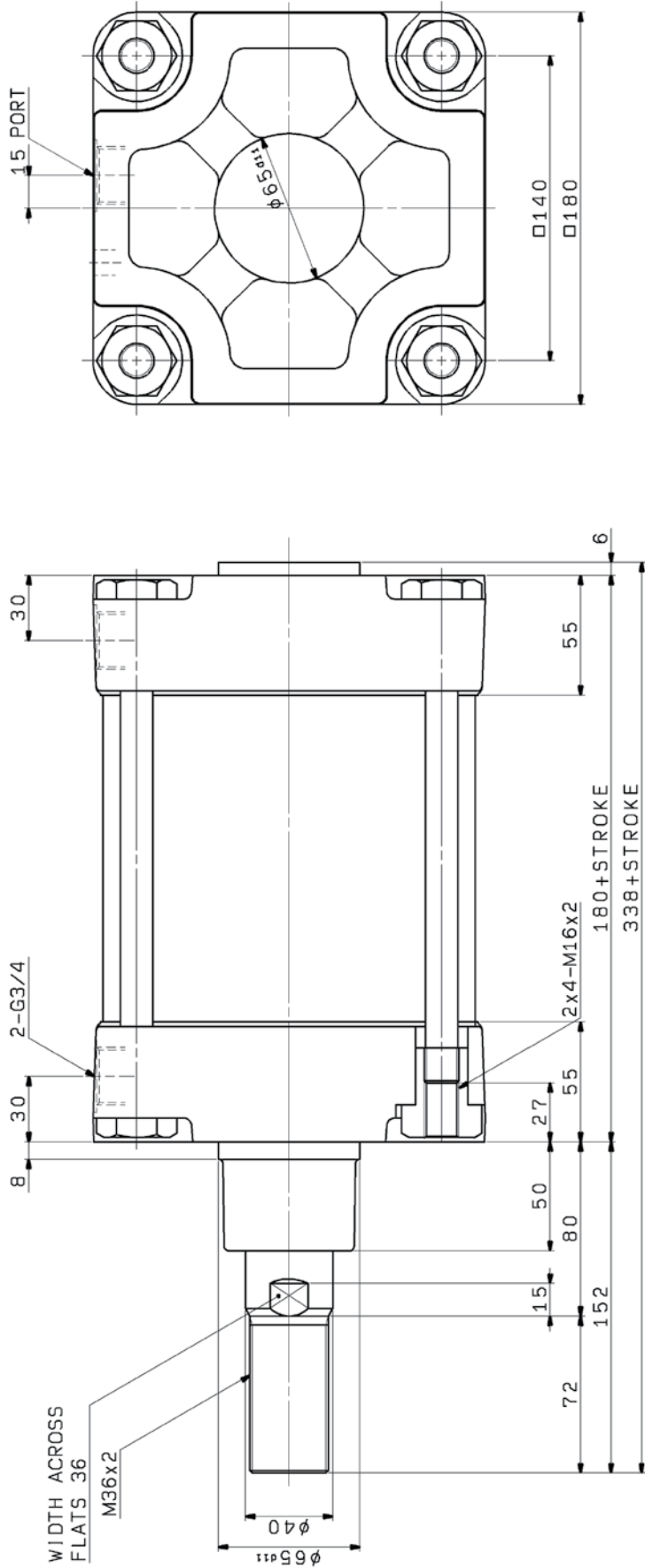
Note5) Please contact SMC for the one with rubber bumper for CQ2, CQS.

Note6) No cushion type is adopted. Piston speed is ranged from 50 to 500 mm/s.

Note7) Refer to the construction of the standard type for the details of the packing set for CJP2 □6,10 and 16.

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

- NOTE**
- 1) PLEASE INSTALL THE EXTERNAL STOPPER AT THE STROKE END.
 - 2) SEALS AND GREASE ARE USED FOR THE LOW TEMPERATURE CYLINDER.
 - 3) PISTON ROD MADE OF STAINLESS STEEL.
 - 4) SEAL KIT PART NO. C95SB160-DCM3551M-PS.

SPECIFICATION	
CYLINDER BORE DIA.	160 mm
CYLINDER STROKE	~250 mm 251~1000 mm 1001~1500 mm 1501~1600 mm
STROKE TOLERANCE	+1.0 mm +1.4 mm +1.8 mm +2.2 mm
CUSHION	NOTHING
MOUNTING	BASIC
MAX. OPERATING PRESS.	1.0 MPa
PROOF PRESSURE	1.5 MPa
AMBIENT AND FLUIDE TEMPERATURE	-30~70°C (NO FREEZING)
CYLINDER ACCESSORY	NOTHING

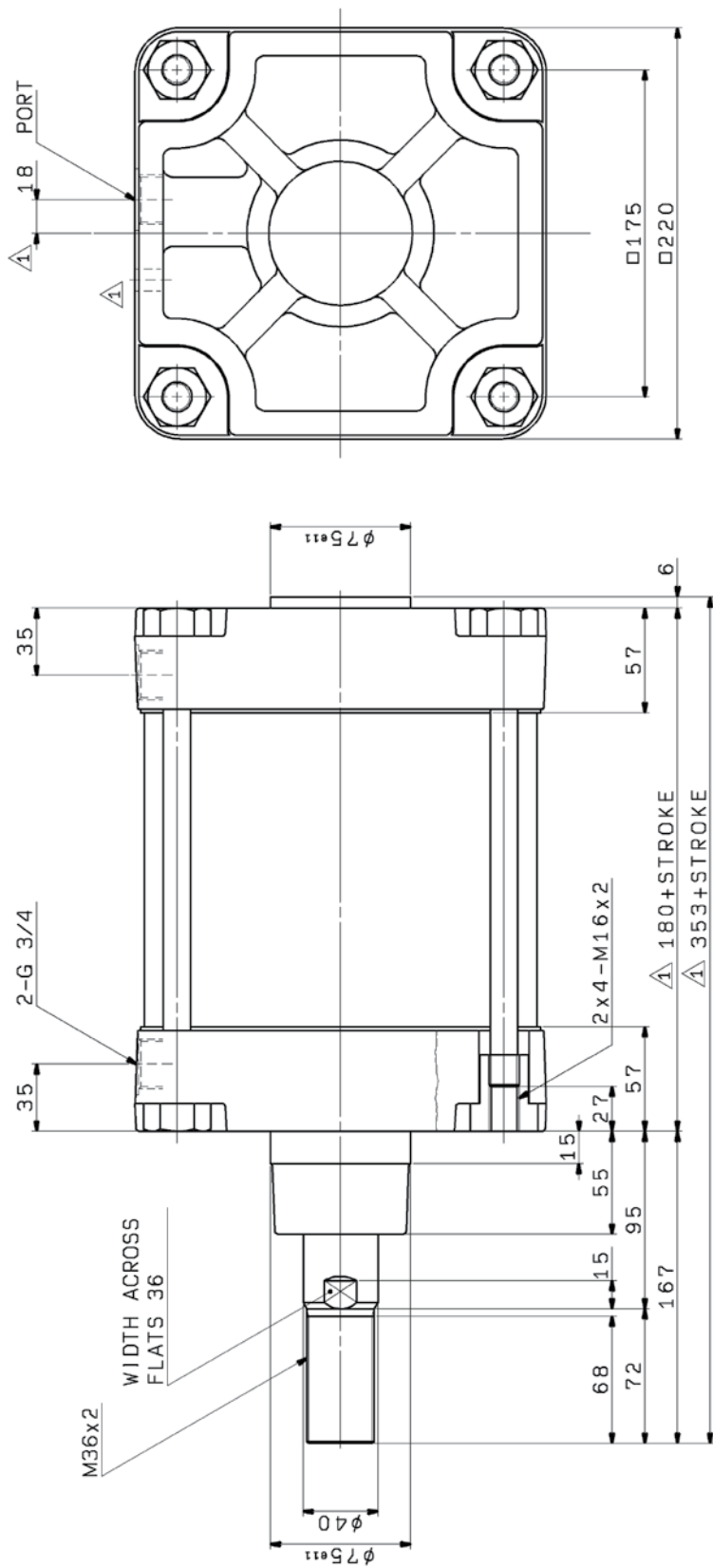


Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-4°F (-20°C)

ISO/VDMA
Cylinder Large

C95SB200-□-DCL1172L

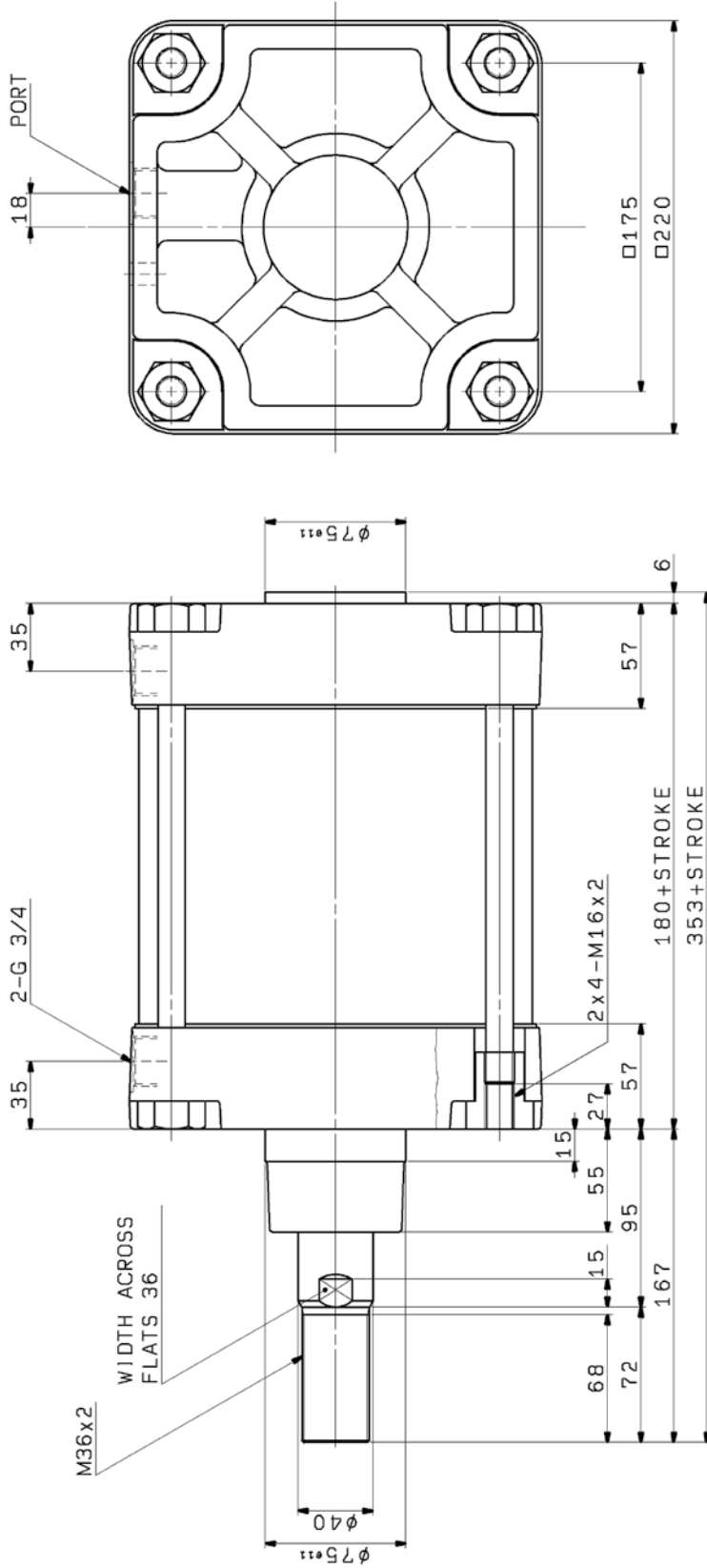


Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

NOTE

- 1) PLEASE INSTALL THE EXTERNAL STOPPER AT THE STROKE END.
- 2) STAINLESS STEEL PISTON ROD.
- 3) SEALS AND GREASE ARE USED FOR THE LOW TEMPERATURE CYLINDER.
- 4) SEAL KIT PART NO. C95SB200-DCL1172L-PS

SPECIFICATION	
CYLINDER BORE DIA.	200 mm
CYLINDER STROKE	~250 mm 251~500 mm
STROKE TOLERANCE	± 1.0 mm ± 1.4 mm
CUSHION	NOTHING
MOUNTING	BASIC
MAX. OPERATING PRESS.	1.0 MPa
PROOF PRESSURE	1.5 MPa
AMBIENT AND FLUDE TEMPERATURE	-20~70°C (NO FREEZING)
CYLINDER ACCESSORY	NOTHING



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

NOTE

- 1) PLEASE INSTALL THE EXTERNAL STOPPER AT THE STROKE END.
- 2) SEALS AND GREASE ARE USED FOR THE LOW TEMPERATURE CYLINDER.
- 3) CYLINDER TUBE MADE OF STEEL.
- 4) PISTON ROD, TIE ROD, TIE ROD NUT AND CUSHION RING B MADE OF STEINLESS STEEL.
- 5) SEAL KIT PART NO. C95SB200-DCN2072N-PS.

SPECIFICATION	
CYLINDER BORE DIA.	200 mm
CYLINDER STROKE	~250 mm 251~1000 mm
STROKE TOLERANCE	+1.0 mm +1.4 mm
CUSHION	NOTHING
MOUNTING	BASIC
MAX. OPERATING PRESS.	1.0 MPa
PROOF PRESSURE	1.5 MPa
AMBIENT AND FLUDE TEMPERATURE	-30~70°C (NO FREEZING)
CYLINDER ACCESSORY	NOTHING

SPECIFICATIONS

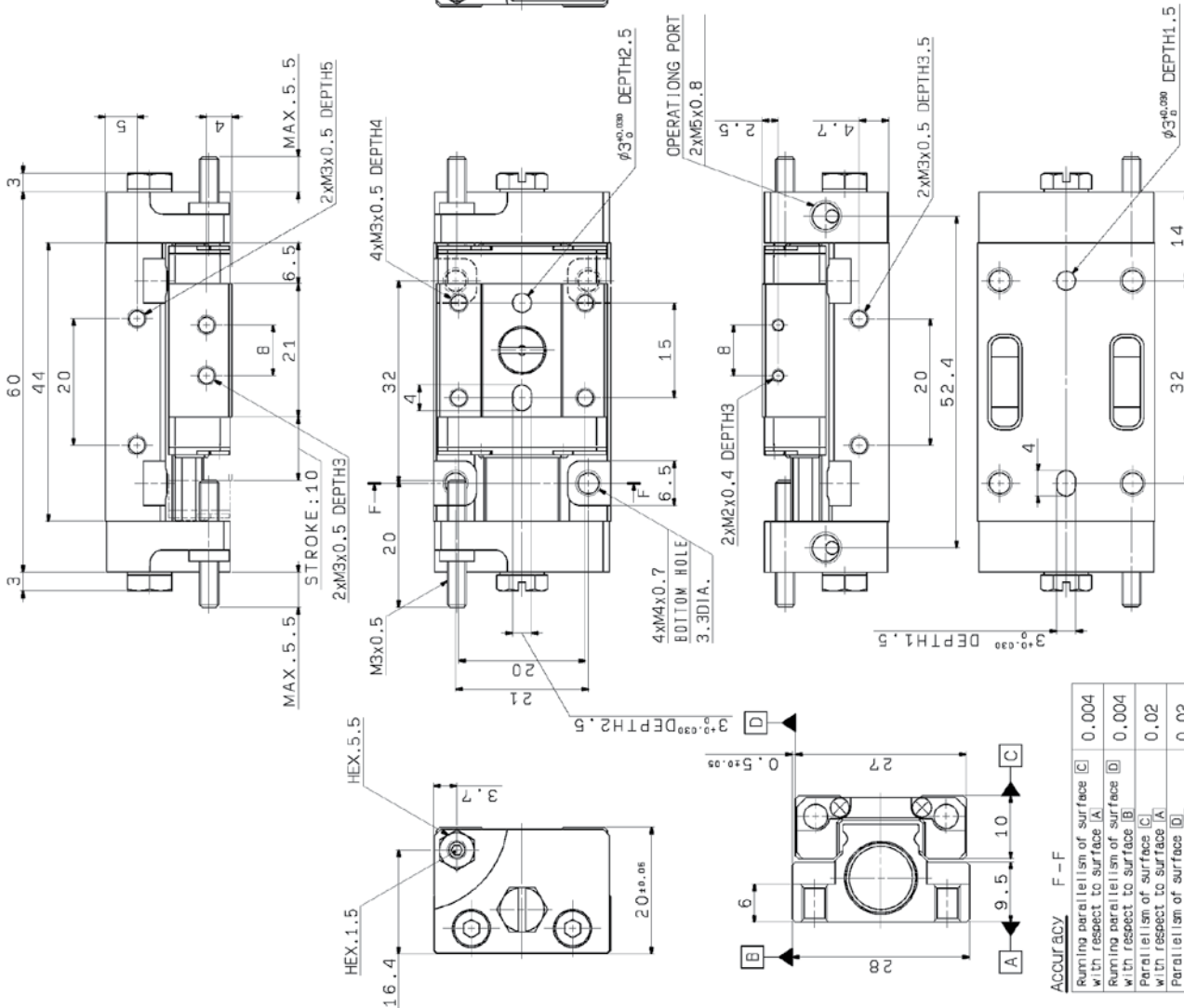
BORE	10 mm
STROKE	10 ¹ / ₁₆ mm
STROKE ADJUSTMENT RANGE	ONE SIDE:5mm(BOTH SIDE:10mm)
SUPPLY PORT SIZE	M5x0.8
MEDIUM	AIR
OPERATING METHOD	DOUBLE ACTING
OPERATING PRESSURE	0.15~0.7MPa
PROOF PRESSURE	1.05MPa
PERMITTED TORQUE/ROTATING AIR TEMP.	-40 ~ 60 °C
PISTON VELOCITY	50 ~ 200mm/S
CUSHION	NONE
LUBRICATION	NOT REQUIRED
MASS	130g

We cannot warranty the life and the guide operation as they are affected by (low) temperature.

NOTE

1. For assembly and inspection. They should follow "Precautions and procedure for assembling and inspecting specials" (MXS-FM10206).
2. Difference from MXP10-10CN:
Grease for low temperature should be used for all grease application parts.
Material of the piston seal was changed to the material for low temperature.
The rubber lining is not in the scraper.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



ACCURACY F-F

Running parallelism of surface [C] with respect to surface [A]	0.004
Running parallelism of surface [B] with respect to surface [B]	0.004
Parallelism of surface [C] with respect to surface [A]	0.02
Parallelism of surface [B] with respect to surface [B]	0.02

Air Slide Table **MXP12-25CN-X1354** **-40°F (-40°C)**

Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AL AR AF AW

Pressure Control
Equipment

Flow Control
Equipment

Fittings and
Tubing

Port Valves for
Fluid Control

Pneumatic
Instrumentation
Equipment

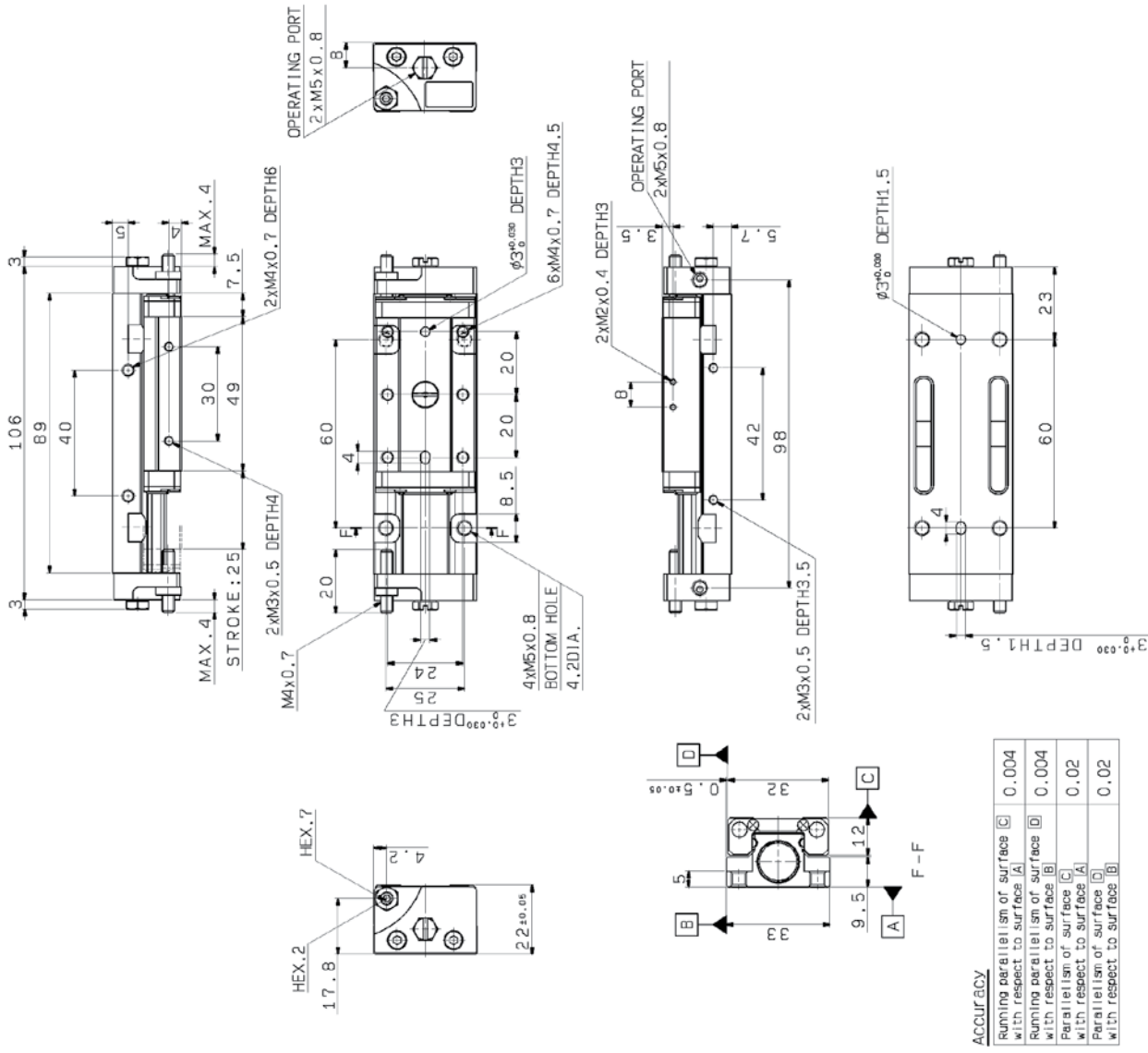
SPECIFICATIONS

BORE	12 mm
STROKE	25 ¹⁴ / ₁₆ mm
STROKE ADJUSTMENT RANGE	ONE SIDE:9mm(BOTH SIDE:10mm)
SUPPLY PORT SIZE	M5x0.8
MEDIUM	AIR
OPERATING METHOD	DOUBLE ACTING
OPERATING PRESSURE	0.15~0.7MPa
PROOF PRESSURE	1.05MPa
AMBIENT TEMP./OPERATING AIR TEMP.	-40 ~ 60 °C
PISTON VELOCITY	50 ~ 200mm/S
CUSHION	NONE
LUBRICATION	NOT REQUIRED
MASS	320g

We cannot warranty the life and the guide operation as they are affected by (low) temperature.

NOTE
 1. For assembly and inspection, they should follow "Precautions and procedure for assembling and inspecting specials" (MX&PM10203).
 2. Difference from MXP12-25CN:
 Grease for low temperature should be used for all grease application parts.
 Material of the piston seal was changed to the material for low temperature.
 The rubber lining is not in the scraper.

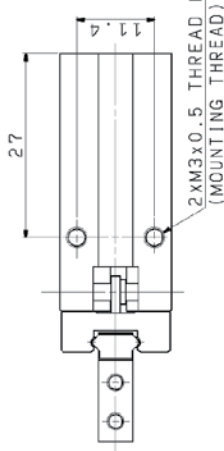
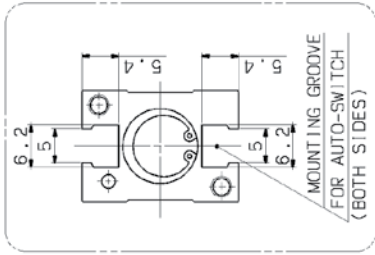
Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



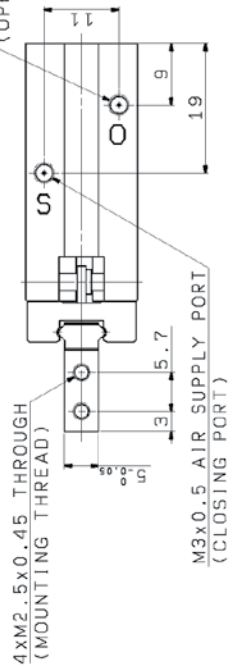
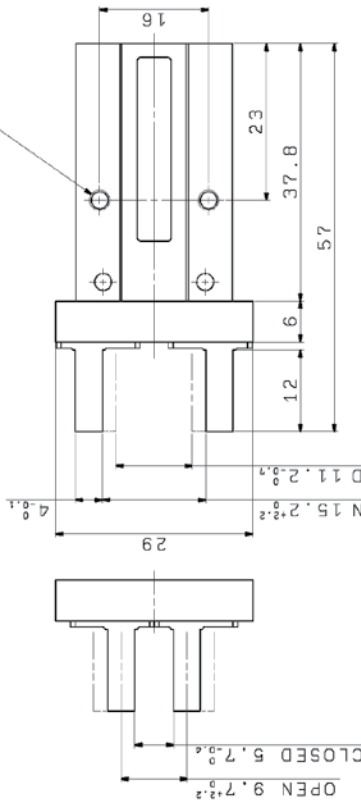
SPECIFICATIONS

1	MEDIUM	AIR
2	OPERATING PRESSURE	0.2 TO 0.7MPa
3	AMBIENT TEMP. AND OPERATING AIR TEMP.	-20 TO 60°C (NO FREEZING)
4	GRIPPING FORCE	EXTERNAL WORK HOLDING 11N
	(at 0.5MPa)	INTERNAL WORK HOLDING 17N
5	FINGER STROKE (BOTH SIDES)	4mm
6	MAX. OPERATING FREQUENCY	180C./min
7	LUBRICATION	NOT REQUIRED
8	MASS	55g

- NOTE
1. DIFFERENCE FROM MHZ2-10^{DN}:
(1) THIS PRODUCT IS COLD RESISTANT TYPE.
(2) MATERIAL OF PISTON PACKING, RCD PACKING AND GASKET ARE CHANGED TO LOW NITRILE RUBBER.
(3) MATERIAL OF GUIDE BOLT AND REINFORCING RING C ARE CHANGED TO STAINLESS STEEL.
(4) USE GREASE FOR LOW TEMPERATURE.
 2. PLEASE USE THE AIR WHICH IS DRY ENOUGH BECAUSE DEW CONDENSES EASILY ON THE INSIDE.
 3. AUTO-SWITCH AMBIENT TEMPERATURE IS -10 TO 60°C.



4xM3x0.5 THREAD DEPTH 5.5 (MOUNTING THREAD)
φ2.6 THROUGH HOLES FOR MOUNTING *



MHZ2-10DN-X4275

HOW TO ORDER

MHZ2-10DN - [M9BW] [S] - X4275

FINGER POSITION:
NIL. STANDARD TYPE
N (EXCEPT FLAT FINGER TYPE)

LEAD WIRE LENGTH
NIL. 0.5 m
M 1 m
L 3 m
Z 5 m

AUTO-SWITCH
NIL. NO. AUTO-SWITCH

NO.	AUTO-SWITCH MODEL	NO.	AUTO-SWITCH MODEL
M9B	D-M9B	M9BW	D-M9BW
M9N	D-M9N	M9NW	D-M9NW
M9P	D-M9P	M9PW	D-M9PW
M9V	D-M9V	M9VW	D-M9VW
M9W	D-M9W	M9WW	D-M9WW
M9PV	D-M9PV	M9PVA	D-M9PVA
M9NA	SOLID STATE SWITCH	M9NA	SOLID STATE SWITCH
M9PA	WATER RESISTANT	M9PA	WATER RESISTANT
M9PAV	(2-COLOR INDICATION)	M9PAV	(2-COLOR INDICATION)
M9PAV		M9PAV	
M9PAV		M9PAV	

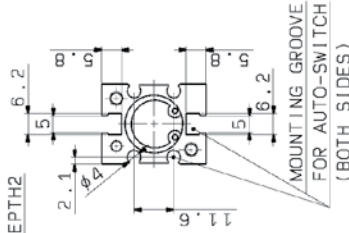
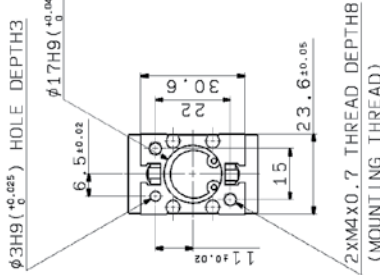
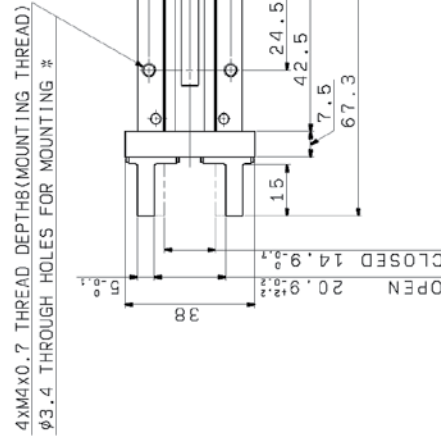
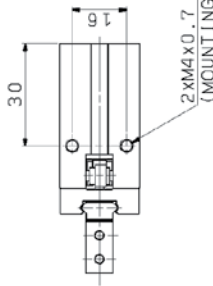
- * THROUGH-HOLE MOUNTING IS NOT POSSIBLE WHEN THE AUTO-SWITCH IS MOUNTED ON A SQUARE SLOT ON THE SIDE.
- * WHEN THE AUTO-SWITCH IS ORDERED SEPARATELY, A SPECIFIC BRACKET (BMG2-012) IS NECESSARY.
- * WATER RESISTANT TYPE AUTO SWITCHES CAN BE MOUNTED ON THE ABOVE MODELS, BUT IN SUCH CASE SMC CANNOT GUARANTEE WATER RESISTANCE.

UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

SPECIFICATION

1 MEDIUM	AIR
2 OPERATING PRESSURE	0.1 TO 0.7MPa
3 AMBIENT TEMP. AND OPERATING AIR TEMP.	-30 TO 60°C(IND. FREEZING)
4 GRIPPING FORCE (EXTERNAL WORK HOLDING)	34N
4 (AT 0.5MPa) INTERNAL WORK HOLDING	45N
5 FINGER STROKE (BOTH SIDES)	6 mm
6 MAX. OPERATING FREQUENCY	180C./D.M.
7 LUBRICATION	NOT REQUIRED
8 MASS	115g

- NOTE**
1. DIFFERENCE FROM MHZ2-16D:
(1) THIS PRODUCT IS GOLD RESISTANT TYPE.
(2) MATERIAL OF PACKING AND GASKET ARE CHANGED TO LOW NITRILE RUBBER.
(3) MATERIAL OF RETAINING RING C AND HEXAGON SOCKET HEAD CAP SCREW ARE CHANGED TO STAINLESS STEEL.
(4) USE GREASE FOR LOW TEMPERATURE.
 2. PLEASE USE THE AIR WHICH IS DRY ENOUGH BECAUSE DEW CONDENSES EASILY ON THE INSIDE.
 3. AUTO-SWITCH AMBIENT TEMPERATURE IS -10 TO 60°C.



HOW TO ORDER

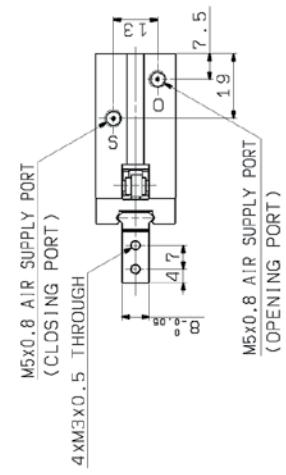
MHZ2-16D-M9BW L S-X5748

*SYMBOL FOR AUTO-SWITCH
 NIL. 2 PCS
 S 1 PCS
 n n PCS
 *LEAD WIRE LENGTH
 M 0.5m
 n 1m (EXCEPT D-F8*)
 Z 5m

*AUTO-SWITCH		NO. AUTO SWITCH MODEL	
F8B	D-F8B	M9BV	D-M9BV
F8N	D-F8N	M9V	D-M9V
M9B	D-M9B	M9PW	D-M9PW
M9N	D-M9N	M9NA	D-M9NA
M9P	D-M9P	M9NAV	D-M9NAV
M9PV	D-M9PV	M9PAV	D-M9PAV

*AUTO SWITCH MODEL		NO. AUTO SWITCH MODEL	
M9BW	D-M9BW	M9BV	D-M9BV
M9NW	D-M9NW	M9V	D-M9V
M9B	D-M9B	M9PW	D-M9PW
M9N	D-M9N	M9NA	D-M9NA
M9P	D-M9P	M9NAV	D-M9NAV
M9PV	D-M9PV	M9PAV	D-M9PAV

- * THROUGH-HOLE MOUNTING IS NOT POSSIBLE WHEN THE AUTO-SWITCH IS MOUNTED ON A SQUARE SLOT ON THE SIDE.
- WHEN THE AUTO-SWITCH USING A SIDE SQUARE SLOT IS ORDERED SEPARATELY, A SPECIFIC BRACKET (BMGE-012) IS NECESSARY.
 - WATER RESISTANT TYPE AUTO SWITCHES CAN BE MOUNTED ON THE ABOVE MODELS, BUT IN SUCH CASE SMC CANNOT GUARANTEE WATER RESISTANCE.



