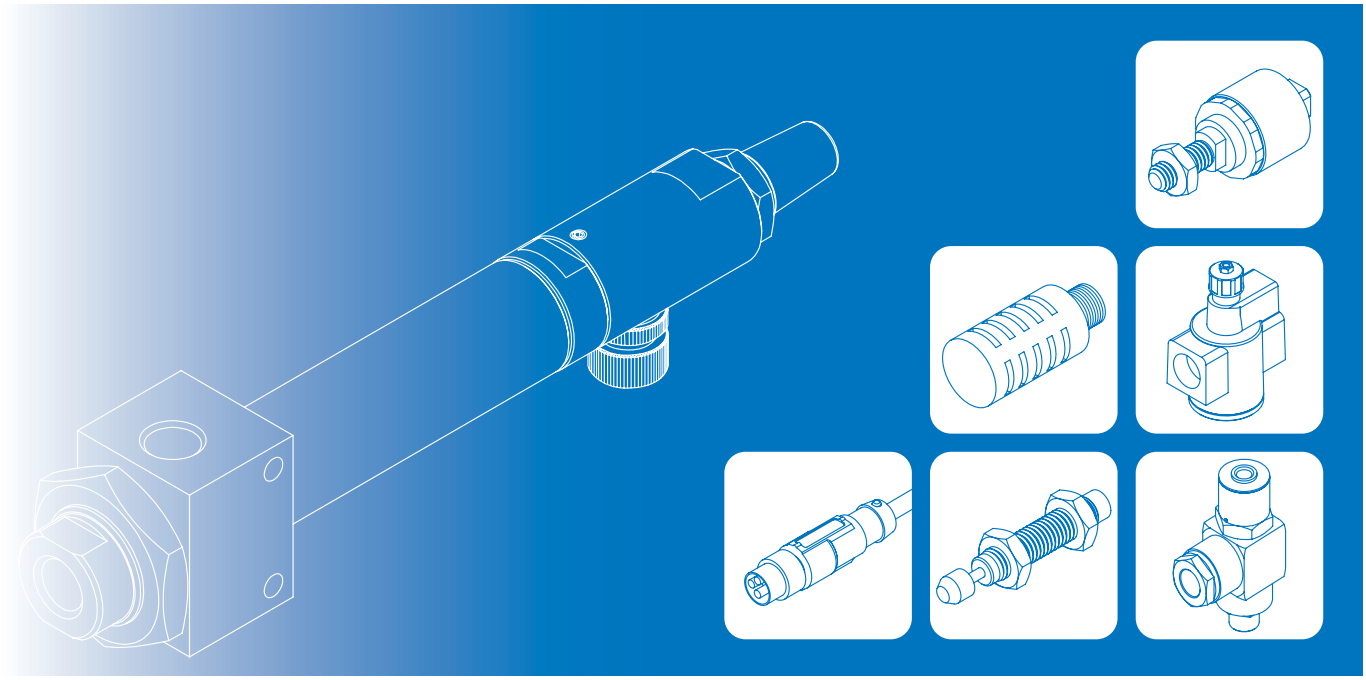
AUXILIARY EQUIPMENT



Piping Component

FITTING

MNS* 2
MS* SOCKET 3
MP* PLUG 4

PU TUBE

UM 5
UML 6

Communication & Wiring

CABLE WITH CONNECTOR

M8 M83-SFSM / SFW / LFW 7
M84-SFW / LFW 7
M88-SFW 7
M12 M124A-SFSM / SFW / LFW 9
M124D-SMSR / SMSM / SMW 9
M125A-SFW / LFW 13
M125B-SFW 14

CONNECTOR

M8 M83-SM 15
M124A-SF / SM 16
M124D-SM 16

Fluid Control

FLOW CONTROL VALVE

MSC 100 17
201 18
300 19
500 / 600 20

QUICK EXHAUST VALVE

MVQE 21

SHUTTLE VALVE

MVAS 23

CHECK VALVE

MJBV 24

Mechanical Transmission

FLOATING JOINT

MFC 25
MFCS 28

FEMALE ROD ENDS

PHS 29
PHS-S Stainless steel 30

SHOCK ABSORBER

MD*C MDSC / MDFC 31

HYDRAULIC SPEED CONTROLLER

MHR 41

Special Applications

JET COOLER

MJC 42

Environmental Protection

SILENCER

MSR PLASTIC SILENCER 45
MSLE PLASTIC SILENCER 46
MSL BRASS SILENCER 47

SILENCER THROTTLE VALVE

MSLC2 47

EXHAUST CLEANER

MEF300 48



Features

- All materials are made of SUS304 / SUS316, which is highly resistant to corrosion, making this series suitable for not only chemical industries but also for airtight special environments (Medical, semiconductor, food, etc.)
- The tube insert part is tightened by a cap nut, ensuring a tight and stable tube.

Specification

Model	MNS*
Medium	Air, water
Max. pressure range	Depending on service range of tube
Working vacuum	−29.8in.Hg (−100 kPa)
Ambient temperature	Depending on service range of tube

Order example

MNSC 0425 — 01 — S

1 2 3 4

1. Model

2. Tube dia. (øO.D. / øI.D.) mm

Code	0420	0425	0640	0860	1080	1290	1210
O.D.	ø4	ø4	ø6	ø8	ø10	ø12	ø12
I.D.	ø2	ø2.5	ø4	ø6	ø8	ø9	ø10

Code	1/4	5/16	3/8	1/2
O.D.	ø6.35	ø7.94	ø9.53	ø12.7
I.D.	ø4.57	ø6	ø6.99	ø9.56

3. Thread size

Code	01	02	03	04
R	R1/8	R1/4	R3/8	R1/2
Rc	Rc1/8	Rc1/4	Rc3/8	Rc1/2

4. Material

Code	–	S
Material	SUS304	SUS316

MNSC Straight



MNSL Elbow



Model MNSC øD-R	Model MNSL øD-R
MNSC0420-01	MNSL0420-01
MNSC0420-02	MNSL0420-02
MNSC0425-01	MNSL0425-01
MNSC0425-02	MNSL0425-02
MNSC0640-01	MNSL0640-01
MNSC0640-02	MNSL0640-02
MNSC0640-03	MNSL0640-03
MNSC0860-01	MNSL0860-01
MNSC0860-02	MNSL0860-02
MNSC1080-02	MNSL1080-02
MNSC1080-03	MNSL1080-03
MNSC1080-04	MNSL1080-04
MNSC1290-02	MNSL1290-02
MNSC1290-03	MNSL1290-03
MNSC1290-04	MNSL1290-04
MNSC1210-02	MNSL1210-02
MNSC1210-03	MNSL1210-03
MNSC1210-04	MNSL1210-04
MNSC1/4-01	MNSL1/4-01
MNSC1/4-02	MNSL1/4-02
MNSC1/4-03	MNSL1/4-03
MNSC5/16-01	MNSL5/16-01
MNSC5/16-02	MNSL5/16-02
MNSC5/16-03	MNSL5/16-03
MNSC3/8-02	MNSL3/8-02
MNSC3/8-03	MNSL3/8-03
MNSC3/8-04	MNSL3/8-04
MNSC1/2-02	MNSL1/2-02
MNSC1/2-03	MNSL1/2-03
MNSC1/2-04	MNSL1/2-04

MNSU Union straight



MNSV Union elbow



MNSE Union tee



Model MNSU øD	Model MNSV øD	Model MNSE øD
MNSU0420	MNSV0420	MNSE0420
MNSU0425	MNSV0425	MNSE0425
MNSU0640	MNSV0640	MNSE0640
MNSU0860	MNSV0860	MNSE0860
MNSU1080	MNSV1080	MNSE1080
MNSU1290	MNSV1290	MNSE1290
MNSU1/4	MNSV1/4	MNSE1/4
MNSU5/16	MNSV5/16	MNSE5/16
MNSU3/8	MNSV3/8	MNSE3/8
MNSU1/2	MNSV1/2	MNSE1/2

MSM



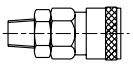
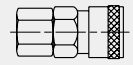
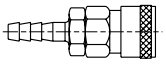
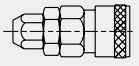
MSM-A (one touch type)



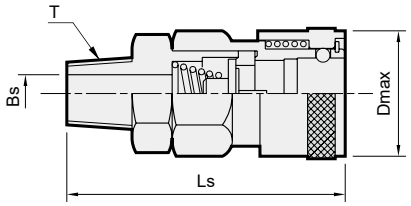
Order example

MSM – 20 – A – S

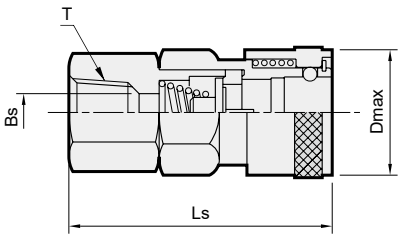
- MODEL
- 20, 30, 40
- MATERIAL: **S**: Steel, **B**: Brass
- Blank: Standard type, **A**: One touch type

MSM	
MSF	
MSH	
MSP	

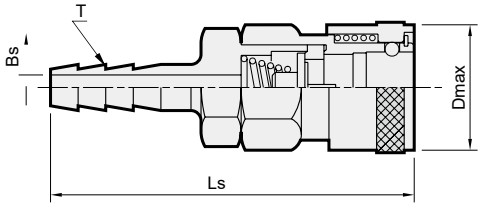
MSM (Male screw)



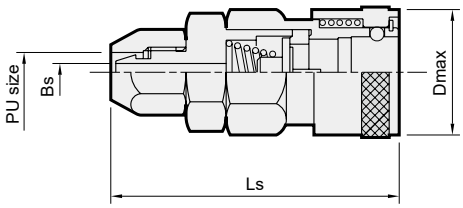
MSF (Female screw)



MSH (Hose screw)



MSP (Nut style)



Dimensions

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bs	D max.	Ls	Steel	Brass
MSM-20	R1/4	ø7.5	ø25	55.5	95	104
MSM-30	R3/8	ø7.5	ø25	57.5	100	109
MSM-40	R1/2	ø9	ø25	59.5	110	117

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bs	D max.	Ls	Steel	Brass
MSF-20	Rc1/4	ø7.5	ø25	52.5	104	110
MSF-30	Rc3/8	ø7.5	ø25	54.5	103	111
MSF-40	Rc1/2	ø9	ø25	54.5	122	131

Model	Hose size T	Dimension (mm)			Weight (g)	
		Bs	D max.	Ls	Steel	Brass
MSH-20	5/16"Hose	ø5	ø25	72.5	95	104
MSH-30	3/8"Hose	ø7.5	ø25	76.5	100	106
MSH-40	1/2"Hose	ø9	Hex.26/30	78.5	110	117

Model	PU size ID×OD (mm)	Dimension (mm)			Weight (g)	
		Bs	D max.	Ls	Steel	Brass
MSP-20	5×8	ø4	ø25	56.5	100	106
MSP-30	6.5×10	ø5	ø26	58	110	116
MSP-40	8×12	ø6	ø26	59	110	116



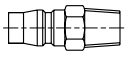
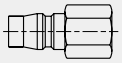
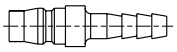
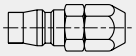
Order example

MPM – 20 – S

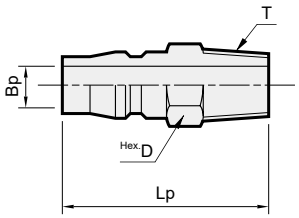
MODEL

20
30
40

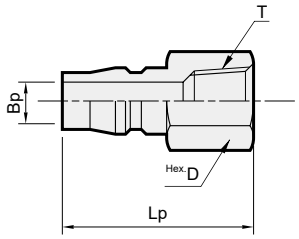
MATERIAL
S: Steel
B: Brass

MPM	
MPF	
MPH	
MPP	

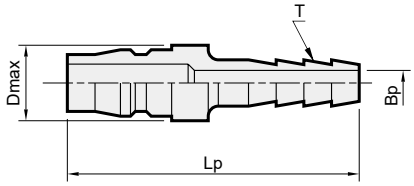
MPM (Male screw)



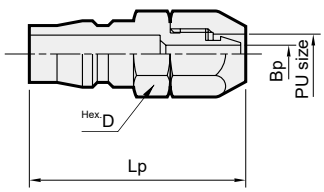
MPF (Female screw)



MPH (Hose screw)



MPP (Nut style)



Dimensions

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bp	Hex.D	Lp	Steel	Brass
MPM-20	R1/4	ø7.5	Hex.14/16.2	41	25	27
MPM-30	R3/8	ø7.5	Hex.17/19.6	43	40	45
MPM-40	R1/2	ø7.5	Hex.21/24.2	46	65	70

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bp	Hex.D	Lp	Steel	Brass
MPF-20	Rc1/4	ø7.5	Hex.17/19.6	38	30	32
MPF-30	Rc3/8	ø7.5	Hex.21/24.2	41	45	48
MPF-40	Rc1/2	ø7.5	Hex.26/30	43	65	70

Model	Hose size T	Dimension (mm)			Weight (g)	
		Bp	D max.	Lp	Steel	Brass
MPH-20	5/16"Hose	ø5	ø16	58	27	29
MPH-30	3/8"Hose	ø7.5	ø16	62	35	38
MPH-40	1/2"Hose	ø7.5	ø18	64	50	55

Model	PU size ID×OD (mm)	Dimension (mm)			Weight (g)	
		Bp	Hex.D	Lp	Steel	Brass
MPP-20	5×8	ø4	Hex.14/16.2	42.5	30	33
MPP-30	6.5×10	ø5	Hex.16/18.2	44.5	40	43
MPP-40	8×12	ø6	Hex.17/19.2	45	40	43



Specification

Model	UM*
Medium	Air
Max. operating pressure	116 psi (0.8 MPa)(65%RH at 20°C) (*)
Working vacuum	−29.5in.Hg (−100 kPa)
Ambient temperature	−5~+140°F(−15~+60°C) (No freezing)

* Max. operating pressure is the value at 65% RH at 20°C.
When using on other temperatures. please take enough safety value judging from the burst pressure curve on the left.
When the tube is applied to moving parts with vibration and bend, the temperature might rise due to self-heat generation due to molecule heat generation and lead to breakage of the tube.

Order example

UM0425 — 100 — B

- UM0425 — MODEL
- 100 — EACH ROLL (m)
- B — COLOR
  - **B**: Black
  - **BU**: Blue
  - **CB**: Transparent blue
  - **O**: Orange
  - **G**: Green
  - **Y**: Yellow
  - **R**: Red
  - **T**: Transparent

Mindman brand PU tube

Model	OD×ID (mm)	Each roll (m)	Available color
UM0425	4×2.5	100	B, BU, CB, O, G, Y, R, T
UM0640	6×4	100	B, BU, CB, O, G, Y, R, T
UM0850	8×5	100	B, BU, CB, O, G, Y, R, T
UM1065	10×6.5	100	B, BU, CB, O, G, Y, R, T
UM1280	12×8	100	B, BU, CB, O, G, Y, R, T
UM1611	16×11	20	B, T

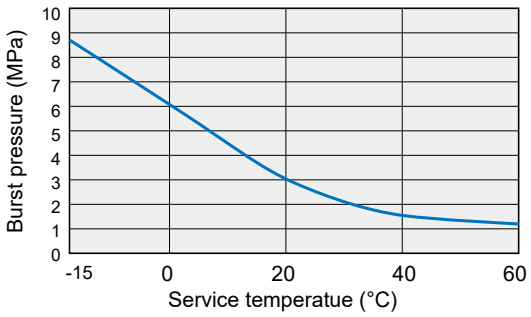
Available color

●Black(B), ●Blue(BU), ●Transparent blue(CB), ●Orange(O), ●Green(G), ●Yellow(Y), ●Red(R), ○Transparent(T)

Measurement of minimum bending radius and minimum mounting radius

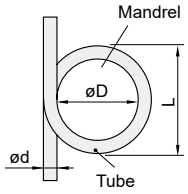
Model	Min.bending radius (mm)	Min.mounting radius (mm)	Weight (g/m)
UM0425	10	15	9
UM0640	15	23	19
UM0850	15	23	36
UM1065	20	30	54
UM1280	30	45	74
UM1611	60	90	128

Burst pressure curve (Reference value)



Minimum bending radius (JIS method)

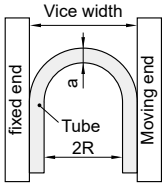
JIS method (based on JIS B8381)
The mandrel radius is measured when the tube is tightly wound around mandrel (round bar) and the deforming ratio becomes 25%.
Measurement condition: 20°C, 65%RH



$$N = 1 - \frac{L - D}{2d} \times 100$$

N=deforming ratio (%) standard value less than 25%
d=Tube diameter (mm)
L=Measurement amount (mm)
D=Mandrel diameter (mm)

Minimum mounting radius (Vice method)



- Fix the tube as shown on the left and bring moving end close to fixed end gradually.
- Measure R when "a" dimension deforms 25% from initial value.

UML series

PU TUBE-COILING TUBE

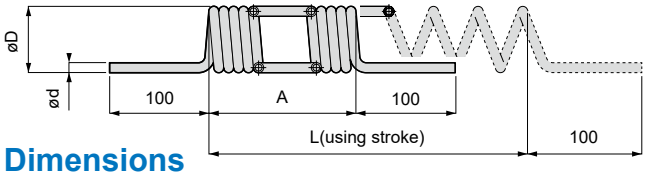


Specification

Model	UML
Medium	Air
Operating pressure range	0.8 MPa (20°C 65%RH) *1,2
Working vacuum	–100 kPa
Ambient temperature	−15~+60°C (No freezing)

*1. The value of max. operating pressure is measured at 20°C and 65%RH. When Tubes are used in different conditions, consider a safety ratio of the pressure with an enough margin, referring to Burst Pressure Curve.
*2. When Tubes are frequently swung and bent, there is a possibility of generating heat between molecules and damaging the products.

UML Polyurethane coiling tube



Order example

UML — 06 — 10 — B

1 2 3 4

1. Name of tube

2. Tube dia.

Code	03	04	06	08	10	12
O.D. (mm)	ø3	ø4	ø6	ø8	ø10	ø12

3. Tube length before coiling

Code		1	2	3	5	7	10	14	20
Dimension(m)		1	2	3	5	7	10	14	20
Tube O.D.	ø3mm	○	○	○	○				
	ø4mm		○	○	○	○	○	○	○
	ø6mm		○	○	○	○	○	○	○
	ø8mm			○	○	○	○	○	○
	ø10mm				○	○	○	○	○
	ø12mm				○	○	○	○	○

* Overall length of tube before coiling. The length after coiling refer to 'L'.

