Hydraulic Oil /Positive Air Pressure / Negative Air Pressure / Coolant

Auto Coupler

Model JVA/JVB
Model JVC/JVD
Model JVE/JVF
Model JNA/JNB
Model JNC/JND
Model JLP/JLS
Model JTA/JTB

Coupler to Connect Fluid Circuit

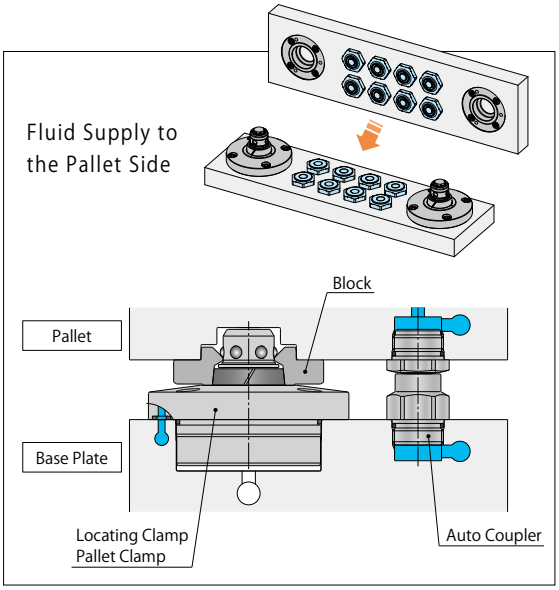
Compact and applicable to various fluids and flow rates.

What is Auto Coupler?

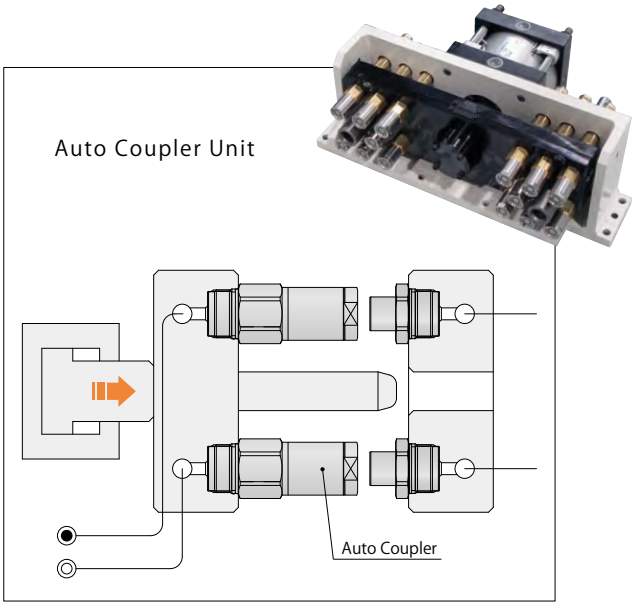
Auto coupler, designed to connect a variety of flow circuits, is suitable for automation and fits in small spaces. We can offer based on your requirement.

※ The auto coupler does not have non-leak mechanism. In case you need the non-leak function, please refer to "Non-Leak Coupler" on KWCS Complete Catalog or visit our website (http://www.kosmek.com).

Application Examples

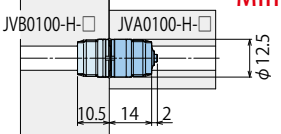
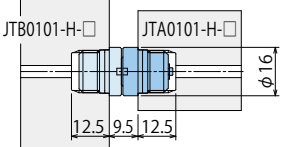
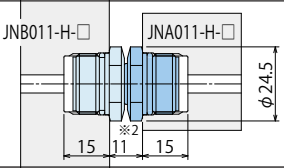
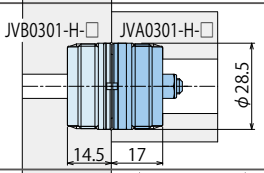
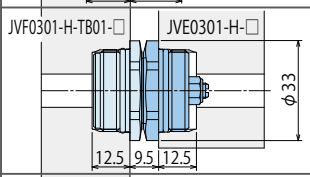
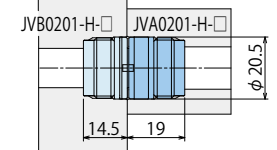
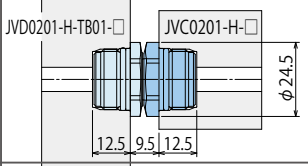
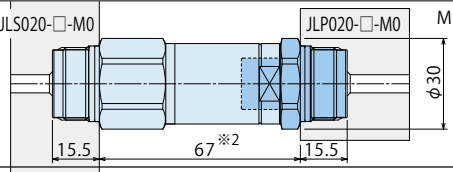
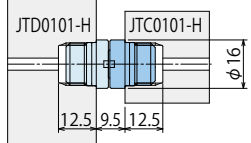
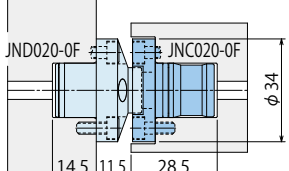
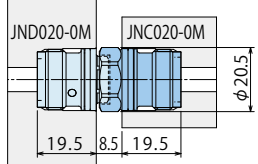


Connecting from the Pallet Bottom



Connecting from Outside

Variation

Usable Fluid	Pressure Range	Comparison of Auto Coupler Connected Dimension ※ The shortest dimension combination of each coupler model.	Model No.
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	1MPa or less	Min. Passage Area：8mm² Minimum Size 	Model JVA0100/ JVB0100 NEW → P.827
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	1MPa or less	Min. Passage Area：5mm² 	Model JTA/JTB → P.861
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	1MPa or less	Min. Passage Area：8.8mm² (At Eccentricity：7.4mm²) 	Model JNA/JNB → P.847
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	1MPa or less	Min. Passage Area：29.0mm² 	Model JVA0301/ JVB0301 → P.835
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	1MPa or less	Min. Passage Area：29.0mm² (In case of JVF0301-H-□-QJ□ Min. Passage Area：21.8mm²) 	Model JVE/JVF → P.843
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	7MPa or less	Min. Passage Area：12.6mm² 	Model JVA0201/ JVB0201 → P.831
Positive air pressure / Negative air pressure / Coolant / General Hyd. Oil	7MPa or less	Min. Passage Area：12.6mm² (In case of JVD0201-H-□-QJ□ Min. Passage Area：10mm²) 	Model JVC/JVD → P.839
Positive air pressure / Coolant / General Hyd. Oil	3.5MPa or less 25MPa or less ※Depends on the material of the product.		Model JLP/JLS → P.857
Positive air pressure / Coolant / General Hyd. Oil	7MPa or less	Min. Passage Area：5mm² 	Model JTC/JTD → Please refer to our website for details.
Positive air pressure / Coolant / General Hyd. Oil	25MPa or less	Min. Passage Area：10.3mm²  Min. Passage Area：10.3mm² 	Model JNC/JND → P.853

※1. The minimum passage area of JLP/JLS differs depending on size.
※2. It shows the connecting dimension on multiple connection.
1. Please refer to each page for detail.

Auto Coupler

Model JVA0100/JVB0100

Positive/Negative air pressure
(Operating Pressure Range : lower than 1MPa)

※This is a full-scale photo.

100% Stainless Steel

JVA0100/JVB0100 Feature

The new auto coupler is designed to be as compact as possible,and maximizes passage area.
Connection stroke is 1mm, and it is easily used with Screw Locator (model VXE/VXF) for quick change.

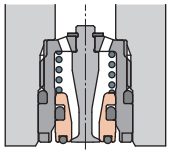
※ The auto coupler does not have the non-leak function. In case you need the non-leak function, please refer to "Non-Leak Coupler" on KWCS Complete Catalog or visit our website (http://www.kosmek.com).

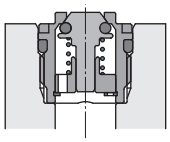
※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

Action Description

Disconnected State	In the Process of Connecting (Pallet Setting)	Connected State

JVA (Fixture Side)

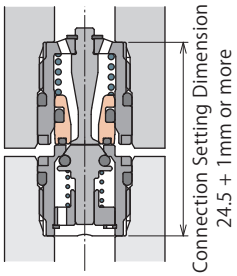




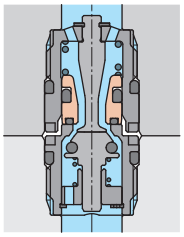
JVB (Pressure Source Side)

① When Not Using with Screw Locator

Reaction force is not generated at the distance of 1mm or further than the connection setting dimensions (24.5mm).
Reaction force is generated at the distance of 1mm or less than the connection setting dimensions (24.5mm).

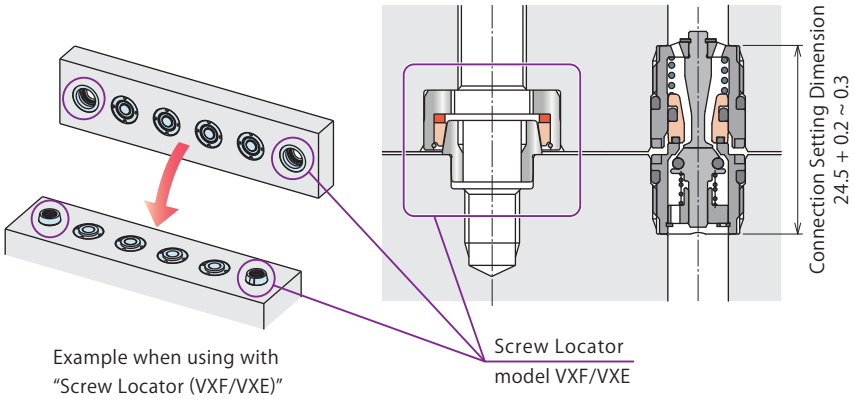


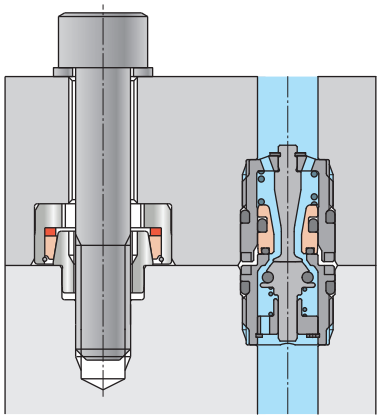
The reaction force is generated by the built-in spring and the pressure of provided fluid.



② When Using with Screw Locator (VXF/VXE)

The reaction force (spring force) is generated when setting up the pallet because the stroke of "Screw Locator" is 0.2 ~ 0.3mm.
If using a light pallet, it may be lifted up when tightening.





Model No. Indication

JV B 010 0 - H - CR

1 2 3 4

1 Style

A : O-ring side of Connection Surface (Outgoing Side / Fixture Side)

B : Metal Side of Connection Surface (Incoming Side / Pressure Source Side)

2 Design No.

0 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

4 Grease

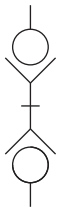
Blank : NBU8EP made by NOK KLUEBER (Standard)
CR : AFF made by THK (For clean environment)
FD : NH1 64-422 made by NOK KLUEBER (For food machinery)

Specifications

Model No.	Fixture Side		**JVA0100-H-□**
	Pressure Source Side		**JVB0100-H-□**
Max. Operating Pressure		MPa	1.0
Withstanding Pressure		MPa	1.5
Min. Passage Area		mm2	8
Offset Distance (Tolerance)		mm	±0.5
Angular Deviation (Tolerance)		DEG.	0.3
Operating Temperature		℃	0 ~ 120
Usable Fluid			Positive / Negative air pressure
Reaction Force kN	Operating Pressure	at 0.5 MPa	0.045
		at P MPa	0.050 × P + 0.02
Weight g		JVA0100	8
		JVB0100	6

Circuit Symbol

JVA0100
(Outgoing Side / Fixture Side)



Metal Seal

Soft Seal

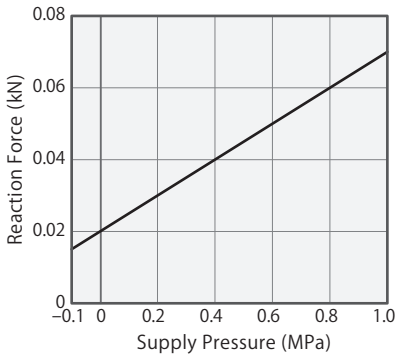
JVB0100
(Incoming Side / Pressure Source Side

※ Since JVA0100 is a metal seal, there will be slight leakage when pressurized while disconnected.

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JVA0100/JVB0100 is completed.

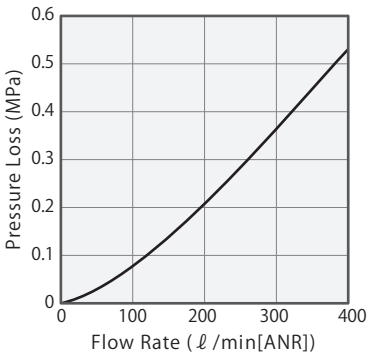
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.015
0	0.020
0.1	0.025
0.2	0.030
0.3	0.035
0.4	0.040
0.5	0.045
0.6	0.050
0.7	0.055
0.8	0.060
0.9	0.065
1.0	0.070



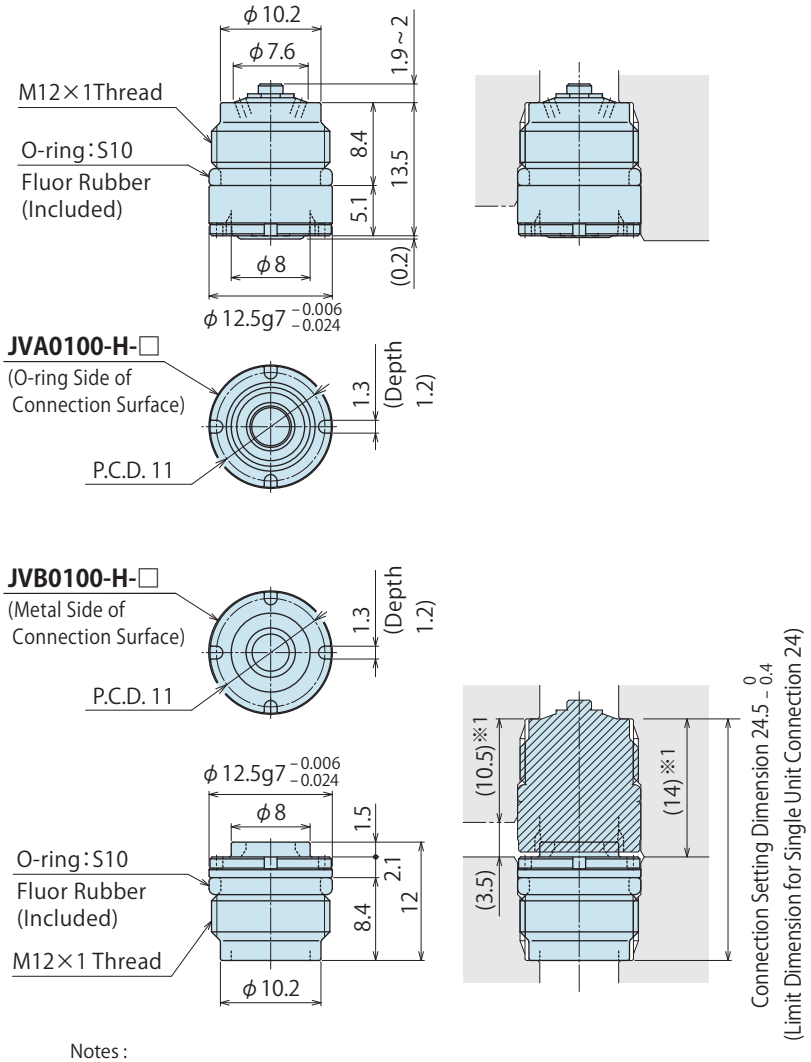
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is air.

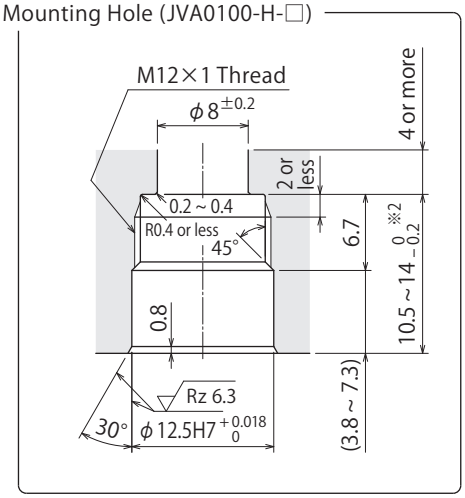
Flow Rate (ℓ/min[ANR])	Pressure Loss (MPa)
0	0
80	0.05
123	0.1
160	0.15
188	0.2
258	0.3
320	0.4
382	0.5



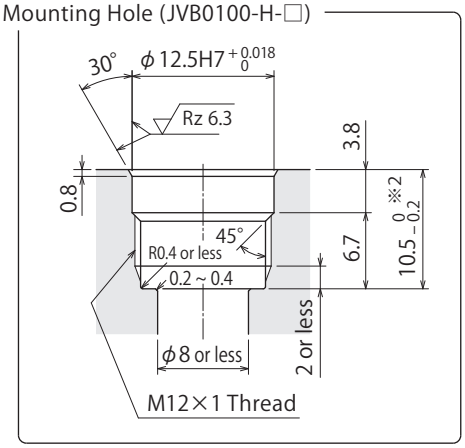
External Dimensions (JVA0100/ JVB0100)



Machining Dimensions for Mounting Hole (JVA0100-H-□)



Machining Dimensions for Mounting Hole (JVB0100-H-□)



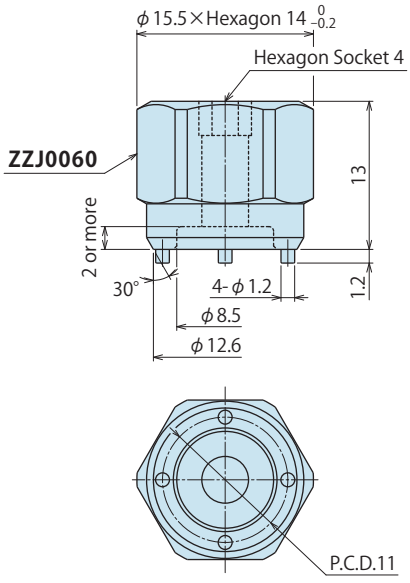
Model No.	Thread Size	Tightening Torque (N·m)
JVA0100-H-□ JVB0100-H-□	M12×1	0.8

Notes :

1. When ※1 dimension is 14 mm, clearance between base plate and pallet is 0 mm.
   When ※1 dimension is 10.5 mm, clearance between base plate and pallet is 3.5 mm.
2. For the tolerance of ※2, when using with the pallet clamp (Lift-Up Stroke 1mm) and it is required to prevent the force of spring in JVA_JVB, the tolerance of each machining depth should be ±0.05mm.
   (Connection Setting Dimension:24.5±0.10mm)
3. Mounting Jig (Model ZZJ0060) or equivalent is required to install and remove JVA0100/JVB0100.
   Mounting Jig (Model ZZJ0060) is not included with JVA0100/JVB0100. Please order separately.