UNLESS OTHERWISE NOTED, ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

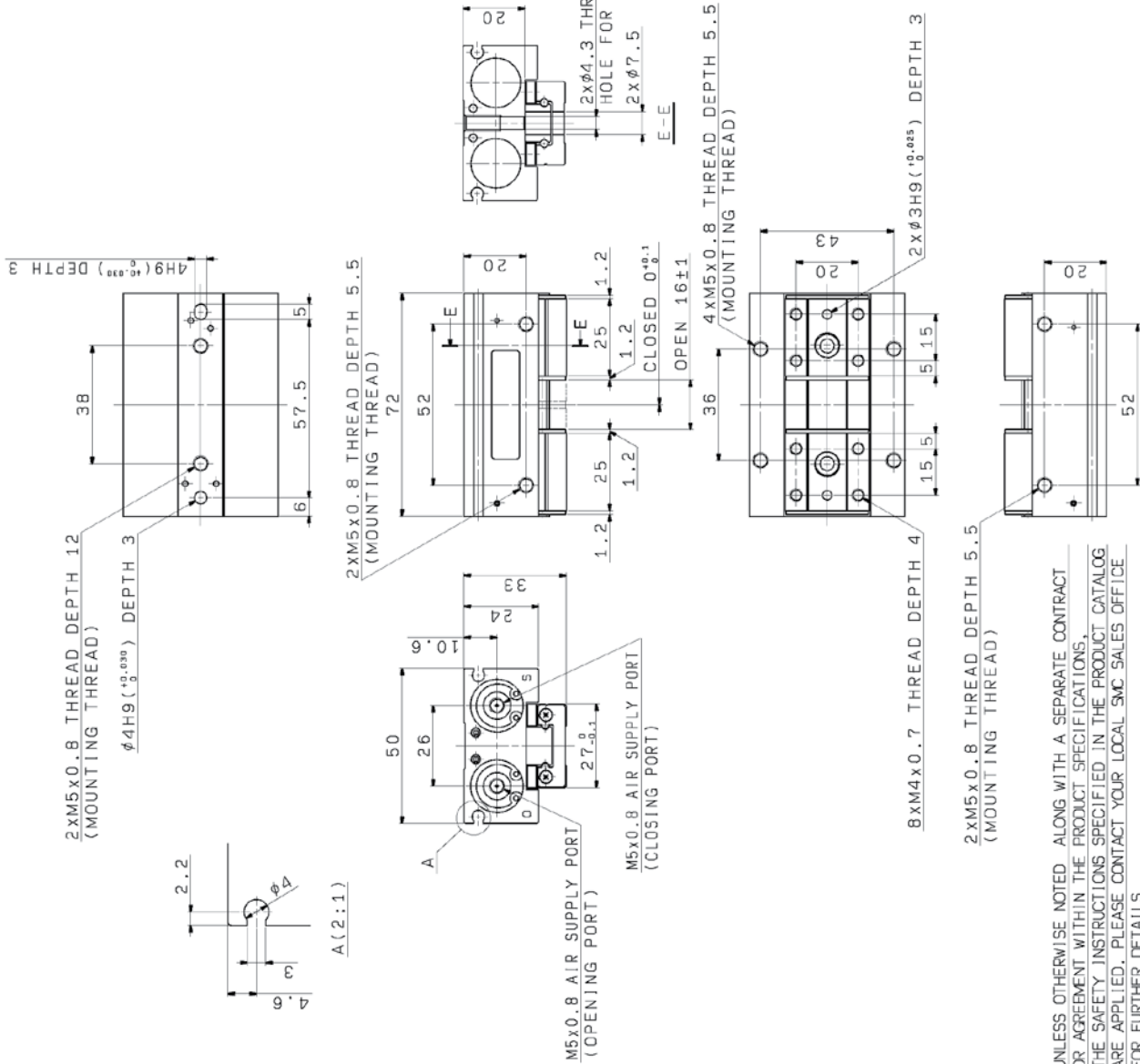
Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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SPECIFICATIONS

1	MEDIUM	AIR
2	OPERATING PRESSURE	0.1 TO 0.7MPa
3	AMBIENT TEMP. AND OPERATING AIR TEMP.	-20 TO 60°C (NO FREEZING)
4	GRIPPING FORCE (at 0.5MPa)	90N
5	FINGER STROKE (BOTH SIDES)	16mm
6	MAX. OPERATING FREQUENCY	120c.p.m
7	LUBRICATION	NOT REQUIRED
8	MASS	350g

NOTE

1. DIFFERENCE FROM MHF2-16D:
- (1) THIS PRODUCT IS COLD RESISTANT TYPE.
- (2) MATERIAL OF PISTON PACKING AND GASKET ARE CHANGED TO LOW NITRILE RUBBER.
- (3) MATERIAL OF REINFORCING RING C AND SCREWS ARE CHANGED TO STAINLESS STEEL.
- (4) USE GREASE FOR LOW TEMPERATURE.
2. PLEASE USE THE AIR WHICH IS DRY ENOUGH BECAUSE DEW CONDENSES EASILY ON THE INSIDE.
3. AUTO-SWITCH AMBIENT TEMPERATURE IS -10 TO 60°C.



HOW TO ORDER



•AUTO-SWITCH		•AUTO SWITCH MODEL	
NO.	AUTO SWITCH MODEL	NO.	AUTO SWITCH MODEL
M9N	D-M9N	M9NW	D-M9NW
M9P	D-M9P	M9PW	D-M9PW
M9B	D-M9B	M9BW	SOLID STATE SWITCH
M9NV	D-M9NV	M9NAV	(2-COLOR INDICATION)
M9BV	D-M9BV	M9BVA	D-M9BVA
M9BY	D-M9BY	M9BYA	D-M9BYA
M9BA	D-M9BA	M9NA	SOLID STATE SWITCH
M9PA	D-M9PA	M9PA	WATER RESISTANT
M9BAV	D-M9BAV	M9BAV	(2-COLOR INDICATION)
M9NAV	D-M9NAV	M9NAV	(2-COLOR INDICATION)
M9PAV	D-M9PAV	M9PAV	(2-COLOR INDICATION)

• WATER RESISTANT TYPE AUTO SWITCHES CAN BE MOUNTED ON THE ABOVE MODELS, BUT IN SUCH CASE SMC CANNOT GUARANTEE WATER RESISTANCE.

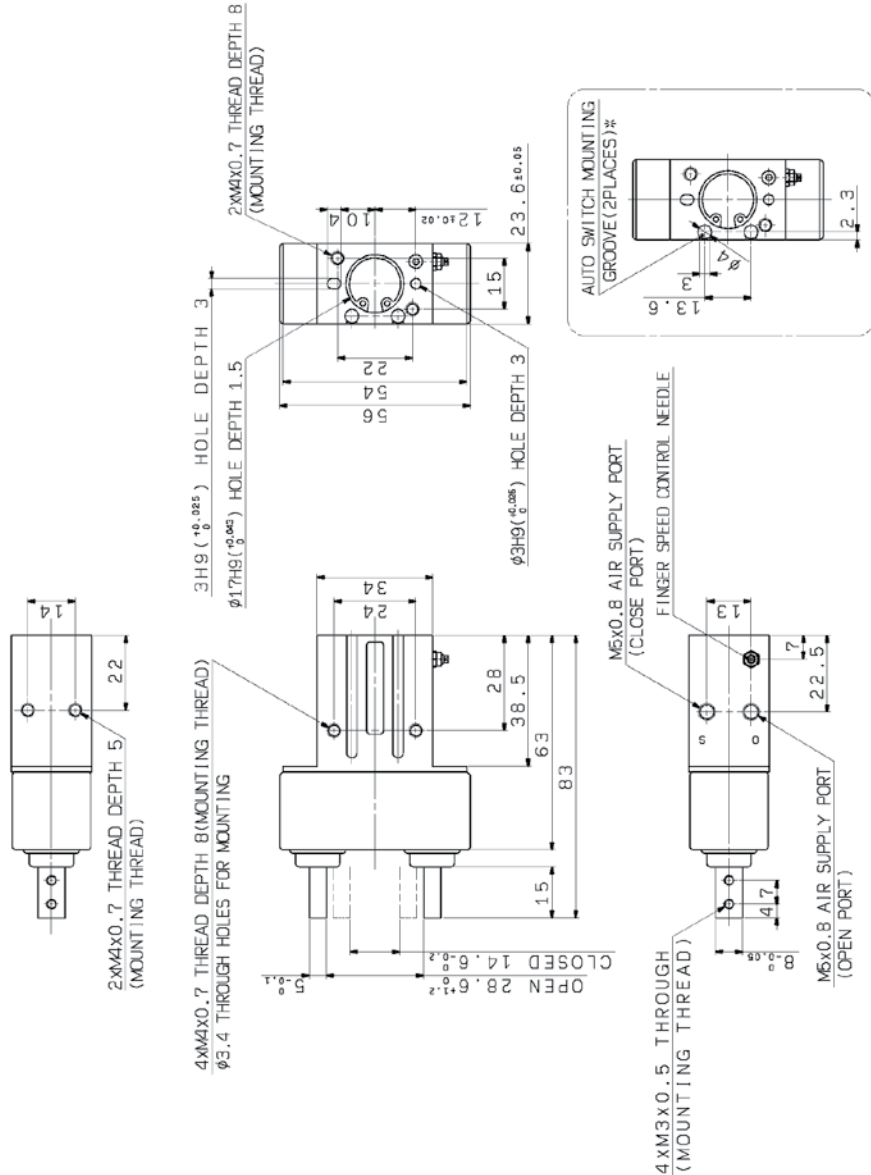
UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

SPECIFICATION

1 MEDIUM	AIR
2 OPERATING SYSTEM	DOUBLE ACTING
3 OPERATING PRESSURE	0.1 TO 0.6MPa
4 AMBIENT TEMP. AND OPERATING MEDIUM TEMP.	-20 TO 60°C(ND FREEZING)
5 GRIPPING FORCE (INTERNAL WORK HOLDING: 27N (at 0.5MPa, l=20mm) EXTERNAL WORK HOLDING: 30N	
6 FINGER STROKE (DIAMETER)	14mm
7 MAX. OPERATING FREQUENCY	90C.P.M.
8 LUBRICATION	NOT REQUIRED
9 MASS	1649

NOTE

1. DIFFERENCE FROM MHKL2-16D□:
 - (1) THIS PRODUCT IS COLD RESISTANT TYPE.
 - (2) MATERIAL OF PISTON PACKING, ROD PACKING AND GASKET ARE CHANGED TO LOW NITRILE RUBBER.
 - (3) MATERIAL OF REINFORCING RING C IS CHANGED TO STAINLESS STEEL.
 - (4) USE GREASE FOR LOW TEMPERATURE.
2. PLEASE USE THE AIR WHICH IS DRY ENOUGH BECAUSE DEW CONDENSES EASILY ON THE INSIDE.
3. AUTO-SWITCH AMBIENT TEMPERATURE IS -10 TO 60°C.



HOW TO ORDER

MHKL2-16D□-M9BV□S-X4771

□ SYMBOL FOR AUTO-SWITCH

□ NIL. 1 PC

□ 5

□ LEAD WIRE LENGTH

□ NIL. 0.5m

□ 3m

□ 5m

• DUST COVER MATERIAL

F — CHLOROPRENE RUBBER

S — FLUORO RUBBER

□ — SILICONE RUBBER

• AUTO-SWITCH

NIL. NO. AUTO-SWITCH

M8B AUTO-SWITCH MODEL

M8N SOLID STATE SWITCH

M8P SOLID STATE SWITCH (2-COLOR INDICATION)

M8BV AUTO-SWITCH MODEL

M8NA SOLID STATE SWITCH

M8NAV SOLID STATE SWITCH (2-COLOR INDICATION)

M8PA SOLID STATE SWITCH

M8PAV SOLID STATE SWITCH (2-COLOR INDICATION)

M8PB SOLID STATE SWITCH

M8PBV SOLID STATE SWITCH (2-COLOR INDICATION)

M8PC SOLID STATE SWITCH

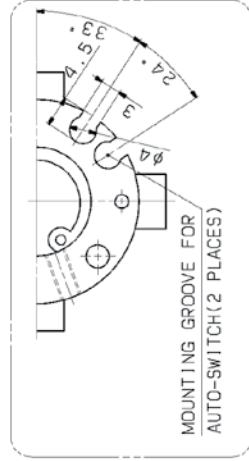
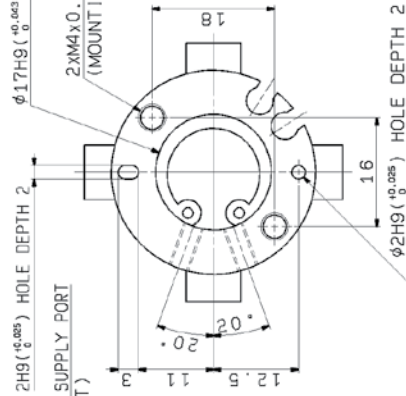
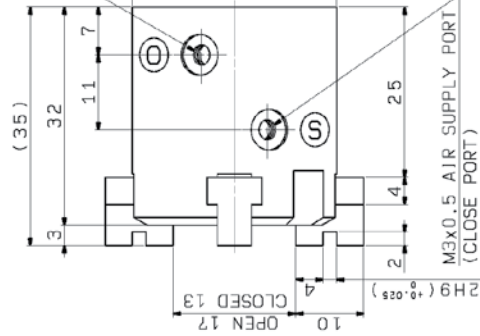
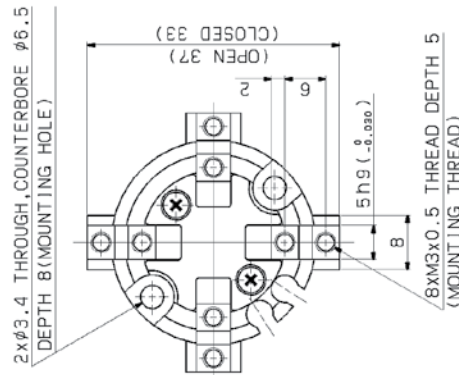
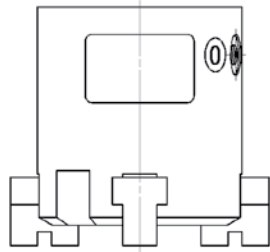
M8PCV SOLID STATE SWITCH (2-COLOR INDICATION)

UNLESS OTHERWISE NOTED, ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

Slide Guide Round Body Air Gripper 4-Finger Type **MHS4-16D-X3918 -22°F (-30°C)**

SPECIFICATION

1	MEDIUM	AIR
2	OPERATING SYSTEM	DOUBLE ACTING
3	OPERATING PRESSURE	0.2 TO 0.6MPa
4	AMBIENT TEMP. AND OPERATING MEDIUM TEMP.	-30 TO 60°C (NO. FREEZING)
5	REPEATABILITY	±0.01
6	GRIPPING FORCE	INTERNAL WORK HOLDING 10N (at 0.9kg, L=20mm) EXTERNAL WORK HOLDING 12N
7	FINGER STROKE (D.I. METER)	4(mm)
8	MAX. OPERATING FREQUENCY	120c.p.m.
9	LUBRICATION	NOT REQUIRED
10	MASS	66g



- NOTE**
1. DIFFERENCE FROM MHS4-16D:
 - (1) THIS PRODUCT IS COLD RESISTANT TYPE.
 - (2) MATERIAL OF PISTON PACKING, ROD PACKING AND GASKET ARE CHANGED TO LOW NITRILE RUBBER.
 - (3) MATERIAL OF REINING RING C AND CROSS-RESSESSED AND FLAT HEAD MACHINE SCREW ARE CHANGED TO STAINLESS STEEL.
 - (4) USE GREASE FOR LOW TEMPERATURE.
 2. PLEASE USE THE AIR WHICH IS DRY ENOUGH BECAUSE DEW CONDENSES EASILY ON THE INSIDE.
 3. AUTO-SWITCH AMBIENT TEMPERATURE IS -10 TO 60°C.

HOW TO ORDER

MHS4-16D-M9BW L S -X3918

•SYMBOL FOR AUTO-SWITCH
N L 2 PCS.
S 1 PC.

•LEAD WIRE LENGTH
N L 0.5 m
M 1 m
L 3 m
Z 5 m

•AUTO-SWITCH		•NO. AUTO SWITCH MODEL	
N L	NO.	N	NO.
M	I-M9B	M	M9BW
L	D-M9B	L	D-M9BW
L	D-M9N	L	D-M9BN
Z	D-M9V	Z	D-M9BV
Z	D-M9S	Z	D-M9SV
Z	D-M9G	Z	D-M9GV
Z	D-M9A	Z	D-M9AV
Z	D-M9PA	Z	D-M9PVA
Z	D-M9RB	Z	D-M9RBA
Z	D-M9RV	Z	D-M9RVA
Z	D-M9M	Z	D-M9MA
Z	D-M9P	Z	D-M9PA
Z	D-M9B	Z	D-M9BA
Z	D-M9V	Z	D-M9VA
Z	D-M9S	Z	D-M9SA
Z	D-M9G	Z	D-M9GA
Z	D-M9A	Z	D-M9AA
Z	D-M9PA	Z	D-M9PA
Z	D-M9RB	Z	D-M9RBA
Z	D-M9RV	Z	D-M9RVA
Z	D-M9M	Z	D-M9MA
Z	D-M9P	Z	D-M9PA
Z	D-M9B	Z	D-M9BA
Z	D-M9V	Z	D-M9VA
Z	D-M9S	Z	D-M9SA
Z	D-M9G	Z	D-M9GA
Z	D-M9A	Z	D-M9AA
Z	D-M9PA	Z	D-M9PA

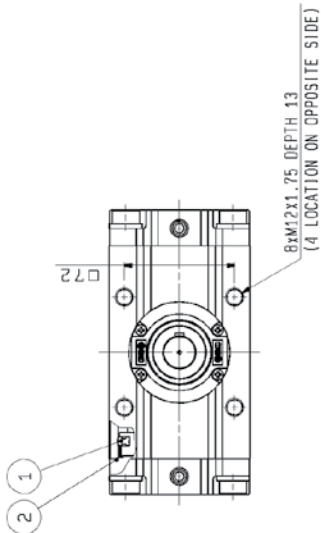
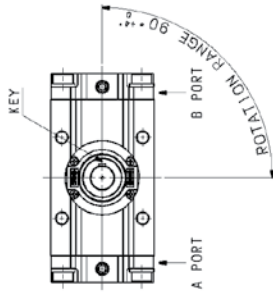
•WATER RESISTANT TYPE AUTO SWITCHES CAN BE MOUNTED ON THE ABOVE MODELS, BUT IN SUCH CASE SMC CANNOT GUARANTEE WATER RESISTANCE.

UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.

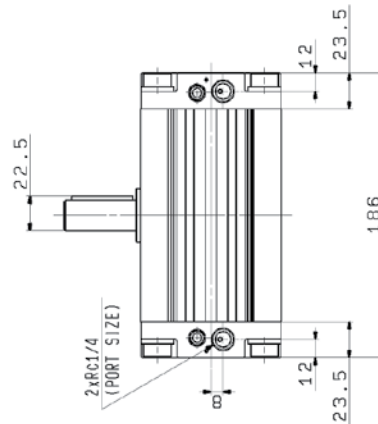
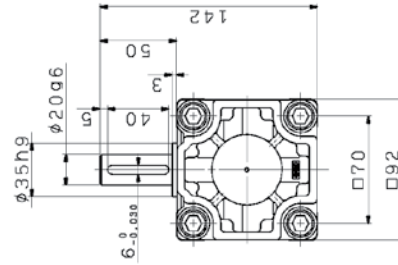
Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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SPECIFICATIONS

- OPERATING PRESSURE RANGE 0.1~1.0MPa
- ◆ OPERATING TEMPERATURE RANGE -20~60°C (BUT NO FREEZING IS ALLOWED)
- BORExROTATION RANGE 80x90°
- ALLOWABLE KINETIC ENERGY 0.16J
- ROTATION RANGE IS AS SHOWN LEFT.
- WHEN LEFT PORT IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE.



CONTENTS OF SPECIAL
 LOW-NITRILE-BUTADIENE RUBBER FOR SEALS.
 CHANGE OF GREASE.
 ◆ MARKS INDICATE THE DIMENSIONS AND SECTIONS WHICH ARE DIFFERENT FROM STANDARD.



THE PARTS WHICH DO NOT EXIST ON THE PARTS LIST ARE COMMON TO CRA1BS80-90Z.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
2		TUBE GASKET	NBR	2	B2.4x79.4x1.5
1		PISTON SEAL	NBR	2	INP-80L

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-40°F
-40°C

Filter Regulator Stainless Steel 316 and Special Temperature Environment -40°F (-40°C) Specifications

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com>

WEB

- External parts material: Stainless steel 316
- Ambient and fluid temperature: -40 to 176°F (-40 to 80°C)
- NACE International Standards compliant

The JIS component standards of the external parts and the component measurement results of the certificate for materials are within the ANSI/NACE standards.



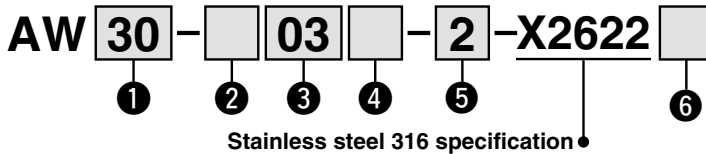
AW40-N04-2R-X2622

Specifications

Made-to-order part no.	-X2622
Fluid	Air
Ambient and fluid temperature	-40 to 176°F (-40 to 80°C) (with no freezing)
Proof pressure	435 psi (3.0 MPa)
Maximum operating pressure	290 psi (2.0 MPa)
Set pressure range	7.3 to 123 psi (0.05 to 0.85 MPa)
Nominal filtration rating	5 μm
Drain capacity (cm ³)	AW30: 20, AW40: 80
Construction	Relieving type
Weight (kg)	AW30: 1.19, AW40: 3.40

Applicable Model

Model	AW30	AW40
Port size	1/4, 3/8	1/4, 3/8, 1/2, 3/4



- Option/Semi-standard: Select one each for **a** to **d**.
 - Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
- Example) AW30-03C-2R-X2622A

		Symbol	Description	① Body size		
				30	40	
②	Thread type	Nil	Rc	●	●	
		N	NPT	●	●	
		F	G	●	●	
		+				
③	Port size	02	1/4	●	●	
		03	3/8	●	●	
		04	1/2	—	●	
		06	3/4	—	●	
		+				
④	Option i	a	Float type auto drain	●	●	
		C ^{Note 1)}	Float type auto drain (N.C.)	●	●	
		+				
⑤	Semi-standard	b	Bowl	●	●	
				+		
		c	Flow direction	Nil	Flow direction: Left to right	●
			R	Flow direction: Right to left	●	●
		+				
⑥	Option ii	d	Pressure gauge ^{Note 3)} Bracket	●	●	
				+		
				+		
				+		
		Nil	Without option	●	●	
		A	Round type pressure gauge (without limit indicator)	●	●	
		B	With bracket	●	●	
		C	Round type pressure gauge (without limit indicator), With bracket	●	●	

Note 1) When the float type auto drain is selected, the fluid temperature range is 23 to 140°F (-5 to 60°C) (with no freezing), and the maximum operating pressure is 145 psi (1.0 MPa). Take measures if the fluid temperature is likely to be out of the specified range due to the ambient temperature.

Note 2) Only metal bowl is available.

Note 3) The pressure gauge is shipped together, but not assembled. AW30: G43-10-□01-X3 or AW40: G43-10-□02-X3 is included.

SPECIFICATIONS

PROOF PRESS. 1.5 MPa
 MAX. WORKING PRESS. 1.0 MPa
 SET PRESS. 0.05~0.85 MPa
 WORKING FLUID AIR
 AMBIENT TEMP. -40~85°C
 WORKING FLUID TEMP.
 -5~60°C (SHOULD BE NO FREEZING)
 RATED FILTRATION 5 μm
 PORT SIZE 2-A
 GAUGE PORT SIZE 2-C

ATTENTION

1. ACCESSORIES ARE PACKED TOGETHER.

TABLE 1.1. PORT SIZE AND COMPONENT PART NO.

MODEL NO.	A	C	① BODY	② PLUG
AW20-01-02(B,H)-2(R)-X2257	Rc 1/8-1/4	Rc 1/8	AW20P-012-01-02-X2242	R 1/8(1B00143)
AW20-F01-F02(B,H)-2(R)-X2257	G 1/8-1/4	G 1/8	AW20P-012-F01-F02-X2242	R 1/8(1B00217)
AW20-N01-N02(B,H)-2(R)-X2257	NPT 1/8-1/4	NPT 1/8	AW20P-012-N01-N02-X2242	NPTF 1/8(1B00248)

ORDER SPECIFICATION CODE
 AW20- [] - [] - [] - X2257

PORT SIZE
 O1 Rc 1/8
 O2 Rc 1/4
 F01 G 1/8
 F02 G 1/4
 ND1 NPT 1/8
 ND2 NPT 1/4

ACCESSORY
 NIL
 B BRACKET ASSEMBLY
 H SET NUT

OPTIONS
 2 METAL-BOWL
 R FROM INDIAN MARKET

WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.

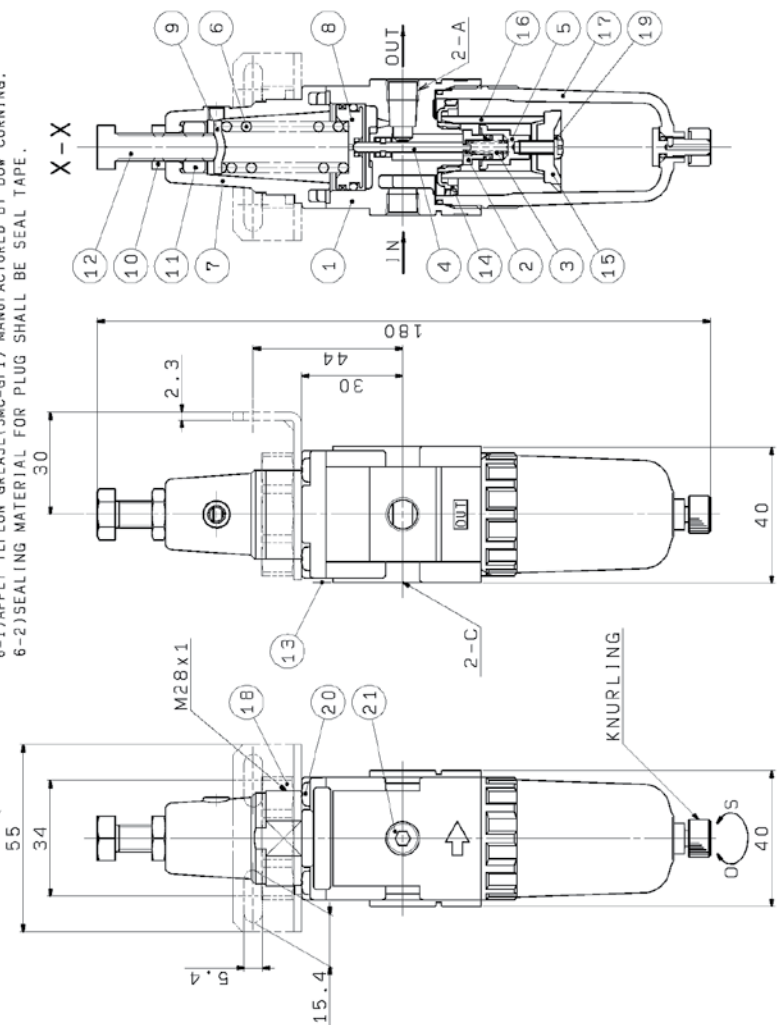
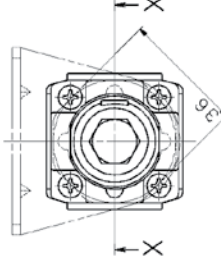
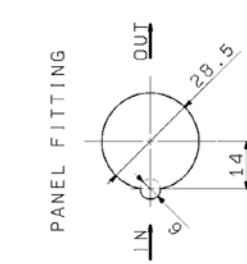
COMBINATION OF ACCESSORY
 B []
 H []

COMBINATION OF OPTIONS
 2 []
 2R []

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS #DIFFERENCE FROM THE STANDARD TYPE, {AW20-(F,N)01~(F,N)02(B,H)-2(R)}
 1. PARTS WITH * MARK OUTSIDE OF THE PARTS LIST ARE DIFFERENT.
 2. AMBIENT TEMP. IS DIFFERENT. (FOR LOW TEMP. AND HIGH TEMP.)
 3. EXTERNAL METAL AND EXTERNAL SPECIFIED PARTS: STAINLESS STEEL. (PLUG IS EXCLUDED)
 4. THE PRESSURE GAUGE PORT HAS BEEN PROCESSED DIRECTLY TO THE BODY.
 5. THE HANDLE SHAPE IS SPECIAL.
 6. ATTENTION FOR MANUFACTURE
 6-1) APPLY TEFLON GREASE (SMC-GF1) MANUFACTURED BY DOW CORNING.
 6-2) SEALING MATERIAL FOR PLUG SHALL BE SEAL TAPE.

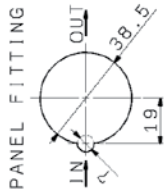
ITEM	PART NO.	PART NAME	MATERIAL	QTY	REMARKS
★	21	REFER TO TABLE.1	STEEL	2	NI-PLATING
★	20	Q3B00087	TAP TITE	4	STAINESS STEEL
★	19	AA00233	SCREW	1	STEEL WIRE
★	18	AR20P-260S-X170	SET NUT	1	BRASS BAR
★	17	C2SF-2-X2257	BOWL ASSEMBLY	1	WITH B
★	16	AW20P-060S-T-58	ELEMENT	1	BOWL MATERIAL-ADC
★	15	AW20P-040S-X430	BAFFLE PLATE	1	SINTERED BRONZE
★	14	AW20P-030-X430	DEFLECTOR	1	PBT
★	13	AR25P-300	NAME PLATE	1	POLYETHYLENE
★	12	AW20P-680-X242	ADJUST SCREW	1	STAINESS STEEL
★	11	AW20P-570-X425	NUT	1	STEEL
★	10	DG00002	NUT	1	STAINESS STEEL
★	9	AW20P-540-X2242	ADJUST SPRING HOLDER	1	STAINESS STEEL
★	8	AW20P-520AS-X242	PISTON ASSEMBLY	1	ALUMINUM DIE CASTING
★	7	AW20P-500-X242	BONNET	1	ALUMINUM DIE CASTING
★	6	AW20P-180-X242	ADJUST SPRING	1	STEEL WIRE
★	5	AW20P-550-X242	VALVE GUIDE	1	ALUMINUM BAR
★	4	AW20P-360A-X242	STEM ASSEMBLY	1	ALUMINUM BAR
★	3	AW20P-350	VALVE SPRING	1	STAINESS STEEL
★	2	AW20P-340AS-X2200	VALVE ASSEMBLY	1	ALUMINUM DIE CASTING
★	1	REFER TO TABLE.1	BODY	1	ALUMINUM DIE CASTING

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Filter Regulator **AW30-F03-2-X2220** **-40°F (-40°C)**

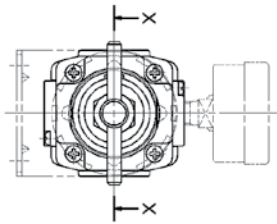
ORDER SPECIFICATION CODE
 AW30 - - - 2 -X2220



PORT SIZE		ACCESSORY	OPTIONS
02 RC 1/4	N1L		1 0.2MPa SETTING
03 RC 3/8	B	BRACKET ASSEMBLY	2 METAL-BOWL
	G	PRESSURE GAUGE	N NON-RELIEVING
	H	SET NUT	R FLOW DIRECTION(RIGHT TO LEFT)

WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.

COMBINATION OF ACCESSORY		COMBINATION OF OPTIONS	
B	BG	2	12
G	GH	2N	12NR
H		2R	12R



NOTE
 1. ACCESSORIES ARE PACKED TOGETHER.
 2. THIS PRODUCT ENSURES NO EXTERNAL LEAKAGE AT -40°C AND 80°C OF AMBIENT TEMP.
 CHARACTERISTICS ARE CONFIRMED AT NORMAL TEMP.

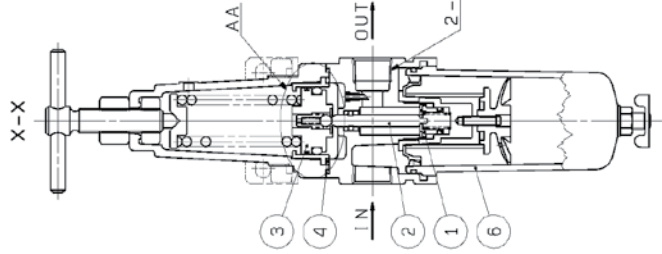
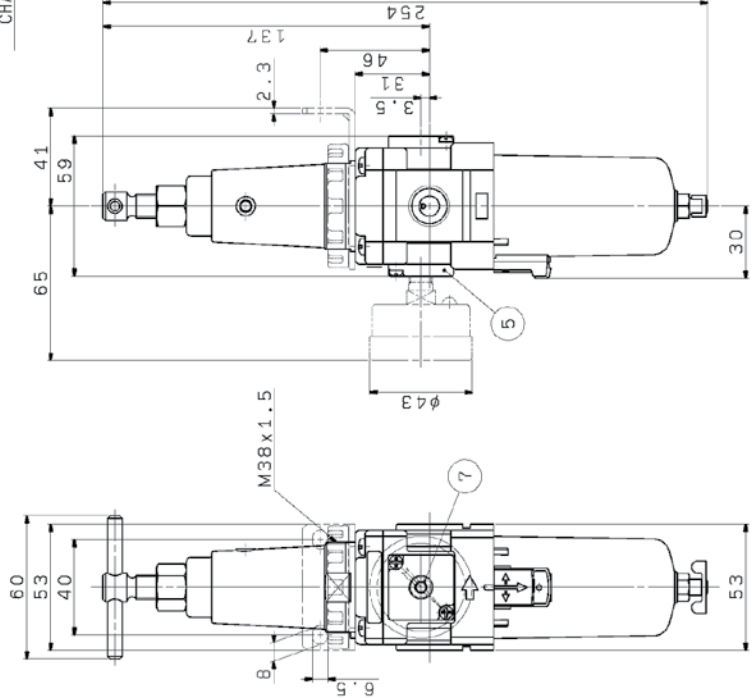


TABLE.1 PISTON ASSEMBLY PORTION AA (1:1)

OPTIONS NO.	CONSTRUCTION
2N AR30P-520AS-X2220 AR30P-520AS-N-X2220	

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 MAX. WORKING PRESS. 1.0 MPa
 SET PRESS. 0.05~0.85MPa
 0.2MPa SETTING 0.02~0.2 MPa
 WORKING FLUID AIR
 AMBIENT TEMP. -40~80 °C
 WORKING FLUID TEMP. -5~60 °C (SHOULD BE NO FREEZING)
 RATED FILTRATION 5 μm
 PORT SIZE 2-RC 1/4~3/8
 GAUGE PORT SIZE 2-RC 1/8

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS
 *DIFFERENCE FROM THE STANDARD TYPE
 (AW30-02-03(B,G,H)-2(1,N,R)-X430)
 1. PARTS IN THE TITLE COLUMN DIFFER FROM STANDARD.
 2. LOW TEMP. AND HIGH TEMP. SPECIFICATION.
 (AMBIENT TEMP. : -40~80 °C)
 3. CAUTIONS FOR MANUFACTURING
 1) APPLY TEFLON GREASE (SMC-GF1).
 2) SEALING MATERIAL FOR PLUG SHALL BE SEAL TAPE.