4. Tube color

△Make to order product

Code	B	R	O	YB	Y
Color	● Black	● Red	● Orange	● Ocher	● Yellow
UML	○	△	△	△	△
Code	G	BU	CB	C	W
Color	● Green	● Blue	● Clean blue	○ Transparent	○ Milky white
UML	△	△	△	△	△

Dimensions

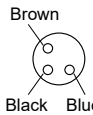
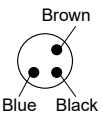
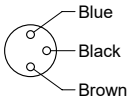
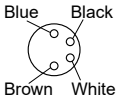
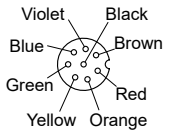
Model	ød	A	øD	L
UML03-1	3	70	16	210
UML03-2	3	150	16	450
UML03-3	3	230	16	700
UML03-5	3	390	16	1200
UML04-2	4	120	24	360
UML04-3	4	180	24	540
UML04-5	4	350	24	1100
UML04-7	4	480	24	1500
UML04-10	4	700	24	2100
UML04-14	4	1040	24	3200
UML04-20	4	1450	24	4400
UML06-2	6	160	30	500
UML06-3	6	230	30	700
UML06-5	6	430	30	1300
UML06-7	6	620	30	1900
UML06-10	6	910	30	2800
UML06-14	6	1300	30	3900
UML06-20	6	1850	30	5600
UML08-3	8	250	42	750
UML08-5	8	390	42	1200
UML08-7	8	540	42	1700
UML08-10	8	770	42	2400
UML08-14	8	1045	42	3200
UML08-20	8	1550	42	4700
UML10-5	10	330	58	1000
UML10-7	10	470	58	1400
UML10-10	10	680	58	2100
UML10-14	10	970	58	3000
UML10-20	10	1380	58	4200
UML12-5	12	310	72	1000
UML12-7	12	450	72	1400
UML12-10	12	660	72	2000
UML12-14	12	920	72	2800
UML12-20	12	1320	72	4000


M83-SFSM


M83/84-SFW


M83/84-LFW

Specification

Model	M83-SFSM		M83-SFW M83-LFW		M84-SFW M84-LFW		M88-SFW
Female pin out							
Number of contacts	3	3	3		4		8
Rated voltage	125V DC/AC		60V DC/AC		60V DC/AC		30V DC
Rated current	3A		3A		3A		1.5A
Contact material	Brass (Au plating)						
Contact bearer material	PVC		PA		PA		PA
Housing material	–		PP		PP		PA
Housing color	Gray		Black		Black		Black
Cable material	ø3.5 PVC		ø4.5 PVC	ø4.5 PUR	ø4.5 PVC	ø4.5 PUR	ø5 PVC
Cable color	Gray		Gray	Black	Gray	Black	Black
Temperature (No freezing)	-20°C~+60°C		-20°C~+80°C				
Cable conductor	24AWG						26AWG
Protection class	IP67						

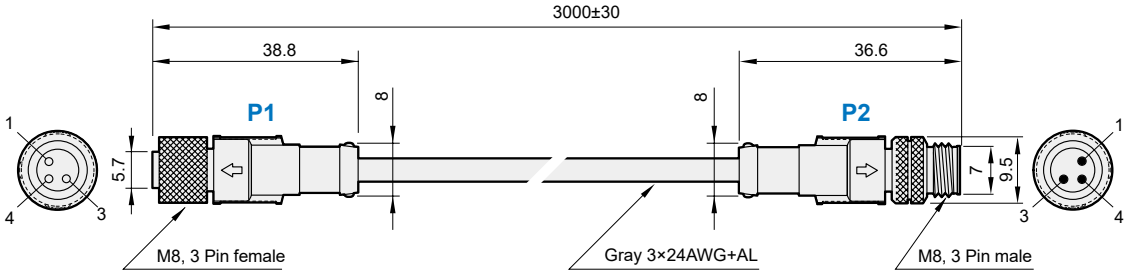
Order example

M83 – SFW – PVC – 2M

Model		Connector	Cable material	Cable length
M83	M8, 3 Pin	**SFSM**: Straight female - Straight male	**PVC**: ø3.5 PVC	**3M**: 3000 mm
		SFW: Straight female - Lead wire **LFW**: Angle female - Lead wire	**PVC**: ø4.5 PVC **PUR**: ø4.5 PUR	**2M**: 2000 mm **5M**: 5000 mm
M84	M8, 4 Pin			
M88	M8, 8 Pin	**SFW**: Straight female - Lead wire	**PVC**: ø5 PVC	**0.45M**: 450 mm

M83-SFSM

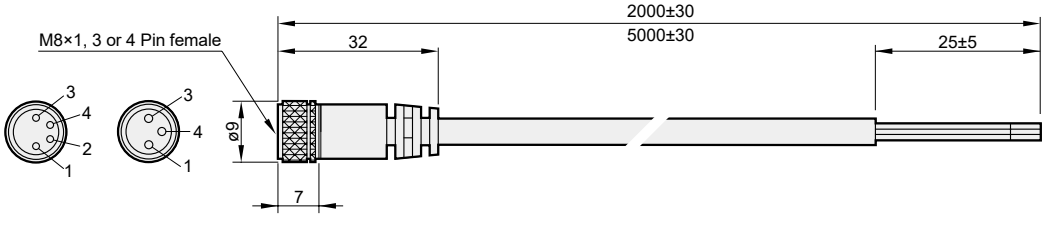
P1 P2
1 — Brown — 1
3 — Blue — 3
4 — Black — 4



M83/M84-SFW Straight cable socket

M83
1 — Brown
3 — Blue
4 — Black

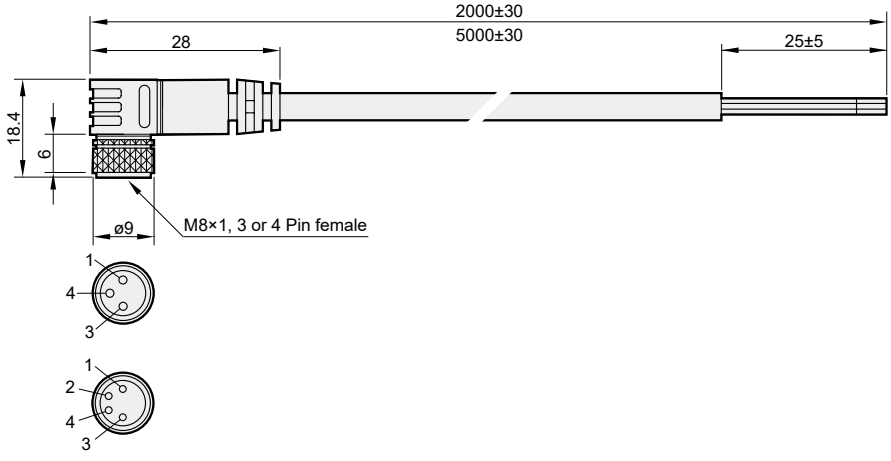
M84
1 — Brown
2 — White
3 — Blue
4 — Black



M83/M84-LFW Angle cable socket

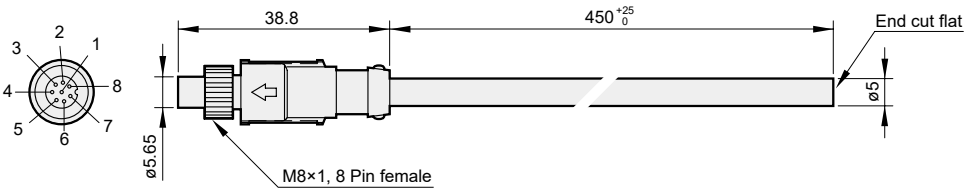
M83
1 — Brown
3 — Blue
4 — Black

M84
1 — Brown
2 — White
3 — Blue
4 — Black



M88-SFW

1 — Black
2 — Violet
3 — Blue
4 — Green
5 — Yellow
6 — Orange
7 — Red
8 — Brown



M124A-** series

CABLE WITH **CONNECTOR** (FEMALE – MALE / LEAD WIRE)



M124A-SFSM

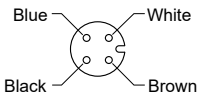
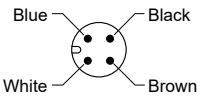
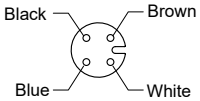


M124A-SFW



M124A-LFW

Specification

Model	M124A-SFSM		M124A-*FW
Female pin out			
Number of contacts	4	4	4
Rated voltage	125V DC/AC		
Rated current	3A		
Contact material	Brass (Au plating)		
Contact bearer material	PVC		
Housing color	Gray		
Cable material	ø4.2, PVC		ø5, PVC
Cable color	Gray		
Temperature	-20°C~+60°C (No freezing)		-20°C~+80°C (No freezing)
Cable conductor	22AWG		22AWG
Protection class of contact	IP67		

Order example

M124 A – SFSM – PVC – 3M

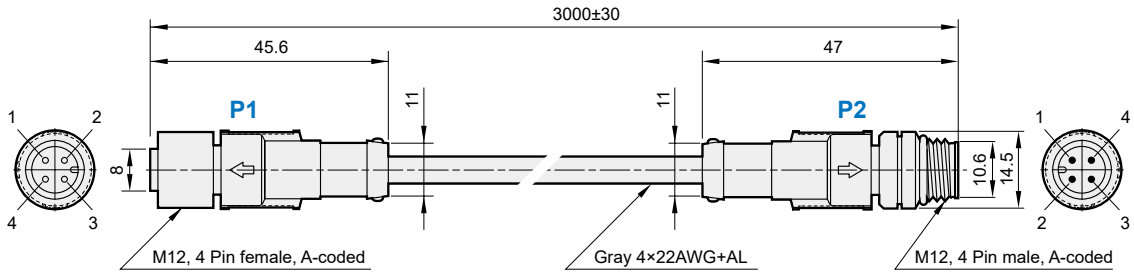
Model		Code	Connector	Cable material	Cable length
M124	M12, 4 Pin	**A**: A-coded	**SFSM**: Straight female - Straight male	**PVC**: ø4.2 PVC	**3M**: 3000 mm
			SFW: Straight female - Lead wire **LFW**: Angle female - Lead wire	**PVC**: ø5 PVC	**1M**: 1000 mm **3M**: 3000 mm

M124A-** Dimensions

CABLE WITH CONNECTOR (FEMALE – MALE / LEAD WIRE)

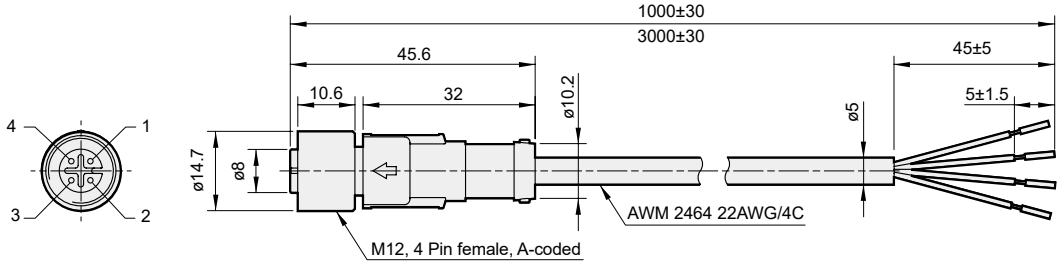
M124A-SFSM

P1		P2
1	Brown	1
2	White	2
3	Blue	3
4	Black	4



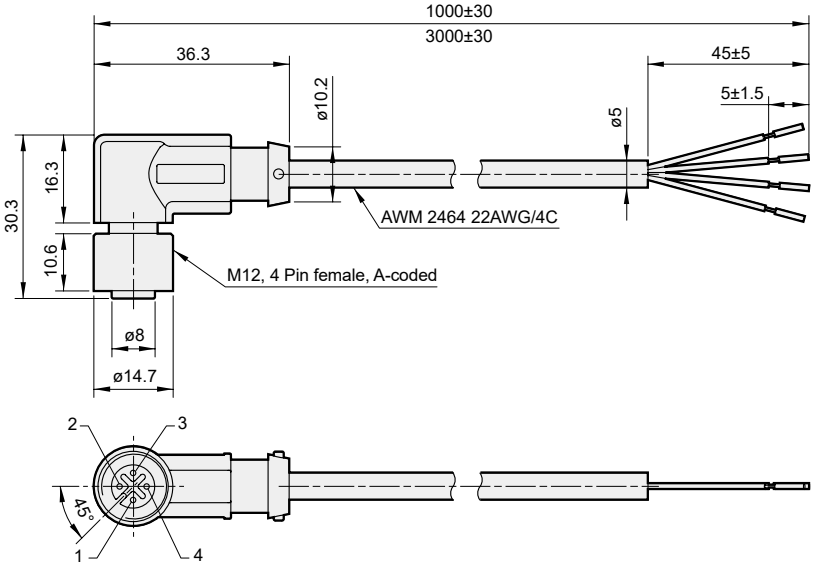
M124A-SFW Straight

1	Brown
2	White
3	Blue
4	Black



M124A-LFW Angle

1	Brown
2	White
3	Blue
4	Black



M124D-** series

CABLE WITH CONNECTOR (MALE – RJ45 / MALE / LEAD WIRE)



M124D-SMSR

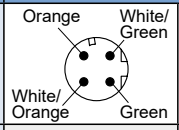
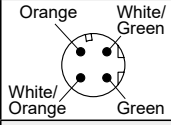
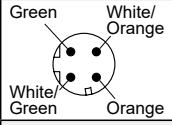
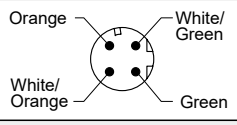


M124D-SMSM



M124D-SMW

Specification

Model	M124D-SMSR		M124D-SMSM		M124D-SMW
Female pin out					
Number of contacts	4	8	4	4	4
Rated voltage	30V DC/AC				250V DC/AC
Rated current	0.5A				1A
Contact material	Brass (Au plating)				
Contact bearer material	PVC				
Housing color	Gray				
Cable material	ø4.5, PVC				
Cable color	Gray				
Temperature	-20°C~+60°C (No freezing)				
Cable conductor	26AWG				
Protection class of contact	IP67	IP20	IP67		IP67

Order example

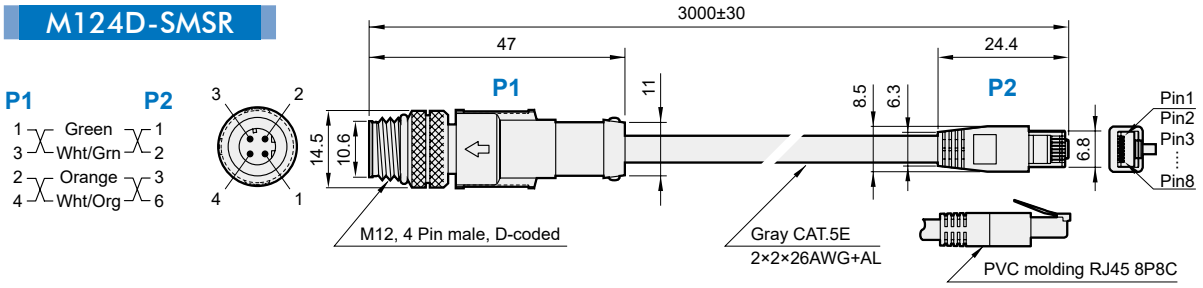
M124 D – SMSR – PVC – 3M

Model		Code	Connector	Cable material	Cable length
M124	M12, 4 Pin	**D**: D-coded	**SMSR**: Straight male – RJ45 **SMSM**: Straight male – Straight male **SMW**: Straight male - Lead wire	**PVC**: ø4.5 PVC	**3M**: 3000 mm

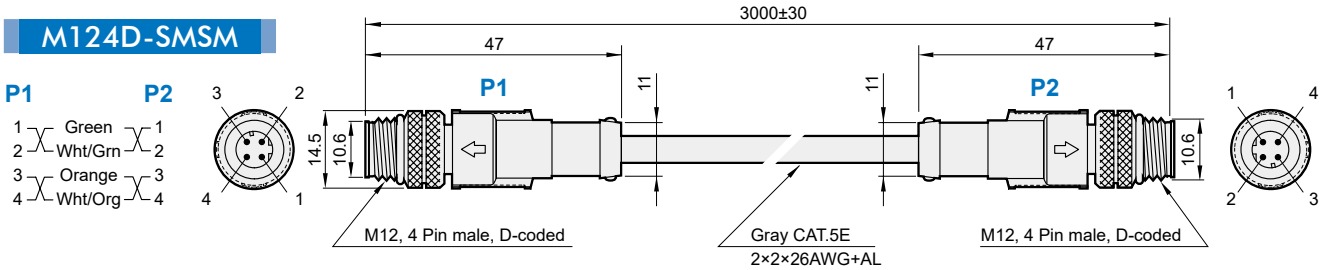
M124D-** Dimensions

CABLE WITH CONNECTOR (MALE – RJ45 / MALE / LEAD WIRE)

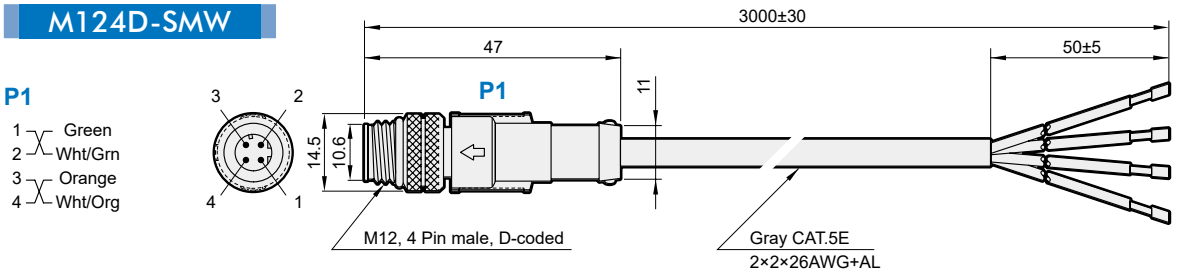
M124D-SMSR



M124D-SMSM



M124D-SMW



M125A-** series

CABLE WITH CONNECTOR (FEMALE – LEAD WIRE)

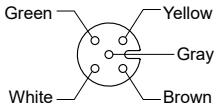


M125A-SFW



M125A-LFW

Specification

Model	M125A-*FW
Female pin out	
Number of contacts	5
Rated voltage	125V DC/AC
Rated current	3A
Contact material	Brass (Au plating)
Contact bearer material	PVC
Housing color	Gray
Cable material	ø5.4, PVC
Cable color	Gray
Temperature	-20°C~+80°C (No freezing)
Cable conductor	24AWG
Protection class of contact	IP 67

