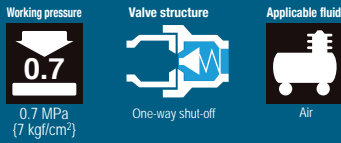


For Multi-Port Connection (Manual)

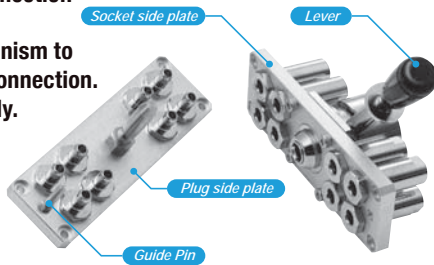
MULTI CUPLA MAM Type

Multiple air port system



**Simultaneously connects several ports securely in one operation!
Greatly cuts cycle time in multiple ports replacement.**

- Handles several ports at once.
- Simple action with lever enables easy connection/disconnection manually.
- Comes with lock mechanism to prevent accidental disconnection.
- Valve on socket side only.



Specifications

Body material	CUPLA : Brass (Chrome plated) Plate : Aluminum alloy (4, 8, 12 ports) / Plate : Steel (16 ports) Locking unit : Steel and others			
Size (Thread)	Rc 1/8			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	0.7	7	7	102
Seal material	Seal material	Mark	Working temperature range	
Working temperature range *1	Nitrile rubber	NBR	-20°C to +60°C	

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Nm {kgf·cm}

Torque	5 {51}
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Interchangeability

No connection is possible between plates with different number of ports.

Minimum Cross-Sectional Area

(mm²)

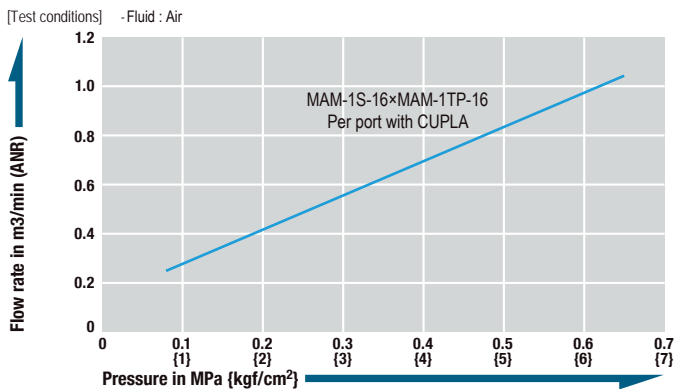
Per port	15.9
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Suitability for Vacuum

Not suitable for vacuum application in either connected or disconnected condition.

Pressure - Flow Characteristics

Per port with CUPLA



Models and Dimensions

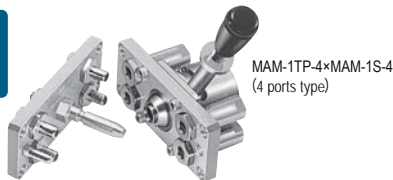
WAF : WAF stands for width across flats.

Model MAM-1TP-4xMAM-1S-4 (4 ports type)

Application (Thread): R 1/8 Mass: 150 g (Plug), 500 g (Socket)

Plate with CUPLA MAM Type

4
Ports

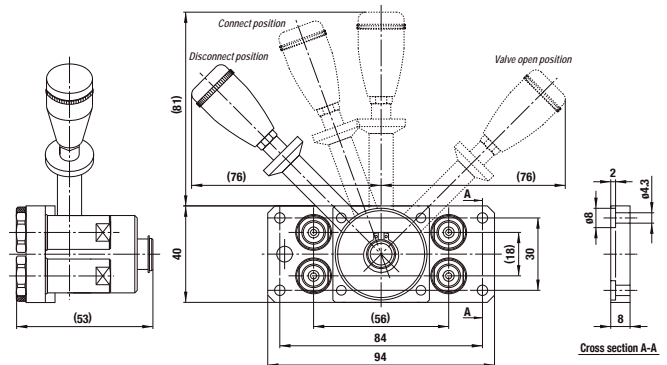
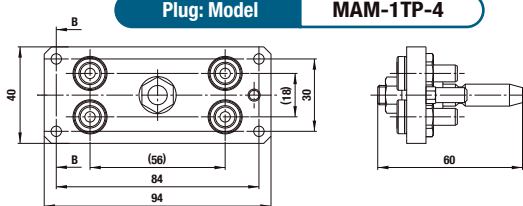
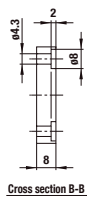


Plug: Model MAM-1TP-4

Socket: Model

MAM-1S-4

Dimensions (mm)

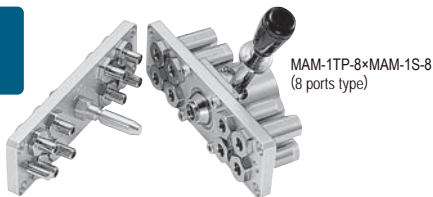


Model MAM-1TP-8xMAM-1S-8 (8 ports type)

Application (Thread): R 1/8 Mass: 250 g (Plug), 650 g (Socket)

Plate with CUPLA MAM Type

8
Ports

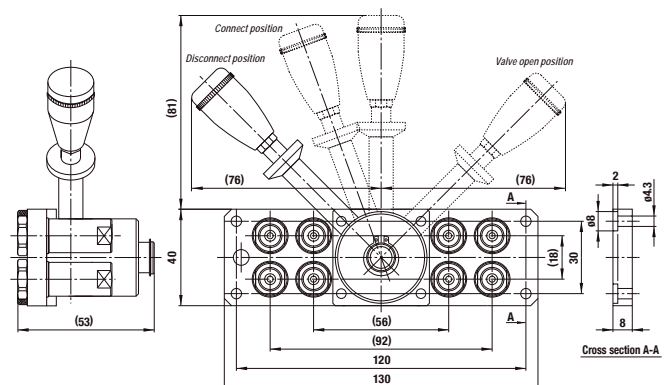
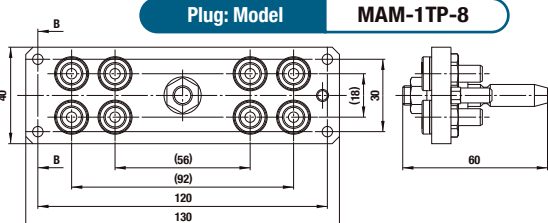
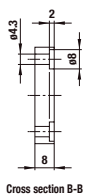


Plug: Model MAM-1TP-8

Socket: Model

MAM-1S-8

Dimensions (mm)



Models and Dimensions

Model MAM-1TP-12×MAM-1S-12 (12 ports type)

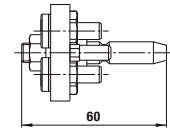
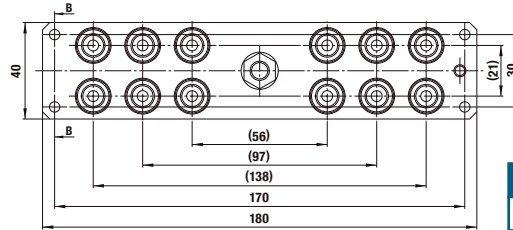
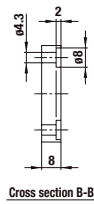
Application (Thread): R 1/8

Mass: 350 g (Plug), 800 g (Socket)

Dimensions (mm)

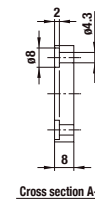
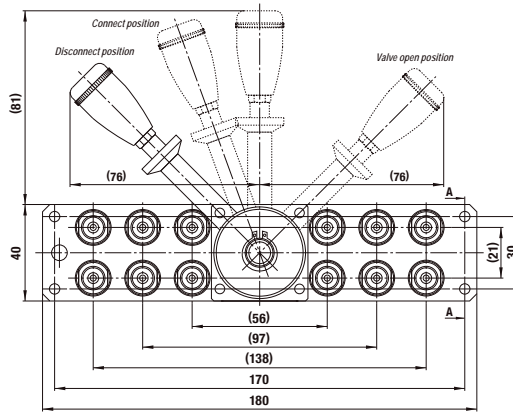
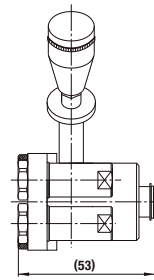
Plate with CUPLA
MAM Type

12
Ports



Plug: Model
MAM-1TP-12

Socket: Model
MAM-1S-12



Model MAM-1TP-16×MAM-1S-16 (16 ports type)

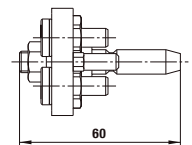
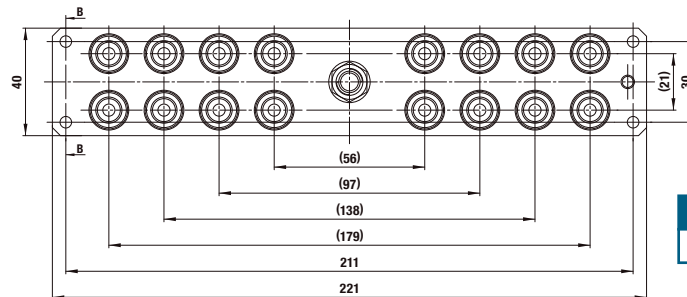
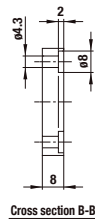
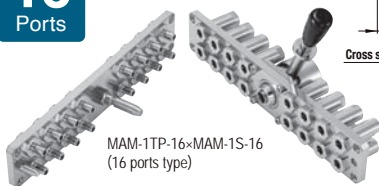
Application (Thread): R 1/8

Mass: 680 g (Plug), 1180 g (Socket)

Dimensions (mm)

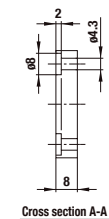
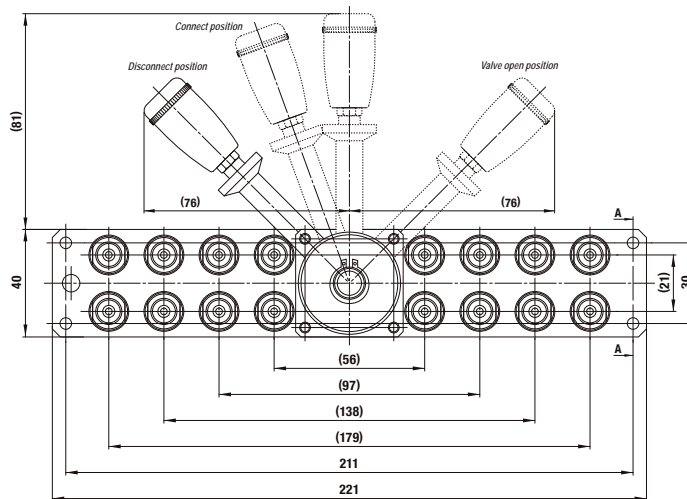
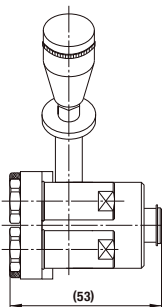
Plate with CUPLA
MAM Type

16
Ports



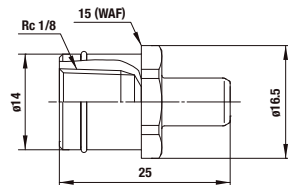
Plug: Model
MAM-1TP-16

Socket: Model
MAM-1S-16



Plug Model MAS-1TP (Individual CUPLA)

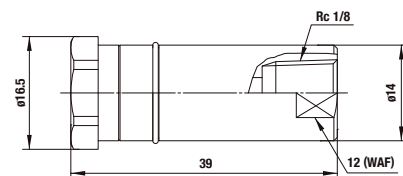
- Application (Thread): R 1/8 Mass: 17 g
- Can be mounted on model MAM-1TP-4/MAM-1TP-8/MAM-1TP-12/MAM-1TP-16.



Dimensions (mm)

Socket Model MAS-1S (Individual CUPLA)

- Application (Thread): R 1/8 Mass: 33 g
- Can be mounted on model MAM-1S-4/MAM-1S-8/MAM-1S-12/MAM-1S-16.



Dimensions (mm)

For Multi-Port Connection (Manual)

MULTI CUPLA MAM-B Type

Multiple port system

Working pressure



1.0 MPa
(10 kgf/cm²)

Valve structure



Two-way shut-off

Applicable fluids



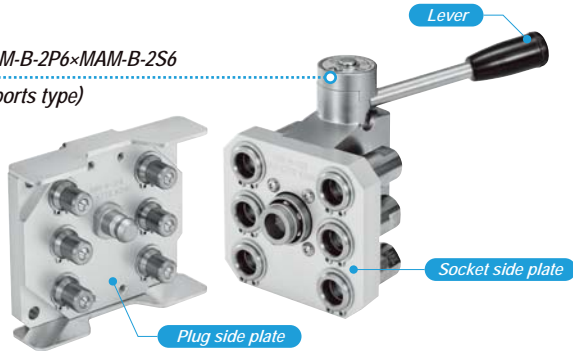
Air

Water

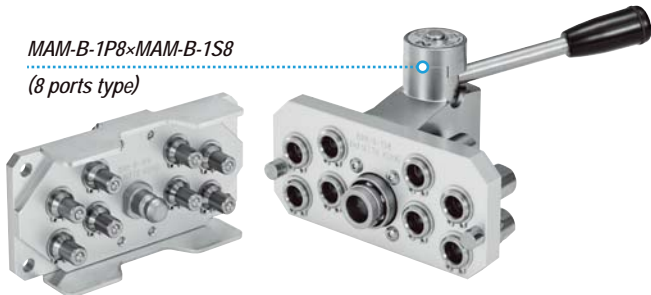
Simultaneously connects several ports securely in one operation. Greatly reduces changeover time in multiple ports replacement.

- Handles several ports at once.
- Simple manual lever action completes easy connection/disconnection.
- Two-stage lever operation prevents CUPLA from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP CUPLA Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.

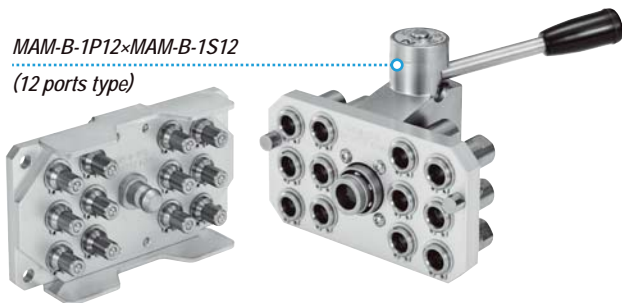
MAM-B-2P6×MAM-B-2S6
(6 ports type)



MAM-B-1P8×MAM-B-1S8
(8 ports type)



MAM-B-1P12×MAM-B-1S12
(12 ports type)



Specifications

Model	Plug	MAM-B-1P8	MAM-B-1P12	MAM-B-2P6	MAM-B-2P8
	Socket	MAM-B-1S8	MAM-B-1S12	MAM-B-2S6	MAM-B-2S8
Number of ports		8	12	6	8
Size (Thread)		1/8"		1/4"	
Body material		CUPLA: Brass (Nickel plated) Plate: Aluminum alloy Locking unit: Steel (Nickel plated)			
Pressure unit		MPa	kgf/cm ²	bar	PSI
Working pressure		1.0	10	10	145
Ambient temperature range		0°C to +60°C			
Seal material	Sealing material	Mark	Working temperature range	Remarks	
Working temperature range ^{*1}	Fluoro rubber	FKM	-20°C to +180°C	Standard material	

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Nm {kgf·cm}

Size (Thread)	1/8"	1/4"
Torque	5 {51}	9 {92}

Interchangeability

No connection is possible between plates with different number of ports or different size.

Minimum Cross-Sectional Area per Port

(mm²)

Model	1SP type	2SP type
Minimum cross-sectional area	14	26

Suitability for Vacuum

1.3×10⁻¹ Pa {1×10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection per Port

May vary depending upon the usage conditions.

(mL)

Model	1SP type	2SP type
Volume of air	0.6	1.1

Volume of Spillage on Disconnection per Port

May vary depending upon the usage conditions.

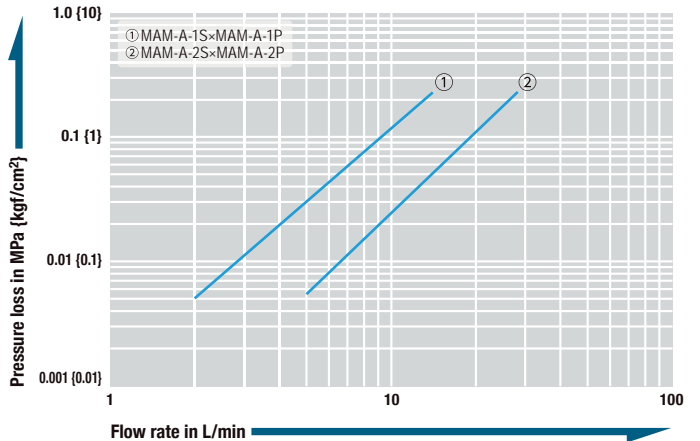
(mL)

Model	1SP type	2SP type
Volume of spillage	0.4	0.8

Flow Rate - Pressure Loss Characteristics

Per port of CUPLA

[Test conditions] - Fluid : Water - Temperature : 23°C±5°C



Models and Dimensions

Model MAM-B-1P8×MAM-B-1S8 (8 ports type)

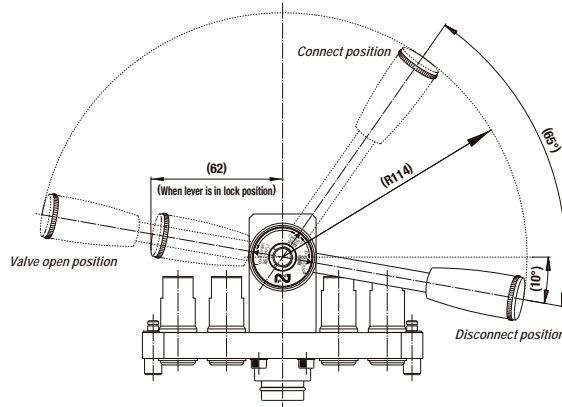
• Application (Thread): R 1/8 Mass: 660 g (Plug), 1210 g (Socket)

Dimensions (mm)

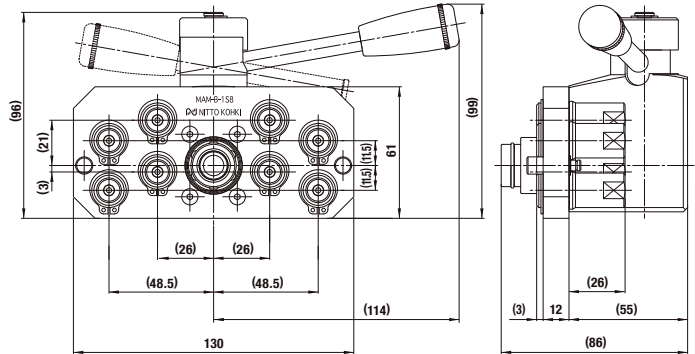
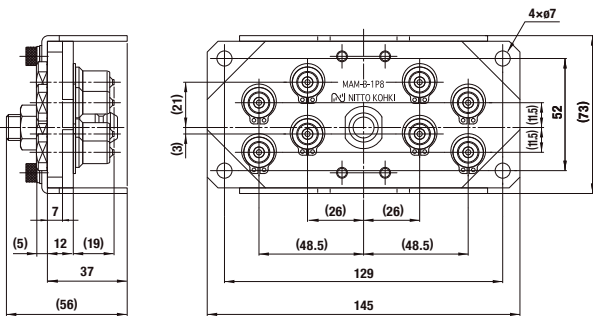
Plate with CUPLA
MAM-B Type