Accessary : Mounting Jig

This jig is used to mount and remove the JVA0100/JVB0100.
Tightening Torque: 0.8 N·m



Model No. Indication

ZZJ0060

Design No.
(Revision Number)

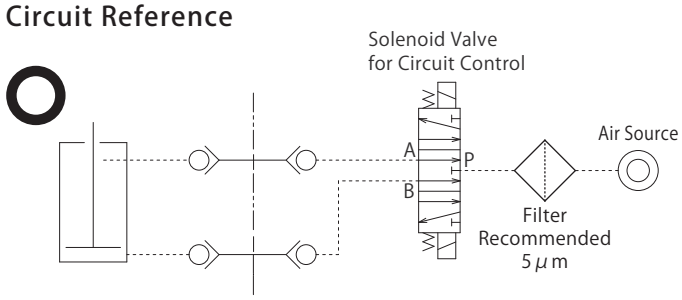
Note :

1. This mounting jig (Model ZZJ0060) or equivalent is required to install and remove JVA0100/JVB0100.
   Please determine the required number of jigs when ordering.

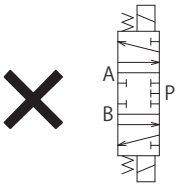
Notes for Usage (JVA0100/JVB0100)

1. Do not connect or disconnect the auto coupler under pressure. (Refer to the following Circuit Reference.)
2. Do not connect the coupler when contaminants are adhered on each connecting surface.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
3. Exceeding allowable offset leads to damage on internal parts. It is recommended to install a guide pin, etc.
4. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 0.25 kN.
5. For mounting and removing the coupler, use the mounting jig ZZJ0060 or equivalent.

Circuit Reference



Use a 3-position exhaust center solenoid valve for circuit control, and stop providing air pressure with the center position when connecting/disconnecting JVA/JVB.



Do not use a 3-position closed center for solenoid valve for circuit control because JVA/JVB will be connected/disconnected under pressure.

Auto Coupler

Model JVA0201/JVB0201

Hydraulic Oil/Positive air pressure/
Negative air pressure/Coolant
(Operating Pressure Range : lower than 7MPa)

100% Stainless Steel

JVA0201/JVB0201Feature

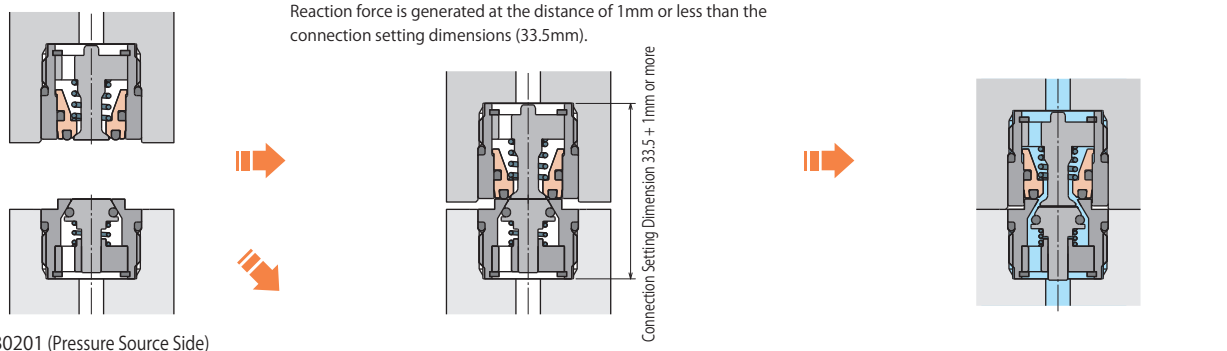
It is suitable for connecting and disconnecting fluid circuits when changing fixture pallets and tombstones.
This threaded auto coupler can be easily used with "Screw Locator (VXE/VXF)".

※ The auto coupler does not have the non-leak function. In case you need the non-leak function, please refer to "Non-Leak Coupler" on KWCS Complete Catalog or visit our website (http://www.kosmek.com).

※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

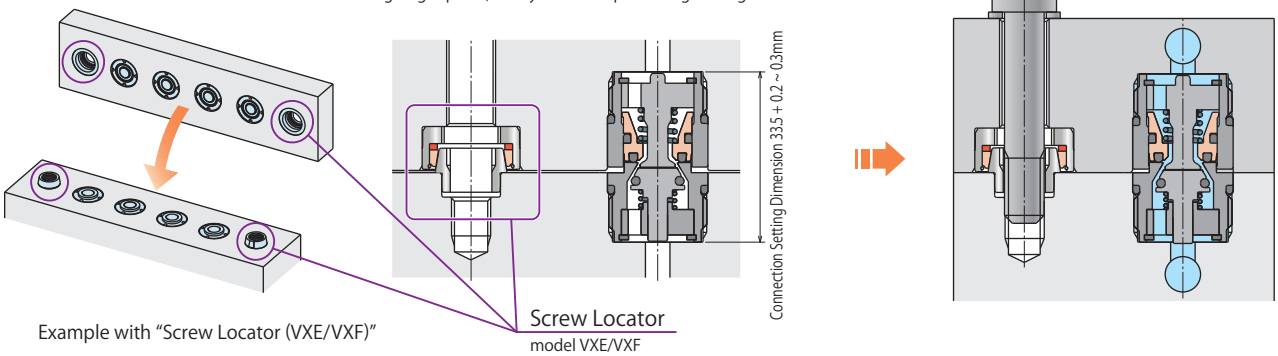
Action Description

Disconnected State	In the Process of Connecting (During Pallet Setting)	Connected State
JVA0201 (Fixture Side)	① Using without "Screw Locator" The reaction force is not generated at the distance of 1mm or further than the connection setting dimensions (33.5mm). Reaction force is generated at the distance of 1mm or less than the connection setting dimensions (33.5mm).	The reaction force is generated by the built-in spring and the supply pressure.



JVB0201 (Pressure Source Side)

② Using with "Screw Locator"
The reaction force (spring force) is generated when setting up the pallet because the stroke of "Screw Locator" is 0.2 ~ 0.3mm.
If using a light pallet, it may be lifted up when tightening.



Example with "Screw Locator (VXE/VXF)"

Model No. Indication

JV **B** 020 **1** - **H** - **CR**

1 2 3 4

1 Style

A : O-ring side of Connection Surface (Fixture Side)

B : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

4 Grease

Blank : NBU8EP made by NOK KLUEBER (Standard)

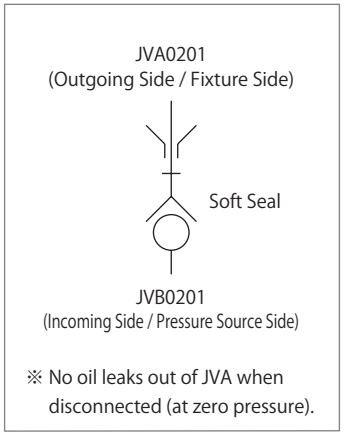
CR : AFF made by THK (For clean environment)

FD : NH1 64-422 made by NOK KLUEBER (For food machinery)

Specifications

Model No.	Fixture Side	JVA0201-H-□
	Pressure Source Side	JVB0201-H-□
Max. Operating Pressure MPa		7.0
Withstanding Pressure MPa		10.5
Min. Passage Area mm²		12.6
Offset Distance (Tolerance) mm		±0.5
Angular Deviation (Tolerance) DEG.		0.3
Operating Temperature ℃		0 ~ 120
Usable Fluid		General Hydraulic Oil Equivalent to ISO-VG-32, Positive air pressure , Negative air pressure , Coolant
Reaction Force kN (Operating Pressure)	at 7 MPa	1.12
	at 1 MPa	0.19
	at P MPa	0.154 × P + 0.04
Weight g	JVA0201	30
	JVB0201	24

Circuit Symbol

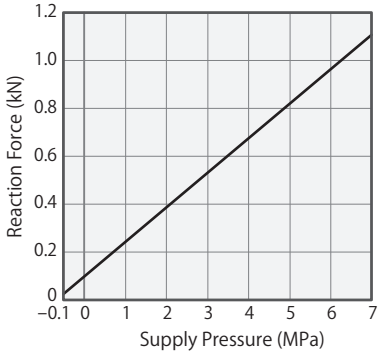


※ No oil leaks out of JVA when disconnected (at zero pressure).

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JVA0201/JVB0201 is completed.

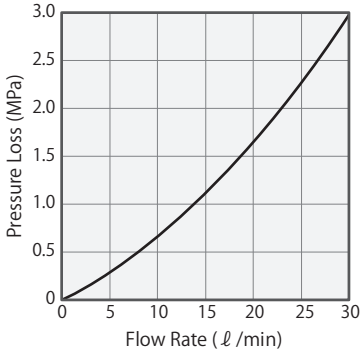
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.02
0	0.04
1	0.19
2	0.35
3	0.50
4	0.66
5	0.81
6	0.96
7	1.12



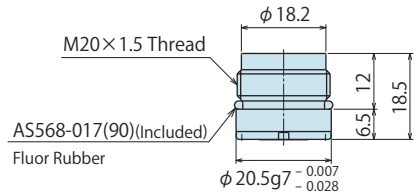
Flow Rate—Pressure Loss Characteristic Graph

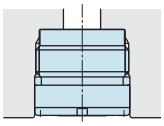
The fluid used on this data is general hydraulic oil equivalent to ISO-VG-32 (30 ~ 40℃).

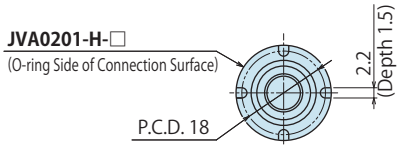
Flow Rate (ℓ/min)	Pressure Loss (MPa)
0	0
5	0.29
10	0.66
15	1.12
20	1.64
25	2.27
30	2.98

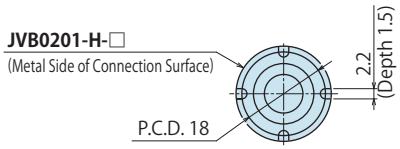


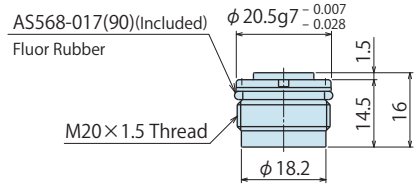
External Dimensions（JVA0201/JVB0201）

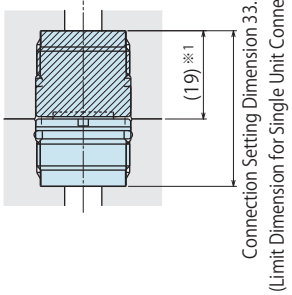




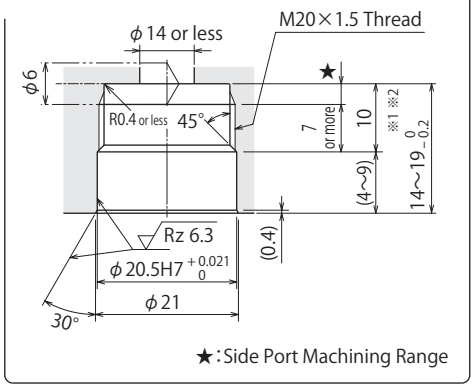




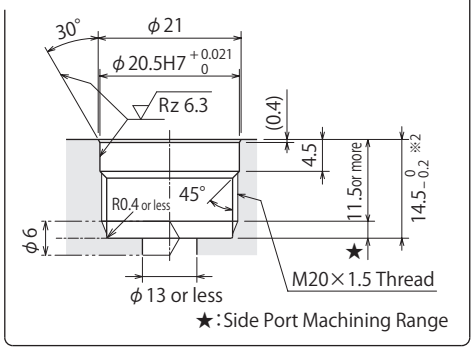




Machining Dimension for Mounting Hole(JVA0201-H-□)



Machining Dimension for Mounting Hole(JVB0201-H-□)



Model No.	Thread Size	Tightening Torque(N・m)
JVA0201-H-□ **JVB0201-H-□**	M20×1.5	16

Notes :

1. When ※1 dimension is 19mm, clearance between base plate and pallet is 0mm.
   When ※1 dimension is 14mm, clearance between base plate and pallet is 5mm.
2. For the tolerance of ※2, when using with the pallet clamp (Lift-Up Stroke 1mm) and it is required to prevent the force of spring in JV, the tolerance of each machining depth should be ±0.05mm.
   (Connection Setting Dimension：33.5±0.10mm)
3. Mounting Jig (Model ZZJ0020) or equivalent is required to install and remove JVA0201/JVB0201.
   Mounting Jig (Model ZZJ0020) is not included with JVA0201/JVB0201. Please order separately.

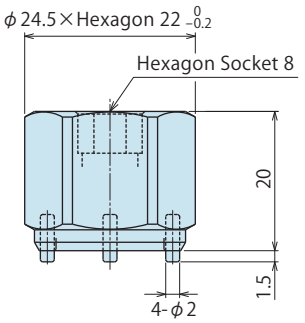
Accessary：Mounting Jig

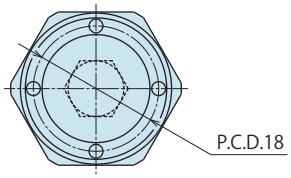
This jig is used to mount and remove the JVA0201/JVB0201.
Tightening Torque：16N・m

Model No. Indication

ZZJ0020

Design No.
(Revision Number)





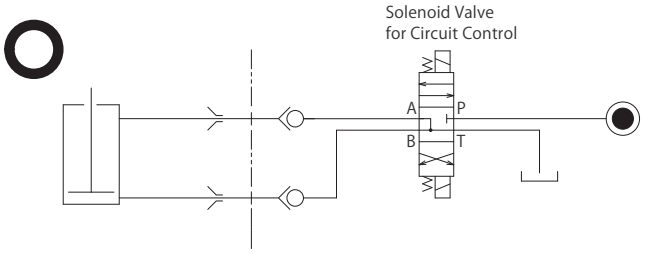
Note :

1. Mounting Jig (Model ZZJ0020) or equivalent is required to install and remove JVA0201/JVB0201.
   Please determine the required number of jigs when ordering.

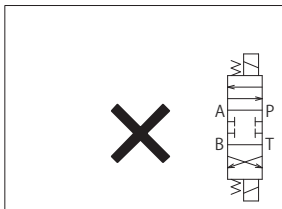
Cautions (JVA0201/JVB0201)

1. Do not connect or disconnect the auto coupler under pressure. (Refer to the following Circuit Reference.)
2. Release the air from the circuit before use (when using hydraulic oil).
3. Do not connect the coupler when contaminants are adhered on each connecting surface.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
4. If load is applied to the actuator on the fixture side while disconnected, it will be pressurized and fluid may leak from the coupler end.
5. Exceeding allowable offset leads to damage on internal parts. It is recommended to install a guide pin.
6. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 3.0kN.
7. For mounting and removing the coupler, use the mounting jig (ZZJ0020) or equivalent.

Circuit Reference



Use a three position (center position, ABT connection) solenoid valve for circuit control, and stop supplying hydraulic (or air) pressure with the center position when connecting/disconnecting JVA/JVB.



Do not use the above solenoid valve (connection/disconnection under pressure).

Auto Coupler

Model JVA0301/JVB0301

Positive air pressure/
Negative air pressure/Coolant
(Operating Pressure Range : lower than 1MPa)

100% Stainless Steel

JVA0301/JVB0301 Feature

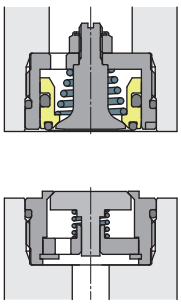
It is suitable for connecting and disconnecting fluid circuits when changing fixture pallets and tombstones.
This threaded auto coupler can be easily used with "Screw Locator (VXE/VXF)".

※ The auto coupler does not have the non-leak function. In case you need the non-leak function, please refer to "Non-Leak Coupler" on KWCS Complete Catalog or visit our website (http://www.kosmek.com).

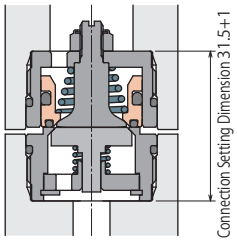
※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

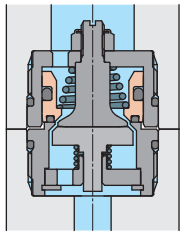
Action Description

Disconnected State	In the Process of Connecting (During Pallet Setting)	Connected State
JVA0301 (Fixture Side)	① Using without "Screw Locator" The reaction force is not generated at the distance of 1mm or further than the connection setting dimensions (31.5mm). The reaction force is generated at the distance of 1mm or less than the connection setting dimensions (31.5mm).	The reaction force is generated by the built-in spring and the supply pressure.

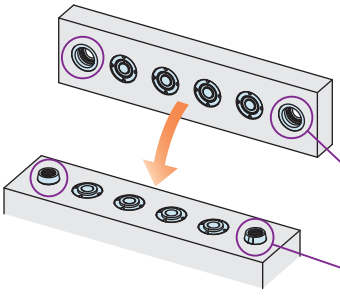


JVB0301 (Pressure Source Side)

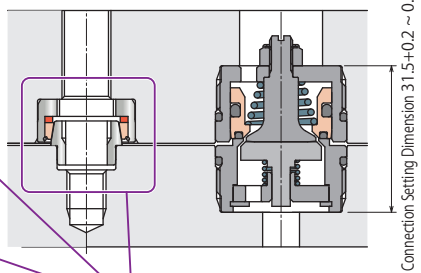




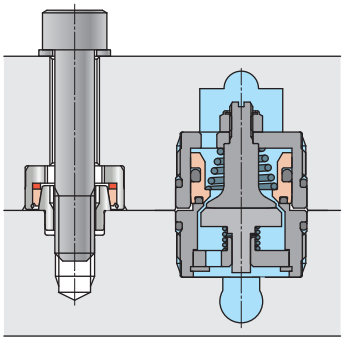
② Using with "Screw Locator (VXE/VXF)"
The reaction force (spring force) is generated when setting up the pallet because the stroke of "Screw Locator" is 0.2 ~ 0.3mm.
If using a light pallet, it may be lifted up when tightening.