Order example

M125 A — SFW — PVC — 3M

- MODEL — **M125**: M12, 5 Pin
- **A**: A-coded
- CONNECTOR — **SFW**: Straight female – Lead wire; **LFW**: Angle female – Lead wire
- CABLE MATERIAL — **PVC**: ø5.4 PVC
- CABLE LENGTH — **3M**: 3000 mm

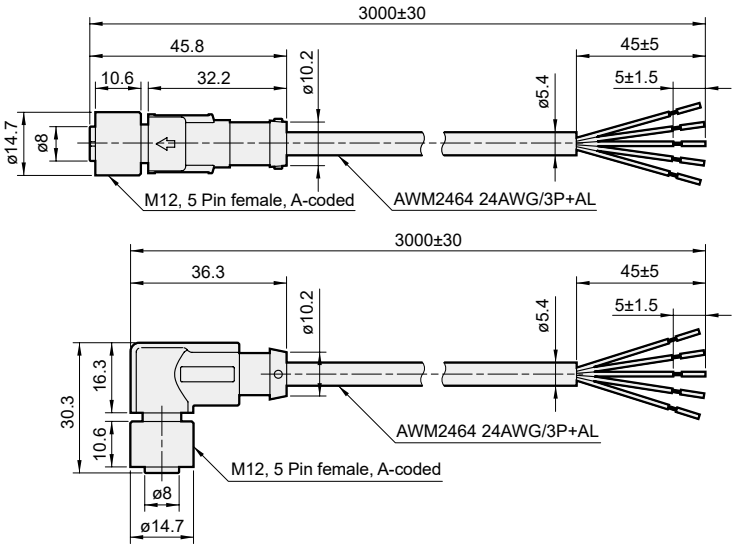
Dimension

M125A-SFW

Straight

1 Brown
2 White
3 Green
4 Yellow
5 Gray
Pink





M125A-LFW

Angle

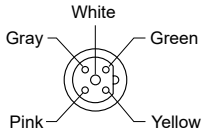
1 Brown
2 White
3 Green
4 Yellow
5 Gray
Pink

M125B-SFW series

CABLE WITH **CONNECTOR** (FEMALE – LEAD WIRE)



Specification

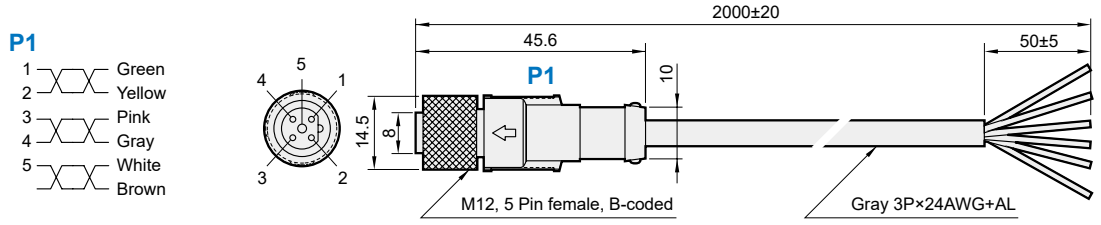
Model	M125B-SFW
Female pin out	
Number of contacts	5
Rated voltage	125V DC/AC
Rated current	3A
Contact material	Brass (Au plating)
Contact bearer material	PVC
Housing color	Gray
Cable material	ø5.5, PVC
Cable color	Gray
Temperature	-20°C~+60°C (No freezing)
Cable conductor	24AWG
Protection class of contact	IP 67

Order example

M125B — SFW — PVC — 2M

- MODEL — **M125**: M12, 5 Pin
- **B**: B-coded
- CONNECTOR — **SFW**: Straight female – Lead wire
- CABLE MATERIAL — **PVC**: ø5.5 PVC
- CABLE LENGTH — **2M**: 2000 mm

Dimension



M83-SM series

CONNECTOR (MALE)



Specification

Model	M83-SM
Male pin out	
Number of contacts	3
Rated voltage	60V DC/AC
Rated current	5A
Temperature	-40°C~+105°C (No freezing)
Protection class of contact	IP 67
Suitable for AWG	20~26AWG
Seals for cable OD	ø4.5 mm ~ ø6.5 mm
Housing material	Nylon

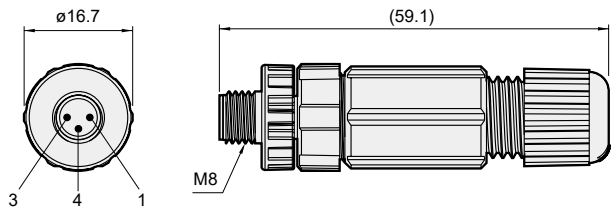
Order example

M83 – SM

MODEL
M83: M8, 3 Pin

CONNECTOR
SM: Straight male

Dimension



M124*-SF / SM series

CONNECTOR (FEMALE / MALE)



Specification

Model	M124A-SF	M124A-SM	M124D-SM
Male pin out			
Number of contacts	4		
Code	A	A	D
Rated voltage	250V DC/AC		
Rated current	4A		
Temperature	-25°C~+80°C (No freezing)	-40°C~+105°C (No freezing)	
Protection class of contact	IP 67		
Suitable for AWG	22AWG		
Seals for cable OD	ø5.5 mm	ø4 mm ~ ø8 mm	
Housing material	Nylon		

Order example

M124 A — SM

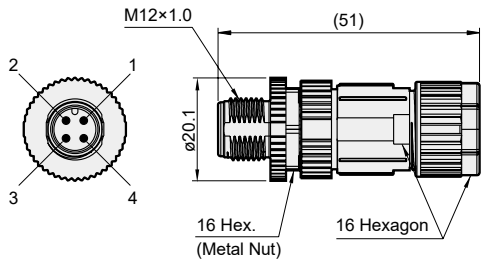
MODEL
M124:
M12, 4 Pin

CODE		CONNECTOR
A	A-coded	**SF**: Straight female
		SM: Straight male
D	D-coded	**SM**: Straight male

Dimensions

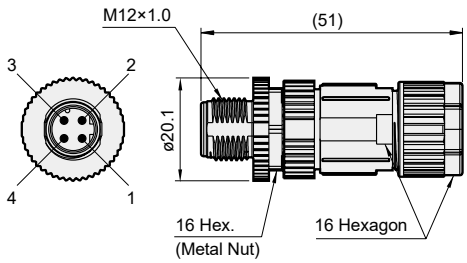
A-coded

M124A-SM

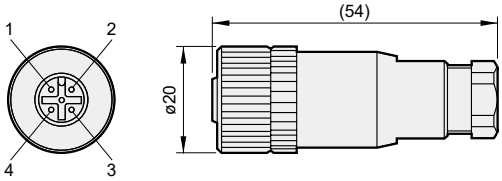


D-coded

M124D-SM

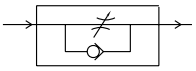


M124A-SF





Symbol



Specification

Model		MSC100	
Bore No.		M3	M5
Port size		M3×0.5	M5×0.8
Medium		Air	
Operating pressure range		0.1~0.7 MPa	
Proof pressure		1 MPa	
Ambient temperature		-5~+60°C (No freezing)	
Flow (ℓ/min) (*)	Free flow	20	90
	Controlled flow	20	80
Number of needle rotations		6	8
Weight		3 g	34 g

* Supply pressure: 0.5 MPa, Temperature: 20°C
* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

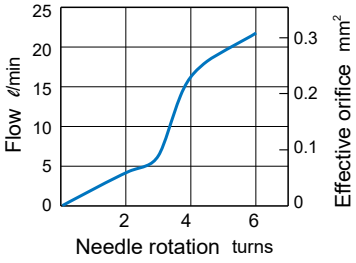
Order example

MSC100 – M5

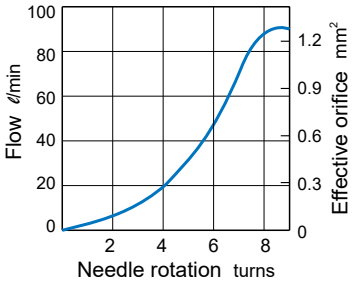
- MODEL
- PORT SIZE
  - **M3**: M3×0.5
  - **M5**: M5×0.8

Flow features

MSC100-M3

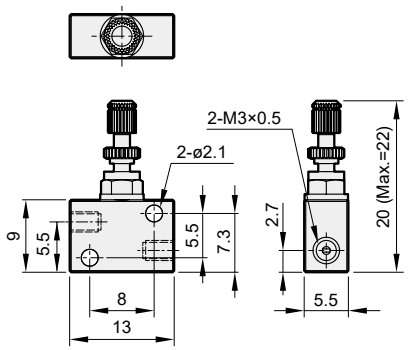


MSC100-M5

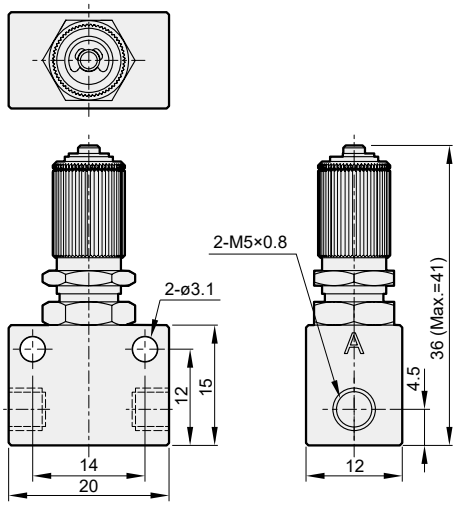


Dimensions

MSC100-M3



MSC100-M5

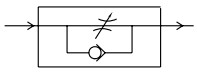


MSC201 series

FLOW CONTROL VALVE



Symbol



Specification

Model	MSC201	
Bore No.	6A	8A
Port size	Rc1/8	Rc1/4
Medium	Air	
Operating pressure range	0~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Flow (ℓ/min) (*) Free flow	110	140
Flow (ℓ/min) (*) Controlled flow	180	220
Number of needle rotations	8	
Weight	66 g	

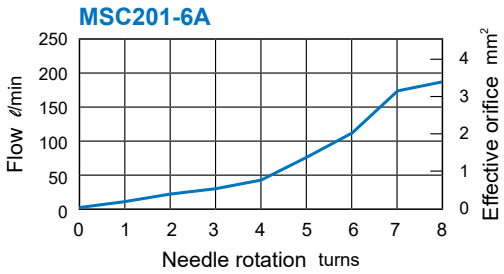
* Supply pressure: 0.5 MPa, Temperature: 20°C
* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

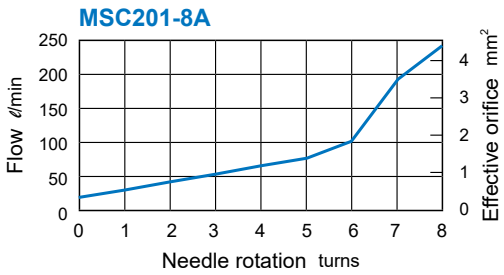
Order example

MSC201 — 6A — □

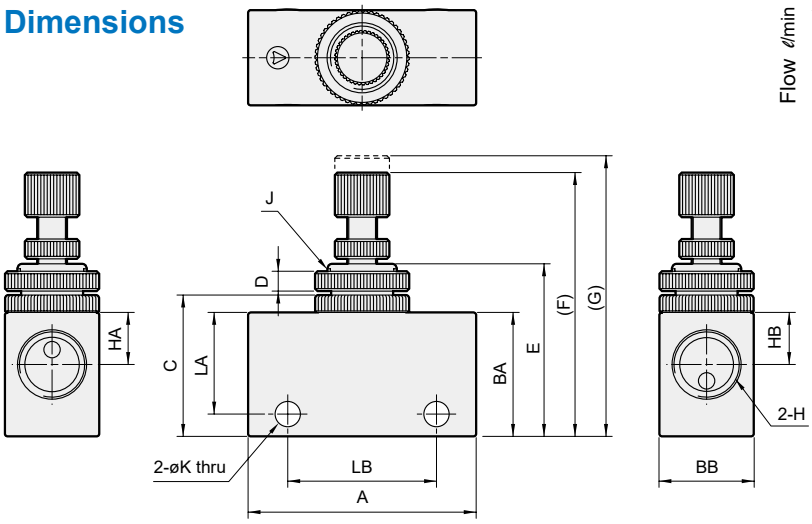
- MODEL
- PORT SIZE
  - **6A**: Rc1/8
  - **8A**: Rc1/4
- PORT THREAD
  - Blank: Rc thread
  - **G**: G thread
  - **NPT**: NPT thread

Flow features





Dimensions



Code / Model		A	BB	BA	C	D	E	F	G	H	HA	HB	J	K	LA	LB
MSC201	6A	46	19.2	25	28.5	4	34.8	50.5	54.8	Rc1/8	10	11.5	M14×1.0	4.5	20.5	30
	8A	46	19.2	25	28.5	4	34.8	50.5	54.8	Rc1/4	10.5	10.5	M14×1.0	4.5	20.5	30



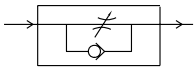
Specification

Model	MSC300	
Bore No.	10A	15A
Port size	Rc3/8	Rc1/2
Medium	Air	
Operating pressure range	0~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Flow (ℓ/min) (*) Free flow	300	400
Flow (ℓ/min) (*) Controlled flow	500	520
Number of needle rotations	8	
Weight	130 g	

* Supply pressure: 0.5 MPa, Temperature: 20°C

* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

Symbol



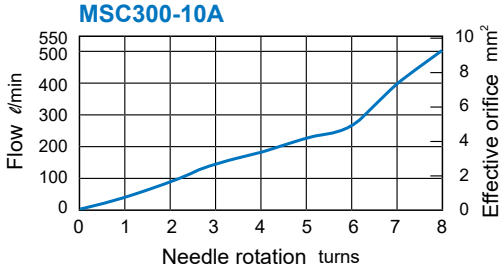
Order example

MSC300 — 10A — G

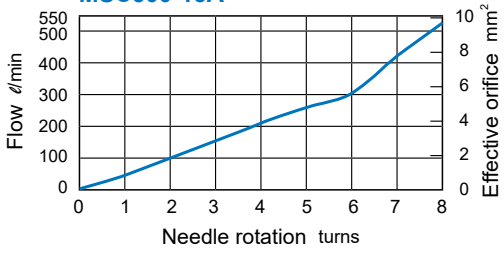
- MODEL
- PORT SIZE
  - **10A**: Rc3/8
  - **15A**: Rc1/2
- PORT THREAD
  - Blank: Rc thread
  - **G**: G thread
  - **NPT**: NPT thread

Flow features

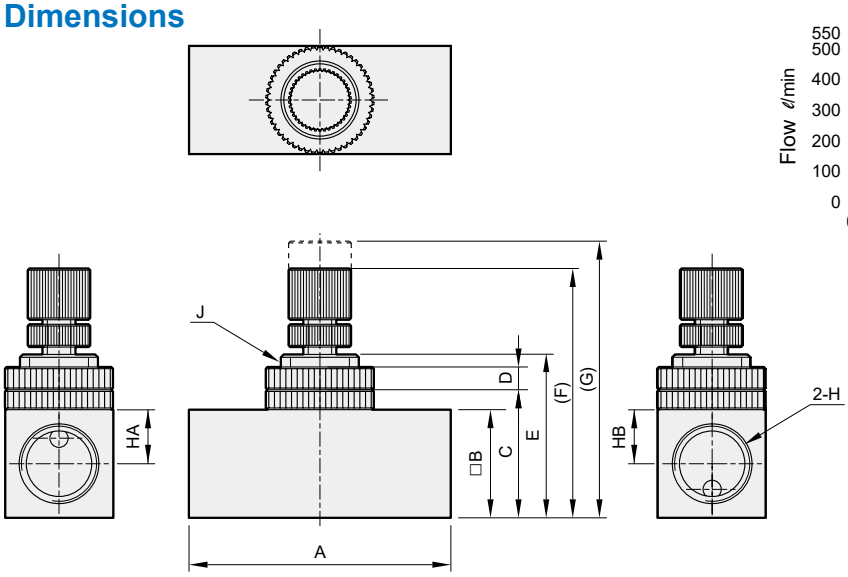
MSC300-10A



MSC300-15A



Dimensions



Code / Model		A	B	C	D	E	F	G	H	HA	HB	J
MSC300	10A	56	25.4	30	4	37	53.7	62.5	Rc3/8	13.8	13.8	M18×1.0
	15A	56	25.4	30	4	37	53.7	62.5	Rc1/2	12.7	12.7	M18×1.0

MSC500 / 600 series

FLOW CONTROL VALVE

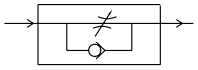


Specification

Model		MSC500		MSC600	
Bore No.		15A	20A	20A	25A
Port size		Rc1/2	Rc3/4	Rc3/4	Rc1
Medium		Air			
Operating pressure range		0~1 MPa			
Proof pressure		1.5 MPa			
Ambient temperature		-5~+60°C (No freezing)			
Effective orifice (mm^2) (*)	Free flow	106	123	151	258
	Controlled flow	116	154	164	230
Weight		406 g	400 g	767 g	721 g

* Supply pressure: 0.5 MPa, Temperature: 20°C

Symbol

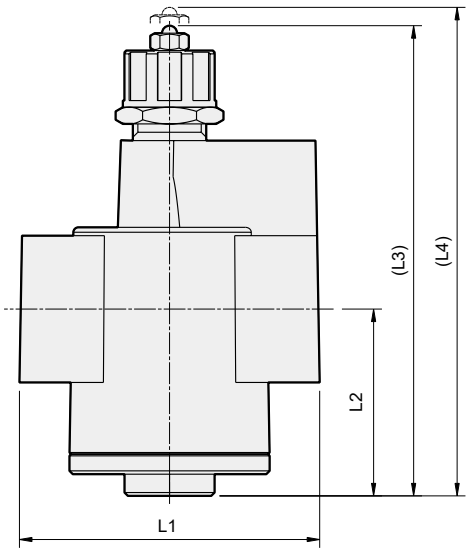


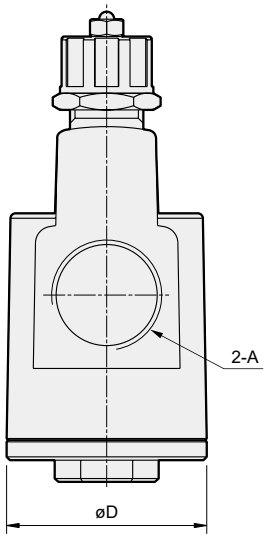
Order example

MSC500 — 20A — G

MODEL	PORT SIZE	PORT THREAD
	15A: Rc1/2 **20A**: Rc3/4 **25A**: Rc1	Blank: Rc thread **G**: G thread **NPT**: NPT thread

Dimensions





Code / Model		A	D	L1	L2	L3	L4
MSC500	15A	Rc1/2	48	74	43	105	115
	20A	Rc3/4	48	74	43	105	115
MSC600	20A	Rc3/4	60	90	56	148	158
	25A	Rc1	60	90	56	148	158



Features

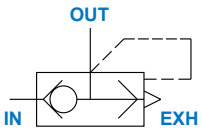
This unit makes it possible to achieve increased piston speeds on the exhaust stroke with single acting and double acting cylinders.

