

STANLEY®
Engineered Fastening



(Note) Above data is the reference strength of HRivets® and HCrivets®.

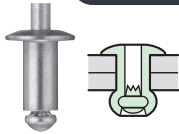
POP® BLIND RIVET SYSTEMS

<http://www.popnpr.co.jp/>
NIPPON POP RIVETS AND FASTENERS LTD.

POP®

Standard

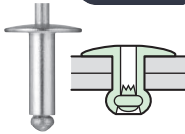
Standard Rivet P7~10



Standard type POP Rivet.

- Rivet body material : Aluminum, Steel, Stainless steel, Copper
- Rivet diameter : $\phi 2.0$ $\phi 2.4$ $\phi 3.0$ $\phi 3.2$ $\phi 4.0$ $\phi 4.8$ $\phi 6.4$

Large Flange Rivet P11~12

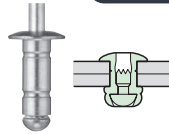


Effective with workpiece with a little larger diameter hole at the rivet flange.

- Rivet body material : Aluminum, Steel, Stainless steel
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$

High Retention "HR"

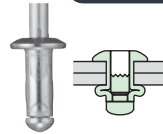
HR Rivet "Rolling Type" P13



Wide grip range and high clinching strength with a special body shape.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$ $\phi 6.4$

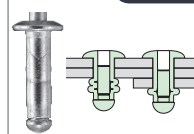
HR Rivet "Swaging Type" P13~15



High clinching strength and large clamping diameter to prevent fall off a workpiece with an enlarged hole.

- Rivet body material : Aluminum, Steel, Stainless steel
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$ $\phi 6.4$ $\phi 10.2$

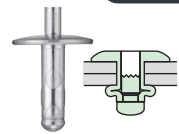
HR Multi-Grip "MG" P15



Available to reduce parts by wide grip range.

- Rivet body material : Steel, Stainless steel
- Rivet diameter : $\phi 3.2$ $\phi 4.8$ etc.

HR Rivet "Large Flange" P16

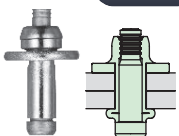


Effective with workpieces with a little larger diameter hole at the rivet flange.

- Rivet body material : Aluminum, Steel
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$

Structural rivets

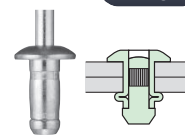
High Clamping Rivet "HC" P17



The flange is squeezed while the clamped part pulls the workpieces, resulting in high clinching force and no loosening under vibration.

- Rivet body material : Steel
- Rivet diameter : $\phi 5.15$

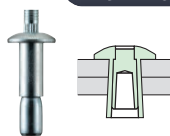
High Strength Rivet "HS" P18



Higher tensile strength and higher clinching strength.

- Rivet body material : Aluminum, Steel
- Rivet diameter : $\phi 4.8$ $\phi 6.4$

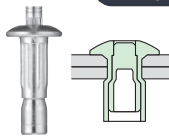
Ultra Grip Rivet "UG" P19~20



Wider material thickness and higher shear strength.

- Rivet body material : Aluminum, Steel, Stainless steel
- Rivet diameter : $\phi 4.8$ $\phi 6.4$

Conductive Rivet "CD" P20

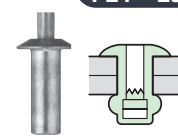


With the rivet protrusion, appropriate for the conduction of surface-treated workpieces.

- Rivet body material : Steel
- Rivet diameter : $\phi 6.4$

Closed

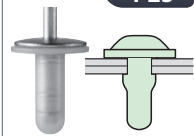
Closed Rivet P21~23



Covered mandrel head to prevent falling off from the clamp side.

- Rivet body material : Aluminum, Steel, Stainless steel
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$ $\phi 6.4$

Cap Rivet P23

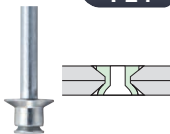


HR Rivet with plastic cap on the rivet body for high water resistant.

- Rivet body material : Aluminum
- Plastic material : PA66, TPE
- Rivet diameter : $\phi 4.1$ $\phi 5.0$ $\phi 6.0$

Low Height Clamping

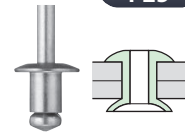
PTM Rivet P24



Both flange and clamp side are flat, providing more design freedom.

- Rivet body material : Steel
- Rivet diameter : $\phi 3.0$

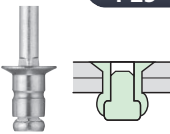
BHM Rivet P25



The cut-off mandrel head provides low-clamp side height.

- Rivet body material : Aluminum, Steel, Stainless steel
- Rivet diameter : $\phi 2.0$ $\phi 2.4$ $\phi 3.2$ $\phi 4.0$ $\phi 4.8$

SMH Rivet P25

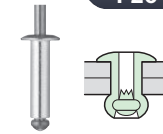


The thin mandrel head "not cut off" provides low-clamp side height.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 3.2$ $\phi 4.0$

For PCB

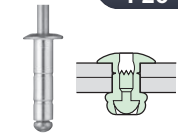
Soft Set Rivet P26



Suitable for fastening PCB connectors and reducing metal dust with the soft aluminum rivet body.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 2.5$ $\phi 3.0$ $\phi 3.2$

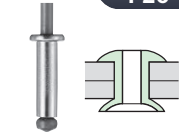
CC Rivet "Chemical Cleaning" P26



Suitable for semiconductor fastening without affecting elements with the soft aluminum rivet body.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 3.0$

Ejector Rivet P26



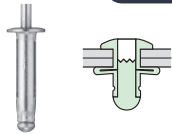
Ideal fastening for ejector movement.

- Rivet body material : Brass
- Rivet diameter : $\phi 2.5$

For Soft Works such as plastics

TL Rivet

P27

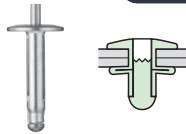


Effective with workpiece of soft material with a clamp side that collapses widely outward, forming three legs during the fastening process.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 4.1$ $\phi 4.9$

TL Rivet "Large Flange"

P27

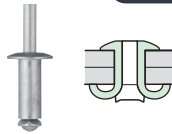


Effective with workpiece of soft material with a little larger diameter hole at the rivet flange.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 4.1$ $\phi 4.9$

SW Rivet

P28



Effective with workpiece of soft material with a clamp side that opens wide to set the workpieces during the fastening process.

- Rivet body material : Aluminum
- Rivet diameter : $\phi 3.2$ $\phi 4.0$ $\phi 4.8$

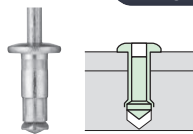
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For Soft Works such as plastics

Hole Lock Rivet

P28

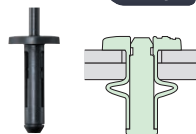


Fastening house wall on a workpiece with a blind hole.

- Rivet body material : Steel
- Rivet diameter : $\phi 4.0$

Plastic Rivet

P29



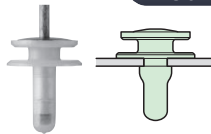
Made from POM, can be used in areas requiring calcium chloride.

- Rivet body material : POM
- Rivet diameter : $\phi 4.8$

Rivet with Clip

Clip Rivet

P30



Plastic clip can be attached to thin workpiece with high water-resistant function.