Example with "Screw Locator (VXE/VXF)"



Screw Locator
model VXE/VXF



Model No. Indication

JV B 030 1 - H - CR

1 2 3 4

1 Style

A : O-ring side of Connection Surface (Fixture Side)

B : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

4 Grease

Blank : NBU8EP made by NOK KLUEBER (Standard)

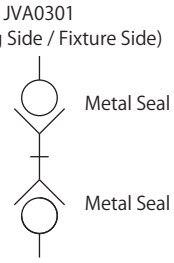
CR : AFF made by THK (For clean environment)

FD : NH1 64-422 made by NOK KLUEBER (For food machinery)

Specifications

Model No.			JVA0301-H-□ / JVB0301-H-□
Max. Operating Pressure		MPa	1.0
Withstanding Pressure		MPa	1.5
Min. Passage Area		mm²	29
Offset Distance (Tolerance)		mm	±0.5
Angular Deviation (Tolerance)		DEG.	0.3
Operating Temperature		℃	0 ~ 120
Usable Fluid			Coolant , Positive air pressure , Negative air pressure
Reaction Force kN	Operating Pressure	at 1 MPa	0.44
		at 0.5 MPa	0.25
		at P MPa	0.380 × P + 0.06
Weight g		JVA0301	70
		JVB0301	55

Circuit Symbol

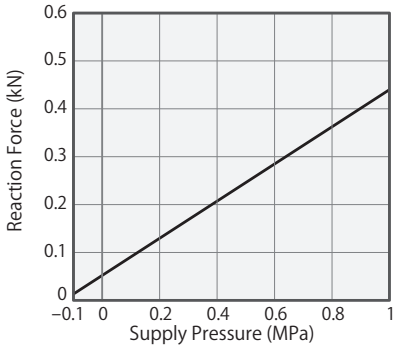


※ Since each check valve is a metal seal, there will be slight air leak if pressurized while disconnected.

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JVA0301/JVB0301 is completed.

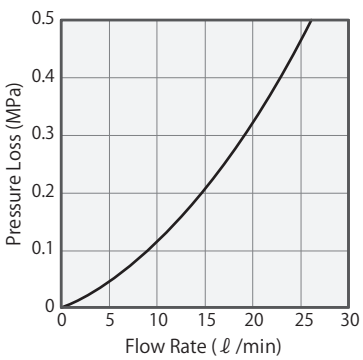
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.02
0	0.06
0.1	0.10
0.2	0.14
0.3	0.17
0.4	0.21
0.5	0.25
0.6	0.29
0.7	0.33
0.8	0.36
0.9	0.40
1.0	0.44



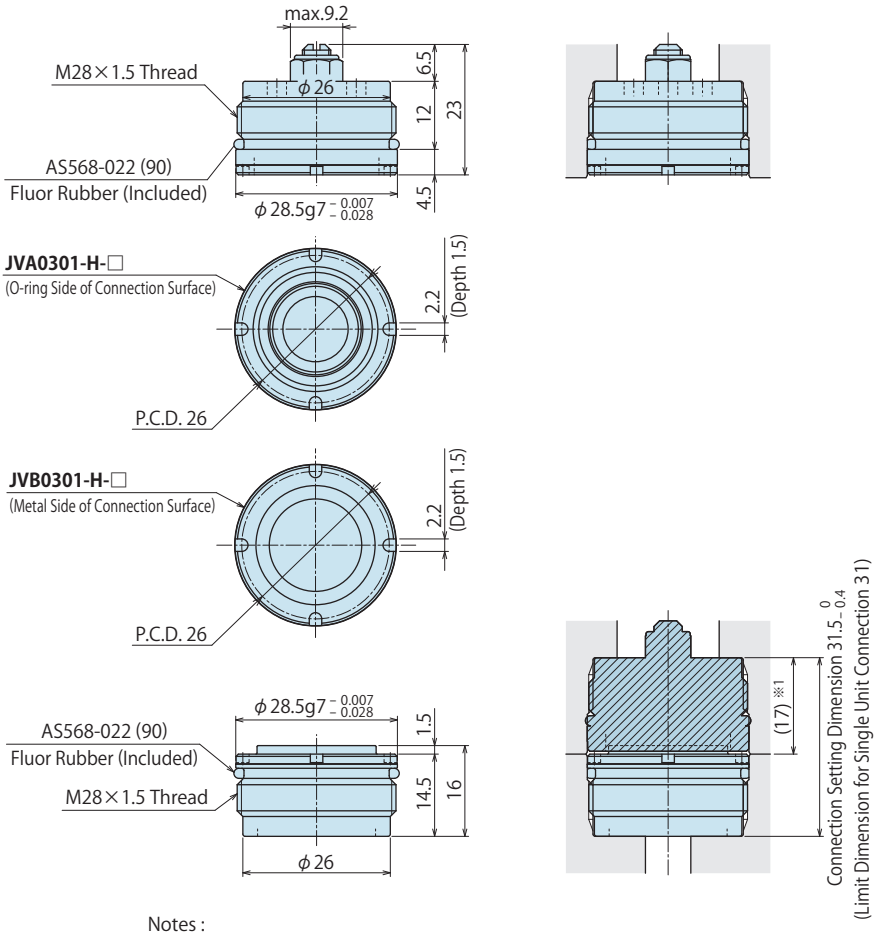
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is water.

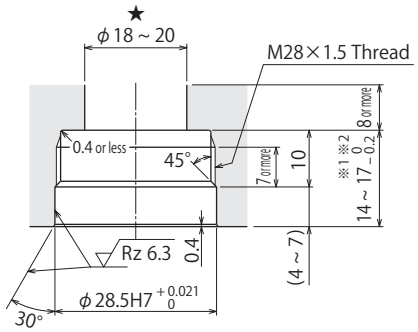
Flow Rate (ℓ/min)	Pressure Loss (MPa)
0	0
5	0.05
10	0.12
15	0.21
20	0.33
25	0.48



External Dimensions (JVA0301/JVB0301)

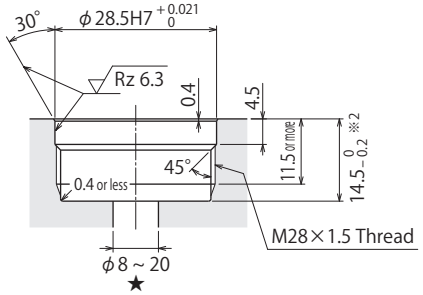


Machining Dimension for Mounting Hole (JVA0301-H-□)



★: Port machining from the side direction should be connected to ★ part.

Machining Dimension for Mounting Hole (JVB0301-H-□)



★: Port machining from the side direction should be connected to ★ part.

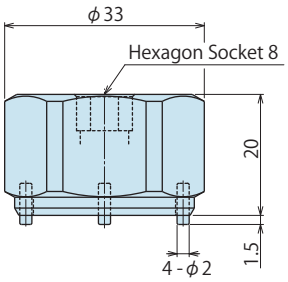
Notes :

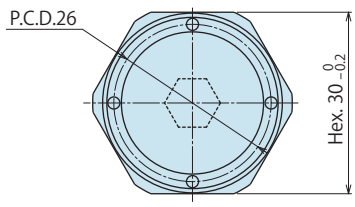
1. When ※1 dimension is 17mm, clearance between base plate and pallet is 0mm.
   When ※1 dimension is 14mm, clearance between base plate and pallet is 3mm.
2. For the tolerance of ※2, when using with the pallet clamp (Lift-Up Stroke 1mm) and it is required to prevent the force of spring in JV, the tolerance of each machining depth should be ±0.05mm.
   (Connection Setting Dimension：31.5±0.10mm)
3. Mounting Jig (Model ZZJ0030) or equivalent is required to install and remove JVA0301/JVB0301.
   Mounting Jig (Model ZZJ0030) is not included with JVA0301/JVB0301. Please order separately.

Model No.	Thread Size	Tightening Torque (N·m)
JVA0301-H-□ **JVB0301-H-□**	M28×1.5	25

Accessary：Mounting Jig

This jig is used to mount and remove the JVA0301/JVB0301.
Tightening Torque：25N・m





Model No. Indication

ZZJ0030

Design No.
(Revision Number)

Note :

1. Mounting Jig (Model ZZJ0030) or equivalent is required to install and remove JVA0301/JVB0301.
   Please determine the required number of jigs when ordering.

Cautions (JVA0301/JVB0301)

1. Make sure to supply fluid after connection is completed.
2. Since each check valve is a metal seal, there will be slight fluid leaks if pressurized while disconnected.
3. Do not connect the coupler when contaminants are adhered on each connecting surface.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
4. Exceeding allowable offset leads to damage on internal parts. It is recommended to install a guide pin.
5. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 4.0kN.
6. For mounting and removing the coupler, use the mounting jig (ZZJ0030) or equivalent.

Auto Coupler

Model JVC/JVD

Oil /Positive air pressure/
Negative air pressure / Coolant
(Operating Pressure Range: lower than 7MPa)

100% Stainless Steel

Feature

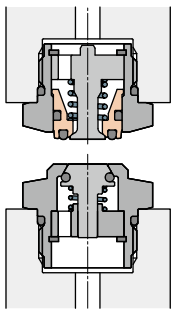
It is suitable for connecting and disconnecting fluid circuits when changing fixture pallets and tombstones.
This auto coupler can be easily used with a location clamp/pallet clamp (model SWT/WVS/VS/SWQ/WVG).
No reaction force is generated during pallet setting when using with SWT/WVS/VS/SWQ.

※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

Action Description

Disconnected State

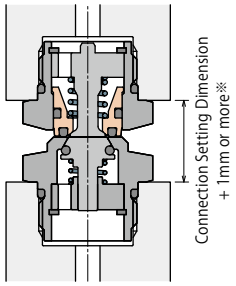
JVC (Fixture Side)



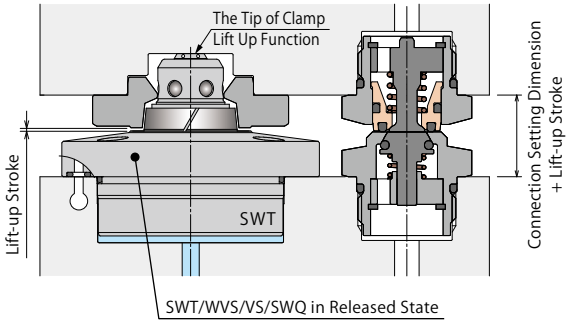
JVD (Pressure Source Side)

Disconnected State (During Pallet Setting)

①Using without a Location/Pallet Clamp (SWT/WVS/VS/SWQ)
The reaction force is not generated at the distance of 1mm or further than the connection setting dimensions※.
※0.8mm or further in case of JVD0201-H-QJ□-□.

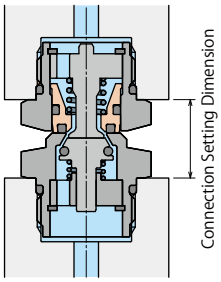


②Using with a Location/Pallet Clamp (SWT/WVS/VS/SWQ)
The auto coupler is connected by the lift-up stroke of SWT/WVS/VS/SWQ.
The reaction force is not generated when SWT/WVS/VS/SWQ is released (when setting a pallet) because the auto coupler is not connected.
(When SWT/WVS/VS/SWQ is locked, the auto coupler is also connected and the reaction force is generated.) ※WVG does not have lifting function.



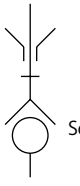
Connected State

The reaction force is generated by the built-in spring and the supply pressure.
(SWT/WVS/VS/SWQ/WVG in clamped condition.)



Circuit Symbol

JVC
(Outgoing Side / Fixture Side)



JVD
(Incoming Side /
Pressure Source Side)

※ No oil leaks out of JVC when disconnected (at zero pressure).

Model No. Indication

JV D 020 1 - H - SB10 - CR

1 2 3 4 5

1 Style

C : O-ring side of Connection Surface (Fixture Side)
D : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

5 Grease

Blank : NBU8EP made by NOK KLUEBER (Standard)
CR : AFF made by THK (for clean environment)
FD : NH1 64-422 made by NOK KLUEBER (for food machinery)

Note : 1. Please contact us when using with Hydraulic Double Action Pallet Clamp (model VT).

4 Model of Block for Location/Pallet Clamp

Blank : 1 C selected
TB01 : SWTB010
SB02 : SWTB020 / VSB020
SB06 : SWTB030 / VSB060
WVGB040※/WVGB060※
SB10 : SWTB050 / VSB100
WVGB100※
SJ01 : SWTJ010
SJ02 : SWTJ020 / VSJ020
SJ06 : SWTJ030 / VSJ060
WVGB040※/WVGB060※
SJ10 : SWTJ050 / VSJ100
QJ03 : SWQJ030
QJ07 : SWQJ070
GB10 : WVGB100※

1 D selected
When not using with a location/pallet clamp, please select a model no. from the Dimension List on the next page.

※ In case of WVGB, model of JVD differs depending on installation method. Refer to WVG catalog for detail.

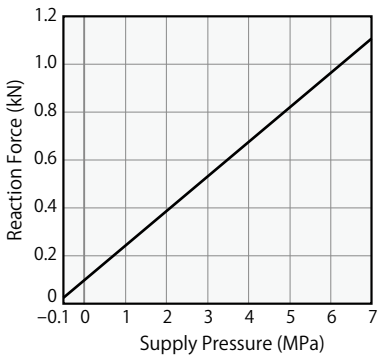
Specifications

Model No.	Fixture Side	JVC0201-H-□										
	Pressure Source Side	JVD0201 -H-TB01-□	JVD0201 -H-SJ01-□	JVD0201 -H-SB02-□	JVD0201 -H-SJ02-□	JVD0201 -H-QJ03-□	JVD0201 -H-SB06-□	JVD0201 -H-SJ06-□	JVD0201 -H-QJ07-□	JVD0201 -H-SB10-□	JVD0201 -H-SJ10-□	JVD0201 -H-GB10-□
Max. Operating Pressure MPa		7.0										
Withstanding Pressure MPa		10.5										
Min. Passage Area mm^2		12.6				10	12.6		10	12.6		
Offset Distance (Tolerance) mm		±0.5										
Angular Deviation (Tolerance) DEG.		0.3										
Operating Temperature ℃		0 ~ 120										
Usable Fluid		General Hydraulic Fluid Equivalent to ISO-VG-32, Positive Air Pressure, Negative Air Pressure, Coolant										
Reaction Force kN	Op. Pressure at 7 MPa	1.12										
	Op. Pressure at 1 MPa	0.19										
	Op. Pressure at P MPa	0.154 × P + 0.04										
Weight g	JVC	34										
	JVD	30	45	32	46	47	36	49	55	41	51	53
Applicable Clamp Model	SWT	SWT0010		SWT0020		-	SWT0030		-	SWT0050		-
	WVS	-		WVS0040		-	WVS0060		-	WVS0100		-
	VS	-		VS0020/VS0040		-	VS0060		-	VS0100		-
	SWQ	-				SWQ0030	-		SWQ0070	-		
	WVG	-					WVG0040/WVG0060		-	WVG0100	-	WVG0100
Applicable Block Model for SWT/ WVS/VS/ SWQ/WVG	Block for SWT	SWTB010	SWTJ010	SWTB020	SWTJ020	-	SWTB030	SWTJ030	-	SWTB050	SWTJ050	-
	Block for WVS/VS	-		VSB020	VSJ020	-	VSB060	VSJ060	-	VSB100	VSJ100	-
	Block for SWQ	-				SWQJ030	-		SWQJ070	-		
	Block for WVG	-					WVGB040/WVGB060		-	WVGB100	-	WVGB100

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JVC/JVD is completed.

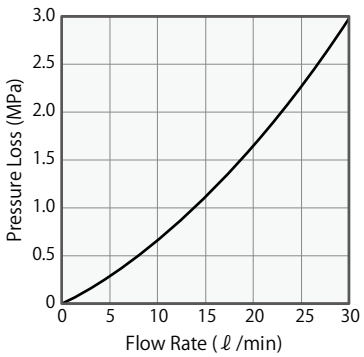
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.02
0	0.04
1	0.19
2	0.35
3	0.50
4	0.66
5	0.81
6	0.96
7	1.12



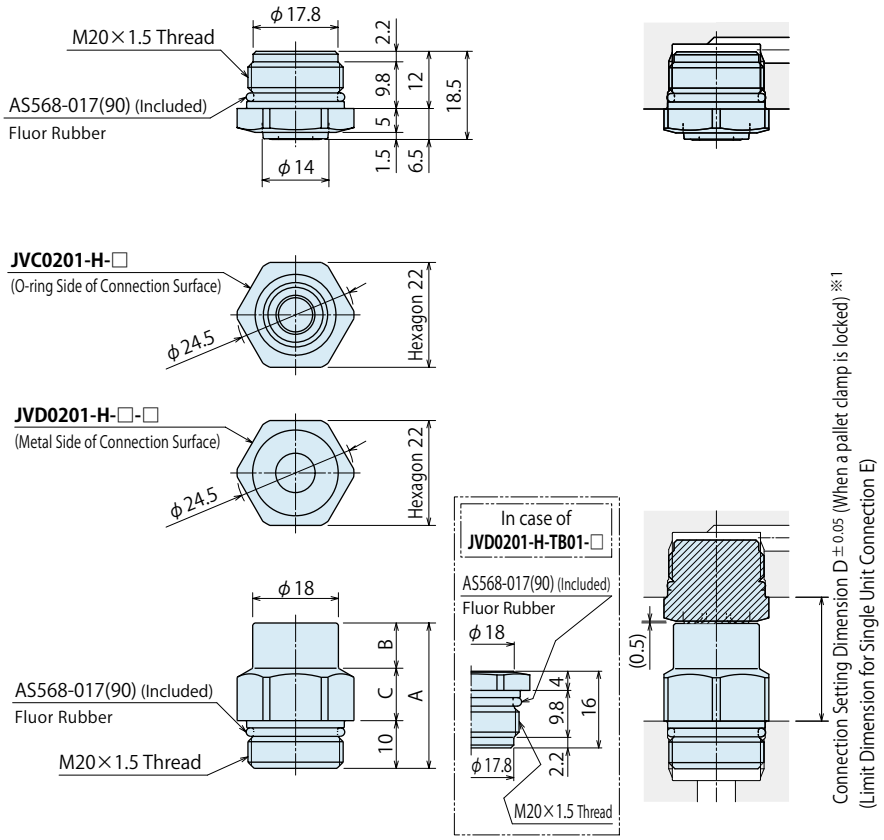
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is general hydraulic oil equivalent to ISO-VG-32 (30 ~ 40℃).