Specification

Model	MVQE
Medium	Air
Operating pressure range	0.1~1 MPa
Proof pressure	1.5 MPa
Ambient temperature	-5~+60°C (No freezing)

Model	Port size	Effective orifice(mm^2)		Weight
		IN→OUT	OUT→EXH	
MVQE-100-6A	Rc1/8	9	19	40 g
MVQE-300-8A	Rc1/4	24	31	100 g
MVQE-300-10A	Rc3/8	25	33	80 g
MVQE-301-10A	Rc3/8	60	70	230 g
MVQE-301-15A	Rc1/2	110	110	212 g
MVQE-400-15A	Rc1/2	46	46	240 g
MVQE-501-20A	Rc3/4	135	180	765 g
MVQE-501-25A	Rc1	176	187	695 g

Symbol



Order example

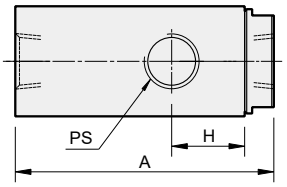
MVQE300 — 10A — G

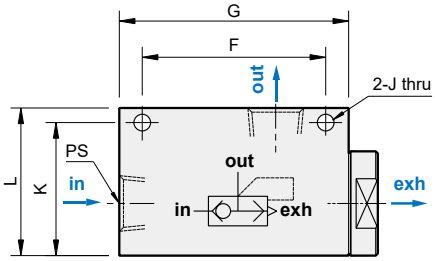
- MODEL
- BODY SIZE
  - **1**: 1/8
  - **3**: 3/8
  - **4**: 1/2
  - **5**: 3/4
- STYLE
  - **0**: Lip (6A-15A)
  - **1**: Diaphragm (10A-25A)
- PORT SIZE

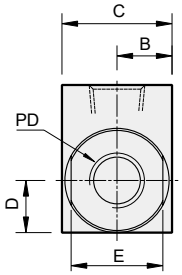
Port size		Applicable series
6A	Rc1/8	MVQE100
8A	Rc1/4	MVQE300
10A	Rc3/8	MVQE300, MVQE301
15A	Rc1/2	MVQE301, MVQE400
20A	Rc3/4	MVQE501
25A	Rc1	

- PORT THREAD
  - Blank: Rc thread
  - **G**: G thread
  - **NPT**: NPT thread

MVQE100/300/400

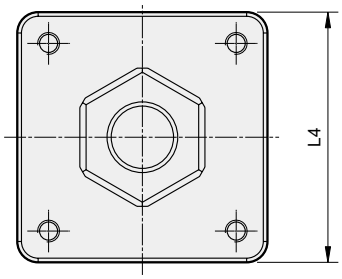


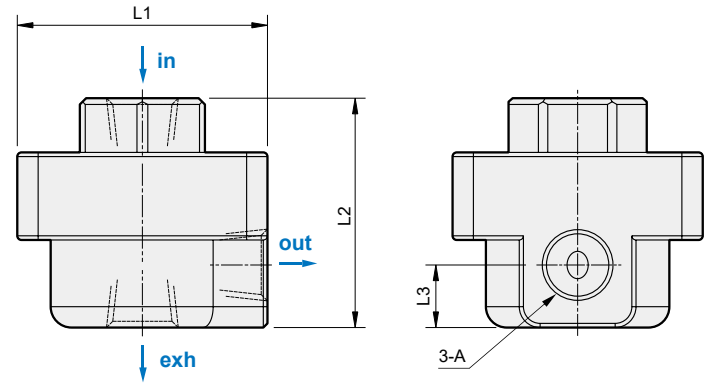




Code / Model		A	B	C	D	E	F	G	H	J	K	L	PS	PD
MVQE100	6A	40	8.25	16.5	9	14	26	35	12	ø3.4	22.6	26	Rc1/8	Rc1/8
MVQE300	8A	62	13.2	26.4	13	22	45	55	17.5	ø4	29.5	35.4	Rc1/4	Rc3/8
	10A	62	13.2	26.4	13	22	45	55	17.5	ø4	29.5	35.4	Rc3/8	Rc3/8
MVQE400	15A	69	20	40	20	36	51	62	20	ø4	46	52	Rc1/2	Rc1/2

MVQE301/501





Code / Model		A	L1	L2	L3	L4
MVQE301	10A	Rc3/8	60	55	15	60
	15A	Rc1/2	60	55	15	60
MVQE501	20A	Rc3/4	90	82.5	23	90
	25A	Rc1	90	82.5	23	90



Features

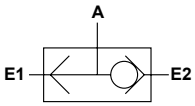
This valve has two input inlets(E1,E2) and can be controlled in dirfferent position.

First activated position can get through to output signal(A).

Specification

Model	MVAS	
Bore No.	6A	8A
Port size	Rc1/8	Rc1/4
Medium	Air	
Operating pressure range	0.1~1 MPa	
Proof pressure	1.5 MPa	
Effective orifice	11.5 mm^2	30.5 mm^2
Ambient temperature	-15~+60°C (No freezing)	
Weight	43 g	119 g

Symbol



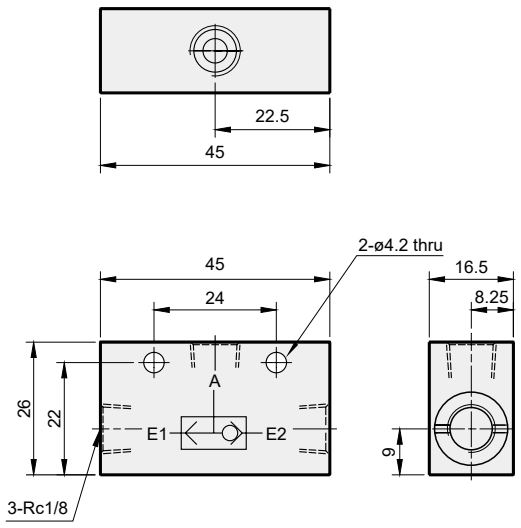
Order example

MVAS — 6A — G

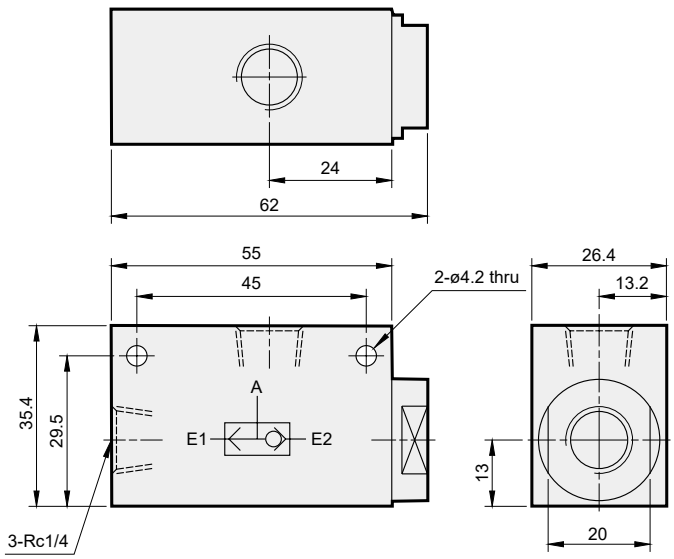
MODEL	PORT SIZE	PORT THREAD
	6A: Rc1/8 **8A**: Rc1/4	Blank: Rc thread **G**: G thread **NPT**: NPT thread

Dimensions

MVAS-6A



MVAS-8A

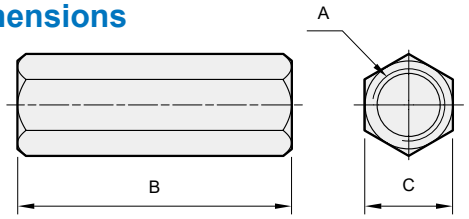




Specification

Model	MJBV
Operating pressure range	0.1~0.7 MPa
Proof pressure	1.5 MPa

Dimensions



Model	A	B	C
MJBV-01	G1/8"	41	14
MJBV-02	G1/4"	50	16
MJBV-03	G3/8"	52	21
MJBV-04	G1/2"	62.5	25

Order example

MJBV – 01 – □

- MJBV: MODEL
- 01: PORT SIZE
  - **01**: 1/8"
  - **02**: 1/4"
  - **03**: 3/8"
  - **04**: 1/2"
- □: PORT THREAD
  - **G**: G thread
  - * Rc, NPT thread are made to order.

MFC series

CYLINDER FLOATING JOINT



Features

- Can be used in many applications.
- Strong simple construction designed for repetitive high usage.
- Wide range available.
- Simple structure, high rigidity.
- Reduce the requirement of concentricity between the cylinder and the other connected component.

Cautions

- Do not use on universal joint.
- Do not disassemble.
- Lubricant required.
- Usage temperature +5~+60°C
- Do not use the end of the thread of the connecting rod.

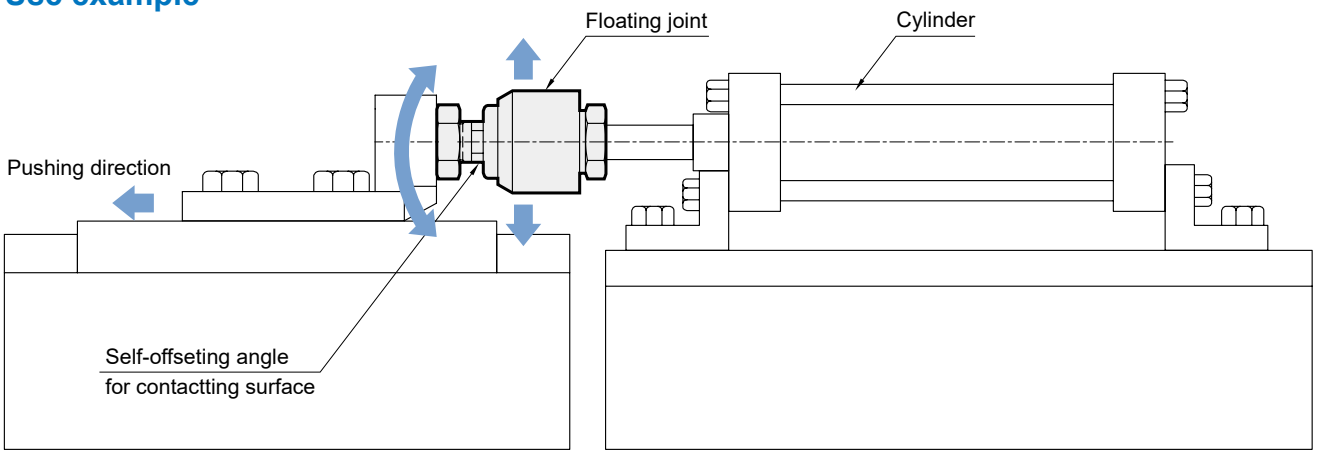
Order example

MFC — 1012 A — M12×1.25

* Thread size **M**.

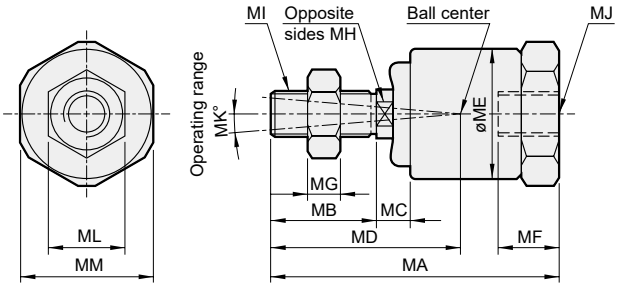
- MODEL
- THREAD SIZE
- TYPE
  - **A**: Standard A type
  - **T**: Standard T type
  - **S**: Short type
  - **F**: FAC type

Use example

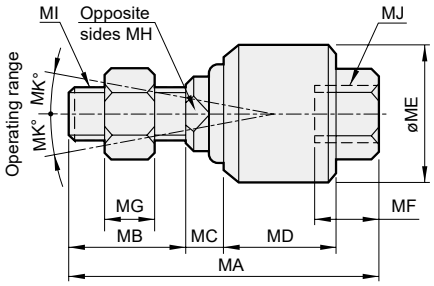


A

1003A ~ 1006A



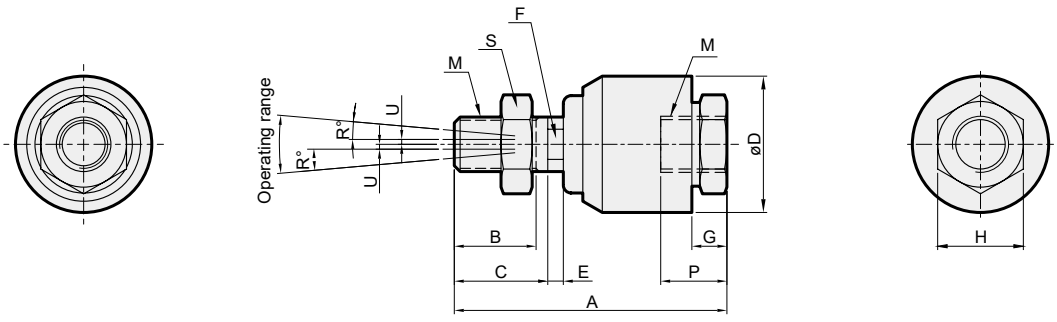
1008A ~ 1036A



Model	Applicable cyl. dia. (mm)	MA	MB	MC	MD	ME	MF	MG	MH	MI/MJ	ML	MM	Rot. angle	Radial compensation	Weight (g)
MFC-1003A	6	23.5	7.5	3	15	12.8	5.5	2.4	4	M3×0.5	5.5	12	±5°	0.5	–
MFC-1004A	8	26	9.5	3	17	12.8	6	3	4	M4×0.7	7	12	±5°	0.5	–
MFC-1005A	10,15	34.5	13.5	3.5	22.8	13.8	8	4	6	M5×0.8	8	14	±5°	0.5	20
MFC-1006A	15	34.5	13.5	3.5	22.8	13.8	8	4	6	M6×1.0	10	14	±5°	0.5	20

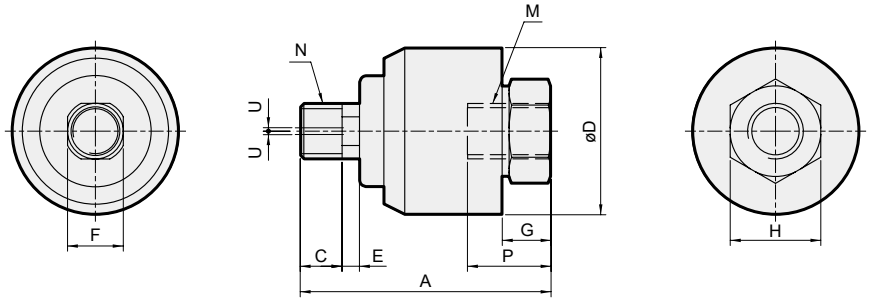
Model	Applicable cyl. dia. (mm)	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	Weight (g)
MFC-1008A	20	51	20	6	17	24	12.5	6	8	M8×1.25	M8×1.25	13	90
MFC-1010A	25,30	58	22	7	21	26	13	6	10	M10×1.25	M10×1.25	12	110
MFC-1012A	40	58	22	8	21	28	14	7	12	M12×1.25	M12×1.25	12	110
MFC-1014A	40	70	22.5	8.5	28	34.5	18.5	8	14	M14×1.5	M14×1.5	12	250
MFC-1016A	50,63	90	27	10	41	44.2	22	10	17	M16×1.5	M16×1.5	7	500
MFC-1018A	50,63	92	27	10	41	44.2	24	11	17	M18×1.5	M18×1.5	7	500
MFC-1020A	80	102	29	13	46	53.5	24	10	22	M20×1.5	M20×1.5	10	720
MFC-1022A	80	108	32	13	46	53.5	27	13	22	M22×1.5	M22×1.5	5	720
MFC-1026A	100	120	32	14.5	52.5	59.5	36	13	27	M26×1.5	M26×1.5	5	1300
MFC-1027A	125	136.5	40	14.5	52.5	59.5	44.5	13.5	27	M27×2.0	M27×2.0	5	1620
MFC-1030A	125,140	122	39	16	50	61	35	13.5	29	M30×1.5	M30×1.5	5	1610
MFC-1036A	140,160	194	60	20.5	77.5	84	54	18	36	M36×2.0	M36×2.0	5	–

T



Model	Applicable cyl. dia. (mm)	A		B		C	øD	E	F	G	H	M	P		R	S	Permissible U deviation	Rot. angle	Permissible pressure	Maximum operating tension and compression force (N)	Weight (g)
		DIM.	TOL.	DIM.	TOL.								DIM.	TOL.							
MFC-1024T	100	123	±2.0	38	±2.0	38	61	12	□26	19	41	M24×1.5	33	±2.0	5	M24×1.5×H11×B35.5	2.5	±5°	3.5 MPa (max.) Pneumatic / Hydraulic	28000	1300
MFC-1039T	140,160	184	±2.0	69	±2.0	70	75	20	□35	23	50	M39×1.5	42	±2.0	5	M39×1.5×H10×B50	4			71000	2820
MFC-1040T	160	194	±2.0	74	±2.0	74	85	15	□43	25	69	M40×1.5/2.0	40	±2.0	5	M40×1.5/2.0×H12×B65	5			71000	4300
MFC-1045T	160	194	±2.0	74	±2.0	74	85	15	□43	25	69	M45×1.5/2.0	40	±2.0	5	M45×1.5/2.0×H12×B65	5			71000	4300
MFC-1050T	160	210	±2.0	70	±2.0	70	105	16	□53	35	85	M50×2.0	55	±2.0	5	M50×2.0×H13×B65	6			80000	6980

S



Model	Applicable cyl. dia. (mm)	A DIM.	A TOL.	C DIM.	C TOL.	øD	E	F	G	H	P DIM.	P TOL.	M	N	Permissible U deviation	Rot. angle	Maximum operating tension and compression force (N)	Weight (g)
MFC-1008S	20	36	±1.0	6	±1.0	24	4	□8	6.5	13	12	±1.0	M8×1.0/1.25	M8×1.0/1.25	0.5	±0.5°	1100	60
MFC-1010S	25,30	48		9		26	5	□10	8	17	14		M10×1.25/1.5	M10×1.25/1.5	0.75		2500	97
MFC-1012S	40	46		9		28	5	□12	8	17	12		M12×1.25/1.5	M12×1.25/1.5			4400	100
MFC-1014S	40	59		11		35	7	□14	9	22	17		M14×1.5	M14×1.5	1		6000	220
MFC-1016S	50,63	77	±2.0	13	±2.0	45	9	□18	13	27	23	±2.0	M16×1.5	M18×1.5	1.25		11000	480
MFC-1018S	50,63	77		13		45	9	□18	13	27	23		M18×1.5	M18×1.5			11000	480
MFC-1020S	80	90		18		50	10	□22	16	32	27		M20×1.5	M20×1.5	2		18000	660
MFC-1022S	80	90		18		50	10	□22	16	32	27		M22×1.5	M20×1.5			18000	660
MFC-1024S	100	107		20		60	12	□26	19	41	33		M24×1.5	M26×1.5	2.5		28000	1190
MFC-1026S	100	107		20		60	12	□26	19	41	33		M26×1.5	M26×1.5			28000	1180
MFC-1027S	125	117		20		63.5	19	□29	20	41	33		M27×2.0	M30×1.5			28000	1380
MFC-1030S	125,140	117		20		63.5	19	□29	20	41	33		M30×1.5/2.0/3.5	M30×1.5/2.0/3.5			36000	1420
MFC-1036S	140,160	133		25		75	20	□35	22	50	40		M36×1.5/2.0	M36×1.5/2.0	3		55000	2800
MFC-1045S	140,160	147		29		85	15	□43	24.5	69	39		M45×1.5/2.0	M45×1.5/2.0			55000	4300

F

With **S** type floating joints.