8
Ports

Socket: Model
MAM-B-1S8



Plug: Model
MAM-B-1P8



Model MAM-B-1P12×MAM-B-1S12 (12 ports type)

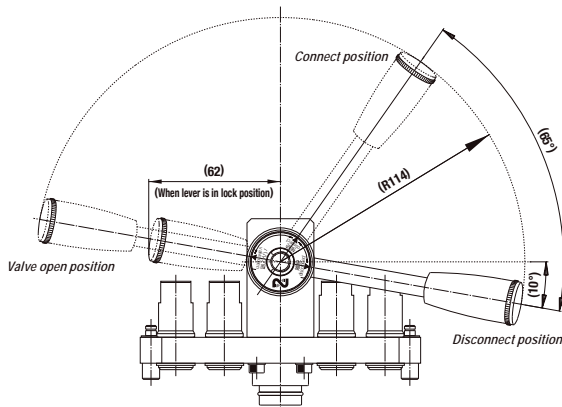
• Application (Thread): R 1/8 Mass: 790 g (Plug), 1430 g (Socket)

Dimensions (mm)

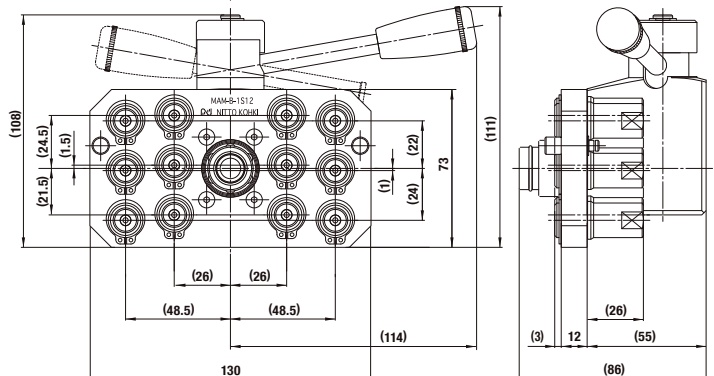
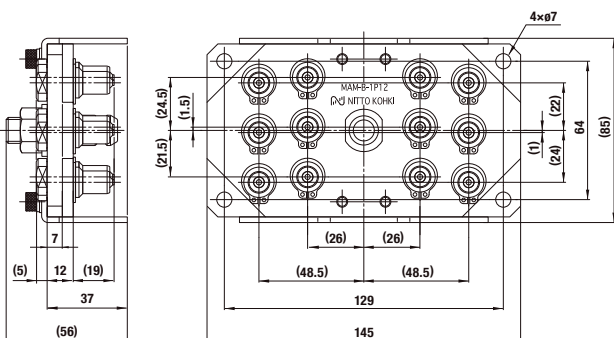
Plate with CUPLA
MAM-B Type

12
Ports

Socket: Model
MAM-B-1S12

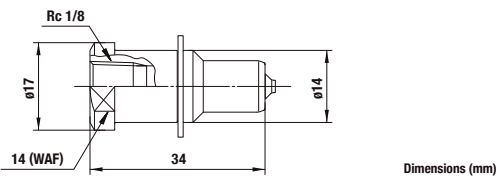


Plug: Model
MAM-B-1P12



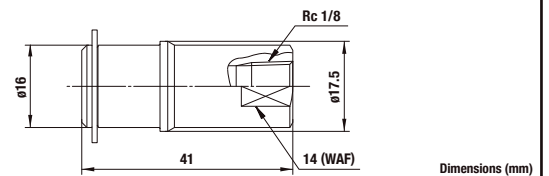
Plug Model MAM-A-1P (Individual CUPLA)

• Application (Thread): R 1/8 Mass: 25 g
• Can be mounted on model MAM-B-1P8 and MAM-B-1P12.



Socket Model MAM-A-1S (Individual CUPLA)

• Application (Thread): R 1/8 Mass: 49 g
• Can be mounted on model MAM-B-1S8 and MAM-B-1S12.



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

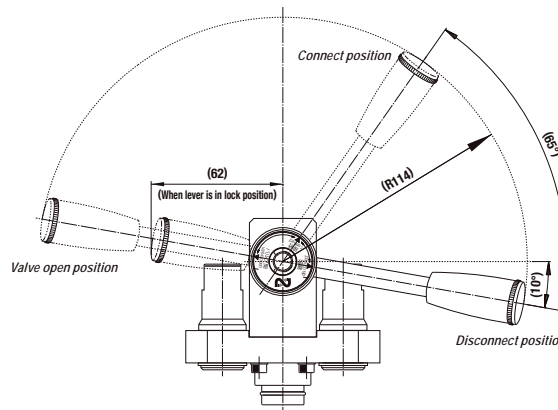
Model MAM-B-2P6×MAM-B-2S6 (6 ports type)

• Application (Thread): R 1/4 Mass: 740 g (Plug), 1280 g (Socket)

Plate with CUPLA
MAM-B Type

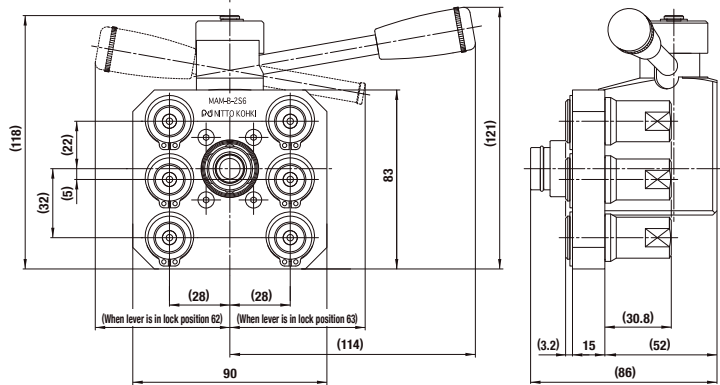
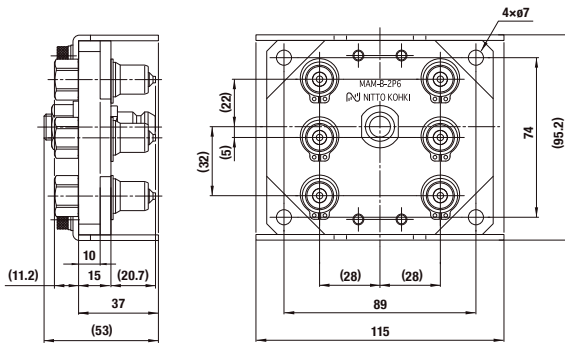
6
Ports

Dimensions (mm)



Socket: Model
MAM-B-2S6

Plug: Model
MAM-B-2P6



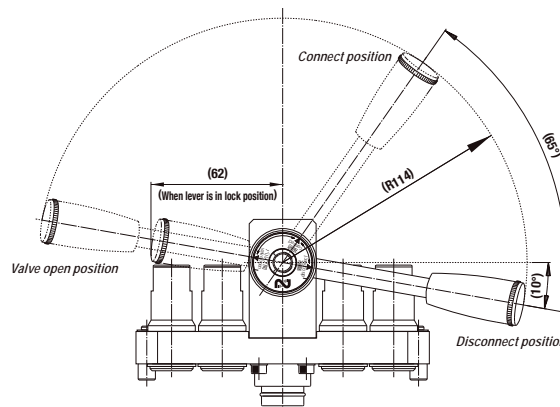
Model MAM-B-2P8×MAM-B-2S8 (8 ports type)

• Application (Thread): R 1/4 Mass: 920 g (Plug), 1550 g (Socket)

Plate with CUPLA
MAM-B Type

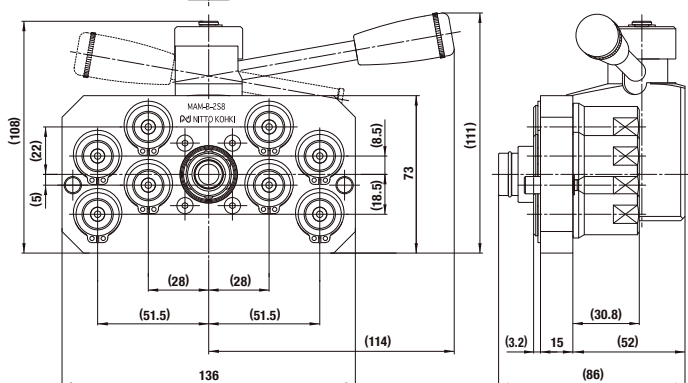
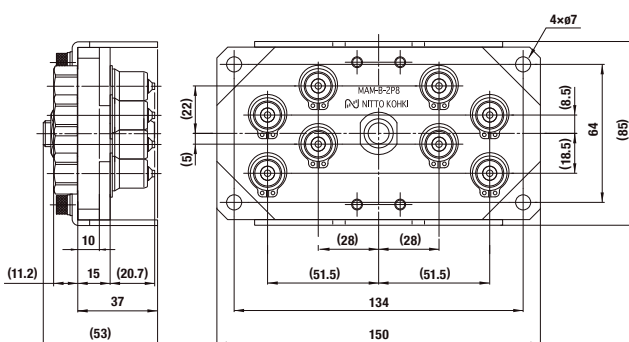
8
Ports

Dimensions (mm)



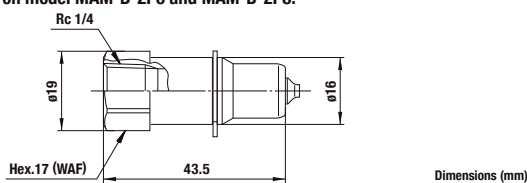
Socket: Model
MAM-B-2S8

Plug: Model
MAM-B-2P8



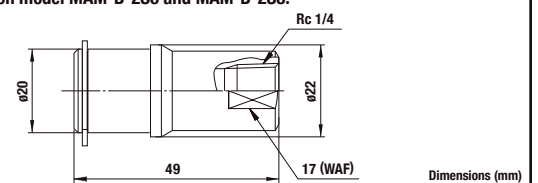
Plug Model MAM-A-2P (Individual CUPLA)

• Application (Thread): R 1/4 Mass: 40 g
• Can be mounted on model MAM-B-2P6 and MAM-B-2P8.

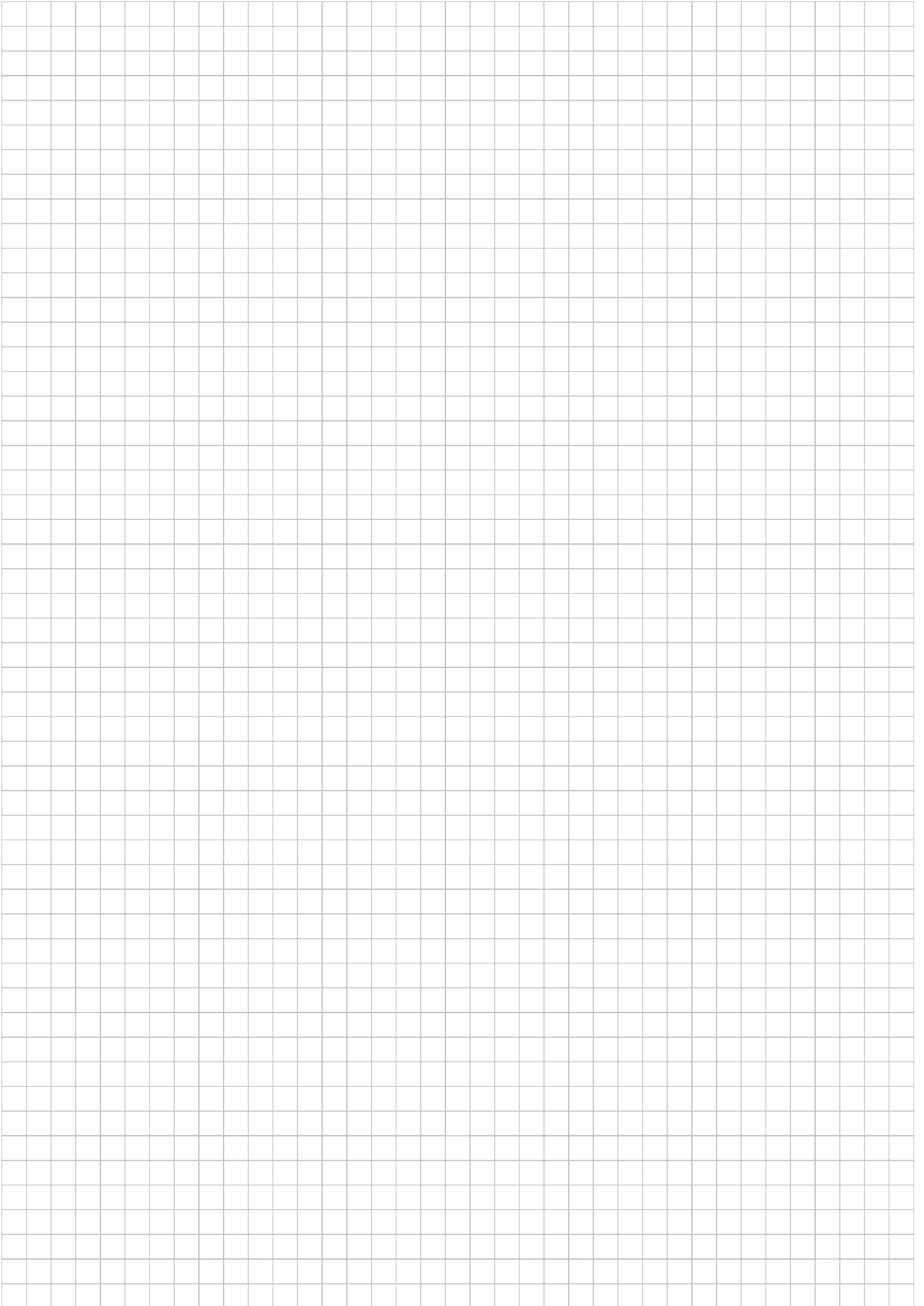


Socket Model MAM-A-2S (Individual CUPLA)

• Application (Thread): R 1/4 Mass: 82 g
• Can be mounted on model MAM-B-2S6 and MAM-B-2S8.



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.



For Multi-Port Connection (Manual)

MULTI CUPLA MAM-A Type

Multiple port system

Working pressure



Valve structure

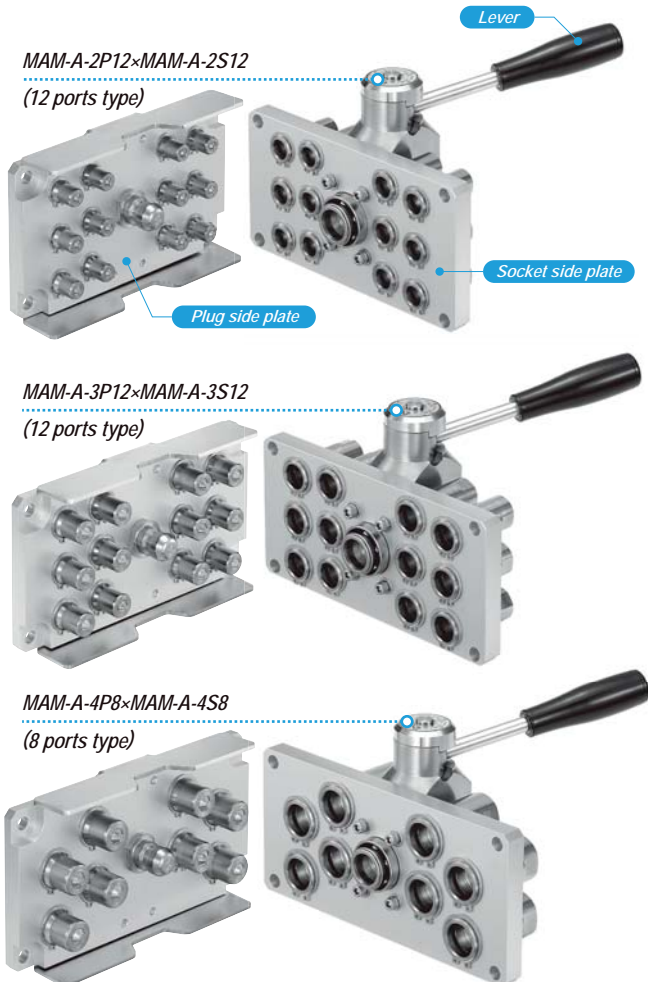


Applicable fluids



Simultaneously connects several ports securely in one operation!
Greatly reduces changeover time in multiple ports replacement.

- Handles several ports at once.
- Simple manual lever action completes easy connection/disconnection.
- Two-stage lever operation prevents CUPLA from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP CUPLA Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.



Specifications						
Model	Plug	MAM-A-2P12	MAM-A-3P6	MAM-A-3P12	MAM-A-4P4	MAM-A-4P8
	Socket	MAM-A-2S12	MAM-A-3S6	MAM-A-3S12	MAM-A-4S4	MAM-A-4S8
Number of ports		12	6	12	4	8
Size (Thread)		1/4"	3/8"		1/2"	
Body material		CUPLA: Brass (Nickel plated) Plate: Aluminum alloy Locking unit: Steel (Nickel plated)				
Pressure unit		MPa	kgf/cm ²	bar	PSI	
Working pressure		1.0	10	10	145	
Ambient temperature range		0°C to +60°C				
Seal material	Sealing material	Mark	Working temperature range	Remarks		
Working temperature range *1	Fluoro rubber	FKM	-20°C to +180°C	Standard material		

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque		Nm {kgf·cm}	
Size (Thread)	1/4"	3/8"	1/2"
Torque	9 {92}	12 {122}	30 {306}

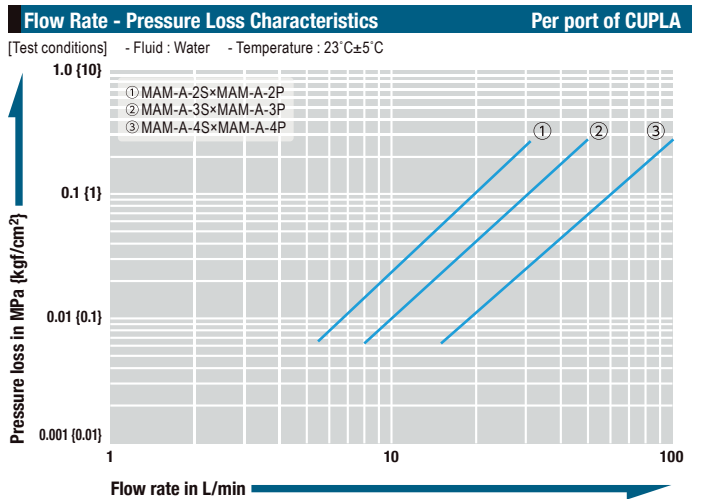
Interchangeability
No connection is possible between plates with different number of ports or different size.