ITEM	PART NO.	PART NAME	MATERIAL	QTY	REMARKS
7	TB00143	PLUG	STEEL	1	R 1/8 WITH PRESSURE GAUGE
6	C3SF-2-X2220	BOWL ASSEMBLY		2	N1 PARTS WITHOUT PRESSURE GAUGE
5	AP2P-30MS-01-X2220	PRESSURE GAUGE ADAPTOR ASSEMBLY		1	Φ10 RING MATERIAL (SUBSTIT. FOR LOW TEMP.)
4	AR30P-830-X2220	“O” RING	NBR	1	FOR LOW TEMP.
3	REFER TO TABLE.1	PISTON ASSEMBLY		1	NUMBER LISTING OF KING
2	AW30P-300A-X2220	STEM ASSEMBLY		1	“O” RING MATERIAL (SUBSTIT. FOR LOW TEMP.)
1	AW30P-500AS-X2220	VALVE ASSEMBLY		1	NUMBER LISTING OF KING (SUBSTIT. FOR LOW TEMP.)

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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TABLE.1 PISTON ASSEMBLY PORTION AA (1:1)

OPTIONS	2	2N
N.O.	AR40P-520AS-X2220	AR40P-520AS-N-X2220
CONSTRUCTION		

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 MAX. WORKING PRESS. 1.0 MPa
 SET PRESS. 0.05~0.85MPa
 0.2MPa SETTING 0.02~0.2 MPa
 WORKING FLUID AIR
 AMBIENT TEMP. -40~80°C
 WORKING FLUID TEMP. -5~60 °C (SHOULD BE NO FREEZING)
 RATED FILTRATION 5 μm
 PORT SIZE 2-G 1/4~1/2
 GAUGE PORT SIZE 2-G 1/4

NOTE
 1. ACCESSORIES ARE PACKED TOGETHER.
 2. THIS PRODUCT ENSURES NO EXTERNAL LEAKAGE AT -40°C AND 80°C OF AMBIENT TEMP..
 CHARACTERISTICS ARE CONFIRMED AT NORMAL TEMP..

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS
 *DIFFERENCE FROM THE STANDARD TYPE.
 {AW40-F02-F04(B,G,H)-2(1,N,R)-X430}

1. PARTS IN THE TITLE COLUMN DIFFER FROM STANDARD.
2. LOW TEMP. AND HIGH TEMP. SPECIFICATION.
3. CAUTIONS FOR MANUFACTURING
 - 1) APPLY TEFLON GREASE (SMC-GF1).
 - 2) SEALING MATERIAL FOR PLUG SHALL BE SEAL TAPE.

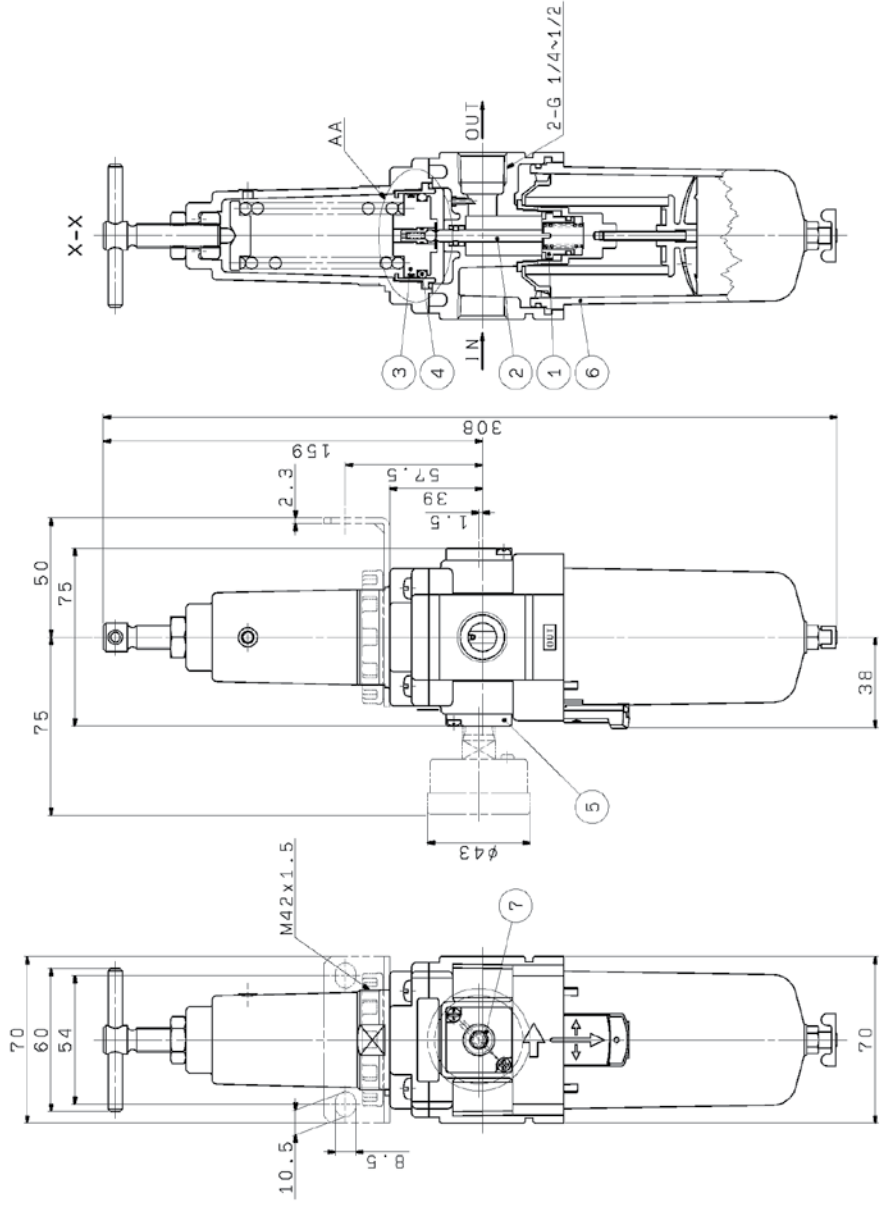
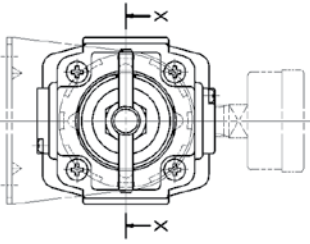
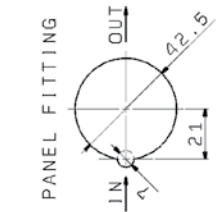
ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
7	TB00280	PLUG	STEEL	1	R 1/4 IN. BORE SIZE PRESSURE SHAPE
6	C4SF-2-X2220	BOWL ASSEMBLY		2	W. FINING PRESSURE SHAPE
5	AZ0P-30MS-F02-X220	PRESSURE GAUGE ADAPTOR ASSEMBLY		1	FOR MATERIAL, AUC
4	AR40P-860-X2220	"O" RING	NBR	2	"O" RING MATERIAL, NBR FOR LOW TEMP.
3	REFER TO TABLE.1	PISTON ASSEMBLY		1	FOR LOW TEMP.
2	AW40P-360A-X2220	STEM ASSEMBLY		1	OTHER LINKS OF PINS MATERIAL, NBR FOR LOW TEMP.
1	AW40P-360MS-X2220	VALVE ASSEMBLY		1	"O" RING MATERIAL, NBR FOR LOW TEMP. PRESSURE LINKING MATERIAL, NBR FOR LOW TEMP.

ORDER SPECIFICATION CODE
 AW40- [] - [] - [] -X2515

PORT SIZE	ACCESSORY	OPTIONS
F02 G 1/4	NIL	1 0.2MPa SETTING
F03 G 3/8	B BRACKET ASSEMBLY	2 METAL-BOWL
F04 G 1/2	G PRESSURE GAUGE	N NON-RELIEVING
	H SET NUT	R FLOW DIRECTION (RIGHT TO LEFT)

WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.

COMBINATION OF ACCESSORY	COMBINATION OF OPTIONS
B BG	2 12 2NR
G GH	2N 12N 12NR
H H	2R 12R



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-22°F
-30°C

Filter Regulator for Special Temperature Environment

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com> or the Best Pneumatics No. **5**



- Special materials are used in the manufacturing of seals and resin parts to allow them to withstand temperature conditions in cold climates.

Specifications

Made-to-order part no.	-X430	
Environment	Low temperature	
Ambient temperature	-22 to 140°F (-30 to 60°C)	
Fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)	
Material	Rubber parts	Special NBR
	Main parts	Metal (Aluminum die-cast etc.)

Applicable Model

Model	AW30	AW40	AW40-06	AW60
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1



AW30-03G-2-X430

AW **30** - **03** **BG** - **2** **X430**

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for **a** to **g**.
 - Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
- Example) AW30-03BG-2N-X430

	Symbol	Description	① Body size		
			30	40	60
② Thread type	Nil	Rc	●	●	●
	N	NPT	●	●	●
	F	G	●	●	●
+					
③ Port size	02	1/4	●	●	—
	03	3/8	●	●	—
	04	1/2	—	●	—
	06	3/4	—	●	●
	10	1	—	—	●
+					
④ Option 1) Mounting	Nil	Without mounting option	●	●	●
	B Note 2)	With bracket	●	●	●
	H	With set nut (for panel fitting)	●	●	—
+					
④ Option 2) Pressure gauge	Nil	Without pressure gauge	●	●	●
	G Note 3)	Round type pressure gauge (without limit indicator)	●	●	●
+					
⑤ Bowl Note 4)	2	Metal bowl	●	●	●
+					
⑥ Semi-standard Set pressure	Nil	7.3 to 123 psi (0.05 to 0.85 MPa) setting	●	●	●
	1 Note 5)	2.9 to 29 psi (0.02 to 0.2 MPa) setting	●	●	●
+					
⑥ Semi-standard Drain port	Nil	With drain cock	●	●	●
	J Note 6)	Drain guide 1/4	●	●	●
+					
⑥ Semi-standard Exhaust mechanism	Nil	Relieving type	●	●	●
	N	Non-relieving type	●	●	●
+					
⑥ Semi-standard Flow direction	Nil	Flow direction: Left to right	●	●	●
	R	Flow direction: Right to left	●	●	●
+					
⑥ Semi-standard Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	●	●	●
	Z Note 7)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	○ Note 8)	○ Note 8)	○ Note 8)

Note 1) Option B, G, H are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts (AW30 to AW40)

Including 2 mounting screws for the AW60

Note 3) Mounting thread for pressure gauge: 1/8 for the AW30, 1/4 for the AW40 and AW60. Pressure gauge type: G43

Note 4) Only metal bowl 2 is available.

Note 5) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 29 psi (0.2 MPa) or more. When the pressure gauge is attached, a 29 psi (0.2 MPa) pressure gauge will be fitted.

Note 6) Without a valve function

Note 7) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 8) ○: For thread type: NPT only



Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AL AR AF AW

Pressure Control Equipment

Flow Control Equipment

Fittings and Tubing

Port Valves for Fluid Control

Pneumatic Instrumentation Equipment

-22°F (-30°C) Filter Regulator AW30 to 40-□□(B, H)-2(J, N, R)-X2023

ORDER SPECIFICATION CODE

AW - - - - - - X2023

BODY SIZE	PORT SIZE	ACCESSORY	OPTIONS
30 3/8	02 Rc 1/4	NIL	2 METAL-BOWL
40 1/2	03 Rc 3/8	B BRACKET ASSEMBLY	J DRAIN GUIDE Rc 1/4
	04 Rc 1/2	H SET NUT	N NON-RELIEVING
	06 Rc 3/4		R FLOW DIRECTION TO LEFT

WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.

COMBINATION OF ACCESSORY
 B H

COMBINATION OF OPTIONS
 2 2JN
 2J 2JR
 2N 2NR
 2R 2JNR

SPECIFICATIONS

PROOF PRESS.	3.0	MPa
MAX. WORKING PRESS.	2.0	MPa
SET PRESS.	0.1~1.7	MPa
WORKING FLUID	AIR	
AMBIENT TEMP.	-30~60°C	
WORKING FLUID TEMP.	-5~60°C (SHOULD BE NO FREEZING)	
RATED FILTRATION	5	μm
PORT SIZE	2-A (REFER TO TABLE.3)	
GAUGE PORT SIZE	2-C (REFER TO TABLE.3)	

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS

*DIFFERENCE FROM THE STANDARD TYPE,
 (AW30~40-□□(B, H)-2(J, N, R))

- HIGH PRESSURE SPECIFICATION.
- LOW TEMP. SPECIFICATION.

NOTE

- ACCESSORIES ARE PACKED TOGETHER.

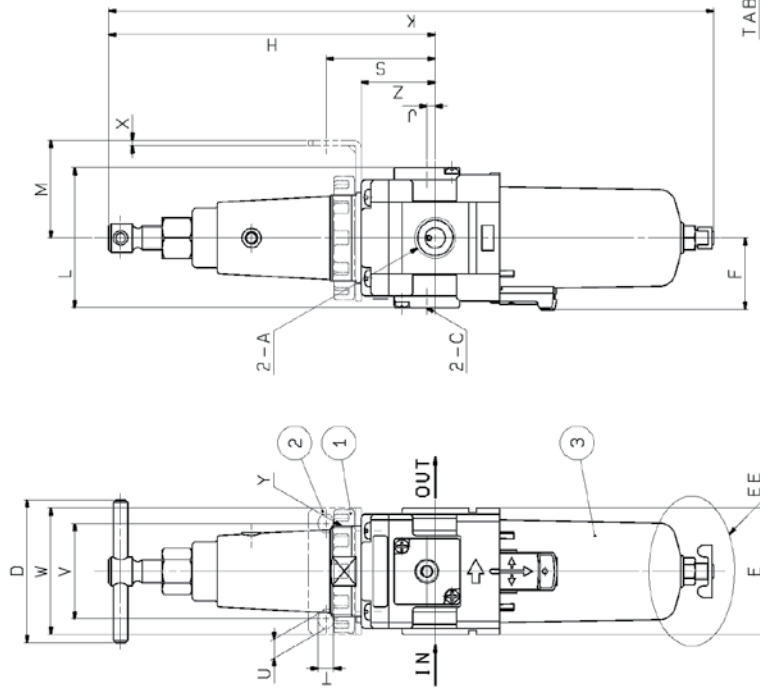
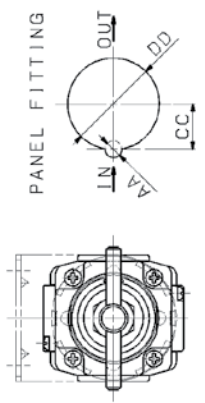


TABLE.1 BOWL ASSEMBLY PORTION EE

MODEL NO.	AW30	AW40	AW40-06
OPTIONS	2 2J	2 2J	2 2J
No.	C35F-2-X430	C45F-2-X430	C45F-2-X430 C45F-2-J-X430
EXTERNAL APPEARANCE DRAWING			
K	254	308	311
			317

3	REFER TO TABLE.1 BOWL ASSEMBLY	1	BOWL MATERIAL,ADC		
2	REFER TO TABLE.2 BRACKET ASSEMBLY	1			
1	REFER TO TABLE.2 SET NUT	1	POLYACETAL		
ITEM	PART NO.	PART NAME	MATERIAL	QTY	REMARKS

TABLE.2

MODEL NO.	AW30	AW40	AW40-06
①SET NUT	AR30P-260S	AR40P-260S	
②BRACKET ASSEMBLY	AR30P-270AS	AR40P-270AS	

TABLE.3 DIMENSION OF EACH PART

DWG No.	A	C	D	E	F	H	J	L	M	S	T	U	V	W	X	Y	Z	AA	CC	DD
AW30-02~03(B, H)-2(J, N, R)-X2023	Rc 1/4, 3/8		60	53	30	137	3.5	59	41	46	6.5	8	40	53	2.3	M38x1.5	31	7	19	38.5
AW40-02~04(B, H)-2(J, N, R)-X2023	Rc 1/4, 3/8, 1/2		60	70	38	159	1.5	75	50	57.5	8.5	10.5	54	70	2.3	M42x1.5	39	7	21	42.5
AW40-06(B, H)-2(J, N, R)-X2023	Rc 3/4		60	75	38	161	1.2	75	50	59	8.5	10.5	54	70	2.3	M42x1.5	40.5	7	21	42.5

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-22°F
-30°C

Air Filter for Special Temperature Environment

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com> or the Best Pneumatics No. **5**

WEB

- Special materials are used in the manufacturing of seals and resin parts to allow them to withstand temperature conditions in cold climates.

Specifications

Made-to-order part no.	-X430
Environment	Low temperature
Ambient temperature	-22 to 140°F (-30 to 60°C)
Fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)
Material	Rubber parts
	Main parts
	Special NBR
	Metal (Aluminum die-cast etc.)

Applicable Model

Model	AF30	AF40	AF40-06	AF50	AF60
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1

AF 30 - 03 **B** - 2 - **X430**

1
 2
 3
 4
 5
 6

- Semi-standard: Select one each for **a** to **c**.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AF30-03B-2R-X430

	Symbol	Description	①				
			Body size				
			30	40	50	60	
②	Thread type	Nil	●	●	●	●	
		N Note 1)	●	●	●	●	
		F Note 2)	●	●	●	●	
+							
③	Port size	02	●	●	—	—	
		03	●	●	—	—	
		04	—	●	—	—	
		06	—	●	●	—	
		10	—	—	●	●	
+							
④	Option (Mounting)	Nil	●	●	●	●	
		B Note 3)	●	●	●	●	
+							
⑤	Bowl Note 4)	2	●	●	●	●	
+							
⑥	a	Drain port	Nil	●	●	●	●
			J Note 5)	●	●	●	●
	+						
	b	Flow direction	Nil	●	●	●	●
			R	●	●	●	●
	+						
c	Pressure unit	Nil	●	●	●	●	
		Z Note 6)	○ Note 7)	○ Note 7)	○ Note 7)	○ Note 7)	

Note 1) Drain guide is NPT1/4.

Note 2) Drain guide is G1/4.

Note 3) A bracket is not assembled and supplied loose at the time of shipment.

Including 2 mounting screws

Note 4) Only metal bowl 2 is available.

Note 5) Without a valve function

Note 6) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 7) ○: For thread type: NPT only

Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AL AR AF AW

Pressure Control Equipment

Flow Control Equipment

Fittings and Tubing

Port Valves for Fluid Control

Pneumatic Instrumentation Equipment

ORDER SPECIFICATION CODE

AF20- [] - [] - [] - X2213

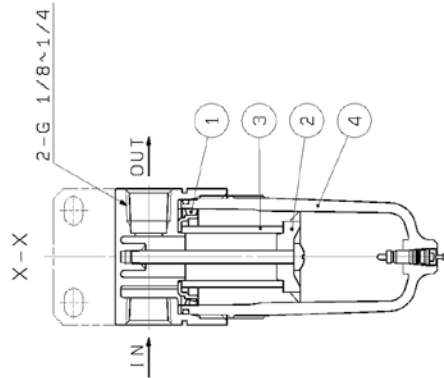
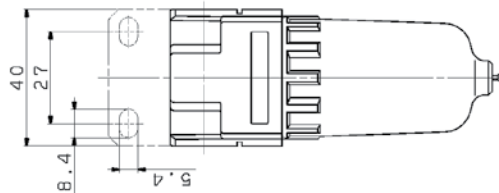
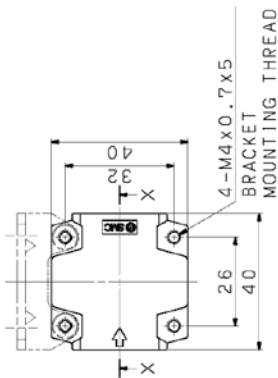
PORT SIZE	ACCESSORY
F01G 1/8	NIL
F02G 1/4	B BRACKET ASSEMBLY

OPTIONS
2 METAL-BOWL
R FLOW DIRECTION (RIGHT TO LEFT)

WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.

COMBINATION OF OPTIONS

2	2R
---	----



SPECIFICATIONS

PROOF PRESS.	1.5 MPa
MAX. WORKING PRESS.	1.0 MPa
WORKING FLUID	AIR
AMBIENT TEMP.	-40~60°C
WORKING FLUID TEMP.	-5~60°C (SHOULD BE NO FREEZING)
RATED FILTRATION	5 μm
PORT SIZE	2-G 1/8~1/4

NOTE
 1. BRACKET ASSEMBLY IS PACKED TOGETHER.
 2. THIS PRODUCT ENSURES NO EXTERNAL LEAKAGE AT LOWER AND UPPER LIMIT OF AMBIENT TEMP.
 CHARACTERISTICS ARE CONFIRMED AT NORMAL TEMP.

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS AND DIFFERENCE FROM THE STANDARD TYPE. (AF20-F01-F02(B)-2(R))
 1. PARTS IN THE TITLE COLUMN DIFFER FROM STANDARD.
 2. LOW TEMP. ENVIRONMENTAL SPECIFICATION.
 3. APPLY TEFLON GREASE (SMC-6F1).

ITEM	PART NO.	PART NAME	MATERIAL	QTY	REMARKS
4	C2SF-2-X2220	BOWL ASSEMBLY		1	BOWL MATERIAL-A0C
3	AF20P-000S-1-5B	ELEMENT	SINTERED BRONZE	1	
2	AF20P-040S-X430	BAFFLE PLATE	PBT	1	
1	AF20P-030-X430	DEFLECTOR	PBT	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

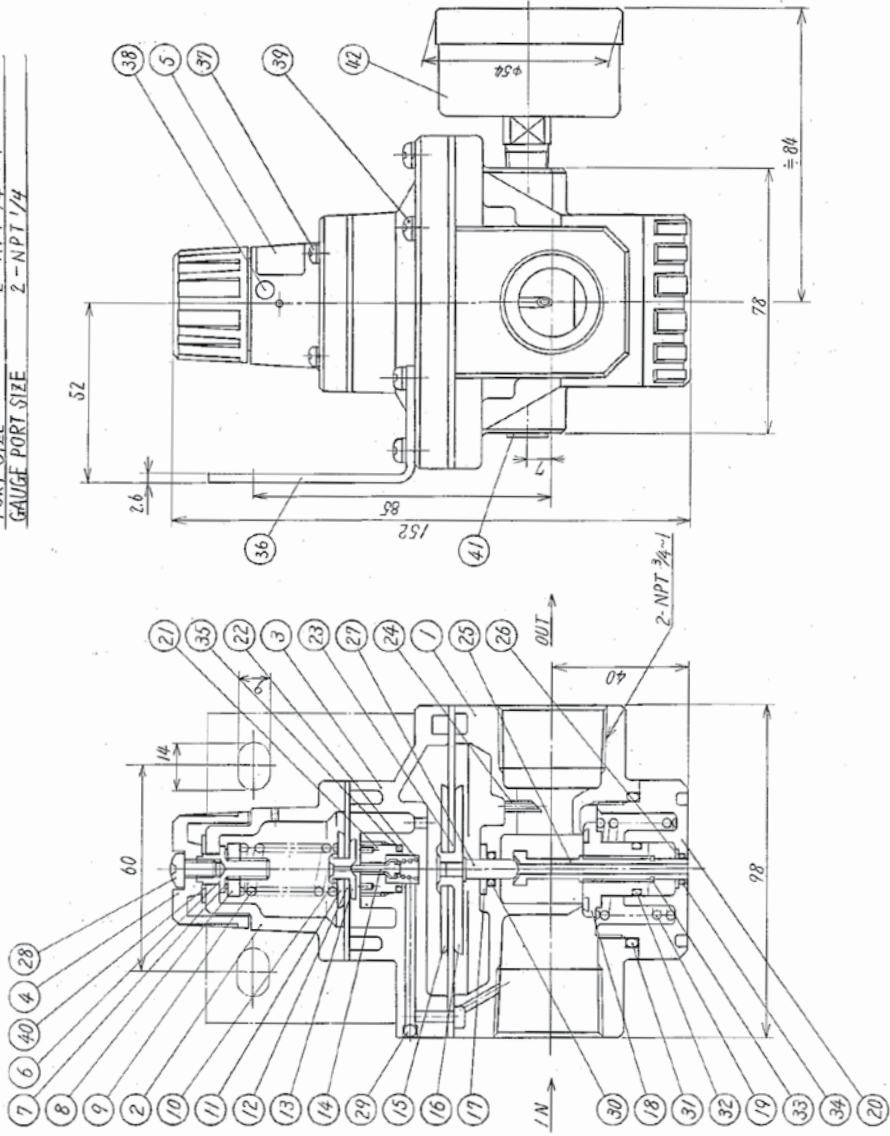
-22°F (-30°C)

Pilot Operated Regulator

AR625-N06 to 10BG1-L

ITEM	PART No.	PART NAME	MATERIAL	REMARKS
42	G51-10-N02	PRESSURE GAUGE		
41		PLUG	STEEL	1 / NPT 1/4 TREATMENT
40		WASHER	STEEL PLATE	1 / CHROMATE TREATMENT
39		SCREW WITH SPRING WASHER	STEEL WIRE	6 / NPT K22 IN PAINTING
38	1131232-1	NAME PLATE	MYLAR FILM	1 /
37		SCREW WITH SPRING WASHER	STEEL WIRE	4 / NPT K22 IN PAINTING
36	B25P	BRACKET	STEEL PLATE	1 / CHROMATE TREATMENT
35		O RING	NBR	1 / JS B 2805 H FOR LOW TEMP FOR 3.60 TREAT.
34		O RING	NBR	1 / JS B 2805 H FOR 3.60 TREAT.
33		RETAINING RING	STAINLESS STEEL	1 / JS B 2805 H FOR LOW TEMP FOR 3.60 TREAT.
32		O RING	NBR	1 / JS B 2805 H FOR LOW TEMP FOR 3.60 TREAT.
31		O RING	NBR	1 / JS B 2805 H FOR LOW TEMP FOR 3.60 TREAT.
30		O RING	NBR	1 / JS B 2805 H FOR LOW TEMP FOR 3.60 TREAT.
29		STEEL BALL	STEEL	1 / φ4
28		SCREW	STEEL WIRE	1 / NPT K22 IN PAINTING
27	132662	ROD	STAINLESS STEEL	1 /
26	132577	O RING HOLDER	ALUMINIUM PLATE	1 / CHROMATE TREATMENT
25	132661-1	STEM	BRASS BAR	1 / RUBBER LINING (C.R.)
24	130515	STATIC PRESSURE TUBE	COPPER TUBE	1 /
23	132659-1	DIAPHRAGM	NBR	1 / FOR LOW TEMP
22	132588	VALVE SPRING	STAINLESS STEEL	1 /
21	132580	VALVE SEAT	BRASS BAR	1 /
20	132650 P	VALVE GUIDE	ZINC DIE CASTING	1 /
19	132656	VALVE SPRING	STAINLESS STEEL	1 / CHROMATE TREATMENT
18	132653-1	VALVE	BRASS BAR	1 / RUBBER LINING (C.R.)
17	135314	O RING HOLDER	ALUMINIUM PLATE	1 / CHROMATE TREATMENT
16	132660	DIAPHRAGM HOLDER	BRASS BAR	1 /
15	132651	DIAPHRAGM SHELL	STEEL PLATE	1 / CHROMATE TREATMENT
14	132587-3	PILOT VALVE	STAINLESS STEEL	1 / RUBBER LINING (C.R.)
13	132586	DIAPHRAGM HOLDER	BRASS BAR	1 /
12	135061	DIAPHRAGM	NBR	1 / FOR LOW TEMP
11	135065	DIAPHRAGM SHELL	ALUMINIUM DIE CASTING	1 / CHROMATE TREATMENT
10	135066	WASHER	BRASS BAR	1 /
9	135063	ADJUST SPRING	STEEL WIRE	1 / CHROMATE TREATMENT
8	135074	ADJUST SPRING HOLDER	STEEL	1 / CHROMATE TREATMENT
7	135075	PACKING	NYLON	1 /
6	134973	ADJUST SCREW	STEEL	1 / CHROMATE TREATMENT
5	132578-3	NAME PLATE	MYLAR FILM	1 / AR625
4	13414	HANDLE	ABS RESIN	1 /
3	132567P	CHAMBER	ALUMINIUM DIE CASTING	1 / CHROMATE TREATMENT
2	132565 P	BOUNNET	ALUMINIUM DIE CASTING	1 / CHROMATE TREATMENT
1	132657P-NPT	BODY	ALUMINIUM DIE CASTING	1 / CHROMATE TREATMENT

SPECIFICATIONS
PROOF PRESS. 1.5 MPa (15.3 kg/cm²)
 MAX. WORKING PRESS. P₁ 1.0 MPa (10.2 kg/cm²)
 SET PRESS. P₂ 0.05 ~ 0.83 MPa (0.51 ~ 8.5 kg/cm²)
 P₂ ≤ P₁ × 0.9
WORKING FLUID AIR
AMBIENT TEMP. -30 ~ 60°C
WORKING FLUID TEMP. 5 ~ 60°C
PORT SIZE 2 - NPT 3/4 ~ 1
GAUGE PORT SIZE 2 - NPT 1/4

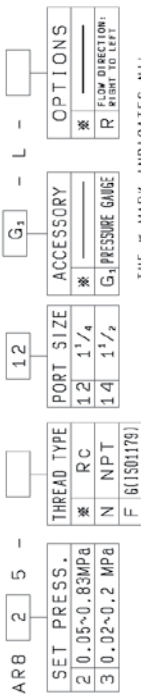


Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Pilot Operated **AR25-(F, N) 12 to 14(G₁)-L (-R)**
 Regulator **AR35-(F, N) 12 to 14(G₁)-L (-R)**

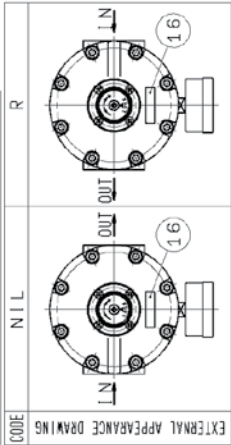
-22°F (-30°C)

ORDER SPECIFICATION CODE



THE * MARK INDICATES NIL
 AND NEED NOT TO BE FILLED IN.

