

# Screw Locator

Compact Model for Light Load (Model VXE) Newly Added

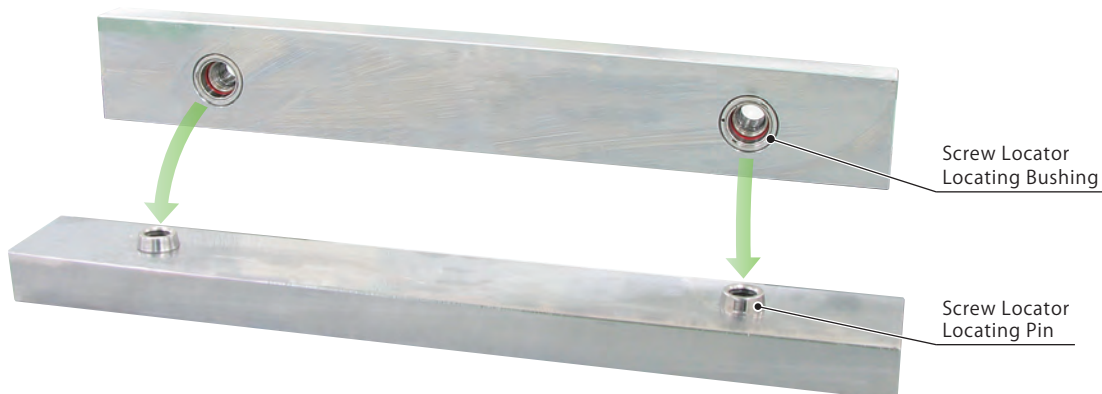
Model VXF/VXE



## Simple High-Accuracy Locating by Hand

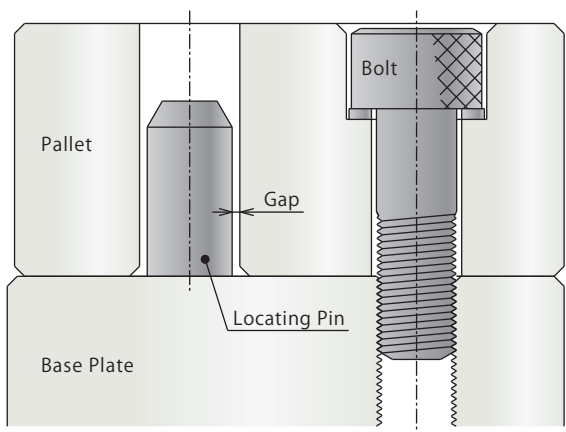
VXF : Locating Repeatability  $3\ \mu\text{m}$  VXE : Locating Repeatability  $5\ \mu\text{m}$

The "Screw Locator" performs high-precision locating by simply tightening the bolts.



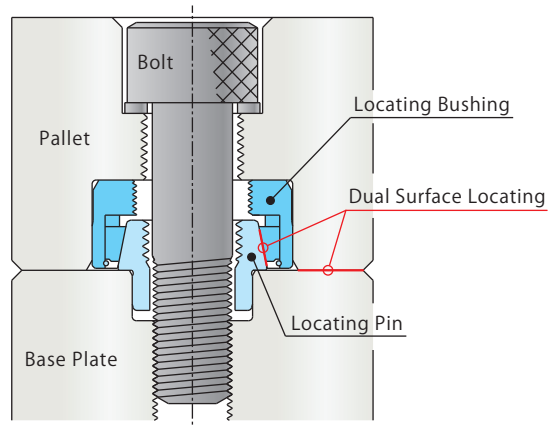
General locating pin has a gap and poor locating repeatability.

Backlash • Low Accuracy • Space Required



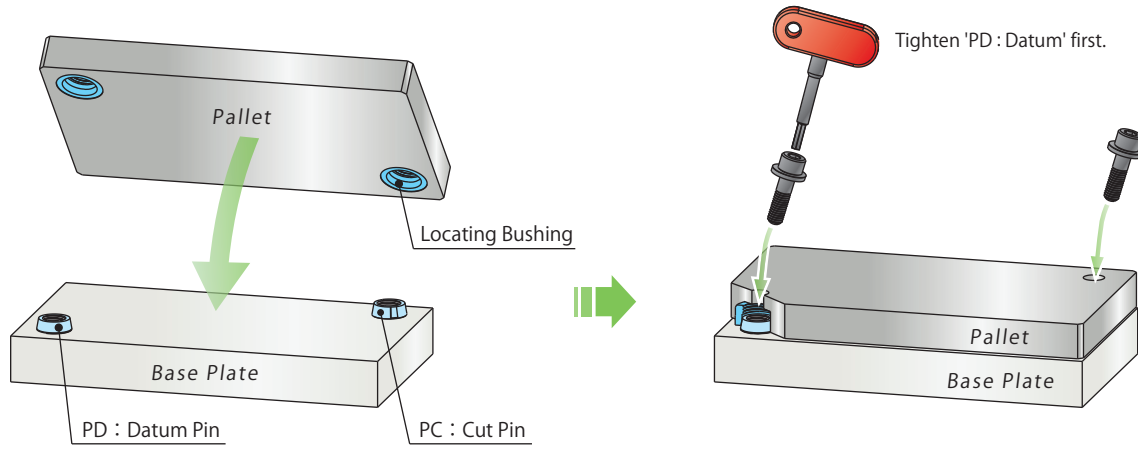
Screw Locator with Dual Surface Tightening **Locating Repeatability  $3\ \mu\text{m}$**  (VXE :  $5\ \mu\text{m}$ )

High accuracy allows for high quality and less defective parts. Compact body saves valuable space.



※ Screw Locator consists of Locating Pin and Locating Bushing.

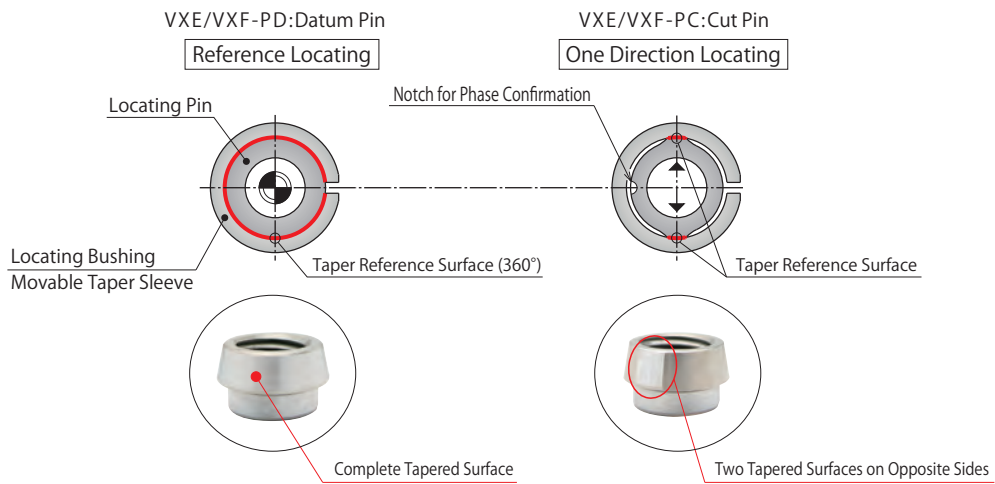
## Action Description



Set the pallet.

Fasten the pallet on the base plate with bolts.  
Tightening procedure is PD : Datum → PC : Cut.  
The pallet is fastened and located simultaneously.

Kosmek "Screw Locator" consists of  
PD : Datum-Pin (Round Pin) and PC : Cut-Pin (Diamond Pin) like other manual locating pins.



- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories**
- Cautions / Others

**Screw Locator**

**VXF/VXE**

- Manual Expansion Locating Pin
- VX

Manifold Block

- WHZ-MD
- LZY-MD
- LZ-MS
- LZ-MP
- TMZ-1MB
- TMZ-2MB
- DZ-M

Manifold Block / Nut

- DZ-R
- DZ-C
- DZ-P
- DZ-B
- LZ-S
- LZ-SQ
- WNZ-SQ
- TNZ-S
- TNZ-SQ

Pressure Switch

- JBA

Pressure Gauge

- JGA/JGB

Manifold

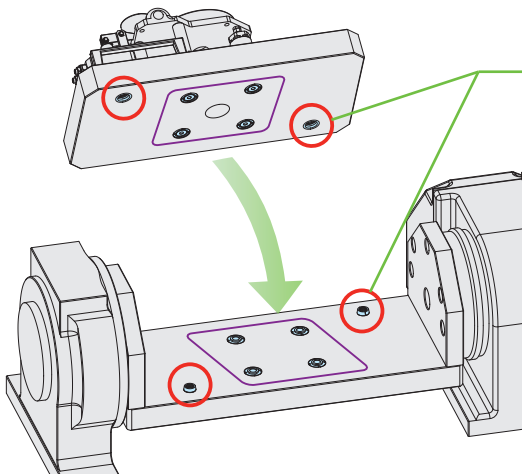
- JX

Coupler Switch

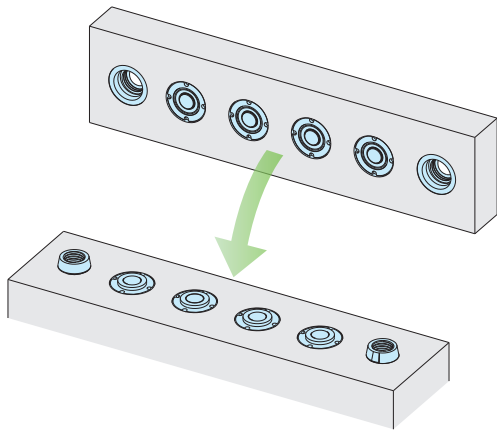
- PS

G-Thread Fitting

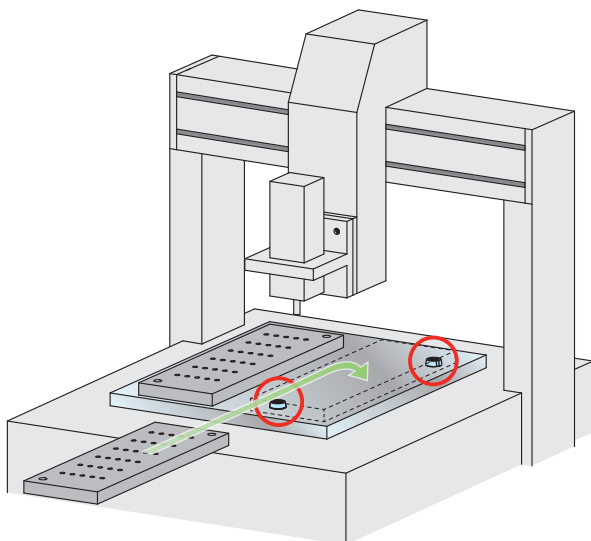
● Application Examples



For Locating/Setup of Fixtures for Machining Applications

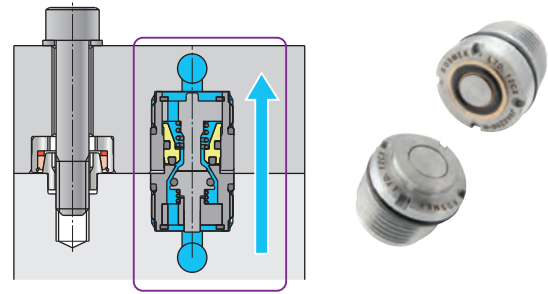


Connects both pallet and couplers simultaneously.