Fig.1

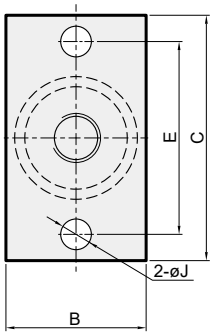
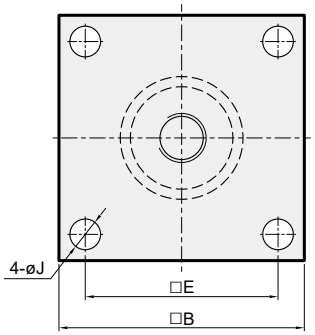
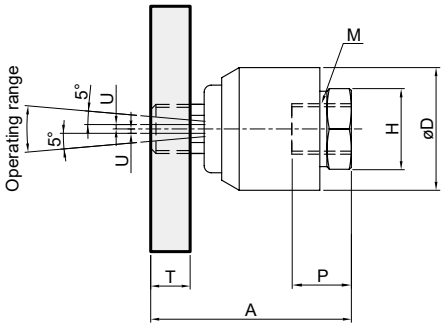


Fig.2





Model	A DIM.	A TOL.	B	C	øD	E	H	J	T	M	P DIM.	P TOL.	Illustration fig no.	Permissible U deviation	Rot. angle	Permissible pressure	Weight (g)
MFC-1008F	36	±1.0	25	52	24	40	13	6.6	6	M8×1.0/1.25	12	±1.0	Fig.1	0.5	±0.5°	3.5MPa (max.) Pneumatic / Hydraulic	130
MFC-1010F	48		32	56	26	44	17	6.6	9	M10×1.25/1.5	14			0.75			235
MFC-1012F	46		32	56	28	44	17	6.6	9	M12×1.25/1.5	12						240
MFC-1014F	59		38	80	35	60	22	11	11.6	M14×1.5	17			1			510
MFC-1016F	77	±2.0	74	–	45	45	27	11	15	M16×1.5	23	±2.0	Fig.2	1.25			1120
MFC-1018F	77		74	–	45	45	27	11	15	M18×1.5	23						1120
MFC-1020F	90		100	–	50	62	32	14	21	M20×1.5	27			2			2280
MFC-1022F	90		100	–	50	62	32	14	21	M22×1.5	27						2280
MFC-1024F	107		100	–	60	70	41	14	21	M24×1.5	33			2.5			2870
MFC-1026F	107		100	–	60	70	41	14	21	M26×1.5	33						2870
MFC-1027F	117		100	–	63.5	70	41	14	21	M27×2.0	33						3070
MFC-1030F	117		100	–	63.5	70	41	14	21	M30×1.5/2.0/3.5	33						3070
MFC-1036F	133		130	–	75	95	50	16	25	M36×1.5/2.0	40			3			5790
MFC-1045F	147		160	–	85	110	69	16	22	M45×1.5/2.0	39						8600

MFCS series

CYLINDER FLOATING JOINT



Features

- The minor error connects between two shafts can be removed.
- The machining accuracy can be neglected.
- The shaft alignment's time for the error tolerance connects between two shafts can be finished and installed easily, even the newcomer can do also.
- The abnormal noise can be prohibited.
- Small in dimension but can be loaded high tension & compression.
- Long time for the machine parts and the packing in the cylinder or the rod sealing's damage can be prohibited, reduced the producing's cost.
- The compression's decrease can be prohibited.

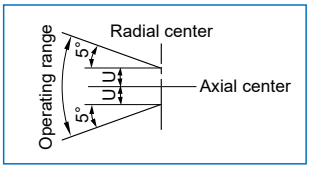
Order example

MFCS — 1004 T — M4×0.7

* Thread size **M**.

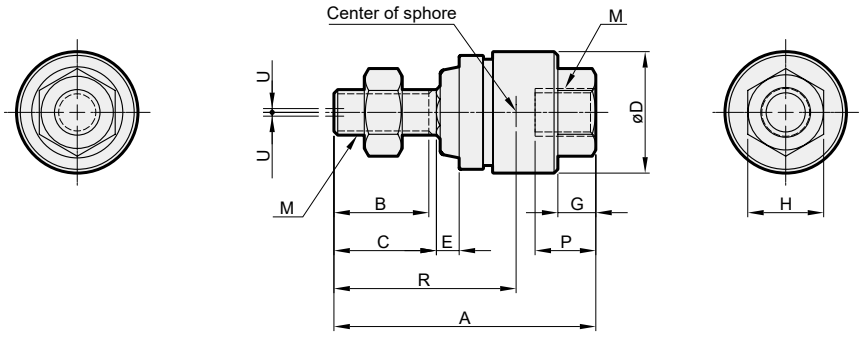
- MFCS — MODEL
- 1004 — THREAD SIZE
- T — TYPE (**T**: Standard type)
- M4×0.7 — * Thread size **M**.

Operating range



Dimensions

T



Model	Cyl. dia	M	A	B	C	D	E	F	G	H	R	P	Permissible U deviation	Max. operating tension and compression force (N)	Weight	Rot. angle
MFCS-1003T	6	M3×0.5	23	7	8	12	2	3.8	3	5.5	15.5	6	0.5	19	5.5 g	±5°
MFCS-1004T	8	M4×0.7	26	9	10	12	2	4	4	6	18.5	7	0.5	54	10 g	
MFCS-1005T	10, 15	M5×0.8	34.5	12.5	13.5	16	3	6	5	10	24	8	0.5	123	20 g	
MFCS-1006T	16	M6×1.0	34.5	12.5	13.5	16	3	6	5	10	24	8	0.5	123	23 g	
MFCS-1008T	20	M8×1.25	46	20	21	21	5	7.8	5	13	31	7.5	0.5	1100	47 g	
MFCS-1010T	25, 32	M10×1.25	49.5	19.5	19.5	24	5	8	7	17	35.5	11	0.5	2500	72 g	

* Permissible pressure range: pneumatic pressure must below 1 MPa.



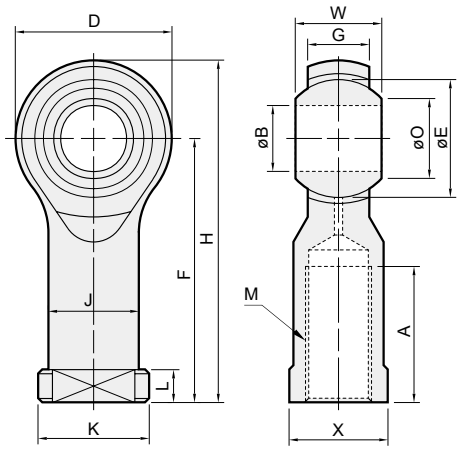
Features

- Copper lining structure embedded.
- Grease nipple as standard.
- Carbon steel body.
- High carbon chromium bearing steel.

Order example

PHS 25 — M24×1.5

MODEL — THREAD SIZE



Dimensions

Model	Dimensions (mm)														Static fracture minimal radial load (kgf)	Dynamic eff. load (kgf)		Weight (g)
	A	B	D	E	F	G	H	J	K	L	M	O	W	X		Radial	Axial	
PHS 5-M5×0.8	14	5	16	11.11	27	7	35	9	12	4	M5×0.8	7.71	8	9	930	620	230	18
PHS 6-M6×1.0	12	6	20	12.7	30	6.75	40	10	13	6.5	M6×1.0	8.96	9	11	1122	439	735	22
PHS 8-M8×1.25	16	8	24	15.875	36	9	48	12.5	16	7	M8×1.25	10.4	12	14	1633	735	1184	47
PHS 10EC-M10×1.25	20	10	26	19.05	43	11	56	15	19	8.5	M10×1.25*	12.9	14	17	2102	1020	1480	77
PHS 12EC-M12×1.25	22	12	32	22.225	50	12	66	17.5	22	10.5	M12×1.25*	15.4	16	19	2449	1367	1735	100
PHS 14EC-M14×1.5	25	14	36	25.4	57	13.5	75	20	25	10.5	M14×1.5*	16.9	19	22	3245	1735	2449	160
PHS 16EC-M16×1.5	28	16	40	28.575	64	15	84	22	27	11	M16×1.5*	19.4	21	24	3857	2204	2908	220
PHS 18-M18×1.5	32	18	46	31.75	71	16.5	94	25	31	13.5	M18×1.5	21.9	23	27	4694	2653	4337	320
PHS 20-M20×1.5	33	20	46	34.925	77	18	100	27.5	34	14	M20×1.5	24.4	25	30	5429	3214	4337	420
PHS 22-M22×1.5	43	22	50	38.1	84	20	109	30	37	12	M22×1.5	25.84	28	32	6100	4070	2290	475
PHS 25-M24×1.5	48	25	56	42.862	94	22	122	33.5	42	12	M24×1.5	29.6	31	36	7420	4950	2830	673
PHS 28-M27×2.0	53	28	67	47.625	110	26	143.5	40	50	15	M27×2.0	32.30	35	41	8870	5210	3240	875
PHS 30-M30×2.0	56	30	67	50.8	110	26	143.5	40	50	15	M30×2.0	34.81	37	41	11000	7370	3960	1050

* Different from the thread pitch commonly available on the market.



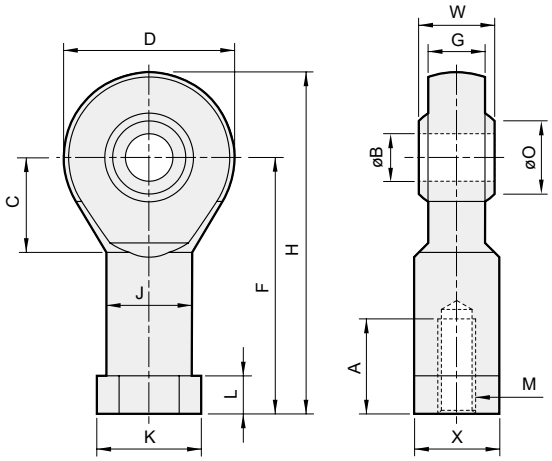
Features

- Embedded bearing structure.
- Stainless steel body.
- Sintered bronze bush.

Order example

PHS — S20 — M20×1.5

MODEL	MATERIAL	SPEC.	THREAD SIZE
	S: SUS		



Dimensions

Code / Model	A	B	C	D	F	G	H	J	K	L	M	O	W	X	Weight (g)
PHS-S4-M4×0.7	12	4	7	14	24	5.25	31	8	9.5	4	M4×0.7	7.6	7	8	12
PHS-S6-M6×1	12	6	11	20	30	6.75	40	10	13	5	M6×1.0	8.9	9	11	27
PHS-S8-M8×1.25	16	8	13	24	36	9	48	12.5	16	5	M8×1.25	10.4	12	14	46
PHS-S10-M10×1.25	20	10	15	28	43	10.5	57	15	19	6.5	M10×1.25	12.9	14	17	77
PHS-S12-M12×1.25	22	12	17	32	50	12	66	17.5	22	6.5	M12×1.25	15.4	16	19	116
PHS-S16-M16×1.5	28	16	23	42	64	15	85	22	27	8	M16×1.5	19.3	21	22	203
PHS-S20-M20×1.5	33	20	27	50	77	18	102	27.5	34	10	M20×1.5	24.3	25	30	376

Optional accessories

Formulas & Examples



Hydraulic industrial shock absorbers

Select the correct shock absorber and it will reduce shock vibration and noise. It will improve efficiency and extend machine life.

The function of shock absorber is to convert the kinetic energy of the moving object into heat and dissipate it into the atmosphere. It can stop a moving object smoothly and quietly before heavy impact occurs.

In order to save cost solid buffers such as polyurethane and rubber are often used. These cause noise and transient shock. The use of shock absorbers alleviates this resulting in both increased reliability and production. Additionally the noise reduction means they are environmentally friendly.

MDSC series: Non-adjustable shock absorbers.
Surface treatment: nickel plated: MDSC-0806, MDSC-1008, MDSC-1210; others are black anodized.

MDFC series: Adjustable shock absorbers.

Operating principles of shock absorbers

Shock Absorber's main structure to combine with body, rod, bearing, inner tube, piston, fluid, spring. On impact the piston rod moves into the shock absorber and the hydraulic fluid is push into accumulator to produce resistant force, the pressure in the inner tube remains constant throughout the entire impact stroke. Shock Absorbers providing a linear deceleration and brings the impacting object to stop smoothly and quietly. At the end of the impact stroke, the return spring pushes the piston to its original position for next cycle

Order example

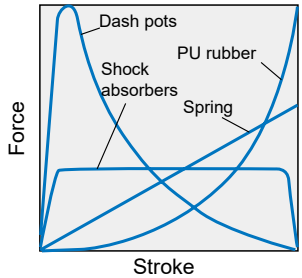
MDSC — 1415 — 1 — □ — M14×1.5

- MDSC: Non-adjustable / MDFC: Adjustable
- TUBE O.D. (mm)
- STROKE (mm)
- Select damping constant from graph
  - **1**: Hight impact speed
  - **2**: Medium impact speed
  - **3**: Low impact speed
- Blank: With impact head / **N**: Without impact head
- THREAD

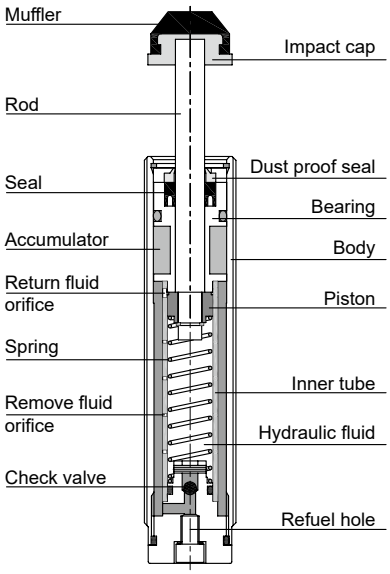
Comparison of shock absorbing of dash pots, PU rubbers, springs and shock absorbers

The springs and PU Rubbers are widespread to use in earlier period, but due to provide non-linear deceleration and to result in strong resistance, all the kinetic energy of moving objects is not absorption and produce counter pressure, this is in low efficiency.

If linear deceleration is necessary for a moving object. Mindman Shock Absorber is your best choice.