INDICATION OF AIR FLOW DIRECTION FREE



SPECIFICATIONS

PROOF PRESS. 1.5 MPa
 MAX. WORKING PRESS. P₁ 1.0 MPa
 SET. PRESS P₂ (AR825) 0.05~0.83MPa
 (AR835) 0.02~0.2 MPa
 P₂SP1.X0.9

WORKING FLUID AIR
 AMBIENT TEMP. -30~60°C
 WORKING FLUID TEMP. -5~60°C(SHOULD BE NO FREEZING)

TABLE.3 PLUG

PART NO.	SIZE	QTY.	PRESSURE GAUGE
TB00024	R1/4	2	WITH PRESSURE GAUGE
TB00037	N1, PLATING	1	WITH PRESSURE GAUGE
TB00173	R1/4	2	WITH PRESSURE GAUGE
	N1, PLATING	1	WITH PRESSURE GAUGE

TABLE.2 PORT SIZE AND PRESSURE GAUGE

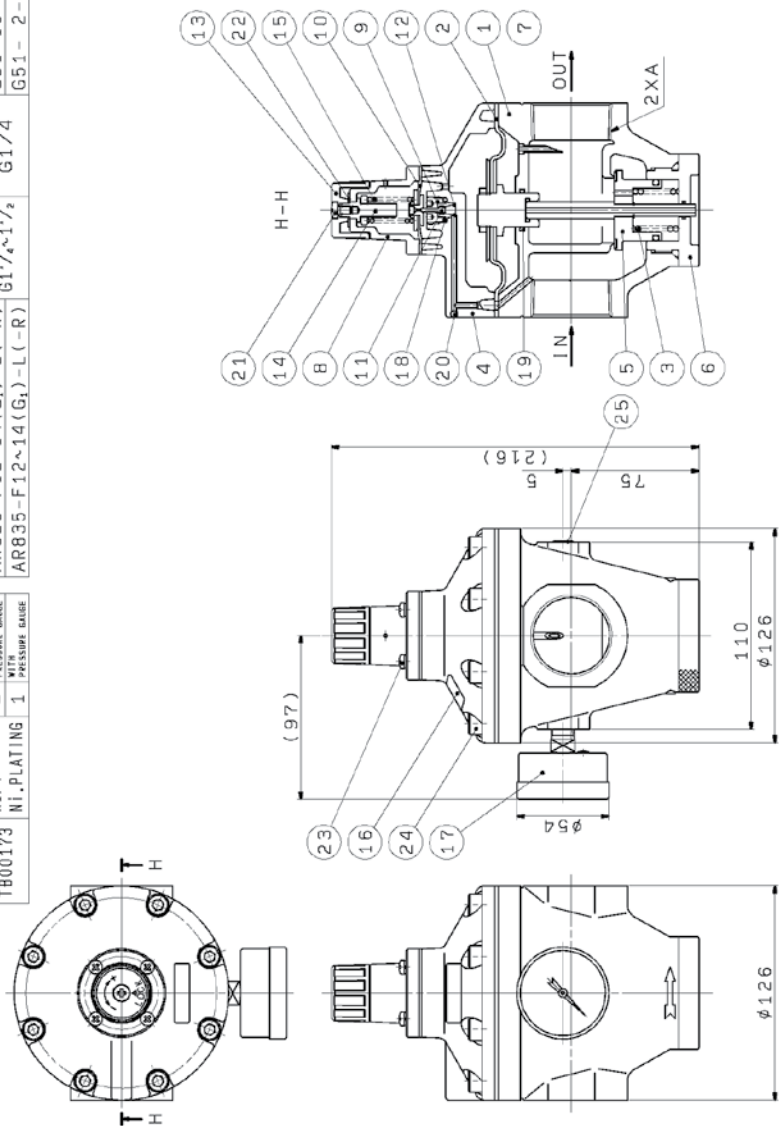
MODEL NO.	A	GAUGE PORT SIZE	① PRESSURE GAUGE
AR825- 12~14(G ₁)-L(-R)	RC1 1/4~1 1/2	RC1/4	G51-10-02
AR835- 12~14(G ₁)-L(-R)	NPT1 1/4~1 1/2	NPT1 1/4	G51-2-02
AR825-N12~14(G ₁)-L(-R)	G1 1/4~1 1/2	G1/4	G51-10-N02
AR835-N12~14(G ₁)-L(-R)	G1 1/4~1 1/2	G1/4	G51-2-N02
AR825-F12~14(G ₁)-L(-R)			G51-10-02
AR835-F12~14(G ₁)-L(-R)			G51-2-02

TABLE.1 ADJUST SPRING

MODEL NO.	② ADJUST SPRING
AR825-(F, N)12~14(G ₁)-L(-R)	135053
AR835-(F, N)12~14(G ₁)-L(-R)	135025

ITEM	PART NO.	PART NAME	MATERIAL	QTY.	REMARKS
25	REFER TO TABLE.3	PLUG	STEEL	2	REFER TO WITHOUT PART WITH PRESSURE GAUGE
24	CA00920	BOLT	STEEL	8	M10, 2518 Ni, PLATING
23	AA00100	SCREW WITH SPRING WASHER	STEEL WIRE	4	M4, 216 Ni, PLATING
22	EB00002	FLAT WASHER	STEEL PLATE	1	NO. 504001, 2.0
21	AA00953	SCREW	STEEL WIRE	1	NO. 504001, 2.0
20	JA00004	STEEL BALL	STEEL	1	Ø4
19	KA01384	"O" RING	NBR	1	JIS B2401, P20 FOR LOW TEMP.
18	KA01190	"O" RING	NBR	1	JIS B2401, P20 FOR LOW TEMP.
17	REFER TO TABLE.2	PRESSURE GAUGE	PET	1	NO. 504001, 2.0
16	1113103	NAME PLATE	STEEL WIRE	1	IN CHROME TREATMENT
15	REFER TO TABLE.1	ADJUST SPRING	STEEL WIRE	1	IN CHROME TREATMENT
14	134973A	ADJUST SCREW ASSEMBLY	ABS	1	
13	13414	HANDLE	ABS	1	
12	132588	VALVE SPRING	STAINLESS STEEL	1	
11	132587-3	PILOT VALVE	STAINLESS STEEL	1	SEALER LIVING MATERIAL
10	132586-1A	DIAPHRAGM ASSEMBLY	BRASS BAR	1	SEALER LIVING MATERIAL: NOT FOR LOW TEMP.
9	132580	VALVE SEAT	BRASS BAR	1	CHROME TREATMENT
8	132565P	BONNET	ALUMINUM DIECAST	1	CHROME TREATMENT
7	132759	STATIC PRESSURE TUBE	BRASS BAR	1	
6	132755PA	VALVE GUIDE ASSEMBLY	BRASS BAR	1	SEALER LIVING MATERIAL: NOT FOR LOW TEMP.
5	132752-1A	VALVE ASSEMBLY	ALUMINUM DIECAST	1	CHROME TREATMENT
4	132751P	CHAMBER	ALUMINUM DIECAST	1	CHROME TREATMENT
3	132713	VALVE SPRING	STAINLESS STEEL	1	
2	13275-1A	DIAPHRAGM ASSEMBLY	STAINLESS STEEL	1	SEALER LIVING MATERIAL: NOT FOR LOW TEMP.
1	1327P-12-14(N, G)	BODY	ALUMINUM ALLOY	1	CHROME TREATMENT

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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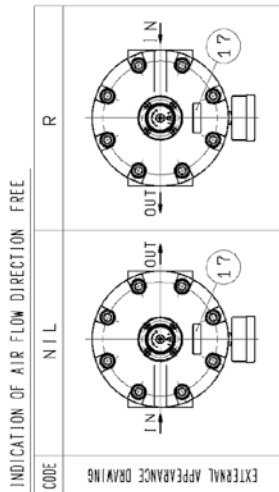
-22°F (-30°C)

Pilot Operated Regulator

AR935-20G₁-L (-R)

SPECIFICATIONS

PROOF PRESS.	1.5 MPa
MAX. WORKING PRESS. P ₁	1.0 MPa
SET PRESS. P ₂	0.02-0.2 MPa
	P ₂ ≤ P ₁ × 0.9
WORKING FLUID	AIR
AMBIENT TEMP.	-30~60°C
WORKING FLUID TEMP.	-5~60°C (SHOULD BE NO FREEZING)
PORT SIZE	2-RC2
GAUGE PORT SIZE	2-RC1/4

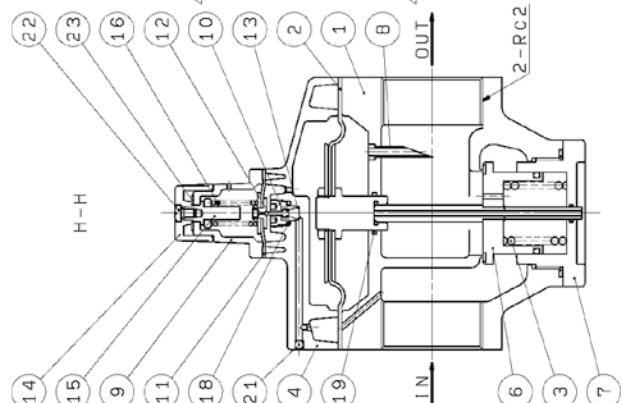
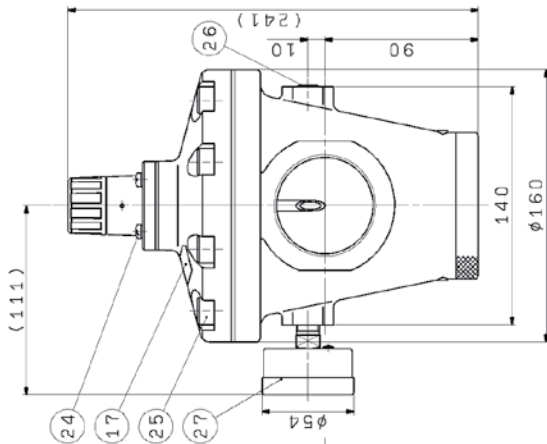
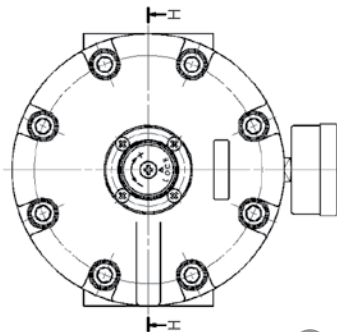


ORDER SPECIFICATION CODE

AR935-20G₁-L-

OPT IONS
* R FLOW DIRECTION TO LEFT

THE * MARK INDICATES NIL AND NEED NOT TO BE FILLED IN.



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
27	G51-2-02	PRESSURE GAUGE		1	
26	TB00024	PLUG	STEEL	1	NITROGEN TREATMENT
25	CA00466	BOLT	STEEL	8	M12L16.0
24	AA00100	SCREW WITH SPRING WASHER	STEEL WIRE	4	Zn CHROMATE TREATMENT
23	EB00002	WASHER	STEEL PLATE	1	M12-5H40C11.2
22	AA00953	SCREW	STEEL WIRE	1	Zn CHROMATE TREATMENT
21	JA00005	STEEL BALL	STEEL	1	φ5
20	KA01386	"O" RING	NBR	1	FOR 8240 P20
19	KA01384	"O" RING	NBR	1	JIS B2401 P20
18	KA01190	"O" RING	NBR	1	FOR LOW TEMP.
17	1113103	NAME PLATE	PET	1	COMPLETE PRODUCT
16	135025	ADJUST SPRING	STEEL WIRE	1	NO. INDICATED
15	134973A	ADJUST SCREW ASSEMBLY		1	
14	13414	HANDLE	ABS RESIN	1	
13	132588	VALVE SPRING	STAINLESS STEEL	1	
12	132587-3	PILOT VALVE	STAINLESS STEEL	1	ROBER LINING MATERIAL, EPDM
11	132586-1A	DIAPHRAGM ASSEMBLY		1	DIAPHRAGM MATERIAL :NBR FOR LOW TEMP.
10	132580	VALVE SEAT	BRASS BAR	1	
9	132565P	BONNET	ALUMINUM CASTING	1	CHROMATE TREATMENT
8	132832	STATIC PRESSURE TUBE	BRASS BAR	1	
7	132830P-1A	VALVE GUIDE ASSEMBLY	BRASS BAR	1	
6	132829-1A	VALVE ASSEMBLY	BRASS BAR	1	ROBER LINING MATERIAL, EPDM
5	132828	STEM	BRASS BAR	1	
4	132826P	CHAMBER	ALUMINUM CASTING	1	CHROMATE TREATMENT
3	13289	VALVE SPRING	STAINLESS STEEL	1	
2	13285-1A	DIAPHRAGM ASSEMBLY		1	DIAPHRAGM MATERIAL :NBR FOR LOW TEMP.
1	13281P-20	BODY	ALUMINUM CASTING	1	CHROMATE TREATMENT

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



-22°F
-30°C

Regulator for Special Temperature Environment

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com> or the Best Pneumatics No. **5**



- Special materials are used in the manufacturing of seals and resin parts to allow them to withstand temperature conditions in cold climates.

Specifications

Made-to-order part no.	-X430	
Environment	Low temperature	
Ambient temperature	-22 to 140°F (-30 to 60°C)	
Fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)	
Material	Rubber parts	Special NBR
	Main parts	Metal (Aluminum die-cast etc.)

Applicable Model

Model	AR25	AR30	AR40	AR40-06	AR50	AR60
Port size	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1



AR30-03G-X430

AR 30 - 03 **BG** - - **X430**

1
 2
 3
 4
 5

- Option/Semi-standard: Select one each for **a** to **g**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AR30-03BG-1NR-X430

	Symbol	Description	① Body size						
			25	30	40	50	60		
② Thread type	Nil	Rc	●	●	●	●	●		
	N	NPT	●	●	●	●	●		
	F	G	●	●	●	●	●		
③ Port size	+								
	02	1/4	●	●	●	—	—		
	03	3/8	●	●	●	—	—		
	04	1/2	—	—	●	—	—		
	06	3/4	—	—	●	●	—		
④ Option	+								
	a	Mounting	Nil	Without mounting option	●	●	●	●	●
	B	Note 2) With bracket	●	●	●	●	●	●	
⑤ Semi-standard	H	With set nut (for panel fitting)	●	●	●	—	—		
	+								
b	Pressure gauge	G	Note 3) Round type pressure gauge (without limit indicator)	●	●	●	●	●	
	+								
c	Set pressure	Nil	7.3 to 123 psi (0.05 to 0.85 MPa) setting	●	●	●	●	●	
		1	Note 4) 2.9 to 29 psi (0.02 to 0.2 MPa) setting	●	●	●	●	●	
d	Exhaust mechanism	Nil	Relieving type	●	●	●	●	●	
		N	Non-relieving type	●	●	●	●	●	
e	Flow direction	Nil	Flow direction: Left to right	●	●	●	●	●	
		R	Flow direction: Right to left	●	●	●	●	●	
f	Knob	Nil	Downward	●	●	●	●	●	
		Y	Upward	●	●	●	●	●	
g	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	●	
		Z	Note 5) Name plate and caution plate for bowl in imperial units: psi	○ Note 6)	○ Note 6)	○ Note 6)	○ Note 6)	○ Note 6)	

Note 1) Option B, G, H are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts (AR25 to AR40)

Including 2 mounting screws for the AR50 and AR60

Note 3) Mounting thread for pressure gauge: 1/8 for the AR25 to AR30; 1/4 for the AR40 to AR60. Pressure gauge type: G43

Note 4) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 29 psi (0.2 MPa) or more. When the pressure gauge is attached, a 29 psi (0.2 MPa) pressure gauge will be fitted.

Note 5) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 6) ○: For thread type: NPT only



ORDER SPECIFICATION CODE

AR - - - -X2023

BODY SIZE		PORT SIZE		ACCESSORY		OPTIONS	
25	1/4	F02G	1/4	NIL	NIL	NIL	
30	3/8	F03G	3/8	B	BRACKET ASSEMBLY	N	NON-RELIEVING
40	1/2	F04G	1/2	H	SET NUT	R	FLOW DIRECTION TO LEFT
50	3/4	F06G	3/4	WHEN SPECIFYING MORE THAN ONE OPTION, PLEASE LIST NUMERICALLY THEN ALPHABETICALLY.			
60	1	F10G	1				

COMBINATION OF ACCESSORY		COMBINATION OF OPTIONS	
B	H	N	NR
		R	

TABLE.1 INDICATION OF AIR FLOW DIRECTION

OPTIONS	NIL	R
EXTERNAL APPEARANCE DRAWING		

SPECIFICATIONS

PROOF PRESS. 3.0 MPa

MAX. WORKING PRESS. 2.0 MPa

SET PRESS. 0.1~1.7 MPa

WORKING FLUID AIR

AMBIENT TEMP. -30~60°C

WORKING FLUID TEMP. -5~60°C (SHOULD BE NO FREEZING)

PORT SIZE 2-A (REFER TO TABLE.3)

GAUGE PORT SIZE 2-C (REFER TO TABLE.3)

TABLE.2

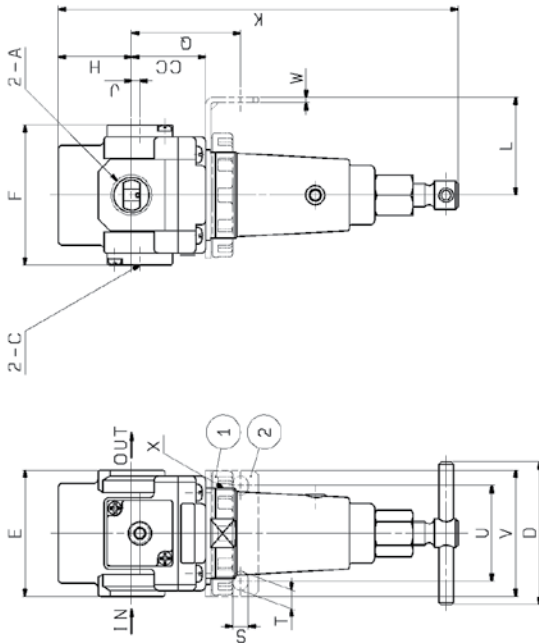
MODEL NO.	AR25	AR30	AR40	AR40-F06	AR50	AR60
① SET NUT	AR25P-260S	AR30P-260S	AR40P-260S	AR40P-260S		
② BRACKET ASSEMBLY	AR25P-270AS	AR30P-270AS	AR40P-270AS	AR50P-270AS		

NOTE

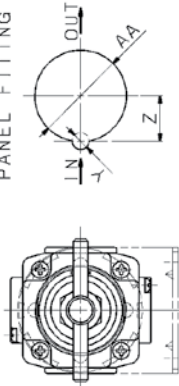
- ACCESSORIES ARE PACKED TOGETHER.
- ACCESSORY 'H' IS APPLICABLE TO AR20-AR40-F06.

2	REFER TO TABLE.2	BRACKET ASSEMBLY	1		
1	REFER TO TABLE.2	SET NUT	POLYACETAL	1	
ITEM	PART NO.	PART NAME	MATERIAL	QTY	REMARKS

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



PANEL FITTING



CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS

*DIFFERENCE FROM THE STANDARD TYPE,

- { AR25~40-F (B, H) (-N, R) }
- { AR50~60-F (B) (-N, R) }

- HIGH PRESSURE SPECIFICATION.
- LOW TEMP. SPECIFICATION.

TABLE.3 DIMENSION OF EACH PART

DWG NO.	A	C	D	E	F	H	J	K	L	Q	S	T	U	V	W	X	Y	Z	AA	CC
AR25-F02-F03(B, H)(-N, R)-X2023	6 1/4, 3/8	G 1/8	60	53	55	28	0	151	30	47	5.4	15.4	34	55	2.3	M32x1.5	6	16	32.5	31
AR30-F02-F03(B, H)(-N, R)-X2023	6 1/4, 3/8	G 1/8	60	53	59	31	3.5	168	41	46	6.5	8	40	5.3	2.3	M38x1.5	7	19	38.5	31
AR40-F02-F04(B, H)(-N, R)-X2023	6 1/4, 3/8, 1/2	G 1/4	60	70	68	36	3.5	195	50	57.5	8.5	10.5	54	7.0	2.3	M42x1.5	7	21	42.5	39
AR40-F06(B, H)(-N, R)-X2023	6 3/4	G 1/4	60	75	68	36	3	196	50	59	8.5	10.5	54	7.0	2.3	M42x1.5	7	21	42.5	40.5
AR50-F02-F03(-N, R)-X2023	6 3/4, 1	G 1/4	125	90	87	43	3.3	248	70	65.8	11	13	66	9.0	3.2					
AR60-F10(B)(-N, R)-X2023	6 1	G 1/4	125	95	87	46	3.3	253	70	65.8	11	13	66	9.0	3.2					

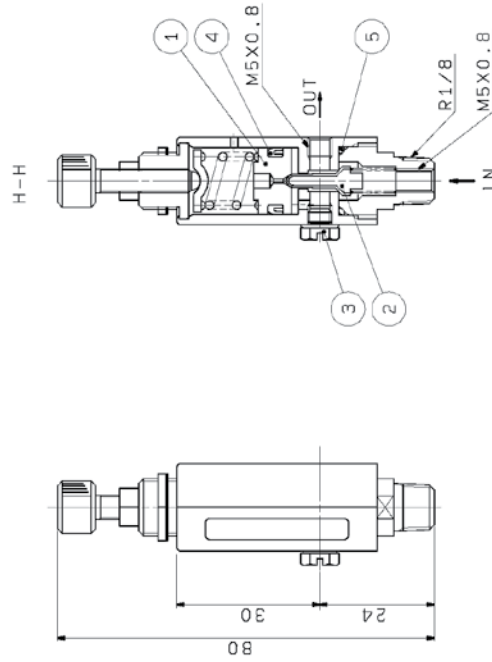
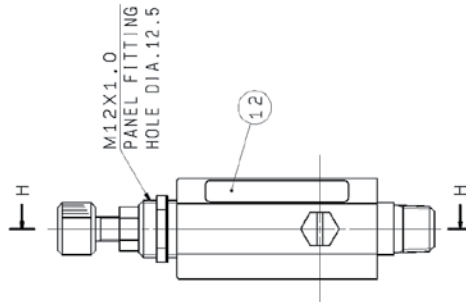
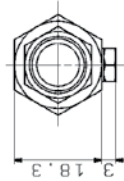
Miniature Regulator **ARJ210-M5(-1)-X250** **-22°F (-30°C)**

ORDER SPECIFICATION CODE
 ARJ210- M5 - -X250
 PORT SIZE OPTIONS
 * 1 0.2MPa SETTING
 THE * MARK INDICATES WIL AND NEED NOT TO BE FILLED IN.

SPECIFICATIONS

PROOF PRESS.	1.2	MPa
MAX. WORKING PRESS.	0.8	MPa
SET PRESS.	0.2~0.7	MPa
0.2MPa SETTING	0.05~0.2	MPa
WORKING FLUID	AIR	
AMBIENT TEMP.	-30~60°C	
WORKING FLUID TEMP.	-5~60°C (SHOULD BE NO FREEZING)	
PORT SIZE	IN: M5X0.8 (INTERNAL THREAD) OUT: M5X0.8 (INTERNAL THREAD)	
GAUGE PORT SIZE	M5X0.8 (INTERNAL THREAD)	

CAUTIONS CONCERNING SPECIFICATIONS, ASSEMBLY, AND INSPECTION OF CUSTOM-MADE PRODUCTS
 * DIFFERENCE FROM THE STANDARD TYPE, (ARJ210-M5(-1))
 1. PARTS IN THE TITLE COLUMN DIFFER FROM STANDARD.
 2. AMBIENT TEMP IS DIFFERENT.
 3. APPLY TEFLON GREASE (SMC-GF1) MANUFACTURED BY DOW CORNING.



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
5	KA02015	"O" RING	NBR	1	FOR LOW TEMP
4	KB01276	Y PACKING	NBR	1	M7H-10AN TEMP FOR LOW TEMP
3	IN-233-734	PLUG	BRASS BAR	1	NI. PLATING
2	134819-1	VALVE	BRASS BAR	1	RUBBER LINING, CR
1	134818	PISTON	BRASS BAR	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-22°F
-30°C

Filter Regulator for Low Temperatures Series IW

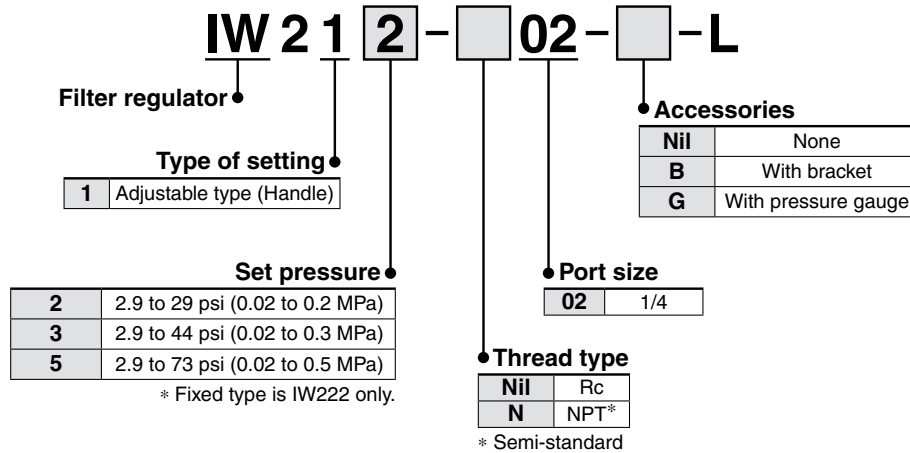
For details about the series, refer to the WEB catalog <http://www.smcworld.com>

WEB

- Two types are available: adjustable set pressure type and fixed set pressure type
- Low temperature and external parts copper-free types can be selected.
- Pressure gauge connecting direction: 2 directions (Front/Back)
- Weight: 0.66 kg (Adjustable type) 0.58 kg (Fixed type)



How to Order



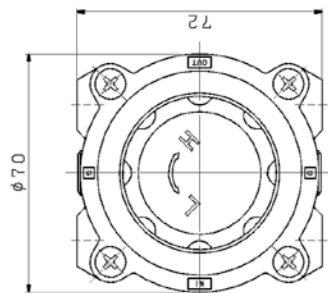
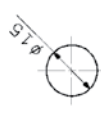
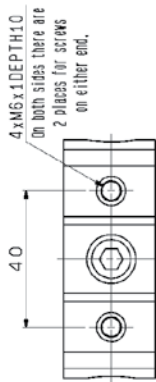
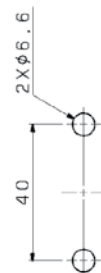
Standard Specifications

Model	IW212	IW213	IW215
Maximum supply pressure	Max. 145 psi (1.0 MPa)		
Set pressure	2.9 to 29 psi (0.02 to 0.2 MPa)	2.9 to 44 psi (0.02 to 0.3 MPa)	2.9 to 73 psi (0.02 to 0.5 MPa)
Air consumption (At maximum set pressure)	0.04 scfm [1 L/min (ANR)] or less		
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (No freezing)		
Filtration accuracy	5 μm		
Port size	Rc1/4		
Pressure gauge port	Rc1/4 (2 locations)		
Weight	0.66 kg		

-40°F (-40°C) Filter Regulator IW21□-02-L-X203

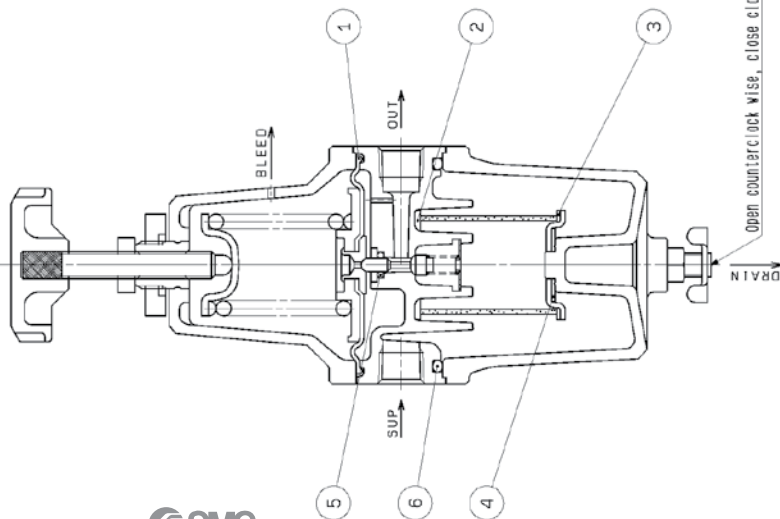
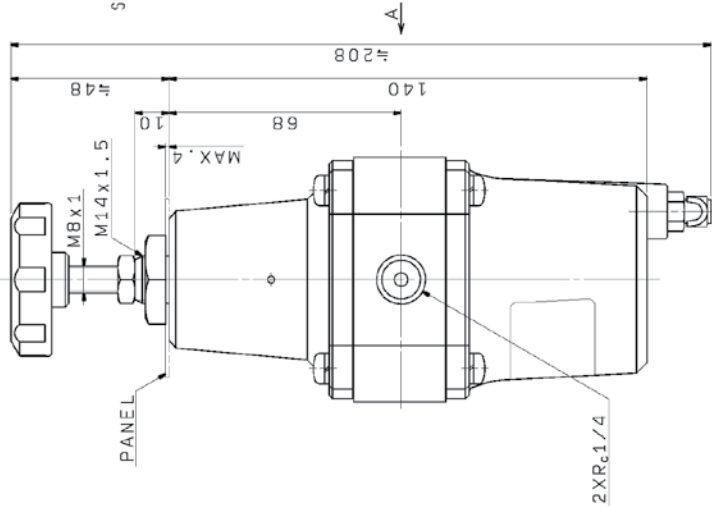
SPECIFICATIONS

SUPPLY PRESSURE	MAX. 1.0MPa
SETTING PRESSURE	IW212: 0.02~0.2MPa
	IW213: 0.02~0.3MPa
	IW215: 0.02~0.5MPa
	IW217: 0.02~0.7MPa
OPERATING TEMPERATURE	-40°C~60°C (DO NOT FREEZE)
DEGREE OF FILTRATION	5µm
AIR CONSUMPTION	Less than 1l/min(AIR) (at maximum set pressure)



SPECIAL SPECIFICATION
• LOW TEMPERATURE SPECIFICATIONS

PANEL MOUNTING DETAIL



MODEL IDENTIFICATION NUMBERING

I W 2 1 □ - 0 2 □ - L - X 2 0 3

SETTING PRESSURE
2: 0.02~0.2MPa
3: 0.02~0.3MPa
5: 0.02~0.5MPa
7: 0.02~0.7MPa

ACCESSORIES
N1: NO ACCESSORIES
G: WITH PRESSURE GAUGE
IW212: G51-2-02
IW213: G51-4-02
IW215: G51-7-02
IW217: G51-10-02

NOTE1: The parts of this model are the same parts as IW21□-02 except expressed parts at the below.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
6	KA01405	ORING	SILICONE RUBBER	1	AS568-228
5	KA01053	ORING	SILICONE RUBBER	1	P4
4	1301530	PACKING	SILICONE RUBBER	1	
3	1301529	PACKING	SILICONE RUBBER	1	
2	1301528	PACKING	SILICONE RUBBER	1	
1	1301527	DIAPHRAGM	SILICONE RUBBER	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-22°F
-30°C

Precision Regulator

Series IR2000/3000

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com> or the Best Pneumatics No. 5

WEB

- **Sensitivity:** Within 0.2% F.S.
- **Repeatability:** Within ±0.5% F.S.

How to Order

IR 2000 02 L

Precision regulator

Body size

2	IR2000
3	IR3000

Type of setting

0	Basic type (Handle)
1	Air operated type

Set pressure range

For series IR2000

0	0.73 to 29 psi (0.005 to 0.2 MPa)
1	1.5 to 58 psi (0.01 to 0.4 MPa)
2	1.5 to 116 psi (0.01 to 0.8 MPa)

Note) Air operated type is model IR2120 only.

For series IR3000

0	1.5 to 29 psi (0.01 to 0.2 MPa)
1	1.5 to 58 psi (0.01 to 0.4 MPa)
2	1.5 to 116 psi (0.01 to 0.8 MPa)

Note) Air operated type is model IR3120 only.

Thread type

Nil	Rc
N	NPT*
F	G*

* Semi-standard

Port size

Symbol	size	Application	
		IR2000	IR3000
02	1/4	●	●
03	3/8	●	●
04	1/2		●

Accessory

Nil	None
B	With bracket

Suffix 2

Nil	—
Note) R	Bracket, Name plate, Mounting on the opposite side

Note) The standard mounting position of the name plate is on the front, when viewing the regulator with the SUP side to the left and OUT side to the right.

• **For low temp. environments (-22 to 140°F [-30 to 60°])**
Note) Except IR1000 type.

Standard Specifications

Model	Basic type		Air operated type	
	IR20□0	IR30□0	IR2120	IR3120
Max. supply pressure	Max. 1.0 MPa			
Min. supply pressure psi (MPa)⁽¹⁾	Set pressure + 7.3 (0.05)	Set pressure + 15 (0.1)	Set pressure + 7.3 (0.05)	Set pressure + 15 (0.1)
Set pressure range psi (MPa)	IR2000: 0.73 to 29 (0.005 to 0.2) IR2010: 1.5 to 58 (0.01 to 0.4) IR2020: 1.5 to 116 (0.01 to 0.8)	IR3000: 1.5 to 29 (0.01 to 0.2) IR3010: 1.5 to 58 (0.01 to 0.4) IR3020: 1.5 to 116 (0.01 to 0.8)	1.5 to 116 (0.01 to 0.8)	1.5 to 116 (0.01 to 0.8)
Input signal pressure psi (MPa)⁽²⁾	—		1.5 to 116 (0.01 to 0.8)	1.5 to 116 (0.01 to 0.8)
Sensitivity⁽³⁾	Within 0.2% of full span			
Repeatability⁽³⁾	Within ±0.5% of full span			
Linearity⁽⁴⁾	Within ±1% of full span			
Air consumption⁽⁵⁾ (At supply pressure of 145 psi (1.0 MPa))	0.16 scfm [4.4 L/min (ANR)] or less	0.41 scfm [(11.5 L/min (ANR))] or less	0.16 scfm [(4.4 L/min (ANR))] or less	0.41 scfm [11.5 L/min (ANR)] or less
Port size	Rc1/4	Rc1/4, 3/8, 1/2	Rc1/4	Rc1/4, 3/8, 1/2
Pressure gauge port	Rc1/8 (2 locations)			
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (No freezing)			
Weight (kg)	0.30	0.64	0.35	0.71

Note 1) With the condition of no flow on the output side. Together with the set pressure, be sure to maintain a minimum differential pressure of 7.3 psi (0.05 MPa) for model IR2000, and 15 psi (0.1 MPa) for model IR3000.

Note 2) Applicable only to air operated types IR2120 and IR3120. The basic type is excepted.

Note 3) Characteristic values do not contain any secular change and temperature change.

Note 4) Indicates the linearity of the output pressure with respect to the input signal pressure.

Note 5) Air is normally being discharged to the atmosphere from a bleed hole or an exhaust port.

-22°F
-30°C

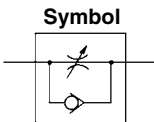
Speed Controller: Standard Type Large Flow In-line Type Series AS

RoHS

WEB

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

- Able to control and set a constant speed easily.
- Speed may be accurately controlled even at low speed.
- Retainer prevents accidental loss of needle.



Caution

Be sure to read this before handling.
Refer to the back cover for Safety Instructions. Refer to "Handling Precautions for SMC Products" on SMC website, <http://www.smcworld.com>

How to Order

AS 42 0 - [] 02 - L

Body size

42	1/2 standard
50	3/4 standard
60	1 standard
80	1 1/4 standard
90	1 1/2 standard

Thread type

Nil	Rc
N	NPT
F	G

Low temperature (-30 to 60°C)

Note) AS900 is available as special.

Bore size

Bore size	Applicable series	
02	1/4	AS420
03	3/8	
04	1/2	
06	3/4	AS500
10	1	AS600
12	1 1/4	AS800
14	1 1/2	AS900
20	2	

Model

Model	Port size	Free flow			Controlled flow			Weight (kg)
		Flow rate scfm (L/min (ANR))	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Flow rate scfm (L/min (ANR))	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	
AS420-02	1/4	88.3 (2,500)	6.9	0.25	127 (3,600)	10	0.45	0.34
AS420-03	3/8	176 (5,000)	13.9		169 (4,800)	13.3		0.33
AS420-04	1/2	233 (6,600)	18.3		237 (6,700)	18.6		0.32
AS500-06	3/4	357 (10,100)	28.1		286 (8,100)	22.5		0.36
AS600-10	1	533 (15,100)	42		597 (16,900)	47		0.7
AS800-12	1 1/4	1250 (35,400)	98		1359 (38,500)	107		1.4
AS900-14	1 1/2	1836 (52,000)	144		1677 (47,500)	132		3.3
AS900-20	2	2040 (57,800)	161		2147 (60,800)	169		3.3

Note) Flow rate values are measured at 73 psi (0.5 MPa) and 68°F (20°C).

Specifications

Fluid	Air
Proof pressure	218 (1.5 MPa)
Max. operating pressure	145 psi (1 MPa)
Min. operating pressure	7.3 psi (0.05 MPa)
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (No freezing)

-22°F
-30°C

Speed Controller: Standard Type In-line Type

Series AS

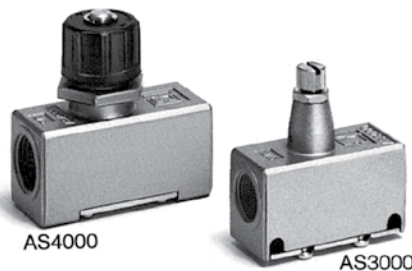
RoHS

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

WEB

- Compact size saves space.
- Speed may be accurately controlled even at low speeds.
- Constant speed easily set.
- Retainer prevents an accidental loss of needle.

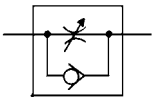
How to Order



AS4000

AS3000

JIS記号



Symbol

Caution

Be sure to read this before handling.
Refer to the back cover for Safety Instructions. Refer to "Handling Precautions for SMC Products" on SMC website, <http://www.smcworld.com>

AS 3 000 - [] 02 - L - []

Body size

3	3/8 standard
4	1/2 standard
5	1/2 standard

Thread type

Nil	Rc
N	NPT
F	G

Lock nut option

Nil	Hexagon lock nut
-----	------------------

Low temperature
-22 to 140°F (-30 to 60°C)

Bore size

Bore size		Applicable series
02	Rc 1/4	AS3000, 4000, 5000
03	Rc 3/8	AS3000, 4000, 5000
04	Rc 1/2	AS4000, 5000

Model/Flow Rate and Sonic Conductance

Model	Port size	Free flow			Controlled flow			Weight (g)
		Flow rate scfm (L/min (ANR))	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Flow rate scfm (L/min (ANR))	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	
AS3000-02	1/4	28.6 (810)	2.3	0.35	28.6 (810)	2.3	0.2	130
AS3000-03	3/8	28.6 (810)	2.3		28.6 (810)	2.3		124
AS4000-02	1/4	59.0 (1,670)	4.6		59.0 (1,670)	4.6		221
AS4000-03	3/8	59.0 (1,670)	4.6		59.0 (1,670)	4.6		214
AS4000-04	1/2	59.0 (1,670)	4.6		59.0 (1,670)	4.6		205
AS5000-02	1/4	100 (2,840)	7.9		100 (2,840)	7.9		242
AS5000-03	3/8	151 (4,270)	11.9		151 (4,270)	11.9		233
AS5000-04	1/2	151 (4,270)	11.9		151 (4,270)	11.9		224

Note) Flow rate values are measured at 73 psi (0.5 MPa) and 68°F (20°C).