- Rivet body material : Aluminum
- Plastic material : PA66
- Rivet diameter : $\phi 5.0$

POP Rivet tools & Fastening Systems

P34~41

ProSet1600A



- Length : 272mm
- Weight : 1.05kg
- Air hydraulic

PowerLink1500i



- Length : 355mm
- Weight : 0.79kg
- Air hydraulic

PB2500



- Length : 320mm
- Weight : 1.7kg "including battery"
- Battery charging

Rivet Kwik- II

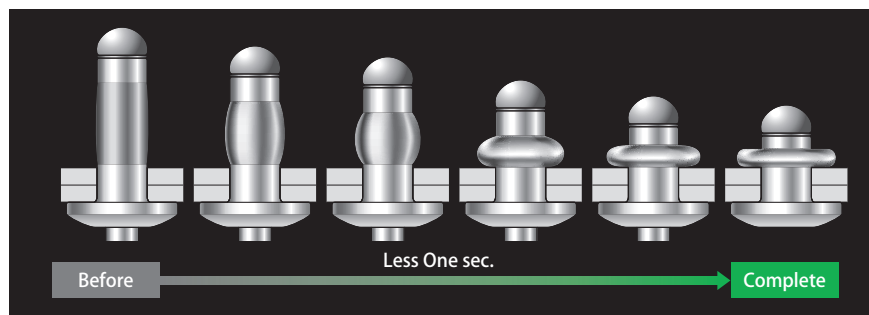


- Body Height : 415mm
- Body Weight : Approx.23.5kg

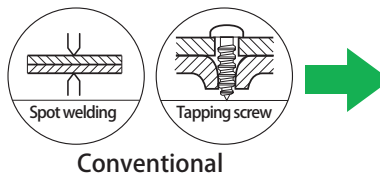
POP one-sided fastening method realizes precision and fast assembling lines.

- POP Rivet complies with RoHS Compliances.
- Do not relate to the category specified in Tables 1-1 to 1-15 of the Export Trade Control Order.
- Various types and sizes to meet diverse designs and specifications.
- Easy operation for no skilled workers to fasten with POP Rivet tools.
- Long hour operating is possible with POP light weight fastening tools.
- Different from welding, after treatment like spatter removing is not necessary.
- Environment-friendly fastening method without sparks.
- Suitable for automating assembly lines.

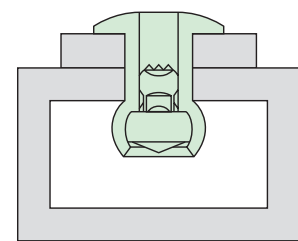
POP Rivet fastening process



- The POP one-sided fastening method deals with the inconveniences of spot and arc welding and tapping screws. It enables quick assembly on assembly lines with low-skilled workers, helping to reduce costs.

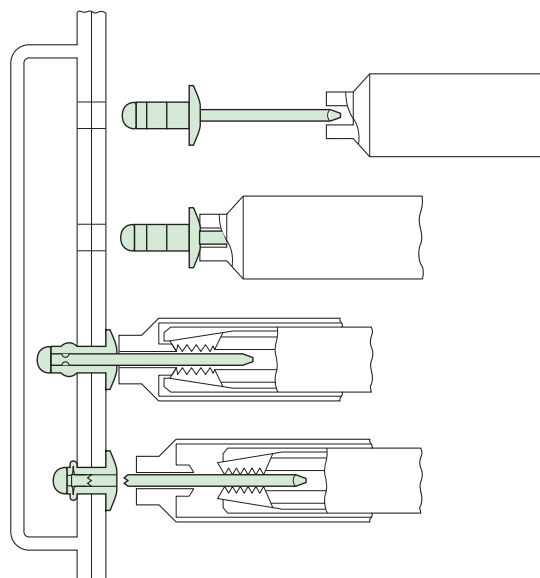


POP Rivet method



POP Rivet fastening method

- 1 Set POP Rivet on the POP Rivet tool.
- 2 Insert POP Rivet into workpiece hole.
- 3 Push flange tightly onto the workpiece with the fastening tool and pull the trigger.
- 4 POP Rivet fastening is completed.



Whether POP rivets relate to the category of cargo specified in Table 1 of the Export Trade Control Order

The products specified in this "POP Blind Rivet Systems" catalog do not relate to the category specified in Tables 1-1 to 1-15 of the Export Trade Control Order. However, they relate to the category specified in Table 1-16. Therefore, please obtain an export license from the Ministry of Economy, Trade and Industry before exporting products falling under any category specified in "Ministerial Ordinance Specifying Cases where exported goods are likely to be used for the Development of Nuclear Weapons, etc." (As per the governmental, ministerial and other ordinances that came into effect on August 1, 2012.)

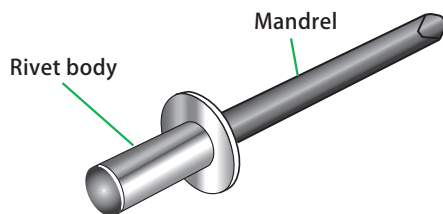
Choose the POP Rivet suitable for your specific material and specifications.

For proper fastening, please check the material, thickness and hole size of the workpiece and choose the suitable rivet strength, function and corrosion resistance depending on the specifications.

○ Rivet Number

As shown at right, each POP rivet name has its own designation and number (material of the rivet body and mandrel, flange shape, rivet diameter, grip range thickness).

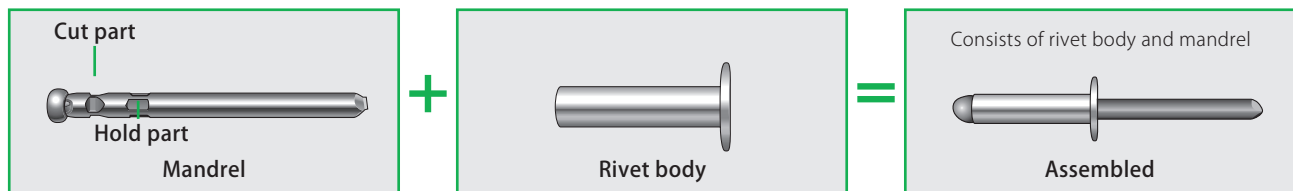
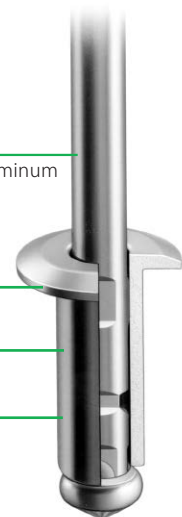
Each part name of the rivet



○ Example : AD42ABS

AD42ABS

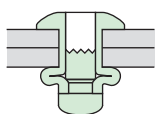
Mandrel material **ABS** : Aluminum
 Grip range thickness(MAX)
2 : $2 \times 1.6(\text{Coefficient}) = 3.2\text{mm}$
 Flange shape **D** : Dome head
 Rivet diameter
4 : $4 \times 0.8(\text{Coefficient}) = 3.2\text{mm}$
 Rivet body material **A** : Aluminum



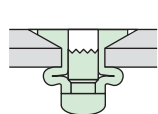
○ Rivet shape

Open Type Rivets

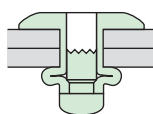
Dome head "D"



Countersunk "K"

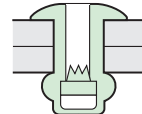


Large Flange "LF"

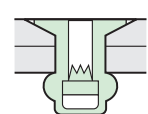


Closed Type Rivets

Dome head "D"

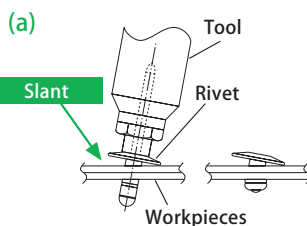


Countersunk "K"



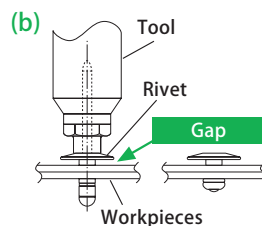
Check points of fastening process

① Do not operate the tool under the conditions in figure (a), (b) and (c) shown below. Doing so causes incorrect fastening.