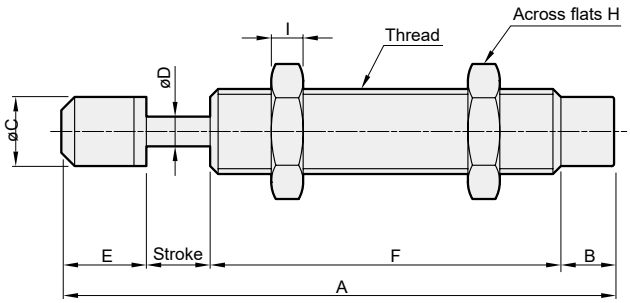


Main structures

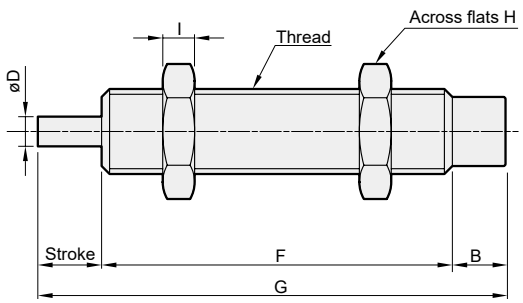


Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-0806-1	6	1.8	0.9 ~ 5.6	2.0	2,400	-10~+70 (No freezing)
MDSC-0806-2	6	1.8	2.5 ~ 10	1.2	2,400	-10~+70 (No freezing)
MDSC-0806-3	6	1.8	5.6 ~ 22.5	0.8	2,400	-10~+70 (No freezing)
MDSC-1008-1	8	3.2	0.9 ~ 4.4	2.6	5,760	-10~+70 (No freezing)
MDSC-1008-2	8	3.2	2.8 ~ 10	1.5	5,760	-10~+70 (No freezing)
MDSC-1008-3	8	3.2	10 ~ 40	0.8	5,760	-10~+70 (No freezing)
MDSC-1210-1	10	6	1.8 ~ 12	2.6	10,800	-10~+70 (No freezing)
MDSC-1210-2	10	6	5.3 ~ 18.7	1.5	10,800	-10~+70 (No freezing)
MDSC-1210-3	10	6	12 ~ 75	0.8	10,800	-10~+70 (No freezing)
MDSC-1412-1	12	16	4.7 ~ 32	2.6	28,800	-10~+70 (No freezing)
MDSC-1412-2	12	16	14 ~ 50	1.5	28,800	-10~+70 (No freezing)
MDSC-1412-3	12	16	56 ~ 200	0.8	28,800	-10~+70 (No freezing)
MDSC-1415-1	15	20	5.9 ~ 27.8	2.6	36,000	-10~+70 (No freezing)
MDSC-1415-2	15	20	17.8 ~ 62.5	1.5	36,000	-10~+70 (No freezing)
MDSC-1415-3	15	20	62.5 ~ 250	0.8	36,000	-10~+70 (No freezing)
MDSC-1425-1	25	28	4.6 ~ 25	3.5	58,800	-10~+70 (No freezing)
MDSC-1425-2	25	28	14 ~ 87.5	2.0	58,800	-10~+70 (No freezing)
MDSC-1425-3	25	28	25 ~ 350	1.5	58,800	-10~+70 (No freezing)



N type

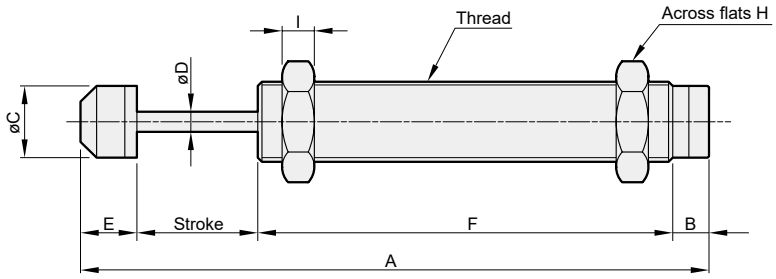


Dimensions

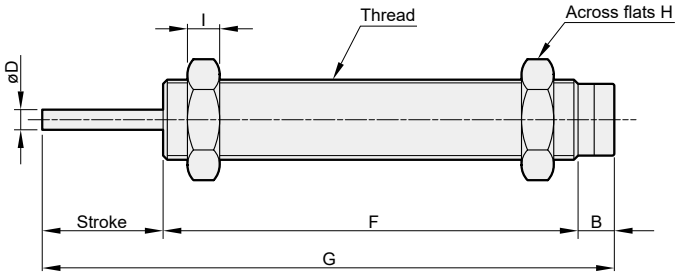
Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-0806	M8×1.0	6	53	5	6.5	2.8	8.5	33.5	—	11	3	12
MDSC-0806-N	M8×1.0	6	—	5	—	2.8	—	33.5	44.5	11	3	11
MDSC-1008	M10×1.0	8	62	5	8.5	3	8.5	40.5	—	12.7	3	20
MDSC-1008-N	M10×1.0	8	–	5	—	3	—	40.5	53.5	12.7	3	19
MDSC-1210	M12×1.0	10	72	4.5	10.5	3	9.5	48	—	14	4	36
MDSC-1210-N	M12×1.0	10	—	4.5	—	3	—	48	62.5	14	4	34
MDSC-1412	M14×1.5	12	92.7	8	12.2	3.5	13.4	59.3	—	19	6	66
MDSC-1412-N	M14×1.5	12	—	8	—	3.5	—	59.3	79.3	19	6	63
MDSC-1415	M14×1.0/1.5	15	103.4	8	12.2	3.5	13.4	67	—	19	6	79
MDSC-1415-N	M14×1.0/1.5	15	—	8	—	3.5	—	67	90	19	6	76
MDSC-1425	M14×1.0/1.5	25	133.4	8	12.2	3.5	13.4	87	—	19	6	90
MDSC-1425-N	M14×1.0/1.5	25	—	8	—	3.5	—	87	120	19	6	86

Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-2020-1	20	35	6.8 ~ 27	3.2	42,000	-10~+70 (No freezing)
MDSC-2020-2	20	35	17.5 ~ 70	2.0	42,000	-10~+70 (No freezing)
MDSC-2020-3	20	35	48.6 ~ 777	1.2	42,000	-10~+70 (No freezing)
MDSC-2030-1	30	46	9 ~ 36	3.2	55,200	-10~+70 (No freezing)
MDSC-2030-2	30	46	23 ~ 92	2.0	55,200	-10~+70 (No freezing)
MDSC-2030-3	30	46	64 ~ 575	1.2	55,200	-10~+70 (No freezing)
MDSC-2050-1	50	62	10.1 ~ 124	3.5	63,240	-10~+70 (No freezing)
MDSC-2050-2	50	62	18.3 ~ 253	2.6	63,240	-10~+70 (No freezing)
MDSC-2050-3	50	62	55 ~ 496	1.5	63,240	-10~+70 (No freezing)



N type



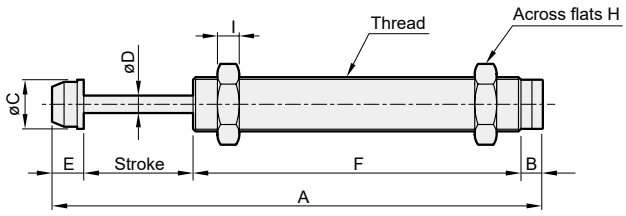
Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-2020	M20×1.5	20	130	9	17.8	5	16	85	—	26	8	200
MDSC-2020-N	M20×1.5	20	—	9	—	5	—	85	114	26	8	196
MDSC-2030	M20×1.5	30	158	9	17.8	5	16	103	—	26	8	221
MDSC-2050	M20×1.5	50	222.5	9	17.8	5	16	147.5	—	26	8	293

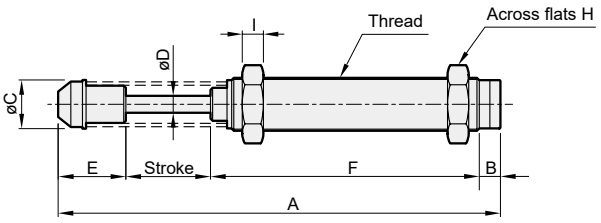
Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDSC-2525-1	25	78	15 ~ 69	3.2	70,200	-10~+70 (No freezing)
MDSC-2525-2	25	78	39 ~ 433	2.0	70,200	-10~+70 (No freezing)
MDSC-2525-3	25	78	108 ~ 1733	1.2	70,200	-10~+70 (No freezing)
MDSC-2540-1	40	122	20 ~ 108	3.5	87,840	-10~+70 (No freezing)
MDSC-2540-2	40	122	50 ~ 381	2.2	87,840	-10~+70 (No freezing)
MDSC-2540-3	40	122	244 ~ 1991	1.0	87,840	-10~+70 (No freezing)
MDSC-2550-1	50	140	20 ~ 124	3.7	100,800	-10~+70 (No freezing)
MDSC-2550-2	50	140	48 ~ 438	2.4	100,800	-10~+70 (No freezing)
MDSC-2550-3	50	140	194 ~ 2286	1.2	100,800	-10~+70 (No freezing)
MDSC-2580-1	80	198	24.7 ~ 99	4	118,800	-10~+70 (No freezing)
MDSC-2580-2	80	198	44 ~ 396	3.0	118,800	-10~+70 (No freezing)
MDSC-2580-3	80	198	176 ~ 1584	1.5	118,800	-10~+70 (No freezing)
MDSC-2725-1	25	78	15 ~ 69	3.2	70,200	-10~+70 (No freezing)
MDSC-2725-2	25	78	39 ~ 433	2.0	70,200	-10~+70 (No freezing)
MDSC-2725-3	25	78	108 ~ 1733	1.2	70,200	-10~+70 (No freezing)
MDSC-3660-1	60	260	57 ~ 231	3.0	124,800	-10~+70 (No freezing)
MDSC-3660-2	60	260	130 ~ 813	2.0	124,800	-10~+70 (No freezing)
MDSC-3660-3	60	260	520 ~ 3250	1.0	124,800	-10~+70 (No freezing)

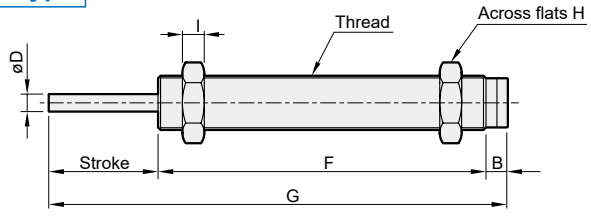
MDSC-2525
MDSC-2550
MDSC-2725



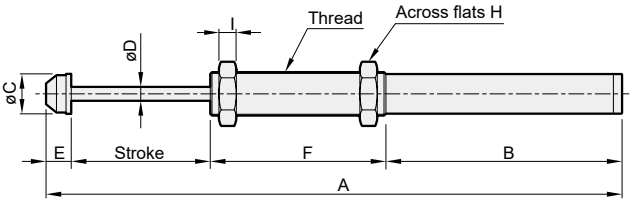
MDSC-2540
MDSC-3660



N type



MDSC-2580

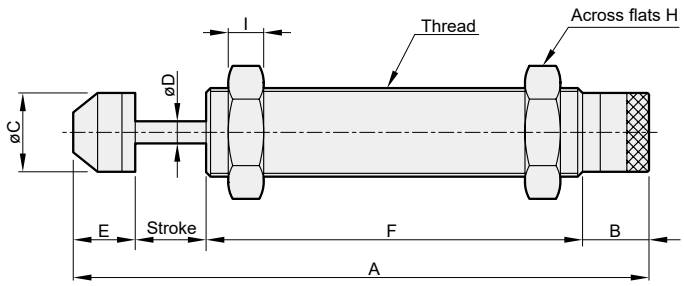


Dimensions

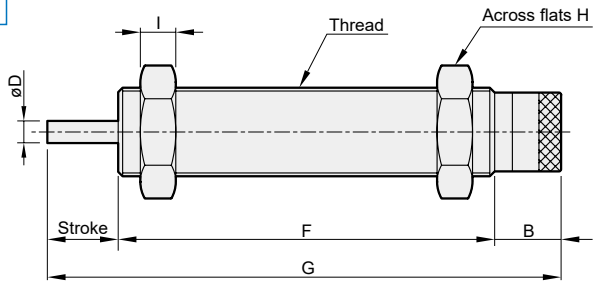
Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDSC-2525	M25×1.5/2.0	25	152.6	10	23	8	16.6	101	—	32	10	341
MDSC-2525-N	M25×1.5/2.0	25	—	10	—	8	—	101	136	32	10	336
MDSC-2540	M25×1.5/2.0	40	211	10	23	8	34	127	—	32	10	430
MDSC-2550	M25×1.5/2.0	50	226.6	10	23	8	16.6	150	—	32	10	430
MDSC-2580	M25×1.5/2.0	80	333.6	137	23	8	16.6	100	—	32	10	578
MDSC-2725	M27×3.0/1.5	25	152.6	10	23	8	14.5	101	—	32	10	335
MDSC-2725-N	M27×3.0/1.5	25	—	10	—	8	—	101	136	32	10	330
MDSC-3660	M36×1.5	60	247	11	36	10	22.5	153.5	—	46	15	1074

Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDFC-1410	10	15	2.9 ~ 120	3.2	27,000	-10~+70 (No freezing)
MDFC-2016	16	28	5.4 ~ 224	3.2	33,600	-10~+70 (No freezing)
MDFC-2020	20	35	6.8 ~ 280	3.2	42,000	-10~+70 (No freezing)
MDFC-2525	25	78	15 ~ 624	3.2	70,200	-10~+70 (No freezing)
MDFC-2550	50	140	27 ~ 1,120	3.2	100,800	-10~+70 (No freezing)
MDFC-2725	25	78	15 ~ 624	3.2	70,200	-10~+70 (No freezing)



N type



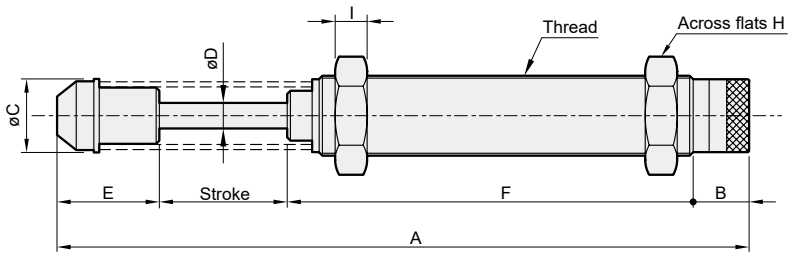
Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	H	I	Weight (g)
MDFC-1410	M14×1.0 / 1.5	10	101.9	11.5	12.2	3.5	13.4	67	19	6	81
MDFC-1410-N	M14×1.0 / 1.5	10	88.5	11.5	–	3.5	–	67	19	6	78
MDFC-2016	M20×1.5	16	132	15	17.8	5	16	85	26	8	218
MDFC-2016-N	M20×1.5	16	116	15	–	5	–	85	26	8	214
MDFC-2020	M20×1.5	20	136	15	17.8	5	16	85	26	8	219
MDFC-2020-N	M20×1.5	20	120	15	–	5	–	85	26	8	215
MDFC-2525	M25×1.5 / 2.0	25	158.1	15.5	23	8	16.6	101	32	10	361
MDFC-2525-N	M25×1.5 / 2.0	25	141.5	15.5	–	8	–	101	32	10	356
MDFC-2550	M25×1.5 / 2.0	50	232.1	15.5	23	8	16.6	150	32	10	470
MDFC-2725	M27×1.5 / 3.0	25	158.1	15.5	23	8	16.6	101	32	6.5	355
MDFC-2725-N	M27×1.5 / 3.0	25	141.5	15.5	–	8	–	101	32	6.5	350

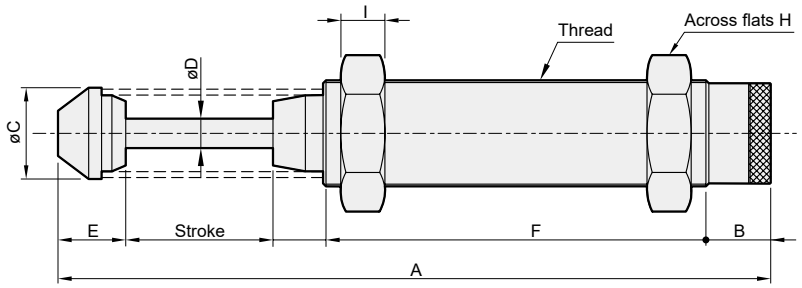
Specification

Model	Stroke (mm)	Max. Nm per cycle (Nm)	Effective max. weight (kg)	Max. impact speed (m/s)	Max. Nm per hour (Nm)	Operating temp. (°C)
MDFC-2540	40	122	23.8 ~ 976	3.2	87,840	-10~+70 (No freezing)
MDFC-3625	25	110	21 ~ 880	3.2	52,800	-10~+70 (No freezing)
MDFC-3650	50	220	43 ~ 1,760	3.2	105,600	-10~+70 (No freezing)

MDFC-2540



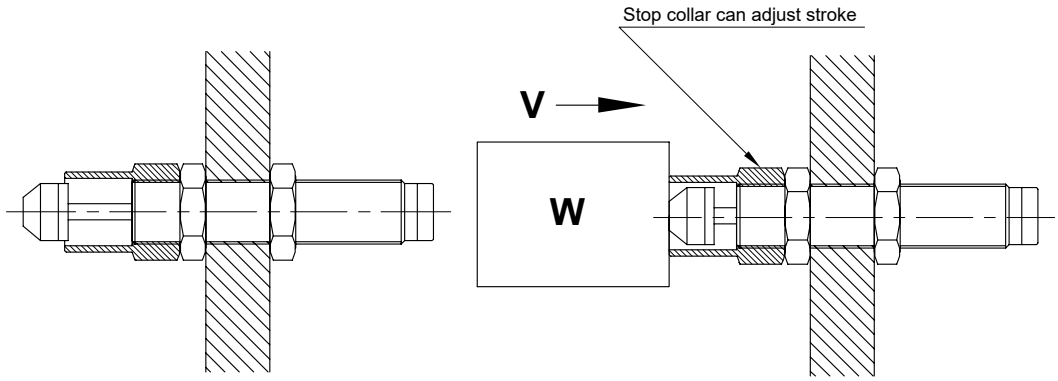
MDFC-3625
MDFC-3650



Dimensions

Model	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I	Weight (g)
MDFC-2540	M25×1.5/2.0	40	216.5	15.5	23	8	34	127	–	32	10	460
MDFC-3625	M36×1.5	25	186	18	36	10	22.5	106.5	14	46	15	974
MDFC-3650	M36×1.5	50	248	18	36	10	22.5	138	19.5	46	15	1144

Installation of stop collar and nut



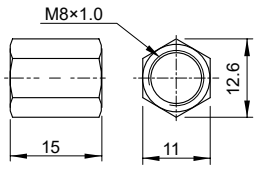
Before Impact

After Impact

Accessories

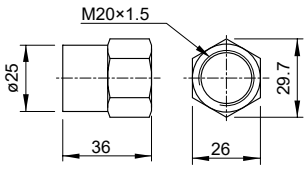
STC-08

Match
MDSC-0806



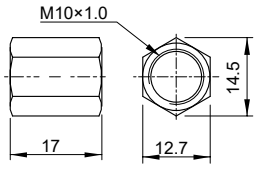
STC-20

Match
MDSC-2020
MDSC-2050
MDFC-2016
MDFC-2020



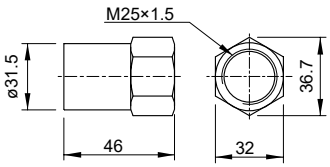
STC-10

Match
MDSC-1008



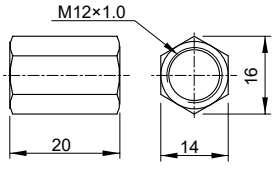
STC-25

Match
MDSC-2525
MDFC-2525



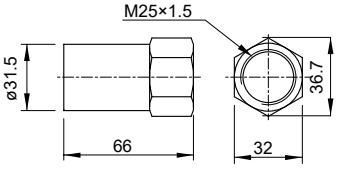
STC-12

Match
MDSC-1210



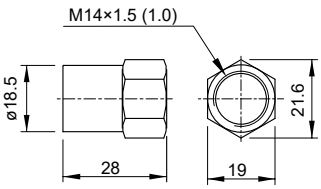
STC-25L

Match
MDSC-2540
MDSC-2550
MDSC-2580
MDFC-2540
MDFC-2550



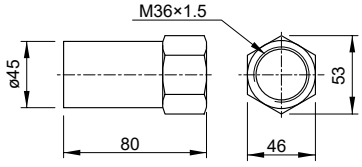
STC-14

Match
MDSC-1412
MDSC-1415
MDFC-1410



STC-36

Match
MDSC-3660
MDFC-3625
MDFC-3650



Four parameters are required to precisely determine the dimension of shock absorbers

- Mass to be decelerated m (kg)
- Impact velocity v (m/s)
- Propelling or driving force F (N)
- Number of impact cycles per hour C (/hr)

Some useful calculation formulas

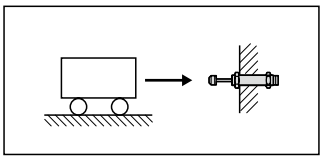
- Kinetic energy: $E_K = mv^2/2$
- Drive energy: $E_D = F \times S$
- Free fall velocity: $v = \sqrt{2g \times h}$
- Pneumatic or hydraulic cylinder driving forces.
  $F = 0.00785\ Pd^2$
- Maximum shock force (approximate).
  $Fm = 1.2\ E_T/S$
- Propelling force generated by electric motors.
  $F = 3000\ kW/v$
- Total energy absorbed per hour.
  $E_{TC} = E_T \times C$

Symbols	Unit	Description
μ		Coefficient of friction
α	(rad)	Angle of incline
θ	(rad)	Side load angle
ω	(rad/s)	Angular velocity
A	(m)	Width
B	(m)	Thickness
C	(/hr)	Impact cycles per hour
d	(mm)	Cylinder bore diameter
E_D	(Nm)	Drive energy per cycle
E_K	(Nm)	Kinetic energy per cycle
E_T	(Nm)	Total energy per cycle
E_{TC}	(Nm)	Total energy per hour
F	(N)	Propelling force
F_m	(N)	Maximum shock force
g	(m/s^2)	Acceleration due to gravity (9.81 m/s)
h	(m)	Height
HM		Arresting torque factor for motors (normally 2.5)
kW	(kW)	Electric motor power
m	(kg)	Mass to be decelerated
M_e	(kg)	Effective mass
P	(bar)	Operation pressure
R	(m)	Radius
R_s	(m)	Shock absorber mounting distance from rotation center
S	(m)	Stroke
T	(Nm)	Driving torque
t	(s)	Deceleration time
v	(m/s)	Velocity of impact mass
v_s	(m/s)	Impact velocity at shock absorber

Example 1. Horizontal impact

Application data

m = 300 kg
v = 1.0 m/s
S = 0.05 m
C = 300 /hr



Formulas and calculation

$$E_K = \frac{mv^2}{2} = \frac{300 \times 1.0^2}{2} = 150\ Nm$$

$$E_T = E_K = 150\ Nm$$

$$E_{TC} = E_T \times C = 150 \times 300 = 45000\ Nm/hr$$

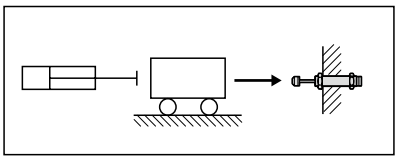
$$M_e = \frac{2E_T}{V^2} = \frac{2 \times 150}{1.0^2} = 300\ kg$$

Choose from calculation: MDFC-3650 is adequate.