Minimum Cross-Sectional Area per Port			(mm ²)
Model	2SP type	3SP type	4SP type
Minimum cross-sectional area	26	51	73

Suitability for Vacuum			1.3×10 ⁻¹ Pa {1×10 ⁻³ mmHg}
Socket only	Plug only	When connected	
-	-	Operational	

Admixture of Air on Connection per Port <small>May vary depending upon the usage conditions.</small>				(mL)
Model	2SP type	3SP type	4SP type	
Volume of air	1.1	2.7	3.9	

Volume of Spillage on Disconnection per Port <small>May vary depending upon the usage conditions.</small>				(mL)
Model	2SP type	3SP type	4SP type	
Volume of spillage	0.8	2.1	3.4	



Models and Dimensions

Model MAM-A-2P12×MAM-A-2S12 (12 ports type)

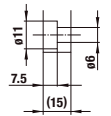
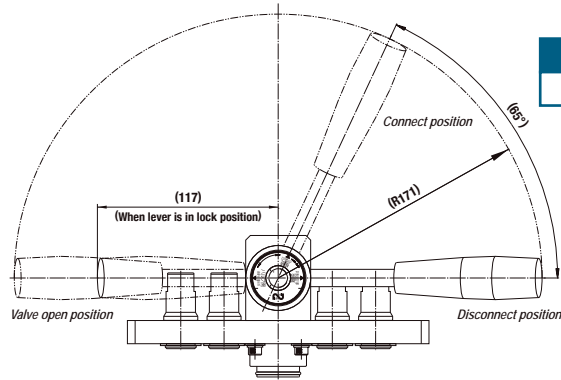
- Application (Thread): R 1/4 Mass: 1650 g (Plug), 2800 g (Socket)

Dimensions (mm)

Plate with CUPLA
MAM-A Type

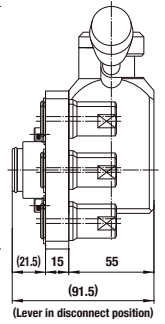
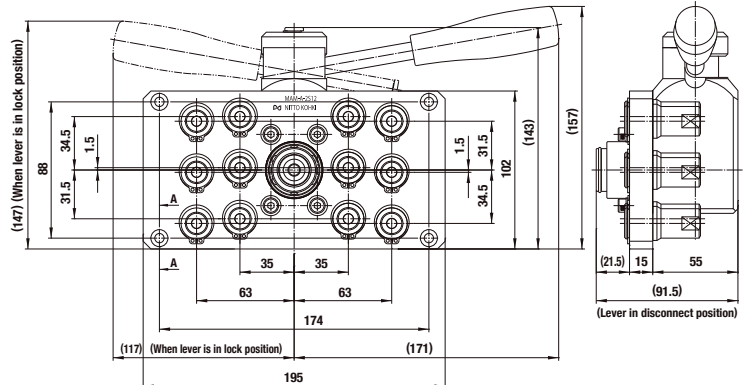
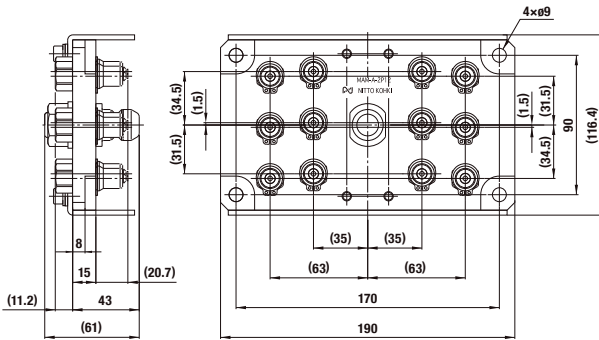
12
Ports

Socket: Model
MAM-A-2S12



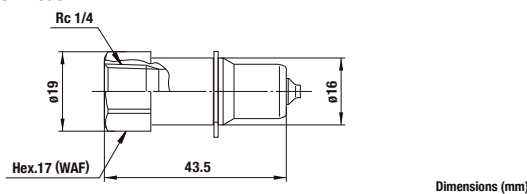
Cross section A-A
(4 corners)

Plug: Model
MAM-A-2P12



Plug Model MAM-A-2P (Individual CUPLA)

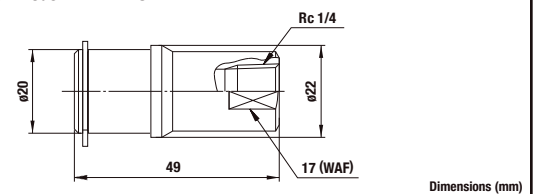
- Application (Thread): R 1/4 Mass: 40 g
- Can be mounted on model MAM-A-2P12.



Dimensions (mm)

Socket Model MAM-A-2S (Individual CUPLA)

- Application (Thread): R 1/4 Mass: 82 g
- Can be mounted on model MAM-A-2S12.



Dimensions (mm)

Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Model MAM-A-3P6×MAM-A-3S6 (6 ports type)

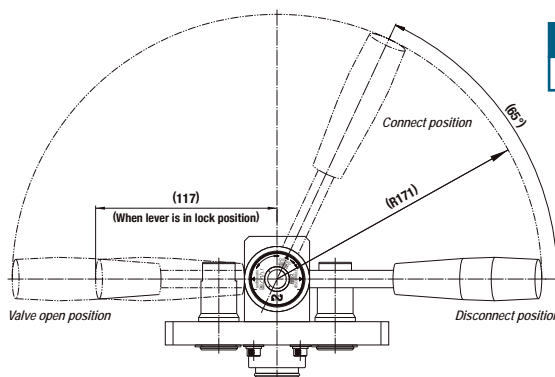
• Application (Thread): R 3/8 Mass: 1250 g (Plug), 2400 g (Socket)

Dimensions (mm)

Plate with CUPLA
MAM-A Type

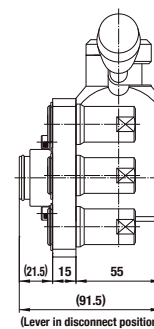
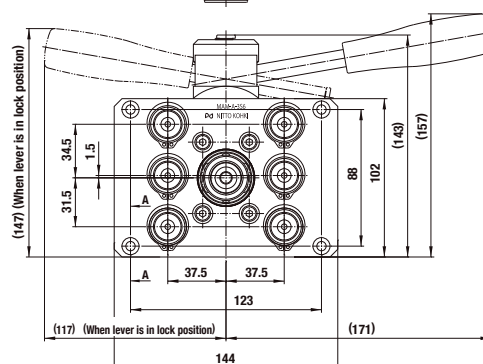
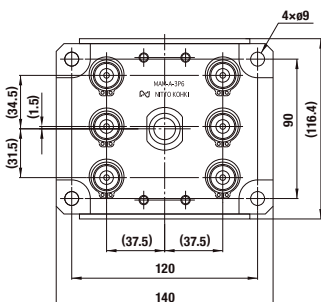
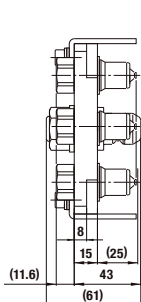
6
Ports

Socket: Model
MAM-A-3S6



Cross section A-A
(4 corners)

Plug: Model
MAM-A-3P6



Model MAM-A-3P12×MAM-A-3S12 (12 ports type)

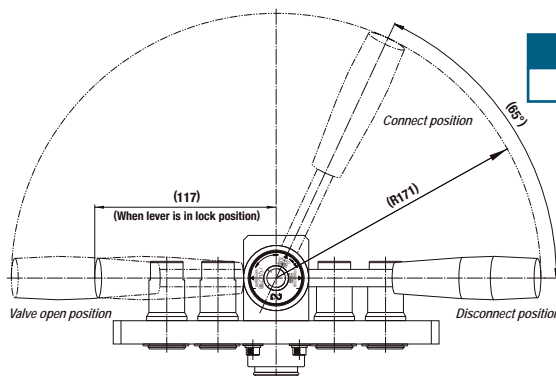
• Application (Thread): R 3/8 Mass: 1950 g (Plug), 3300 g (Socket)

Dimensions (mm)

Plate with CUPLA
MAM-A Type

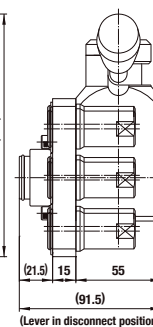
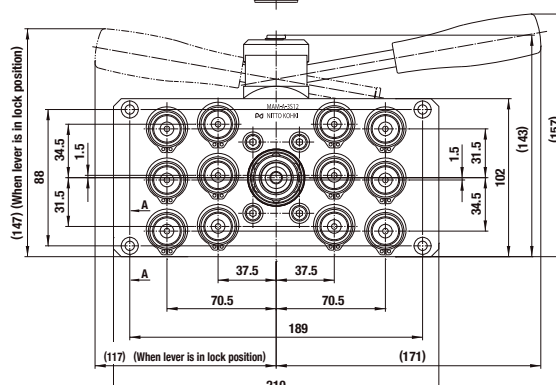
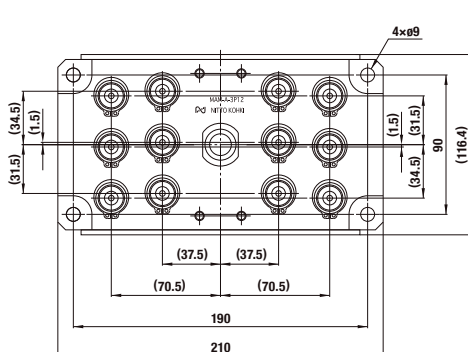
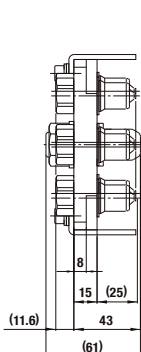
12
Ports

Socket: Model
MAM-A-3S12



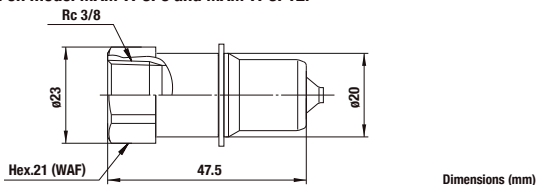
Cross section A-A
(4 corners)

Plug: Model
MAM-A-3P12



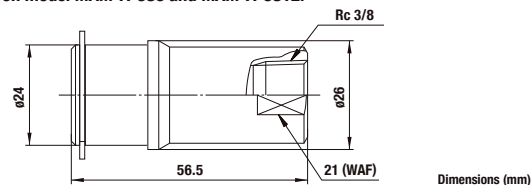
Plug Model MAM-A-3P (Individual CUPLA)

• Application (Thread): R 3/8 Mass: 62 g
• Can be mounted on model MAM-A-3P6 and MAM-A-3P12.



Socket Model MAM-A-3S (Individual CUPLA)

• Application (Thread): R 3/8 Mass: 122 g
• Can be mounted on model MAM-A-3S6 and MAM-A-3S12.



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Models and Dimensions

Model MAM-A-4P4×MAM-A-4S4 (4 ports type)

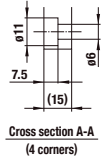
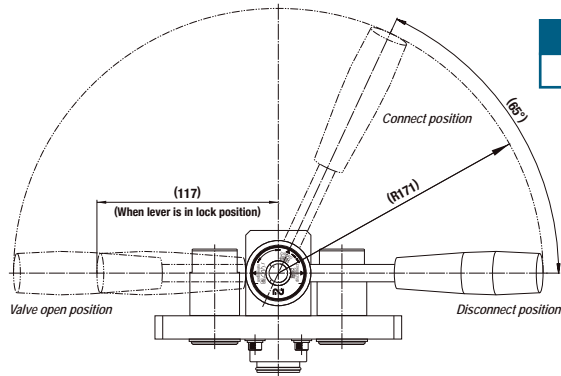
• Application (Thread): R 1/2 Mass: 1400 g (Plug), 2700 g (Socket)

Dimensions (mm)

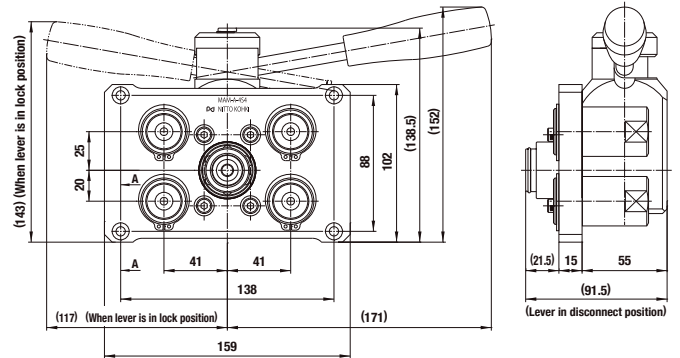
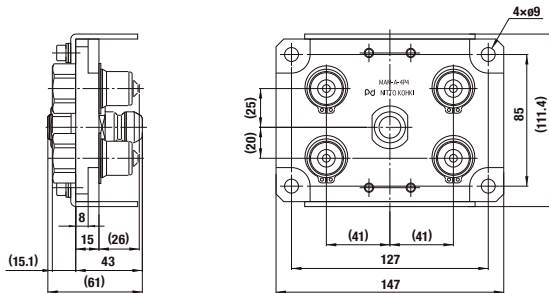
Plate with CUPLA
MAM-A Type

4
Ports

Socket: Model
MAM-A-4S4



Plug: Model
MAM-A-4P4



Model MAM-A-4P8×MAM-A-4S8 (8 ports type)

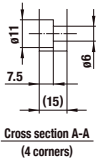
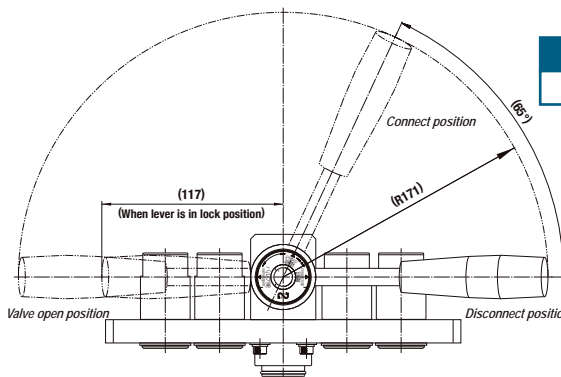
• Application (Thread): R 1/2 Mass: 2300 g (Plug), 4000 g (Socket)

Dimensions (mm)

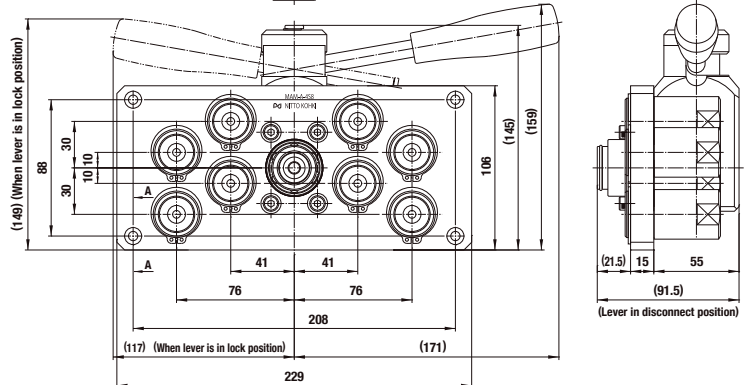
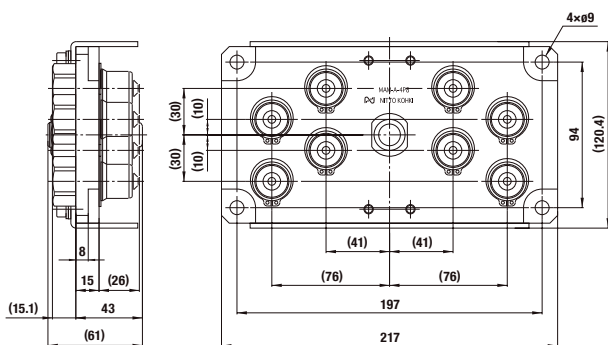
Plate with CUPLA
MAM-A Type

8
Ports

Socket: Model
MAM-A-4S8

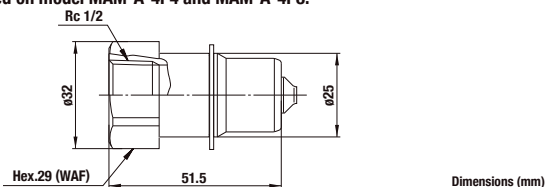


Plug: Model
MAM-A-4P8



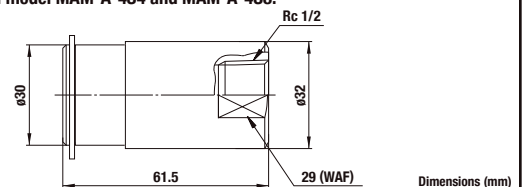
Plug Model MAM-A-4P (Individual CUPLA)

• Application (Thread): R 1/2 Mass: 127 g
• Can be mounted on model MAM-A-4P4 and MAM-A-4P8.



Socket Model MAM-A-4S (Individual CUPLA)

• Application (Thread): R 1/2 Mass: 256 g
• Can be mounted on model MAM-A-4S4 and MAM-A-4S8.



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

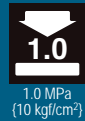
For Multi-Port Connection (Manual)

MULTI CUPLA

MAM-A-SP Type

For mounting onto plates of MULT CUPLA MAM-A / MAM-B Type

Working pressure



Valve structure



Applicable fluids



Individual CUPLA for mounting onto plates of MULTI CUPLA MAM-A / MAM-B Type.

- Large flow equivalent to that of SP CUPLA Type A.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.

MULTI CUPLA series and plates that can mount MAM-A-SP Type

MAM-B Type (See page 115 to 117)

MAM-B Type plate (See page 126 to 127)

MAM-A Type (See page 119 to 122)

MAM-A Type plate (See page 128 to 130)



Specifications (Individual CUPLA)

Model	Plug	MAM-A-1P	MAM-A-2P	MAM-A-3P	MAM-A-4P
	Socket	MAM-A-1S	MAM-A-2S	MAM-A-3S	MAM-A-4S
Size (Thread)		Rc 1/8	Rc 1/4	Rc 3/8	Rc 1/2
Body material	Brass (Nickel plated)				
Pressure unit	MPa	kgf/cm ²	bar	PSI	
Working pressure		1.0	10	10	145
Seal material	Sealing material	Mark	Working temperature range	Remarks	
Working temperature range *1	Fluoro rubber	FKM	-20°C to +180°C	Standard material	

* The specifications when used with individual CUPLA mounted onto the plate, conform to the specifications of the individual CUPLA.

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Nm {kgf·cm}

Size (Thread)	Rc 1/8	Rc 1/4	Rc 3/8	Rc 1/2
Torque	5 {51}	9 {92}	12 {122}	30 {306}

Interchangeability

No connection is possible between plates with different number of ports or different size.

Minimum Cross-Sectional Area per Port

(mm²)

Model	MAM-A-1S×MAM-A-1P	MAM-A-2S×MAM-A-2P	MAM-A-3S×MAM-A-3P	MAM-A-4S×MAM-A-4P
Minimum cross-sectional area	14	26	51	73

Suitability for Vacuum

1.3×10⁻¹ Pa {1×10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection per Port

May vary depending upon the usage conditions.