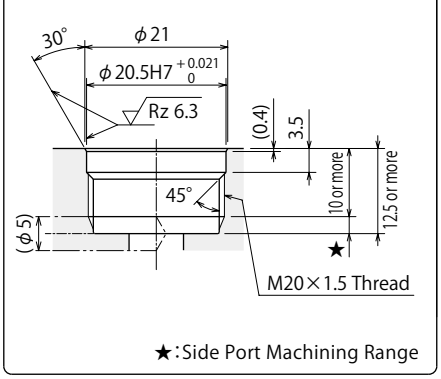
Flow Rate (ℓ/min)	Pressure Loss (MPa)
0	0
5	0.29
10	0.66
15	1.12
20	1.64
25	2.27
30	2.98



External Dimensions (JVC/JVD)



Machining Dimension for Mounting Hole (JVC/JVD)



Model No.	Thread Size	Tightening Torque (N·m)
JVC0201-H-□ JVD0201-H-□-□	M20×1.5	25

Dimension List (mm)

Model No. Fixture Side	JVC0201-H-□										
Model No. Pressure Source Side	JVD0201 -H-TB01-□	JVD0201 -H-SJ01-□	JVD0201 -H-SB02-□	JVD0201 -H-SJ02-□	JVD0201 -H-QJ03-□	JVD0201 -H-SB06-□	JVD0201 -H-SJ06-□	JVD0201 -H-QJ07-□	JVD0201 -H-SB10-□	JVD0201 -H-SJ10-□	JVD0201 -H-GB10-□
A	-	21.5	16	24.5	25.8	17.5	28	32.8	20	30.5	32.5
B	-	1	1	3.5	4.8	1	7	11.8	1	9.5	11.5
C	-	10.5	5	11	11	6.5	11	11	9	11	11
D	9.5	17	11.5	20	21.5	13	23.5	28.5	15.5	26	28
E	9	16.5	11	19.5	20.8	12.5	23	27.8	15	25.5	27.5

The Connected Condition Dimension when Using with SWT/WVS/VS (mm)

Clamp Model No.		SWT0010 - -	SWT0020 WVS0040 VS0020/VS0040	SWT0030 WVS0060 VS0060	SWT0050 WVS0100 VS0100
When using SWTB / VSB Block	BA	9.5	11.5	13	15.5
When using SWTJ / VSJ Block	BB	17	20	23.5	26

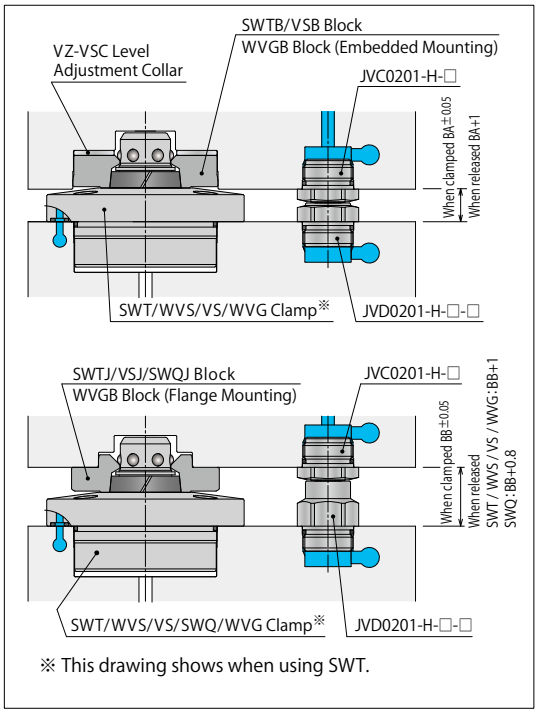
The Connected Condition Dimension when Using with SWQ (mm)

Clamp Model No.		SWQ0030	SWQ0070
When using SWQJ Block	BB	21.5	28.5

The Connected Condition Dimension when Using with WVG (mm)

Clamp Model No.		WVG0040 WVG0060	WVG0100
WVGB Embedded Mounting	BA	13	15.5
WVGB Flange Mounting	BB	23.5	28

Connected Condition Dimensions when Used in Combination with SWT/WVS/VS/WVG/SWQ



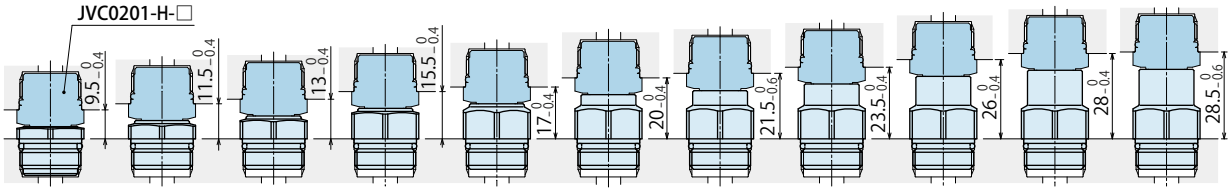
※ This drawing shows when using SWT.

Cautions (JVC/JVD)

1. Do not connect or disconnect the auto coupler under pressure. (Refer to the following Circuit Reference.)
2. Release the air from the circuit before use (when using hydraulic oil).
3. Do not connect the coupler when contaminants are adhered on each connecting surface.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
4. If load is applied to the actuator on the fixture side while disconnected, it will be pressurized and fluid may leak from the coupler end.
5. Exceeding allowable offset leads to damage on internal parts.
   (It is recommended to install a guide pin when not using SWT/WVS/VS/SWQ/WVG.)
6. It is recommended to use SWT/WVS/VS/SWQ series as the location/pallet clamp to ensure stabilized setting due to the lift-up stroke.
   When using JVC/JVD with pallet clamps other than the applicable models, the connection dimensions※1 of JVC/JVD should be $D^{\pm 0.05}$.
7. The connection dimensions BA and BB are different when using the level adjustment collar (VZ-VS1).
   The connection dimensions※1 of JVC/JVD should be $D^{\pm 0.05}$.
8. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 4.0kN.

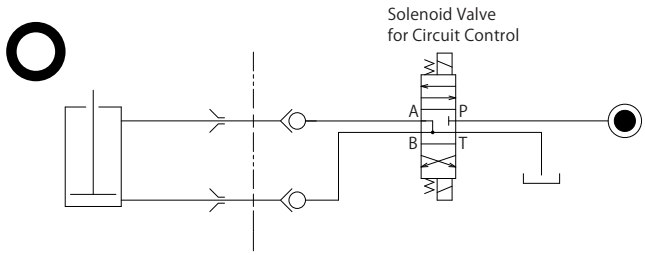
※1. The connection setting dimension $D^{\pm 0.05}$ indicates the tolerance when using JVC/JVD with SWT/WVS/VS/SWQ and reducing the reaction force of the auto coupler to zero during pallet setting (when releasing SWT/WVS/VS/SWQ).
For any other conditions, refer to the following connection setting dimention.

● Connection Setting Dimension (Tolerance shows when SWT/WVS/VS/SWQ/WVG are not used with.)

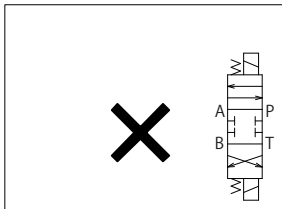


JVD0201-H -TB01-□	JVD0201-H -SB02-□	JVD0201-H -SB06-□	JVD0201-H -SB10-□	JVD0201-H -SJ01-□	JVD0201-H -SJ02-□	JVD0201-H -QJ03-□	JVD0201-H -SJ06-□	JVD0201-H -SJ10-□	JVD0201-H -GB10-□	JVD0201-H -QJ07-□

Circuit Reference



Use a three position (center position, ABT connection) solenoid valve for circuit control, and stop supplying hydraulic (or air) pressure with the center position when connecting/disconnecting JVC/JVD.



Do not use the above solenoid valve (connection/disconnection under pressure).

Auto Coupler

Model JVE/JVF

Positive Air Pressure/
Negative Air Pressure/Coolant
(Operating Pressure Range: lower than 1MPa)

100% Stainless Steel

Feature

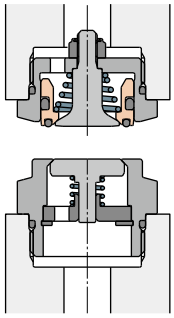
It is suitable for connecting and disconnecting fluid circuits when changing fixture pallets and tombstones.
This auto coupler can be easily used with a location clamp / pallet clamp (model SWT/WVS/VS/SWQ/WVG).
No reaction force is generated during pallet setting when using with a location clamp / pallet clamp (model SWT/WVS/VS/SWQ).

※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

Action Description

Disconnected State

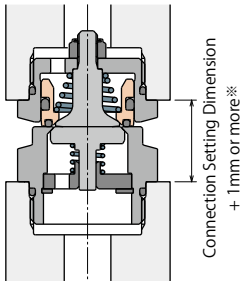
JVE (Fixture Side)



JVF (Pressure Source Side)

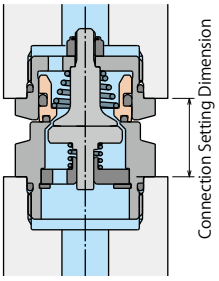
Disconnected State (During Pallet Setting)

①Using without a Location Clamp/Pallet Clamp (SWT/WVS/VS/SWQ)
The reaction force is not generated at the distance of 1mm or further than the connection setting dimensions※.
※0.8mm or further in case of JVF0301-H-QJ□-□.

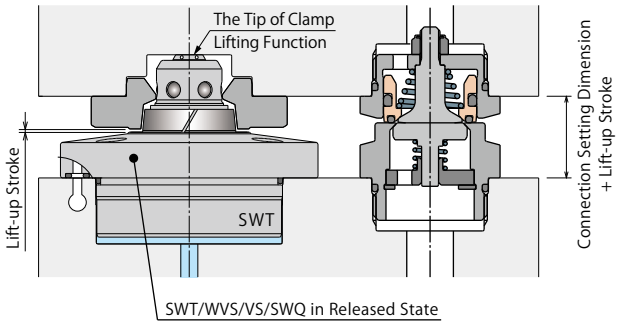


Connected State

The reaction force is generated by the built-in spring and the supply pressure. (SWT/WVS/VS/SWQ/WVG in clamped condition.)

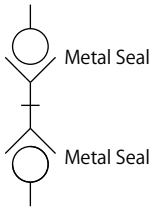


②Using with a Location Clamp/Pallet Clamp (SWT/WVS/VS/SWQ)
The auto coupler is connected by the lift-up stroke of SWT/WVS/VS/SWQ.
The reaction force is not generated when SWT/WVS/VS/SWQ is released (when setting a pallet) because the auto coupler is not connected.
(When SWT/WVS/VS/SWQ is locked, the auto coupler is also connected and the reaction force is generated.) ※WVG does not have lifting function.



Circuit Symbol

JVE (Outgoing Side / Fixture Side)



JVF (Incoming Side / Pressure Source Side)

※ No coolant leaks out of JVE when disconnected (at zero pressure).

Model No. Indication

JV **F** 030 **1** - **H** - **SB10** - **CR**

1 2 3 4 5

1 Style

E : O-ring side of Connection Surface (Fixture Side)

F : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

5 Grease

Blank : NBU8EP made by NOK KLUEBER (Standard)

CR : AFF made by THK (for clean environment)

FD : NH1 64-422 made by NOK KLUEBER (for food machinery)

Note : 1. Please contact us when using with Hydraulic Double Action Pallet Clamp (model VT).

4 Model of Block for Location/Pallet Clamp

Blank : 1 E selected

TB01 : SWTB010

SB02 : SWTB020 / VSB020

SB06 : SWTB030 / VSB060
WVGB040※/WVGB060※

SB10 : SWTB050 / VSB100
WVGB100※

SJ01 : SWTJ010

SJ02 : SWTJ020 / VSJ020

SJ06 : SWTJ030 / VSJ06
WVGB040※/WVGB060※

SJ10 : SWTJ050 / VSJ100

QJ03 : SWQJ030

QJ07 : SWQJ070

GB10 : WVGB100※

1 F selected

(When not using with a location/pallet clamp, please select a model no. from the Dimension List on the next page.)

※ In case of WVGB, model of JVF differs depending on installation method. Refer to WVG catalog for detail.

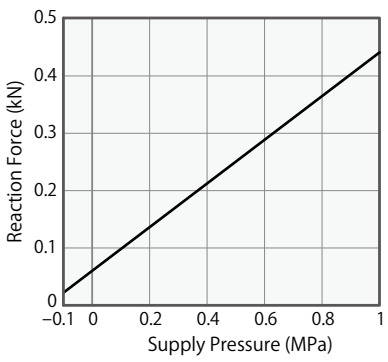
Specifications

Model No.	Fixture Side	JVE0301-H-□										
	Pressure Source Side	JVF0301 -H-TB01-□	JVF0301 -H-SJ01-□	JVF0301 -H-SB02-□	JVF0301 -H-SJ02-□	JVF0301 -H-QJ03-□	JVF0301 -H-SB06-□	JVF0301 -H-SJ06-□	JVF0301 -H-QJ07-□	JVF0301 -H-SB10-□	JVF0301 -H-SJ10-□	JVF0301 -H-GB10-□
Max. Operating Pressure MPa		1.0										
Withstanding Pressure MPa		1.5										
Min. Passage Area mm^2		29.0				21.8	29.0		21.8	29.0		
Offset Distance (Tolerance) mm		±0.5										
Angular Deviation (Tolerance) DEG.		0.3										
Operating Temperature ℃		0 ~ 120										
Usable Fluid		Coolant, Positive Air Pressure, Negative Air Pressure										
Reaction Force kN (Op. Pressure)	at 1.0 MPa	0.44										
	at 0.4 MPa	0.21										
	at P MPa	0.380 × P + 0.06										
Weight g	JVE	61										
	JVF	51	81	57	81	83	62	85	93	71	89	92
Applicable Clamp Model	SWT	SWT0010		SWT0020		-	SWT0030		-	SWT0050		-
	WVS	-		WVS0040		-	WVS0060		-	WVS0100		-
	VS	-		VS0020/VS0040		-	VS0060		-	VS0100		-
	SWQ	-				SWQ0030	-		SWQ0070	-		
	WVG	-					WVG0040/WVG0060		-	WVG0100	-	WVG0100
Block Model for SWT/WVS/VS/ SWQ/WVG	Block for SWT	SWTB010	SWTJ010	SWTB020	SWTJ020	-	SWTB030	SWTJ030	-	SWTB050	SWTJ050	-
	Block for WVS/VS	-		VSB020	VSJ020	-	VSB060	VSJ060	-	VSB100	VSJ100	-
	Block for SWQ	-				SWQJ030	-		SWQJ070	-		
	Block for WVG	-					WVGB040/WVGB060		-	WVGB100	-	WVGB100

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JVE/JVF is completed.

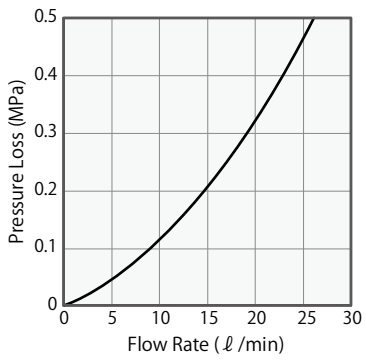
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.02
0	0.06
0.1	0.10
0.2	0.14
0.3	0.17
0.4	0.21
0.5	0.25
0.6	0.29
0.7	0.33
0.8	0.36
0.9	0.40
1.0	0.44



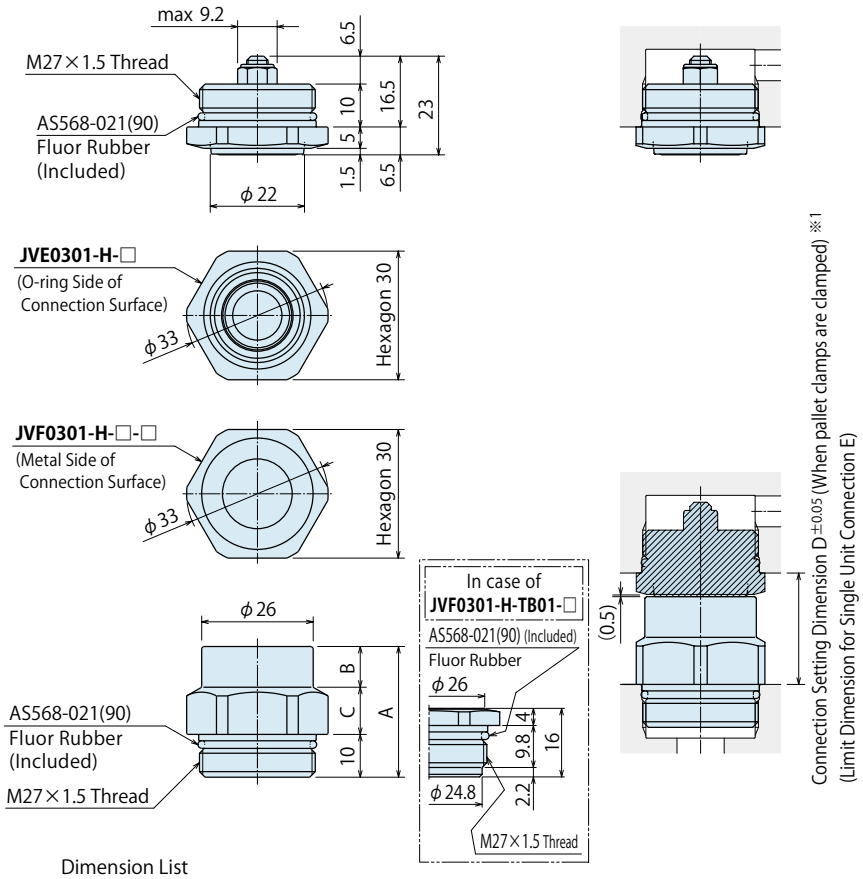
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is water.