Example 2. Horizontal impact with propelling force

Application data

m = 50 kg
v = 1.0 m/s
S = 0.04 m
F = 1000 N
C = 500 /hr



Formulas and calculation

$$E_K = \frac{mv^2}{2} = \frac{50 \times 1.0^2}{2} = 25\ Nm$$

$$E_D = F \times S = 1000 \times 0.04 = 40\ Nm$$

$$E_T = E_K + E_D = 25+40 = 65\ Nm$$

$$E_{TC} = E_T \times C = 65 \times 500 = 32500\ Nm/hr$$

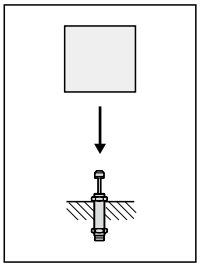
$$M_e = \frac{2E_T}{V^2} = \frac{2 \times 65}{1.0^2} = 130\ kg$$

Choose from calculation: MDFC-2540 is adequate.

Example 3. Free fall impact

Application data

m = 30 kg
h = 0.5 m
S = 0.08 m
C = 300 /hr



Formulas and calculation

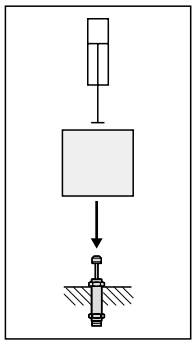
v	$= \sqrt{2g \times h}$	$= \sqrt{2 \times 9.81 \times 0.5}$		$= 3.1$ m/sec
E_K	$= mg \times h$	$= 30 \times 9.81 \times 0.5$		$= 147$ Nm
E_D	$= mg \times s$	$= \frac{30 \times 9.81 \times}{0.08}$		$= 23.5$ Nm
E_T	$= E_K + E_D$	$= 147 + 23.5$		$= 170.5$ Nm
E_{TC}	$= E_T \times C$	$= 170.5 \times 300$		$= 51150$ Nm/hr
M_e	$= \frac{2E_T}{V^2}$	$= \frac{2 \times 170.5}{3.1^2}$		$= 35.5$ kg

Choose from calculation: MDSC-2580-1 is adequate.

Example 4. Free fall impact with propelling

Application data

m = 40 kg
h = 0.3 m
S = 0.025 m
P = 5 bar
d = 50 mm
C = 200 /hr
v = 1.0 m/sec



Formulas and calculation

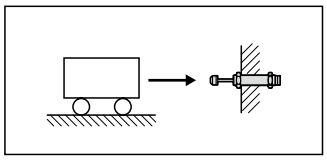
E_K	$= \frac{mv^2}{2}$	$= \frac{40 \times 1.0^2}{2}$		$= 20$ Nm
E_D	$= F \times S$	$= (mg + 0.0785Pd^2) \times S$		
	$= (40 \times 9.81 + 0.0785 \times 5 \times 50^2) \times 0.025$			$= 34.3$ Nm
E_T	$= E_K + E_D$	$= 20 + 34.3$		$= 54.3$ Nm
E_{TC}	$= E_T \times C$	$= 54.3 \times 200$		$= 10860$ Nm/hr
M_e	$= \frac{2E_T}{V^2}$	$= \frac{2 \times 54.3}{1.0^2}$		$= 108.6$ kg

Choose from calculation: MDFC-2525 is adequate.

Example 5. Horizontal impact with motor driving

Application data

m = 50 kg
v = 1.5 m/s
W = 2 kW
HM = 2.5
S = 0.06 m
C = 100 /hr



$\frac{300 \times 1.0^2}{2}$

Formulas and calculation

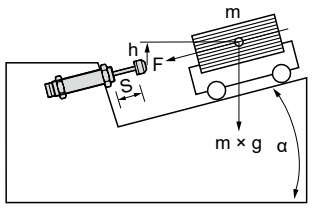
E_K	$= \frac{mv^2}{2}$	$= \frac{300 \times 1.0^2}{2}$		$= 150$ Nm
E_D	$= F \times S$	$= \frac{kW \times HM}{v} \times S$	$= \frac{2000 \times 2.5}{1.5} \times 0.06$	$= 200$ Nm
E_T	$= E_K + E_D$	$= 56.25 + 200$		$= 256.25$ Nm
E_{TC}	$= E_T \times C$	$= 256.25 \times 100$		$= 25625$ Nm/hr
M_e	$= \frac{2E_T}{V^2}$	$= \frac{2 \times 256.25}{1.5^2}$		$= 227$ kg

Choose from calculation: MDSC-3660-2 is adequate.

Example 6. Inclined impact

Application data

m = 30 kg
h = 0.25 m
S = 0.04 m
α = 30°
C = 250 /hr



Formulas and calculation

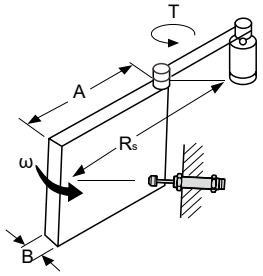
v	$= \sqrt{2g \times h}$	$= \sqrt{2 \times 9.81 \times 0.5}$		$= 2.2$ m/sec
E_K	$= \frac{mv^2}{2}$	$= \frac{30 \times 2.2^2}{2}$		$= 72.6$ Nm
E_D	$= F \times S$	$= m \times g \times S \times \sin\alpha$		
	$= 30 \times 9.81 \times 0.04 \times \sin 30° = 5.9$ Nm			
E_T	$= E_K + E_D$	$= 72.6 + 5.9$		$= 78.5$ Nm
E_{TC}	$= E_T \times C$	$= 78.5 \times 250$		$= 19625$ Nm/hr
M_e	$= \frac{2E_T}{V^2}$	$= \frac{2 \times 78.5}{2.2^2}$		$= 32$ kg

Choose from calculation: MDSC-2540-1 is adequate.

Example 7. Horizontal rotating door

Application data

m = 20 kg
ω = 2.0 rad/s
T = 20 Nm
R_S= 0.8 m
A = 1.0 m
B = 0.05 m
S = 0.016 m
C = 100 /hr



Formulas and calculation

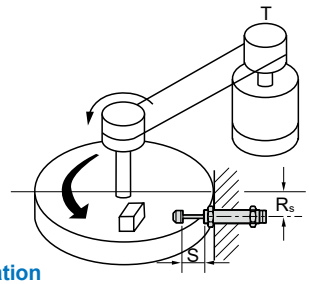
I	=	$\frac{m(4A^2+B^2)}{12}$	=	$\frac{20(4 \times 1.0^2+0.05^2)}{12}$	=	6.67 kg•m²
E_K	=	$\frac{I\omega^2}{2}$	=	$\frac{6.67 \times 2.0^2}{2}$	=	13.34 Nm
θ	=	$\frac{s}{R_S}$	=	$\frac{0.04}{0.8}$	=	0.05 rad
E_D	=	T × θ	=	20 × 0.05	=	1.0 Nm
E_T	=	E_K+E_D	=	13.34+1.0	=	14.34 Nm
E_{TC}	=	E_T × C	=	14.34 × 100	=	1434 Nm/hr
v	=	ω × R_S	=	2.0 × 0.8	=	1.6 m/s
M_e	=	$\frac{2E_T}{V^2}$	=	$\frac{2 \times 14.34}{1.6^2}$	=	11.20 kg

Choose from calculation: MDFC-2016 is adequate.

Example 8. Rotary index table with propelling force

Application data

m = 200 kg
ω = 1.0 rad/s
T = 100 Nm
R = 0.5 m
R_S= 0.4 m
S = 0.04 m
C = 100 /hr



Formulas and calculation

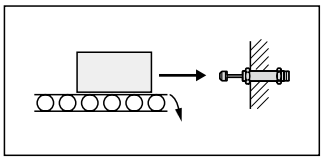
I	=	$\frac{mR^2}{2}$	=	$\frac{200 \times 0.5^2}{2}$	=	25 kg•m²
E_K	=	$\frac{I\omega^2}{2}$	=	$\frac{25 \times 1.0^2}{2}$	=	12.5 Nm
θ	=	$\frac{s}{R_S}$	=	$\frac{0.04}{0.4}$	=	0.1 rad
E_D	=	T × θ	=	100 × 0.1	=	10 Nm
E_T	=	E_K+E_D	=	12.5+10	=	22.5 Nm
E_{TC}	=	E_T × C	=	22.5 × 50	=	1125 Nm/hr
v	=	ω × R_S	=	1.0 × 0.4	=	0.4 m/s
M_e	=	$\frac{2E_T}{V^2}$	=	$\frac{2 \times 22.5}{0.4^2}$	=	281 kg

Choose from calculation: MDFC-2540 is adequate.

Example 9. Horizontal mass on driven rollers

Application data

m = 150 kg
v = 0.5 m/s
μ = 0.25
S = 0.02 m
C = 120 /hr



Formulas and calculation

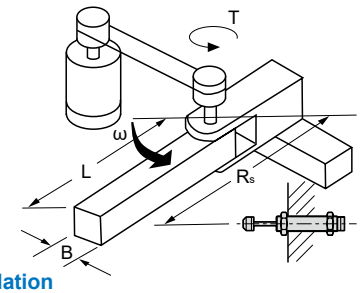
E_K	=	$\frac{mv^2}{2}$	=	$\frac{150 \times 0.5^2}{2}$	=	18.75 Nm
E_D	=	F × S = mgμ × S = 150 × 9.81 × 0.25 × 0.02 = 7.35 Nm				
E_T	=	E_K+E_D =		18.73+7.35	=	26.1 Nm
E_{TC}	=	E_T × C =		26.1 × 120	=	3132 Nm/hr
M_e	=	$\frac{2E_T}{V^2}$	=	$\frac{2 \times 26.1}{0.5^2}$	=	208.8 kg

Choose from calculation: MDSC-2020-3 is adequate.

Example 10. Rotating beam with driving force

Application data

m = 40 kg
A = 0.5 m
B = 0.05 m
ω = 2.0 rad/s
T = 10 Nm
R_S= 0.4 m
S = 0.05 m
C = 50 /hr



Formulas and calculation

I	=	$\frac{m(4A^2+B^2)}{12}$	=	$\frac{40(4 \times 0.5^2+0.05^2)}{12}$	=	3.34 kg•m²
E_K	=	$\frac{I\omega^2}{2}$	=	$\frac{3.34 \times 2.0^2}{2}$	=	6.7 Nm
θ	=	$\frac{s}{R_S}$	=	$\frac{0.05}{0.4}$	=	0.125 rad
E_D	=	T × θ	=	10 × 0.125	=	1.25 Nm
E_T	=	E_K+E_D	=	6.7+1.25	=	8 Nm
E_{TC}	=	E_T × C	=	8 × 50	=	400 Nm/hr
v	=	ω × R_S	=	2.0 × 0.4	=	0.8 m/s
M_e	=	$\frac{2E_T}{V^2}$	=	$\frac{2 \times 8}{0.8^2}$	=	25 kg

Choose from calculation: MDSC-2050-1 is adequate.

MHR series

HYDRAULIC SPEED CONTROLLER



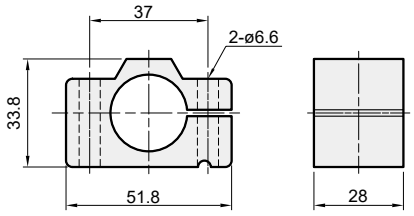
Features

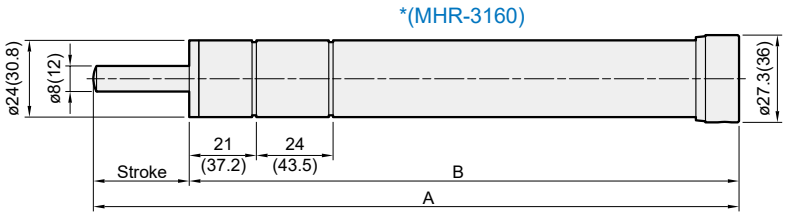
- Used extensively for providing smooth consistent feed speed on machine tools.
- Construction incorporates double seal enabling unit to be used in dirty and dusty environments.
- Fully adjustable speeds can be quickly and simply selected.
- Compact size, ideal for use on robots, drills, conveyors, cut off machines and woodworking equipment.
- Can be used in conjunction with Pneumatic air cylinder in order to provide consistent movement.

Specification

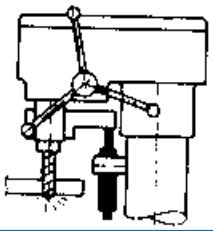
Order no.	Max. stroke (mm)	A	B	Operating temperature (°C)	Max. load (kgf)	Weight (g)
MHR-15	15	152	137	0-60	15~350	470
MHR-30	30	202	172	0-60	15~350	495
MHR-60	60	282.5	222.5	0-60	15~350	615
MHR-80	80	350	270	0-60	15~350	690
MHR-100	100	396	296	0-60	15~350	765
MHR-3160	60	331	271	0-60	30~420	1000

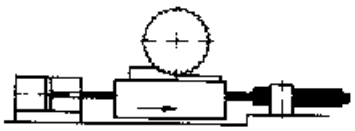
Dimensions



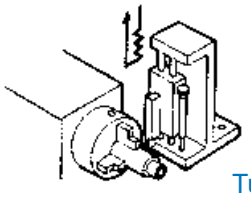


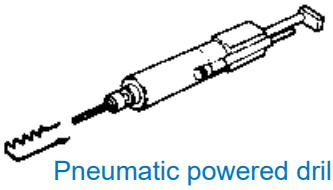
Application example

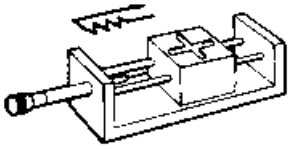

Drilling


Disk sawing


Horizontal drilling


Turning


Pneumatic powered drilling


Linear motion slide

MJC series

JET COOLER

User manual

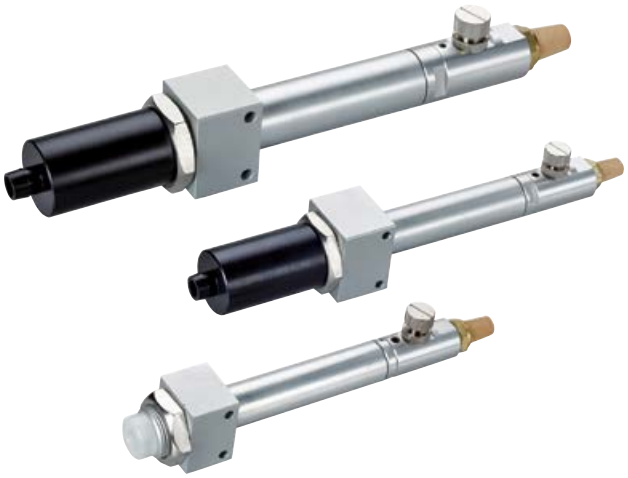
1 Compressed air supply only

2 No electricity

3 Long life

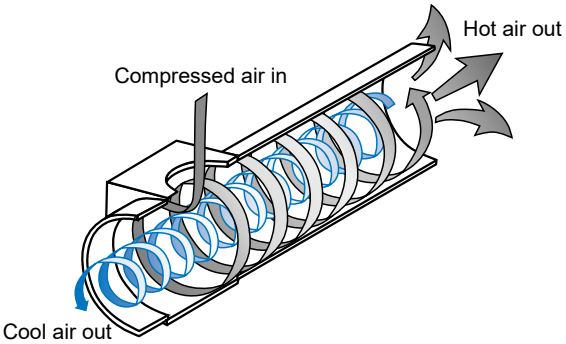
4 User friendly

5 Two models



Features

- Jet out cooler air maximum 60°C(max. temp. drop) lower than the inlet air only by supplying compressed air.
- Uses the theory of vortex, no moving parts are used in the construction, hence long life sustainability.
- Does not require coolant or an electrical source, utilises the high speed flow of compressed air for generating cool air from hot air. Ideal for applications where rapid cooling is required, (ie) Spot Welding.
- Can produce consistent supply of cool air even when the supply in is 40 Degrees C. By changing air consumption you can simply change the cooling temperature.



