

### ● General type (PY)

The standard material for grooved pins and rivets for general use is low carbon steel wire (SWCH16A, 18A).

### ● Wear Resistance type (PT)

Grooved pins, grooved rivets, and grooved dowel pins, which especially require wear resistance, are treated with carburizing hardening.

### ● Stainless Steel (PS)

Stainless steel (equivalent to JIS SUS304) is recommended when both corrosion resistance and mechanical performance are required.

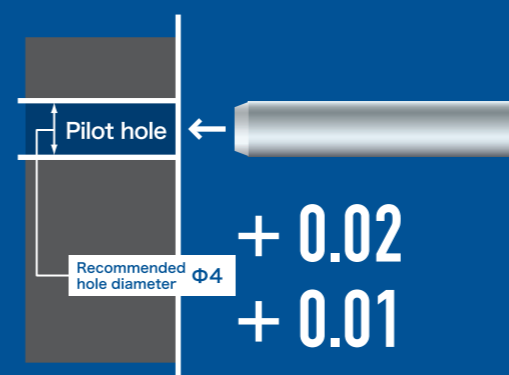
### ● Heavy Duty type (PH)

When high mechanical performance is required, alloy steel SAE8630\* will be used with providing strength, wear resistance and fatigue resistance through heat treatment. (Standard hardness HRC42-48)  
\* SCM435 will be used for nominal diameter 12mm-20mm.

## Reduces installation costs!

### Grooved fastener **G-Pin**

#### Ordinary products 'Dowel Pin'



Tight tolerance

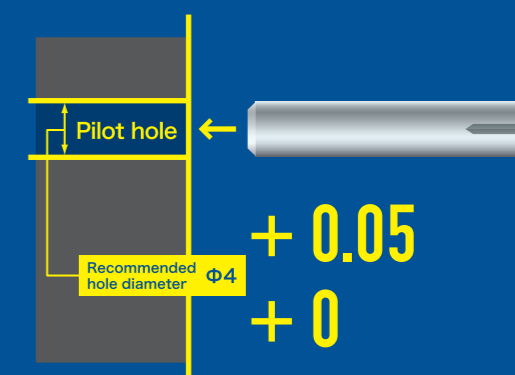
- Pilot hole machining

Drilling

Reaming

Pilot hole inspection

#### G-Pin



Wide tolerance

- Pilot hole machining

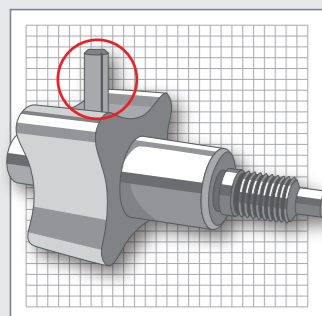
Drilling

~~Reaming~~

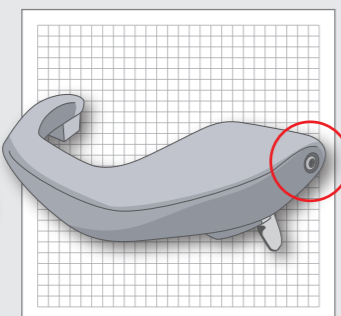
Pilot hole inspection

#### Application

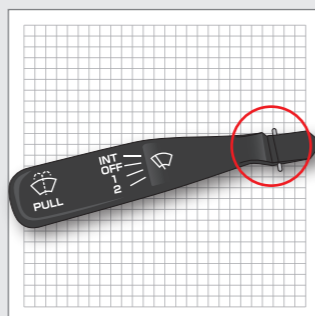
##### Automobile oil pump



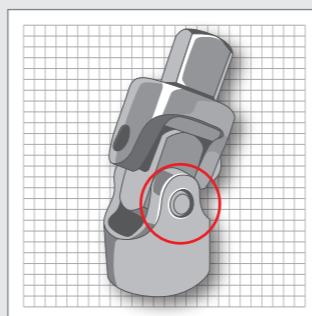
##### Automobile assist grip



##### Automobile wiper lever

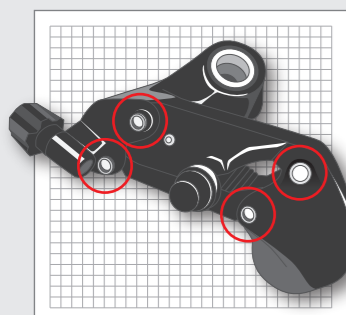


##### Universal joint



#### Other grooved pins

##### Bicycle gearbox

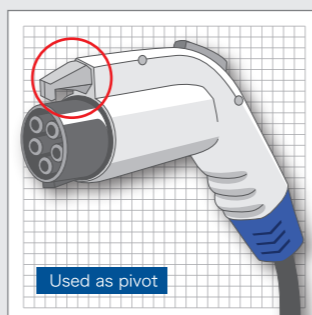


##### Double Barb-Lok pins



Barb-Lok pin is a fastener to be used in plastic application by pressing installation. 3 barbs located at 120° intervals on the body interferes to mated hole then performs excellent anti-pullout strength. Double Barb-Lok pin has barbs on both ends.