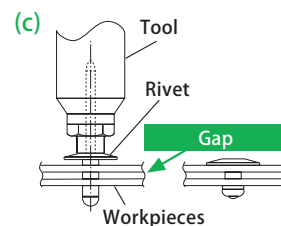
(a) Tool not horizontal with the workpieces.

Keep the tool vertical.



(b) A gap between rivet flange and the workpieces.

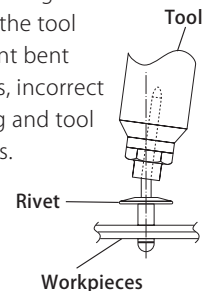
Push the rivet onto the workpieces.



(c) A gap between the rivet and the workpieces.

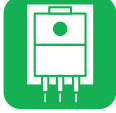
Push the rivet onto the workpieces. No space between the workpieces.

② During operation, avoid twisting or slanting the tool to prevent bent mandrels, incorrect fastening and tool problems.



Rivet Usage Guide

POP Rivets are designed to provide setting features to benefit the relevant applications. Please see the Icon Glossary below in order to satisfy your usage.

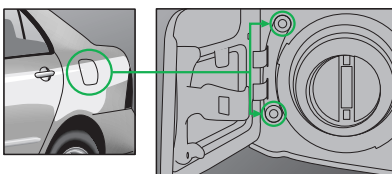
	General purpose Can be used in a wide range applications with normal load bearing requirements.		Large Flange Effective with workpiece with a little larger diameter hole at the rivet flange.
	No Rattle Provide a rattle free joint, securing the mandrel head strongly.		Large Secondary Expansion Large secondary expansion has the benefit to increase tensile strength.
	High Pull-Up Capacity Overcome gaps, presented before assembly.		Improved Strength Structural POP rivets have improved strength compared to other POP rivet ranges.
	Wide Grip Range Accommodate a wider grip range, providing the benefit of reducing inventory.		Conduction Cut into work surface treatment with rivet body protrusion to allow conduction between works.
	Restrained Mandrel Head Prevent mandrel heads from falling off into applications.		Water / Pressure Tight Ideal for application that needs to be water/pressure tight.
	Low Profile Ideal choice for applications where the space is at a premium.		For PCB Designed for PCB and semiconductors using aluminum A1100 rivet body to reduce metal dust.
	Load Spreading Designed with legs expand, reducing the setting force for soft materials.		Hole filling Ideal for no-through hole that has been drilled into the soft materials.
	With Clip Clip function can be obtained with one-sided rivet fastening.		

Application

POP Rivets have been adopted for many kinds of applications in transportation, electrical devices, building material and other products. Please contact us with your questions regarding fastening.

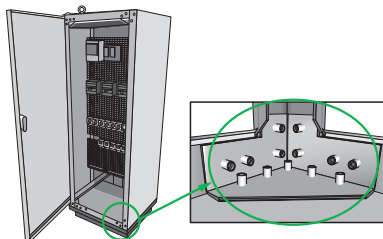
Fuel lid hinge

Rivet : High retention type



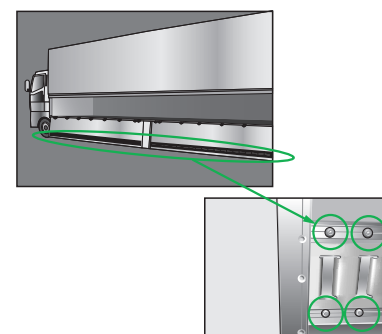
Rack

Rivet : Structural type

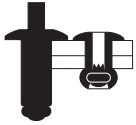
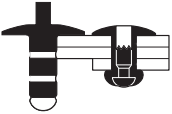
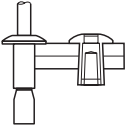
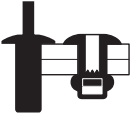
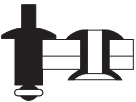
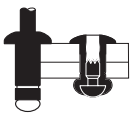
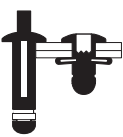
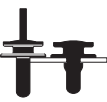


Lashing rail of the truck

Rivet : Structural type



POP Rivet List

Type	Rivet	Rivet body	Mandrel	Name		Page
				Dome head	Countersunk	
Standard 	Standard	Aluminum (A5154/A5056)	Steel	TAP-D■BS	TAP-K■BS	7
		Aluminum (A5052)	Aluminum	AD■ABS	AK■ABS	8
		Aluminum (A5154)	Stainless steel	TAP-D■SSBS	TAP-K■SSBS	
		Steel (SWCH)	Steel	SD■BS	SK■BS	9
		Copper (C1100)	Bronze	TCP-D■BSB		10
		Stainless steel (Austenite)	Steel	SSD■BS	SSK■BS	
		Stainless steel (Austenite)	Stainless steel	SSD■SSBS	SSK■SSBS	
	Large Flange	Aluminum (A5154)	Steel	AD■BS-LF		11
		Aluminum (A5052)	Aluminum	AD■ABS-LF		
		Steel (SWCH)	Steel	SD■BS-LF		12
		Stainless steel (Austenite)	Steel	SSD■BS-LF		
		Stainless steel (Austenite)	Stainless steel	SSD■SSBS-LF		
High Retention 	HR	Aluminum (A5052)	Steel	TAP-D■HR	TAP-K■HR	13
		Aluminum (A5052)	Aluminum	AD■AHR		14
		Steel (SWCH)	Steel	SD■HR	SK■HR	
		Stainless steel (Austenite/Ferrite)	Stainless steel	SSD■SSHR	SSK■SSHR	15
	MG (Multi Grip)	Steel (SWCH)	Steel	SD■MG		
		Stainless steel (Austenite)	Stainless steel	SSD■MG		
	HR (Large Flange)	Aluminum (A5052)	Steel	TAP-D■HR-LF		16
		Aluminum (A5052)	Stainless steel	TAP-D■SSHR-LF		
		Steel (SWCH)	Steel	SD■HR-LF		
Structural rivets 	High Clamping	Steel(SWCH)+Steel Washer	Steel	SHC-52M■		17
	High Strength	Steel (SWCH)	Steel	SD■HS	SK■HS	18
		Aluminum (A5052)	Aluminum	AD■AHS		
	Ultra Grip	Steel (SWCH)	Steel	SD■UG	SK■UG	19
		Aluminum (A5000series)	Aluminum	AD■UG	AK■UG	
		Stainless steel (Austenite)	Stainless steel	SSD■UG	SSK■UG	20
Closed 	Closed	Aluminum (A5056)	Steel	AD■	AK■	21
		Aluminum (A1100)	Aluminum	AD■AH		
		Aluminum (A5154)	Stainless steel	AD■SSH		22
		Stainless steel (Austenite)	Stainless steel	SSD■SSH		
		Steel (ELCH)	Steel	SD■H		23
	Cap	Aluminum (A5052)+Plastic Cap	Steel	N2C		
				NCAP		
Low Height Clamping 	PTM	Steel (SWCH)	Steel		SK■PTM	24
	BHM	Aluminum (A5154)	Steel	TAP-D■BHM		25
		Steel (SWCH)	Steel	SD■BHM		
		Stainless steel (Austenite)	Steel	SSD■BHM		
	SMH	Aluminum (A5052)	Steel	TAP-D■SMH	TAP-K■SMH	
For PCB 	Soft Set	Aluminum (A1100)	Aluminum	PAD■ABS		26
	Chemical Cleaning	Aluminum (A1100)	Aluminum	PAD■HR-CC		
	Ejector	Brass (C2600)+Nickel Plating	Aluminum	BD25M■ABHM-EJ		
For Soft Works 	TL	Aluminum (A5052)	Aluminum	AD■TL		27
	TL (Large Flange)	Aluminum (A5052)	Aluminum	AD■TL-LF		
	SW	Aluminum (A5154)	Steel	TAP-D■SW	TAP-K■SW	28
	Hole Lock	Steel (SWCH)	Steel	SD■HL		
	Plastic	Plastic (POM)	Plastic (POM)	PD■TL		29
With Clip 	Clip	Aluminum (A5052)+Plastic Cap	Steel	N2WC-AD■HRLF-GJB AD54HR■		30