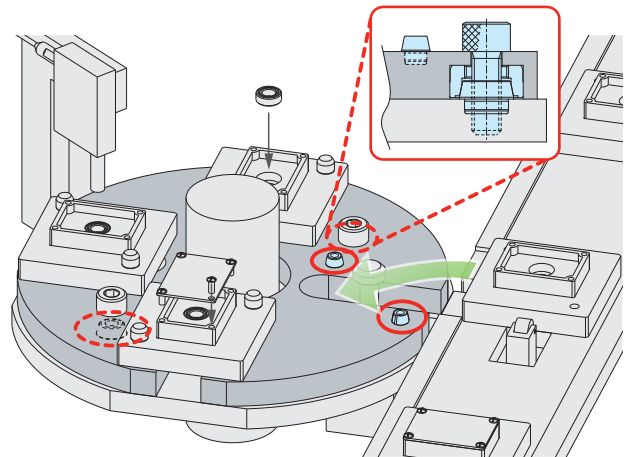


For Locating of Pallets for Robot Applications

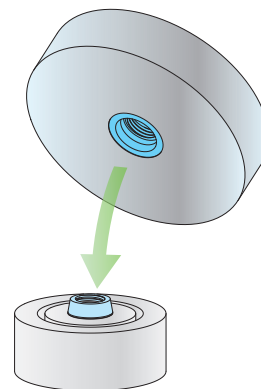
■ Auto Coupler  
Model JVA/JVB



Able to supply hydraulic or air pressure from the base plate to the pallet by using with the Auto Coupler.  
※Refer to P.1145.



For Setup of Carrier Pallets • Fixture Bases for Assembly / Press Fitting / Inspection Device of Compact Components



For High-Accuracy Tightening of Components

※ If there is no need of diamond locating, the datum pin can be used in singular fashion.

● Lineup



Model **VXF** → P.1313



Model **VXE** → P.1317

Locating Repeatability	3 μm	5 μm
Tightening Bolt Size	M4 / M5 / M6 / M8 / M10 / M12 / M16	M3
Min. Tightening Force	1200 ~ 3000 N	50 N
Max. Loading Weight ※	Horizontal Mounting : 100 ~ 800 kg Vertical Mounting : 20 ~ 160kg	Horizontal Mounting : 2 kg Vertical Mounting : 0.4kg
Applications Features	<p>With a variety of body sizes, Screw Locator can be used in various environments. High loading weight allows for locating heavy pallets and using in machining fixture. Setup time of fixture pallet can be reduced.</p>	<p>With small min. tightening force (reaction force at connection), thin/compact pallets can hardly be deformed when locating. When locating with the use of auto clamps, the taper pin avoids interference and thus suitable for automation.</p> <p>Low tightening force (reaction force) hardly deforms pallets.</p>

※ Maximum loading weight of VXF / VXE shows the maximum pallet weight that can be located.

About load applied after locating, vertical force is received by fixture seating surface, and horizontal force is received by clamping force with bolt tightening, etc.

High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Screw Locator

VXF/VXE

Manual Expansion Locating Pin

VX

Manifold Block

WHZ-MD

LZY-MD

LZ-MS

LZ-MP

TMZ-1MB

TMZ-2MB

DZ-M

Manifold Block / Nut

DZ-R

DZ-C

DZ-P

DZ-B

LZ-S

LZ-SQ

WNZ-SQ

TNZ-S

TNZ-SQ

Pressure Switch

JBA

Pressure Gauge

JGA/JGB

Manifold

JX

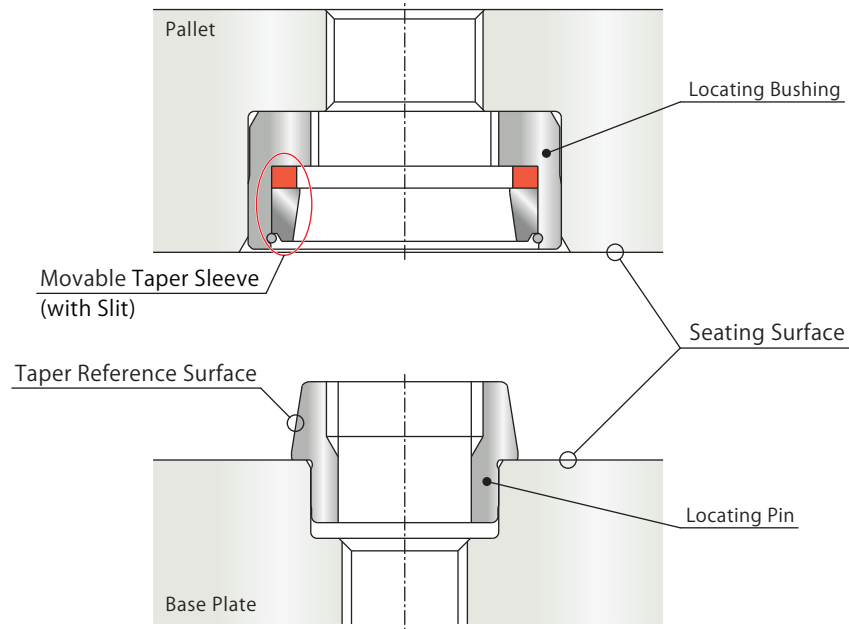
Coupler Switch

PS

G-Thread Fitting

## ● Description of Movable Taper Sleeve

Locating Method : Dual Surface with Movable Taper Sleeve



### The Benefits of Movable Taper Sleeve

- ① Absorbs tolerance variations in each locating pin and locating bushing.
- ② Absorbs wear of locating part due to long time use.
- ③ Absorbs space variations of mounting holes.
- ④ Absorbs space variations due to temperature change.

The advantage of the 'Movable Taper Sleeve' is to absorb dimension error by vertical movements. This is achieved by removing clearance between the locating pin, tapered sleeves and locating bushing. The dual surface fastening enables high precision with repeated accurate locating.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

**Screw Locator**  
VXF/VXE

Manual Expansion Locating Pin  
VX

- Manifold Block
- WHZ-MD
  - LZY-MD
  - LZ-MS
  - LZ-MP
  - TMZ-1MB
  - TMZ-2MB
  - DZ-M

- Manifold Block / Nut
- DZ-R
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  - LZ-S
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  - WNZ-SQ
  - TNZ-S
  - TNZ-SQ

Pressure Switch  
JBA

Pressure Gauge  
JGA/JGB

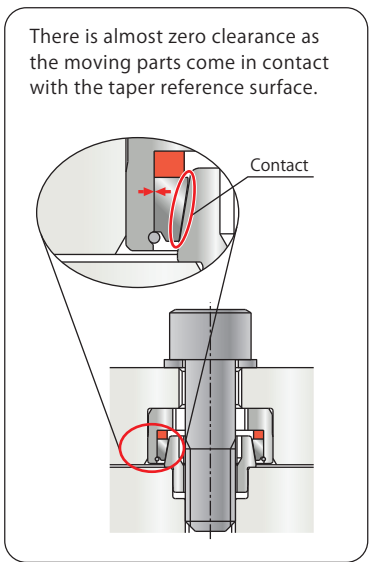
Manifold  
JX

Coupler Switch  
PS

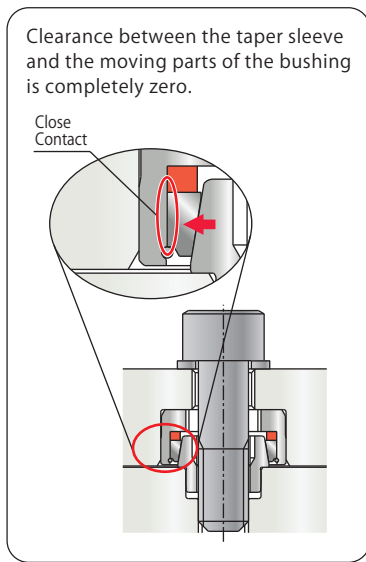
G-Thread Fitting

## Movement and Error Absorbed by the Movable Taper Sleeve (①/②)

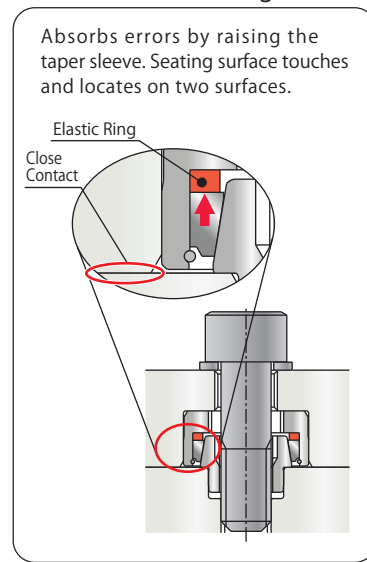
### Starting of Action for Locating



### XY Locating



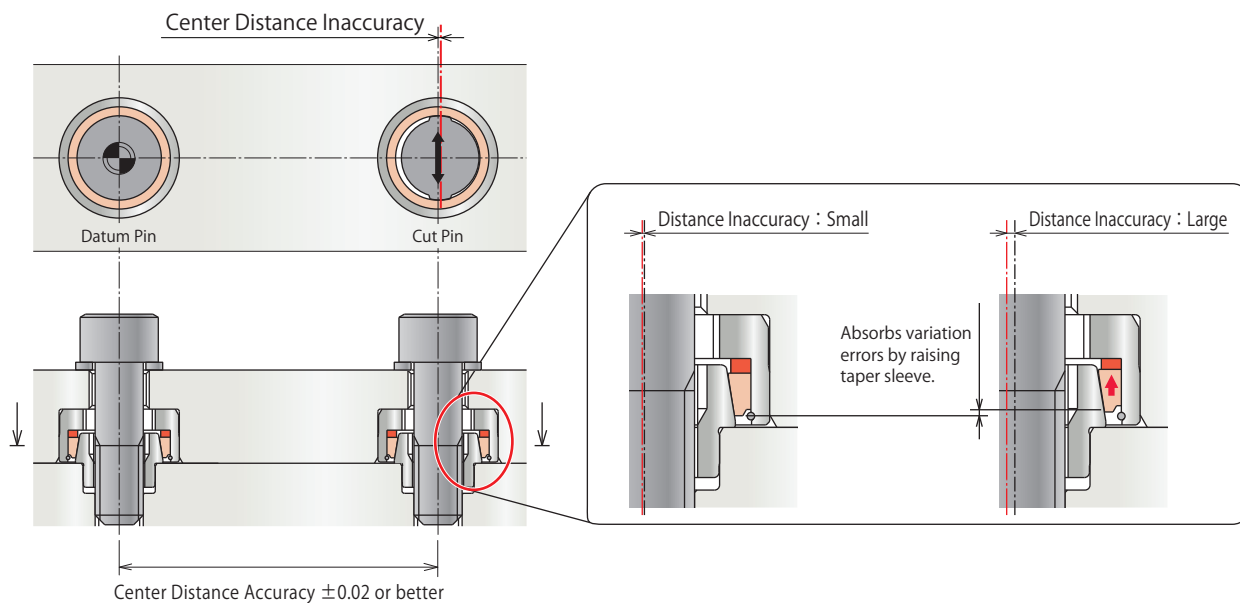
### XYZ Locating



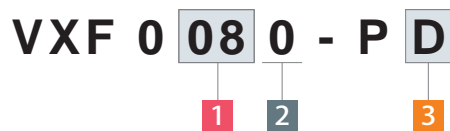
## Movable taper sleeve absorbs distance error. (③/④)