##### Connector for EV charger



\* In the case of nominal diameter is 4 mm.

## Pilot hole dimensional tolerances no longer need to be tight.

The elasticity of the three V-shaped grooves press-fitted on the circumference of the pin provides strong self-retaining power. Contributes to improved workability and reduced fastening costs, since the pilot hole does not require precision compared to Parallel Pins, Dowel Pins, etc.

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Feature 01

# Lower installation cost

Before installation

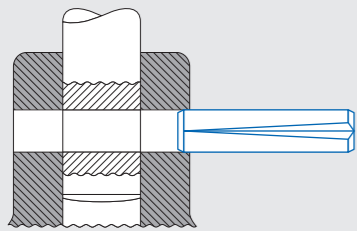
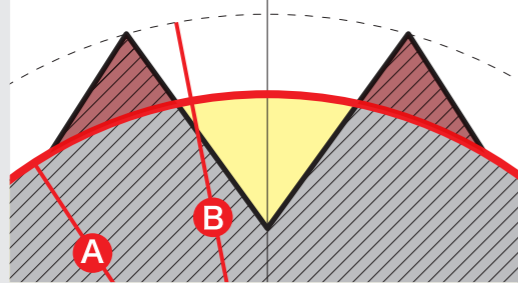


Fig.1 (Cross-section of the grooved portion)



After installation

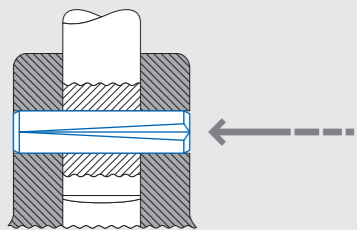
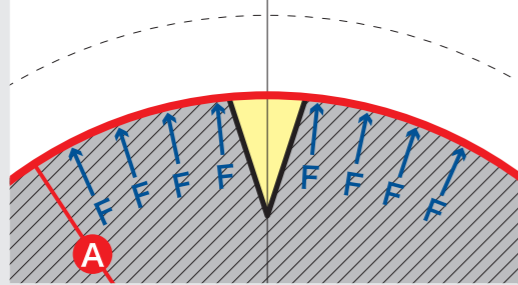


Fig.2 (Cross-section of the grooved portion)



Structure

The "G-Pin" has three V-shaped grooves molded lengthwise on its body. When the V-grooves are processed, the material in the grooves is raised on both sides, and the outer diameter B of the crest becomes slightly larger than the original blank diameter A. (Fig.1)



Mounting

The "G-Pin" is inserted by pressing in the hole specified by the nominal diameter. When Grooved pin is inserted to the hole, the crest is compressed and generates strong radial holding force according to its elascity.(Fig.2)

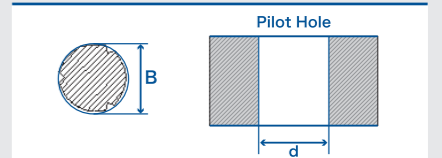
Feature 03

# Strong self-retaining force

## Standard G-Pin Dimensions

Dimension	Unit:mm			Unit:mm	
	Nominal Diameter "A"	Groove Expanded Diameter "B"	Pilot Hole diameter (for reference) "d"	Dimension	Length
2.0	1.98 ~ 2.00	2.10 ~ 2.15	2.00 ~ 2.04	2.0	8 ~ 14
2.5	2.48 ~ 2.50	2.65 ~ 2.70	2.50 ~ 2.54	2.5	10 ~ 20
3.0	2.97 ~ 3.00	3.15 ~ 3.20	3.00 ~ 3.04	3.0	12 ~ 30
4.0	3.96 ~ 4.00	4.15 ~ 4.25	4.00 ~ 4.05	4.0	16 ~ 40
5.0	4.96 ~ 5.00	5.20 ~ 5.30	5.00 ~ 5.05	5.0	20 ~ 32
6.0	5.96 ~ 6.00	6.20 ~ 6.30	6.00 ~ 6.05	6.0	24 ~ 50
8.0	7.96 ~ 8.00	8.30 ~ 8.40	8.00 ~ 8.06	8.0	30 ~ 60
10.0	9.95 ~ 10.00	10.40 ~ 10.50	10.00 ~ 10.06	10.0	40 ~ 90