(mL)

Model	MAM-A-1S×MAM-A-1P	MAM-A-2S×MAM-A-2P	MAM-A-3S×MAM-A-3P	MAM-A-4S×MAM-A-4P
Volume of air	0.6	1.1	2.7	3.9

Volume of Spillage on Disconnection per Port

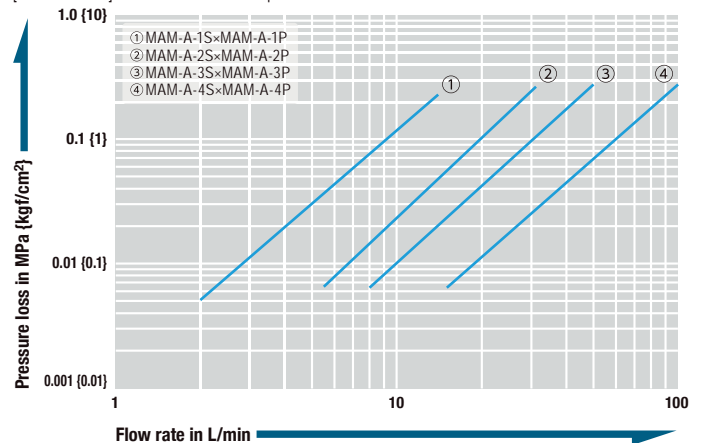
May vary depending upon the usage conditions.

(mL)

Model	MAM-A-1S×MAM-A-1P	MAM-A-2S×MAM-A-2P	MAM-A-3S×MAM-A-3P	MAM-A-4S×MAM-A-4P
Volume of spillage	0.4	0.8	2.1	3.4

Flow Rate - Pressure Loss Characteristics

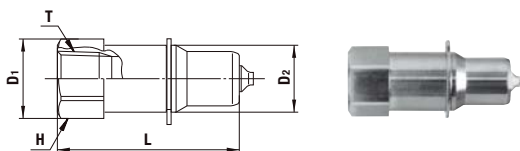
[Test conditions] - Fluid : Water - Temperature : 23°C±5°C



Models and Dimensions

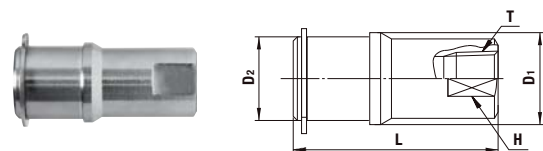
WAF : WAF stands for width across flats.

Plug For mounting onto plug side plate (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H (WAF)	T
MAM-A-1P	R 1/8	25	34	17	14	14	Rc 1/8
MAM-A-2P	R 1/4	40	43.5	19	16	Hex.17	Rc 1/4
MAM-A-3P	R 3/8	62	47.5	23	20	Hex.21	Rc 3/8
MAM-A-4P	R 1/2	127	51.5	32	25	Hex.29	Rc 1/2

Socket For mounting onto socket side plate (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H (WAF)	T
MAM-A-1S	R 1/8	49	41	17.5	16	14	Rc 1/8
MAM-A-2S	R 1/4	82	49	22	20	17	Rc 1/4
MAM-A-3S	R 3/8	122	56.5	26	24	21	Rc 3/8
MAM-A-4S	R 1/2	256	61.5	32	30	29	Rc 1/2

Valve-less (Plug and Socket without valve) are available on request as made-to-order versions. In such case, the model name ends with "-VL". (ex: MAM-A-2P-VL)

For Multi-Port Connection (Manual)

MULTI CUPLA

MAM-A-ZEL Type

For mounting onto plates of MULTI CUPLA MAM-A / MAM-B Type

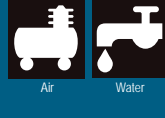
Working pressure



Valve structure



Applicable fluids



Individual CUPLA for mounting onto plates of MULTI CUPLA MAM-A / MAM-B Type.

Their “airless valve shut-off design” greatly reduces both liquid spillage and air admixture.

- Original valve structure reduces both liquid spillage and air admixture on connection and disconnection.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.

MULTI CUPLA series and plates that can mount MAM-A-ZEL Type

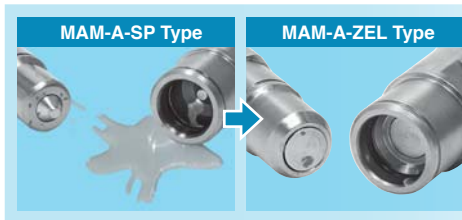
MAM-B Type* (See page 115 to 117)

MAM-B Type plate* (See page 126 to 127)

MAM-A Type (See page 119 to 122)

MAM-A Type plate (See page 128 to 130)

*Excluding size Rc 1/8



Typical spillage
(6 ports of size 1/4")
4.8 mL → 0.36 mL
(May vary. Depends on the application.)

Specifications (Individual CUPLA)

Model	Plug	MAM-A-ZEL-2P	MAM-A-ZEL-3P	MAM-A-ZEL-4P
	Socket	MAM-A-ZEL-2S	MAM-A-ZEL-3S	MAM-A-ZEL-4S
Size (Thread)		Rc 1/4	Rc 3/8	Rc 1/2
Body material	Brass (Nickel plated)			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	1.0	10	10	145
Seal material	Sealing material	Mark	Working temperature range	Remarks
Working temperature range ^{*1}	Fluoro rubber	FKM	-20°C to +180°C	Standard material

- Do not use in an environment where there is impulse pressure.

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Nm {kgf·cm}

Size (Thread)	Rc 1/4	Rc 3/8	Rc 1/2
Torque	9 {92}	12 {122}	30 {306}

Interchangeability

No connection is possible between plates with different number of ports or different size.

Minimum Cross-Sectional Area per Port

(mm²)

Model	MAM-A-ZEL-2S×MAM-A-ZEL-2P	MAM-A-ZEL-3S×MAM-A-ZEL-3P	MAM-A-ZEL-4S×MAM-A-ZEL-4P
Minimum cross-sectional area	31	60.5	86.5

Suitability for Vacuum

1.3×10⁻¹ Pa {1×10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection per Port

May vary depending upon the usage conditions. (mL)

Model	MAM-A-ZEL-2S×MAM-A-ZEL-2P	MAM-A-ZEL-3S×MAM-A-ZEL-3P	MAM-A-ZEL-4S×MAM-A-ZEL-4P
Volume of air	0.16	0.21	0.39

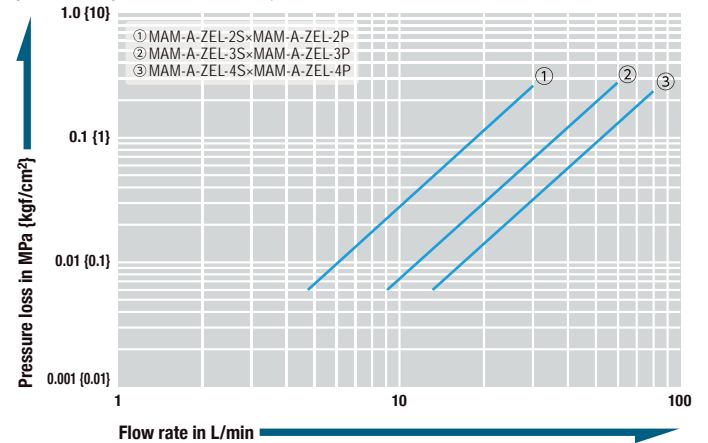
Volume of Spillage on Disconnection per Port

May vary depending upon the usage conditions. (mL)

Model	MAM-A-ZEL-2S×MAM-A-ZEL-2P	MAM-A-ZEL-3S×MAM-A-ZEL-3P	MAM-A-ZEL-4S×MAM-A-ZEL-4P
Volume of spillage	0.06	0.12	0.15

Flow Rate - Pressure Loss Characteristics

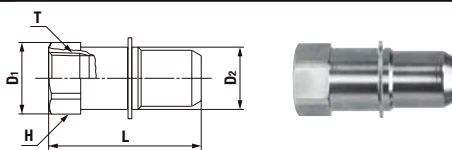
[Test conditions] - Fluid : Water - Temperature : 23°C±5°C



Models and Dimensions

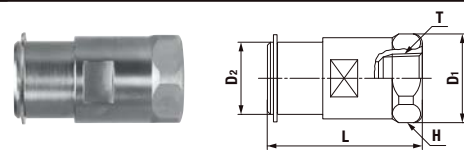
WAF : WAF stands for width across flats.

Plug For mounting onto plug side plate (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H	T
MAM-A-ZEL-2P	R 1/4	42	47	19	16	Hex.17	Rc 1/4
MAM-A-ZEL-3P	R 3/8	64	49	23	20	Hex.21	Rc 3/8
MAM-A-ZEL-4P	R 1/2	123	55	32	25	Hex.29	Rc 1/2

Socket For mounting onto socket side plate (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H	T
MAM-A-ZEL-2S	R 1/4	78	46	23	20	Hex.21	Rc 1/4
MAM-A-ZEL-3S	R 3/8	129	51.5	24	29.5	Hex.27	Rc 3/8
MAM-A-ZEL-4S	R 1/2	210	59	35	30	Hex.32	Rc 1/2

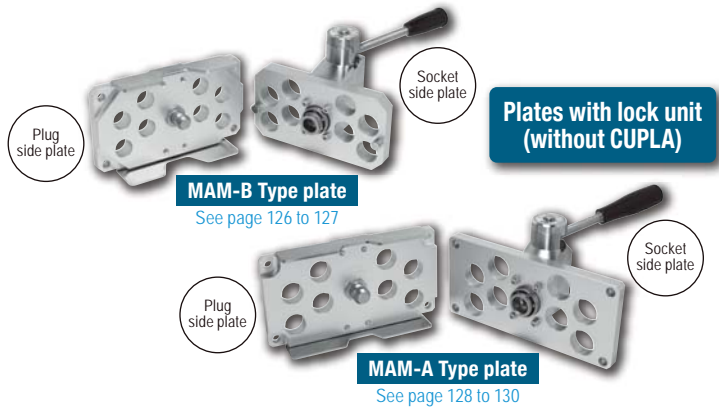
One way valve types (Plug without valve) are available on request as made-to-order versions. In such case, the model name ends with "-VL". (ex: MAM-A-ZEL-2P-VL)

For Multi-Port Connection (Manual)

MULTI CUPLA

Plate for mounting
MAM-A-ZEL / MAM-A-SP Type

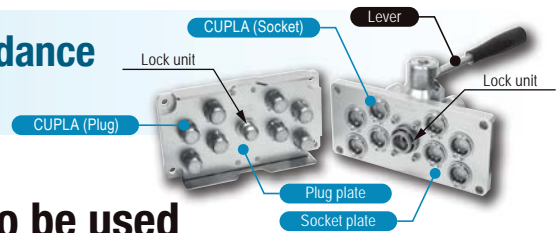
Plates for mounting MULTI CUPLA MAM-A-ZEL and MAM-A-SP Type.



Specifications (Individual plate)


Plate type	MAM-B Type				MAM-A Type						
Model	Plug side	MAM-B-1P8-CL	MAM-B-1P12-CL	MAM-B-2P6-CL	MAM-B-2P8-CL	MAM-A-2P6-CL	MAM-A-2P12-CL	MAM-A-3P6-CL	MAM-A-3P12-CL	MAM-A-4P4-CL	MAM-A-4P8-CL
	Socket side	MAM-B-1S8-CL	MAM-B-1S12-CL	MAM-B-2S6-CL	MAM-B-2S8-CL	MAM-A-2S6-CL	MAM-A-2S12-CL	MAM-A-3S6-CL	MAM-A-3S12-CL	MAM-A-4S4-CL	MAM-A-4S8-CL
Number of ports	8	12	6	8	6	12	6	12	4	8	
Body material	Aluminum alloy										
Ambient temperature range	0°C to +60°C										


Select the most suitable combination in accordance with your operating conditions.





1 Decide the [Type] and [Size] of CUPLA to be used

CUPLA

Low spill type	Plug	Size (Thread)	Model
 See page 124	MAM-A-ZEL Type	1/8	—
		1/4	MAM-A-ZEL-2P
		3/8	MAM-A-ZEL-3P
		1/2	MAM-A-ZEL-4P

Low spill type	Socket	Size (Thread)	Model
 See page 124	MAM-A-ZEL Type	1/8	—
		1/4	MAM-A-ZEL-2S
		3/8	MAM-A-ZEL-3S
		1/2	MAM-A-ZEL-4S

General purpose type	Plug	Size (Thread)	Model
 See page 123	MAM-A-SP Type	1/8	MAM-A-1P
		1/4	MAM-A-2P
		3/8	MAM-A-3P
		1/2	MAM-A-4P

General purpose type	Socket	Size (Thread)	Model
 See page 123	MAM-A-SP Type	1/8	MAM-A-1S
		1/4	MAM-A-2S
		3/8	MAM-A-3S
		1/2	MAM-A-4S

Interchangeable

Same size only

No interchangeability

Interchangeable

Same size only

MAM-A-ZEL and MAM-A-SP Type can be mounted on the same plates.

Note: MAM-A-ZEL Type is not interchangeable with the MAM-A-SP Type.


One way valve for MAM-A-ZEL (Plug without valve) and valve-less MAM-A-SP (Plug and Socket without valve) are available on request as made-to-order versions.

In such case, the model name ends with "-VL".
(ex: MAM-A-2P-VL)

2 Specify the required number of [Port]s

3 Select the [Plate]

Note: If CUPLA size is 1/4" and the number of ports is 6, either plate for MAM-A or MAM-B can be used. (Choose either one by the outer dimensions)

Plate	Coupling body	Size (Thread)	Number of ports	Plate model of Plug side	Plate model of Socket side	Outer dimensions	
	MAM-A-ZEL Type	1/8	8	MAM-B-1P8-CL	MAM-B-1S8-CL	See page 126	
			12	MAM-B-1P12-CL	MAM-B-1S12-CL	See page 126	
		MAM-A-SP Type	1/4	6	MAM-A-2P6-CL	MAM-A-2S6-CL	See page 128
				8	MAM-B-2P6-CL	MAM-B-2S6-CL	See page 127
			1/4	12	MAM-B-2P8-CL	MAM-B-2S8-CL	See page 127
				12	MAM-A-2P12-CL	MAM-A-2S12-CL	See page 128
	3/8	6	MAM-A-3P6-CL	MAM-A-3S6-CL	See page 129		
		12	MAM-A-3P12-CL	MAM-A-3S12-CL	See page 129		
	1/2	4	MAM-A-4P4-CL	MAM-A-4S4-CL	See page 130		
		8	MAM-A-4P8-CL	MAM-A-4S8-CL	See page 130		

In order to balance the force of system pressure, place each CUPLA symmetrically from the lock unit (center).

Models and Dimensions

Model MAM-B-1P8-CL×MAM-B-1S8-CL (8 Ports Type / Plate size : Small)

• Application (Thread): R 1/8 Mass: 460 g (Plug), 818 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-B Type

8 Ports

Applicable CUPLA (See page 123)	Plug	Socket
	MAM-A-1P	MAM-A-1S

Plate model of Socket side
MAM-B-1S8-CL

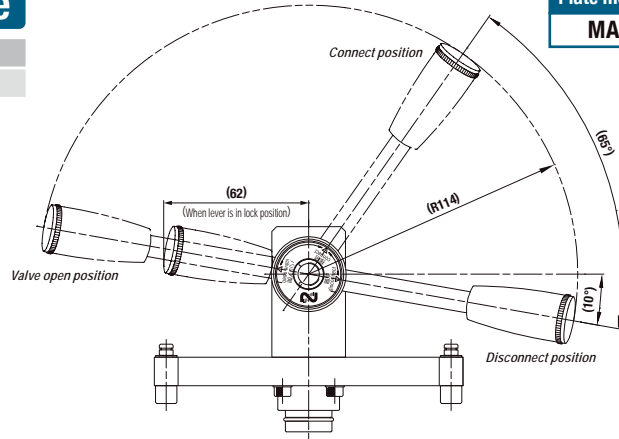
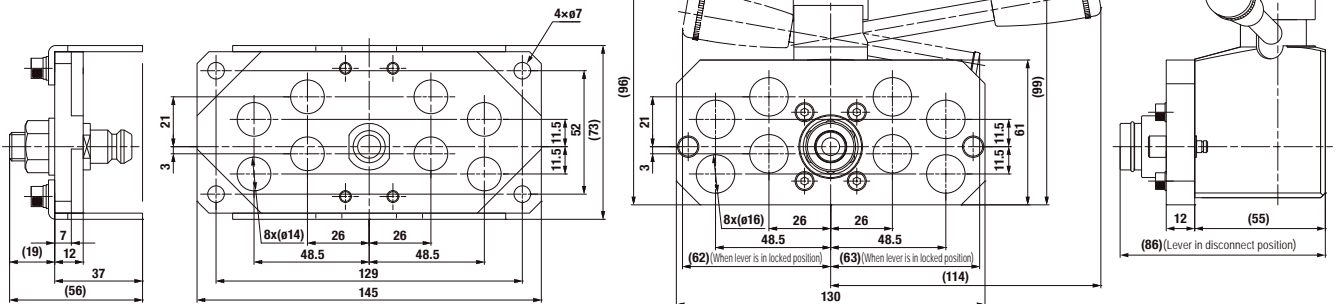


Plate model of Plug side
MAM-B-1P8-CL



Model MAM-B-1P12-CL×MAM-B-1S12-CL (8 Ports Type / Plate size : Large)

• Application (Thread): R 1/8 Mass: 490 g (Plug), 842 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-B Type

12 Ports

Applicable CUPLA (See page 123)	Plug	Socket
	MAM-A-1P	MAM-A-1S

Plate model of Socket side
MAM-B-1S12-CL

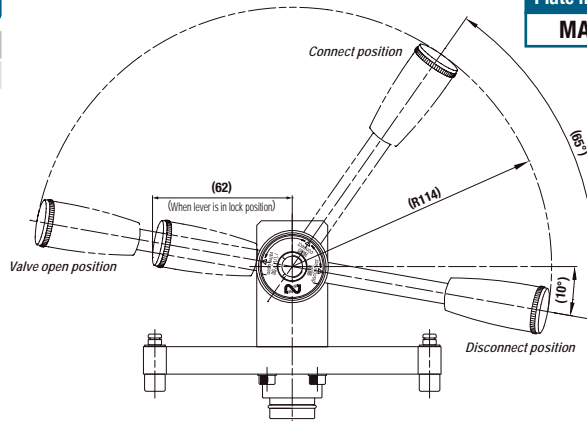
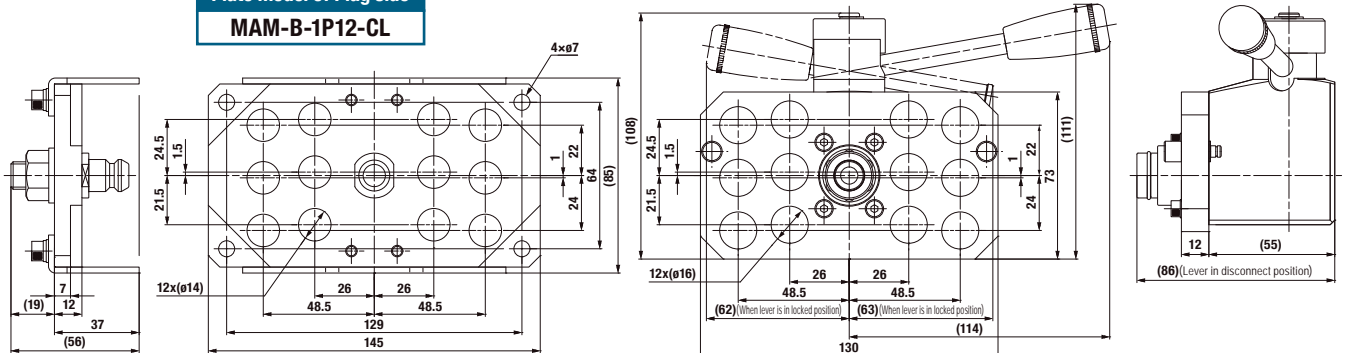