● TAP-D ■ BS (Dome head)



● TAP-K ■ BS (Countersunk)

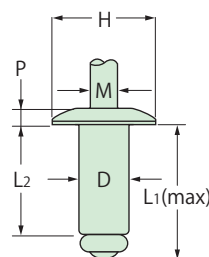


	Material	Surface Treatment
Rivet body	Aluminum (A5154)	—
Mandrel	Steel	Zinc plated

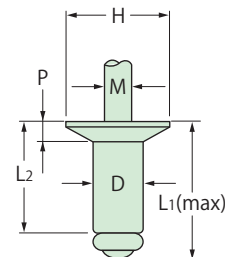
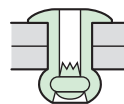
RoHS Compliance



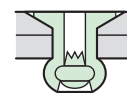
TAP-D ■ BS
TAP-K ■ BS



Dome head (D)



Countersunk 120° (K)



Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)	L2 (mm)	H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk				Dome head	Countersunk		Shear(N)	Tensile(N)
2.0 ±0.07	2.1	20M1	1.0 - 1.6	—	7.5	4.1	3.8 ±0.2	0.6 ±0.15	—	1.1	370	560
		20M2	1.6 - 3.2	—	9.1	5.7						
		20M3	3.2 - 4.8	—	10.8	7.4						
		20M4	4.8 - 6.4	—	12.4	9.0						
		20M5	6.4 - 8.0	—	14.1	10.7						
2.4 ^{+0.07} _{-0.11}	2.5	32	1.0 - 3.2	1.6 - 3.2	9.1	5.7	4.8 ±0.25	0.7 ±0.2	0.8 ±0.2	1.4	470	710
		33	3.2 - 4.8	3.2 - 4.8	10.7	7.3						
		34	4.8 - 6.4	4.8 - 6.4	12.3	8.9						
		35	6.4 - 8.0	6.4 - 8.0	14.4	11.0						
		36	8.0 - 9.6	8.0 - 9.6	16.0	12.6						
3.0 ^{+0.07} _{-0.11}	3.1	30M2	1.0 - 3.2	1.6 - 3.2	10.7	6.3	6.0 ±0.3	0.9 ±0.2	1.0 ±0.2	1.8	720	1050
		30M3	3.2 - 4.8	3.2 - 4.8	12.4	8.0						
		30M4	4.8 - 6.4	—	14.2	9.8						
		41	1.0 - 1.6	—	8.8	4.4						
		42	1.6 - 3.2	1.6 - 3.2	10.7	6.3						
3.2 ^{+0.07} _{-0.11}	3.3	43	3.2 - 4.8	3.2 - 4.8	12.4	8.0	6.4 ±0.3	0.9 ±0.2	1.1 ±0.2	1.8	910	1360
		44	4.8 - 6.4	4.8 - 6.4	14.2	9.8						
		45	6.4 - 8.0	6.4 - 8.0	16.0	11.6						
		46	8.0 - 9.6	8.0 - 9.6	17.8	13.4						
		48	9.6 - 12.8	9.6 - 12.8	21.4	17.0						
		410	12.8 - 16.0	—	25.0	20.6						
		412	16.0 - 19.2	—	28.6	24.2						
		52	1.2 - 3.2	1.6 - 3.2	11.3	6.9	8.0 ±0.4	1.2 ±0.2	1.4 ±0.2	2.3	1390	2110
4.0 ^{+0.07} _{-0.11}	4.1	53	3.2 - 4.8	3.2 - 4.8	13.0	8.6						
		54	4.8 - 6.4	4.8 - 6.4	14.8	10.4						
		56	6.4 - 9.6	6.4 - 9.6	18.4	14.0						
		58	9.6 - 12.8	9.6 - 12.8	22.0	17.6						
4.8 ^{+0.07} _{-0.11}	4.9	62	1.6 - 3.2	2.3 - 3.2	12.9	7.5	9.6 ±0.5	1.4 ±0.2	1.6 ±0.2	2.7	2140	3120
		63	3.2 - 4.8	3.2 - 4.8	14.7	9.3						
		64	4.8 - 6.4	4.8 - 6.4	16.5	11.1						
		66	6.4 - 9.6	6.4 - 9.6	20.1	14.7						
		68	9.6 - 12.8	9.6 - 12.8	23.6	18.2						
		610	12.8 - 16.0	12.8 - 16.0	27.0	21.6						
		612※	16.0 - 19.2	—	28.9	23.5						
		616※	19.2 - 25.6	—	35.3	29.9						
6.4 ^{+0.07} _{-0.11}	6.5	84※	3.2 - 6.4	—	17.6	12.1	12.8 ±0.6	1.7 ±0.2	—	3.8	3680	5520
		86※	6.4 - 9.6	—	20.7	15.2						
		88※	9.6 - 12.8	—	23.9	18.4						
		812※	12.8 - 19.2	—	30.2	24.8						

Marked ※:Aluminum"A5056"

Standard

● AD ■ ABS (Dome head)



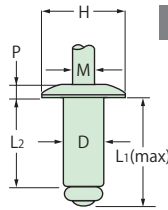
● AK ■ ABS (Countersunk)



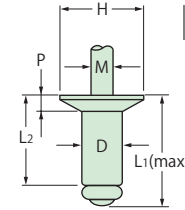
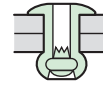
AD ■ ABS
AK ■ ABS

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

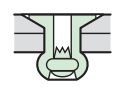
RoHS Compliance



Dome head (D)



Countersunk 120° (K)



Countersunk type is made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)	L2 (mm)	H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk				Dome head	Countersunk		Shear(N)	Tensile(N)
2.4 ^{+0.07} _{-0.11}	2.5	32	1.0 - 3.2	1.6 - 3.2	9.1	5.7	4.8 ±0.25	0.7 ±0.2	0.8 ±0.2	1.5	360	540
		34	3.2 - 6.4	3.2 - 6.4	12.3	8.9						
		36	6.4 - 9.6	—	16.0	12.6						
3.2 ^{+0.07} _{-0.11}	3.3	41	1.0 - 1.6	—	9.2	4.8	6.4 ±0.3	0.9 ±0.2	1.1 ±0.2	1.9	660	980
		42	1.6 - 3.2	1.6 - 3.2	10.8	6.4						
		43	3.2 - 4.8	3.2 - 4.8	12.4	8.0						
		44	4.8 - 6.4	4.8 - 6.4	13.9	9.5						
		45	6.4 - 8.0	6.4 - 8.0	15.6	11.2						
		46	8.0 - 9.6	8.0 - 9.6	17.1	12.7						
		48	9.6 - 12.8	9.6 - 12.8	20.3	15.9						
		410	12.8 - 16.0	—	24.1	19.7						
4.0 ^{+0.07} _{-0.11}	4.1	412	16.0 - 19.2	—	27.6	23.2	8.0 ±0.4	1.2 ±0.2	1.4 ±0.2	2.4	1030	1560
		52	1.2 - 3.2	1.6 - 3.2	11.4	7.0						
		53	3.2 - 4.8	3.2 - 4.8	13.0	8.6						
		54	4.8 - 6.4	4.8 - 6.4	14.6	10.2						
		56	6.4 - 9.6	6.4 - 9.6	17.7	13.3						
4.8 ^{+0.07} _{-0.11}	4.9	58	9.6 - 12.8	9.6 - 12.8	20.9	16.5	9.6 ±0.5	1.4 ±0.2	1.6 ±0.2	2.9	1460	2200
		62	1.6 - 3.2	—	13.0	7.6						
		64	3.2 - 6.4	3.2 - 6.4	16.2	10.8						
		66	6.4 - 9.6	6.4 - 9.6	19.4	14.0						
		68	9.6 - 12.8	9.6 - 12.8	22.6	17.2						
		610	12.8 - 16.0	—	25.7	20.3						
		612	16.0 - 19.2	—	28.9	23.5						
		616	22.4 - 25.6	—	35.3	29.9						