Absorbs distance variations minimizing the wear of locating parts and prevents deformation of locating pin/ locating bushing.

※ Accuracy becomes paramount when securing multiple sub plates.

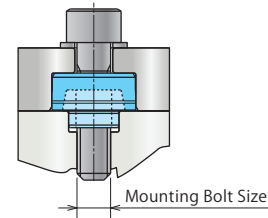


Model No. Indication (Locating Pin)



1 Mounting Bolt Size

- 04 : Mounting Bolt Size M4
- 05 : Mounting Bolt Size M5
- 06 : Mounting Bolt Size M6
- 08 : Mounting Bolt Size M8
- 10 : Mounting Bolt Size M10
- 12 : Mounting Bolt Size M12
- 16 : Mounting Bolt Size M16

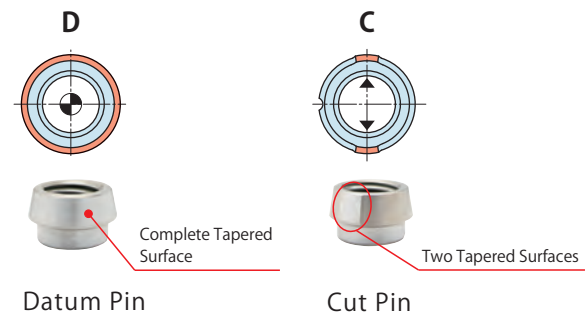


2 Design No.

- 0 : Revision Number

3 Function Classification

- D : Datum Pin (For Reference Locating)
- C : Cut Pin (For One Direction Locating)



Combination of Locating Pin and Locating Bushing

Mounting Bolt Size	Locating Pin Model No.	Locating Bushing Model No.	Function
M4 Bolt	VXF0040-PD (Datum Pin)	VXF0040-B	Reference Locating
	VXF0040-PC (Cut Pin)	VXF0040-B	One Direction Locating
M5 Bolt	VXF0050-PD (Datum Pin)	VXF0050-B	Reference Locating
	VXF0050-PC (Cut Pin)	VXF0050-B	One Direction Locating
M6 Bolt	VXF0060-PD (Datum Pin)	VXF0060-B	Reference Locating
	VXF0060-PC (Cut Pin)	VXF0060-B	One Direction Locating
M8 Bolt	VXF0080-PD (Datum Pin)	VXF0080-B	Reference Locating
	VXF0080-PC (Cut Pin)	VXF0080-B	One Direction Locating
M10 Bolt	VXF0100-PD (Datum Pin)	VXF0100-B	Reference Locating
	VXF0100-PC (Cut Pin)	VXF0100-B	One Direction Locating
M12 Bolt	VXF0120-PD (Datum Pin)	VXF0120-B	Reference Locating
	VXF0120-PC (Cut Pin)	VXF0120-B	One Direction Locating
M16 Bolt	VXF0160-PD (Datum Pin)	VXF0160-B	Reference Locating
	VXF0160-PC (Cut Pin)	VXF0160-B	One Direction Locating

## Model No. Indication (Locating Bushing)

**VXF 0 08 0 - B**

08
0

1
2



High-Power Series
Pneumatic Series
Hydraulic Series
Valve / Coupler Hydraulic Unit
Manual Operation Accessories
Cautions / Others

### Screw Locator

VXF/VXE

### Manual Expansion Locating Pin

VX

### Manifold Block

WHZ-MD

LZY-MD

LZ-MS

LZ-MP

TMZ-1MB

TMZ-2MB

DZ-M

### Manifold Block / Nut

DZ-R

DZ-C

DZ-P

DZ-B

LZ-S

LZ-SQ

WNZ-SQ

TNZ-S

TNZ-SQ

### Pressure Switch

JBA

### Pressure Gauge

JGA/JGB

### Manifold

JX

### Coupler Switch

PS

### G-Thread Fitting

## 1 Accommodate VXF Locating Pin Model

**04** : VXF0040-PD / VXF0040-PC

**05** : VXF0050-PD / VXF0050-PC

**06** : VXF0060-PD / VXF0060-PC

**08** : VXF0080-PD / VXF0080-PC

**10** : VXF0100-PD / VXF0100-PC

**12** : VXF0120-PD / VXF0120-PC

**16** : VXF0160-PD / VXF0160-PC

## 2 Design No.

**0** : Revision Number

## Specifications

Model No.		VXF0040	VXF0050	VXF0060	VXF0080	VXF0100	VXF0120	VXF0160	
Locating Repeatability	mm	0.003							
Stroke	mm	0.2				0.3			
Max. Loading Weight	Horizontal Mounting	100	200	300	400	500	600	800	
	kg	Vertical Mounting	20	40	60	80	100	120	160
Min. Tightening Force <sup>※1</sup>	kN	1.2	1.4	1.5	1.8	2.0	2.5	3.0	
Tightening Procedure		VXF-PD → VXF-PC							
Operating Temperature	°C	0 ~ 70							
Weight	Locating Pin	2	3	4	5	10	15	25	
	g	Locating Bushing	4	7	10	11	22	36	50

### Notes :

1. This product is made only for locating. It does not have clamping function. Tightening force is required when locating.

※1. Minimum tightening force indicates the required tightening force (pressing force) per locating unit. (It is the required axial force when tightening the center of VXF with a bolt.)

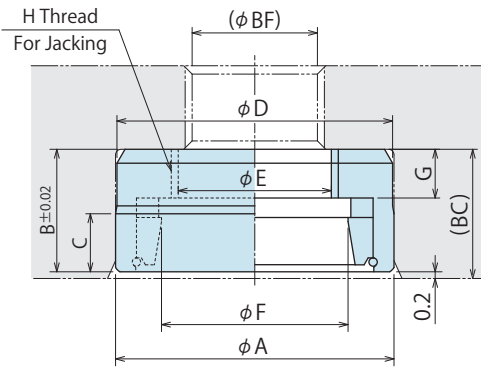
Tighten the mounting bolt with appropriate tightening torque. (Refer to P.1323 for reference data of bolt axial force and tightening torque.)

Tightening torque may differ according to bolt tensile strength grade / plate material. For further information, please refer to JIS B 1083, JIS B 1084 or catalogs of bolt makers.



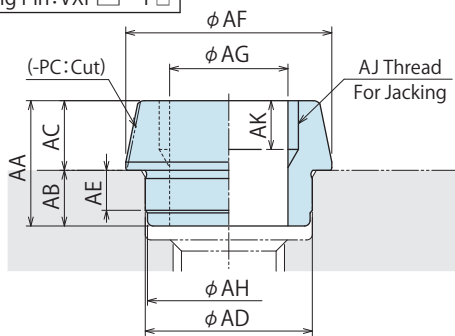
External Dimensions

Locating Bushing : VXF□-B



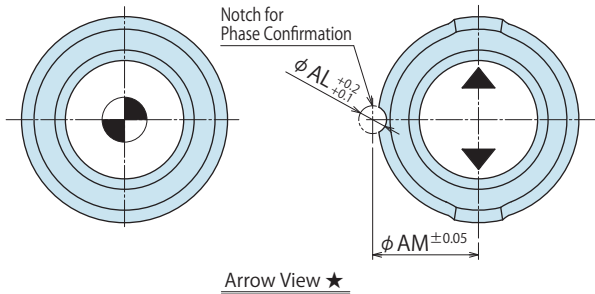
Arrow View ★

Locating Pin: VXF□-P□



VXF□-PD (Datum)

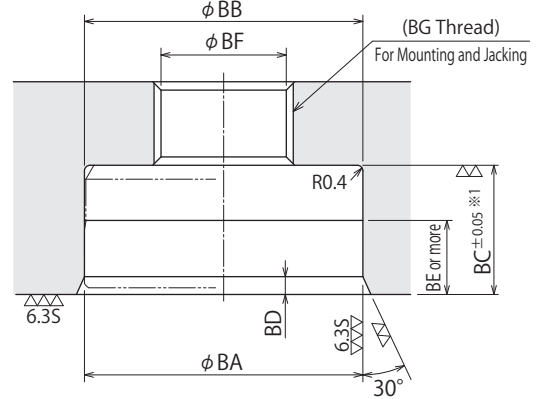
VXF□-PC (Cut)