Plate model of Plug side
MAM-B-1P12-CL



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

Models and Dimensions

Model MAM-B-2P6-CL×MAM-B-2S6-CL (6 Ports Type / Plate size : Small)

• Application (Thread): R 1/4 Mass: 500 g (Plug), 788 g (Socket)

Dimensions (mm)

Plate without CUPLA **MAM-B Type**

6
Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-2P	MAM-A-2S
MAM-A-ZEL-2P	MAM-A-ZEL-2S

Plate model of Socket side
MAM-B-2S6-CL

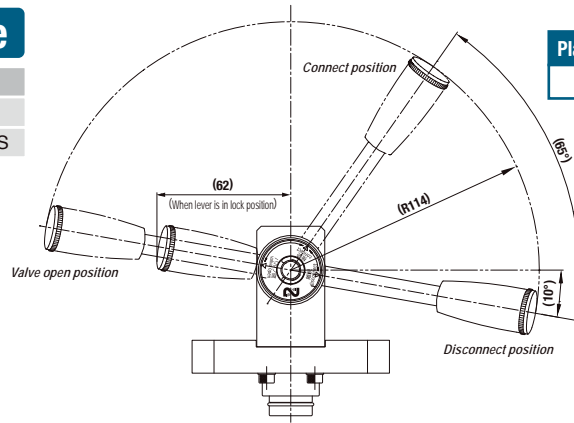
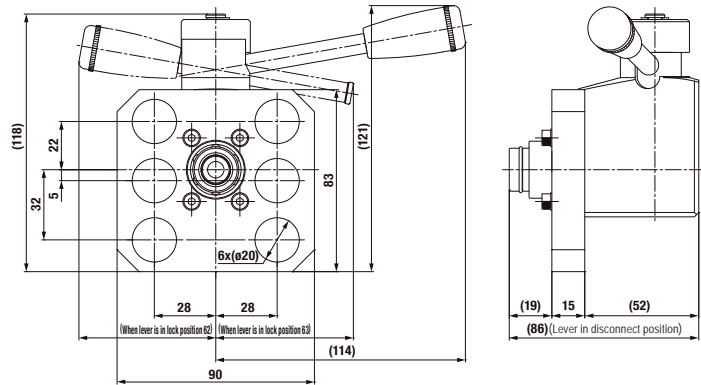
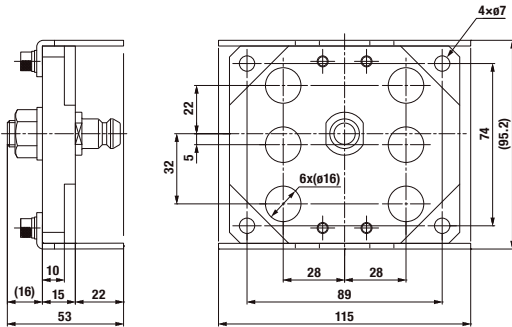


Plate model of Plug side
MAM-B-2P6-CL



Model MAM-B-2P8-CL×MAM-B-2S8-CL (8 Ports Type / Plate size : Large)

• Application (Thread): R 1/4 Mass: 600 g (Plug), 894 g (Socket)

Dimensions (mm)

Plate without CUPLA **MAM-B Type**

8
Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-2P	MAM-A-2S
MAM-A-ZEL-2P	MAM-A-ZEL-2S

Plate model of Socket side
MAM-B-2S8-CL

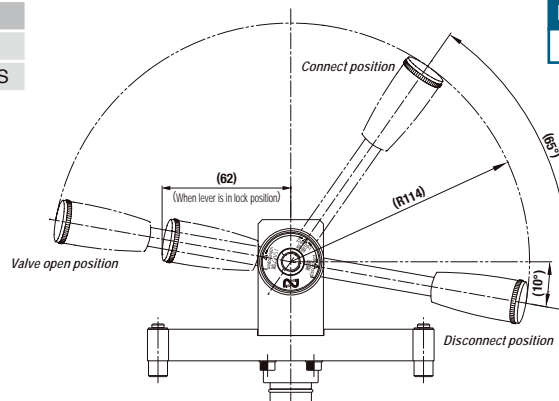
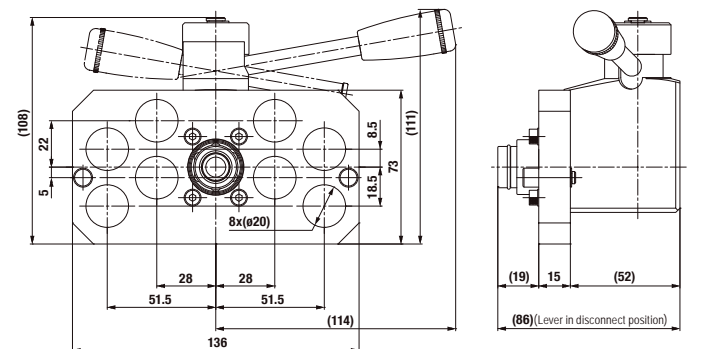
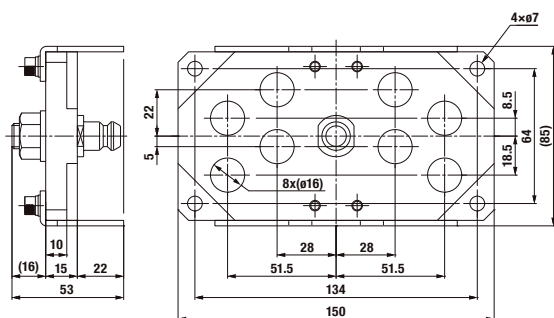


Plate model of Plug side
MAM-B-2P8-CL



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Models and Dimensions

Model MAM-A-2P6-CL×MAM-A-2S6-CL (6 Ports Type / Plate size : Small)

• Application (Thread): R 1/4 Mass: 860 g (Plug), 1658 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

6 Ports

Applicable CUPLA
(See page 123 to 124)

	Plug	Socket
	MAM-A-2P	MAM-A-2S
	MAM-A-ZEL-2P	MAM-A-ZEL-2S

Plate model of Plug side
MAM-A-2P6-CL

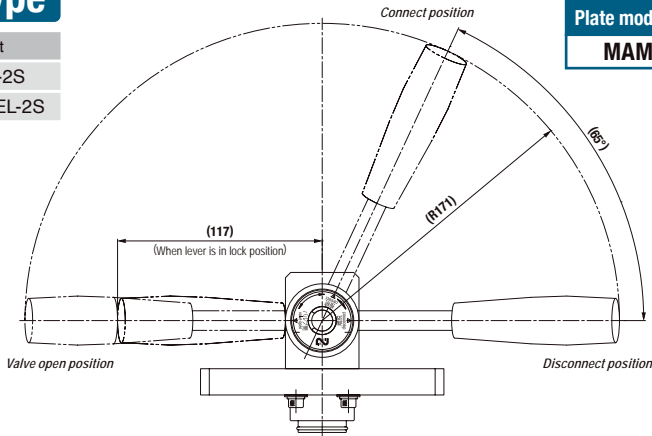
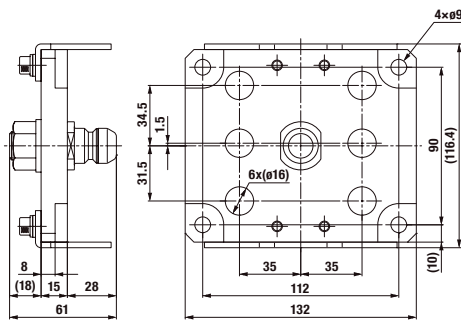
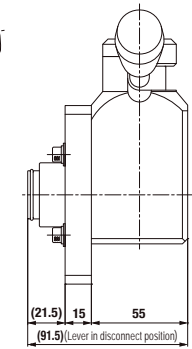
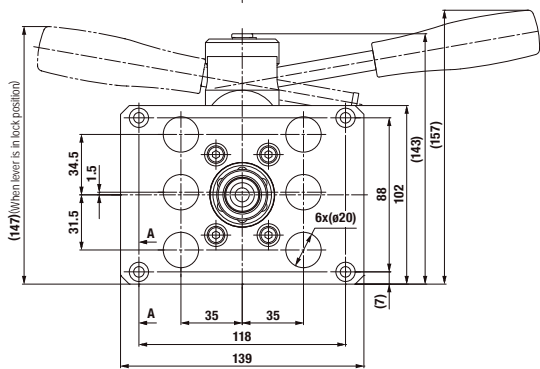
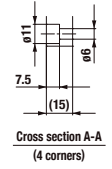


Plate model of Socket side
MAM-A-2S6-CL



Model MAM-A-2P12-CL×MAM-A-2S12-CL (12 Ports Type / Plate size : Large)

• Application (Thread): R 1/4 Mass: 1170 g (Plug), 1816 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

12 Ports

Applicable CUPLA
(See page 123 to 124)

	Plug	Socket
	MAM-A-2P	MAM-A-2S
	MAM-A-ZEL-2P	MAM-A-ZEL-2S

Plate model of Plug side
MAM-A-2P12-CL

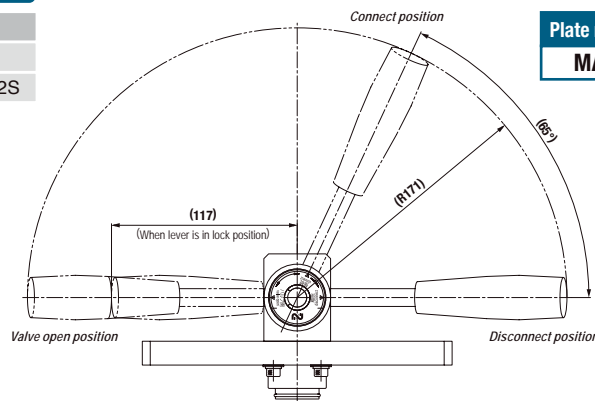
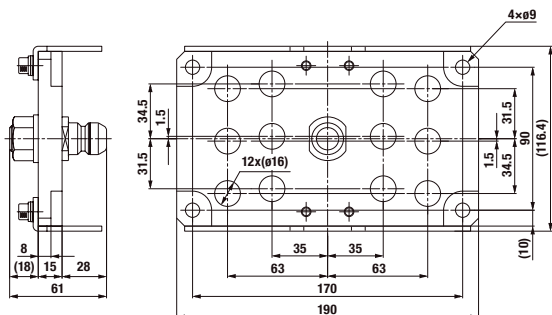
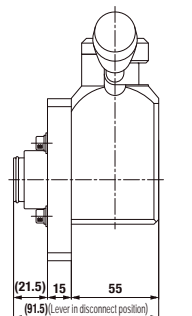
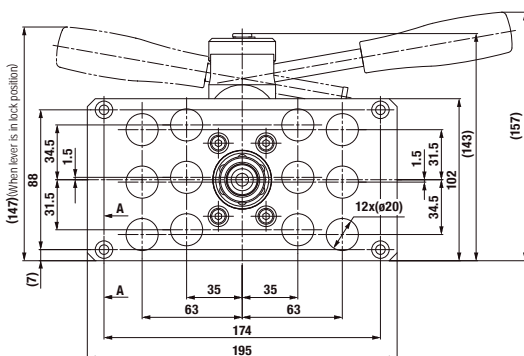
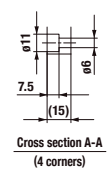


Plate model of Socket side
MAM-A-2S12-CL



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

Models and Dimensions

Model MAM-A-3P6-CL×MAM-A-3S6-CL (6 Ports Type / Plate size : Small)

• Application (Thread): R 3/8 Mass: 878 g (Plug), 1668 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

6 Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-3P	MAM-A-3S
MAM-A-ZEL-3P	MAM-A-ZEL-3S

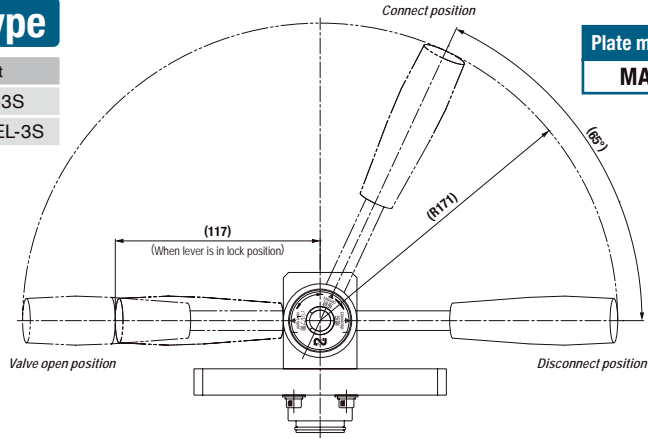


Plate model of Socket side
MAM-A-3S6-CL

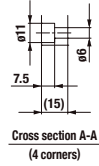
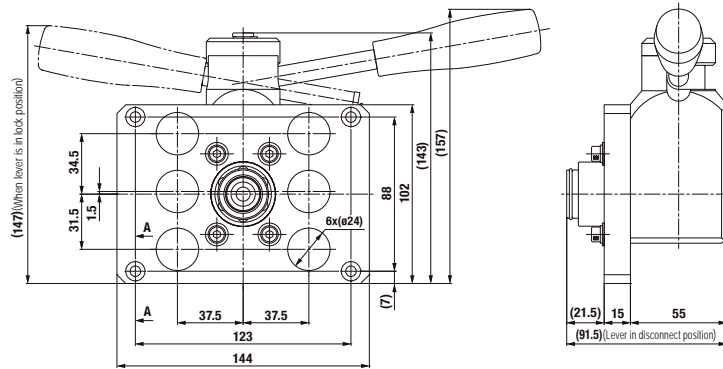
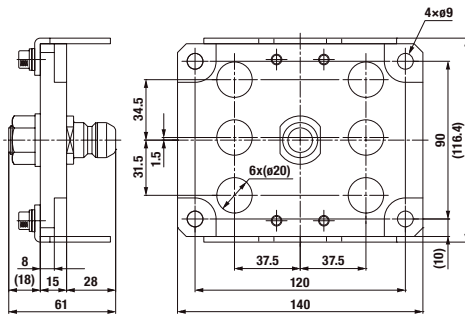


Plate model of Plug side
MAM-A-3P6-CL



Model MAM-A-3P12-CL×MAM-A-3S12-CL (12 Ports Type / Plate size : Large)

• Application (Thread): R 3/8 Mass: 1206 g (Plug), 1836 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

12 Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-3P	MAM-A-3S
MAM-A-ZEL-3P	MAM-A-ZEL-3S

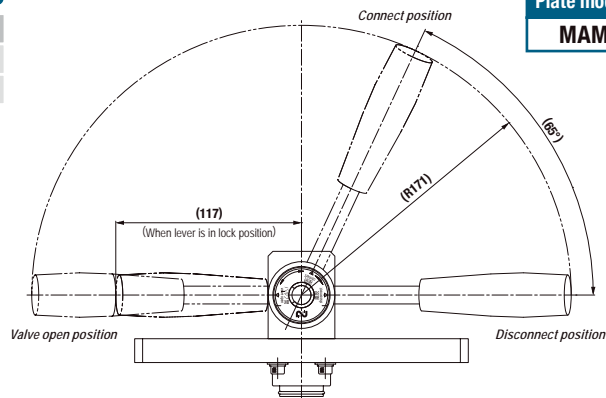


Plate model of Socket side
MAM-A-3S12-CL

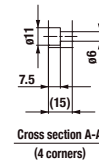
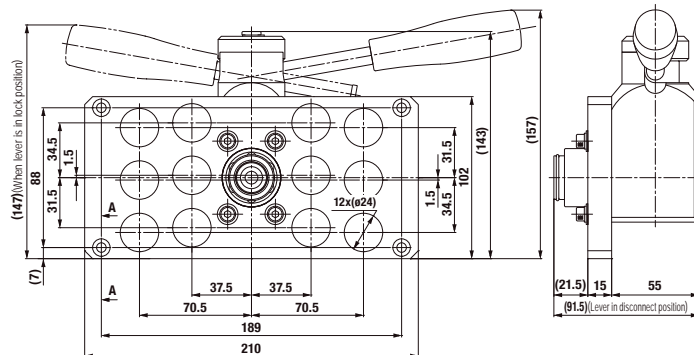
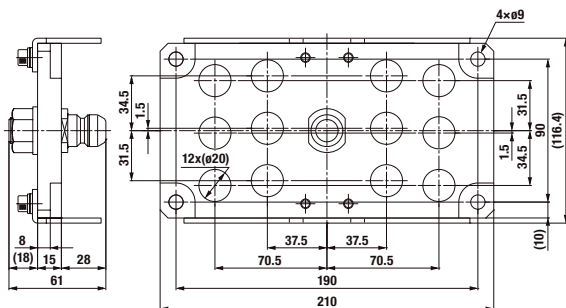


Plate model of Plug side
MAM-A-3P12-CL



Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Models and Dimensions

Model MAM-A-4P4-CL×MAM-A-4S4-CL (4 Ports Type / Plate size : Small)

• Application (Thread): R 1/2 Mass: 892 g (Plug), 1676 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

4 Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-4P	MAM-A-4S
MAM-A-ZEL-4P	MAM-A-ZEL-4S

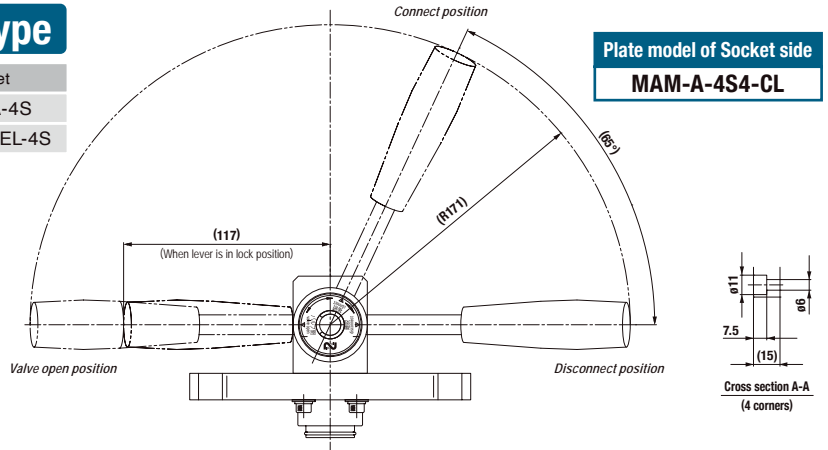
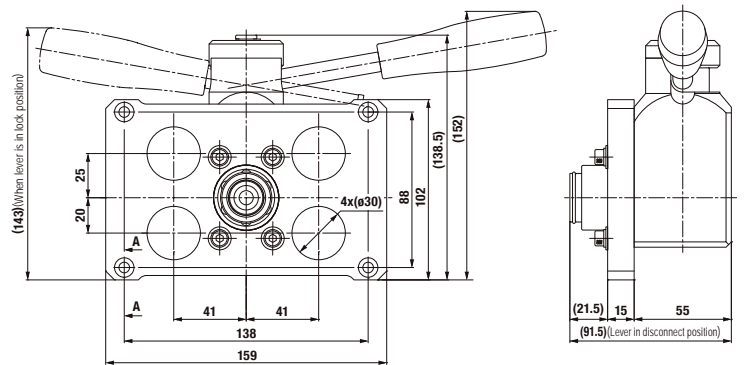
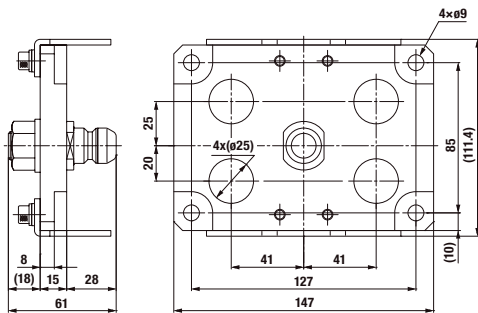