● TAP-D ■ SSBS (Dome head)



● TAP-K ■ SSBS (Countersunk)



TAP-D ■ SSBS
TAP-K ■ SSBS

	Material	Surface Treatment
Rivet body	Aluminum (A5154)	—
Mandrel	Stainless steel	—

RoHS Compliance

Countersunk type is made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)	L2 (mm)	H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk				Dome head	Countersunk		Shear(N)	Tensile(N)
2.4 ^{+0.07} _{-0.11}	2.5	32	1.0 - 2.7	1.6 - 2.7	9.1	5.7	4.8 ±0.25	0.7 ±0.2	0.8 ±0.2	1.4	470	710
		33	2.7 - 4.3	2.7 - 4.3	10.7	7.3						
		34	4.3 - 5.9	4.3 - 5.9	12.3	8.9						
3.2 ^{+0.07} _{-0.11}	3.3	42	1.0 - 2.7	1.6 - 2.7	10.7	6.3	6.4 ±0.3	0.9 ±0.2	1.1 ±0.2	1.8	910	1360
		43	2.7 - 4.3	2.7 - 4.3	12.4	8.0						
		44	4.3 - 5.9	4.3 - 5.9	14.2	9.8						
		45	5.9 - 7.5	5.9 - 7.5	16.0	11.6						
4.0 ^{+0.07} _{-0.11}	4.1	46	7.5 - 9.1	7.5 - 9.1	17.8	13.4	8.0 ±0.4	1.2 ±0.2	1.4 ±0.2	2.3	1390	2110
		52	1.2 - 2.7	1.6 - 2.7	11.3	6.9						
		53	2.7 - 4.3	2.7 - 4.3	13.0	8.6						
		54	4.3 - 5.9	4.3 - 5.9	14.8	10.4						
4.8 ^{+0.07} _{-0.11}	4.9	56	5.9 - 9.1	5.9 - 9.1	18.4	14.0	9.6 ±0.5	1.4 ±0.2	1.6 ±0.2	2.7	2140	3120
		58	9.1 - 12.3	9.1 - 12.3	22.0	17.6						
		62	1.6 - 2.7	2.3 - 2.7	12.9	7.5						
		63	2.7 - 4.3	2.7 - 4.3	14.7	9.3						
		64	4.3 - 5.9	4.3 - 5.9	16.5	11.1						
		66	5.9 - 9.1	5.9 - 9.1	20.1	14.7						
		68	9.1 - 12.3	9.1 - 12.3	23.6	18.2						

Standard

● SD ■ BS (Dome head)



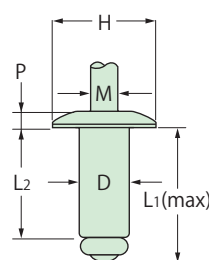
● SK ■ BS (Countersunk)



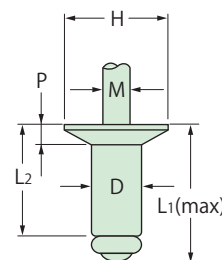
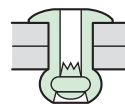
SD ■ BS
SK ■ BS

	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plated

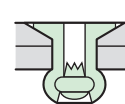
RoHS Compliance



Dome head (D)



Countersunk 120° (K)



Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)	L2 (mm)	H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk				Dome head	Countersunk		Shear(N)	Tensile(N)
2.4 ^{+0.07} / _{-0.11}	2.5	32※ 34※	1.0 - 3.2	—	9.1	5.7	4.8 ±0.3	0.7 ±0.2	—	1.5	720	920
			3.2 - 6.4	—	12.3	8.9						
3.0 ^{+0.07} / _{-0.11}	3.1	30M2 30M3 30M4	1.0 - 3.2	—	10.8	6.4	6.0 ±0.3	0.9 ±0.2	—	1.8	1160	1540
			3.2 - 4.8	—	12.4	8.0						
			4.8 - 6.4	—	13.9	9.5						
3.2 ^{+0.07} / _{-0.11}	3.3	41 42 43 44 45 46 48	1.0 - 1.6	—	9.2	4.8	6.4 ±0.3	0.9 ±0.2	1.1 ±0.2	1.9	1270	1720
			1.6 - 3.2	1.6 - 3.2	10.8	6.4						
			3.2 - 4.8	3.2 - 4.8	12.4	8.0						
			4.8 - 6.4	4.8 - 6.4	13.9	9.5						
			6.4 - 8.0	—	15.6	11.2						
			8.0 - 9.6	—	17.1	12.7						
4.0 ^{+0.07} / _{-0.11}	4.1	52 53 54 55 56 58	1.2 - 3.2	—	11.4	7.0	8.0 ±0.4	1.2 ±0.2	1.4 ±0.2	2.4	2060	2760
			3.2 - 4.8	1.6 - 4.8	13.0	8.6						
			4.8 - 6.4	4.8 - 6.4	14.6	10.2						
			6.4 - 8.0	—	16.2	11.8						
			6.4 - 9.6	6.4 - 9.6	17.7	13.3						
			9.6 - 12.8	—	20.9	16.5						
4.8 ^{+0.07} / _{-0.11}	4.9	62 64 66 68	1.6 - 3.2	—	13.0	7.6	9.6 ±0.5	1.4 ±0.2	1.6 ±0.2	2.9	2980	4000
			3.2 - 6.4	3.2 - 6.4	16.2	10.8						
			6.4 - 9.6	6.4 - 9.6	19.4	14.0						
			9.6 - 12.8	—	22.6	17.2						
6.4 ^{+0.07} / _{-0.11}	6.5	84 86 88 812	3.2 - 6.4	—	17.6	12.1	12.8 ±0.6	1.7 ±0.3	—	3.8	5510	7670
			6.4 - 9.6	—	20.7	15.2						
			9.6 - 12.8	—	23.9	18.4						
			12.8 - 19.2	—	30.3	24.8						

※The surface treatment of mandrel is phosphate coating.

● TCP-D ■ BSB (Dome head)



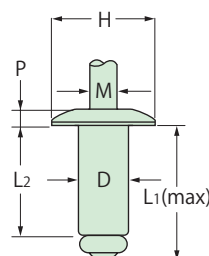
●Use of highly conductive copper in the rivet body makes this an ideal rivet for fastening PCB and electronic parts.