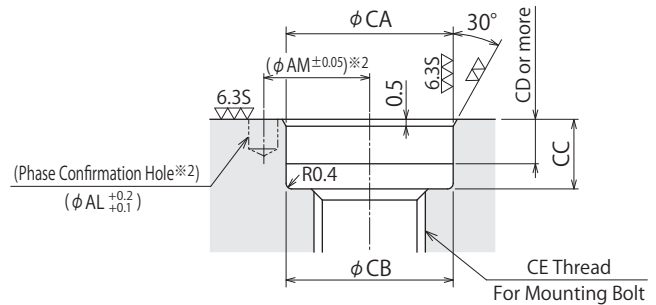
Arrow View ★

Machining Dimensions of Mounting Area

Locating Bushing (VXF□-B) Side



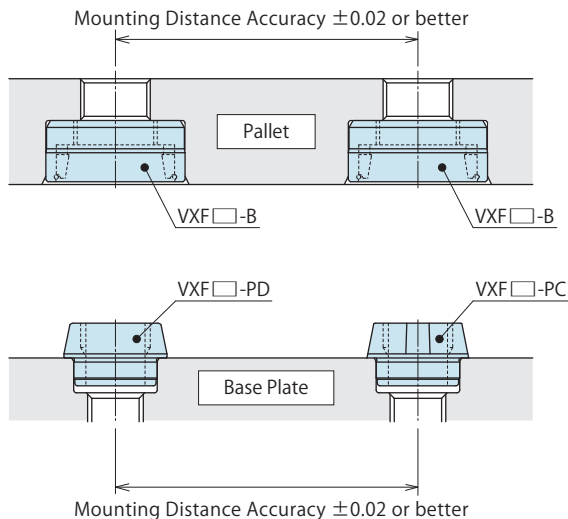
Locating Pin (VXF□-P□) Side



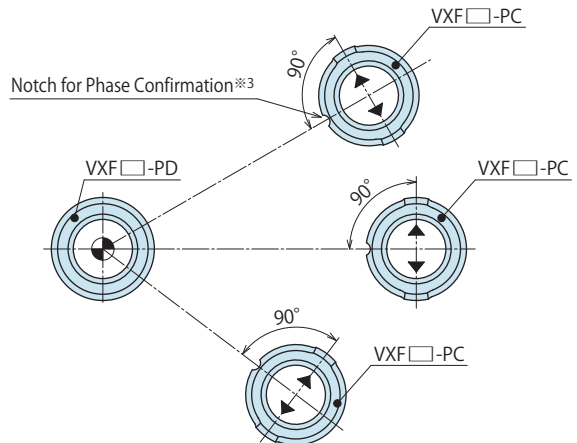
Notes :

- ※1. If material of a base plate and pallet is different, BC machining tolerance should be  $\pm 0.02$ .
- ※2. Prepare this hole for phase confirmation. The overlap of the notch and hole will confirm phase. Phasing becomes easier with a phase confirmation hole when using a parallel pin for mounting VXF-PC. (When using parallel pin, please take into account for the removal of the pin after phase alignment.)

Mounting Distance Accuracy



VXF-PC Phase



Note :

- ※3. Please align the notch of VXF-PC perpendicular to the center of VXF-PD.

## External Dimensions and Machining Dimensions for Mounting

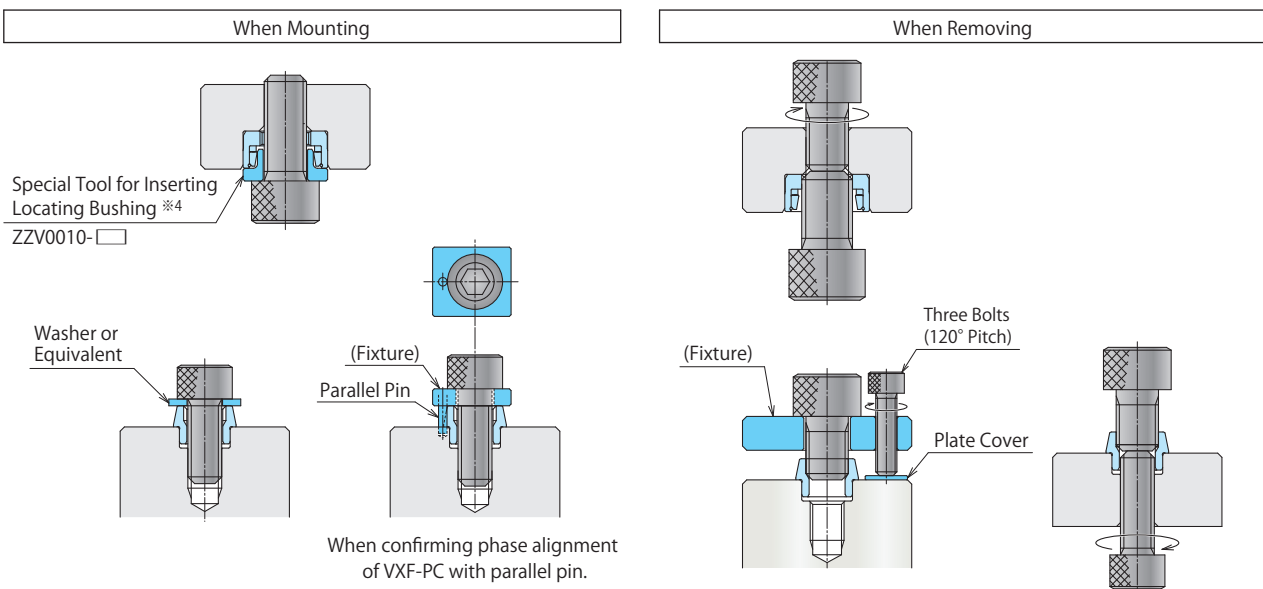
(mm)

Model No.	VXF0040	VXF0050	VXF0060	VXF0080	VXF0100	VXF0120	VXF0160
A	13 <sup>+0.033</sup> / <sub>+0.020</sub>	16 <sup>+0.033</sup> / <sub>+0.020</sub>	18 <sup>+0.033</sup> / <sub>+0.020</sub>	20 <sup>+0.033</sup> / <sub>+0.020</sub>	25 <sup>+0.033</sup> / <sub>+0.020</sub>	30 <sup>+0.033</sup> / <sub>+0.020</sub>	35 <sup>+0.042</sup> / <sub>+0.026</sub>
B	6.8	7.8	8.3	8.8	10.8	12.8	13.8
C	3.8	4	4	4.5	5.5	6.5	8
D	12.8	15.8	17.8	19.8	24.8	29.8	34.8
E	5.1	6.8	9	11	12.5	16.5	20.5
F	7.7	9.5	11.5	13.3	16.8	20.2	24.9
G	2	2.8	3.2	3.5	4.2	5.2	5.2
H	M6×1	M8×1.25	M10×1.5	M12×1.75	M14×2	M18×2.5	M22×2.5
AA	8	8.5	8.5	9	11	13	14
AB	3.5	4	4	4	5	6	6
AC	4.5	4.5	4.5	5	6	7	8
AD	6.5p6 <sup>+0.024</sup> / <sub>+0.015</sub>	8p6 <sup>+0.024</sup> / <sub>+0.015</sub>	10p6 <sup>+0.024</sup> / <sub>+0.015</sub>	12p6 <sup>+0.029</sup> / <sub>+0.018</sub>	15p6 <sup>+0.029</sup> / <sub>+0.018</sub>	18p6 <sup>+0.029</sup> / <sub>+0.018</sub>	23p6 <sup>+0.035</sup> / <sub>+0.022</sub>
AE	2.5	3	3	3	4	4.5	4.5
AF	9	10.8	12.8	14.8	18.6	22.2	27.3
AG	4.3	5.3	6.8	8.5	11	14	18
AH	6.3	7.8	9.8	11.8	14.8	17.8	22.8
AJ	M5×0.8	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2	M20×2.5
AK	3.5	3.5	3.5	3.5	4.5	5	6
AL	1.5	1.5	1.5	2	2.5	3	4
AM	4.7	5.6	6.5	7.6	9.6	11.4	14.4
BA	13H6 <sup>+0.011</sup> / <sub>0</sub>	16H6 <sup>+0.011</sup> / <sub>0</sub>	18H6 <sup>+0.011</sup> / <sub>0</sub>	20H6 <sup>+0.013</sup> / <sub>0</sub>	25H6 <sup>+0.013</sup> / <sub>0</sub>	30H6 <sup>+0.013</sup> / <sub>0</sub>	35H6 <sup>+0.016</sup> / <sub>0</sub>
BB	13 <sup>+0.011</sup> / <sub>-0.1</sub>	16 <sup>+0.011</sup> / <sub>-0.1</sub>	18 <sup>+0.011</sup> / <sub>-0.1</sub>	20 <sup>+0.013</sup> / <sub>-0.1</sub>	25 <sup>+0.013</sup> / <sub>-0.1</sub>	30 <sup>+0.013</sup> / <sub>-0.1</sub>	35 <sup>+0.016</sup> / <sub>-0.1</sub>
BC	7	8	8.5	9	11	13	14
BD	0.5	0.8	0.8	1	1.2	1.5	1.5
BE	4.2	4.5	5	5.5	6.5	7.5	8.5
BF	4.3	5.3	6.8	9	11	14	18
(BG)	M5×0.8	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2	M20×2.5
CA	6.5H6 <sup>+0.009</sup> / <sub>0</sub>	8H6 <sup>+0.009</sup> / <sub>0</sub>	10H6 <sup>+0.009</sup> / <sub>0</sub>	12H6 <sup>+0.011</sup> / <sub>0</sub>	15H6 <sup>+0.011</sup> / <sub>0</sub>	18H6 <sup>+0.011</sup> / <sub>0</sub>	23H6 <sup>+0.013</sup> / <sub>0</sub>
CB	6.5 <sup>+0.009</sup> / <sub>-0.1</sub>	8 <sup>+0.009</sup> / <sub>-0.1</sub>	10 <sup>+0.009</sup> / <sub>-0.1</sub>	12 <sup>+0.011</sup> / <sub>-0.1</sub>	15 <sup>+0.011</sup> / <sub>-0.1</sub>	18 <sup>+0.011</sup> / <sub>-0.1</sub>	23 <sup>+0.013</sup> / <sub>-0.1</sub>
CC	4.5	5	5	5	6	7	7
CD	3.5	4	4	4	5	5.5	5.5
CE	M4×0.7	M5×0.8	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2

Notes :

- Special tool (Model: ZZV0010-□) or equivalent is required when inserting VXF□-B.  
Special tool (Model: ZZV0010-□) is not included with VXF□-B. Please order separately. (Refer to P.1321)
- Mounting bolts are not included in this product.

## Mounting and Removing



Note :

- ※4. Special tool (Model: ZZV0010-□) or equivalent is required when inserting VXF□-B.  
Special tool (Model: ZZV0010-□) is not included with VXF□-B. Please order separately.