Specifications

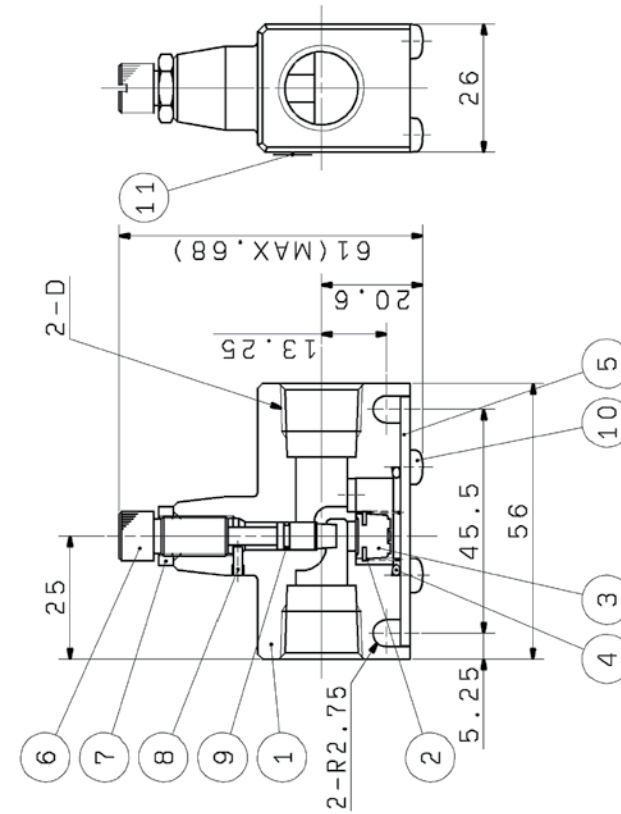
Fluid	Air
Proof pressure (Note)	218 psi (1.5 MPa)
Max. operating pressure (Note)	145 psi (1 MPa)
Min. operating pressure (Note)	7.3 psi (0.05 MPa)
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (No freezing)

SPECIFICATIONS

PROOF PRESS. 1.5 MPa
 WORKING PRESS.RENGE 0.05~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -40~60℃ (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE DWG. NO. 2-D

AS3000-02~03-X422	RC 1/4~3/8
AS3000-N02~N03-X422	NPT1/4~3/8
AS3000-F02~F03-X422	G 1/4~3/8

DIFFERENCE FROM THE AS3000-#02~#03 REGARDING SPECIFICATION. ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 2. LOW TEMPERATURE SPECIFICATION.
 3. SILICONE GREASE IS USED FOR THREADS OF NEEDLE AND
 (9) "O" RING. (MORI COAT: HP-300)



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
★ 11		NAME PLATE	POLYESTER	1	T1503: X422
10	AA00241	SCREW	STEEL PLATE	4	M4x8 NI PLATED
△ 9	142851	"O" RING	NBR	1	Suitable for low Temp.
8	142848	PIN	STAINLESS STEEL	1	
7	14307P	LOCK NUT	STEEL	1	
6	142812P	NEEDLE	BRASS BAR	1	
5	14285P	CAP	STEEL PLATE	1	
★ 4	14284-1	"O" RING	CR	1	Suitable for low Temp.
★ 3	142852	VALVE	BRASS BAR·NBR	1	
2	14282	SPRING	STAINLESS STEEL	1	
1	142811-1P-02G-03G	-F02~F03	BODY	1	
	142811-1P-02N-03N	-N02~N03			
	142811-1P-02~03	-02~03			

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-22°F
-30°C

Quick Exhaust Valve Series AQ

RoHS

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

WEB

- Excellent exhaust characteristics
- Large flow capacity
- Compact and lightweight
- A wide selection of models



How to Order

AQ 2 000 - 02 - L

Standard size

2	1/4
3	3/8
5	3/4

Type/Diaphragm

Thread type

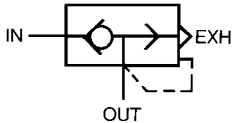
Nil	Rc
N	NPT
F	G

Low temperature
-22 to 140°F
(-30 to 60°C)

Port size

Port size	Applicable series	
01	1/8	AQ2000
02	1/4	AQ2000/3000
03	3/8	AQ3000
04	1/2	AQ5000
06	3/4	

Symbol



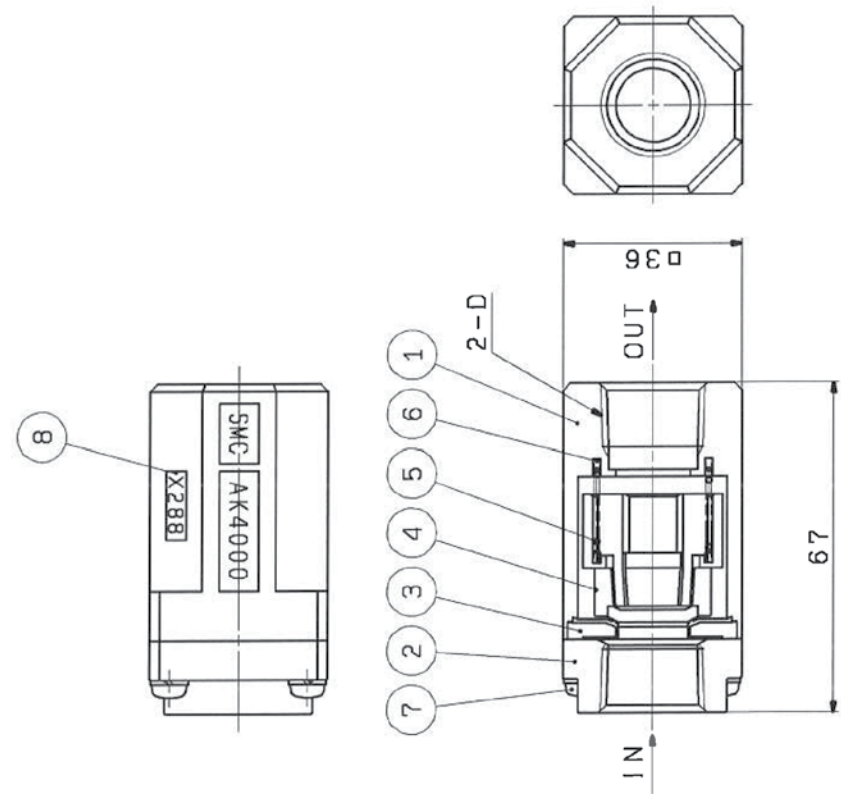
Model

Model	Port size	Sonic conductance dm ³ /(s·bar)		Critical pressure ratio		Weight (g)
		IN → OUT	OUT → EXH	IN → OUT	OUT → EXH	
AQ2000-01	1/8	5	5	0.45	0.35	110
AQ2000-02	1/4	7	8			105
AQ3000-02	1/4	8	8.4			215
AQ3000-03	3/8	12	14			205
AQ5000-04	1/2	21	23			690
AQ5000-06	3/4	27	36			650

Specifications

Fluid	Air	
Proof pressure	218 psi (1.5 MPa)	
Max. operating pressure	AQ2000 to 5000	145 psi (1 MPa)
Min. operating pressure	AQ2000 to 5000	7.3 psi (0.05 MPa)
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (No freezing)	

DIFFERENCE FROM THE AK4000-N02~N04 REGARDING SPECIFICATION. ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 2. LOW TEMPERATURE TYPE.
 3. ASSEMBLY AND INSPECTION IS SAME AS THE STANDARD.



SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE 2-D

DWG. NO.	2-D
△AK4000-N02-X288	NPT1/4
△AK4000-N03-X288	NPT3/8
△AK4000-N04-X288	NPT1/2



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
★ 8		NAME PLATE	PET	1	T1503-X288
7	AA00098	SCREW	STEEL WIRE	4	M4X14 WITH WASHER
★ 6	19016-3	RING	NBR	2	
5	19015	SPRING	STAINLESS STEEL WIRE	1	
4	19014	VALVE	POM	1	
★ 3	19013-5	SEAT RING	STAINLESS STEEL-NBR	1	
2	19012P-02N~04N	COVER	ADC	1	
1	19011P-02N~04N	BODY	ADC	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS

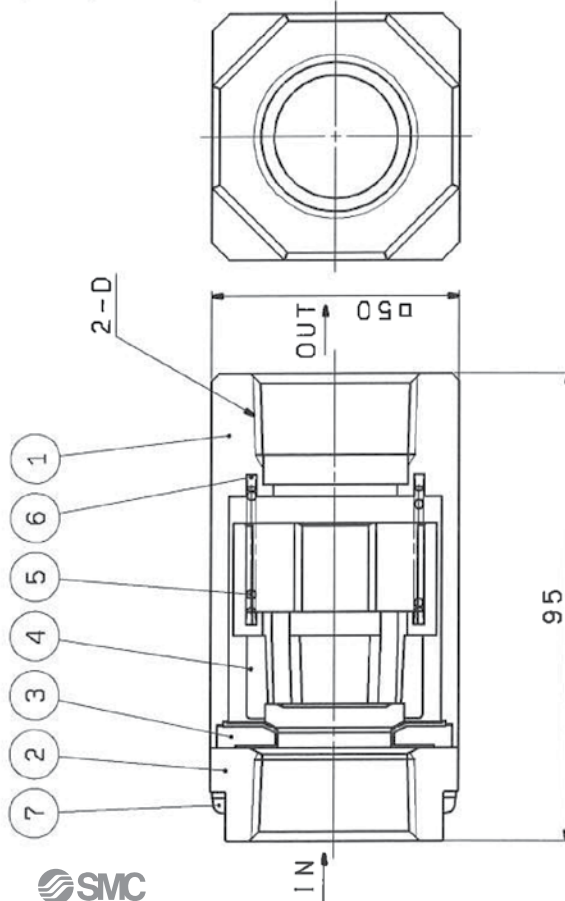
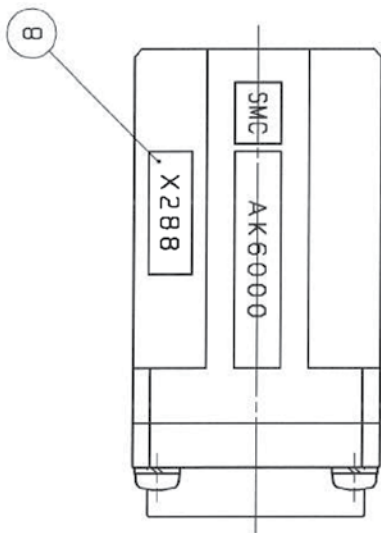
PROOF PRESS. 1.5 MPa
 WORKING PRESS. RENG 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60℃ (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE

DWG. NO.	2-D
AK6000-N06-X288	NPT3/4
AK6000-N10-X288	NPT 1

DIFFERENCE FROM THE AK6000-N06~N10 REGARDING SPECIFICATION. ASSEMBLY AND INSPECTION.

1. ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
2. LOW TEMPERATURE TYPE.
3. ASSEMBLY AND INSPECTION IS AS THE STANDARD.

SYMBOL



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
★ 8		NAME PLATE	PET	1	T1503:X288
★ 7	AA00111	SCREW	STEEL WIRE	4	M5x16 NI PLATED WITH WASHER
★ 6	19026-3	RING	NBR	2	
★ 5	19025	SPRING	STAINLESS STEEL WIRE	1	
★ 4	19024	VALVE	POM	1	
★ 3	19023-5	SEAT RING	BRASS BAR-NBR	1	
2	19021P-06N~10N	COVER	ADC	1	CHROMATED
1	19021P-06N~10N	BODY	ADC	1	CHROMATED

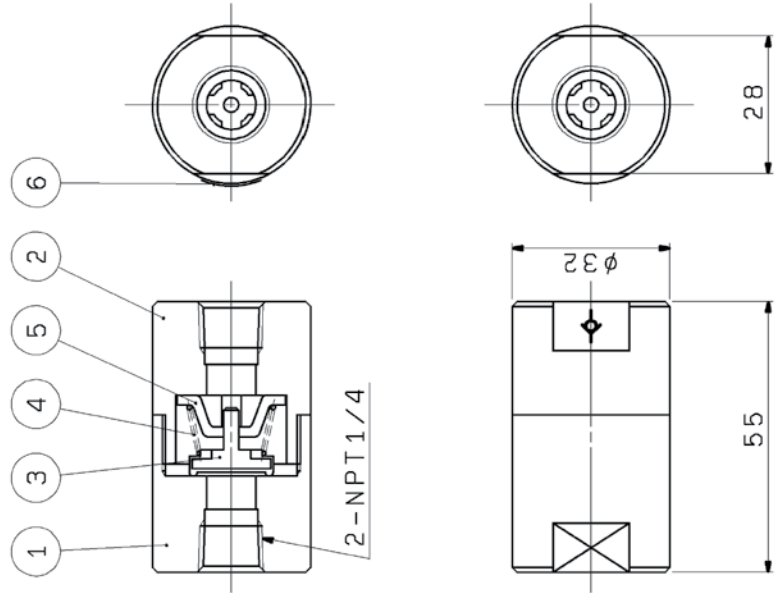
Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



SPECIFICATIONS

PROOF PRESS.	1.5	MPa
WORKING PRESS.	0.02~1	MPa
AMBIENT TEMP. AND WORKING FLUID TEMP.	-30~60 °C (NO FREEZING)	
WORKING FLUID	AIR	
PORT SIZE	2-NPT1/4	

NOTE
 FOLLOW THE SPECIAL PRODUCT ASSEMBLING INSPECTION INSTRUCTION AS TO ASSEMBLING. (AS*-PMI0367)

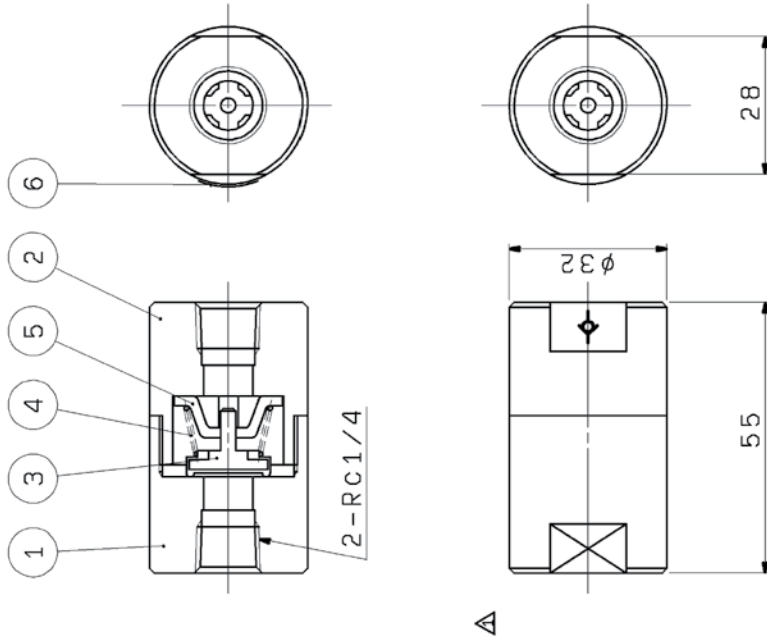


ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
6	XTO-674-3-3	NAME PLATE	PET	1	AK-DPJ00300
5	14313-6	STOPPER	STAINLESS STEEL	1	
4	XTO-1684-2	CHECK VALVE SPRING	STAINLESS STEEL	1	
3	14315-3	VALVE	STAINLESS STEEL-CR	1	
2	AK-DPJ00300-P02	BODY B	ALUMINIUM ALLOY	1	CHROMATED
1	AK-DPJ00300-P01	BODY A	ALUMINIUM ALLOY	1	CHROMATED

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. Δ 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR, ~~WATER~~ Δ
 PORT SIZE 2-RC1/4

SYMBOL

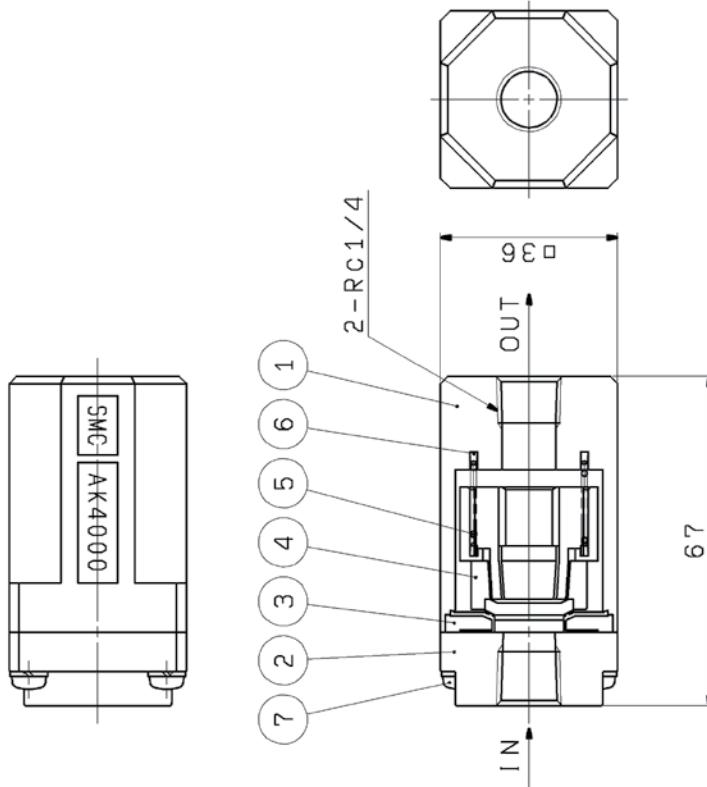


6	XT0-674-3-1	NAME PLATE	PET	1	AK-DPI00324
5	14313-6	STOPPER	STAINLESS STEEL	1	
4	XT0-1684-2	CHECK VALVE SPRING	STAINLESS STEEL	1	
3	14315-3	VALVE	STAINLESS STEEL+CR	1	
2	AK-DPI00324-P02	BODY B	ALUMINIUM ALLOY	1	CHROMATED
1	AK-DPI00324-P01	BODY A	ALUMINIUM ALLOY	1	CHROMATED
ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE Rc1/4

DIFFERENCE FROM THE AK4000-02 REGARDING SPECIFICATION, ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS

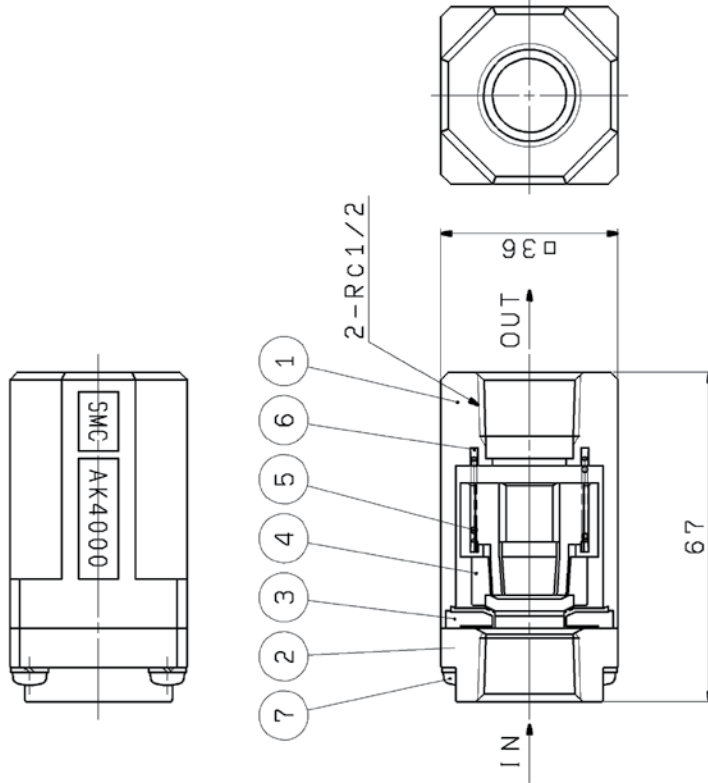


7	AAA00098	SCREW	STEEL WIRE	4	★	WATER NI PLATED WITH WASHER
6	19016-3	RING	NBR	2		
5	19015	SPRING	STAINLESS STEEL WIRE	1		
4	19014	VALVE	POM	1		
3	19013-5	SEAT RING	STAINLESS STEEL·NBR	1		
2	19012P-02	COVER	ADC	1		
1	19011P-02	BODY	ADC	1		
ITEM	PART NO	PART NAME	MATERIAL	QTY		REMARKS

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE RC1/2

DIFFERENCE FROM THE AK4000-04 REGARDING SPECIFICATION, ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
7	AA00098	SCREW	STEEL WIRE	4	★ MAX14 NI-PLATED WITH WASHER
6	19016-3	RING	NBR	2	
5	19015	SPRING	STAINLESS STEEL WIRE	1	
4	19014	VALVE	POM	1	
3	19013-5	SEAT RING	STAINLESS STEEL·NBR	1	
2	19012P-04	COVER	ADC	1	
1	19011P-04	BODY	ADC	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

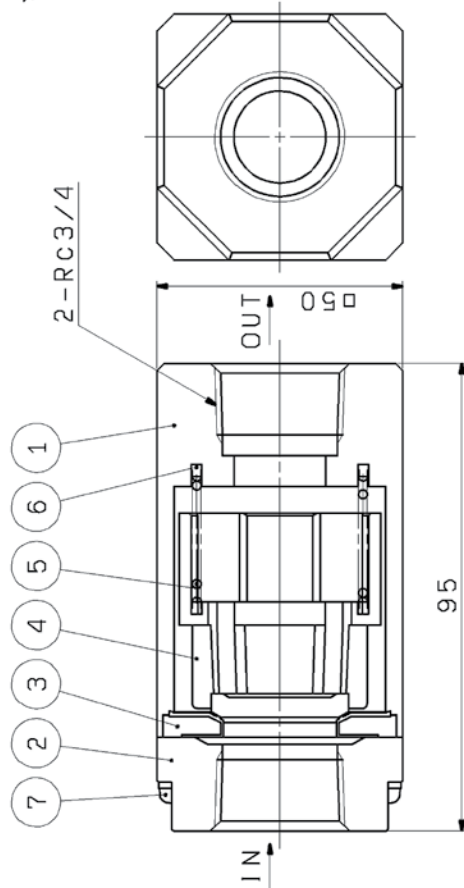
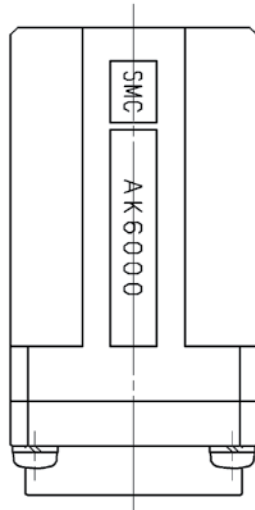
Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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SYMBOL



DIFFERENCE FROM THE AK6000-06 REGARDING SPECIFICATION.
 ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 2. LOW TEMPERATURE SPECIFICATION.
 3. ASSEMBLY AND INSPECTION ARE SAME AS STANDARD.

SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.02~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR
 PORT SIZE 2-RC3/4



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
7		SCREW		4	M5x16, NI-PLATED WITH WASHER
6	19026-3	RING	NBR	2	
5	19025	SPRING	STAINLESS STEEL WIRE	1	
4	19024	VALVE	POM	1	
3	19023-5	SEAT RING	BRASS BAR-NBR	1	
2	19022P-06	COVER	ADC	1	
1	19021P-06	BODY	ADC	1	

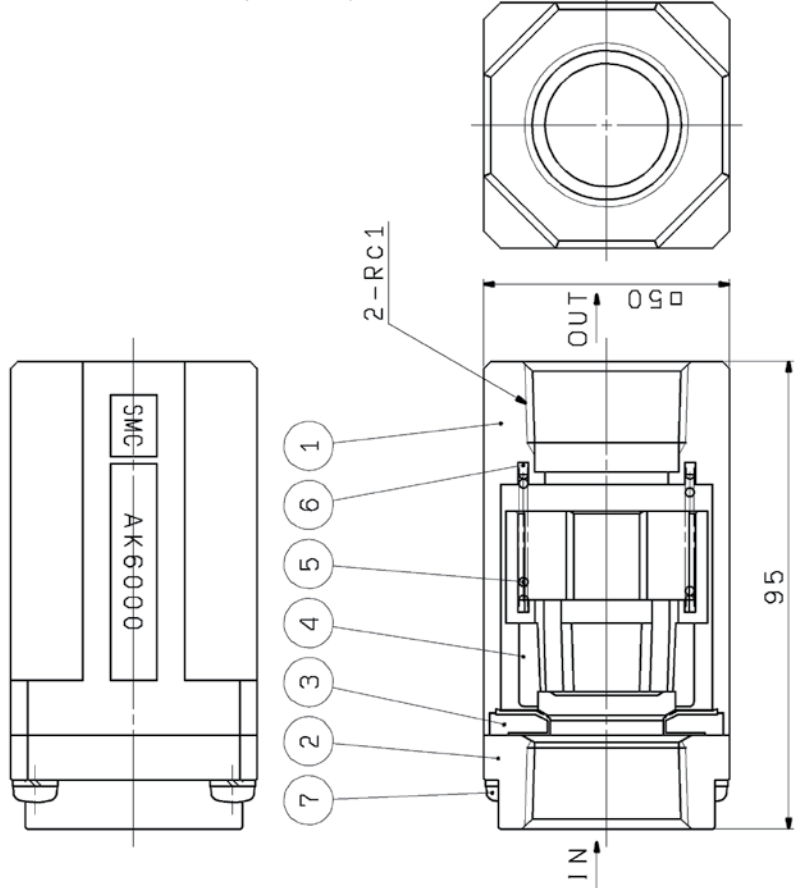
★

★

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



- DIFFERENCE FROM THE AK6000-10 REGARDING SPECIFICATION.
- ASSEMBLY AND INSPECTION.
- ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 - LOW TEMPERATURE SPECIFICATION
 - ASSEMBLY AND INSPECTION ARE SAME AS STANDARD.



SPECIFICATIONS

PROOF PRESS.	1.5	MPa
WORKING PRESS. RANGE	0.02~1	MPa
AMBIENT TEMP. AND WORKING FLUID TEMP.	-30~60	(NO FREEZING)
WORKING FLUID	AIR	
PORT SIZE	2-RC1	

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
★ 7		SCREW	STEEL WIRE	4	M5*16 NI-PLATED WITH WASHER
6	19026-3	RING	NBR	2	
5	19025	SPRING	STAINLESS STEEL WIRE	1	
4	19024	VALVE	POM	1	
★ 3	19023-5	SEAT RING	BRASS BAR-NBR	1	
2	19022P-10	COVER	ADC	1	
1	19021P-10	BODY	ADC	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-22°F (-30°C)

XTO-674-02L to 04L
Check Valve XTO-674-N02L to N04L

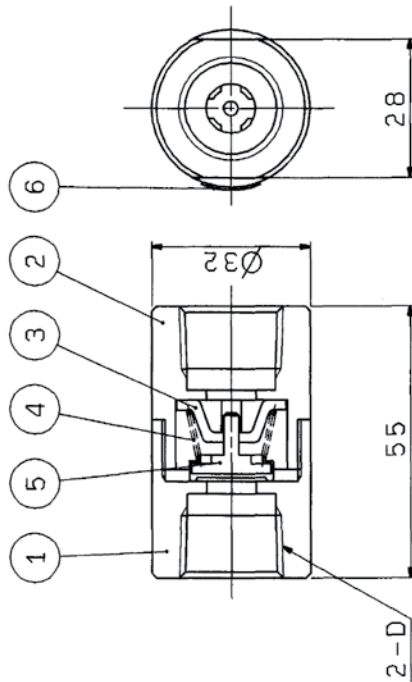
SPECIFICATIONS
 PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.05~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR

PORT SIZE	DWG. No.	D
XTO-674-02L~04L	RC 1/4~1/2	
XTO-674-N02L~N04L	NPT 1/4~1/2	

XTO-674-#02L

PORT SIZE
02 R1/4
03 R3/8
04 R1/2
N02 NPT 1/4
N03 NPT 3/8
N04 NPT 1/2

SYMBOL



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
6	XTO-674-3	NAME PLATE	PET	1	FULL PART NUMBER DISPLAY
5	14315-1	VALVE	STEEL WIRE-CR	1	
4	14314	CHECK VALVE SPRING	STAINLESS STEEL	1	
3	14313	STOPPER	STEEL PLATE	1	
2	XTO-674-2-N02~N04	-N02L~N04L	BODY B	1	
	XTO-674-2-02~04	-02L~04L	BRASS BAR	1	
1	XTO-674-1-N02~N04	-N02L~N04L	BODY A	1	
	XTO-674-1-02~04	-02L~04L	BRASS BAR	1	

☆

DIFFERENCE FROM THE XTO-674-#02~#04 REGARDING SPECIFICATION, ASSEMBLY AND INSPECTION.
 1. ☆ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 2. LOW TEMP. TYPE.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

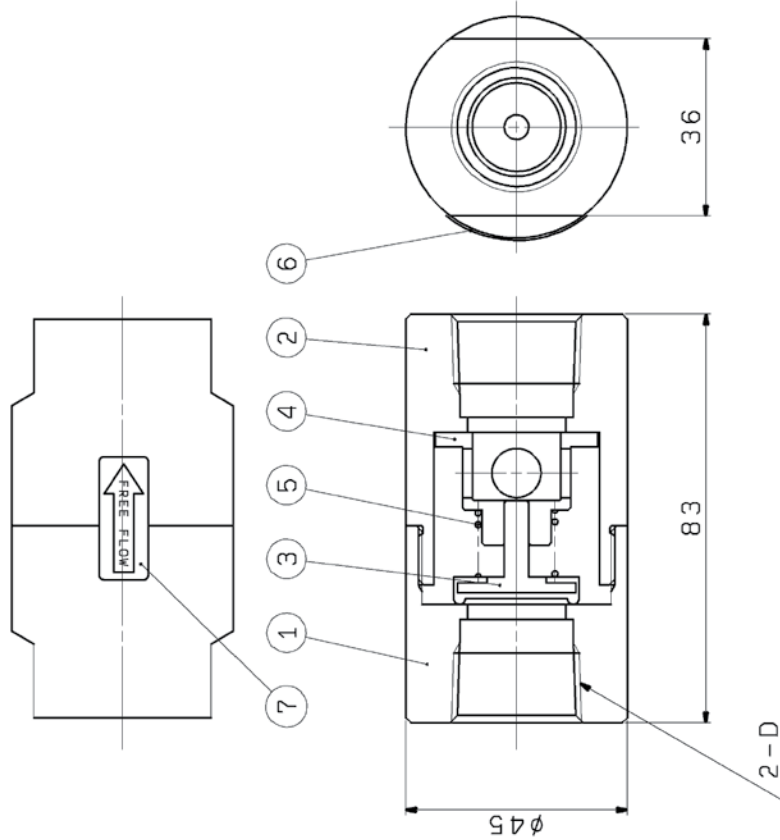
Check Valve **XTO-674-□06L** **-22°F (-30°C)**

NOTE
 1. ASSEMBLY AND INSPECTION SHOULD BE PERFORMED ACCORDING TO THE INDICATION OF ASSEMBLY AND INSPECTION FOR SPECIAL PRODUCT. (AS*-PMC0737)
 2. MIND THE LABEL(143038) APPLYING DIRECTION.

SPECIFICATIONS

PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.05~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C(-22~140°F)(NO FREEZING)
 WORKING FLUID AIR

PORT SIZE	DWG. NO.	2-D
	XTO-674-06L	RC 3/4
	XTO-674-N06L	NPT3/4



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
7	143038	NAME PLATE	PET	1	
6	XTO-674-3	NAME PLATE	PET	1	
5	INA-14-47-7	SPRING	STEEL WIRE	1	
4	XTO-674-12	GUIDE	BRASS BAR	1	ELECTROLESS NI PLATED
3	XTO-674-11	VALVE	STEEL WIRE·CR	1	
2	XTO-674-10-06N	-NO6	BODY(B)	1	ELECTROLESS NI PLATED
	XTO-674-10-06	-O6			
1	XTO-674-9-06N	-NO6	BODY(A)	1	ELECTROLESS NI PLATED
	XTO-674-9-06	-O6			

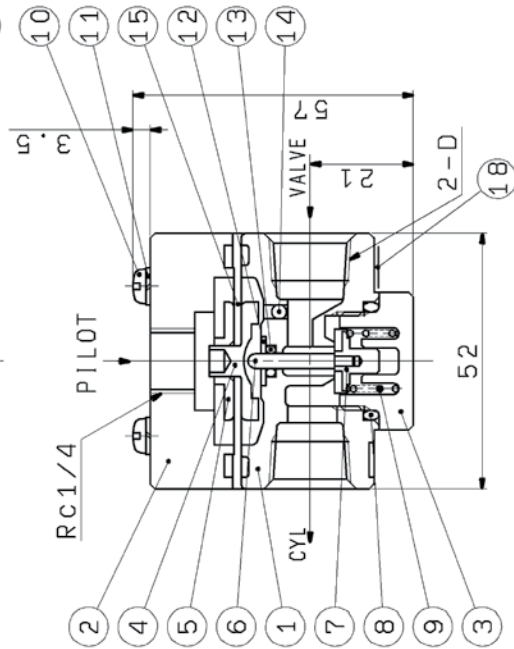
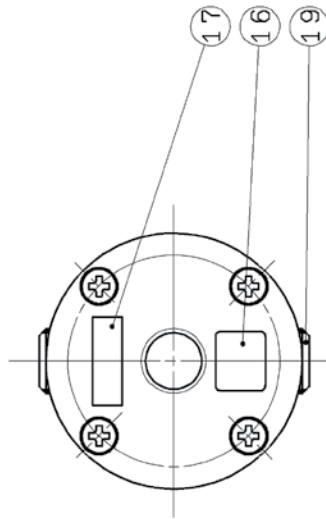
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Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS

PROOF PRESS. 1.5 MPa
 WORKING PRESS. RANGE 0.2~1 MPa
 AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
 WORKING FLUID AIR
 PILOT PRESS. 0.2~1 MPa
 PILOT PORT Rc1/4
 PORT SIZE

MODEL	2-D
XTO-2571-02-L	Rc 1/4
XTO-2571-03-L	Rc 3/8



DIFFERENCE FROM THE XTO-2571-02~03 REGARDING SPECIFICATION.
 ASSEMBLY AND INSPECTION.
 1. ★ MARKED PARTS OUT OF THE PARTS TABLE IS DIFFERENT.
 2. LOW TEMPERATURE SPECIFICATION.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
19	TB00024	PLUG	STEEL	2	R 1/4
18	63114	NAME PLATE	POLYESTER	1	
17	350118	NAME PLATE	POLYESTER	1	
16	XTO-2571-3	NAME PLATE	POLYESTER	1	XTO-2571
15	13506-1	DIAPHRAGM	NBR FOR LOW TEMP	1	
14	JA00221	STEEL BALL	STEEL	1	φ 3
13	KA02071	"O" RING	NBR FOR LOW TEMP	1	JIS B 2401 P3
12	135012	"O" RING HOLDER	ALUMINIUM	1	
11	EC00079	SPRING WASHER	STEEL WIRE	4	NO. 2 4
10	AA00234	SCREW	STEEL WIRE	4	MMφ. 7x25
9	200728	VALVE SPRING	STAINLESS STEEL	1	
8	KA02369	"O" RING	NBR FOR LOW TEMP	1	JIS W1516 AM6227-14
7	13504-1	VALVE	BRASS BAR-CR	1	
6	XTO-2571-8	STEM	STAINLESS STEEL	1	
5	13508	DIAPHRAGM SHELL	ADC	1	
4	XTO-2571-1	DIAPHRAGM HOLDER	STEEL	1	
3	13503P	VALVE GUIDE	ADC	1	
2	XTO-1672-1P	BONNET	ALUMINIUM	1	
1	XTO-1672-2P-02~03	BODY	ADC	1	

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Check Valve **XTO-1719-06 to 10-L** **-22°F (-30°C)**

DIFFERENCE FROM THE XTO-1719-06~10

REGARDING SPECIFICATION,
ASSEMBLY AND INSPECTION.