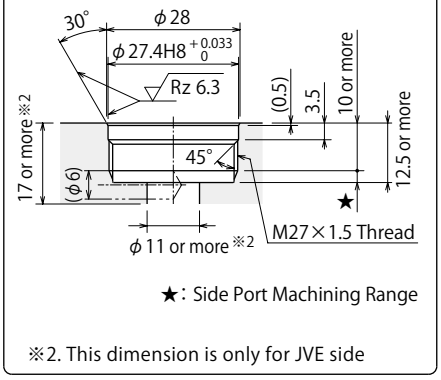
Flow Rate (ℓ/min)	Pressure Loss (MPa)
0	0
5	0.05
10	0.12
15	0.21
20	0.33
25	0.48



External Dimensions (JVE/JVF)



Machining Dimension for Mounting Hole (JVE/JVF)



★: Side Port Machining Range

※2. This dimension is only for JVE side

Model No.	Thread Size	Tightening Torque (N・m)
JVE0301-H-□ **JVF0301-H-□-□**	M27×1.5	40

Dimension List (mm)

Model No. Fixture Side	JVE0301-H-□										
Model No. Pressure Source Side	JVF0301 -H-TB01-□	JVF0301 -H-SJ01-□	JVF0301 -H-SB02-□	JVF0301 -H-SJ02-□	JVF0301 -H-QJ03-□	JVF0301 -H-SB06-□	JVF0301 -H-SJ06-□	JVF0301 -H-QJ07-□	JVF0301 -H-SB10-□	JVF0301 -H-SJ10-□	JVF0301 -H-GB10-□
A	-	21.5	16	24.5	25.8	17.5	28	32.8	20	30.5	32.5
B	-	1	1	3.5	4.8	1	7	11.8	1	9.5	11.5
C	-	10.5	5	11	11	6.5	11	11	9	11	11
D	9.5	17	11.5	20	21.5	13	23.5	28.5	15.5	26	28
E	9	16.5	11	19.5	20.8	12.5	23	27.8	15	25.5	27.5

The Connected Condition Dimension when Using with SWT/WVS/VS (mm)

Clamp Model No.		SWT0010 - -	SWT0020 WVS0040 VS0020/VS0040	SWT0030 WVS0060 VS0060	SWT0050 WVS0100 VS0100
When using SWTB / VSB Block	BA	9.5	11.5	13	15.5
When using SWTJ / VSJ Block	BB	17	20	23.5	26

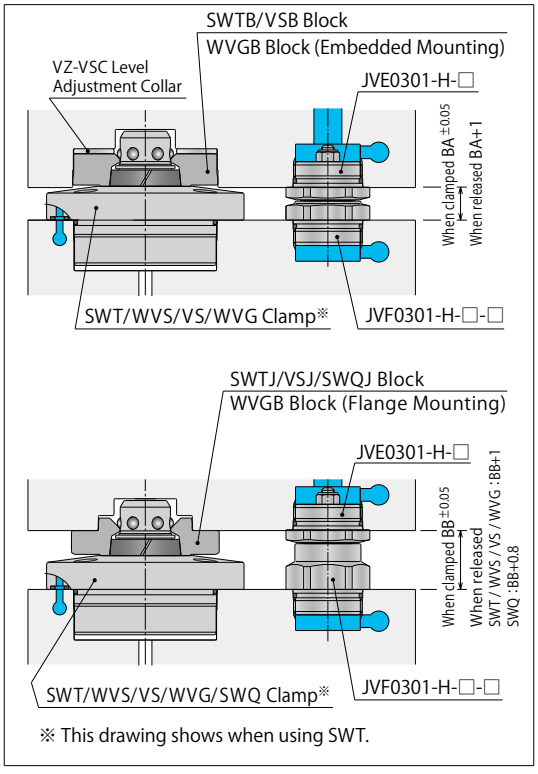
The Connected Condition Dimension when Using with SWQ (mm)

Clamp Model No.		SWQ0030	SWQ0070
When using SWQJ Block	BB	21.5	28.5

The Connected Condition Dimension when Using with WVG (mm)

Clamp Model No.		WVG0040 WVG0060	WVG0100
WVGB Embedded Mounting	BA	13	15.5
WVGB Flange Mounting	BB	23.5	28

Connected Condition Dimensions when Used in Combination with SWT/WVS/VS/WVG/SWQ



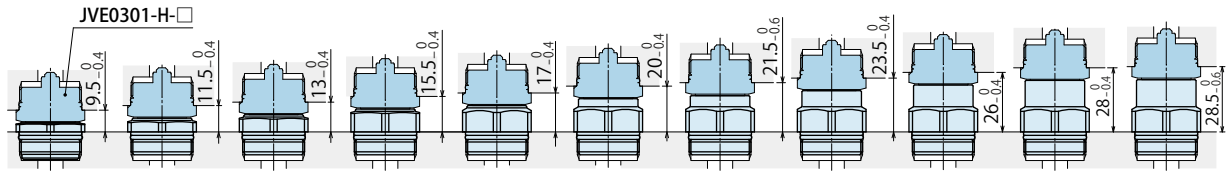
※ This drawing shows when using SWT.

Cautions (JVE/JVF)

1. Make sure to supply fluid after connection is completed.
2. Since each check valve is a metal seal, there will be slight fluid leaks if pressurized while disconnected.
3. Do not connect the coupler when each connecting surface is contaminated.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
4. Exceeding allowable offset leads to damage on internal parts.
   (It is recommended to install a guide pin when not using SWT/WVS/VS/SWQ/WVG.)
5. It is recommended to use SWT/WVS/VS/SWQ series as the location/pallet clamp to ensure stabilized setting due to the lift-up stroke.
   When using JVE/JVF with pallet clamps other than the applicable models, the connection dimensions※1 of JVE/JVF should be $D^{\pm 0.05}$.
6. The connection dimensions BA and BB are different when using the level adjustment spacer (VZ-VS1).
   The connection dimensions※1 of JVE/JVF should be $D^{\pm 0.05}$.
7. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 4.0kN.

※1. The connection setting dimension $D^{\pm 0.05}$ indicates the tolerance when using JVE/JVF with SWT/WVS/VS/SWQ and reducing the reaction force of the auto coupler to zero during pallet setting (when releasing SWT/WVS/VS/SWQ).
For any other conditions, refer to the following connection setting dimention.

● Connection Setting Dimension (Tolerance shows when SWT/WVS/VS/SWQ/WVG are not used with.)

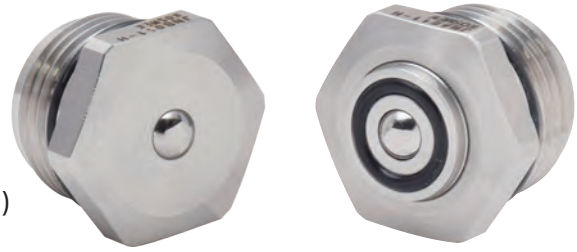


JVF0301-H -TB01-□	JVF0301-H -SB02-□	JVF0301-H -SB06-□	JVF0301-H -SB10-□	JVF0301-H -SJ01-□	JVF0301-H -SJ02-□	JVF0301-H -QJ03-□	JVF0301-H -SJ06-□	JVF0301-H -SJ10-□	JVF0301-H -GB10-□	JVF0301-H -QJ07-□

Auto Coupler

Model JNA/JNB

Positive/Negative air pressure
(Operating Pressure Range: lower than 1MPa)



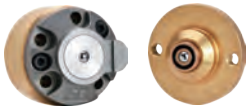
Feature

Designed to prevent coolant and cutting chips from entering into the check valve when disconnected.
Compact Manifold Option and BGC/BGD Combination Option are available.

Manifold Option

Manifold Option is **100% Stainless Steel**.

※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

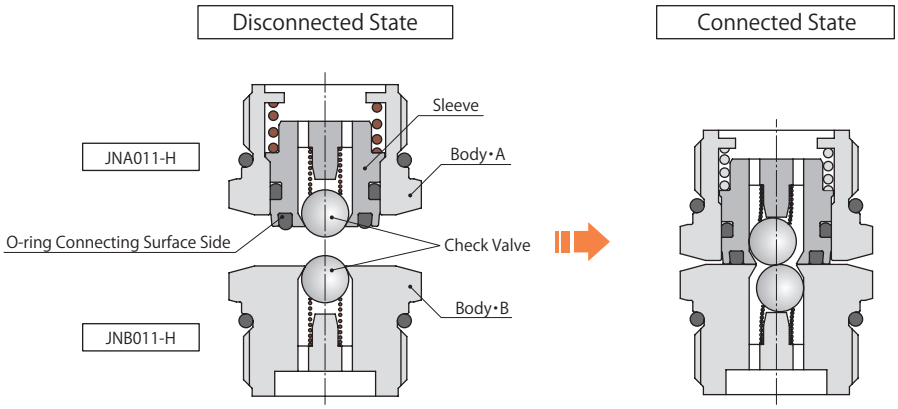


BGC/BGD Combination Option

BGC/BGD combination Option is not 100% Stainless Steel.

※Refer to P.851~P.852 for BGC/BGD Combination Option.

Action Description (Manifold Option)



① When JNA closely contacts with JNB, the check valves press each other to open the valve.
② At this time, the O-ring on the end surface of the sleeve prevents air from leaking to the outside.

Model No. Indication (Manifold Option)

JN B 01 1 - H - CR

1 2 3 4

1 Style

A : O-ring side of Connection Surface (Fixture Side)
B : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel,Fluor Rubber

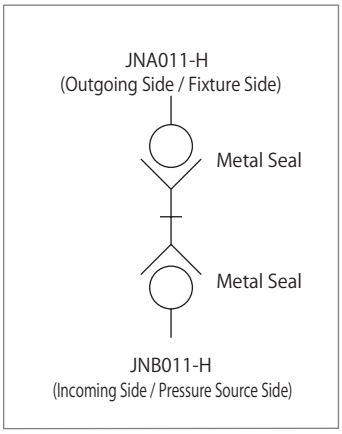
4 Grease

Blank : NBU8EP made by NOK KLUEBER (Standard)
CR : AFF made by THK (For clean environment)
FD : NH1 64-422 made by NOK KLUEBER (For food machinery)

Specifications

Model No.			Fixture Side: JNA011-H-□ / Pressure Source Side: JNB011-H-□
Max. Operating Pressure	MPa		1.0
Withstanding Pressure	MPa		1.5
Min. Passage Area	mm²		8.8(At eccentricity: 7.4)
Offset Distance (Tolerance)	mm		±1
Angular Deviation (Tolerance)	DEG.		0.3
Operating Temperature	℃		0 ~ 120
Usable Fluid			Positive / Negative air pressure
Reaction Force	kN	Op. Pressure at 0.5 MPa	0.12
		Op. Pressure at 0.2 MPa	0.07
		Op. Pressure at P MPa	0.154 × P + 0.04
Weight	g	JNA011-H	35
		JNB011-H	40

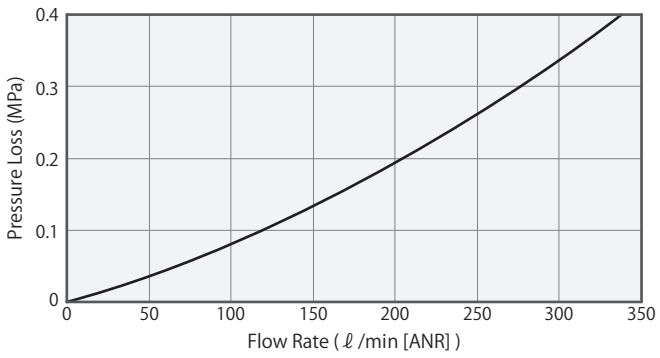
Circuit Symbol (Manifold Option)



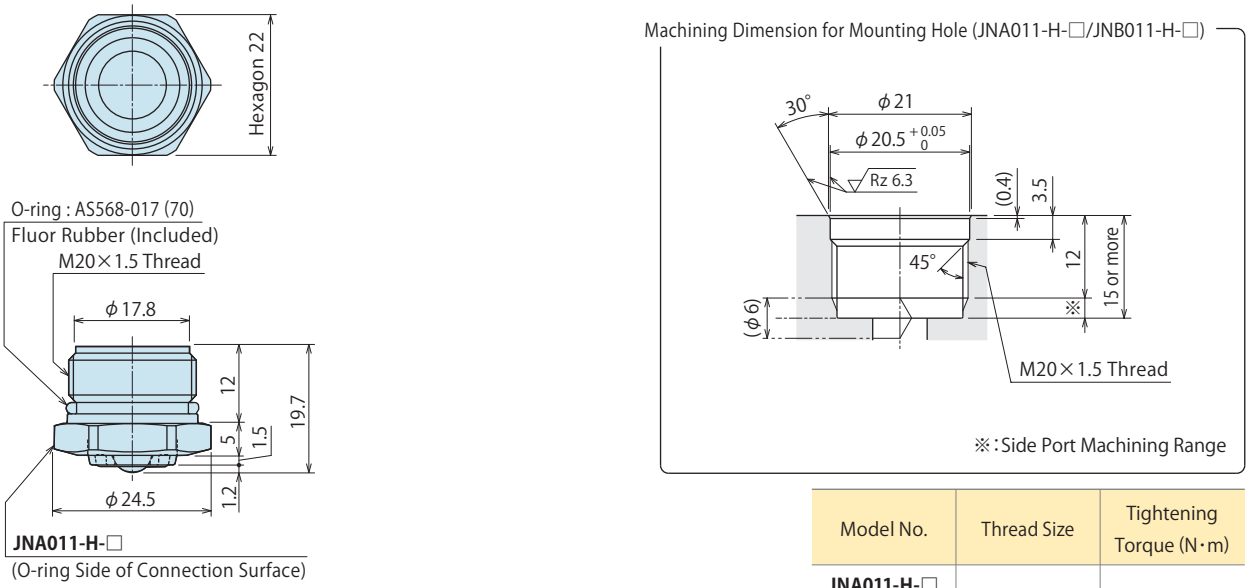
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is air (temperature is 25℃) with min. passage area 8.8mm².

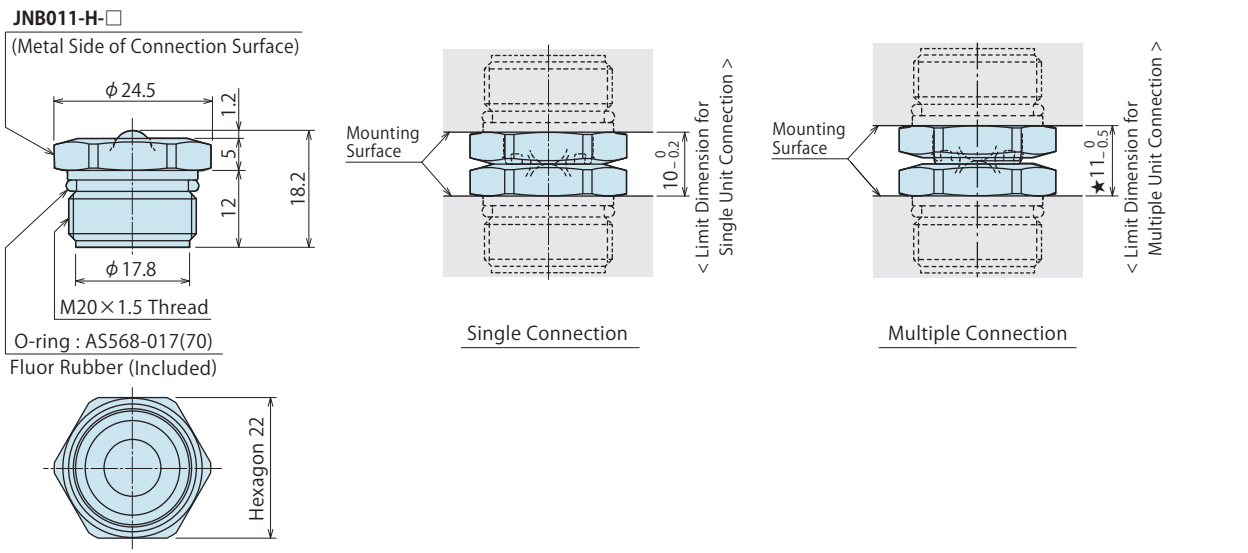
Flow Rate (ℓ/min [ANR])	Pressure Loss (MPa)
0	0
85	0.05
125	0.10
165	0.15
200	0.20
235	0.25
270	0.30
305	0.35
345	0.40



External Dimensions (Manifold Option JNA011-H-□/JNB011-H-□)



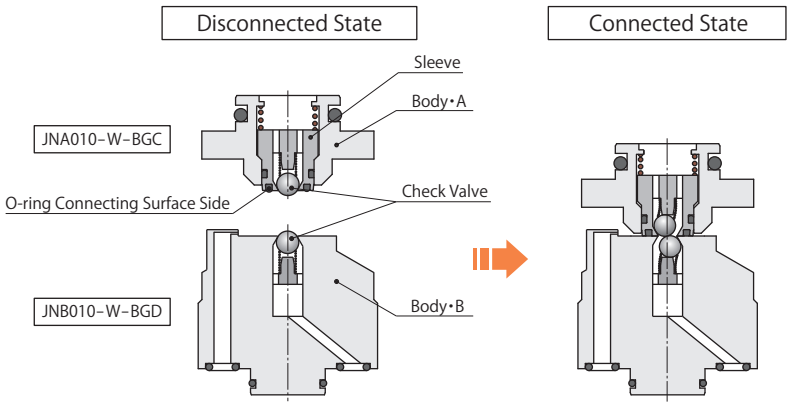
Model No.	Thread Size	Tightening Torque (N·m)
JNA011-H-□ **JNB011-H-□**	M20×1.5	25



Cautions (Manifold Option JNA011-H-□/JNB011-H-□)

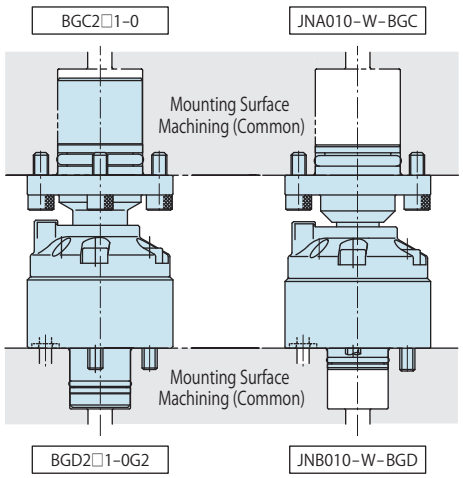
1. Since each check valve is a metal seal, there will be slight fluid leaks if pressurized while disconnected.
2. When pressurizing the one side at disconnected state and connecting the couplers, the air comes out from the time the pressurized side check valve is open until the o-ring of the connecting surface is sealed.
3. Do not connect the coupler when each connecting surface is contaminated.
4. When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
5. When using connection limit stopper(s) or multiple couplers, follow the connection setting dimension (★) in the drawing.
6. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 1.0kN.