Plate model of Plug side MAM-A-4P4-CL



Model MAM-A-4P8-CL×MAM-A-4S8-CL (8 Ports Type / Plate size : Large)

• Application (Thread): R 1/2 Mass: 1284 g (Plug), 1952 g (Socket)

Dimensions (mm)

Plate without CUPLA MAM-A Type

8 Ports

Applicable CUPLA
(See page 123 to 124)

Plug	Socket
MAM-A-4P	MAM-A-4S
MAM-A-ZEL-4P	MAM-A-ZEL-4S

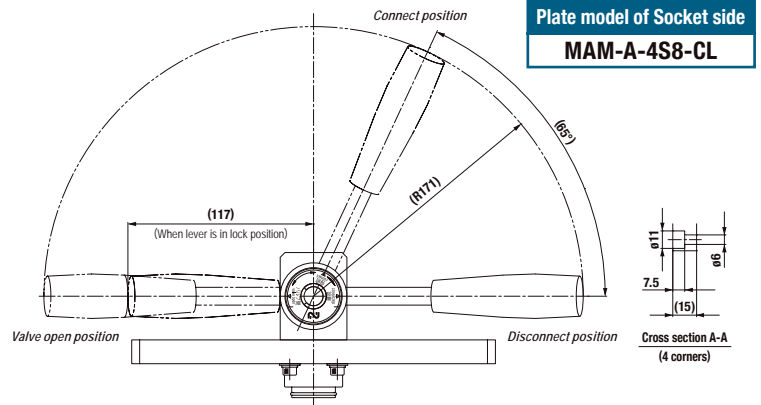
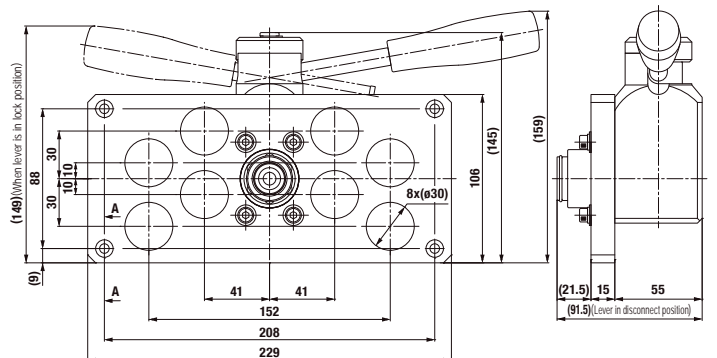
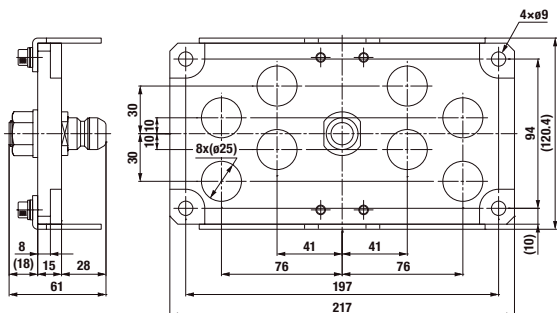


Plate model of Plug side MAM-A-4P8-CL



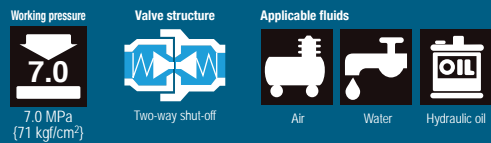
Made-to-order MULTI CUPLA is available on request, such as a combination of different sizes on the flange plate.

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Multi-Port Connection (Automatic)

MULTI CUPLA MAS Type / MAT Type

7.0 MPa {71 kgf/cm²} general purpose type



Connects multiple lines simultaneously with a single operation for different fluids and sizes.

- Effective for automated systems that connect/disconnect multiple lines simultaneously using hydraulic or pneumatic cylinders.
- Automatic shut-off valves in both sockets and plugs ensure no outflow of fluid on disconnection.
- Body materials other than stainless steel are available, which can be ordered with or without valves (made-to-order products).
- Snap ring and screw thread-in types to mount on the base plate are standardized.
- MAS type can accept axial eccentricity between socket and plug. The allowance of eccentricity is within the radius range of 0.3 mm.

* CUPLA connection or disconnection with fluid under dynamic pressure cannot be made.



Specifications				
Body material	Stainless steel (Nickel plated)			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	7.0	71	70	1020
Seal material	Sealing material	Mark	Working temperature range	
Working temperature range ^{*1}	Fluoro rubber	FKM	-20°C to +180°C	

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque					Nm {kgf·cm}				
Size (Thread)	1/4"	3/8"	1/2"	3/4"	1"				
Torque (MAS type)	14 {143}	22 {224}	60 {612}	90 {918}	120 {1224}				
Size (Thread)	M20	M24	M30	M39	M45				
Torque (MAT type)	50 {510}	50 {510}	50 {510}	70 {714}	80 {816}				

Interchangeability

- MAS & MAT or MAS & MAS types of the same size are to be connected.
- Connection between the same MAT types is virtually not possible because there is no allowance for eccentricity.

Minimum Cross-Sectional Area						(mm ²)					
Model	2SP	3SP	4SP	6SP	8SP						
Min. cross-sectional area	23	41	76	145	224						

Suitability for Vacuum

Suitability for Vacuum			1.3×10 ⁻¹ Pa {1×10 ⁻³ mmHg}		
Socket only	Plug only	When connected			
—	—	Operational			

Admixture of Air on Connection

May vary depending upon the usage conditions.

Admixture of Air on Connection						(mL)					
Model	2SP	3SP	4SP	6SP	8SP						
Volume of air	1.1	2.4	3.2	10.5	17.0						

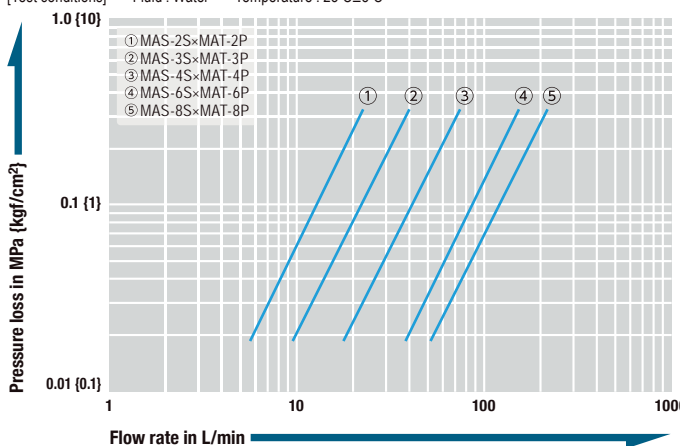
Load Required to Maintain Connection When Line Is Pressurized

Load Required to Maintain Connection When Line Is Pressurized					
Model	2SP	3SP	4SP	6SP	8SP
Maximum acceptable load N (kgf)	3200 {327}	5200 {531}	9200 {939}	13900 {1419}	20200 {2062}
Minimum load required to maintain connection N (kgf) *1	Px185+45 {p×1.85+4.5}	Px310+70 {p×3.1+7}	Px545+85 {p×5.45+8.5}	Px850+95 {p×8.5+9.5}	Px1225+120 {p×12.25+12}

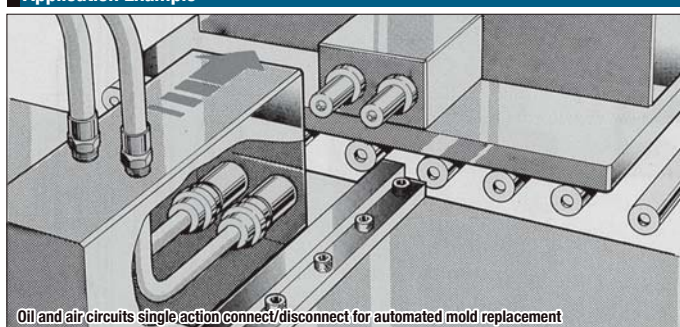
*1: Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

Flow Rate - Pressure Loss Characteristics

[Test conditions] - Fluid: Water - Temperature: 23°C±5°C

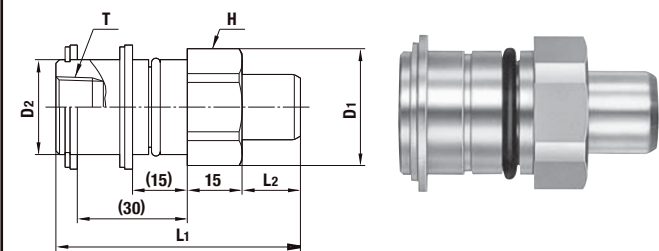


Application Example



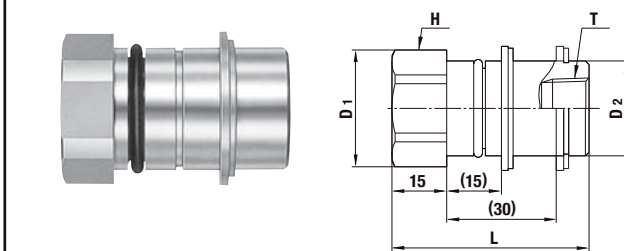
Models and Dimensions

Plug MAS type (With snap ring)



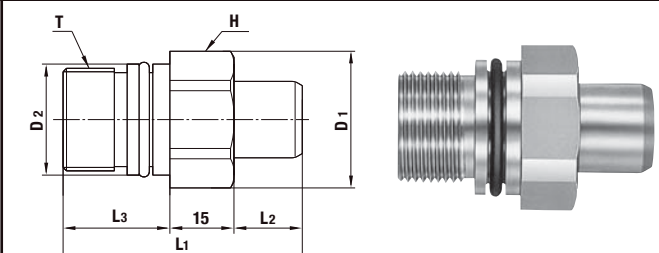
Model	Application (Thread)	Mass (g)	Dimensions (mm)					
			L1	L2	øD1	øD2	H(WAF)	T
MAS-2P	R 1/4	150	65	14	28	21.9	Hex.26	Rc 1/4
MAS-3P	R 3/8	203	67	16	35	25.9	Hex.32	Rc 3/8
MAS-4P	R 1/2	412	73	20	44	35.9	Hex.41	Rc 1/2
MAS-6P	R 3/4	579	76.5	23.5	50	41.9	Hex.46	Rc 3/4
MAS-8P	R 1	720	78	24	58	47.9	Hex.54	Rc 1

Socket MAS type (With snap ring)



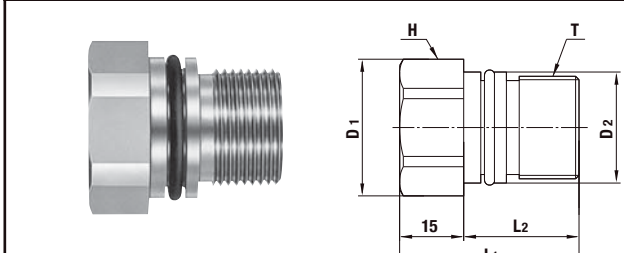
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H(WAF)	T
MAS-2S	R 1/4	126	51.5	28	21.9	Hex.26	Rc 1/4
MAS-3S	R 3/8	171	55	35	25.9	Hex.32	Rc 3/8
MAS-4S	R 1/2	406	65	44	35.9	Hex.41	Rc 1/2
MAS-6S	R 3/4	604	76	50	41.9	Hex.46	Rc 3/4
MAS-8S	R 1	825	87	58	47.9	Hex.54	Rc 1

Plug MAT type (Thread screw mount)



Model	Application (Thread)	Mass (g)	Dimensions (mm)						
			L1	L2	L3	øD1	øD2	H(WAF)	T
MAT-2P	See drawings below.	121	53	14	(24)	28	21.9	Hex.26	M20×1.5
MAT-3P		164	56	16	(25)	32	25.9	Hex.29	M24×1.5
MAT-4P		332	67	20	(32)	44	35.9	Hex.41	M30×2
MAT-6P		453	73	23.5	(34.5)	50	41.9	Hex.46	M39×2
MAT-8P		571	76	24	(37)	54	47.9	Hex.50	M45×2

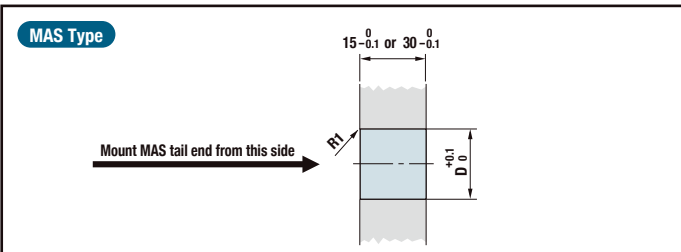
Socket MAT type (Thread screw mount)



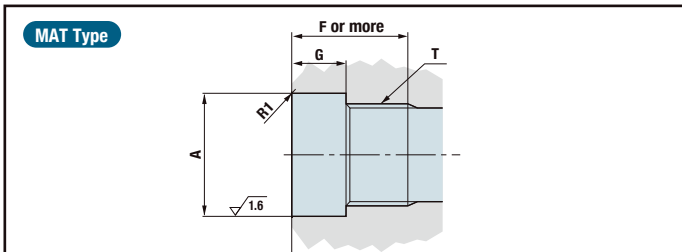
Model	Application (Thread)	Mass (g)	Dimensions (mm)					
			L1	L2	øD1	øD2	H(WAF)	T
MAT-2S	See drawings below.	95	39	(24)	28	21.9	Hex.26	M20×1.5
MAT-3S		124	42	(27)	32	25.9	Hex.29	M24×1.5
MAT-4S		246	48	(33)	44	35.9	Hex.41	M30×2
MAT-6S		382	58	(43)	50	41.9	Hex.46	M39×2
MAT-8S		506	66	(51)	54	47.9	Hex.50	M45×2

• MAT type must be coupled with MAS type.

Dimensions for Mounting



Model	Dimensions (mm)	
	øD	
MAS-2S / MAS-2P	23	
MAS-3S / MAS-3P	27	
MAS-4S / MAS-4P	37	
MAS-6S / MAS-6P	43	
MAS-8S / MAS-8P	49	






Model	Dimensions (mm)				
	øA	G	F		T
			Plug	Socket	
MAT-2S / MAT-2P	22 ^{+0.06} ₀	13	25		M20×1.5
MAT-3S / MAT-3P	26 ^{+0.06} ₀	13	26	28	M24×1.5
MAT-4S / MAT-4P	36 ^{+0.08} ₀	16	34	35	M30×2
MAT-6S / MAT-6P	42 ^{+0.08} ₀	17	36.5	45	M39×2
MAT-8S / MAT-8P	48 ^{+0.08} ₀	17	39	53	M45×2

For Multi-Port Connection (Automatic)

MULTI CUPLA MALC-01 Type for Low Pressure Use

One-way shut-off type for Low pressure use

Working pressure  1.0 MPa (10 kgf/cm ²)	Valve structure  One-way shut-off	Applicable fluids  Air Water
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**Solo use of socket is possible.
Suitable for operation of ejector
pins to open/close valve gates
in molding.**

- Solo use of socket is possible.
- As in the case of MULTI CUPLA MALC-SP type and MALC-HSP type, the distance between the socket plate and the plug plate is designed to be 30 mm when connected. This means MULTI CUPLA MALC-01 type can also be installed mixed with any size of MALC-SP type and MALC-HSP type on the same plate.
- An axial eccentricity allowance of 2 mm eliminates precise centering at installation.
- Compact size with " thread screw mount " and "with flange" types available.



Specifications				
Body material	Socket: Brass (Nickel plated) Plug: Brass (Nickel plated)			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	1.0	10	10	145
Seal material	Sealing material		Mark	Working temperature range
Working temperature range *1	Nitrile rubber		NBR	-20°C to +80°C

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque		Nm {kgf·cm}
Thread screw mount	15 {153}	
Flange	1.5 {15}	

Interchangeability

- Sockets and plugs can be connected regardless of end configurations.
- Not interchangeable with MALC-SP Type (for medium pressure use) MALC-1SP or MALC-HSP Type (for high pressure use) MALC-1HSP.

Minimum Cross-Sectional Area		(mm ²)
Minimum cross-sectional area	28	

Suitability for Vacuum

Not suitable for vacuum application in either connected or disconnected condition.

Load Required to Maintain Connection When Line Is Pressurized

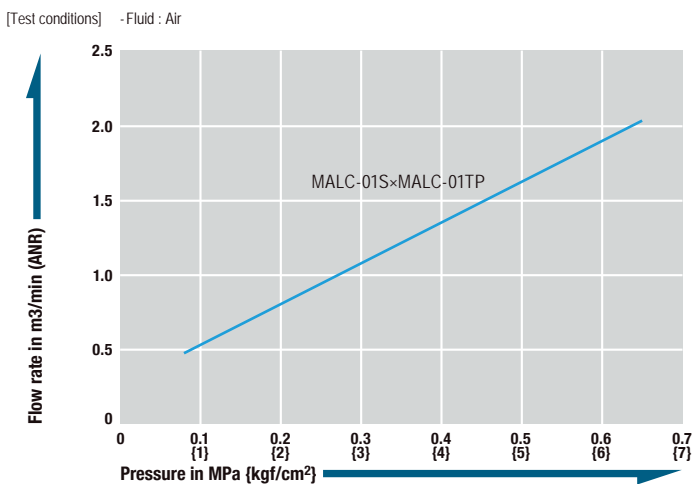
$$F = (P \times 160) + 50 \{ f = p \times 1.6 + 5 \}$$

Minimum load required to maintain connection F [N] {f [kgf]}

Actual value of pressure P [MPa] {p [kgf/cm²]}

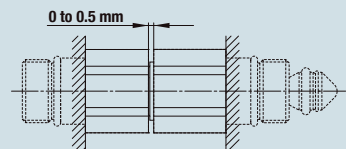
Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula. Maintain the connection with this load [F (N), f (kgf)] or more. However, the maximum acceptable load is 500 N {51 kgf}.

Pressure - Flow Characteristics



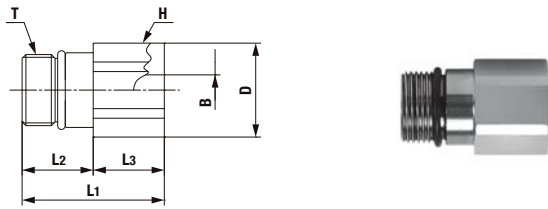
Acceptable distance between CUPLA

Socket and plug or plate must be used in contact with each other. Maximum 0.5 mm distance between socket and plug or plate is acceptable.