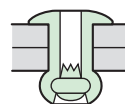
TCP-D ■ BSB

	Material	Surface Treatment
Rivet body	Copper (C1100)	—
Mandrel	Bronze	—

RoHS Compliance



Dome head (D)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 ^{+0.07} / _{-0.11}	3.3	41 42 43	1.0 - 1.6	8.8	4.4	6.4 ±0.3	0.9 ±0.2	1.8	980	1420
			1.6 - 3.2	10.7	6.3					
			3.2 - 4.8	12.4	8.0					
4.0 ^{+0.07} / _{-0.11}	4.1	52 54	1.2 - 3.2	11.3	6.9	8.0 ±0.4	1.2 ±0.2	2.3	1460	2160
			3.2 - 6.4	14.8	10.4					

● SSD ■ BS (Dome head)



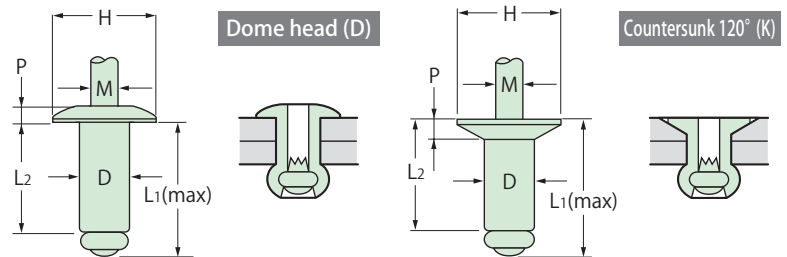
● SSK ■ BS (Countersunk)



SSD ■ BS
SSK ■ BS

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Steel	Zinc plated

RoHS Compliance



Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1(mm)		L2(mm)		H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk		Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.3	41	1.0 - 1.6	—	9.2	—	4.8	—	6.4 ± 0.3	0.9 ± 0.2	0.8 ± 0.2	1.9	2500	3000
		42	1.6 - 3.2	1.6 - 3.2	10.8	11.6	6.4	7.2						
		43	3.2 - 4.8	3.2 - 4.8	12.4	13.2	8.0	8.8						
		44	4.8 - 6.4	4.8 - 6.4	13.9	14.7	9.5	10.3						
		46	6.4 - 9.6	—	17.1	—	12.7	—						
4.0 ^{+0.07} _{-0.11}	4.1	52	1.2 - 3.2	2.2 - 3.2	11.4	12.8	7.0	8.4	8.0 ± 0.4	1.1 ± 0.2	1.4 ± 0.2	2.4	3950	4950
		53	3.2 - 4.8	3.2 - 4.8	13.0	14.4	8.6	10.0						
		54	4.8 - 6.4	4.8 - 6.4	14.6	16.0	10.2	11.6						
		56	6.4 - 9.6	6.4 - 9.6	17.7	19.1	13.3	14.7						
4.8 ^{+0.07} _{-0.11}	4.9	62	1.6 - 3.2	—	13.0	—	7.6	—	9.6 ± 0.5	1.3 ± 0.2	—	2.9	4730	5980
		64	3.2 - 6.4	—	16.2	—	10.8	—						
		66	6.4 - 9.6	—	19.4	—	14.0	—						
		68	9.6 - 12.8	—	22.6	—	17.2	—						

● SSD ■ SSBS (Dome head)



● SSK ■ SSBS (Countersunk)



SSD ■ SSBS
SSK ■ SSBS

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

RoHS Compliance

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1(mm)		L2(mm)		H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk		Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.3	41	1.0 - 1.6	—	9.2	—	4.8	—	6.4 ± 0.3	0.9 ± 0.2	0.8 ± 0.2	1.9	2500	3000
		42	1.6 - 3.2	1.6 - 3.2	10.8	11.6	6.4	7.2						
		43	3.2 - 4.8	3.2 - 4.8	12.4	13.2	8.0	8.8						
		44	4.8 - 6.4	4.8 - 6.4	13.9	14.7	9.5	10.3						
		46	6.4 - 9.6	—	17.1	—	12.7	—						
4.0 ^{+0.07} _{-0.11}	4.1	52	1.2 - 3.2	2.2 - 3.2	11.4	12.8	7.0	8.4	8.0 ± 0.4	1.1 ± 0.2	1.4 ± 0.2	2.4	3950	4950
		53	3.2 - 4.8	3.2 - 4.8	13.0	14.4	8.6	10.0						
		54	4.8 - 6.4	4.8 - 6.4	14.6	16.0	10.2	11.6						
		56	6.4 - 9.6	6.4 - 9.6	17.7	19.1	13.3	14.7						
4.8 ^{+0.07} _{-0.11}	4.9	62	1.6 - 3.2	—	13.0	—	7.6	—	9.6 ± 0.5	1.3 ± 0.2	—	2.9	4730	5980
		64	3.2 - 6.4	—	16.2	—	10.8	—						
		66	6.4 - 9.6	—	19.4	—	14.0	—						
		68	9.6 - 12.8	—	22.6	—	17.2	—						
		610	12.7 - 15.9	—	26.4	—	21.0	—						

● AD ■ BS-LF

(Dome head)



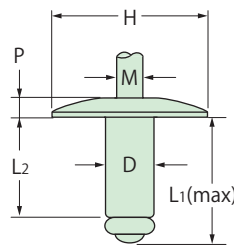
- Effective with workpieces that have holes of a little larger diameter and soft material at the rivet flange.



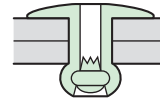
AD ■ BS-LF

	Material	Surface Treatment
Rivet body	Aluminum (A5154)	—
Mandrel	Steel	Zinc plated

RoHS Compliance



Large Flange (LF)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	3.3	42	1.0 - 3.2	10.7	6.3	9.5 ± 0.4	1.0 ± 0.2	1.8	910	1400
		44	3.2 - 6.4	14.2	9.8					
4.0 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	4.1	54	3.2 - 6.4	14.8	10.4	11.9 ± 0.5	1.25 ± 0.2	2.3	1440	2230
		64	3.2 - 6.4	16.2	10.8					
4.8 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	4.9	66	6.4 - 9.6	19.4	14.0	15.9 ± 0.6	1.9 ± 0.2	2.7	2130	3060
		68	9.6 - 12.8	22.6	17.2					
		610	12.8 - 16.0	25.7	20.3					
		612	16.0 - 19.2	28.9	23.5					

● AD ■ ABS-LF

(Dome head)



AD ■ ABS-LF

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

RoHS Compliance

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	3.3	42	1.0 - 3.2	10.8	6.4	9.5 ± 0.4	1.0 ± 0.2	1.9	660	980
		44	3.2 - 6.4	13.9	9.5					
4.0 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	4.1	54	3.2 - 6.4	14.6	10.2	11.9 ± 0.5	1.25 ± 0.2	2.4	1030	1560
		64	3.2 - 6.4	16.2	10.8					
4.8 $\begin{smallmatrix} +0.07 \\ -0.11 \end{smallmatrix}$	4.9	66	6.4 - 9.6	19.4	14.0	15.9 ± 0.6	1.9 ± 0.2	2.9	1460	2200
		68	9.6 - 12.8	22.6	17.2					
		610	12.8 - 16.0	25.7	20.3					

Standard

(Large Flange)

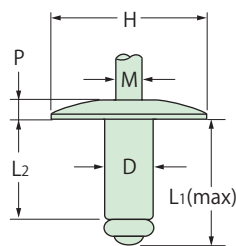
● SD ■ BS-LF (Dome head)



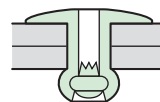
SD ■ BS-LF

	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plated

RoHS Compliance



Large Flange (LF)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $^{+0.07}_{-0.11}$	3.3	42	1.0 - 3.2	10.8	6.4	9.5 ±0.4	1.0 ±0.2	1.9	1270	1720
		44	3.2 - 6.4	13.9	9.5					
4.0 $^{+0.07}_{-0.11}$	4.1	54	3.2 - 6.4	14.6	10.2	11.9 ±0.5	1.25 ±0.2	2.4	2060	2760
4.8 $^{+0.07}_{-0.11}$	4.9	64	3.2 - 6.4	16.2	10.8	15.9 ±0.6	1.9 ±0.2	2.9	2980	4000
		66	6.4 - 9.6	19.4	14.0					
		68	9.6 - 12.8	22.6	17.2					
		610	12.8 - 16.0	25.7	20.3					
		612	16.0 - 19.2	28.9	23.5					

● SSD ■ BS-LF (Dome head)



SSD ■ BS-LF

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Steel	Zinc plated

RoHS Compliance

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $^{+0.07}_{-0.11}$	3.3	42	1.0 - 3.2	10.8	6.4	9.5 ±0.4	1.0 ±0.2	1.9	2500	3000
		44	4.8 - 6.4	13.9	9.5					