External Dimensions (BGC/BGD Combination Option)



① When JNA closely contacts with JNB, the check valves press each other to open the valve.
② At this time, the O-ring on the end surface of the sleeve prevents air from leaking to the outside.

When using BGC/BGD Combination Option



Model No. Indication (BGC/BGD Combination Option)

JN B 01 0 - W - BGD

1 2 3 4

1 Style

A : O-ring side of Connection Surface (Fixture Side)
B : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

0 : Revision Number

3 Material

W : Stainless Steel, Brass, NBR

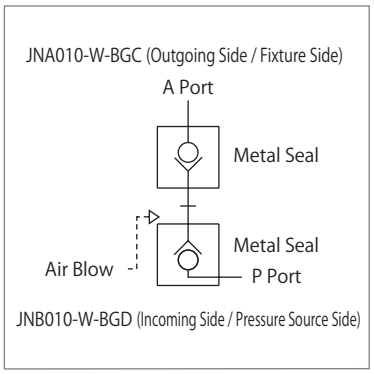
4 Combination Coupler Option

BGC : 1 When selecting A and using BGC together
BGD : 1 When selecting B and using BGD together

Specifications

Model No.	Fixture Side	JNA010-W-BGC
	Pressure Source Side	JNB010-W-BGD
Max. Operating Pressure MPa		1.0
Withstanding Pressure MPa		1.5
Min. Passage Area mm^2		8.8 (At eccentricity: 7.4)
Offset Distance (Tolerance) mm		±1
Angular Deviation (Tolerance) DEG.		0.3
Operating Temperature ℃		0 ~ 70
Usable Fluid		Positive / Negative air pressure
Reaction Force kN	Op. Pressure at 0.5 MPa	0.12
	Op. Pressure at 0.2 MPa	0.07
	Op. Pressure at P MPa	0.154 × P + 0.04
Weight g	JNA010-W-BGC	150
	JNB010-W-BGD	450

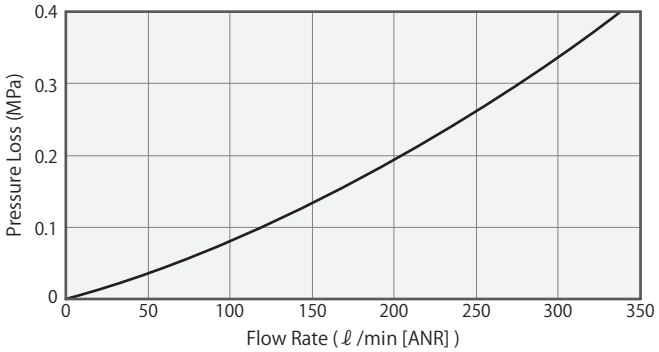
Circuit Symbol (BGC/BGD Combination Option)



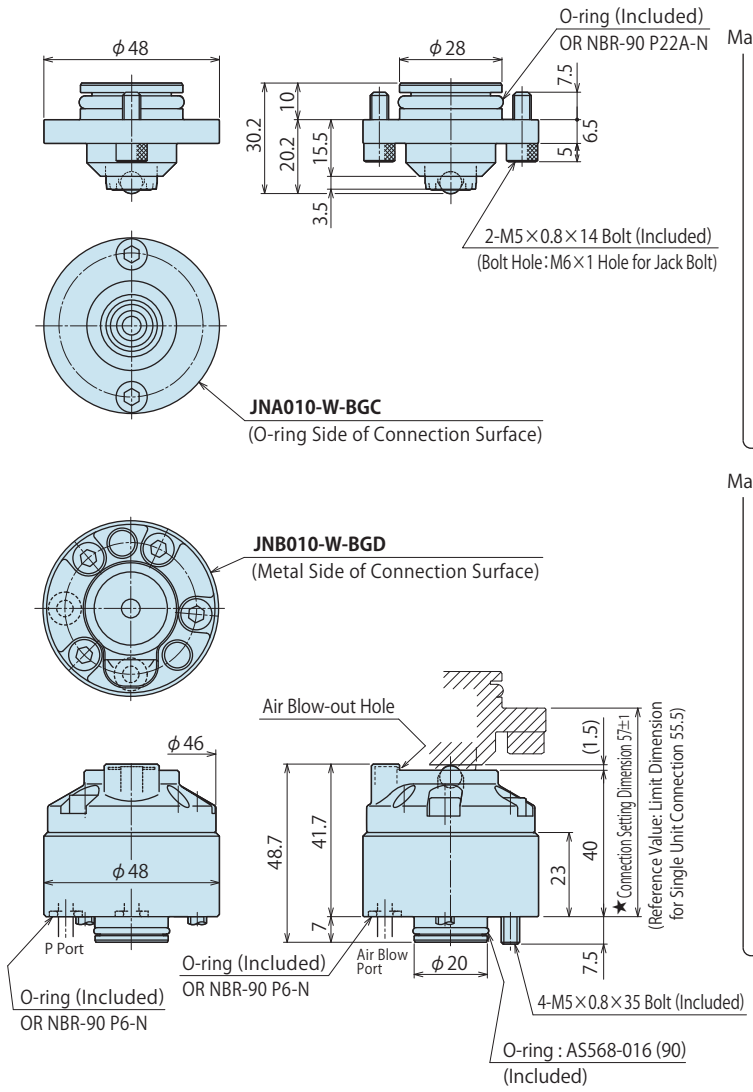
Flow Rate—Pressure Loss Characteristic Graph

The fluid used on this data is air (temperature is 25℃) with min. passage area 8.8mm^2.

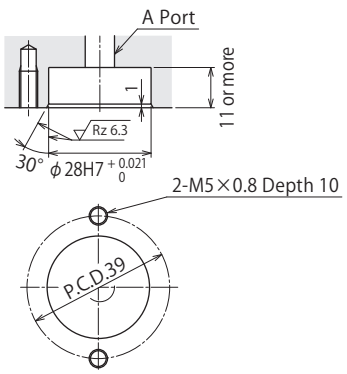
Flow Rate (ℓ/min [ANR])	Pressure Loss (MPa)
0	0
85	0.05
125	0.10
165	0.15
200	0.20
235	0.25
270	0.30
305	0.35
345	0.40



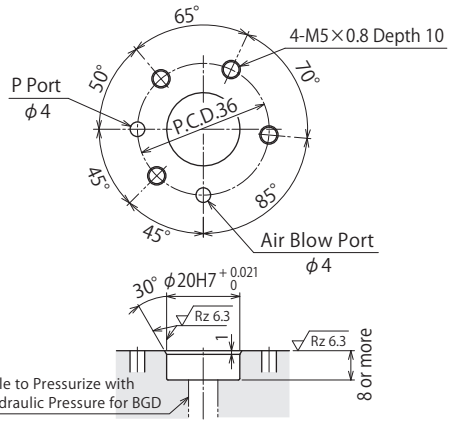
External Dimensions (BGC/BGD Combination Option) JNA010-W-BGC/JNB010-W-BGD)



Machining Dimension for Mounting Hole (JNA010-W-BGC)



Machining Dimension for Mounting Hole (JNB010-W-BGD)



Model No.	Thread Size	Tightening Torque (N·m)
JNA010-W-BGC **JNB010-W-BGD**	M5×0.8	6.3

Cautions (BGC/BGD Combination Option) JNA010-W-BGC/JNB010-W-BGD)

1. Since each check valve is a metal seal, there will be slight fluid leaks if pressurized while disconnected.
2. When pressurizing the one side at disconnected state and connecting the couplers, the air comes out from the time the pressurized side check valve is open until the o-ring of the connecting surface is sealed.
3. When using connection limit stopper(s) or multiple couplers, follow the connection setting dimension (★) in the drawing.
4. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 2.0kN.
5. Do not connect the coupler when each connecting surface is contaminated.

Auto Coupler

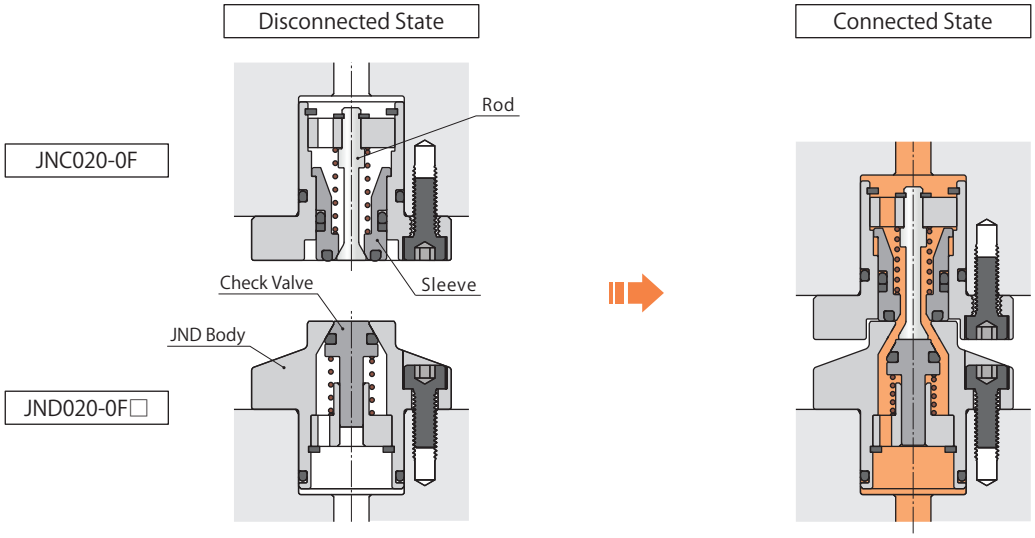
Model JNC/JND

Oil /Positive air pressure
(Operating Pressure Range: lower than 25MPa)

Feature

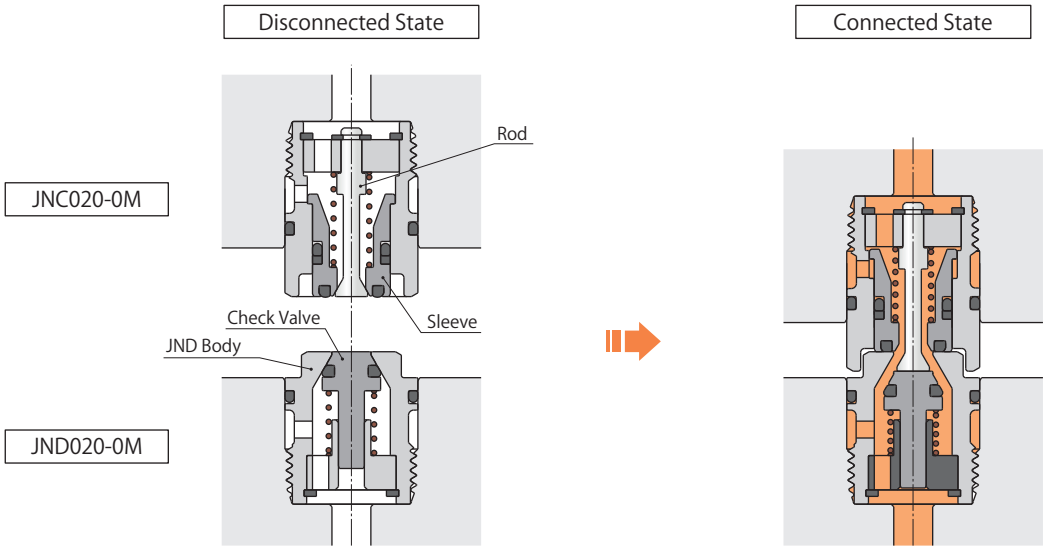
This auto coupler is suitable for connecting and disconnecting fluid circuits when changing fixture pallets and tombstones.
Two options are available: Compact Manifold Option and Flange Option which can be easily used with the pallet clamp.

Action Description (Flange Option)



When JNC is closely in contact with JND, the body presses against the sleeve and the rod presses against check valve then the valve will open.

Action Description (Manifold Option)



When JNC is closely in contact with JND, the body presses against the sleeve and the rod presses against check valve then the valve will open.

Model No. Indication

JN D 02 0 - 0 F ☐
1 2 3 4

1 Style

C : O-ring side of Connection Surface (Fixture Side)
D : Metal Side of Connection Surface (Pressure Source Side)

2 Design No.

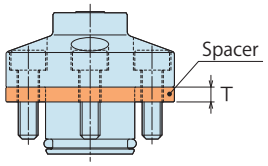
0 : Revision Number

3 Mounting Method

F : Flange Option (Easy to use with pallet clamps)
M : Manifold Option

4 Spacer Thickness ※ Specify only when selecting JND Flange Option.

Blank : No Spacer (Standard)
05 : T = 0.5mm
15 : T = 1.5mm
40 : T = 4.0mm
65 : T = 6.5mm
80 : T = 8.0mm
0D : Spacer Block (Refer to the external dimensions.)※1



Notes :
※1. Refer to the external dimensions for 0D : Spacer Block.
1. Spacer thickness depends on the pallet clamps used with this coupler.

Specifications

Model No.	Fixture Side		JNC020-0F	JNC020-0M
	Pressure Source Side		JND020-0F☐	JND020-0M
Max. Operating Pressure MPa			25.0	
Withstanding Pressure MPa			37.5	
Min. Passage Area mm²			10.3	
Offset Distance (Tolerance) mm			±0.5	±0.4
Angular Deviation (Tolerance) DEG.			0.3	
Operating Temperature ℃			0 ~ 70	
Usable Fluid			General Hydraulic Oil Equivalent to ISO VS 32, Positive air pressure	
Reaction Force kN	Op. Pressure	at 25 MPa	2.86	
		at 7 MPa	0.82	
		at P MPa	0.113 × P + 0.03	
Weight g	JNC		0.07	0.05
	JND		Refer to External Dimensions	0.05

Circuit Symbol

JNC (Outgoing Side / Fixture Side)

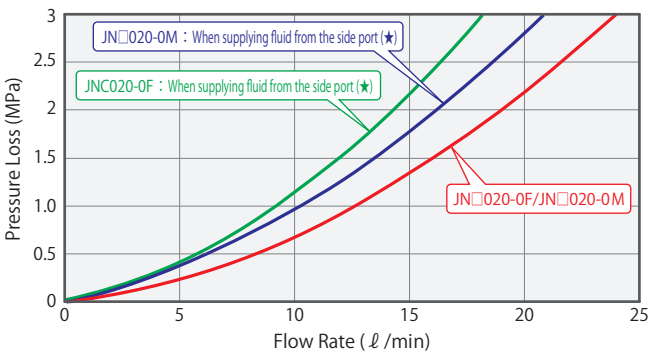
JND (Incoming Side / Pressure Source Side)

※ No oil leaks out of JNC when disconnected (at zero pressure).

Flow Rate—Pressure Loss Characteristic Graph

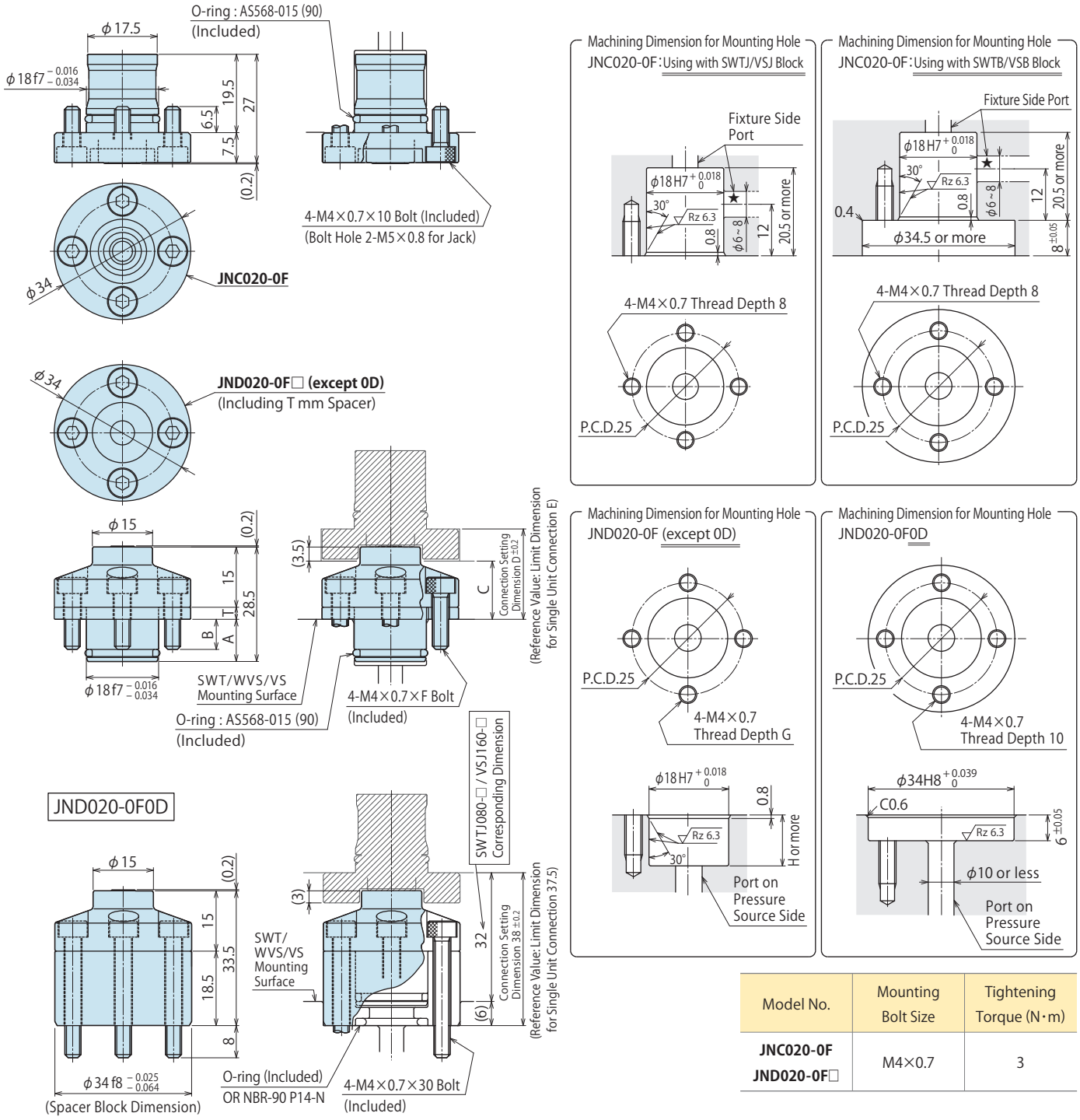
The fluid used on this data is general hydraulic oil equivalent to ISO-VG-32 (30 ~ 40℃).