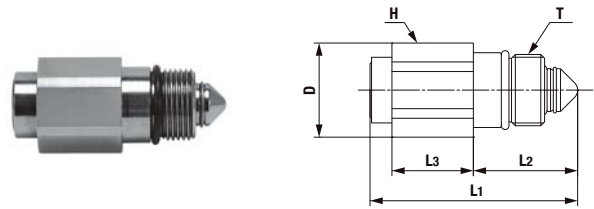
Models and Dimensions

Plug MALC-01TP type (Thread screw mount)



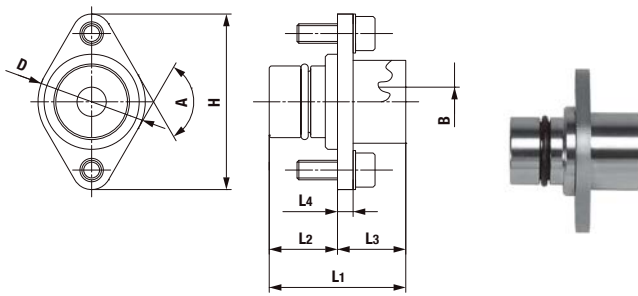
Model	Application	Mass (g)	Dimensions (mm)						
			L1	L2	L3	øD	øB	H(WAF)	T
MALC-01TP	See drawings below.	40	28	(14)	14	18.5	6	Hex.17	M14×1

Socket MALC-01S type (Thread screw mount)



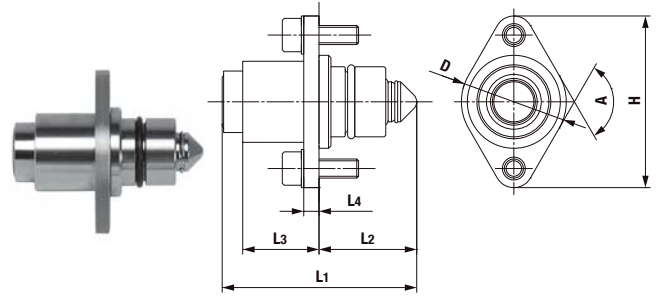
Model	Application	Mass (g)	Dimensions (mm)					T
			L1	L2	L3	øD	H(WAF)	
MALC-01S	See drawings below.	39	(41)	(20.5)	16	18.5	Hex.17	M14×1

Plug MALC-01TP-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)							
			L1	L2	L3	L4	øD	A	øB	H
MALC-01TP-FL	See drawings below.	52	28	(14)	14	3.2	(22)	120°	6	36

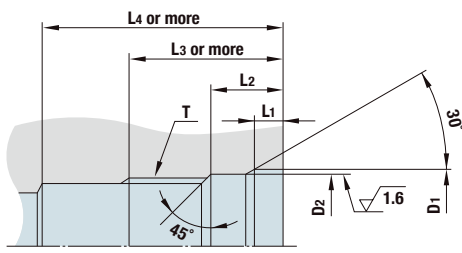
Socket MALC-01S-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)						H
			L1	L2	L3	L4	øD	A	
MALC-01S-FL	See drawings below.	51	(41)	(20.5)	16	3.2	(22)	120°	36

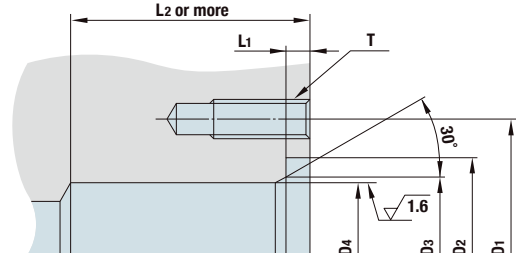
Dimensions for Mounting

MALC-01TP / 01S type (Thread screw mount)



Model	Dimensions (mm)						
	øD1	øD2	L1	L2	L3	L4	T
MALC-01S	15.8 ^{+0.05} ₀	14.8 ^{+0.05} ₀	3	7.5 ^{+0.2} ₀	16	25	M14×1
MALC-01TP						18	

MALC-01TP-FL / 01S-FL type (With flange)

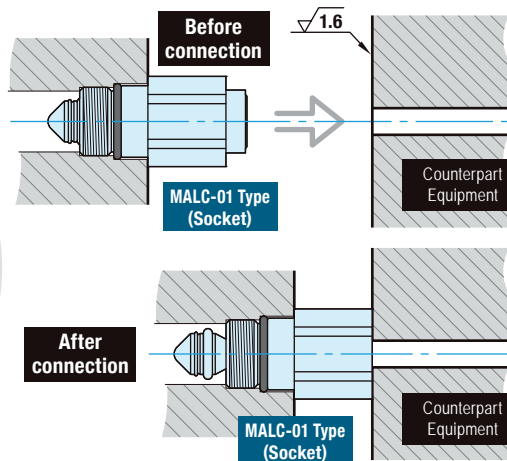
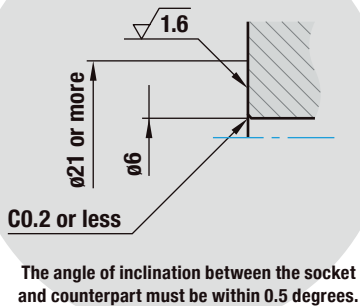


Model	Dimensions (mm)						
	D1	øD2	øD3	øD4	L1	L2	T
MALC-01S-FL	PCD28	20	16	14.8 ^{+0.05} ₀	2.5 ^{+0.1} ₀	25	2×M4×0.7 Thread depth 10 mm or more
MALC-01TP-FL						16	

Solo use of socket is possible

The shape of counterpart for solo use of socket

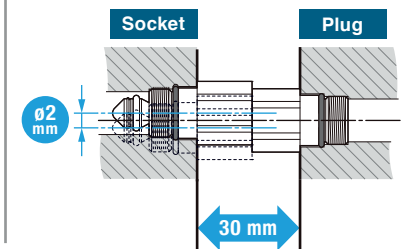
The shape of counterpart for connection



Distance between plates is 16 mm for solo use of socket.

As in the case of MULTI CUPLA MALC-SP type and MALC-HSP type, the distance between the socket plate and the plug plate is designed to be 30 mm when connected. This means MULTI CUPLA MALC-01 type can also be installed mixed with any size of MALC-SP type and MALC-HSP type on the same plate.

A 2 mm axial eccentricity allowance.



For Multi-Port Connection (Automatic)

MULTI CUPLA

MALC-SP Type for Medium Pressure Use

Low spill type for medium pressure use

Working pressure	Valve structure	Applicable fluids		
1.5 to 7.0 MPa (15 to 71 kgf/cm²)	Two-way shut-off (Spill Reduction)	Water	Hydraulic oil	Air

A single operation enables simultaneous connections of multiple lines. A special design for medium pressure use minimizes air admixture in fluid lines upon connection.

- Compared with conventional MULTI CUPLA, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on CUPLA sizes.)
- The MALC type realizes a 2 mm axial eccentricity allowance, while conventional MULTI CUPLA is only 0.6 mm.
- Special valve design enables connection of socket and plug under pressure of up to 2 MPa. (up to 1.5 MPa for MALC-12SP.)
- When connected, the distance between the socket plate and the plug plate is designed to be 30 mm for all sizes. This means that any size of CUPLA can be mounted and used on the same plate.
- Low spill valves minimize outflow of fluid and admixture of air into the fluid line.



Specifications				
Body material		Stainless steel (Socket body: Nickel plated)		
Model	Thread screw mount	MALC-1SP	MALC-2 to 8SP	MALC-12SP
	Flange	-	MALC-2 to 8SP-FL	-
	Snap ring	-	MALC-8SP-10F	MALC-12SP-(F/-16F)
Working pressure (Individual unit)	MPa	7.0 (2.0)	5.0 (2.0)	1.5 (1.5)
	kgf/cm ²	71 (20)	51 (20)	15 (15)
	bar	70 (20)	50 (20)	15 (15)
	PSI	1020 (290)	725 (290)	218 (218)
Seal material		Sealing material	Mark	Working temperature range
Working temperature range ¹⁾		Fluoro rubber	FKM	-20°C to +180°C

¹⁾ The operable temperature range depends on the operating conditions.

Maximum Tightening Torque						Nm {kgf·cm}	
Model	1SP	2SP	3SP	4SP	6SP	8SP	12SP-16F
Thread screw mount	20 {204}	30 {306}	35 {357}	45 {460}	60 {612}	75 {765}	80 {816}
Flange	-	7 {71.5}	7 {71.5}	7 {71.5}	7 {71.5}	23 {235}	-
Snap ring	-	-	-	-	-	260 {2652}	280 {2856}

Interchangeability
Socket and plug in the same size can be connected regardless of their end configurations.

Minimum Cross-Sectional Area (mm ²)							
Model	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Min. cross-sectional area	26	49.5	87	153	227	347	795

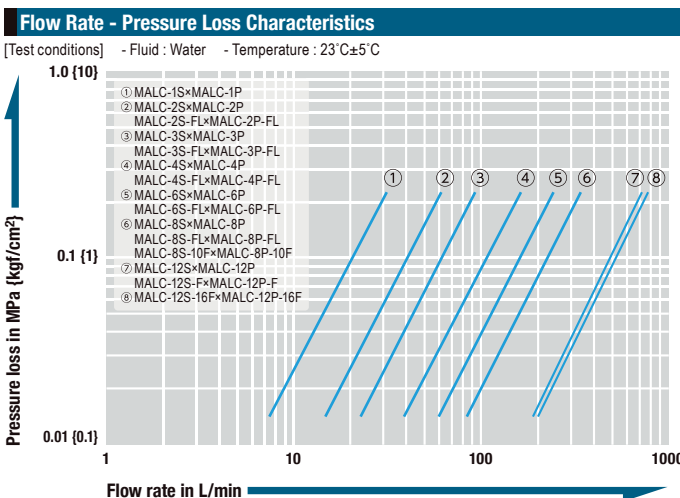
Suitability for Vacuum
Not suitable for vacuum application in either connected or disconnected condition.

Admixture of Air on Connection (mL)							
Model	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85	1.46

Volume of Spillage per Disconnection (mL)							
Model	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85	1.46

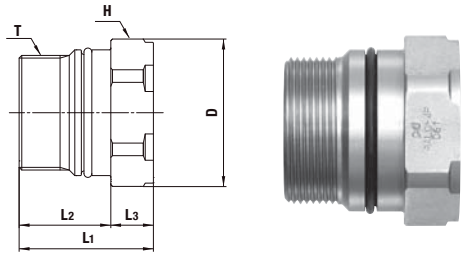
Load Required to Maintain Connection When Line Is Pressurized							
Model	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Maximum acceptable load N (kgf)	2800 {286}	4500 {459}	5600 {571}	10000 {1019}	14000 {1427}	15600 {1591}	8200 {837}
Minimum load required to maintain connection N (kgf) ^{*1}	P×170+85 {p×1.7+8.5}	P×345+180 {p×3.45+18}	P×460+190 {p×4.6+19}	P×855+260 {p×8.55+26}	P×1160+260 {p×11.6+26}	P×1360+310 {p×13.6+31}	P×2260+400 {p×22.6+40}

^{*1} Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.



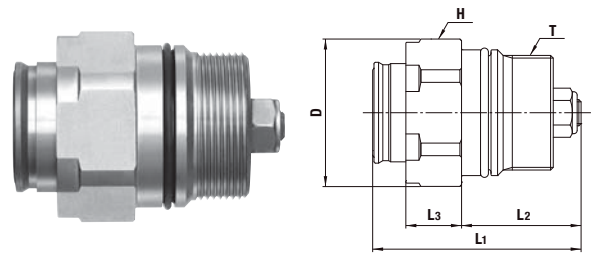
Models and Dimensions

Plug MALC-1 to 12P type (Thread screw mount)



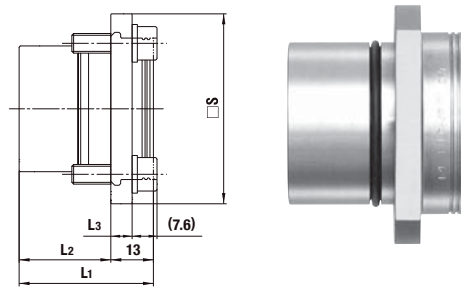
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1P	See page 137	40	32	(18)	14	21	Hex.19	M16×1
MALC-2P		75	33	(20)	13	28	Hex.26	M20×1.5
MALC-3P		95	33	(20)	13	32	Hex.29	M24×1.5
MALC-4P		248	41	(28)	13	45	Hex.41	M35×1.5
MALC-6P		369	50.5	(37.5)	13	50	Hex.46	M40×2
MALC-8P		399	53	(41)	12	54	Hex.50	M45×2
MALC-12P		724	57	(45)	12	74	Hex.67	M62×2

Socket MALC-1 to 12S type (Thread screw mount)



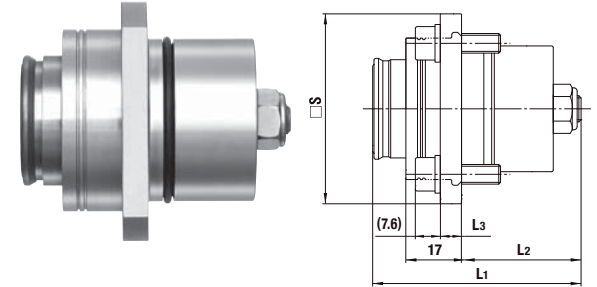
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1S	See page 137	53	(45)	(23)	16	21	Hex.19	M16×1
MALC-2S		95	(49)	(26)	17	28	Hex.26	M20×1.5
MALC-3S		120	(51)	(26)	17	32	Hex.29	M24×1.5
MALC-4S		306	(64)	(36.5)	17	45	Hex.41	M35×1.5
MALC-6S		471	(78.5)	(47.5)	17	50	Hex.46	M40×2
MALC-8S		590	(86)	(53)	18	54	Hex.50	M45×2
MALC-12S		1176	(98)	(60)	18	74	Hex.67	M62×2

Plug MALC-2 to 6P-FL type (With flange)



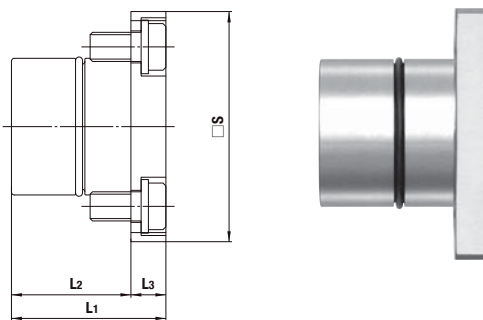
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□ S
MALC-2P-FL	See page 137	146	30	(17)	6	40
MALC-3P-FL		180	33	(20)	6	45
MALC-4P-FL		390	41	(28)	6.5	58
MALC-6P-FL		553	50.5	(37.5)	6.5	64

Socket MALC-2 to 6S-FL type (With flange)



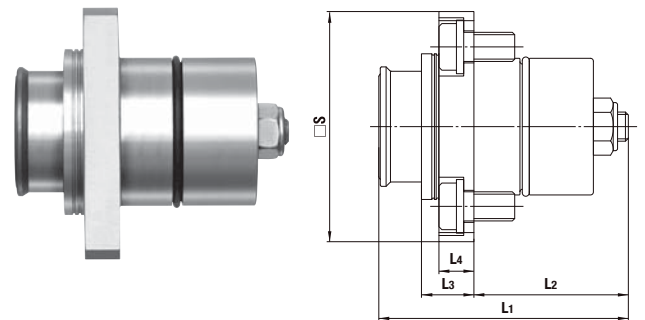
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□ S
MALC-2S-FL	See page 137	173	(49)	(26)	6	40
MALC-3S-FL		208	(51)	(26)	6	45
MALC-4S-FL		449	(64)	(36.5)	6.5	58
MALC-6S-FL		663	(78.5)	(47.5)	6.5	64

Plug MALC-8P-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□ S
MALC-8P-FL	See page 137	796	53	(41)	12	79

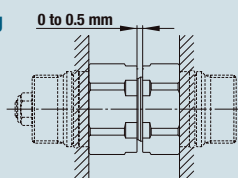
Socket MALC-8S-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□ S
MALC-8S-FL	See page 137	978	(86)	(53)	18	12	79

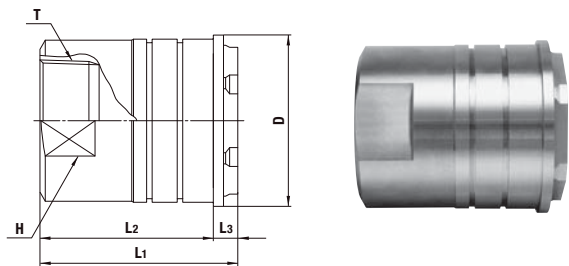
Acceptable distance between socket and plug

Plug and socket must be used in contact with each other.
Maximum 0.5 mm distance between socket and plug is acceptable.



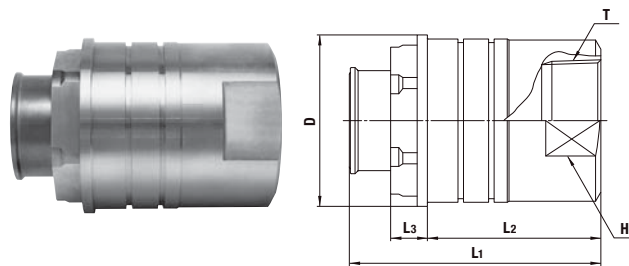
Models and Dimensions

Plug MALC-8 / 12P type (With snap ring)



Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-8P-10F	See drawings below.	1182	(87)	75	(12)	64	54	Rc 1 1/4
MALC-12P-F		2054	(97)	85	(12)	84	58	Rc 1 1/2
MALC-12P-16F		2128	(97)	85	(12)	84	71	Rc 2

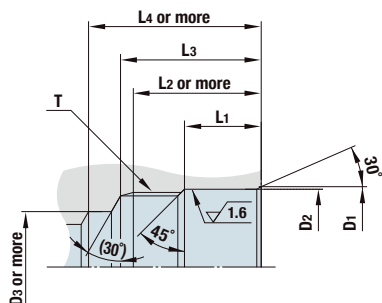
Socket MALC-8 / 12S type (With snap ring)



Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-8S-10F	See drawings below.	1373	(108)	75	(18)	64	54	Rc 1 1/4
MALC-12S-F		2505	(123)	85	(18)	84	58	Rc 1 1/2
MALC-12S-16F		2579	(123)	85	(18)	84	71	Rc 2

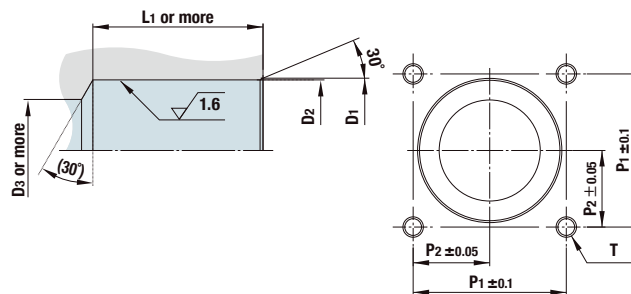
Dimensions for Mounting

MALC-1 to 12SP type (Thread screw mount)



Model	Dimensions (mm)							T
	øD1	øD2	øD3	L1	L2	L3	L4	
MALC-1S	18.3 ^{+0.1} ₀	17.3 ^{+0.06} ₀	13	11	20	22	25	M16×1
MALC-1P								
MALC-2S	24 ^{+0.1} ₀	23 ^{+0.06} ₀	16	11.5	22	25	28	M20×1.5
MALC-2P								
MALC-3S	27.6 ^{+0.1} ₀	26.6 ^{+0.08} ₀	18	11	22	25	29	M24×1.5
MALC-3P								
MALC-4S	39.5 ^{+0.1} ₀	38.5 ^{+0.08} ₀	26	15.5	30	33	40.5	M35×1.5
MALC-4P								
MALC-6S	45 ^{+0.1} ₀	44 ^{+0.08} ₀	30	20	40	44	51.5	M40×2
MALC-6P								
MALC-8S	48 ^{+0.3} ₀	47 ^{+0.08} ₀	35	27	43	47	55	M45×2
MALC-8P								
MALC-12S	66 ^{+0.3} ₀	64 ^{+0.1} ₀	45	30	50	54	65	M62×2
MALC-12P								