Order example

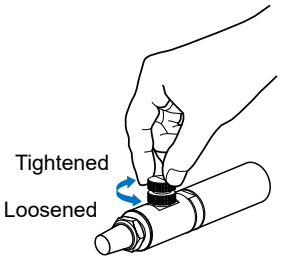
MJC — 150K — S — □

MODEL	ACCESSORY	PORT THREAD
MJC-150K **MJC-300K** **MJC-450K** **MJC-600K**	Blank: Standard type **S**: Silencer Decrease 8-12dB (Based on the flow rate)	Blank: Rc thread **G**: G thread **NPT**: NPT thread

Cool air adjustment

Temperature drop 60°C

- Rapid temperature drop.
- Panel mounting option available.
- Can be fitted with silencer on cold side, thus reducing noise.
- Can be piped on the hot side.



Adj. screw(up)
Adj. nut (down)

* When the adj. screw has set, lock the adj. nut.

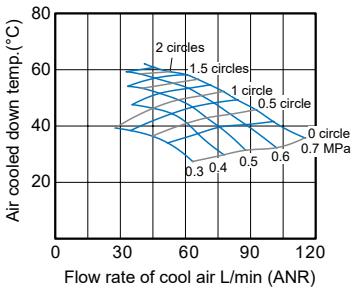
Specification

Model	Working pressure (MPa)	Max. temp. drop (°C)	Cool air out port	Weight (kg)
MJC-150K	0.3~0.7	60	Rc1/8	0.25
MJC-300K	0.3~0.7	60	Rc1/4	0.30
MJC-450K	0.3~0.7	60	Rc3/8	0.60
MJC-600K	0.3~0.7	60	Rc3/8	0.60

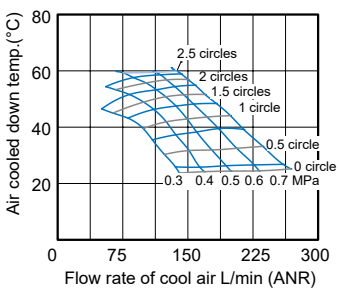
*The max. temp. drop is the difference in temp. between the input and the output.

Temperature drop of cool air

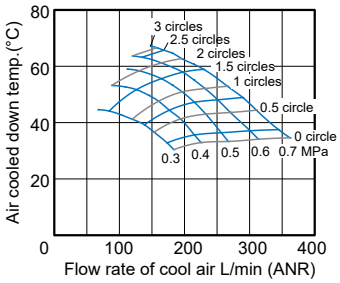
MJC-150K



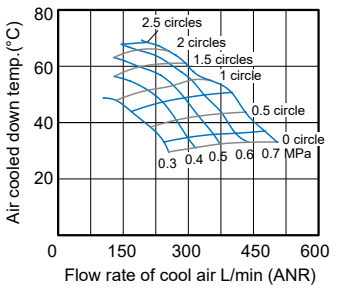
MJC-300K



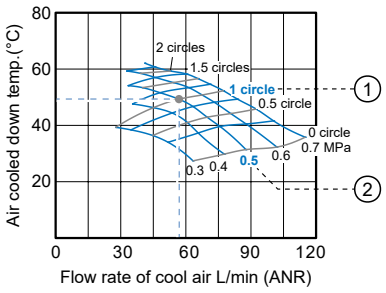
MJC-450K



MJC-600K



Graph description (MJC-150K)



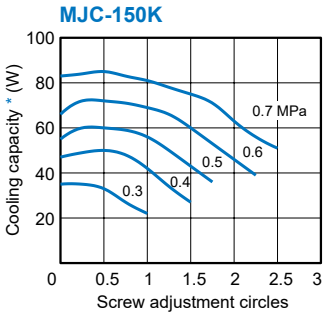
Cold air flow rate & temperature drop

1. One time of rotating the adjust screw from tightening condition.
2. Temperature drop is around 48°C under the condition of air pressure = 0.5 MPa and cold air flow rate = 58 L/min(ANR)

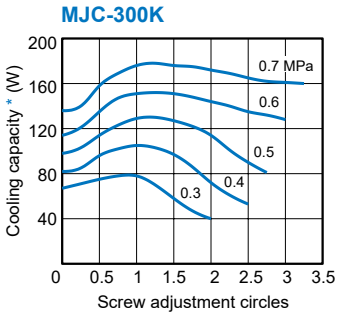
Cooling capacity

* The heat quantity which is able to be absorbed (cooling).

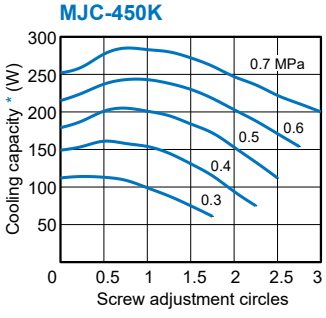
MJC-150K



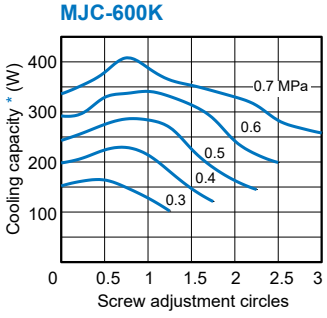
MJC-300K



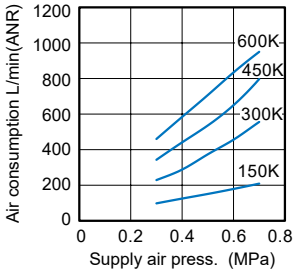
MJC-450K



MJC-600K

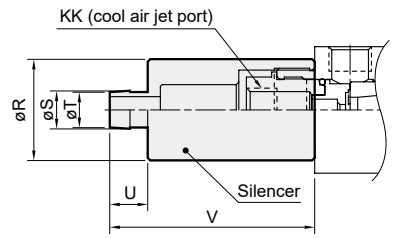


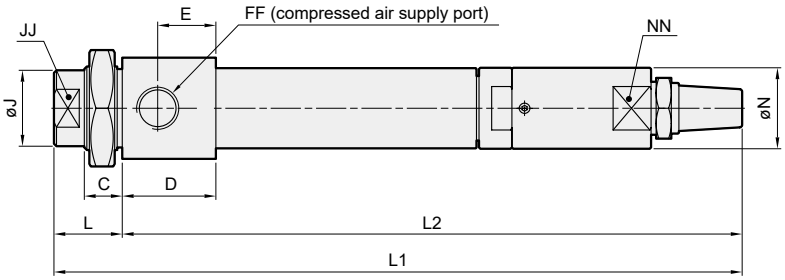
Air consumption

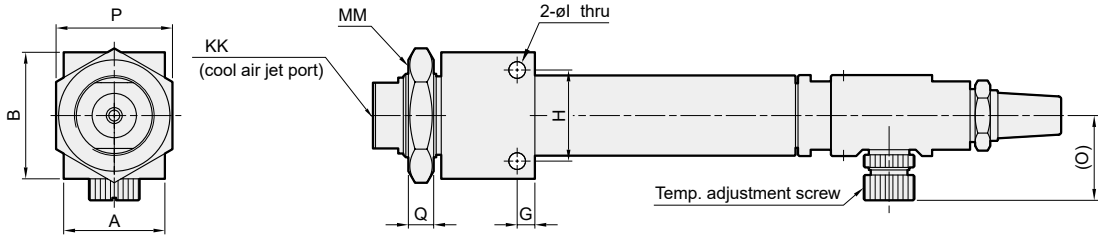


MJC-*K

Silencer (option)



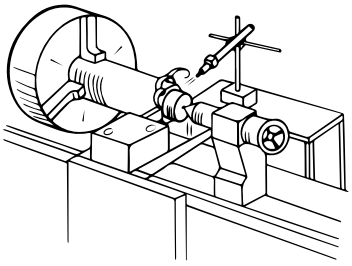




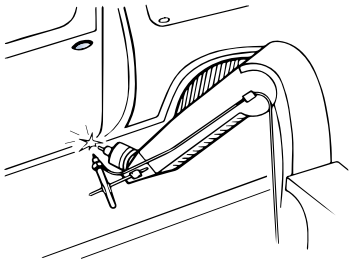
Code / Model	A	B	C	D	E	FF	G	H	I	J	JJ	KK	L	L1	L2	MM	N	NN	O	P	Q	R	S	T	U	V
150K	30	35	13	24	15	Rc1/8	5	24	4.5	20	17	Rc1/8	21	198	177	M24×1.5	20	18	22	32	7	30	11	10	10	60
300K	35	40	15	28	17	Rc1/4	5	30	4.5	22	19	Rc1/4	23	204	181	M27×1.5	22	19	22	36	7	32	13	12	10	63
450K / 600K	40	50	15	37	23	Rc3/8	7	36	6.6	30	26	Rc3/8	27	272	245	M33×1.5	32	27	31	46	10	40	15	14	15	81

Application

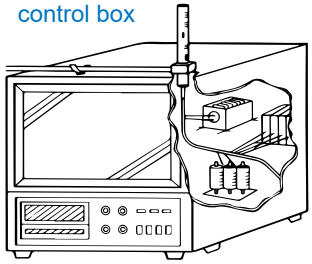
■ Plastic machining cool



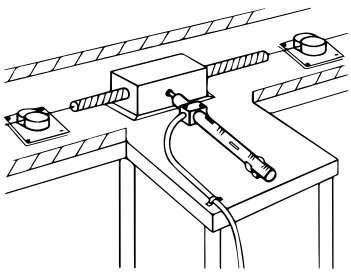
■ Spot welding cool



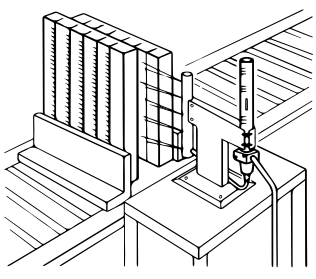
■ Monitoring camera case cool and dust-proof inside control box



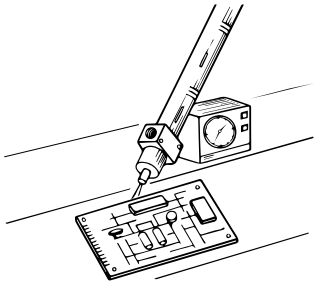
■ Wire cut harden



■ Adherent quick cool



■ Welding quick cool



⚠ • Please use filter and pressure regulator when piping.
• To prevent freezing at low temperatures, please use it with an air dryer.



Specification

Model	MSR
Medium	Air
Operating pressure range	0~0.9 MPa
Ambient temperature	0~+60°C

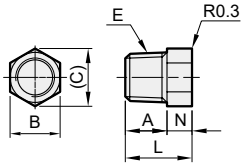
Order example

MSR 01 W – S

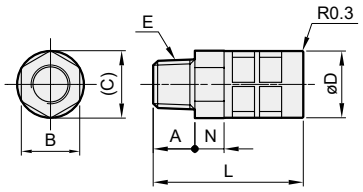
- MODEL
- **01**: R1/8, **02**: R1/4, **03**: R3/8
- Blank: Black, **W**: White
- **S**: S type, **B**: B type

Dimensions

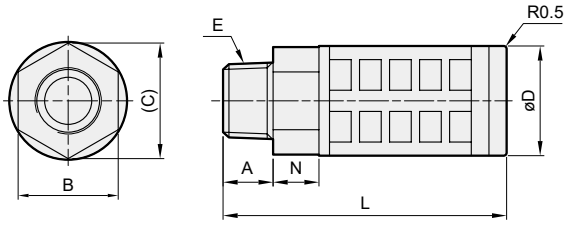
MSR01-S



MSR02-S



MSR*-B



Model	Code / Port size	A	B	C	D	E	L	N
MSR01-S	R1/8	10	10	11.5	—	R1/8	16	6
MSR01-B	R1/8	7	14	16.2	16	R1/8	33	7
MSR02-S	R1/4	10	14	16.2	16	R1/4	36	7
MSR02-B	R1/4	10	17	19.6	20.3	R1/4	63	8.5
MSR03-B	R3/8	12	24	26.2	26.3	R3/8	67.5	11



Features

- Porous polyethylene moulded body allows high flow with low noise.
- Wide range of connecting threads available to screw into exhaust port of control valve.
- High noise reduction.

■ Significant noise reduction & high air flow

With double layer design, significant noise reduction and high air flow can be achieved at the same time.

■ Easy installation

With different adapter, silencers screw directly to the exhaust port.

■ High working pressures

Working pressures up to 1 MPa.

■ Chemical resistance

High chemical resistance & Rust free.

■ Maintenance free

Oil and water are not able to affect polyethylene silencers.

Order example

MSLE — 01— 70

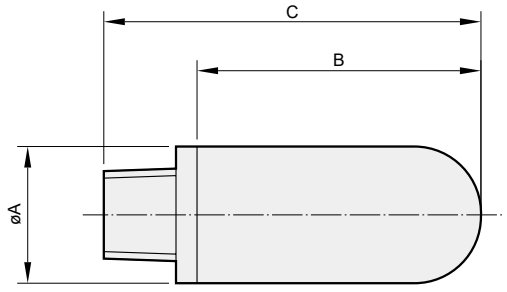
MODEL

PORT SIZE
01: R1/8
02: R1/4
03: R3/8
04: R1/2
06: R3/4
06D: R3/4 (Double layer)
08: R1

PORE SIZE
70: 70*μ*

Specification

Model	MSLE
Medium	Air
Operating pressure	1 MPa
Ambient temperature	0~+60°C



Dimensions

Model	Code / Port size	A	B	C
MSLE-01	R1/8	15.6	27.3	37.3
MSLE-02	R1/4	19	30.5	43.3
MSLE-03	R3/8	25	53	69
MSLE-04	R1/2	25	62.5	78.5
MSLE-06	R3/4	38	108.4	132.4
MSLE-06D	R3/4	50	107	127
MSLE-08	R1	50	107	139

- MSLE-04-70 means a R1/2 silencer with 70*μ* porous body.
- MSLE-06D-70 means a R3/4 double layer silencer with 70*μ* porous body.
- Port size out of specification is also available.



Order example

MSL — B — M5

- MSL — MODEL
- B — **S**: S type, **B**: B type
- M5 — PORT SIZE

Dimensions

MSL-B

Model	A	CH	D1	D2	F	H	L	N
MSL-B-M5	M5	8	5	4	5	19	12	3
MSL-B-01	R1/8	12	8	7	6	24	14	4
MSL-B-02	R1/4	16	12	10	8	30	18	4
MSL-B-03	R3/8	18	14	11	9	35	21	5
MSL-B-04	R1/2	24	19	15	10	44	28	6
MSL-B-06	R3/4	30	25	20	10	50	32	8
MSL-B-08	R1	36	30	25	12	62	43	8

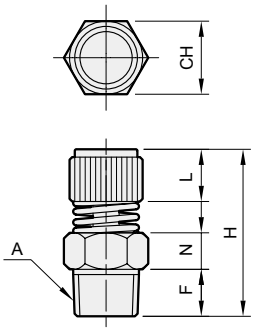
MSL-S

Model	A	CH	F	L	N
MSL-S-M5	M5	8	5	9.5	3
MSL-S-01	R1/8	12	6	12	4
MSL-S-02	R1/4	17	8	15	4
MSL-S-03	R3/8	19	9	17	5
MSL-S-04	R1/2	24	10	18.5	6
MSL-S-06	R3/4	30	10	21	8
MSL-S-08	R1	36	12	23	8

MSLC2-*

Silencer throttle valve

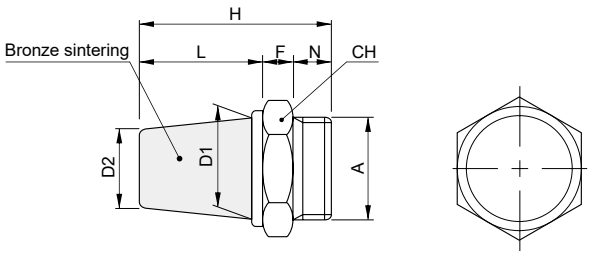




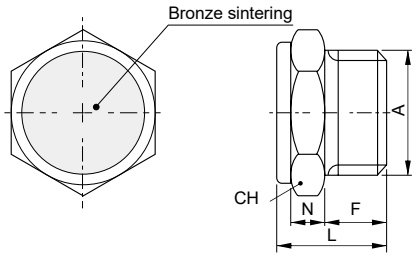
Operating pressure range: 0.1~0.7 MPa
Proof pressure: 1.5 MPa

Model	A	CH	F	H		L	N
				Min.	Max.		
MSLC2-01	R1/8	12	6	28	30	9	7
MSLC2-02	R1/4	14	9	31	35	10	7
MSLC2-03	R3/8	19	10	35.5	39	10	10
MSLC2-04	R1/2	22	10	36.5	40	10	10

MSL-B



MSL-S





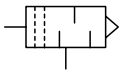
Features

The MEF300 can remove oil mist and dust in exhaust air for keeping environment clean.

Specification

Model	MEF300
Port size	Rc3/8
Medium	Air
Operating pressure range	0~0.9 MPa
Filter element	6 μm
Ambient temperature	0~+60°C

Symbol

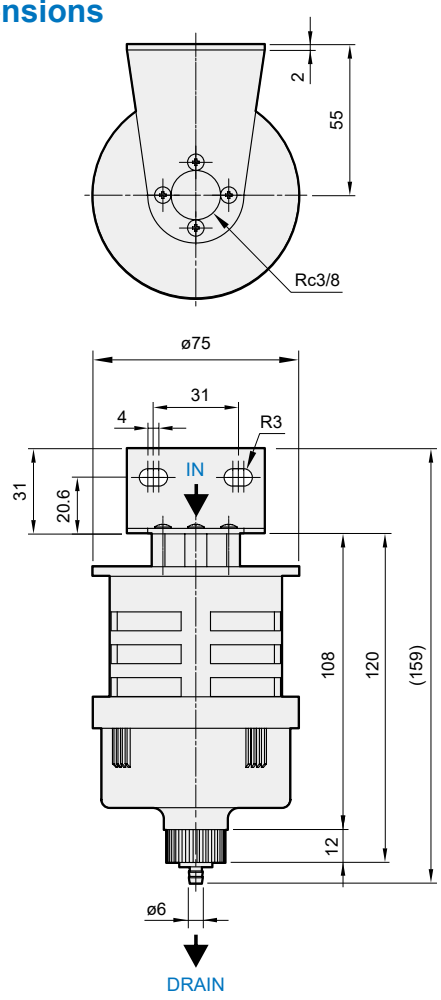


Order example

MEF300 — 03

- MODEL
- **03**: Rc3/8

Dimensions



MEMO

NOTE