Pressure Loss (MPa)	Flow Rate (ℓ /min)		
	JN☐020-0F	When supplying fluid from the side port (★).	
	JN☐020-0M	JN☐020-0F	JNC020-0M
0	0	0	0
0.5	8.5	5.6	6.5
1.0	12.6	9.2	10.2
1.5	15.8	12.0	13.5
2.0	19.2	14.3	16.0
2.5	21.5	16.5	18.5
3.0	24.0	18.2	21.0



Note : 1. Refer to the external dimensions for the side port position (★).

External Dimensions (JNC020-0F/JND020-0F□)



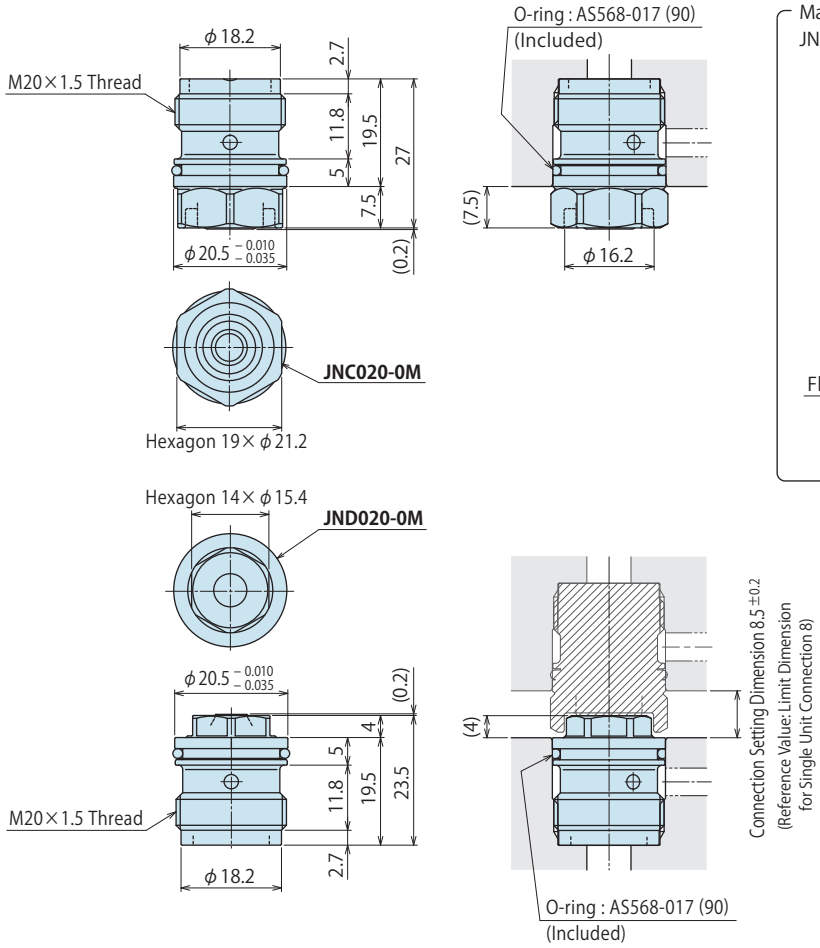
Model No.	Mounting Bolt Size	Tightening Torque (N·m)
JNC020-0F **JND020-0F□**	M4×0.7	3

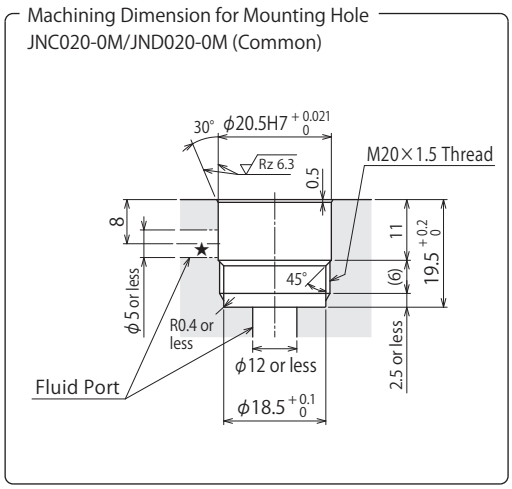
Dimensions (Spacer Thickness Selection Table)

(mm)

JND Model		JND020 -0F	JND020 -0F05	JND020 -0F15	JND020 -0F40		JND020 -0F65	JND020 -0F80	JND020 -0F0D
Location Clamp Pallet Clamp Model	SWT	SWT0020		SWT0030		SWT0050		SWT0080	
	WVS	WVS0040		WVS0060		WVS0100		WVS0160	
	VS	VS0020/VS0040		VS0060		VS0100 –		VS0160	
Block Model	Block for SWT	SWTB020	SWTJ020	SWTB030	SWTJ030	SWTB050	SWTJ050	SWTB080	SWTJ080
	Block for WVS/VS	VSB020	VSJ020	VSB060	VSJ060	VSB100	VSJ100	VSB160	VSJ160
T		0 (No Spacer)	0.5	1.5	4		6.5	8	Refer to the Drawing Above
A		13.5	13	12	9.5		7	5.5	
B		6.5	6	7	6.5		6	8.5	
C		11.5	–	13	–	15.5	–	19.5	
D		19.5	20	21	23.5		26	27.5	
E		19	19.5	20.5	23		25.5	27	
F		10	10	12	14		16	20	
G		8	8	9	8		8	10	
H		14.5	14	13	10.5		8	6.5	
Weight	kg	0.08	0.08	0.09	0.11		0.12	0.13	0.17

External Dimensions (JNC020-0M/JND020-0M)





Model No.	Mounting Bolt Size	Tightening Torque (N·m)
JNC020-0M **JND020-0M**	M20×1.5	40

Cautions (JNC/JND)

< General Cautions >

1. Do not connect or disconnect the auto coupler under pressure (pressure remained state).
2. Release the air from the circuit before use (when using hydraulic oil).
3. Do not connect the coupler when each connecting surface is contaminated.
   (When there are cutting chips or coolant, remove all contaminants with air blow.)
4. When connected, maximum 0.03 kN of the spring force is applied to the coupler even if circuit pressure is zero.
5. If load is applied to the actuator on the fixture side while disconnected, it will be pressurized and fluid may leak from the JNC end (when using hydraulic oil).
6. When pressing up to the connection limit, the pressing force should be higher than the reaction force and lower than 5.0kN for JN□020-0F, and higher than the reaction force and lower than 4.0kN for JN□020-0M.
7. When using the port with ★ mark, flow characteristics will be deteriorated. (Please refer to the [Flow Rate — Pressure Loss Characteristic Graph].)

<JNC020-0F/JND020-0F□:Cautions for Flange Option>

1. Select the standard JNC020-0F/JND020-0F when not using with location clamps/pallet clamps (SWT/WVS/VS).
2. When supplying hydraulic/air pressure in the connected condition, keep the location clamps/pallet clamps in the locked condition (when using with SWT/WVS/VS).
3. Contact us for the combination use of SWTB and SWTJ, VSB and VSJ.

<JNC020-0M/JND020-0M:Caution for Manifold Option>

1. The area of hexagonal head for tightening is small because of the compact design. Make sure to securely apply a tool to the hexagonal head.

Auto Coupler

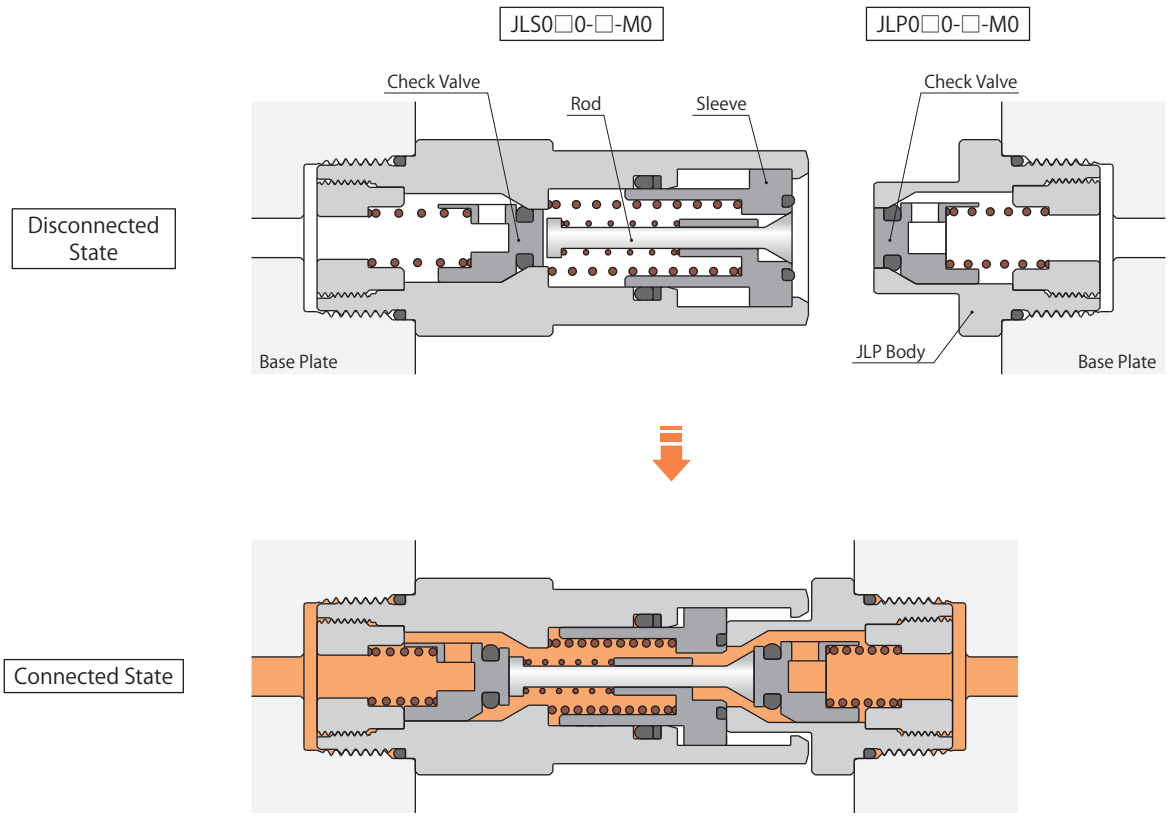
Model JLP/JLS

Oil/Positive air pressure/Coolant
(Operating Pressure Range :
lower than 3.5MPa/lower than 25MPa)

Feature

The auto coupler with the check valve is suitable for automation and used in hyraulic circuit, air circuit and for coolant.

Action Description



When JLS is closely in contact with JLP, the body presses against the sleeve and the rod presses against the check valve then the valve will open.

Model No. Indication

JL P 0 2 0 - W - M 0

1 2 3 4 5

1 Style

P : Plug Side
S : Socket Side

2 Body Size ※1

2 : Min. Passage Area 29mm²
3 : Min. Passage Area 50mm²
4 : Min. Passage Area 102mm²

3 Design No.

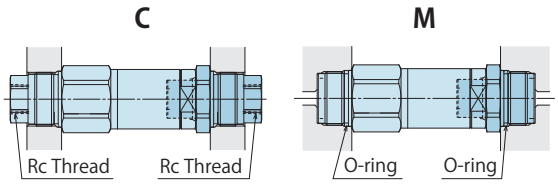
0 : Revision Number

4 Material

W : Stainless Steel, Brass, NBR (Rec. Fluid:Positive air pressure)
H : Stainless Steel, Brass, Fluor Rubber (Rec. Fluid:Coolant)
O : Steel, NBR (Rec. Fluid:General Hyd. Oil)

5 Piping Method ※2

C : Connector Option
M : Manifold Option (O-ring Seal)

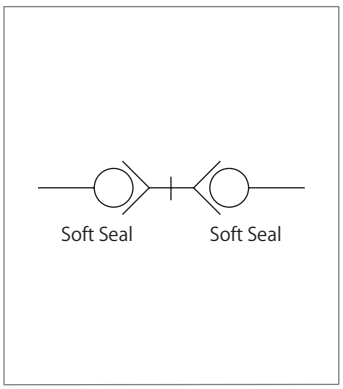


Notes :
※1. Please contact us when combining different body sizes.
However, it is recommended to use the same size couplers due to maintenance and management of spare items.
※2. The piping methods C and M can be combined for use.

Specifications

Model No.			JLP020-□-□0	JLP030-□-□0	JLP040-□-□0
	Plug Side				
	Socket Side		JLS020-□-□0	JLS030-□-□0	JLS040-□-□0
Min. Passage Area mm²			29	50	102
Offset Distance (Tolerance) mm			±0.5	±0.5	±0.8
Angular Deviation (Tolerance) DEG.			0.5		
Max. Operating Pressure MPa	4	Material W	3.5		
	4	Material H	3.5		
	4	Material O	25		
Operating Temperature ℃	4	Material W/O	0 ~ 80		
	4	Material H	0 ~ 120		
Reaction Force kN	Operating Pressure	at 3.5 MPa	0.64	0.84	1.47
		at 25.0MPa	3.95	5.16	9.64
		at P MPa	0.154 × P + 0.10	0.201 × P + 0.13	0.380 × P + 0.14
Weight			Refer to External Dimensions		

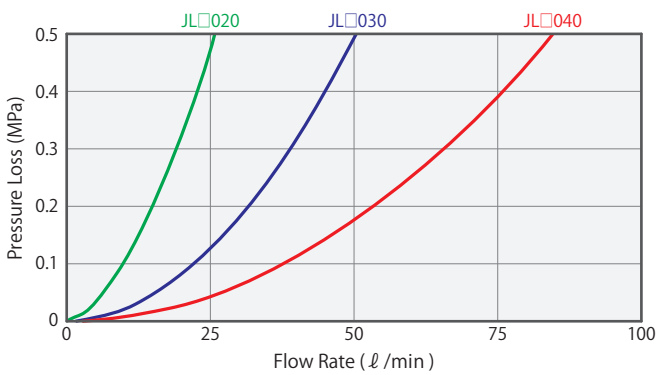
Circuit Symbol



Flow Rate—Pressure Loss Characteristic Graph

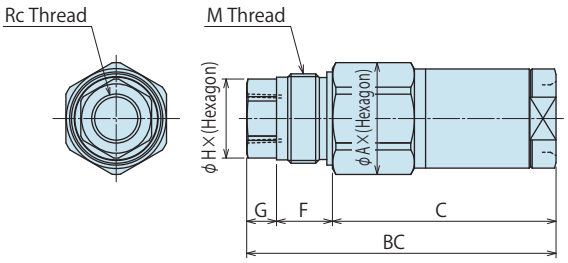
The fluid used on this data is water (temperature is 20℃).

Pressure Loss (MPa)	Flow Rate (ℓ /min)		
	JL□020	JL□030	JL□040
0	0	0	0
0.1	10.0	21.8	37.7
0.2	14.0	31.1	52.2
0.3	19.0	38.1	65.2
0.4	22.0	44.0	74.1
0.5	26.0	50.0	85.0

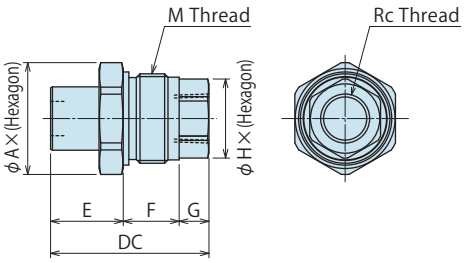


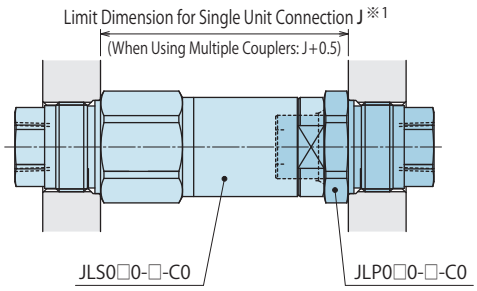
External Dimensions (JLP/JLS)

JLS0□0-□-C0

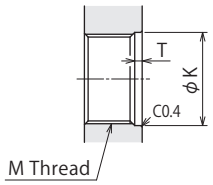


JLP0□0-□-C0



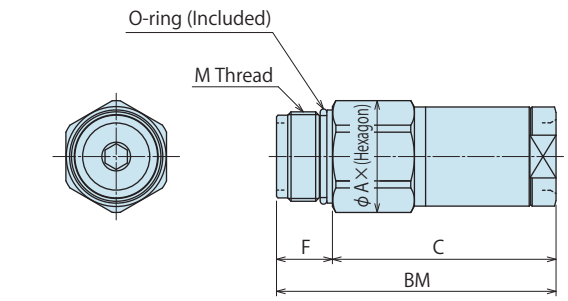


Machining Dimension for Mounting Hole
JLS0□0-□-C0/JLP0□0-□-C0

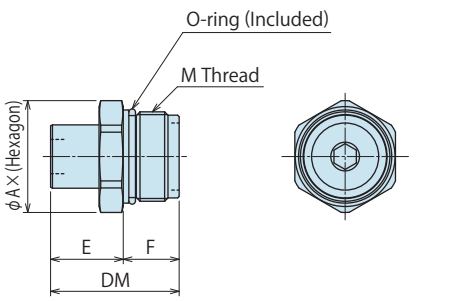


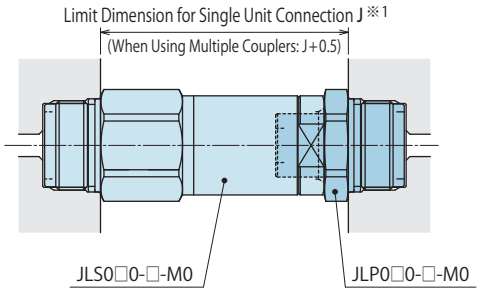
Model No.	Thread Size (M Thread)	Tightening Torque (N·m)	
		When selecting Material **W/H**	When selecting Material **O**
JL□020-□-C0	M24×1.5	25	100
JL□030-□-C0	M27×1.5	40	100
JL□040-□-C0	M33×1.5	63	180

JLS0□0-□-M0

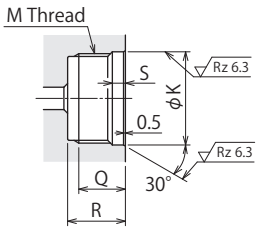


JLP0□0-□-M0





Machining Dimension for Mounting Hole
JLS0□0-□-M0/JLP0□0-□-M0



Model No.	Thread Size (M Thread)	Tightening Torque (N·m)	
		When selecting Material **W/H**	When selecting Material **O**
JL□020-□-M0	M24×1.5	25	100
JL□030-□-M0	M27×1.5	40	100
JL□040-□-M0	M33×1.5	63	180

Dimensions

(mm)

Model No.	JLP	JLP020	JLP030	JLP040
	JLS	JLS020	JLS030	JLS040
A×(Hexagon)		ϕ30×(27)	ϕ33×(30)	ϕ40×(36)
BC		83	92.5	107
BM		75	81.5	94
C		60	65.5	76
DC		42.5	48.5	57.5
DM		34.5	37.5	44.5
E		19.5	21.5	26.5
F		15	16	18
G		8	11	13
H×(Hexagon)		ϕ21.2×(19)	ϕ24.5×(22)	ϕ30×(27)
J		66.5	72	84.5
K		ϕ25H8 $^{+0.033}_{0}$	ϕ28H8 $^{+0.033}_{0}$	ϕ34H8 $^{+0.039}_{0}$
M		M24×1.5	M27×1.5	M33×1.5
Q		12.5 or more	13.5 or more	15.5 or more
R		15.5 or more	16.5 or more	18.5 or more
S		3.5	3.5	3.5
T		2	2	2
Rc Thread		Rc1/4	Rc3/8	Rc1/2

Note :

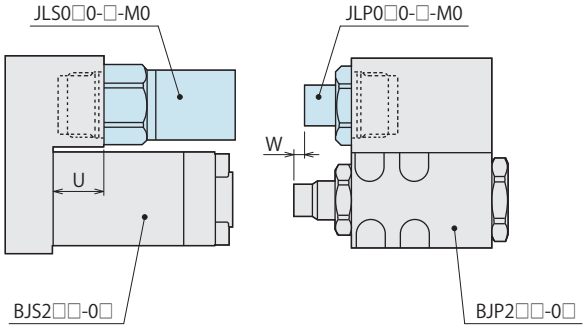
※1. When using multiple couplers, provide stopper(s) for connection dimension to be within +0.5mm of limit dimension for single unit connection.