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- Manual Operation Accessories
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### Screw Locator

VXF/VXE

Manual Expansion Locating Pin  
VX

- Manifold Block
  - WHZ-MD
  - LZY-MD
  - LZ-MS
  - LZ-MP
  - TMZ-1MB
  - TMZ-2MB
  - DZ-M

- Manifold Block / Nut
  - DZ-R
  - DZ-C
  - DZ-P
  - DZ-B
  - LZ-S
  - LZ-SQ
  - WNZ-SQ
  - TNZ-S
  - TNZ-SQ

Pressure Switch  
JBA

Pressure Gauge  
JGA/JGB

Manifold  
JX

Coupler Switch  
PS

G-Thread Fitting

Model No. Indication (Locating Pin)

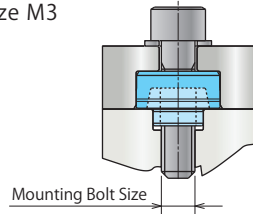
VXE 0 03 0 - P D

1   2   3



1 Mounting Bolt Size

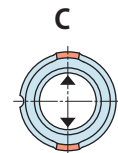
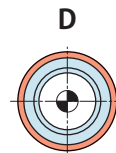
03 : Mounting Bolt Size M3



3 Function Classification

D : Datum Pin (For Reference Locating)

C : Cut Pin (For One Direction Locating)



Complete Tapered Surface



Two Tapered Surfaces

Datum Pin

Cut Pin

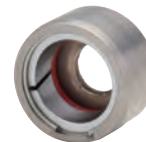
2 Design No.

0 : Revision Number

Model No. Indication (Locating Bushing)

VXE 0 03 0 - B

1   2



1 Accommodate VXE Locating Pin Model

03: VXE0030-PD / VXE0030-PC

2 Design No.

0 : Revision Number

Combination of Locating Pin and Locating Bushing

Mounting Bolt Size	Locating Pin Model No.	Locating Bushing Model No.	Function
M3 Bolt	VXE0030-PD (Datum Pin)	VXE0030-B	Reference Locating
	VXE0030-PC (Cut Pin)	VXE0030-B	One Direction Locating

## Specifications

Model No.		<b>VXE0030</b>
Locating Repeatability	mm	0.005
Stroke	mm	0.2
Max. Loading Weight	Horizontal Mounting	2.0
	Vertical Mounting	0.4
Min. Tightening Force <sup>※1</sup> <sup>※2</sup>	N	50
Tightening Procedure		VXE-PD → VXE-PC
Operating Temperature		°C
		0~70
Weight	Locating Pin	1.5
	Locating Bushing	3.0

### Notes :

1. This product is made only for locating. It does not have clamping function. Tightening force is required when locating.
- ※1. Minimum tightening force indicates the required tightening force (pressing force) per locating unit. (It is the required axial force when tightening the center of VXE with a bolt.)  
Tighten the mounting bolt with appropriate tightening torque. (Refer to P.1323 for reference data of bolt axial force and tightening torque.)  
Tightening torque may differ according to bolt tensile strength grade / plate material. For further information, please refer to JIS B 1083, JIS B 1084 or catalogs of bolt makers.
- ※2. When tightening/clamping a point other than the VXE center using external clamps, clamping force has to be greater than the minimum tightening force. Refer to P.1325 "For tightening (clamping) a point other than the VXE/VXF center." and calculate required tightening force.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories**
- Cautions / Others

- Screw Locator**
- VXF/VXE

- Manual Expansion Locating Pin
- VX

- Manifold Block
- WHZ-MD
- LZY-MD
- LZ-MS
- LZ-MP
- TMZ-1MB
- TMZ-2MB
- DZ-M

- Manifold Block / Nut
- DZ-R
- DZ-C
- DZ-P
- DZ-B
- LZ-S
- LZ-SQ
- WNZ-SQ
- TNZ-S
- TNZ-SQ

- Pressure Switch
- JBA

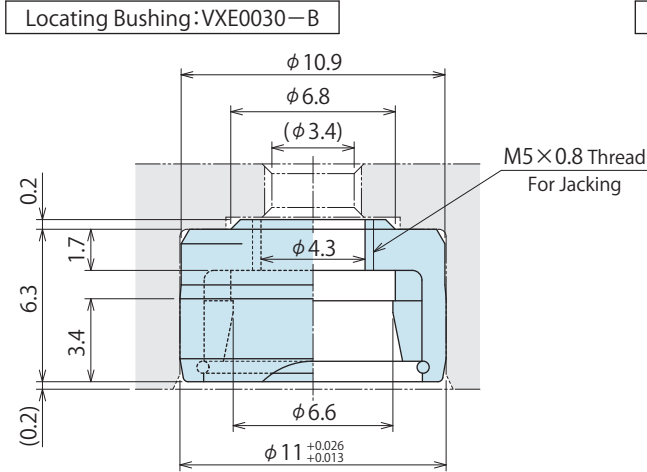
- Pressure Gauge
- JGA/JGB

- Manifold
- JX

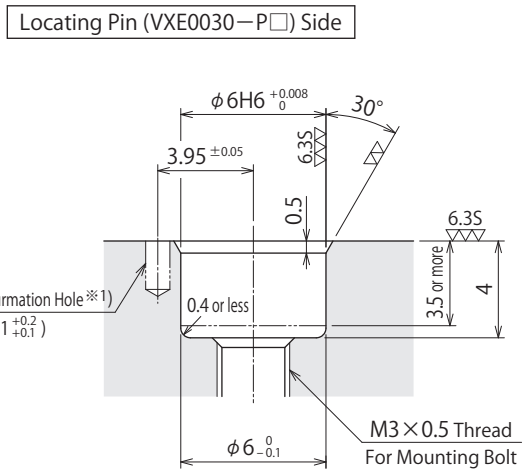
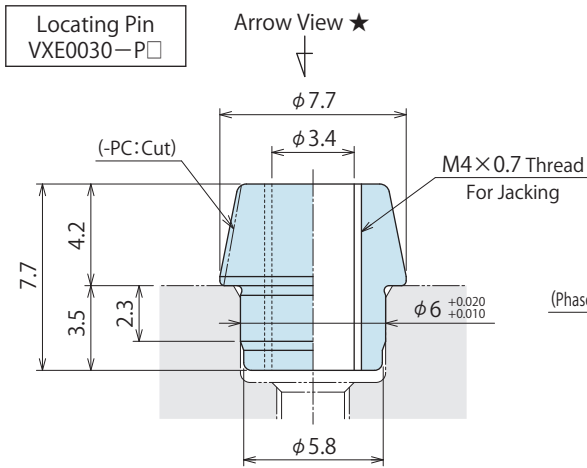
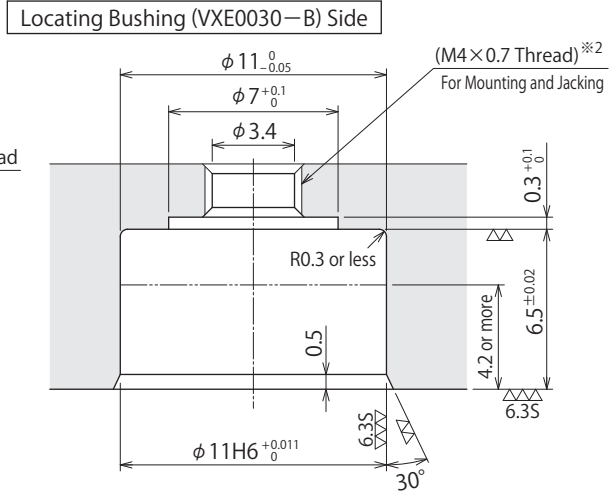
- Coupler Switch
- PS

- G-Thread Fitting

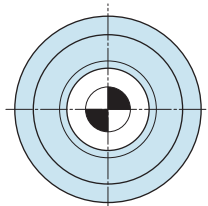
External Dimensions



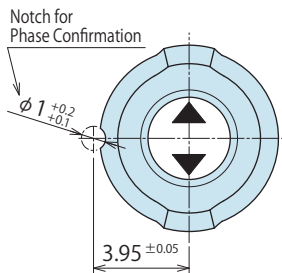
Machining Dimensions of Mounting Area



VXE0030-PD (Datum)



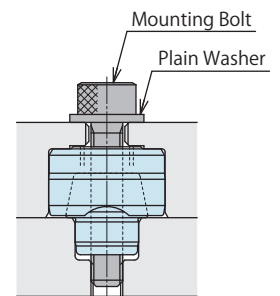
VXE0030-PC (Cut)



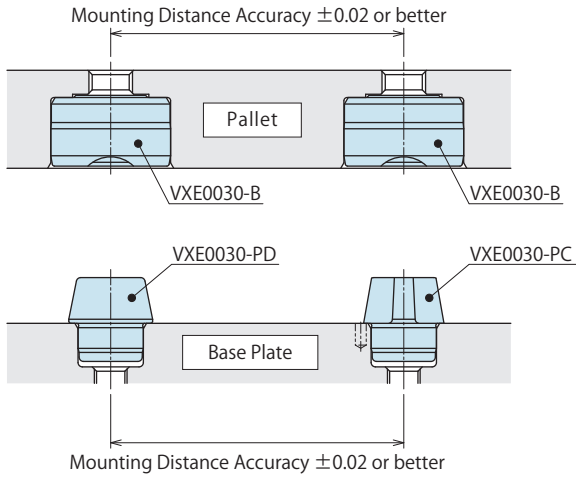
Arrow View

Notes:

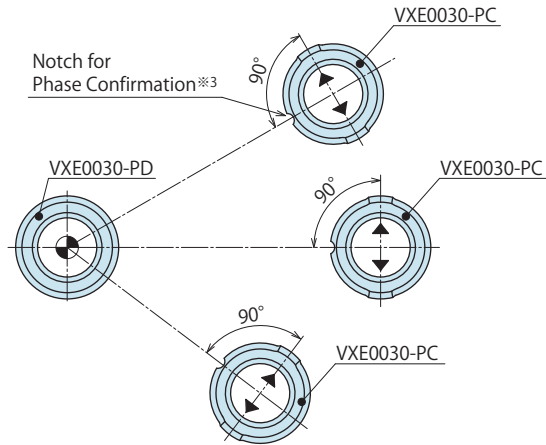
- ※1. Prepare this hole for phase confirmation. The overlap of the notch and hole will confirm phase. Phasing becomes easier with a phase confirmation hole when using a parallel pin for mounting VXE-PC. (When using parallel pin, please take into account for the removal of the pin after phase alignment.)
- ※2. When preparing M4x0.7 thread for mounting/jacking, use the plain washer for the mounting bolt as shown in the drawing on the right.
  1. Special tool (Model: ZZV0010-030) or equivalent is required when inserting VXE0030-B. Special tool (Model: ZZV0010-030) is not included with VXE0030-B. Please order separately (refer to P.1321).
  2. Mounting bolts are not included in this product.