● SSD ■ SSBS-LF (Dome head)



SSD ■ SSBS-LF

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

RoHS Compliance

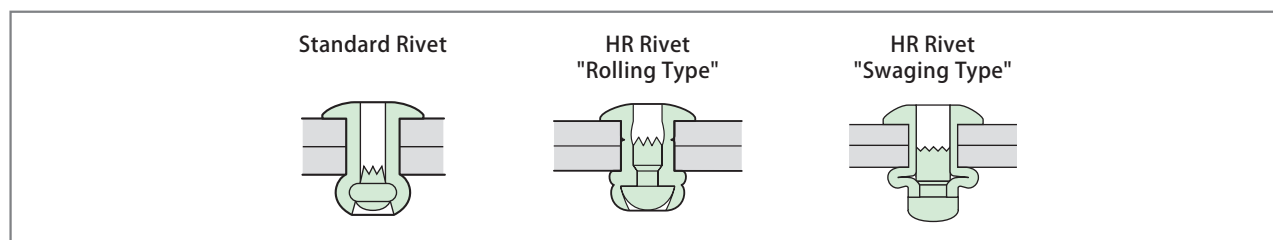
Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $^{+0.07}_{-0.11}$	3.3	42	1.0 - 3.2	10.8	6.4	9.5 ±0.4	1.0 ±0.2	1.9	2500	3000
		43	3.2 - 4.8	12.4	8.0					
		44	4.8 - 6.4	13.9	9.5					

HRivets®

- High clinching strength is provided by the bulb-shaped clamping.
- The HR clamping is larger than that of the Standard type because of the HR Rivet structure.
The tensile strength prevents falling off of thin pieces due to enlarged holes.
- The mandrel head is strongly secured after fastening.

Comparison of clamping shapes



● TAP-D ■ HR (Dome head)



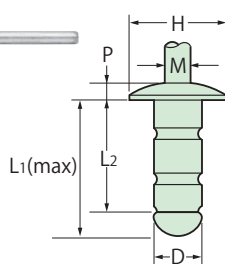
● TAP-K ■ HR (Countersunk)



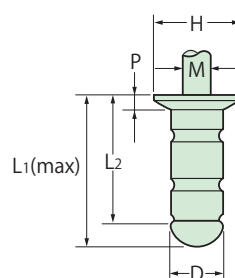
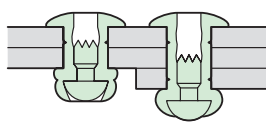
TAP-D ■ HR
TAP-K ■ HR

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Steel	Zinc plated

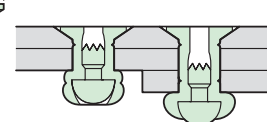
RoHS Compliance



Dome head (D)



Countersunk 120° (K)

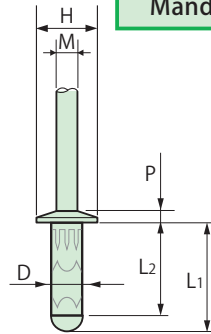


Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1(mm)		L2(mm)		H(mm)		P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} / _{-0.11}	3.4	43	1.0 - 4.8	—	11.2	—	8.0	—	6.4 ±0.3	—	0.9 ±0.2	—	1.9	690	1030
		44	—	2.0 - 6.4	—	12.3	—	9.1	—	5.5 ±0.25	—	0.7 ±0.2			
		45	4.0 - 8.0	—	14.6	—	11.6	—	6.4 ±0.3	—	0.9 ±0.2	—			
		48	9.6 - 12.8	—	20.0	—	17.0	—	6.4 ±0.3	—	0.9 ±0.2	—			
4.0 ^{+0.07} / _{-0.11}	4.2	54	1.2 - 6.4	2.5 - 6.4	14.0	14.0	10.2	10.2	—	6.2 ±0.3	—	0.8 ±0.2	2.3	1150	1680
		56	4.8 - 9.6	—	17.8	—	14.0	—	8.0 ±0.4	—	—	—			
		57	9.6 - 11.2	—	19.8	—	16.0	—	—	—	1.2 ±0.2	—			
		510	12.8 - 16.0	—	26.0	—	22.2	—	—	—	—	—			
4.8 ^{+0.07} / _{-0.11}	5.0	64	1.6 - 6.4	3.0 - 6.4	14.6	14.6	10.8	10.8	—	8.6 ±0.4	—	1.4 ±0.2	2.9	1600	2360
		68	6.4 - 12.8	—	22.0	—	18.2	—	9.6 ±0.5	—	1.4 ±0.2	—			
		610	11.2 - 16.0	—	25.9	—	22.1	—	—	—	—	—			
		612	16.0 - 19.2	—	28.6	—	24.8	—	—	—	—	—			
6.4 ^{+0.15} / _{-0.10}	6.6	83	1.6 - 4.8	—	18.0	—	13.0	—	13.0 ±0.5	—	2.5 ±0.2	—	3.9	2800	4050
		85	4.8 - 8.0	—	21.5	—	16.5	—	—	—	—	—			

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

High Retention

● AD ■ AHR (Dome head)



Dome head (D)

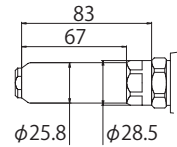
	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

RoHS Compliance

For AD135/139AHR

POP Rivet tool
ProSet3400-AHR

- Length : 325mm ● Weight : 1.94kg
- Air pressure : 0.5 ~ 0.6MPa



Air hydraulic



PAT.PENDING Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 ^{+0.17} / _{-0.05}	3.4	43	3.2 - 4.8	12.8	9.6	6.4 ±0.3	1.1 ±0.2	2.2	550	800
4.0 ^{+0.17} / _{-0.05}	4.2	52	1.6 - 3.2	12.1	8.6	8.0 ±0.4	1.5 ±0.2	2.7	850	1120
		53	3.2 - 4.8	13.7	10.2					
		62	1.6 - 3.2	13.5	9.2					
4.8 ^{+0.17} / _{-0.05}	5.0	63	3.2 - 4.8	15.1	10.8	9.6 ±0.4	1.9 ±0.2	3.4	1150	1650
		64	4.8 - 6.4	16.7	12.4					
		135	4.0 - 8.0	20.0max	16.0	17.5 ±0.6	4.0 ±0.3	7.3	10500	8500
10.2 ±0.15	10.6	139	8.0 - 14.0	28.0max	24.0					
10.25 ±0.15										

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

● SD ■ HR (Dome head)

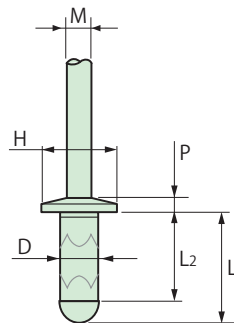


● SK ■ HR (Countersunk)

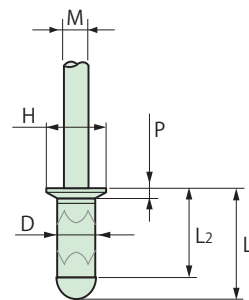


	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	φ3.2 φ4.0 : Zinc plated φ4.8 φ6.4 : Zinc plating trivalent chrome

RoHS Compliance



Dome head (D)



Countersunk 120° (K)