Weight

(kg)

Material		In case of **W / H**	In case of **O**
Piping Method **C**	**JLS020-□-C0**	0.26	0.25
	JLP020-□-C0	0.09	0.09
	JLS030-□-C0	0.36	0.35
	JLP030-□-C0	0.13	0.13
	JLS040-□-C0	0.60	0.57
	JLP040-□-C0	0.26	0.26
Piping Method **M**	**JLS020-□-M0**	0.25	0.24
	JLP020-□-M0	0.08	0.08
	JLS030-□-M0	0.34	0.33
	JLP030-□-M0	0.11	0.11
	JLS040-□-M0	0.56	0.53
	JLP040-□-M0	0.22	0.22

Combination Sample



(mm)

Model No.	JLP	JLP020-□-M0	JLP030-□-M0
	JLS	JLS020-□-M0	JLS030-□-M0
U		27.5	22
W		5.5	3.5

Note :
1. Additionally install the air blow for JL□ (to prevent cutting chips).

Cautions (JLP/JLS)

< General Cautions >

1. Do not connect or disconnect the auto coupler under pressure (pressure remained state).
2. Release the air from the circuit before use (when using hydraulic oil).
3. Do not connect the coupler when each connecting surface is contaminated.
   (When there are cutting chips or coolant, remove all contaminants with air blow.)
4. Prevent contaminants (cutting chips or sealing tapes) from entering into the circuit.
5. When using water or air as fluid, consider rust prevention of manifold blocks and pipe fittings.
6. When pressing up to the connection limit, the pressing force should be :
   higher than the reaction force and lower than 4.0kN for JL□020-W/H-□0, higher than the reaction force and lower than 6.0kN for JL□020-O-□0.
   higher than the reaction force and lower than 5.0kN for JL□030-W/H-□0, higher than the reaction force and lower than 9.0kN for JL□030-O-□0.
   higher than the reaction force and lower than 7.0kN for JL□040-W/H-□0, higher than the reaction force and lower than 12.0kN for JL□040-O-□0.
7. Please contact us when requiring the auto coupler with a larger passage area.

Auto Coupler

Model JTA/JTB

Positive/Negative air pressure
(Operating Pressure Range: lower than 1MPa)

100% Stainless Steel

JTA/JTB Feature

Ultra-Compact Auto Coupler

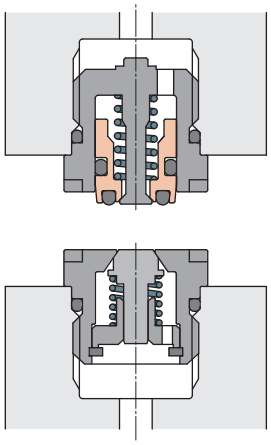
※ The auto coupler does not have the non-leak function. In case you need the non-leak function, please refer to "Non-Leak Coupler" on KWCS Complete Catalog or visit our website (http://www.kosmek.com).

※ No copper (Cu) or zinc (Zn) based materials are used.
Stainless steel and aluminum materials may contain copper (Cu) and zinc (Zn) as additive elements.

Action Description

Disconnected State

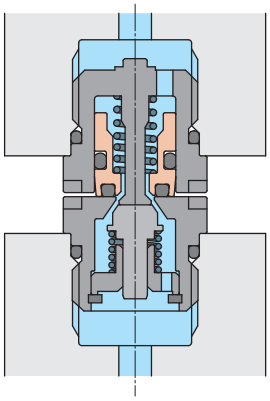
JTA (Fixture Side)



JTB (Pressure Source Side)

Connected State

The reaction force is generated by the built-in spring and the supply pressure.



Model No. Indication

JT B 010 1 - H - CR
1 2 3 4

1 Style

A : O-ring side of Connection Surface (Outgoing Side / Fixture Side)

B : Metal Side of Connection Surface (Incoming Side / Pressure Source Side)

2 Design No.

1 : Revision Number

3 Material

H : Stainless Steel, Fluor Rubber

4 Grease

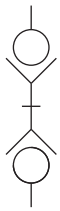
Blank : NBU8EP made by NOK KLUEBER (Standard)
CR : AFF made by THK (For clean environment)
FD : NH1 64-422 made by NOK KLUEBER (For food machinery)

Specifications

Model No.			Fixture Side: JTA0101-H-□ / Pressure Source Side: JTB0101-H-□
Max. Operating Pressure MPa			1.0
Withstanding Pressure MPa			1.5
Min. Passage Area mm²			5
Offset Distance (Tolerance) mm			±0.5
Angular Deviation (Tolerance) DEG.			0.3
Operating Temperature ℃			0 ~ 120
Usable Fluid			Positive / Negative air pressure
Reaction Force kN	Operating Pressure	at 1 MPa	0.101
		at 0.5 MPa	0.066
		at P MPa	0.071 × P + 0.03
Weight g		JTA	15
		JTB	13

Circuit Symbol

JTA (Outgoing Side / Fixture Side)



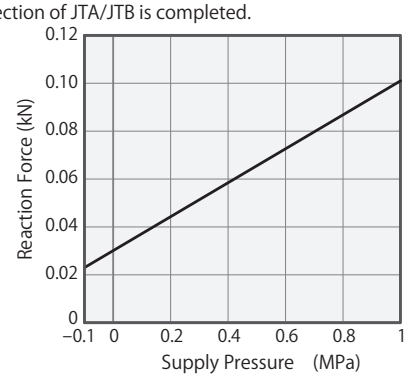
JTB (Incoming Side / Pressure Source Side)

※ Since each check valve is a metal seal, there will be slight air leak if pressurized while disconnected.

Supply Pressure—Reaction Force Graph

The graph shows the reaction force when supplying pressure after the connection of JTA/JTB is completed.

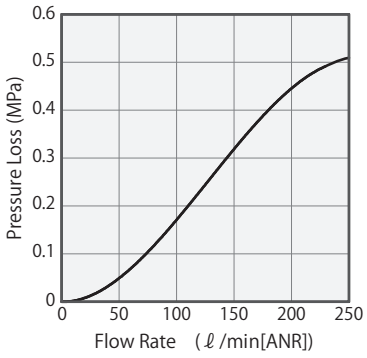
Supply Pressure (MPa)	Reaction Force (kN)
−0.1	0.023
0	0.030
0.1	0.037
0.2	0.044
0.3	0.051
0.4	0.058
0.5	0.066
0.6	0.073
0.7	0.080
0.8	0.087
0.9	0.094
1.0	0.101



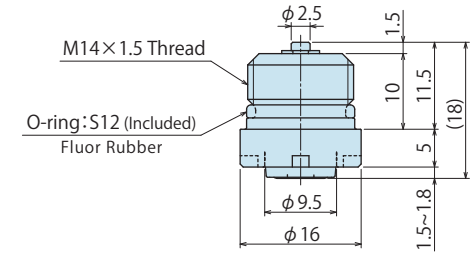
Flow Rate—Pressure Loss Characteristic Graph

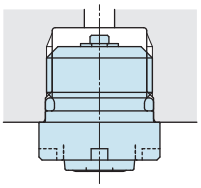
The fluid used on this data is air.

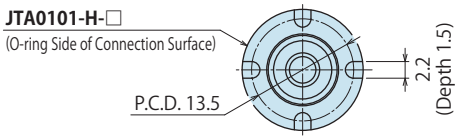
Flow Rate (ℓ/min[ANR])	Pressure Loss (MPa)
0	0
48	0.05
75	0.1
95	0.15
110	0.2
125	0.25
140	0.3
160	0.35
180	0.4
210	0.45
230	0.5

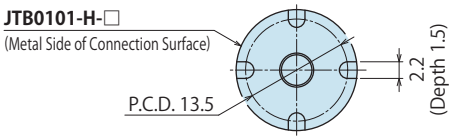


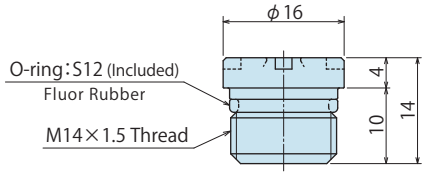
External Dimensions (JTA/JTB)

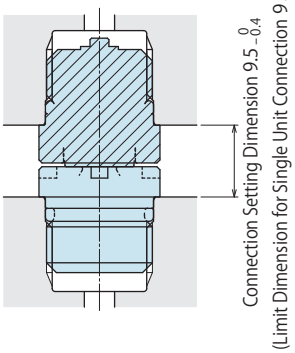


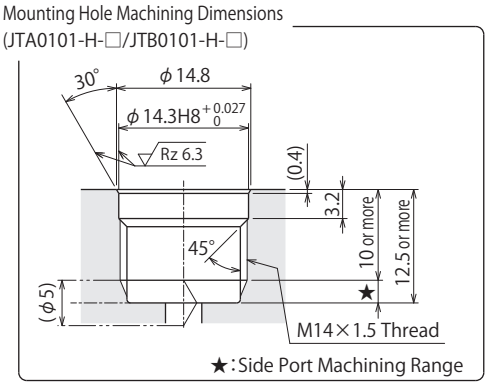












Model No.	Thread Size	Tightening Torque (N·m)
JTA0101-H-□ **JTB0101-H-□**	M14×1.5	10

Note :

1. Mounting Jig (Model ZZJ0040) or equivalent is required to install and remove JTA/JTB.
   Mounting Jig (Model ZZJ0040) is not included with JTA/JTB. Please order separately.

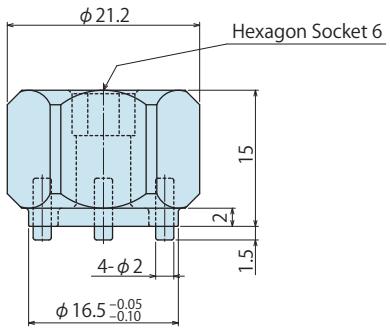
Accessary : Mounting Jig

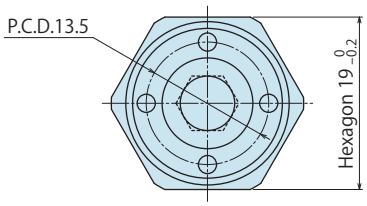
This jig is used to mount and remove the JTA/JTB.
Tightening Torque:10N•m

Model No. Indication

ZZJ0040

Design No.
(Revision Number)



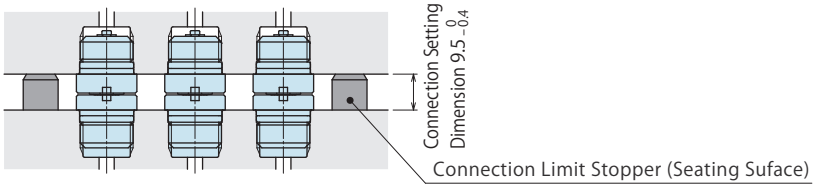


Note :

1. Mounting Jig (Model ZZJ0040) or equivalent is required
   to install and remove JTA/JTB.
   Please determine the required number of jigs when ordering.

Cautions (JTA/JTB)

1. Make sure to supply fluid after connection is completed.
2. Since each check valve is a metal seal, there will be slight fluid leaks if pressurized while disconnected.
3. Do not connect the coupler when contaminants are adhered on each connecting surface.
   When there are cutting chips or coolant, install a cover, or remove all contaminants with air blow.
4. Exceeding allowable offset leads to damage on internal parts. It is recommended to install a guide pin.
5. When using connection limit stopper(s) or multiple couplers (more than three of them), make sure it becomes the connection setting dimension when connected.



6. When pressing up to the connection limit, the force should be higher than the reaction force and lower than 1.0kN.
7. For mounting and removing the coupler, use the mounting jig (ZZJ0040) or equivalent.
8. When using with the pallet clamp (VS/WVS), it is recommended to use the auto coupler model JVC/JVD or JVE/JVF.
   (When using JTA/JTB with the pallet clamp: If a pallet might be lifted up by the spring reaction force when setting, the connection setting dimension needs to be reconsidered. Please contact us.)

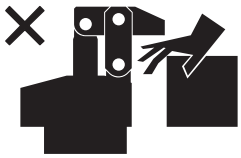
Cautions

Notes on Handling

1) It should be operated by qualified personnel.
- The hydraulic machine and air compressor should be operated and maintained by qualified personnel.

2) Do not operate or remove the product unless the safety protocols are ensured.
① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
③ After stopping the product, do not remove until the temperature drops.
④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch a clamp (cylinder) while it is working.
Otherwise, your hands may be injured.

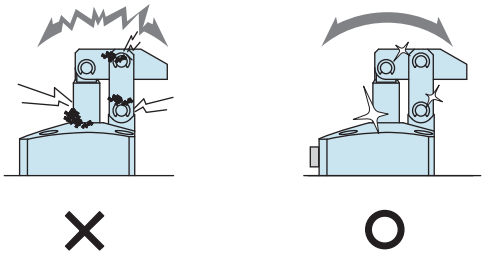


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

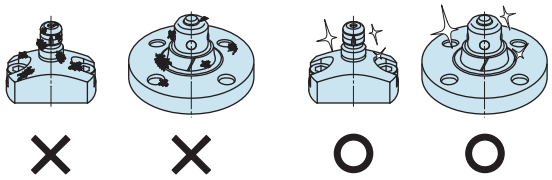
Maintenance and Inspection

1) Removal of the Machine and Shut-off of Pressure Source
- Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
- Make sure there is no trouble/issue in the bolts and respective parts before restarting.

2) Regularly clean the area around the piston rod and plunger.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage.



3) Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/SWP/VRA/VRC/VX/VXE/VXF/WVS/WVG/VWH/VWM/VWK).
- Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
- Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.



4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.

5) Make sure the hydraulic fluid has not deteriorated.

6) Make sure there is a smooth action without an irregular noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

7) The products should be stored in the cool and dark place without direct sunshine or moisture.

8) Please contact us for overhaul and repair.

Warranty

1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② Failure caused by the use of the non-confirming state at the user's discretion.
③ If it is used or operated in an inappropriate way by the operator.
（Including damage caused by the misconduct of the third party.）
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Other caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

Sales Offices

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JAPAN HEAD OFFICE Overseas Sales	**TEL. +81-78-991-5162**	FAX. +81-78-991-8787 KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
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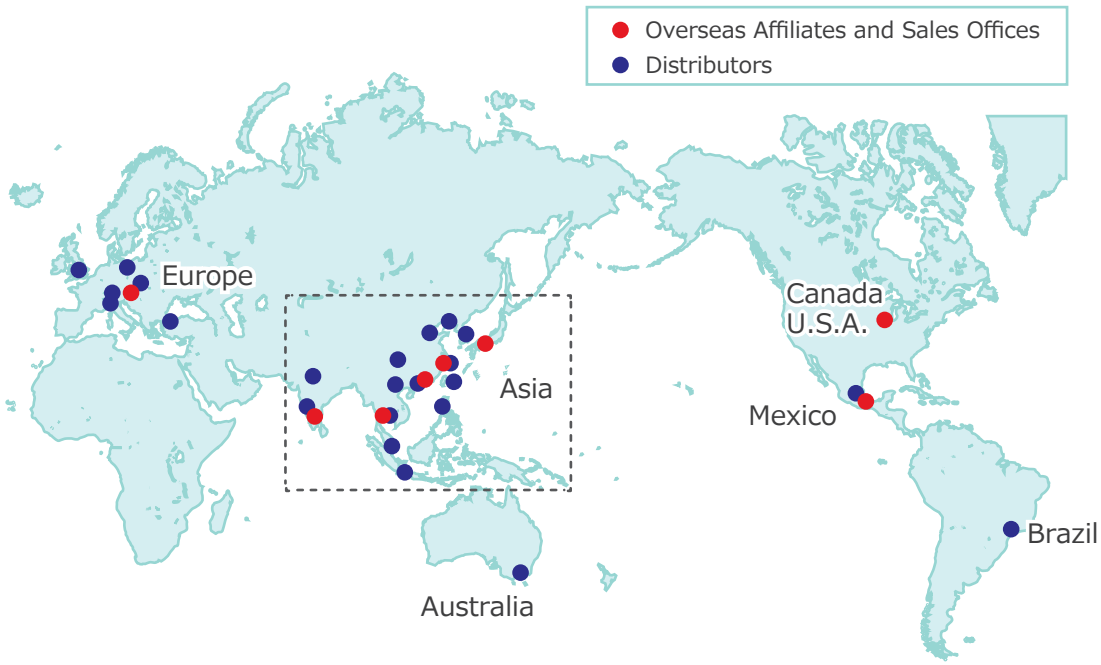
Global Network



Asia Detailed Map

KOSMEK
Harmony in Innovation

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