### Mounting Distance Accuracy



### VXE-PC Phase

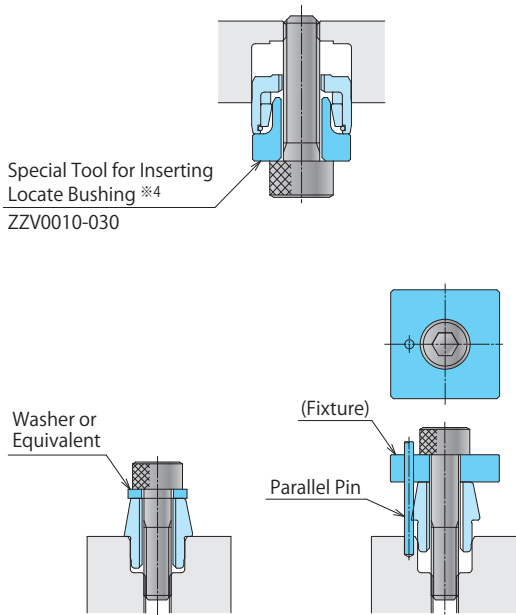


Note :

※3. Please align the notch of VXE-PC perpendicular to the center of VXE-PD.

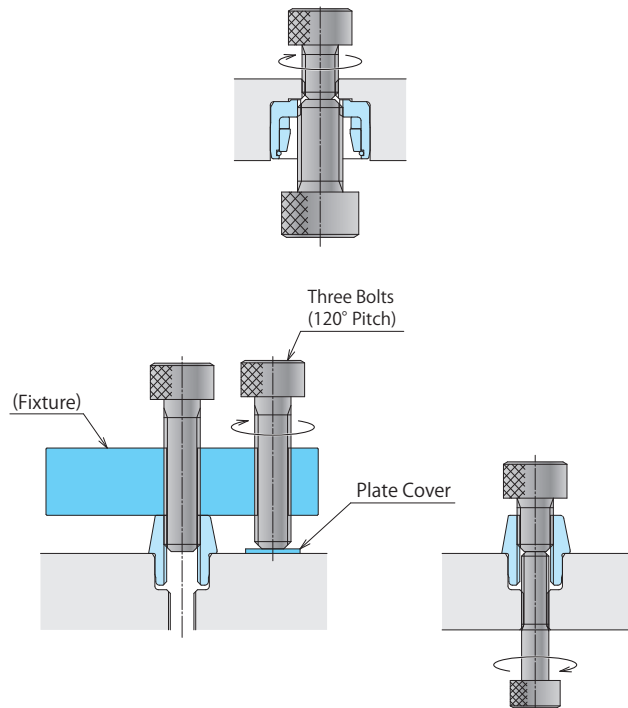
### Mounting and Removing

When Mounting



When confirming phase alignment of VXE-PC with parallel pin.

When Removing



Notes :

※4. Special tool (Model: ZZV0010-030) or equivalent is required when inserting VXE0030-B.  
Special tool (Model: ZZV0010-030) is not included with VXE0030-B. Please order separately.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

#### Screw Locator

VXF/VXE

Manual Expansion Locating Pin  
VX

#### Manifold Block

WHZ-MD  
LZY-MD  
LZ-MS  
LZ-MP  
TMZ-1MB  
TMZ-2MB  
DZ-M

#### Manifold Block / Nut

DZ-R  
DZ-C  
DZ-P  
DZ-B  
LZ-S  
LZ-SQ  
WNZ-SQ  
TNZ-S  
TNZ-SQ

#### Pressure Switch

JBA

#### Pressure Gauge

JGA/JGB

#### Manifold

JX

#### Coupler Switch

PS

#### G-Thread Fitting

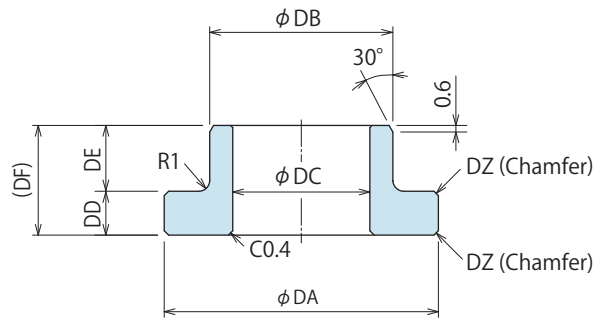
● Accessory : Special Tool for Inserting Locating Bushing

Model No. Indication

**ZZV0010 - 060**

Size (See the table below.)

Design No.  
(Revision Number)



External Dimensions

(mm)

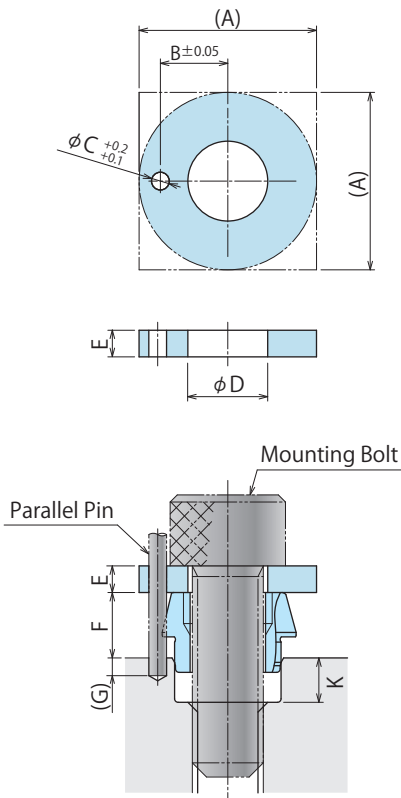
Model No.	ZZV0010-040	ZZV0010-050	ZZV0010-060	ZZV0010-080	ZZV0010-100	ZZV0010-120	ZZV0010-160	ZZV0010-030
Corresponding Product Model	VXF0040-B	VXF0050-B	VXF0060-B	VXF0080-B	VXF0100-B	VXF0120-B	VXF0160-B	VXE0030-B
DA	13 <sup>-0.2</sup> <sub>-0.5</sub>	16 <sup>-0.2</sup> <sub>-0.5</sub>	18 <sup>-0.2</sup> <sub>-0.5</sub>	20 <sup>-0.2</sup> <sub>-0.5</sub>	25 <sup>-0.2</sup> <sub>-0.5</sub>	30 <sup>-0.2</sup> <sub>-0.5</sub>	35 <sup>-0.2</sup> <sub>-0.5</sub>	11 <sup>-0.2</sup> <sub>-0.5</sub>
DB	7.6 <sup>0</sup> <sub>-0.2</sub>	9.4 <sup>0</sup> <sub>-0.2</sub>	11.4 <sup>0</sup> <sub>-0.2</sub>	13.2 <sup>0</sup> <sub>-0.2</sub>	16.7 <sup>0</sup> <sub>-0.2</sub>	20.1 <sup>0</sup> <sub>-0.2</sub>	24.8 <sup>0</sup> <sub>-0.2</sub>	6.4 <sup>0</sup> <sub>-0.2</sub>
DC	5.5	6.7	8.5	10.5	12.5	16.5	20.5	4.5
DD	3	3	3	3	4	5	5	3
DE	4.3	4.5	4.5	4.5	6	7	8	4
DF	7.3	7.5	7.5	7.5	10	12	13	7
DZ (Chamfer)	C0.4	C0.4	C0.4	C0.4	C0.4	C0.4	C0.4	C0.2

Note :

1. Special tool (Model:ZZV0010-□) or equivalent is required when inserting VXF□-B / VXE0030-B. Please determine the number of tools required when ordering.

## Reference Data : Mounting Jig

Sample jig design for mounting and phasing VXF□-PC, VXE0030-PC with parallel pins.

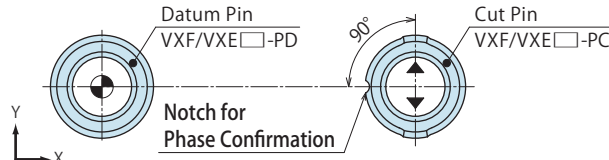


### External Dimensions (mm)

Corresponding Product Model	VXF0040-PC	VXF0050-PC	VXF0060-PC	VXF0080-PC	VXF0100-PC	VXF0120-PC	VXF0160-PC	VXE0030-PC
A	(18 or more)	(18 or more)	(20 or more)	(20 or more)	(25 or more)	(30 or more)	(40 or more)	(12 or more)
B	4.7	5.6	6.5	7.6	9.6	11.4	14.4	3.95
C	1.5	1.5	1.5	2	2.5	3	4	1
D	4.5	5.5	6.8	9	11	14	18	3.4
E	(3)	(3)	(3)	(3)	(5)	(5)	(5)	(3)
F	6.5 or more	7 or more	7 or more	7.5 or more	9.5 or more	11 or more	12 or more	6 or more
G	(2)	(2)	(2)	(2)	(3)	(3)	(3)	(2)
K	4.5	5	5	5	6	7	7	4
Mounting Bolt※1	M4×0.7	M5×0.8	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2	M3×0.5
Parallel Pin※2	φ 1.5(h8)	φ 1.5(h8)	φ 1.5(h8)	φ 2(h8)	φ 2.5(h8)	φ 3(h8)	φ 4(h8)	φ 1(h8)

Notes : ※1. Determine the length of mounting bolt according to the length of mounting thread of base plate.  
 ※2. Determine the length of parallel pin according to the dimension G.

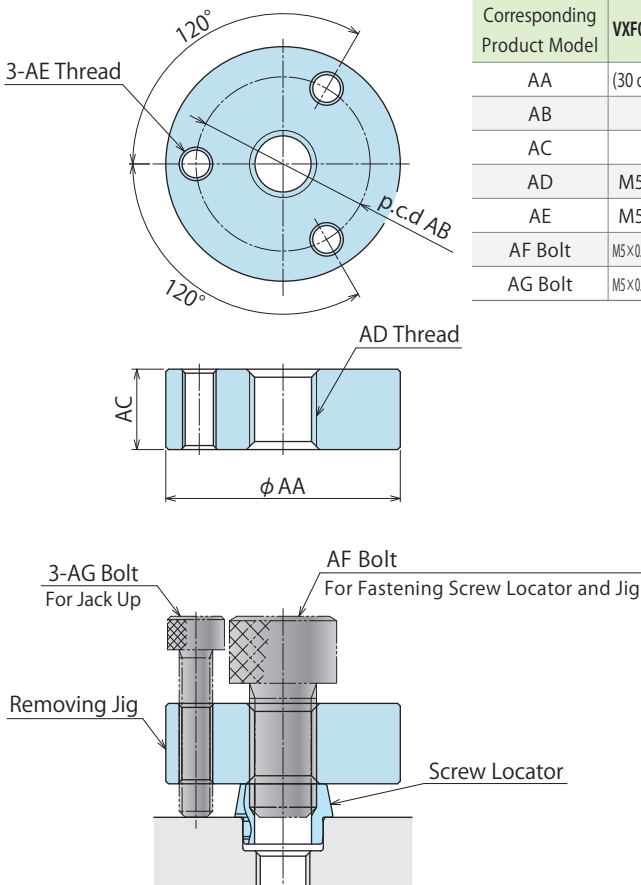
### VXF/VXE-PC Phase



Align the notch of Cut Pin perpendicular to the center of Datum Pin.