1. ★ MARKED PARTS OUT OF THE PARTS
TABLE IS DIFFERENT.

2. LOW TEMPERATURE SPECIFICATION.

SPECIFICATIONS

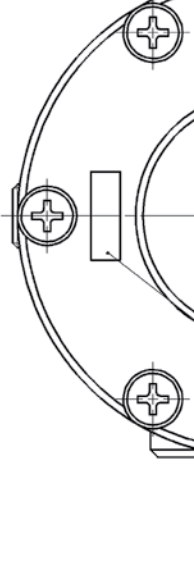
PROOF PRESS. 1.5 MPa
WORKING PRESS. RANGE 0.2~1 MPa
AMBIENT TEMP. AND WORKING FLUID TEMP. -30~60°C (NO FREEZING)
WORKING FLUID AIR
PORT SIZE 2-RC3/4~1 (PILOT: RC1/4)
PILOT PRESS. 0.2~1 MPa

1.5 MPa
0.2~1 MPa
-30~60°C (NO FREEZING)
AIR
2-RC3/4~1 (PILOT: RC1/4)
0.2~1 MPa

1.5 MPa
0.2~1 MPa
-30~60°C (NO FREEZING)
AIR
2-RC3/4~1 (PILOT: RC1/4)
0.2~1 MPa

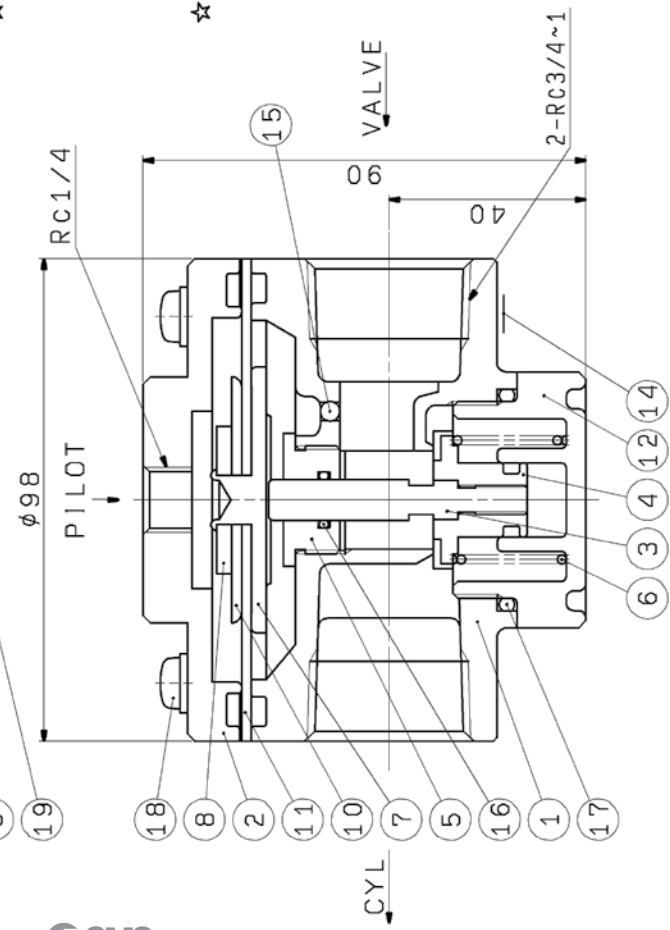
1.5 MPa
0.2~1 MPa
-30~60°C (NO FREEZING)
AIR
2-RC3/4~1 (PILOT: RC1/4)
0.2~1 MPa

1.5 MPa
0.2~1 MPa
-30~60°C (NO FREEZING)
AIR
2-RC3/4~1 (PILOT: RC1/4)
0.2~1 MPa



ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
★ 20	1131232-1	NAME PLATE	POLYESTER	1	①
19	TB00024	PLUG	STEEL	2	R1/4
18	AA00457	SCREW	STEEL WIRE	6	M6x20 WASHERS
★ 17	KA02815	"O" RING	NBR FOR LOW TEMP	1	G40
★ 16	KA02816	"O" RING	NBR FOR LOW TEMP	1	P8
15	JA00004	STEEL BALL	STEEL	1	φ4
14	63486	NAME PLATE	POLYESTER	1	
13	350118	NAME PLATE	POLYESTER	1	
12	13533P	VALVE GUIDE	ADC	1	
★ 11	132659-1	DIAPHRAGM	NBR FOR LOW TEMP	1	
10	12604	CENTER DISK	ALUMINIUM	1	
9	XTO-2571-6	NAME PLATE	POLYESTER	1	XTO-1719
8	XTO-1719-18	SPACER	ALUMINIUM	1	
7	XTO-1719-17	DIAPHRAGM SHELL	STEEL	1	
6	XTO-1719-16	VALVE SPRING	STAINLESS STEEL	1	
5	XTO-1719-14	BUSHING	BRASS BAR	1	
★ 4	XTO-1719-13-1	VALVE	BRASS BAR·CR	1	
3	XTO-1719-12	STEM	STAINLESS STEEL	1	
2	XTO-1719-2P	BONNET	ALUMINIUM	1	
1	XTO-1719-11P-06~10	BODY	ADC	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



Pneumatic Instrumentation Equipment	Port Valves for Fluid Control	Fittings and Tubing	Flow Control Equipment	Pressure Control Equipment	F.R.L. AL AR AF AW	Rotary Actuator	Air Grippers	Air Cylinders	Valves
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-4°F
-20°C

Self-align Fittings Series *H/DL/L/LL*

RoHS

WEB

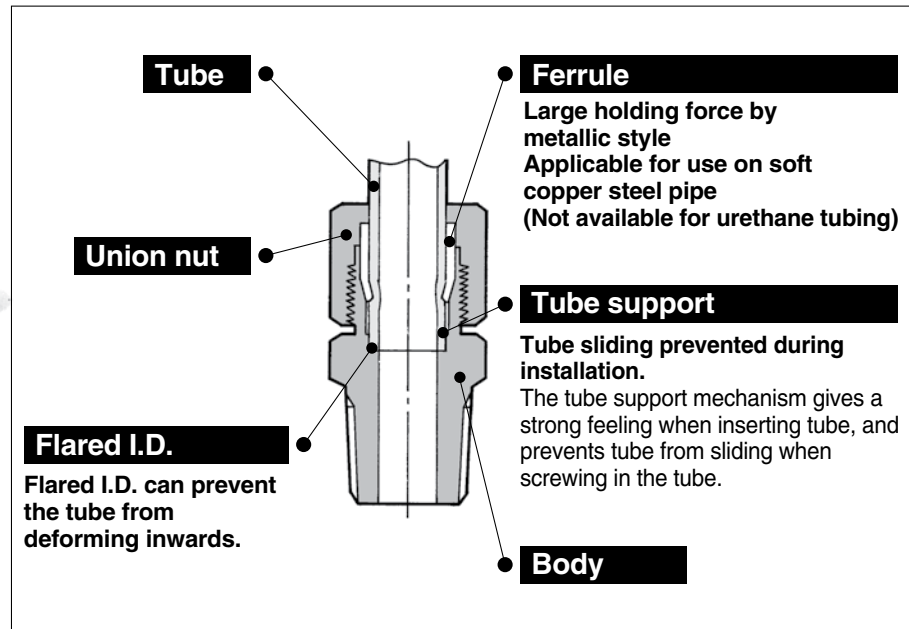
For details about the series, refer to the **WEB catalog** <http://www.smcworld.com> or the Best Pneumatics No. **6**

- **Flared ridge ferrule**
Prevents accidental loss of ferrule when inserting tubing into the fitting body.
- **Hardened ridge ferrule**
Prevents breakage of ferrule when tightening nut.
- **Flared I.D.**
Provides low flow resistance inside the fitting.
- **Wide variety of styles and sizes**
Ten styles and five tube O.D.'s provide a wide range of fittings that will fit any application.



How to Order

Refer to the **WEB catalog** or the Best Pneumatics No. 6.



Specifications

Applicable tubing material		Nylon, Soft nylon, Soft copper steel pipe (C1220T-0)
Applicable tubing O.D.		ø4, ø6, ø8, ø10, ø12
Maximum operating pressure		145 psi (1 MPa)
Proof pressure		1450 psi (10 MPa)
Fluid		Air
Ambient and fluid temperature		-4 to 140°F (-20 to 60°C) (No freezing) ^{Note 1)}
Thread	Mounting section	JIS B 0203 (Taper thread for piping)
	Nut section	JIS B 0205 (Metric fine thread)
Seal on the threads ^{Note 2)}		None or with sealant

Note 1) Check the operating temperature range of the tube.

Note 2) Male elbow, Male branch tee, Male run tee with sealant is manufactured upon receipt of order.
Suffix "S" to the end of part number if w/ sealant is desired.

Principal Parts Material

Body	C3604, C3771BE
Nut	C3604
Ferrule	C2700

-40°F
-40°C

Brass sleeve Insert Fittings

RoHS

Series **KF□B**

WEB

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6



Brass sleeve

How to Order

Refer to the WEB catalog or the Best Pneumatics No. 6.

Specifications

Sleeve material	Brass
Fluid	Air, Steam ^{Note 2)}
Ambient and fluid temperature	-40 to 302°F (-40 to 150°C (No freezing))
Operating pressure range ^{Note 1)}	-14.7 to 145 psi (-101.3 kPa to 1 MPa)
Proof pressure	1015 psi (7.0 MPa (at 140°F [60°C]))
Lubricant	Grease-free
Seal on the threads	None or with sealant

Note 1) Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Note 2) Swivel type is not compatible with water and steam.

Applicable Tubing

Series	Tubing O.D.	Tubing O.D. x I.D. (mm)							
		ø4 x ø2.5	ø6 x ø4	ø8 x ø5	ø8 x ø6	ø10 x ø6.5	ø10 x ø7.5	ø12 x ø8	ø12 x ø9
T	Nylon	●	●	—	●	—	●	—	●
TS	Soft nylon	●	●	—	●	—	●	—	●
TU	Polyurethane	●	●	—	—	—	—	—	—
TPH	Polyolefin	●	●	—	●	—	●	—	●
TPS	Soft polyolefin	●	●	—	—	—	—	—	—
TH	FEP	●	●	—	●	—	●	—	●
TL	Super PFA	—	●	—	●	—	—	—	—
TD	Modified PTFE	●	●	—	●	—	●	—	●

Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AW
AF
AR
AL

Pressure Control Equipment

Flow Control Equipment

Fittings and Tubing

Port Valves for Fluid Control

Pneumatic Instrumentation Equipment

-85°F
-65°C

Stainless Steel 316 Insert Fittings

RoHS

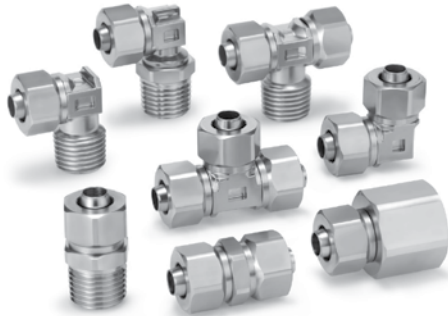
Series **KFG2**

Applicable Tubing: Metric Size,
Connection Thread: R, Rc

For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

WEB

- Fluid temperature –85 to 500°F (–65 to 260°C) (Swivel elbow: 23 to 302°F [–5 to 150°C])
- Material: Stainless steel 316 Rubber material is not used. (Except swivel elbow)
- Grease-free
- Can be used with steam.



How to Order

Refer to the WEB catalog or the Best Pneumatics No. 6.

Specifications

Fluid	Air, Water, Steam ^{Note 2) Note 3)}
Operating pressure range ^{Note 1)}	1.45 to 145 psi (–100 kPa to 1 MPa) ^{Note 4)}
Proof pressure	435 psi (3.0 MPa)
Ambient and fluid temperature	–85 to 500°F (–65 to 260°C) (No freezing) ^{Note 4)} [Swivel elbow and with sealant types: 23 to 302°F (–5 to 150°C)]
Lubricant	Grease-free specification
Seal on the threads	Without sealant (With sealant type compatible) ^{Note 5)}

Note 1) Avoid using in a vacuum holding application such as a leak tester, since there is leakage.

Note 2) Consult with SMC regarding applicable tubing separately.

Note 3) Using special FKM that is resistant even when steam is used.

Note 4) Check the operating pressure range and operating temperature range of the tube.

Note 5) With sealant: Suffix "S" to the end of part number.

Note 6) Union nut is shipped together.

Applicable Tubing

Tubing material ^{Note)}	FEP, PFA, Modified PTFE, Nylon, Soft nylon ^{Note)} , Polyurethane, Soft polyurethane, Polyolefin, Soft polyolefin, Antistatic soft nylon, Antistatic polyurethane, Hard polyurethane
Tubing size	ø4 x ø2.5, ø4 x ø3, ø6 x ø4, ø8 x ø6, ø10 x ø7.5 ø10 x ø8, ø12 x ø9, ø12 x ø10, ø16 x ø13

Note) For soft nylon tubing, soft polyurethane tubing, hard polyurethane tubing, antistatic polyurethane tubing, water cannot be used.

Series	Tubing material	Tubing O.D. x I.D. (mm)								
		ø4 x ø2.5	ø4 x ø3	ø6 x ø4	ø8 x ø6	ø10 x ø7.5	ø10 x ø8	ø12 x ø9	ø12 x ø10	ø16 x ø13
TH	FEP	●	—	●	●	●	●	●	●	—
TL	Super PFA	—	●	●	●	—	●	—	●	—
TD	Modified PTFE	●	—	●	●	●	—	●	—	—
T	Nylon	●	●	●	●	●	—	●	—	●
TS	Soft nylon	●	—	●	●	●	—	●	—	—
TU	Polyurethane	●	—	●	—	—	—	—	—	—
TPH	Polyolefin	●	—	●	●	●	—	●	—	—
TUS	Soft polyurethane	●	—	●	—	—	—	—	—	—
TUH	Hard polyurethane (High pressure)	●	—	●	—	—	—	—	—	—
TPS	Soft polyolefin	●	—	●	—	—	—	—	—	—
TAS	Antistatic soft nylon	●	—	●	—	—	—	—	—	—
TAU	Antistatic polyurethane	●	—	●	—	—	—	—	—	—

-4°F
-20°C

Clean One-touch Fittings For Blowing

RoHS

Series KP

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

WEB

- Completely oil free (Rubber parts are fluorine-coated.)
- Liquid-contact areas are non-metallic
- Parts cleaning, assembly and double packaging in a clean room
- Can be used for vacuum (-14.5 psi [-100kPa])



⚠ Caution

Series KP is a line of special One-touch fittings for use in clean room blowing and washing lines.

Please consult with SMC regarding other types of applications.

Seal material: The durability of EPDM with respect to mineral oils is inferior, which makes it unsuitable for piping in general pneumatic equipment.

How to Order

Refer to the **WEB** catalog or the Best Pneumatics No. 6.

Specifications

Particulate generation grade	Grade 1 Note 1)
Fluid	Air/Nitrogen gas/Water (pure water) Note 2)
Maximum operating pressure (68°F [20°C])	145 psi (1 MPa) Note 3)
Operating vacuum pressure	-14.5 psi (-100 kPa) {10 Torr}
Proof pressure (68°F [20°C])	435 psi (3 MPa)
Ambient and fluid temperature	-4 to 176°F (-20 to 80°C)
Threads	JIS B0203 (Taper thread for piping)

Note 1) Refer to particulate generation grade classifications.

Note 2) The surge pressure must be under the maximum operating pressure.

Note 3) The maximum operating pressure is the value at 68°F (20°C). Refer to the operating pressure curve for other temperatures.

Note 4) Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Applicable Tubing

Tubing material	PFA, Polyolefin Soft polyolefin, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Note 1) FEP, nylon and soft nylon tubing, and tubing not compatible with the clean series can also be used. However, the degree of clean performance will be reduced.

Note 2) Due to the softness of polyurethane tubing, it may fold when being inserted. Hold the end of the tubing and insert it all the way in.

Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AL AR AF AW

Pressure Control Equipment

Flow Control Equipment

Fittings and Tubing

Port Valves for Fluid Control

Pneumatic Instrumentation Equipment

-40°F
-40°C

Nylon Tubing

Series T/TIA

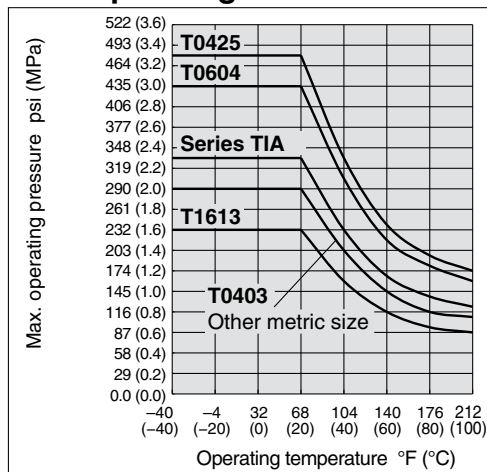
RoHS

WEB

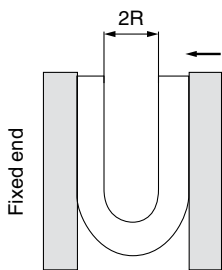
For details about the series, refer to the WEB catalog <http://www.smcworld.com> or the Best Pneumatics No. 6

For general pneumatic tubing, Nylon tubing

Max. Operating Pressure



How to measure the minimum bending radius.



At a temperature of 68°F (20°C), bend the tubing into a U shape. Fix one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 10%.

⚠ Precautions

Be sure to read before handling. Refer to the Best Pneumatic No. 6 for Safety Instructions. Be sure to read this before handling. Refer to the back cover for Safety Instructions. Refer to "Handling Precautions for SMC Products" on SMC website, <http://www.smcworld.com>

⚠ Caution

1. Applicable for general industrial water. Please consult with SMC if using other kinds of fluid. Surge pressure must be under the max. operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
2. Please exercise caution when using this item in a clean room. There is a possibility of plasticizer and other materials precipitating on the tube surface and detracting from the cleanliness level of the room.

How to Order

T0425 B - 20

Tubing model

Color

Symbol	Color
B	Black (Translucent)
W	White (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
Y	Yellow (Translucent)
G	Green (Translucent)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll (Black and white only)

Model

● — 20 m roll □ — 100 m roll (T1613 is reel.)

Model	Tubing size													
	Metric size (Series T)							Inch size (Series TIA)						
	T0425	T0403	T0604	T0645	T0806	T1075	T1209	T1613	TIA01	TIA05	TIA07	TIA11	TIA13	
Tubing O.D. (mm)	4	4	6	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7	
Tubing I.D. (mm)	2.5	3	4	4.5	6	7.5	9	13	2.18	3.48	4.57	6.99	9.56	
Black (B)	●	●	●	●	●	●	●	●	●	●	●	●	●	
White (W)	□	□	□	□	□	□	□	□	□	□	□	□	□	
Red (R)	●	●	●	●	●	●	●	●	●	●	●	●	●	
Blue (BU)	●	●	●	●	●	●	●	●	●	●	●	●	●	
Yellow (Y)	●	●	●	●	●	●	●	●	●	●	●	●	●	
Green (G)	●	●	●	●	●	●	●	●	●	●	●	●	●	
	5/32"				5/16"				Nominal size (inch)					
									1/8"	3/16"	1/4"	3/8"	1/2"	
									Nominal size (mm)					
									3.2					

Specifications

Fluid	Air/Water																	
	68°F (20°C) or less	104°F (40°C)	140°F (60°C)	176°F (80°C)	212°F (100°C)	3.3	2.0	3.0	2.0	2.0	2.0	2.0	1.6	2.3	2.3	2.3	2.3	2.3
Max. operating pressure (MPa) (Note 1)	1.65	1.0	1.5	1.0	1.0	1.0	1.0	1.0	0.8	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Applicable fittings (Note 1) (Note 2)	One-touch fittings, Insert fittings, Self-align fittings, Miniature fittings																	
Min. bending radius (mm) (Note 3)	Min. bending radius	13	20	24	30	40	50	60	100	15	25	30	50	65				
	Bending value (Reference)	10	15	18	23	30	40	45	75	12	20	23	40	48				
Operating temperature (Note 1)	-40 to 212°F (-40 to 100°C), Water: 32 to 158°F (0 to 70°C) (No freezing)																	
Material	Nylon 12																	

1MPa = 145 psi

Note 1) Be sure to operate under the maximum operating pressure conditions using the lower maximum operating specification of either the tubing or fittings.

Note 2) Mount an inner sleeve when using metal One-touch fittings in high-temperature environments of 140°F (60°C) or more. Use self-align fittings at a temperature of 140°F (60°C) or less.

Note 3) The minimum bending radius is the representative value measured as shown in the left figure.

- Use a tube above the recommended minimum bending radius.
- The tubing may be bent if used under the recommended minimum bending radius. Therefore, refer to the refraction value and make sure that the tubing is not bent or flattened.
- Please note that the refraction value is not warranted because of the value when 2R is measured by the method in the left figure if the tubing is bent or flattened, etc.

Nylon Tubing *Series T/TIA* **-40°F (-40°C)**

Made to Order

(Please contact SMC for specifications in detail, dimensions, delivery and specifications other than those mentioned above.)

100 m reel Metric size and Inch size except ø16: Suffix "-X3" to the end of part number. Ex.) T0425R-100-X3

Longer length reel Metric size: Suffix "-X3" to the end of part number. Ex.) T0425G-500-X3

20 m roll Inch size: Suffix "-X4" to the end of part number. Ex.) TIA01BU-20-X4

Made to Order Availability

Part no.	Length \ Model	T0425 *	T0604 *	T0806 *	T1075 *	T1209 *	TIA01 *	TIA05 *	TIA07 *	TIA11 *	TIA13 *	Color
		X3	100 m reel	○	○	○	○	○	○	○	○	
150 m reel					○							
200 m reel				○								
500 m reel	○		○									
X4	20 m roll						○	○	○	○	○	Red, Blue, Yellow, Green

Valves

Air Cylinders

Air Grippers

Rotary Actuator

F.R.L.
AL
AR
AF
AW

Pressure Control Equipment

Flow Control Equipment

Fittings and Tubing

Port Valves for Fluid Control

Pneumatic Instrumentation Equipment

Specifications

Valve construction	Direct operated poppet	
Fluid	Air	
Orifice size	mmφ 5	
Max operating pressure differential	MPa 1.0	
Flow characteristics	C(dm ³ /s·bar)	1.96
	b	0.55
	Cv	0.75
Withstand pressure	MPa 2.0	
Fluid temperature	°C -30~60	
Ambient temperature	°C -40~60	
Environment	Location without corrosive or explosive gases	
Valve leakage (cm ³ /min)	Internal	1 or less <small>Note1)</small>
	External	1 or less <small>Note1)</small>
Weight	g 610	
Body material	SUS	
Seal material	NBR	
Rated voltage	V 230AC	
Allowable voltage fluctuation	±10% of rated voltage	
Allowable leakage voltage	±10% or less of rated voltage	
Coil insulation type	Class B	
Apparent power	VA 12	
Temperature rise	°C 70	

Note1) Leakage is the value at ambient temperature 20°C.

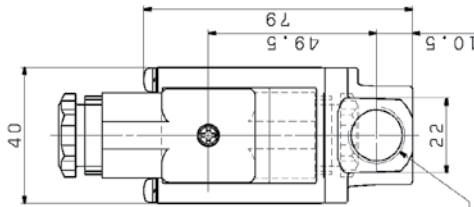
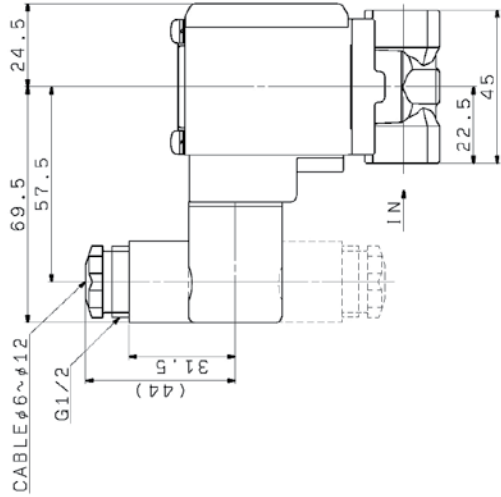
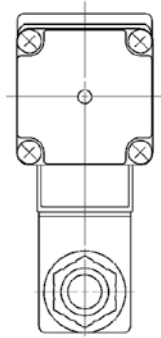
Special specification

- 1) Seal material: NBR for low temperature (-40°C)
- 2) Body material: SUS
- 3) Fluid temperature: -30~60°C
- 4) Ambient temperature: -40~60°C

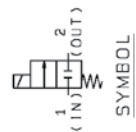
NOTE

- 1) Use this product number
- "port 1 pressure > port 2 pressure" condition.
- Do not use in the opposite pressurized way.

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



2XG3/8
1(IN), 2(OUT) PORT



Bag Filter Valve VXF23A $\square \square \square \square \square$ X39 -40°F (-40°C)

HOW TO ORDER
VXF23A $\square \square \square \square \square$ X39

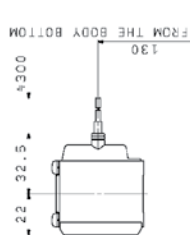
PORT SIZE
SYMBOL SPECIAL SIZES
NIL (STANDARD)

3 1-1/2

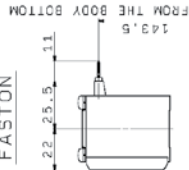
MATERIAL-PRESENCE OF SILENCER
SWR1 WITH/WITHOUT SILENCER
A NBR/PDM WITH SURGE SUPPRESSOR
B NBR/PDM WITH SILENCER

VOLTAGE-ELECTRICAL ENTRY
SYMBOL ELECTRICAL ENTRY
A 24VDC GROMMET
B 100VAC
C 110VAC GROMMET
D 200VAC (WITH SURGE VOLTAGE SUPPRESSOR)
E 250VAC
F 24VDC
G 24VDC
H 100VAC
I 110VAC DIN TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)
J 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
K 200VAC
L 250VAC
M 24VDC
N 100VAC CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)
P 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
Q 200VAC
R 250VAC
S 24VDC
T 100VAC CONDUIT
U 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
V 200VAC
W 250VAC
Y 24VDC FASTON
Z OTHERS

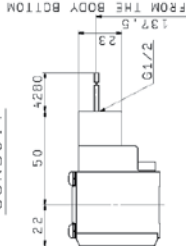
GROMMET (WITH SURGE VOLTAGE SUPPRESSOR)



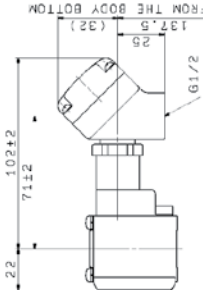
FASTON



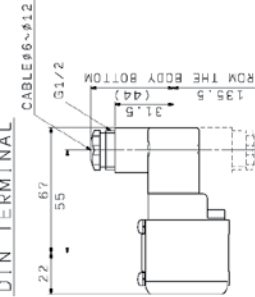
CONDUIT



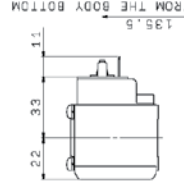
CONDUIT TERMINAL



DIN TERMINAL



WITHOUT DIN CONNECTOR COIL



SYMBOL	VOLTAGE	ELECTRICAL ENTRY	SYMBOL	VOLTAGE	ELECTRICAL ENTRY
1A	48VAC	GROMMET	2A	24VDC	WITHOUT DIN CONNECTOR
1B	220VAC (WITH SURGE VOLTAGE SUPPRESSOR)	GROMMET	2B	100VAC	WITHOUT DIN CONNECTOR
1C	220VAC	GROMMET	2C	110VAC	WITHOUT DIN CONNECTOR
1D	24VAC	GROMMET	2D	200VAC	WITHOUT DIN CONNECTOR
1E	12VDC	GROMMET	2E	250VAC	WITHOUT DIN CONNECTOR
1F	48VAC	DIN TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2F	24VAC	WITHOUT DIN CONNECTOR
1G	220VAC (WITH SURGE VOLTAGE SUPPRESSOR)	DIN TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2G	100VAC	WITHOUT DIN CONNECTOR
1H	24VAC	DIN TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2H	24VDC	WITHOUT DIN CONNECTOR
1I	12VDC	DIN TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2I	110VAC	WITHOUT DIN CONNECTOR
1J	12VDC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2J	250VAC	WITHOUT DIN CONNECTOR
1K	48VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2K	24VAC	WITHOUT DIN CONNECTOR
1L	220VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2L	100VAC	WITHOUT DIN CONNECTOR
1M	220VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2M	24VAC	WITHOUT DIN CONNECTOR
1N	12VDC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2N	200VAC	WITHOUT DIN CONNECTOR
1O	220VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2O	24VAC	WITHOUT DIN CONNECTOR
1P	110VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2P	100VAC	WITHOUT DIN CONNECTOR
1Q	200VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2Q	24VAC	WITHOUT DIN CONNECTOR
1R	250VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2R	100VAC	WITHOUT DIN CONNECTOR
1S	24VDC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2S	24VAC	WITHOUT DIN CONNECTOR
1T	12VDC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2T	110VAC	WITHOUT DIN CONNECTOR
1U	110VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2U	250VAC	WITHOUT DIN CONNECTOR
1V	200VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2V	24VAC	WITHOUT DIN CONNECTOR
1W	250VAC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2W	100VAC	WITHOUT DIN CONNECTOR
1Y	24VDC	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2X	24VAC	WITHOUT DIN CONNECTOR
1Z	OTHERS	CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)	2Y	100VAC	WITHOUT DIN CONNECTOR

SPECIFICATIONS

ORIFICE SIZE	mmφ	44
FLUID		AIR
MIN. OPERATING PRESSURE MPa		0.03
MAX. OPERATING PRESSURE MPa		0.7
FLUID TEMPERATURE °C	-(NON-FREEZING) TO 60	
AMBIENT TEMPERATURE °C	-40 TO 60	
PORT SIZE		1-1/2
APPARENT POWER (VA)	50HZ	10
POWER CONSUMPTION (W)	60HZ	8
TYPE OF COIL INSULATION ENCLOSURE	CLASS B	IP65

SPECIAL SPECIFICATION

Δ) AMBIENT TEMPERATURE: -40 TO 60°C



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Pneumatic Instrumentation Equipment

Port Valves for Fluid Control

Fittings and Tubing

Flow Control Equipment

Pressure Control Equipment

F.R.L.
AL AR AF AW

Rotary Actuator

Air Grippers

Air Cylinders

Valves

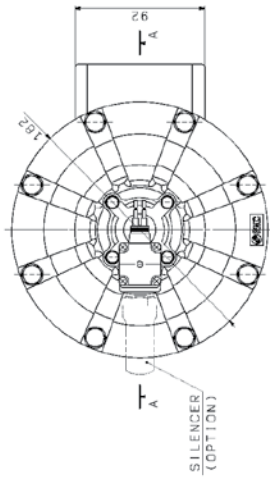
HOW TO ORDER
VXF25A X39

PORT SIZE
SYMBOL PORT SIZE
5 2-1/2

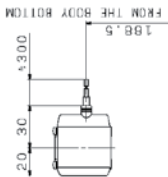
OTHER OPTION
SYMBOL SPECIAL SCREW
NIL STANDARD (2)

A G
B NPT

MATERIAL-PRESENCE OF SILENCER
SYMBOL DIMENSIONAL VALUE REFERENCE SYMBOL
A NBRZ/PDM WITHOUT SILENCER
B NBRZ/PDM WITH SILENCER



GROMMET (WITH SURGE VOLTAGE SUPPRESSOR)

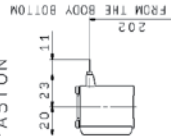


SILENCER (OPTION)

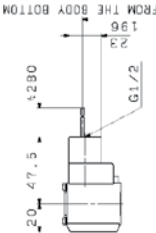


VOLTAGE-ELECTRICAL ENTRY
SYMBOL DIMENSIONAL VALUE REFERENCE SYMBOL
A 24VDC GROMMET
B 110VAC
C 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
D 240VAC (WITH SURGE VOLTAGE SUPPRESSOR)
E 240VAC
F 24VDC
G 24VDC
H 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
I 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
J 110VAC
K 240VAC
L 240VAC
M 24VDC
N 110VAC CONDUIT TERMINAL (WITH SURGE VOLTAGE SUPPRESSOR)
O 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
P 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
Q 240VAC
R 240VAC
S 24VDC CONDUIT
T 110VAC CONDUIT (WITH SURGE VOLTAGE SUPPRESSOR)
U 110VAC (WITH SURGE VOLTAGE SUPPRESSOR)
V 240VAC
W 240VAC
Y 24VDC FASTON
Z OTHERS

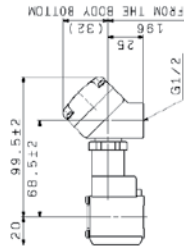
FASTON



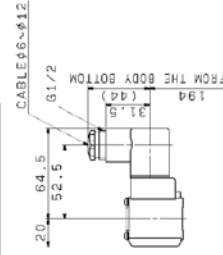
CONDUIT



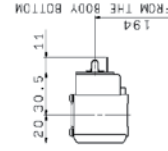
CONDUIT TERMINAL



DIN TERMINAL



WITHOUT DIN CONNECTOR COIL



SYMBOL	DIMENSIONAL VALUE	REFERENCE SYMBOL	MINIMUM VOLTAGE	ELECTRICAL ENTRY
2A	24VDC		2A 24VDC	
2B	100VAC		2B 100VAC	
2C	110VAC		2C 110VAC	
2D	200VAC		2D 200VAC	
2E	240VAC		2E 240VAC	
2F	48VAC		2F 48VAC	
2G	240VAC		2G 240VAC	
2H	240VAC		2H 240VAC	
2J	12VDC		2J 12VDC	
2K	24VDC		2K 24VDC	
2L	100VAC		2L 100VAC	
2M	110VAC		2M 110VAC	
2N	200VAC		2N 200VAC	
2O	48VAC		2O 48VAC	
2P	200VAC		2P 200VAC	
2Q	240VAC		2Q 240VAC	
2R	240VAC		2R 240VAC	
2S	240VAC		2S 240VAC	
2T	24VDC		2T 24VDC	
3A	24VDC		3A 24VDC	
3B	100VAC		3B 100VAC	
3C	110VAC		3C 110VAC	
3D	200VAC		3D 200VAC	
3E	240VAC		3E 240VAC	
3F	48VAC		3F 48VAC	
3H	240VAC		3H 240VAC	
3V	24VAC		3V 24VAC	
3U	12VDC		3U 12VDC	

SPECIFICATIONS

ORIFICE SIZE	mmφ	7.0
FLUID		AIR
MIN. OPERATING PRESSURE	MPa	0.1
MAX. OPERATING PRESSURE	MPa	0.7
FLUID TEMPERATURE	°C	-10 (NON-FREEZING) TO 60
AMBIENT TEMPERATURE	°C	-40 TO 60
PORT SIZE		±2-1/2
APPARENT POWER (VA)	60HZ	7
POWER CONSUMPTION (DC (W))	60HZ	4.5
TYPE OF COIL INSULATION		CLASS B
ENCLOSURE		IP65

SPECIAL SPECIFICATION
1) AMBIENT TEMPERATURE: -40 TO 60°C

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

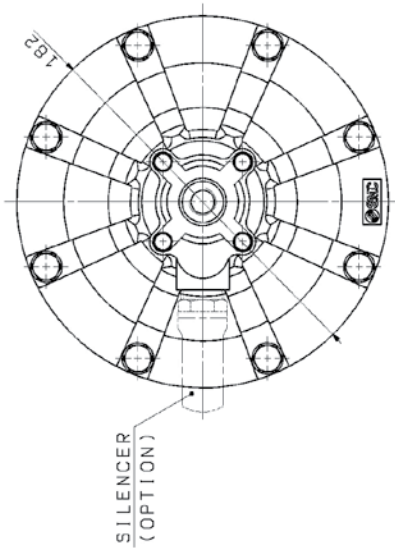
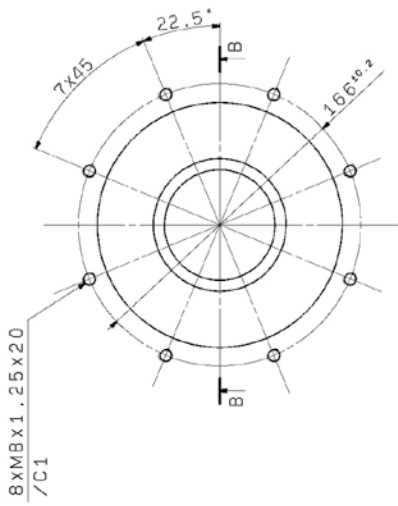
MOUNTING SIDE DIMENSIONS

HOW TO ORDER
V X F A 2 5 B X **4 1**

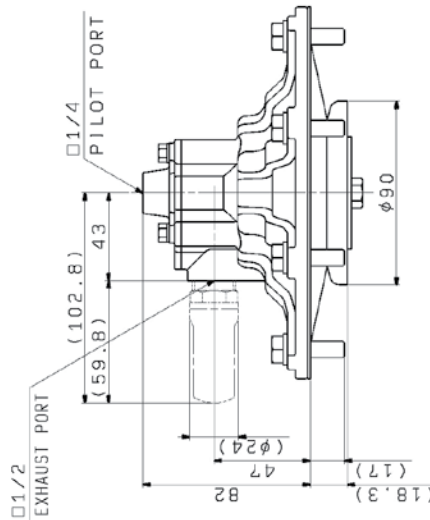
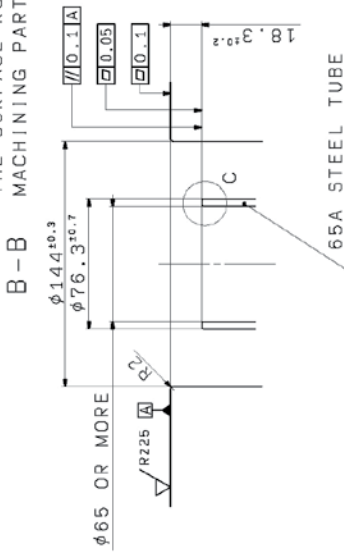
MATERIAL-PRESENCE OF SILENCER
 SYMBOL SPECIAL SCREW
 NTL STANDARD(RC)
 A G
 B NPT

MATERIAL-PRESENCE OF SILENCER
 SYMBOL SPECIAL SCREW
 NTL STANDARD(RC)
 A G
 B NPT

MATERIAL-PRESENCE OF SILENCER
 SYMBOL SPECIAL SCREW
 NTL STANDARD(RC)
 A G
 B NPT



B-B THE SURFACE ROUGHNESS OF THE ORIFICE MACHINING PART IS RZ6.3 OR LESS.