MALC-2 to 8SP-FL type (With flange)



Model	Dimensions (mm)						T
	øD1	øD2	øD3	L1	P1	P2	
MALC-2S-FL	24 ^{+0.1} ₀	23 ^{+0.06} ₀	16	28	28	14	4×M6 Thread depth 17 mm or more
MALC-2P-FL				19			
MALC-3S-FL	27.6 ^{+0.1} ₀	26.6 ^{+0.08} ₀	18	28	31	15.5	
MALC-3P-FL				22			
MALC-4S-FL	39.5 ^{+0.1} ₀	38.5 ^{+0.08} ₀	26	39	40	20	4×M10 Thread depth 15 mm or more
MALC-4P-FL				30.5			
MALC-6S-FL	45 ^{+0.1} ₀	44 ^{+0.08} ₀	30	50	45	22.5	
MALC-6P-FL				40			
MALC-8S-FL	48 ^{+0.3} ₀	47 ^{+0.08} ₀	35	53	55	27.5	
MALC-8P-FL				43			

MALC-8 / 12P type (With snap ring)

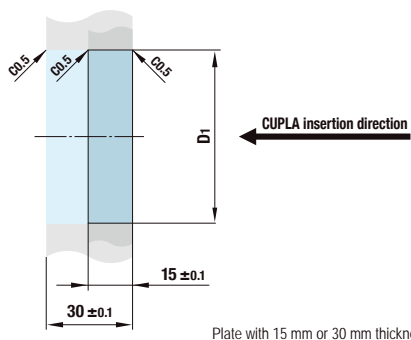
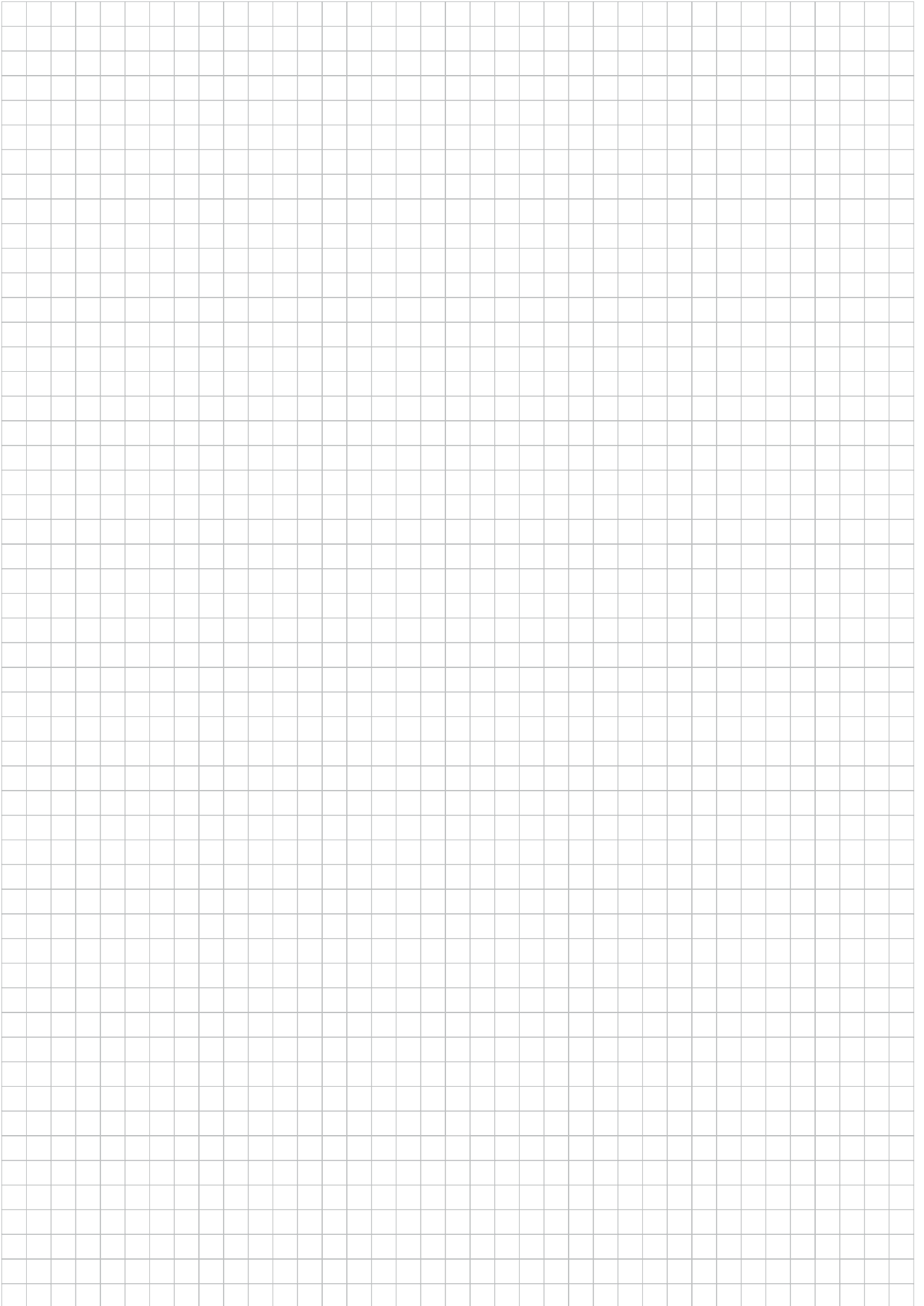


Plate with 15 mm or 30 mm thickness can be mounted.

Model	Dimensions (mm)	
	øD1	
MALC-8S-10F	60.1 ^{+0.1} ₀	
MALC-8P-10F		
MALC-12S-F	80.1 ^{+0.1} ₀	
MALC-12P-F		
MALC-12S-16F	80.1 ^{+0.1} ₀	
MALC-12P-16F		



For Multi-Port Connection (Automatic)

MULTI CUPLA

MALC-HSP Type for High Pressure Use

Low spill type for high pressure use

Working pressure



21.0 to 25.0 MPa
(214 to 255 kgf/cm²)

Valve structure



Two-way shut-off
(Spill Reduction)

Applicable fluids



Hydraulic oil

A single operation enables simultaneous connections of multiple lines. A special design minimizes air admixture in fluid lines upon connection. Suitable for high pressure hydraulic circuits.

- Compared with conventional MULTI CUPLA, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on CUPLA sizes.)
- The MALC type realizes a 2 mm axial eccentricity allowance, while the conventional MULTI CUPLA is only 0.6 mm.
- Special valve design enables connection of socket and plug under dynamic pressure of up to 8 MPa.
- When connected, the distance between the socket plate and plug plate is designed to be 30 mm for all sizes. This means any size of CUPLA can be mounted and used on the same plate.
- Low spill valves minimize outflow of fluid and admixture of air into the fluid line.



Specifications			
Body material		Special steel (Nickel plated)	
Model	Thread screw mount	MALC-1HSP	MALC-2 to 8HSP
	Flange	-	MALC-2 to 8HSP-FL
Working pressure (Individual unit)	MPa	25.0 (8.0)	21.0 (8.0)
	kgf/cm ²	255 (81)	214 (81)
	bar	250 (80)	210 (80)
	PSI	3630 (1160)	3050 (1160)
Seal material		Sealing material	Mark
Working temperature range *1		Fluoro rubber	FKM
		Working temperature range	
		-20 °C to +180 °C	

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque						Nm {kgf·cm}
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Thread screw mount	30 {306}	50 {510}	53 {540}	65 {663}	80 {816}	95 {969}
Flange	-	9 {91}				30 {306}

Interchangeability
Socket and plug in the same size can be connected regardless of their end configurations.

Minimum Cross-Sectional Area						(mm ²)
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Min. cross-sectional area	26	49.5	87	153	227	347

Suitability for Vacuum
Not suitable for vacuum application in either connected or disconnected condition.

Admixture of Air on Connection						(mL)
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85

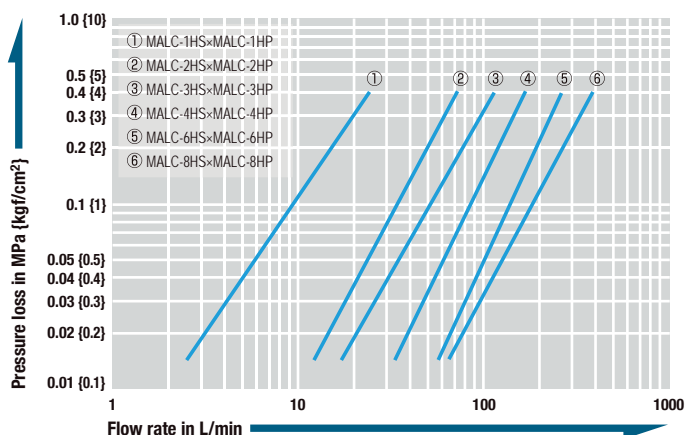
Volume of Spillage per Disconnection						(mL)
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85

Load Required to Maintain Connection When Line Is Pressurized						
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Maximum acceptable load N (kgf)	9300 {948}	16500 {1683}	22000 {2244}	40500 {4130}	55000 {5609}	64500 {6577}
Minimum load required to maintain connection N (kgf) *1	P×170+85 {p×1.7+8.5}	P×345+180 {p×3.45+18}	P×460+190 {p×4.6+19}	P×855+260 {p×8.55+26}	P×1160+260 {p×11.6+26}	P×1360+310 {p×13.6+31}

*1: Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

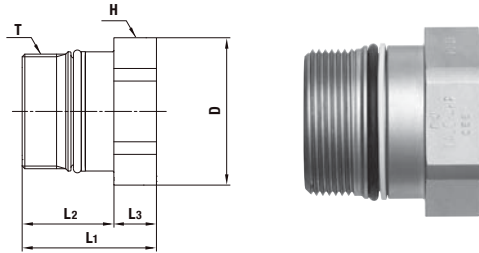
Flow Rate - Pressure Loss Characteristics

[Test conditions] - Fluid : Hydraulic oil - Temperature : 30 °C±5 °C
- Fluid viscosity : 32×10⁻⁶ m²/s - Density : 0.87×10³ kg/m³



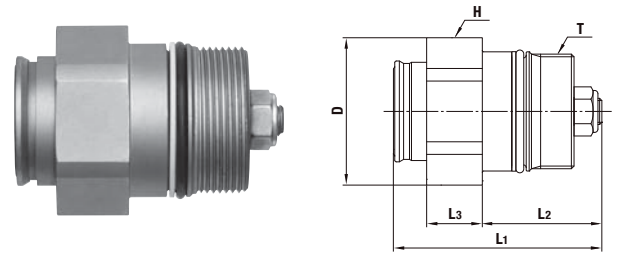
Models and Dimensions

Plug MALC-1 to 8HP type (Thread screw mount)



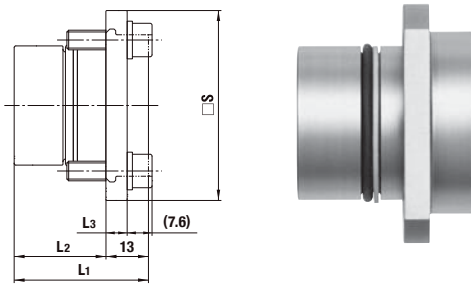
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HP	See page 141	39	32	(18)	14	21	Hex.19	M16×1
MALC-2HP		73	33	(20)	13	28	Hex.26	M20×1.5
MALC-3HP		96	33	(20)	13	32	Hex.29	M24×1.5
MALC-4HP		250	41	(28)	13	45	Hex.41	M35×1.5
MALC-6HP		357	50.5	(37.5)	13	50	Hex.46	M40×2
MALC-8HP		391	53	(41)	12	54	Hex.50	M45×2

Socket MALC-1 to 8HS type (Thread screw mount)



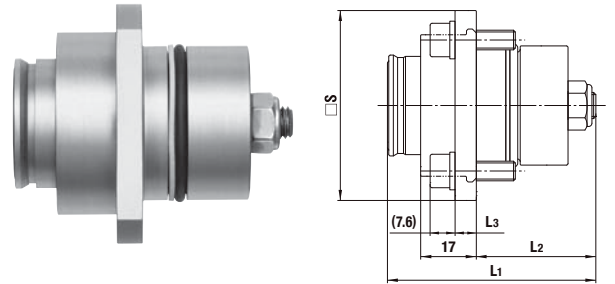
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HS	See page 141	51	(45)	(23)	16	21	Hex.19	M16×1
MALC-2HS		89	(49)	(26)	17	28	Hex.26	M20×1.5
MALC-3HS		117	(51)	(26)	17	32	Hex.29	M24×1.5
MALC-4HS		290	(64)	(36.5)	17	45	Hex.41	M35×1.5
MALC-6HS		447	(78.5)	(47.5)	17	50	Hex.46	M40×2
MALC-8HS		579	(86)	(53)	18	54	Hex.50	M45×2

Plug MALC-2 to 6HP-FL type (With flange)



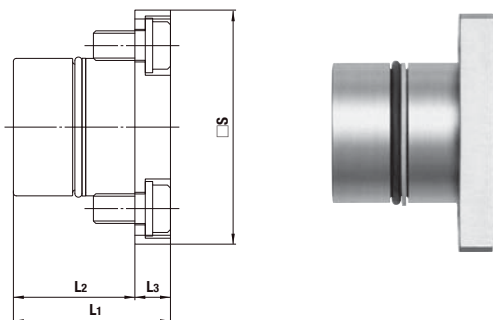
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	S
MALC-2HP-FL	See page 141	142	30	(17)	6	40
MALC-3HP-FL		179	33	(20)	6	45
MALC-4HP-FL		367	41	(28)	6.5	58
MALC-6HP-FL		514	50.5	(37.5)	6.5	64

Socket MALC-2 to 6HS-FL type (With flange)



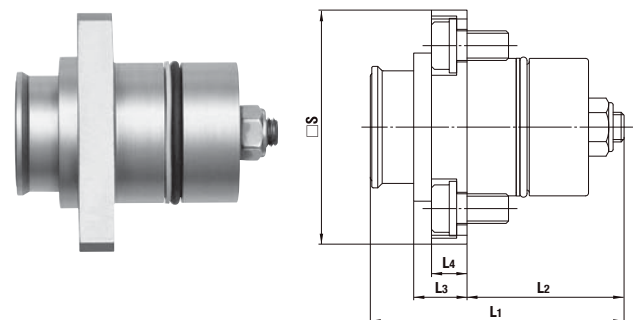
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	S
MALC-2HS-FL	See page 141	163	(49)	(26)	6	40
MALC-3HS-FL		200	(51)	(26)	6	45
MALC-4HS-FL		418	(64)	(36.5)	6.5	58
MALC-6HS-FL		611	(78.5)	(47.5)	6.5	64

Plug MALC-8HP-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	S
MALC-8HP-FL	See page 141	786	53	(41)	12	79

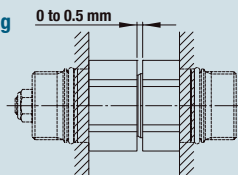
Socket MALC-8HS-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	S
MALC-8HS-FL	See page 141	964	(86)	(53)	18	12	79

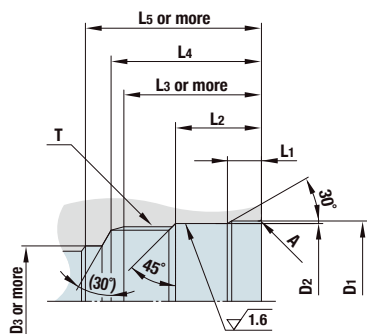
Acceptable distance between Socket and Plug

Plug and socket must be used in contact with each other.
Maximum 0.5 mm distance between socket and plug is acceptable.



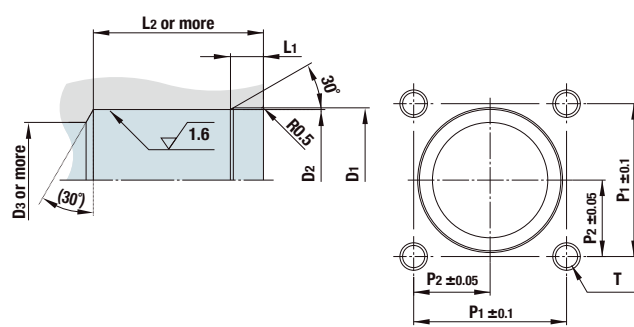
Dimensions for Mounting

MALC-1 to 8HSP type (Thread screw mount)



Model	Dimensions (mm)									
	øD1	øD2	øD3	L1	L2	L3	L4	L5	T	A
MALC-1HS	17.8 ^{+0.1} ₀	16.8 ^{+0.06} ₀	13	3.5 ^{+0.2} ₀	11	20	22	25	M16×1	C0.2
MALC-1HP										
MALC-2HS	23 ^{+0.1} ₀	22 ^{+0.06} ₀	16	2.8 ^{+0.2} ₀	11	22	25	28	M20×1.5	R0.5
MALC-2HP										
MALC-3HS	27.1 ^{+0.1} ₀	26 ^{+0.08} ₀	18	2.8 ^{+0.2} ₀	11	22	25	29	M24×1.5	R0.5
MALC-3HP										
MALC-4HS	37.7 ^{+0.3} ₀	36.5 ^{+0.08} ₀	26	6 ^{+0.2}	18	30	33	40.5	M35×1.5	R0.5
MALC-4HP										
MALC-6HS	42.5 ^{+0.3} ₀	41.5 ^{+0.08} ₀	30	6 ^{+0.2}	23	40	44	51.5	M40×2	R0.5
MALC-6HP										
MALC-8HS	47.5 ^{+0.3} ₀	46.5 ^{+0.08} ₀	35	10.5 ^{+0.2}	27	43	47	55	M45×2	R0.5
MALC-8HP										

MALC-2 to 8HSP-FL type (With flange)



Model	Dimensions (mm)							
	øD1	øD2	øD3	L1	L2	P1	P2	T
MALC-2HS-FL	23 ^{+0.1} ₀	22 ^{+0.06} ₀	16	2.8 ^{+0.2} ₀	28	28	14	4×M6 Thread depth 17 mm or more
MALC-2HP-FL					19			
MALC-3HS-FL	27.1 ^{+0.1} ₀	26 ^{+0.08} ₀	18	2.8 ^{+0.2} ₀	28	31	15.5	
MALC-3HP-FL					22			
MALC-4HS-FL	37.7 ^{+0.3} ₀	36.5 ^{+0.08} ₀	26	6 ^{+0.2}	39	40	20	
MALC-4HP-FL					30.5			
MALC-6HS-FL	42.5 ^{+0.3} ₀	41.5 ^{+0.08} ₀	30	6 ^{+0.2}	50	45	22.5	4×M10 Thread depth 15 mm or more
MALC-6HP-FL					40			
MALC-8HS-FL	47.5 ^{+0.3} ₀	46.5 ^{+0.08} ₀	35	10.5 ^{+0.2}	53	55	27.5	
MALC-8HP-FL					43			