## Reference Data : Removing Jig

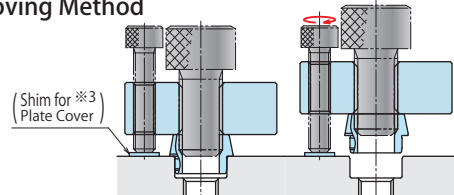
Sample jig design for removing VXF□-PD/PC, VXE0030-PD/PC.



### External Dimensions (mm)

Corresponding Product Model	VXF0040-P□	VXF0050-P□	VXF0060-P□	VXF0080-P□	VXF0100-P□	VXF0120-P□	VXF0160-P□	VXE0030-P□
AA	(30 or more)	(30 or more)	(35 or more)	(35 or more)	(40 or more)	(48 or more)	(56 or more)	(30 or more)
AB	20	20	26	26	30	36	45	20
AC	10	10	10	12	16	16	16	8
AD	M5×0.8	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2	M20×2.5	M4×0.7
AE	M5×0.8	M5×0.8	M5×0.8	M5×0.8	M6×1	M6×1	M6×1	M4×0.7
AF Bolt	M5×0.8×16 or more	M6×1×16 or more	M8×1.25×16 or more	M10×1.5×20 or more	M12×1.75×25 or more	M16×2×25 or more	M20×2.5×30 or more	M4×0.7×20 or more
AG Bolt	M5×0.8×20 or more	M5×0.8×20 or more	M5×0.8×20 or more	M5×0.8×25 or more	M6×1×30 or more	M6×1×30 or more	M6×1×30 or more	M4×0.7×20 or more

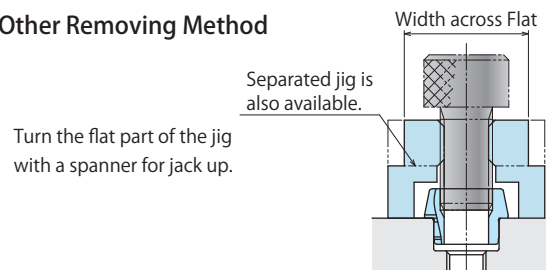
### Removing Method



Notes :

- Use jack up bolt and remove the product parallel.
- ※3. Able to prevent damage on the jig by using shims.

### Other Removing Method



High-Power Series  
Pneumatic Series  
Hydraulic Series  
Valve / Coupler Hydraulic Unit  
Manual Operation Accessories  
Cautions / Others

Screw Locator

VXF/VXE

Manual Expansion Locating Pin  
VX

Manifold Block  
WHZ-MD  
LZY-MD  
LZ-MS  
LZ-MP  
TMZ-1MB  
TMZ-2MB  
DZ-M

Manifold Block / Nut

DZ-R

DZ-C

DZ-P

DZ-B

LZ-S

LZ-SQ

WNZ-SQ

TNZ-S

TNZ-SQ

Pressure Switch

JBA

Pressure Gauge

JGA/JGB

Manifold

JX

Coupler Switch

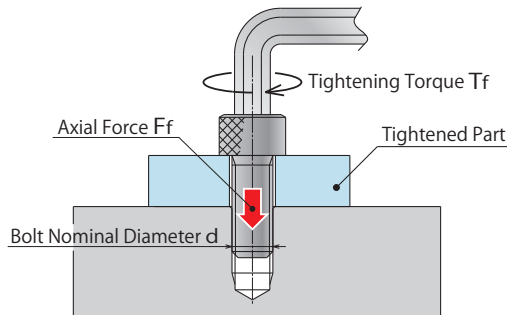
PS

G-Thread Fitting



Reference Data : Bolt Axial Force and Tightening Torque (Torque Method)

Reference Calculation of Tightening Force (Axial Force). (Not a guaranteed value.)  
 This is extracted and edited from catalogs of Kyokuto MFG Co., Ltd. and Goshō Works Ltd.



$F_{fmax}$  : Allowable Max. Axial Force [kN]  
 $A_s$  : Bolt Effective Cross Section Area [mm<sup>2</sup>]  
 $\sigma_y$  : Yield Stress or Proof Strength

Strength Grade	8.8(d≤16)	8.8(d>16)	10.9	12.9
$\sigma_y$ [N/mm <sup>2</sup> ]	640	660	940	1100

Allowable Max. Axial Force Calculation Formula

$$F_{fmax} = 0.7 \times \sigma_y \times A_s$$

Appropriate Tightening Torque Calculation Formula

$$T_{fA} = \frac{0.35 \times K \times (1+1/Q) \times \sigma_y \times A_s \times d}{1000}$$

【Reference Value】 Tightening Force (Axial Force) Calculation Formula

$$F_f = \frac{T_f}{K \times d}$$

$T_{fA}$  : Appropriate Tightening Torque [N·m]  
 $K$  : Torque Coefficient  
 $Q$  : Tightening Coefficient  
 $d$  : Bolt Nominal Diameter [mm]  
 $F_f$  : Tightening Force (Axial Force) [kN]  
 $T_f$  : Tightening Torque [N·m]  
 $T_{fA}$  is assigned in the table below.

Nominal × Pitch	Bolt Effective Cross Section Area $A_s$ [mm <sup>2</sup> ]	Strength Grade 12.9				Strength Grade 10.9				Strength Grade 8.8			
		Yield Load	Allowable Max. Axial Force	Appropriate Tightening Torque	Tightening Force 【Reference】	Yield Load	Allowable Max. Axial Force	Appropriate Tightening Torque	Tightening Force 【Reference】	Yield Load	Allowable Max. Axial Force	Appropriate Tightening Torque	Tightening Force 【Reference】
		[kN]	$F_{fmax}$ [kN]	$T_{fA}$ [N·m]	$F_f$ [kN]	[kN]	$F_{fmax}$ [kN]	$T_{fA}$ [N·m]	$F_f$ [kN]	[kN]	$F_{fmax}$ [kN]	$T_{fA}$ [N·m]	$F_f$ [kN]
M3×0.5	5.03	5.5	3.8	1.7	(3.3)	4.7	3.3	1.4	(2.7)	3.2	2.2	1.0	(2.0)
M4×0.7	8.78	9.6	6.7	3.9	(5.8)	8.3	5.8	3.3	(4.9)	5.6	3.9	2.3	(3.3)
M5×0.8	14.2	15.6	10.9	7.9	(9.3)	13.4	9.3	6.8	(8.0)	9.1	6.4	4.6	(5.4)
M6×1	20.1	22.1	15.5	13.5	(13.3)	18.9	13.2	11.6	(11.3)	12.9	9.0	7.8	(7.7)
M8×1.25	36.6	40.2	28.1	32.8	(24.1)	34.4	24.1	28.0	(20.6)	23.4	16.4	19.1	(14.1)
M10×1.5	58.0	63.7	44.6	65.0	(38.2)	54.5	38.2	55.6	(32.7)	37.1	26.0	37.9	(22.3)
M12×1.75	84.3	92.6	64.8	114	(55.8)	79.3	55.5	97.1	(47.6)	54.0	37.8	66.1	(32.4)
M16×2	157	172	121	281	(103)	148	103	241	(88.7)	101	70.4	164	(60.2)

- Notes :
1. Tightening Condition : Tightened by torque wrench. Surface Oil Lubrication. Torque Coefficient  $K=0.17$ , Tightening Coefficient  $Q=1.4$
  2. Torque coefficient and tightening coefficient may vary depending on the conditions of use. Use this table as a reference.  
 For further information, please refer to JIS B 1083, JIS B 1084 or catalogs of bolt makers.
  3. This table is extracted and edited from the catalog of Kyokuto MFG Co., Ltd.  
 Tightening force 【Reference】  $F_f$  is a reference value of tightening force (axial force) when tightening with appropriate tightening torque  $T_{fA}$ .  
 Tightening force should be calculated from the actual tightening torque.  
 Consider the tightening torque and calculate the strength as the bolt seating surface must not dent tightened part.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories**
- Cautions / Others

**Screw Locator**

**VXF/VXE**

Manual Expansion Locating Pin

- VX

Manifold Block

- WHZ-MD
- LZY-MD
- LZ-MS
- LZ-MP
- TMZ-1MB
- TMZ-2MB
- DZ-M

Manifold Block / Nut

- DZ-R
- DZ-C
- DZ-P
- DZ-B
- LZ-S
- LZ-SQ
- WNZ-SQ
- TNZ-S
- TNZ-SQ

Pressure Switch

- JBA

Pressure Gauge

- JGA/JGB

Manifold

- JX

Coupler Switch

- PS

G-Thread Fitting

**Cautions**

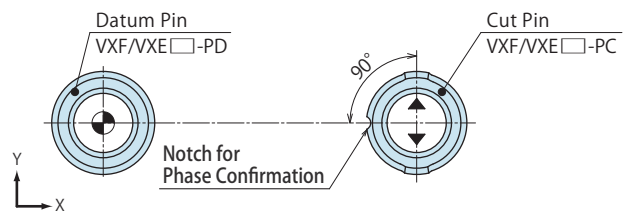
**Cautions for Use**

- 1) **Bolt Tightening Procedure (Locating Action)**  
**Tighten the Screw Locator in order of Datum Pin (VXF/VXE-PD) → Cut Pin (VXF/VXE-PC).**  
**When using other bolt(s), tighten them in order of Datum Pin (VXF/VXE-PD) → Cut Pin (VXF/VXE-PC) → other bolt(s).**

**Cautions for Design**

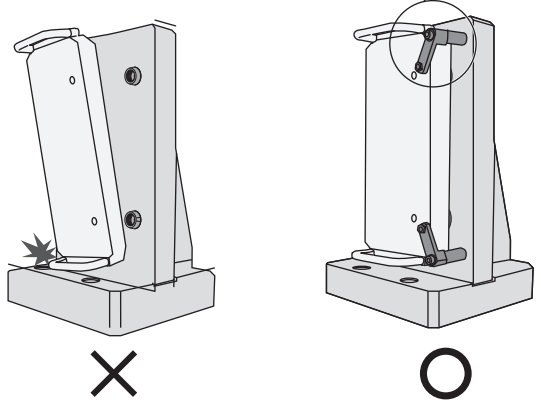
- 1) X-axis/Y-axis Locating
  - The reference position (origin) is determined by Datum Pin (VXF/VXE-PD : for reference locating).
  - Cut Pin (VXF/VXE-PC : for one direction locating) only locates in one direction (Y-axis direction).
  - **Please follow the illustration below for phase alignment of Cut Pin (VXF/VXE-PC).**

**VXE / VXF-PC Phase**

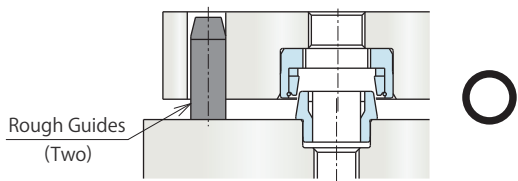
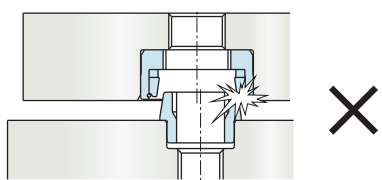


- Please align the notch of VXF/VXE-PC perpendicular to the center of VXF/VXE-PD.
- 2) When using a pallet in vertical position.
    - Please prepare and secure precautionary measures to prevent injury from fixture plate falling off.
    - When the pallet is used in vertical position (hanging on the wall), the internal moving parts tend to wear out. Confirm the locating accuracy on a regular basis. In case the allowed range is exceeded, change the product.
    - Refer to the vertical mounting fixture specification of maximum allowable loading weight.