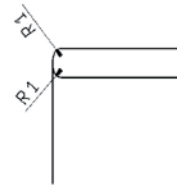
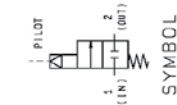


SPECIFICATIONS

ORIFICE SIZE	mmφ	70
FLUID	AIR	
MIN. OPERATING PRESSURE	MPa	0.1
MAX. OPERATING PRESSURE	MPa	0.7
FLUID TEMPERATURE	°C	-10(NON-FREEZING) TO 60
AMBIENT TEMPERATURE	°C	-40 TO 60

SPECIAL SPECIFICATION
 1) AMBIENT TEMPERATURE: -40 TO 60 °C

C (2:1)



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

HOW TO ORDER

VXF26A **X39**

PORT SIZE
SYMBOL: SPECIAL SAFETY
NIL (STANDARD)

OTHER OPTION
A U NPT

MATERIAL-PRESENCE OF SILENCER
SYMBOL: WITH SILENCER
A NBR/PDM WITH SILENCER
B NBR/PDM WITH SILENCER
C GROMMET

VOLTAGE-ELECTRICAL ENTRY
SYMBOL: ELECTRICAL ENTRY
A 12VDC
B 10VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

CONDUIT TERMINAL
SYMBOL: CONDUIT TERMINAL
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

FASTON
SYMBOL: FASTON
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

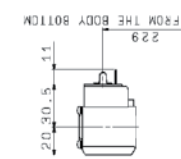
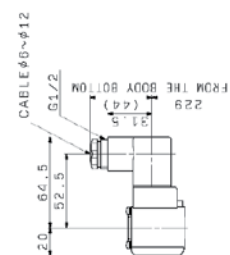
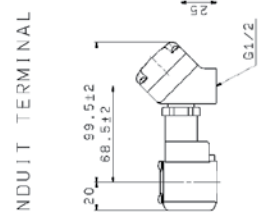
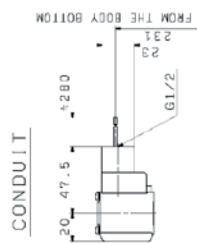
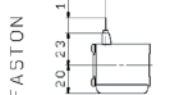
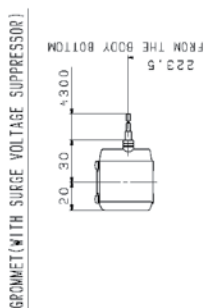
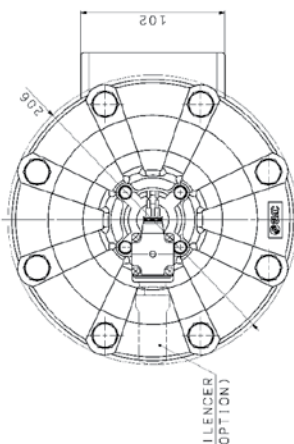
CONDUIT
SYMBOL: CONDUIT
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

OTHERS
SYMBOL: OTHERS
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

FASTON
SYMBOL: FASTON
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
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U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

CONDUIT
SYMBOL: CONDUIT
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
J 10VAC
K 20VAC
L 20VAC
M 10VAC
N 10VAC (WITH SURGE SUPPRESSOR)
O 20VAC
P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS

OTHERS
SYMBOL: OTHERS
A 10VAC
B 20VAC
C 10VAC
D 20VAC (WITH SURGE SUPPRESSOR)
E 20VAC
F 24VDC
G 24VDC
H 10VAC
I 10VAC (WITH SURGE SUPPRESSOR)
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P 10VAC
Q 20VAC
R 20VAC
S 24VDC
T 10VAC
U 10VAC (WITH SURGE SUPPRESSOR)
V 20VAC
W 20VAC
Y 24VDC
Z OTHERS



OTHER OPTION	SYMBOL	SPECIAL SAFETY	NIL (STANDARD)
A	U	NPT	
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P			
Q			
R			
S			
T			
U			
V			
W			
X			
Y			
Z			

OTHER OPTION	SYMBOL	SPECIAL SAFETY	NIL (STANDARD)
A	U	NPT	
B			
C			
D			
E			
F			
G			
H			
I			
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K			
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M			
N			
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Q			
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S			
T			
U			
V			
W			
X			
Y			
Z			

OTHER OPTION	SYMBOL	SPECIAL SAFETY	NIL (STANDARD)
A	U	NPT	
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P			
Q			
R			
S			
T			
U			
V			
W			
X			
Y			
Z			

OTHER OPTION	SYMBOL	SPECIAL SAFETY	NIL (STANDARD)
A	U	NPT	
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P			
Q			
R			
S			
T			
U			
V			
W			
X			
Y			
Z			

OTHER OPTION	SYMBOL	SPECIAL SAFETY	NIL (STANDARD)
A	U	NPT	
B			
C			
D			
E			
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G			
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Y			
Z			

UNLESS OTHERWISE NOTED ALONG WITH A SEPARATE CONTRACT OR AGREEMENT WITHIN THE PRODUCT SPECIFICATIONS, THE SAFETY INSTRUCTIONS SPECIFIED IN THE PRODUCT CATALOG ARE APPLIED. PLEASE CONTACT YOUR LOCAL SMC SALES OFFICE FOR FURTHER DETAILS.



-22°F
-30°C

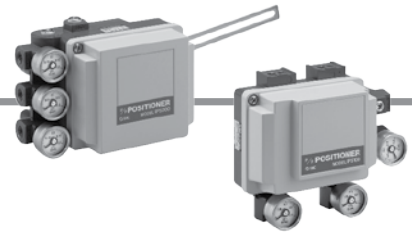
Pneumatic-Pneumatic Positioner (Lever type / Rotary type) Series **IP5000/5100**

For details about the series, refer to the **WEB** catalog <http://www.smcworld.com>



● JIS F8007 IP55

How to Order



IP5 000 - 0 1 0 L -

Type

000	Lever type
100	Rotary type

Input pressure

0	2.9 to 145 psi ([0.02 to 1 MPa] (Standard)
1	2.9 to 8.7 psi (0.02 to 0.06 MPa) 8.7 psi to 145 psi (0.06 to 0.1 MPa)

Pressure gauge (SUP, OUT1)

0	None
1	29 psi (0.2 MPa)
2	44 psi (0.3 MPa)
3	145 psi (1.0 MPa)

Indication of opening ^{Note 1)}

0	Not indicated
1	Indicated

Note 1) IP5000 is available only with option "0" (no indication).

Pressure gauge/Air port

Nil	Rc (Standard)
N	NPT
F	G

Accessories ^{Note 1)}

Nil	None (Standard)	With standard lever (10 to 85 mm stroke) for IP5000
A	ø0.7 Output restriction with pilot valve	Common to IP5000 and IP5100 small capacity actuators
B	ø1.0 Output restriction with pilot valve	
C	Fork lever-type fitting M	Only for IP5100
D	Fork lever-type fitting S	
E	For stroke 35 to 100 mm with lever unit	Only for IP5000 ^{Note 2)}
F	For stroke 50 to 140 mm with lever unit	

Note 1) If two or more accessories are required, the part numbers should be made according to alphabetical order.

Ex.) IP5000-010-AD

Note 2) For "E" and "F", standard lever is not attached.

Precautions

- Do not apply any excessive vibration or impact to the positioner during transportation, handling and operation, as it may cause malfunction.
- Do not use the product in a temperature range exceeding its specifications, as various seals may deteriorate earlier or the product may malfunction.
- When the product is in use or left at work site, attach a body cover to prevent entry of rainwater etc.
- If the product is exposed to the high temperature or high humidity during transportation, storage, or when it is left at work site, take measures so that no dew condensation occurs inside the product.
- The zero point may change depending on the mounting posture. Adjust the zero point after installed in the equipment (at work site).

Specifications

Item	Model	IP5000		IP5100	
		Lever type lever feedback		Rotary type cam feedback	
		Single acting	Double acting	Single acting	Double acting
Supply pressure		20 to 1015 psi (0.14 to 0.7 MPa)			
Input pressure		2.9 to 145 psi (0.02 to 0.1 MPa)			
Standard stroke		10 to 85 mm		60° to 100°	
Sensitivity		Within 0.1%F.S.		Within 0.5%F.S.	
Linearity		Within ±1%F.S.		Within ±2%F.S.	
Hysteresis		Within 0.75%F.S.		Within 1%F.S.	
Repeatability		Within ±0.5%F.S.			
Air consumption		5 L/min (ANR) or less (SUP = 0.14 MPa)		11 L/min (ANR) or less (SUP = 0.4 MPa)	
Output flow rate		80 L/min (ANR) or more (SUP = 0.14 MPa)		200 L/min (ANR) or more (SUP = 0.4 MPa)	
Ambient and fluid temperature		-22 to 140°F (-30°C to 60°C)			
Coefficient of temperature		Within 0.1%F.S./°C			
Air connection port		Rc1/4 (Standard)			
Main component parts		Aluminum die-cast, Stainless steel, Brass, Nitrile rubber			
Weight		Approx. 1.4 kg		Approx. 1.2 kg	
Dimensions		118 x 102 x 86 (Body)		118 x 92 x 77.5 (Body)	

Note) Standard air temperature: 68°F (20°) (293 K), Absolute pressure: 760 mmHg (14.7 psi [101.3 kPa]), Relative humidity: 65%

Replacement Parts

Part no.	Description	Note
P378010-54	Pilot valve unit	For IP5000-L
P378020-64	Pilot valve unit	For IP5100-L
P368010-24	Fork lever assembly M	For IP5100 (Accessory: C)
P368010-25	Fork lever assembly S	For IP5100 (Accessory: D)
P378010-11	Feedback lever	For IP5000/10 to 85 mm (Accessory: Nil)
P378010-12	Feedback lever	For IP5000/35 to 100 mm (Accessory: E)
P378010-13	Feedback lever	For IP5000/50 to 140 mm (Accessory: F)

-40°F
-40°C

Electro-Pneumatic Positioner
(Lever type / Rotary type)
Series IP8000/8100



WEB

For details about the series, refer to the WEB catalog <http://www.smcworld.com>

- Dustproof / Waterproof
- Monitoring function
- With external scale plate (Rotary type)
- Explosion-proof construction
- ATEX intrinsically safe explosion-proof construction (II2G Ex ibIICT5/T6)
- With internal opening indicator plate

How to Order

ATEX Directive Intrinsically Safe Explosion proof

IP8000-010-□-X14-L

Type

000	Electro-pneumatic lever type
100	Electro-pneumatic rotary type

Pressure gauge

Symbol	Pressure
0	None
1	29 psi (0.2 MPa)
2	44 psi (0.3 MPa)
3	145 psi (1.0 MPa)

ATEX directive compliance and connection

X14	ATEX directive category 2 Intrinsically safe explosion-proof item Air connection port: 1/4 NPT Conduit connection port: M20×1.5 With blue cable gland
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Accessories ^{Note 1)}

Symbol	Accessories	Applicable model	
		IP8000	IP8100
Nil	None	●	●
A	ø0.7 Output restriction with pilot valve ^{Note 2)}	●	●
B	ø1.0 Output restriction with pilot valve ^{Note 2)}	●	●
C	Fork lever-type fitting M ^{Note 3)}	—	●
D	Fork lever-type fitting S ^{Note 4)}	—	●
E	For stroke 35 to 100 mm with lever unit ^{Note 5)}	●	—
F	For stroke 50 to 140 mm with lever unit ^{Note 5)}	●	—
G	Compensation spring (A) ^{Note 6)}	●	●
H	With external scale plate	—	●

Note 1) If two or more accessories are required, the part numbers should be made according to alphabetical order.
Ex.) IP8100-010-AG

Note 2) "A" is applied to approx 90cm³-capacity actuator.
"B" is applied to approx 180cm³-capacity actuator.

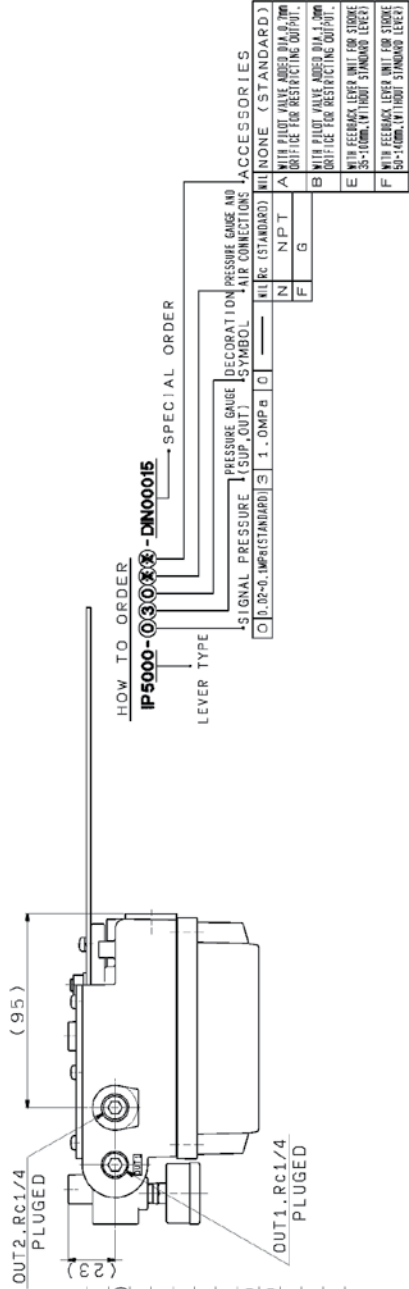
Note 3) Fork lever-type fitting MX (Connection thread: M6 x 1) for IP8100-0□0-□-X14.

Note 4) Fork lever-type fitting SX (Connection thread: M6 x 1) for IP8100-0□0-□-X14.

Note 5) Standard lever is not attached.

Note 6) It is to be used together with "A" or "B" when tending to overshoot by the use of "A" or "B".
It is mounted to the body as a replacement of the standard compensation spring.

Pneumatic Positioner **IP5000-030** □□-DIN00015 **-40°F (-40°C)**



SPECIFICATIONS

SIGNAL PRESSURE 0.02~0.1MPa(STANDARD)

SUPPLY PRESSURE 0.14~0.7MPa

STANDARD STROKE 10~85mm(ALLOWABLE SWING ANGLE 10°~30°)

SENSITIVITY WITHIN 0.5% OF FULL SPAN

LINEARITY WITHIN ±2% OF FULL SPAN

HYSTERESIS WITHIN 1% OF FULL SPAN

REPEATABILITY WITHIN ±0.5% OF FULL SPAN

TEMPERATURE COEFFICIENT WITHIN 0.2% F.S./°C

OUTPUT FLOW 80L/min(ANR) OR MORE (AT SUP=0.14MPa)

AIR CONSUMPTION WITHIN 5l/min(ANR) (AT SUP=0.14MPa)

AMBIENT AND FLUID TEMPERATURE -40°C~80°C (NO FREEZING)

AIR CONNECTIONS Rc1/4 (FEMALE)(STANDARD)

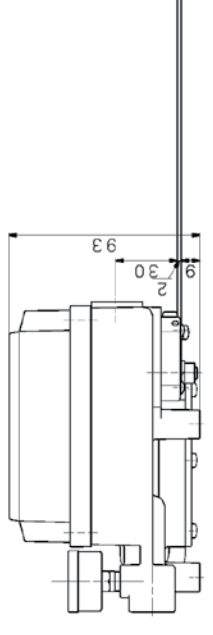
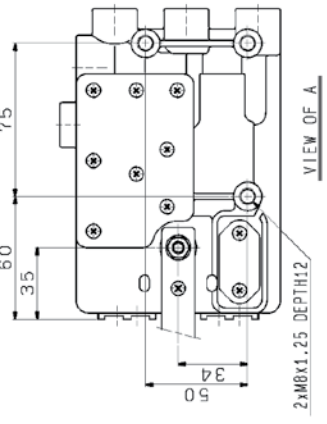
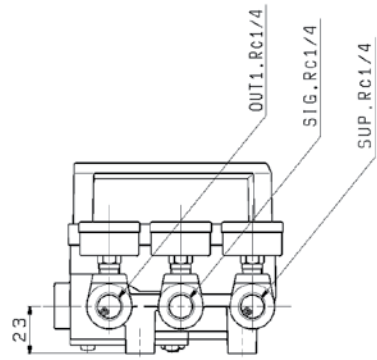
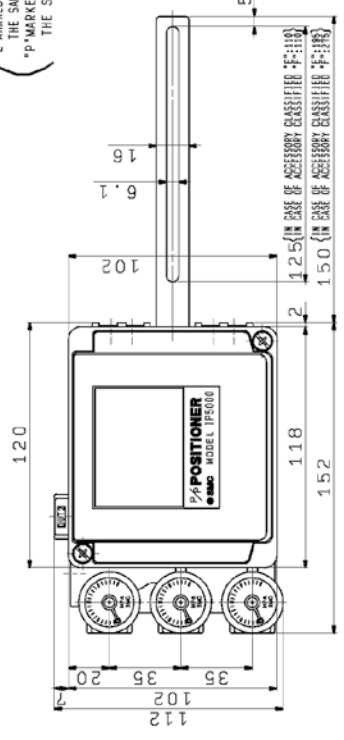
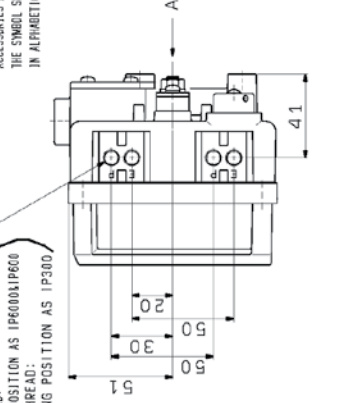
MASS APPROX. 1.4kg

NOTE 1. (ANR) SHOWS STANDARD AIR. (JIS B 0420)

2. IF 1/2 SPAN RANGE IS USED, ADD 1% TO THE ABOVE CHARACTERISTICS.

4xM8x1.25 DEPTH12
 (*E-MARKED FEMALE THREAD: THE SAME MOUNTING POSITION AS IP60001P600)
 (*P-MARKED FEMALE THREAD: THE SAME MOUNTING POSITION AS IP300)

NOTE WHEN MORE THAN 2 ACCESSORIES ARE REQUIRED, THE SYMBOL SHOULD BE STATED IN ALPHABETICAL ORDER.



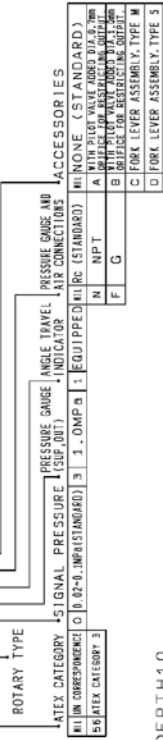
Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



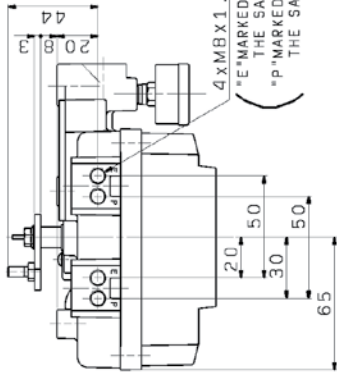
- Pneumatic Instrumentation Equipment
- Port Valves for Fluid Control
- Fittings and Tubing
- Flow Control Equipment
- Pressure Control Equipment
- F.R.L. AL / AR / AF / AW
- Rotary Actuator
- Air Grippers
- Air Cylinders
- Valves

EXPLOSION-PROTECTED SPECIFICATION (CASE OF 56-)
 AGREEMENT DIRECTIVE ATEX DIRECTIVE 94/9/EC
 EXPLOSION-PROTECTED CLASSIFICATION **CE II 3GD 60°C (T6)**

HOW TO ORDER
 -IP5100-031--DIL00505



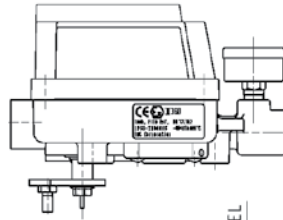
NOTE: WHEN MORE THAN 2 ACCESSORIES ARE REQUIRED, THE SYMBOL SHOULD BE STATED IN ALPHABETICAL ORDER.



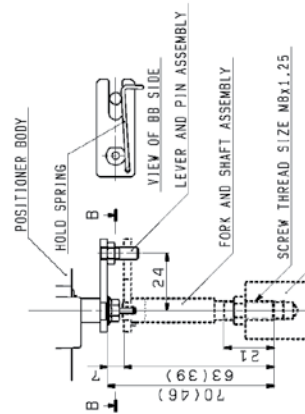
4xMBX1.25 DEPTH 10
 *E MARKED FEMALE THREAD:
 THE SAME MOUNTING POSITION AS IP6100&IP610
 *P MARKED FEMALE THREAD:
 THE SAME MOUNTING POSITION AS IP310

SPECIFICATIONS
 SIGNAL PRESSURE 0.02~0.1MPa(STANDARD)
 SUPPLY PRESSURE 0.14~0.7MPa
 STANDARD STROKE 60 * ~100
 (* THE STROKE IS ADJUSTABLE)
 SENSITIVITY WITHIN 0.5% OF FULL SPAN
 LINEARITY WITHIN ±2% OF FULL SPAN
 HYSTERESIS WITHIN 1% OF FULL SPAN
 REPEATABILITY WITHIN ±0.5% OF FULL SPAN
 TEMPERATURE COEFFICIENT WITHIN 0.1% F.S./°C
 OUTPUT FLOW 200l/min (AIR) OR MORE (AT SUP=0.4MPa)
 AIR CONSUMPTION WITHIN 1l/min (AIR) (AT SUP=0.4MPa)
 AMBIENT AND FLUID TEMPERATURE -40°C~80°C (CASE OF 56-)
 AIR CONNECTIONS Rc1/4 (FEMALE) (STANDARD)
 MASS APPROX. 1.2kg

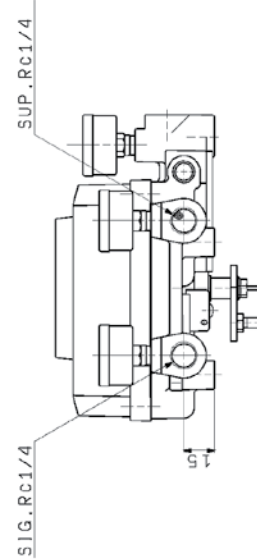
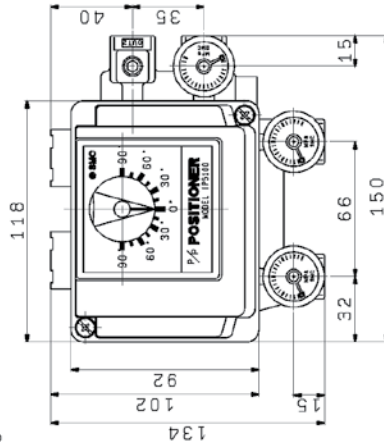
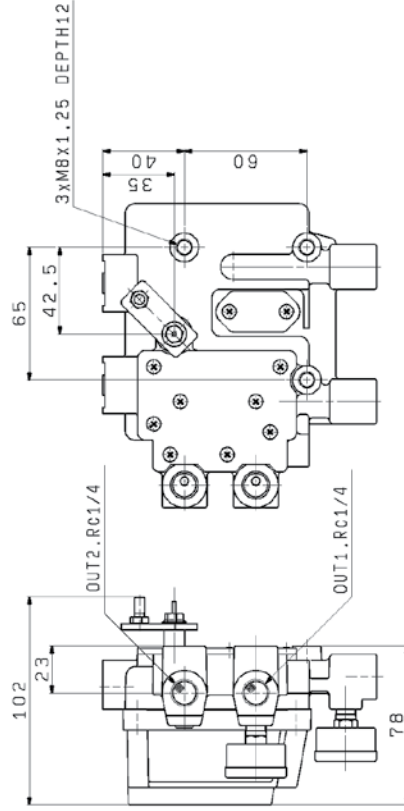
NOTE1. (AIR) SHOWS STANDARD AIR. (JIS B 0120)
 2. IF 1/2 SPRIT RANGE IS USED, ADD 1% TO THE ABOVE CHARACTERISTICS.
 NOTE3. WE HAVE NOT YET COMPLETED THE TCF. IF YOU NEED TO "56-", PLEASE CONTACT US ADVANCE.



ENLARGED VIEW OF LABEL (CASE OF 56-)



DIMENSION OF OPTIONAL *FORK LEVER ASSEMBLY*
 () SHOWS DIMENSION OF FORK LEVER ASSEMBLY TYPE "S".



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Smart Positioner (Lever type)

52-IP8001-0 □4-□-□-X414

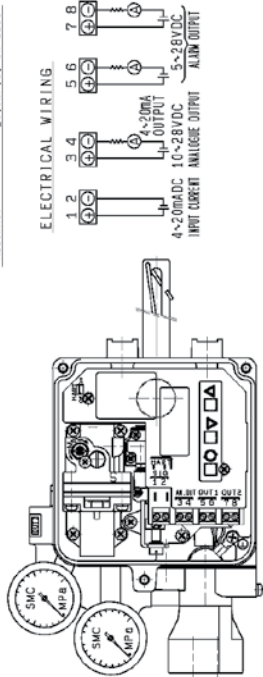
-40°F (-40°C)

ALARM OUTPUT
OVERSHOOTING STANDARD
WIRING METHOD 2 WIRE SYSTEM
POWER SUPPLY VOLTAGE 5-28VDC
OUTPUT CURRENT ON: 2.1mA DC OR MORE
OFF: 1.2mA DC OR LESS

ANALOGUE OUTPUT
WIRING METHOD 2 WIRE SYSTEM
SUPPLY SOURCE VOLTAGE 10-28VDC
OUTPUT CURRENT 4-20mA DC
LOAD RESISTANCE 0-750Ω
ACCURACY ±0.5% S. OR LESS

SPECIAL SPECIFICATIONS
LOW TEMPERATURE
ATEX AND GOST-R STANDARD

BEFORE BODY COVER UNIT IS MOUNTED



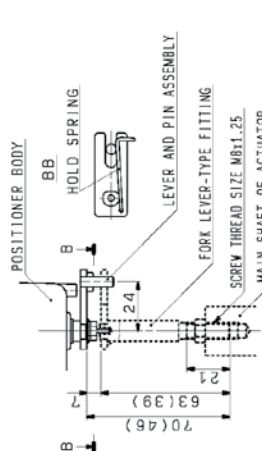
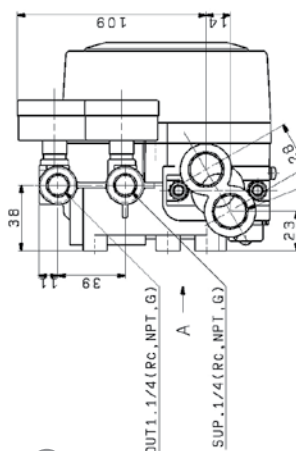
SPECIFICATIONS

INPUT CURRENT 45mA DC (POWER SYSTEM, SEPARATE POWER SOURCE UNNECESSARY)
MINIMUM CURRENT 3.85mA DC OR MORE
VOLTAGE BETWEEN TERMINALS 120V AC (INPUT RESISTANCE EQUIVALENT TO 60Ω AT 20mA DC)
SUPPLY AIR PRESSURE 0.14-0.3MPa
STANDARD STROKE 10-30mm
SENSITIVITY 10.2% S. OR LESS
LINEARITY ±1% S. OR LESS
HYSTERESIS 0.5% S. OR LESS
REPEATABILITY ±0.5% S. OR LESS
MAX OUTPUT FLOW RATE 80L/MIN (AT 0.1MPa, 100% LINEAR)
AIR CONSUMPTION 217L/MIN (AT 0.1MPa, 100% LINEAR)
MOTION AND OPERATING FLUID TEMPERATURE -40°C ~ 60°C

EXPLUSION PROTECTED CONSTRUCTION
AID INTRINSIC SAFETY TYPE OF EXPLUSION PROTECTED CONSTRUCTION
CE MARKING EXEMPTED 04

APPROVAL NO. FROM STATISTICS
AIR CONNECTION PORTS 1/4"(R), NPT, FEMALE
ELECTRICAL CONNECTIONS 1/2"(R), NPT, FEMALE, M20x1.5, FEMALE
MKS APPROX. 2.5kg

NOTE1 (ANP) SHOWS STANDARD AIR. (JIS B 0120)
2. LINEARITY IS A CHARACTERISTIC CHECKED WITHOUT LOADS USING A FACTORY INSTRUMENT. THE POSITIONER CAN NOT WORK INDEPENDENTLY AND IS USED AS A PART OF LOOP INCLUDING ACTUATING EQUIPMENT SUCH AS A VALVE, ACTUATOR AND DCV, THEREFORE, THE DESCRIBED CHARACTERISTIC VALUES MAY VARY DEPENDING ON THE LOOP CONDITIONS.
3. ANALOGUE OUTPUT ACCURACY TO POSITION VALUE (IN THE LDD DISPLAY).
4. AIR CONNECTION PORT AND ELECTRICAL CONNECTION PORT CAN BE CHANGED BY HOW TO ORDER, AND THE COMBINATION CONFORMS TO THE CONNECTION PORT CLASSIFICATION OF THE MODEL INDICATION SYMBOL.



○ DIMENSION OF OPTIONAL "FORK LEVER FITTING"
() SHOWS DIMENSION OF FORK LEVER FITTING TYPE "S".