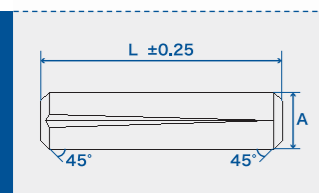
Diagram of Groove Expanded Diameter (B) and Pilot Hole diameter (d)



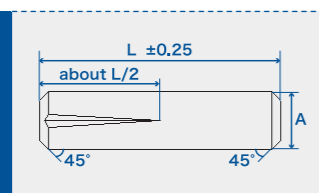
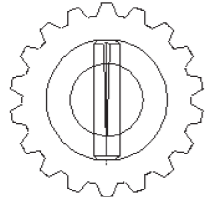
Caution

- [1] The left dimensions are for steel-made pins.
- [2] Please contact us if you require dimensions other than those shown left.
- [3] Nominal diameter may differ from those shown on the left depending on the type of surface treatment.
- [4] Applicable hole dimensions are provided for reference only and should be set by the customer according to the intended use.

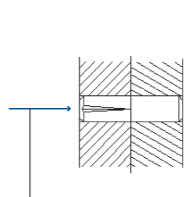
Types Classification by shape



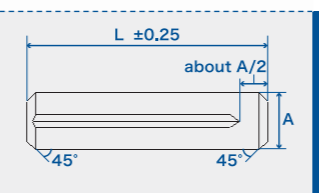
Example of use  
Fixing boss and shaft



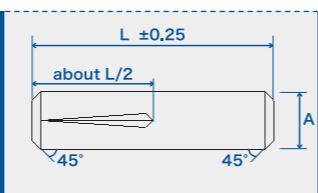
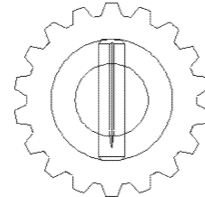
Example of use  
Fixing two boards



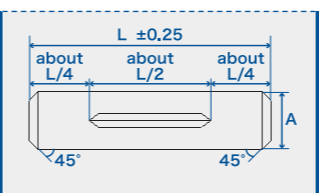
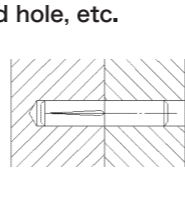
Installation from the direction of the arrow



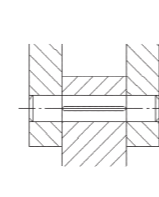
Example of use  
Fixing boss and shaft



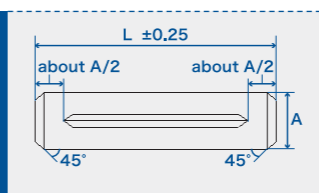
Example of use  
Used as locating pin at blind hole, etc.



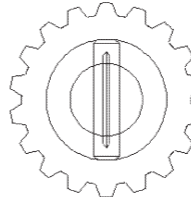
Example of use  
Used as pivot pins, etc.



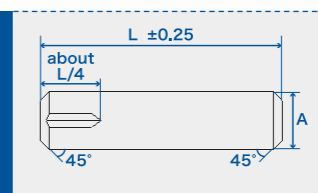
No directional sorting required



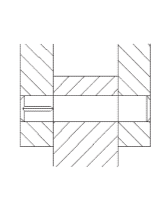
Example of use  
Fixing boss and shaft



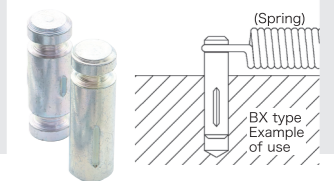
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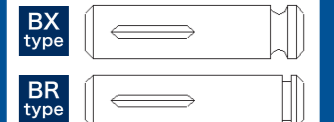
Example of use  
Used as pivot pins, etc.



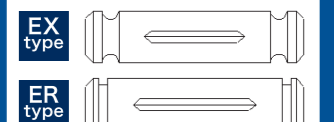
Ring-groove processed products



Ring-groove processing on grooved pins. Processed by "cutting + chamfering".



Both BX and BR types have three grooves over half of the overall length.



Both EX and ER types have three grooves in the center of the overall length.