Example of Latching Mechanism

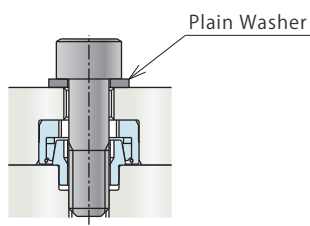


- 3) Reference Surface towards Z-axis
  - Z-axis direction datum surface is determined by customer's base plate and pallet specifications. Consider the accuracy when designing them, since it will affect accuracy of Z-axis direction.
- 4) Rough Guide Installation
  - When setting up the fixture plate, prepare rough guides to prevent damaging taper surfaces on "Screw Locator". Otherwise locating accuracy will be affected.



- 5) Check Specifications
  - Locating is operated by hand.
  - This product is made only for locating. It does not have clamping function.
- 6) Special Tool for Mounting VXF/VXE-□-B.
  - Special tool (Model : ZZV0010-□) or equivalent is required when inserting VXF/VXE-□-B (refer to P.1321). Special tool (Model : ZZV0010-□) is not included with VXF/VXE-□-B. Please order separately.

- 7) Use Plain Washer
  - When tightening a mounting bolt, use a plain washer to avoid damage on the seating surface.

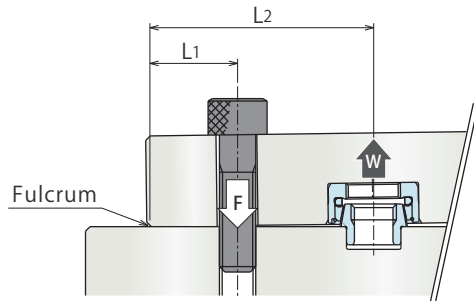


Continuing "Notes for Design" on the Next Page

## ● Cautions

### ● Notes for Design (Continued)

- 8) For tightening (clamping) a point other than the VXF/VXE center.
- When tightening (clamping) a point other than the VXF/VXE center using external clamps, clamping force has to be greater than the minimum tightening force. Calculate required tightening force with the calculation formula below.



$$\text{Required Tightening Force } F > \frac{\text{Min. Tightening Force } W \times L_2 \times \text{Safety Factor (2 or more)}}{L_1}$$

- If tightening (clamping) a point other than the VXF/VXE center when a pallet or plate has low rigidity, it will deform the pallet or plate.



### ● Maintenance • Inspection

- 1) Make sure Screw Locator is securely inserted.


**MEMO**

 High-Power  
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler  
Hydraulic Unit
 Manual Operation  
Accessories

Cautions / Others

 Screw  
Locator

VXF/VXE

Manual Expansion  
Locating Pin

VX

Manifold Block

WHZ-MD

LZY-MD

LZ-MS

LZ-MP

TMZ-1MB

TMZ-2MB

DZ-M

Manifold Block /  
Nut

DZ-R

DZ-C

DZ-P

DZ-B

LZ-S

LZ-SQ

WNZ-SQ

TNZ-S

TNZ-SQ

Pressure Switch

JBA

Pressure Gauge

JGA/JGB

Manifold

JX

Coupler Switch

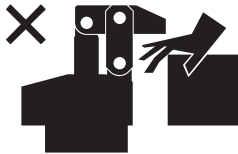
PS

G-Thread Fitting

## ⓘ Cautions

### ● Notes on Handling

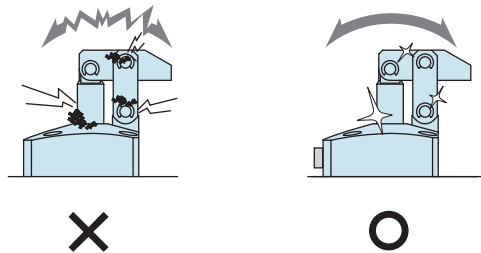
- 1) It should be operated by qualified personnel.
  - The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
  - ① The machine and equipment can only be inspected or prepared 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 abnormality 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 due to clinching.



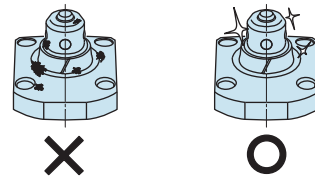
- 4) Do not disassemble or modify.
  - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

### ● Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
  - Before the machine is removed, make sure that safety devices and preventive 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 abnormality 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 and fluid leakage.



- 3) Please clean out the reference surfaces on a regular basis (taper reference surface and seating surface) of the locating products. (VS/VT/VFL/VFM/VFJ/VFK/WVS/VWM/VWK/VX/VXE/VXF)
  - The locating products, except VX/VXE/VXF model, can remove contaminants with cleaning functions. However, hardened cutting chips, adhesive coolant and others may not be removed. Make sure there are no contaminants before installing a workpiece/pallet.
  - Continuous use with contaminant on components will lead to locating accuracy failure, malfunction and fluid leakage.



- 4) If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.
- 5) Regularly tighten nut, bolt, pin, cylinder, pipe line and others to ensure proper use.
- 6) Make sure the hydraulic fluid has not deteriorated.
- 7) 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.
- 8) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 9) 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 If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
- 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.

High-Power  
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler  
Hydraulic Unit

Manual Operation  
Accessories

Cautions / Others

#### Cautions

Installation Notes  
(For Hydraulic Series)

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Sales Offices

# Sales Offices

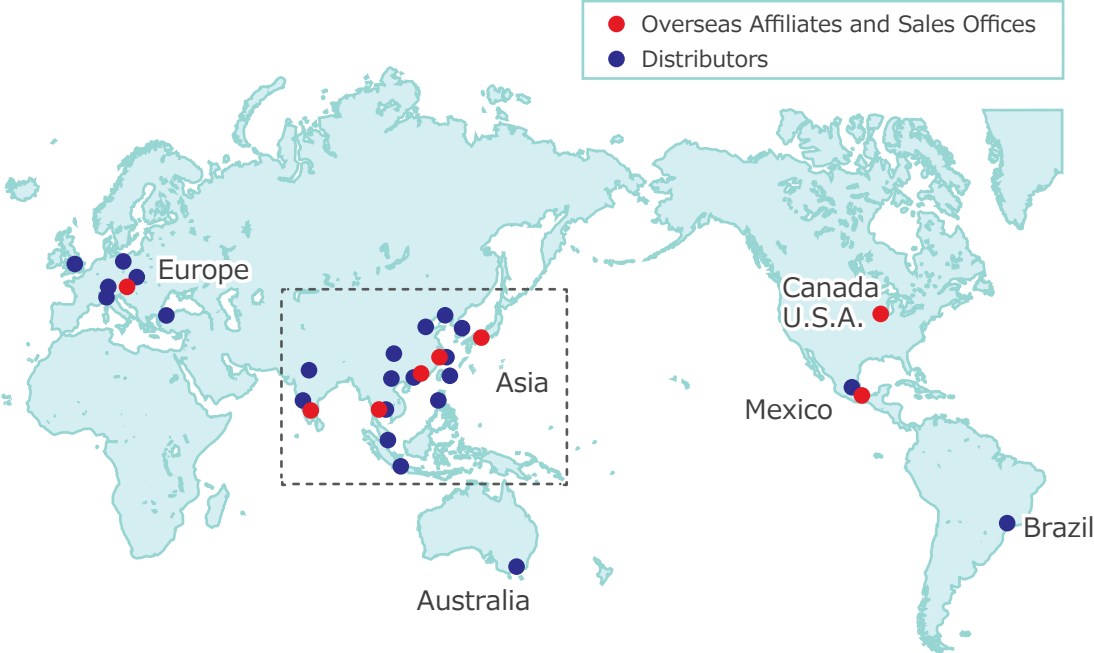
## Sales Offices across the World

JAPAN HEAD OFFICE Overseas Sales	<b>TEL. +81-78-991-5162</b>	<b>FAX. +81-78-991-8787</b>
	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	
United States of America SUBSIDIARY KOSMEK (USA) LTD.	<b>TEL. +1-630-620-7650</b>	<b>FAX. +1-630-620-9015</b>
	650 Springer Drive, Lombard, IL 60148 USA	
MEXICO REPRESENTATIVE OFFICE KOSMEK USA Mexico Office	<b>TEL. +52-442-161-2347</b>	
	Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico	
EUROPE SUBSIDIARY KOSMEK EUROPE GmbH	<b>TEL. +43-463-287587</b>	<b>FAX. +43-463-287587-20</b>
	Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria	
CHINA KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	<b>TEL. +86-21-54253000</b>	<b>FAX. +86-21-54253709</b>
	Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125	
INDIA BRANCH OFFICE KOSMEK LTD - INDIA	<b>TEL. +91-9880561695</b>	
	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India	
THAILAND REPRESENTATIVE OFFICE KOSMEK Thailand Representation Office	<b>TEL. +66-2-300-5132</b>	<b>FAX. +66-2-300-5133</b>
	67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand	
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INDONESIA (Indonesia Exclusive Distributor) PT. Yamata Machinery	<b>TEL. +62-21-29628607</b>	<b>FAX. +62-21-29628608</b>
	Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia	

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Head Office Osaka Sales Office Overseas Sales	<b>TEL. 078-991-5162</b>	<b>FAX. 078-991-8787</b>
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Tokyo Sales Office	<b>TEL. 048-652-8839</b>	<b>FAX. 048-652-8828</b>
	〒331-0815 埼玉県さいたま市北区大成町4丁目81番地	
Nagoya Sales Office	<b>TEL. 0566-74-8778</b>	<b>FAX. 0566-74-8808</b>
	〒446-0076 愛知県安城市美園町2丁目10番地1	
Fukuoka Sales Office	<b>TEL. 092-433-0424</b>	<b>FAX. 092-433-0426</b>
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# Global Network



Asia Detailed Map



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