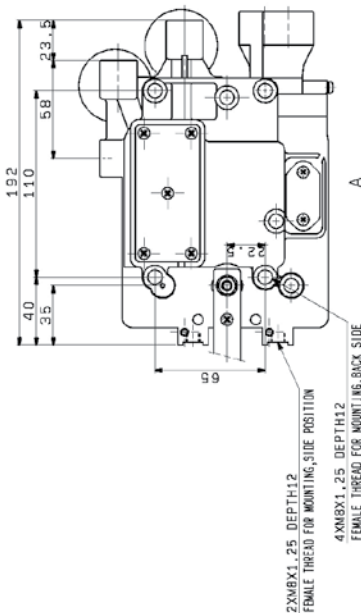
HOW TO ORDER
52-IP8001-0 □4-□-□-X414

ACCESSORIES

MODEL ACCESSORY	AIR ELECTRIC	AIR ELECTRIC
E WITH FEEDBACK LEVER UNIT FOR STROKE 10-30mm (WITHOUT STANDARD LEVER)	RC1/4	G1/2
F WITH FEEDBACK LEVER UNIT FOR STROKE 50-100mm (WITHOUT STANDARD LEVER)	RC1/4	G1/2
W WITH BODY COVER WINDOW	1/4"NPT	G1/2
	1/2"NPT	G1/2
	1/2"NPT	G1/2

NOTE: WHEN MORE THAN 2 ACCESSORIES ARE REQUIRED, THE SYMBOL SHOULD BE STATED IN ALPHABETICAL ORDER.
NOTE2: THE CABLE GLANDS ARE ATTACHMENT.

PRESSURE GAUGE
(SUP. OUT1)
1. 10-2MPa
2. 0-3MPa
3. 1-6MPa



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

- Pneumatic Instrumentation Equipment
- Port Valves for Fluid Control
- Fittings and Tubing
- Flow Control Equipment
- Pressure Control Equipment
- F.R.L. AL AR AF AW
- Rotary Actuator
- Air Grippers
- Air Cylinders
- Valves

-40°F (-40°C)

**Smart Positioner
(Rotary type)**

52-IP8101-034-□-□-X414

SPECIAL SPECIFICATIONS
LOW TEMPERATURE
ATEX AND GOST-R STANDARD

HOW TO ORDER

52 - P8101 - 034 - □ - □ - X414

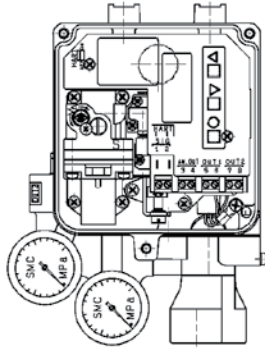
ACCESSORIES

LOW TEMP. (-40°C)

CONNECTIONS	
ATR ELECTRIC	ATR ELECTRIC
W/1/4 NPT	W/1/4 NPT
W/1/2 NPT	W/1/2 NPT
W/3/4 NPT	W/3/4 NPT
W/1 NPT	W/1 NPT
W/1 1/4 NPT	W/1 1/4 NPT
W/1 1/2 NPT	W/1 1/2 NPT
W/2 NPT	W/2 NPT
W/2 1/2 NPT	W/2 1/2 NPT
W/3 NPT	W/3 NPT
W/3 1/2 NPT	W/3 1/2 NPT
W/4 NPT	W/4 NPT
W/4 1/2 NPT	W/4 1/2 NPT
W/5 NPT	W/5 NPT
W/5 1/2 NPT	W/5 1/2 NPT
W/6 NPT	W/6 NPT
W/6 1/2 NPT	W/6 1/2 NPT
W/8 NPT	W/8 NPT
W/8 1/2 NPT	W/8 1/2 NPT
W/10 NPT	W/10 NPT
W/10 1/2 NPT	W/10 1/2 NPT
W/12 NPT	W/12 NPT
W/12 1/2 NPT	W/12 1/2 NPT

NOTE: WHEN MORE THAN 2 ACCESSORIES ARE REQUIRED, THE NOTE SYMBOL SHOULD BE STATED IN ALPHABETICAL ORDER.
NOTE: WHEN ELECTRICAL CONNECTIONS ARE M20X1.5, THE CABLE GLANDS ARE ATTACHMENT.

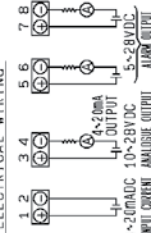
BEFORE BODY COVER UNIT IS MOUNTED



ALARM OUTPUT
COMBINING METHOD 01452/FAN/R STANDARD
WIRING METHOD 2 WIRE SYSTEM
POWER SUPPLY VOLTAGE 5-28VDC
OUTPUT CURRENT 0N-2.10ADC OR MORE
OFF-1.20ADC OR LESS

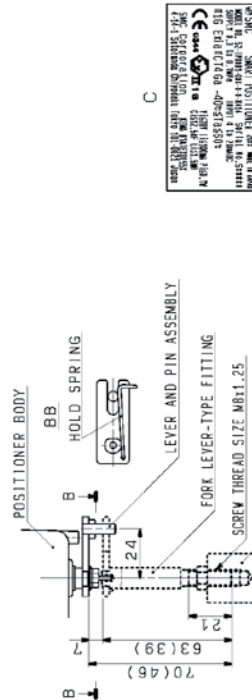
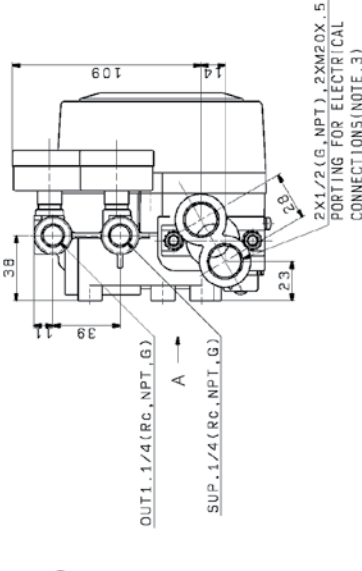
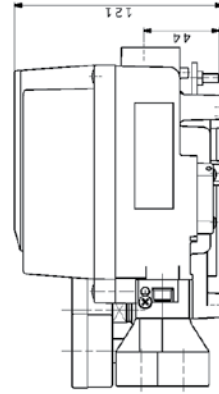
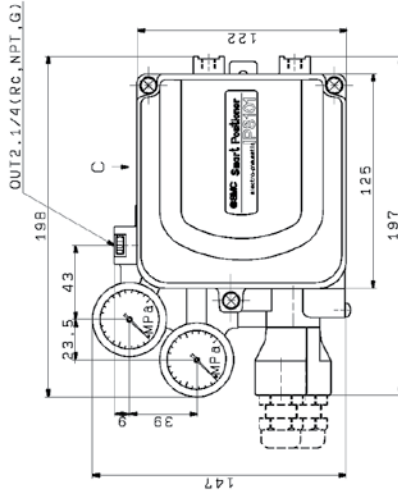
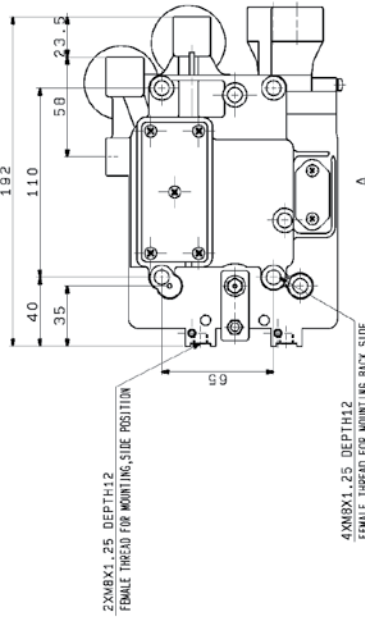
ANALOGUE OUTPUT
WIRING METHOD 2 WIRE SYSTEM
SUPPLY SOURCE VOLTAGE 10-28VDC
OUTPUT CURRENT 4-20mADC
LOAD RESISTANCE 0-750Ω
ACCURACY ±0.5% S. OR LESS

ELECTRICAL WIRING



SPECIFICATIONS
INPUT CURRENT 4-20mADC (POWER SYSTEM, SEPARATE POWER SOURCE UNNECESSARY)
MINIMUM CURRENT 3.5mADC OR MORE
WIRING BETWEEN TERMINALS 120Ω (INPUT RESISTANCE EQUIVALENT TO EOPD AT 20mADC)
SUPPLY AIR PRESSURE 0.3-0.7MPa
STANDARD STROKE 60-100*
SENSITIVITY ±0.2% S. OR LESS
LINEARITY ±0.5% S. OR LESS
HYSTERESIS ±0.5% S. OR LESS
REPEATABILITY ±0.5% S. OR LESS
MAX OUTPUT FLOW RATE 20(L/MIN) OR MORE (SIP-0.4MPa)
AIR CONSUMPTION 11(L/MIN) OR LESS (AT SIP-0.4MPa)
FLUID TEMPERATURE -40~+60°C
EXPOSITION PROTECTED ATEX INTRINSIC SAFETY TYPE OF EXPOSITION PROTECTED CONSTRUCTION
CONSTRUCTION CE-MARKING EX14CT4 GA
APPROVAL NO. IEM4 EX155X
AIR CONNECTION PORTS 1/2IN. NPT FEMALE, M20X1.5 FEMALE
ELECTRICAL CONNECTIONS APPROX. 2.5IN
MNS

NOTE 1. (AMP.) SHOWS STANDARD A.I.G. (JIS B 0170) 2. LINEARITY CHARACTERISTIC CHECKED WITHOUT LOADS CAN NOT WORK INDEPENDENTLY AND IS USED AS A PART OF LOOP INCLUDING ACTUATING EQUIPMENT SUCH AS VALVE ACTUATOR AND DCV. THEREFORE THE DESCRIBED CHARACTERISTIC VALUES MAY VARY DEPENDING ON THE LOOP CONDITIONS.
3. ANALOGUE OUTPUT ACCURACY TO POSITION VALUE (VOLT) IN THE LOAD DISPLAY.
4. AIR CONNECTION PORT AND ELECTRICAL CONNECTION PORT CAN BE CHANGED BY BOX SET ORDER, AND THE COMBINATION CONFORMS TO THE CONNECTION PORT CLASSIFICATION OF THE MODEL INDICATION SYMBOL.



* DIMENSION OF OPTIONAL "FORK LEVER FITTING"
() SHOWS DIMENSION OF FORK LEVER FITTING TYPE "S".

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

-22°F
-30°C

Lock-Up Valve

Series IL201/211/220

For details about the series, refer to the WEB catalog <http://www.smcworld.com>

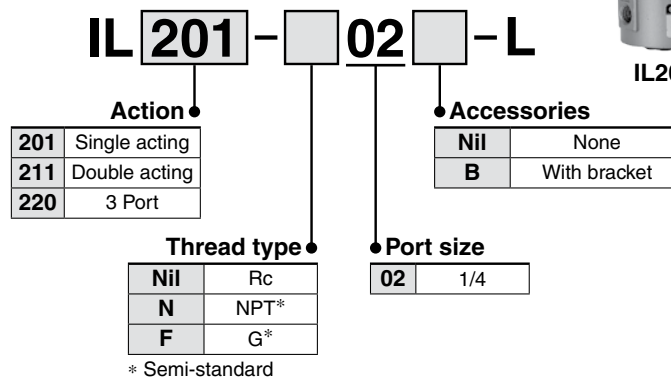
WEB

- The lock-up valve is used if any air source or air supply piping line failure occurs in the air operated process control line.

Single acting, Double acting: Retains pressure at the operating area as emergency operation until the air source is recovered to its normal state.

3 Port: Changes the supply port if a trouble occurs.

How to Order



Standard Specifications

Model	IL201	IL211	IL220
Action	Single acting	Double acting	3 Port
Signal pressure	Max. 145 psi (1.0 MPa) ^{Note 1)}		
Set pressure range	20 to 102 psi (0.14 to 0.7 MPa) ^{Note 1)}		
Shut-off pneumatic circuit pressure	Max. 102 psi (0.7 MPa)		
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C) (Do not freeze.)		
Port size	1/4		
Differential ^{Note 2)}	1.45 psi (0.01 MPa)		
Weight	0.45 kg	0.64 kg	0.7 kg

Note 1) Provide a differential pressure of 14.5 psi (0.1 MPa) or more between the signal pressure and set pressure. If the differential pressure is small, the internal part is worn out due to the structure of this product and the bleed amount from the exhaust port increases, which may affect the characteristics.

Note 2) Pressure difference between lock activated and lock released

-22°F
-30°C

Booster Relay Series *IL100*

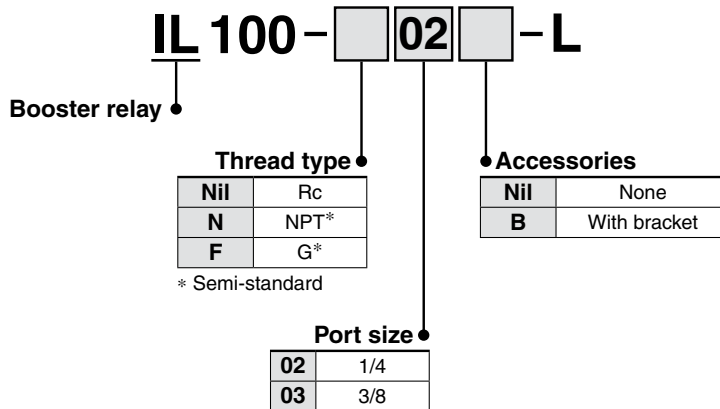
For details about the series, refer to the WEB catalog <http://www.smcworld.com>

WEB

- Used when the piping distance between instrumentation and operational area is long, or when operational area has large capacity.
- Can help accelerate actuation speed considerably.



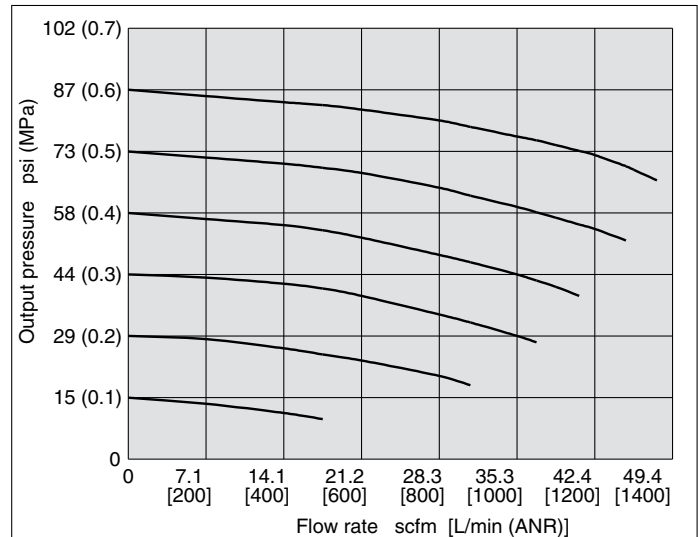
How to Order



Standard Specifications

Supply pressure	Max. 145 psi (1.0 MPa)
Input pressure	Max. 102 psi (0.7 MPa)
Output pressure	Max. 102 psi (0.7 MPa)
Air consumption	0.11 scfm [3 L/min (ANR)] or less (Outlet pressure: 73 psi [0.5 MPa])
Linearity	Within ±1%
Hysteresis	Within 1%
Ambient and fluid temperature	-22 to 140°F (-30 to 60°C)(Do not freeze.)
Port size	1/4, 3/8
Weight	0.56 kg

Flow-rate Characteristics



Booster Relay *IL100-□□□-L-DIO00047* -40°F (-40°C)

SPECIFICATIONS

SUPPLY PRESSURE	: MAX. 1.0MPa
INPUT PRESSURE	: MAX. 0.7MPa
OUTPUT PRESSURE	: MAX. 0.7MPa
LINEARITY	: ±1.0% S. (WHEN THE NEEDLE VALVE 3/4 OPEN.)
HYSTERESIS	: ±1.0% S. (WHEN THE NEEDLE VALVE 3/4 OPEN.)
CV FACTOR	: 1.1
TEMPERATURE	: -40~60°C (DO NOT FREEZE.)
MASS	: 560g (WITH BRACKET: 620g)
INPUT: OUTPUT	: 1: 1

HOW TO ORDER

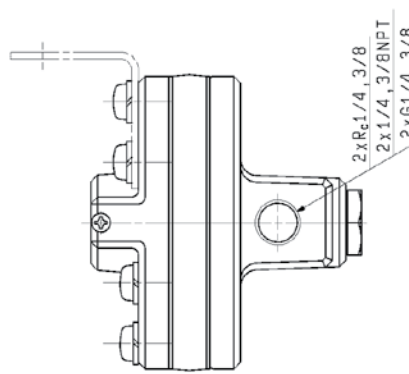
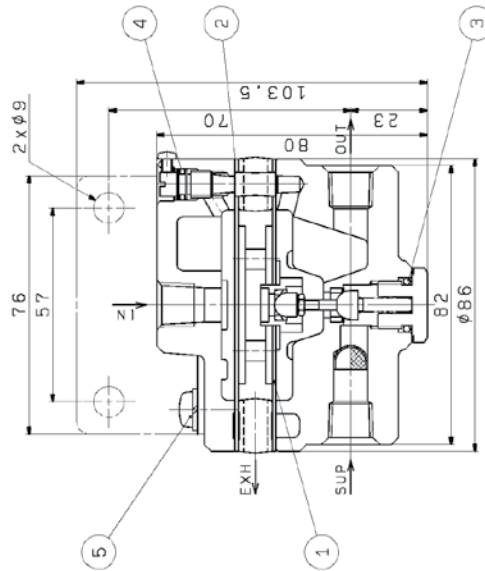
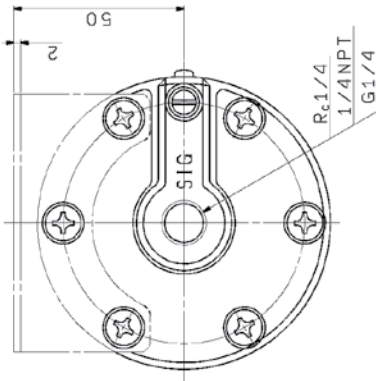
IL100-※※※-L-DIO00047

Connect screw
N: 1/4
N: NPT
F: G

CONNECTION PORT
02: 1/4
03: 3/8

ACCESSORIES
NONE: NO ACCESSORY
B: WITH BRACKET

LOW TEMPERATURE TYPE



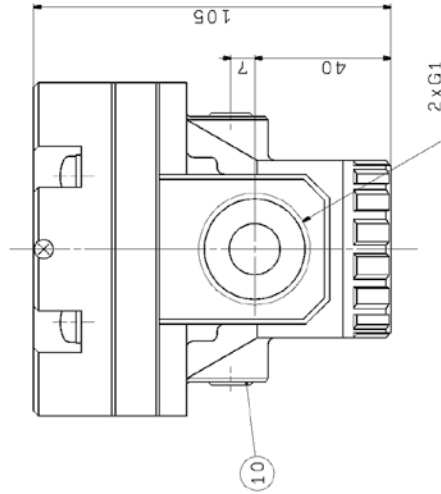
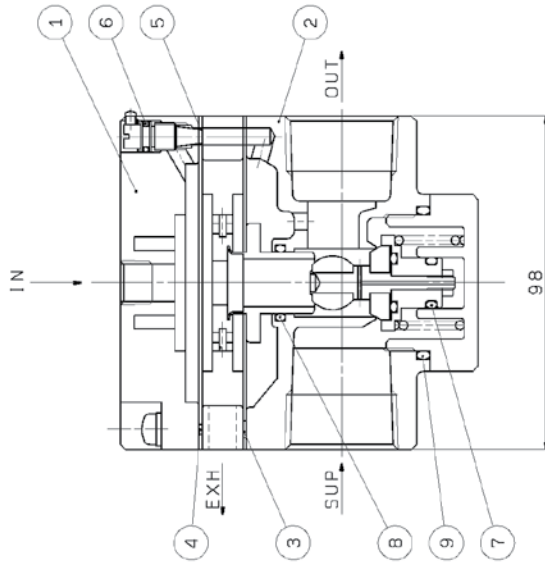
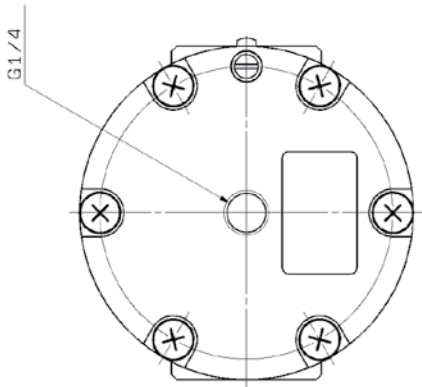
NOTE: The parts of this model are the same parts as IL100-※※※ except expressed parts at the below.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
5	AA00103	MACHINE SCREW AND WASHER ASSEMBLIES	STAINLESS	6	M6x1x35
4	KA00873	"O" RING	SI	1	P6
3	KA00879	"O" RING	SI	1	P12
2	261057	DIAPHRAGM	SI	1	
1	261056	DIAPHRAGM	SI	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS

SUPPLY PRESSURE	: MAX. 1.0MPa
INPUT PRESSURE	: MAX. 0.7MPa
OUTPUT PRESSURE	: MAX. 0.7MPa
TEMPERATURE	: -30~60°C
M A S	: 1.2kg
LINEARITY	: ±5%F.S.
HYSTERESIS	: 2%F.S.

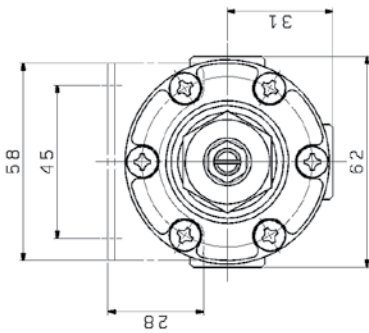


NOTE: The parts of this model are the same parts as XT240-1 except expressed parts at the below.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
10	TB00003	PLUG	STEEL	2	R1/4 NI PLATED
9	KA01722	"O" RING	SI	1	G40
8	KA01721	"O" RING	SI	1	P18
7	KA00872	"O" RING	SI	2	P11
6	KA00879	"O" RING	SI	1	P6
5	KA00876	"O" RING	SI	1	P3
4	XT240-1-28	DIAPHRAGM	NBR	1	
3	XT240-1-27	DIAPHRAGM	NBR	1	
2	INI-240-0-35P	BODY	AL.DIE CASTING	1	PAINTING
1	INI-240-0-34P	COVER	ALUMINIUM BAR	1	PAINTING

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Lock-Up Valve **IL201-□02□-L-DIO00048** **-40°F (-40°C)**



HOW TO ORDER

IL201 - * 02 * - L - DIO00048

Connect screw
 N1: Rc
 N: NPT
 F: G

CONNECTION PORT
 02: 1/4
 ACCESSORIES
 NONE: NO ACCESSORY
 B: WITH BRACKET

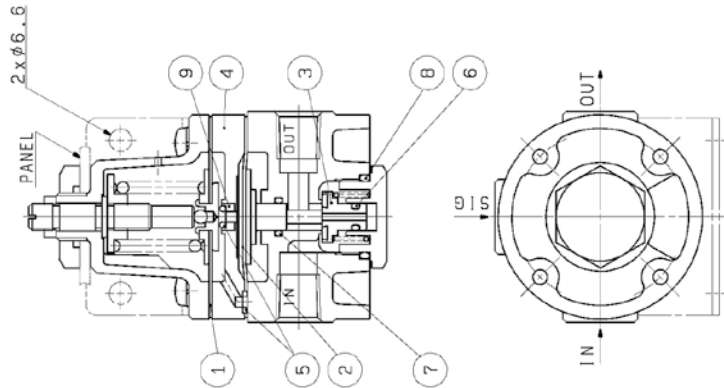
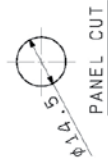
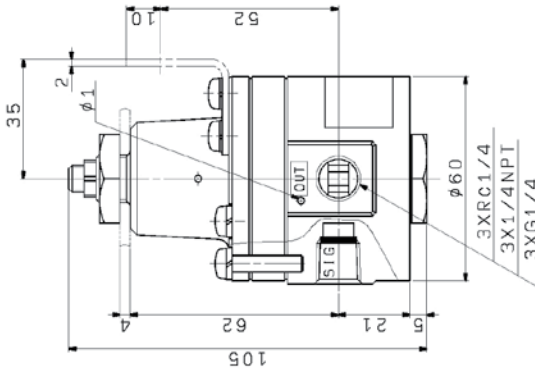
LOW TEMPERATURE TYPE

SPECIFICATION

SETTING PRESSURE RANGE	: 0.14~0.7MPa
LINE PRESSURE	: 0.7MPa
DIFFERENTIAL	: 0.01MPa
DIFFERENTIAL	: -40~60°C.(Do not freeze.)
VALUE OF Cv	: 0.9
MASS	: 450g(495g:WITH BRACKET)

Note)

Signal pressure and the set pressure must be different for more than 0.1MPa.



NOTE: The parts of this model are the same parts as IL201-□02□ except expressed parts at the below.

ITEM	PART NO	PART NAME	MATERIAL	QTY	REMARKS
9	INI-29-9-5	BUSHING	ALUMINIUM	1	CHROMATED
8	KA01399	*O-RING	MBR(11-7070)	1	P21
7	KA01398	*O-RING	MBR(11-7070)	1	P8
6	KA01397	*O-RING	MBR(11-7070)	1	P5
5	KA01396	*O-RING	MBR(11-7070)	2	P3
4	INI-29-13-4	BODY	AL.DIE CASTING	1	SILVER FINISH
3	290332#1	VALVE	BRASS	1	
2	INI-29-13-3	DIAPHRAGM	SI	1	
1	INI-29-13-2	DIAPHRAGM	SI	1	

Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

SPECIFICATIONS

SET PRESSURE	: 0.14~0.7MPa
INTERCEPTION RANGE	: 0.7MPa
DIFFERENTIAL	: 0.01MPa
VALUE OF CV	: 0.9
OPERATING TEMPERATURE	: -40~60°C(Do not freeze)
MASS	: 640g(685g:WITH BRACKET)

NOTE)
Signal pressure and the set pressure must be different for more than 0.1MPa.

SPECIAL SPECIFICATION
· LOW TEMPERATURE

HOW TO ORDER

IL211-□02□-L-DIQ00154

LOW TEMPERATURE TYPE

ACCESSORIES

NIL: NO ACCESSORY

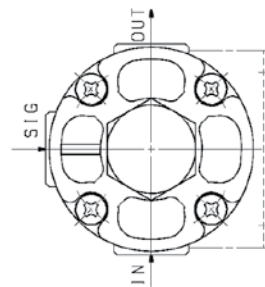
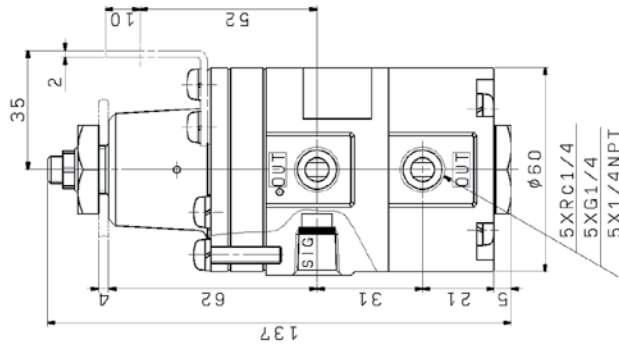
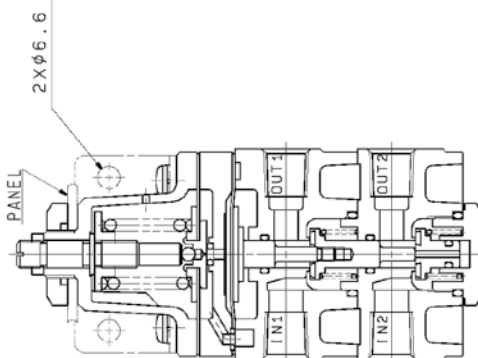
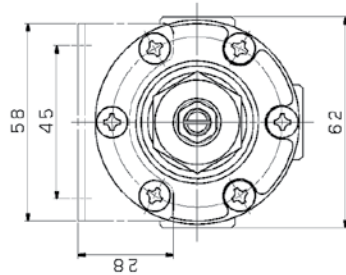
B : WITH BRACKET

CONNECT SCREW

NIL: RC

N: NPT

G: F

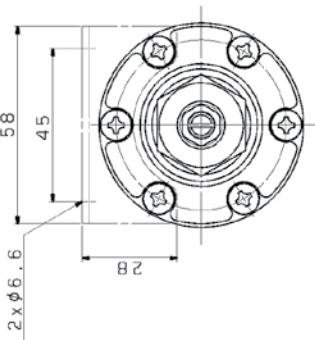


Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.

Lock-Up Valve **IL220-F02□-L-DIP00520** **-40°F (-40°C)**

HOW TO ORDER

IL220-F02□-L-DIP00520



ACCESSORIES
 NIL: NO ACCESSORY
 B : WITH BRACKET

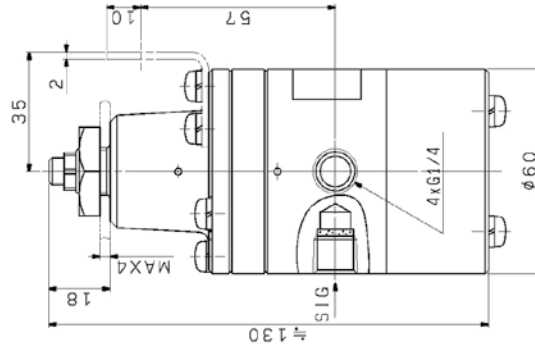
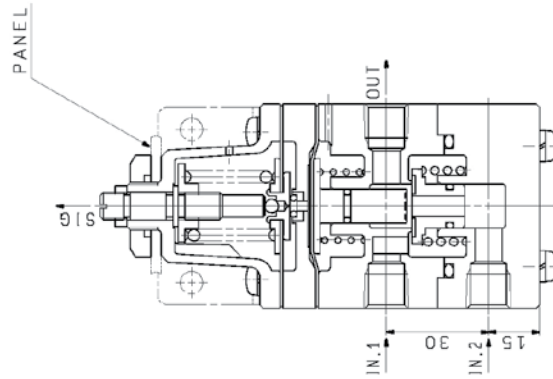
LOW TEMPERATURE TYPE

SPECIFICATIONS

SET PRESSURE	: 0.14~0.7MPa
INTERCEPTION RANGE	: MAX. 0.7MPa
DIFFERENTIAL	: 0.01MPa
EFFECTIVE AREA	: 20mm ²
OPERATING TEMPERATURE	: -40~50°C (Do not freeze)
MASS	: 700g (745g: With bracket)

NOTE)
 Signal pressure and the set pressure must be different for more than 0.1MPa.

SPECIAL SPECIFICATION
 · LOW TEMPERATURE



Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog are applied. Please contact your local SMC Sales office for further details.



3/4/5 Port Solenoid Valves/Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions. Refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Air Supply

Use air with a low dew point so that drain or moisture is not solidified or frozen.

Wiring

Take appropriate measures so that no dew condensation occurs in the electrical connection part of the solenoid valve. Failure to do so may cause malfunction or coil burning.



Actuators/Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions. Refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

- This product should be used without lubrication.
- Use the air preparation equipment that can dehumidify sufficiently. If moisture enters the product, this may cause malfunction due to freezing.
- Please consult SMC for auto switch mounting.
- Rust may occur in an environment where water droplets generated by dew condensation stick to the product.
- Be aware that smoking cigarettes etc after your hands have come into contact with the grease used in this actuator can create a gas that is hazardous to humans.

Precautions

[Model: Air Cylinder]

- Please contact SMC for the one with rubber bumper for CQ2, CQS.
- Series CG1 has no cushion type. Piston speed is ranged from 50 to 500 mm/s.
- Refer to the construction of the standard type for the details of the packing set for CJP2□6, 10 and 16.

[Model: Air Gripper]

- The service life and finger operation are not guaranteed due to effects of the temperature (low temperature).
- The air gripper with auto switch can be operated in an ambient temperature of between -10 to 60°C.



Pressure Control Equipment/Pneumatic Instrumentation Equipment/Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions. Refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

- Use the air preparation equipment that can dehumidify sufficiently. If moisture enters the product, this may cause malfunction due to freezing.


Precautions


[Model: Series IR]


- In a low temperature environment, the pulsations of the set pressure tend to occur when compared to the normal temperature (68°F [20°C]) environment. If a pulsation occurs under operating conditions, it can be avoided by taking corrective actions described below.
 - a. Increase the outlet piping capacity.
 - b. Operate with the supply pressure reduced as much as possible in a range of the minimum supply pressure or more.
 - c. When using the low pressure range (IR2000, IR3000) or medium pressure range (IR2010, IR3010) type, change it to the high pressure range (IR2020, IR3020) type.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

 **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

 **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

 **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots – Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.

If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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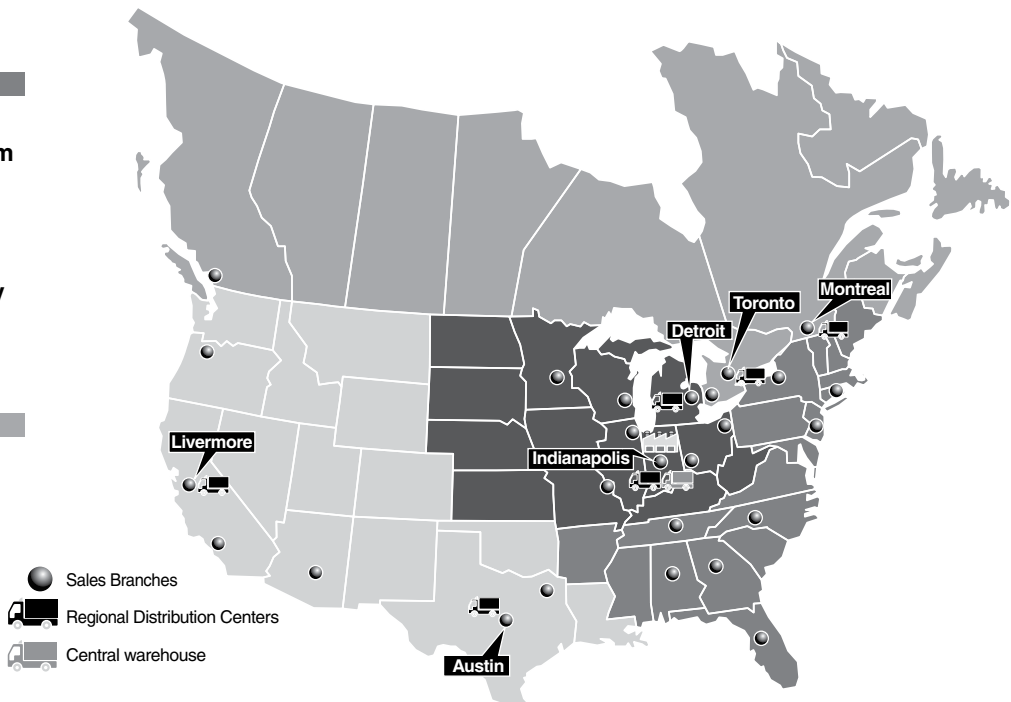
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