SD ■ HR
SK ■ HR

PAT.PENDING

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)		L2 (mm)		H (mm)		P (mm)		M (mm)	Reference Strength			
			Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk	Dome head	Countersunk		Shear(N)	Tensile(N)	Shear(N)	Tensile(N)
3.2 ^{+0.17} / _{-0.05}	3.4	42	1.6 - 3.2	2.0 - 3.2	11.2	11.2	8.0	8.0	5.3 ±0.3	5.3 ±0.3	1.1 ^{+0.2} / _{-0.1}	0.8 ±0.2	2.2	1450	1100	1700	1700
		43	3.2 - 4.8	3.2 - 4.8	12.8	12.8	9.6	9.6	6.4 ±0.3	6.4 ±0.3		0.8 ±0.2					
		44	4.8 - 6.4	—	14.4	—	11.2	—				—					
4.0 ^{+0.17} / _{-0.05}	4.2	52	1.6 - 3.2	2.0 - 3.2	12.5	12.5	9.0	9.0	8.0 ±0.3	6.4 ±0.3	1.5 ^{+0.2} / _{-0.1}	1.0 ±0.2	2.8	2000	1300	2600	2000
		53	3.2 - 4.8	3.2 - 4.8	14.1	14.1	10.6	10.6									
		54	4.8 - 6.4	4.8 - 6.4	15.7	15.7	12.2	12.2									
4.8 ^{+0.17} / _{-0.05}	5.0	62	1.6 - 3.2	—	13.5	—	9.2	—	—	—	—	—	—	—	—	—	—
		63	3.2 - 4.8	2.4 - 4.8	15.1	15.1	10.8	10.8	9.6 ±0.4	8.2 ±0.4	1.9 ±0.2	1.3 ±0.2	3.4	3100	2300	3400	3400
		64	4.8 - 6.4	4.8 - 6.4	16.7	16.7	12.4	12.4		8.2 ±0.4		1.3 ±0.2					
		65	6.4 - 8.0	—	18.3	—	14.0	—		—		—					
6.4 ^{+0.17} / _{-0.51}	6.6	83	1.2 - 4.8	—	16.0	—	11.3	—	13.0 ±0.5	—	2.5 ±0.2	—	4.6	3900	—	5350	—
		85	4.8 - 8.0	—	19.2	—	14.5	—		—		—					

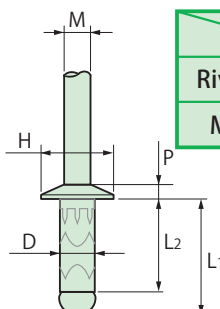
Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

High Retention

● SSD ■ SSHR (Dome head)



SSD ■ SSHR



Dome head (D)

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

RoHS Compliance

PAT.PENDING

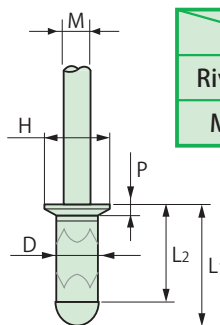
Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $^{+0.17}_{-0.05}$	3.4	42	1.6 - 3.2	11.2	8.4	6.4 ±0.3	1.1 ±0.2	2.2	1900	2500
		43	3.2 - 4.8	12.8	10.0					
		44	4.8 - 6.4	14.4	11.6					
4.0 $^{+0.17}_{-0.05}$	4.2	52	1.6 - 3.2	12.5	9.0	8.0 ±0.3	1.5 ±0.2	2.8	2800	3800
		53	3.2 - 4.8	14.1	10.6					
		54	4.8 - 6.4	15.7	12.2					
4.8 $^{+0.17}_{-0.05}$	5.0	62	1.6 - 3.2	13.9	9.6	9.6 ±0.4	1.9 ±0.2	3.4	4700	5000
		63	3.2 - 4.8	15.5	11.2					
		64	4.8 - 6.4	17.1	12.8					
		65	6.4 - 8.0	18.7	14.4					

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

● SSK ■ SSHR (Countersunk)



SSK ■ SSHR



Countersunk 120° (K)

	Material	Surface Treatment
Rivet body	Stainless steel (Ferrite)	—
Mandrel	Stainless steel	—

RoHS Compliance

PAT.PENDING

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $^{+0.17}_{-0.05}$	3.4	42	2.0 - 3.2	11.2	8.0	5.3 ±0.3	0.8 ±0.2	2.2	1400	2000
		52	2.0 - 3.2	12.5	9.0	6.4 ±0.3	1.0 ±0.2	2.8	2100	3000
4.0 $^{+0.17}_{-0.05}$	4.2	63	2.4 - 4.8	15.1	10.8	8.2 ±0.3	1.3 ±0.2	3.4	3700	5000
		64	4.8 - 6.4	16.7	12.4					

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

● HR Multi-Grip "MG" (Dome head)

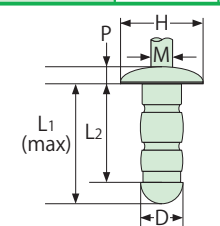


● Reduce parts by wide grip range.

※MG Rivets are designed for each customer's specifications. If you have technical questions, please contact us.



	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plated
		Zinc plating trivalent chrome



Dome head (D)

	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

RoHS Compliance

Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
※	※	SD ■ MG	※	※	※	※	※	※	※	※
※	※	SSD ■ MG	※	※	※	※	※	※	※	※

Note : Clamping shape is different depends on the work thickness.

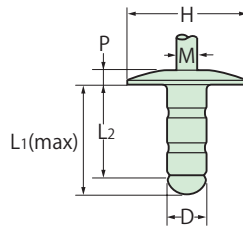
● TAP-D ■ HR-LF (Dome head)



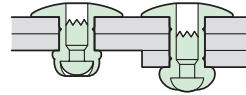
TAP-D ■ HR-LF

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Steel	Zinc plated

RoHS Compliance



Large Flange (LF)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.2 $+0.07$ -0.10	3.4	43	1.0 - 4.8	11.2	8.0	9.6 ± 0.4	1.0 ± 0.2	1.9	690	1030
4.0 $+0.07$ -0.10	4.2	54	1.6 - 6.4	14.0	10.2	12.0 ± 0.5	1.25 ± 0.2	2.3	1150	1680
		56	6.4 - 9.6	17.8	14.0					
		64	1.6 - 6.4	14.6	10.8					
4.8 $+0.07$ -0.10	5.0	66	6.4 - 9.6	18.5	14.7	15.9 ± 0.6	1.9 ± 0.2	2.9	1600	2360
		68	6.4 - 12.8	22.0	18.2					
		612	12.8 - 19.2	28.6	24.8					

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

● TAP-D ■ SSHR-LF (Dome head)



TAP-D ■ SSHR-LF

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Stainless steel	—

RoHS Compliance

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.8 $+0.07$ -0.10	5.0	68	6.4 - 12.8	22.0	18.2	15.9 ± 0.6	1.9 ± 0.2	2.9	1600	2360
		612	12.8 - 19.2	28.6	24.8					

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

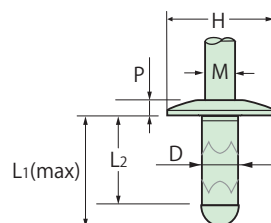
● SD ■ HR-LF (Dome head)



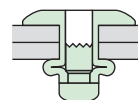
SD ■ HR-LF

	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plating trivalent chrome

RoHS Compliance



Large Flange (LF)

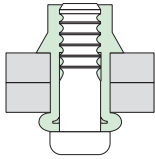
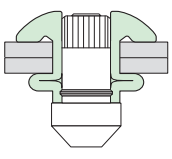
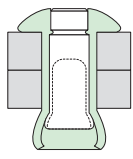


PAT.PENDING Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.8 $+0.17$ -0.05	5.0	62	1.6 - 3.2	13.5	9.2	15.9 ± 0.5	2.0 ± 0.2	3.4	3100	3400
		63	3.2 - 4.8	15.1	10.8					
		64	4.8 - 6.4	16.7	12.4					
		65	6.4 - 8.0	18.3	14.0					
		83	1.2 - 4.8	16.0	11.3					
6.4 $+0.17$ -0.05	6.6	85	4.8 - 8.0	19.2	14.5	16.0 ± 0.5	3.0 ± 0.2	4.6	3900	5350

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

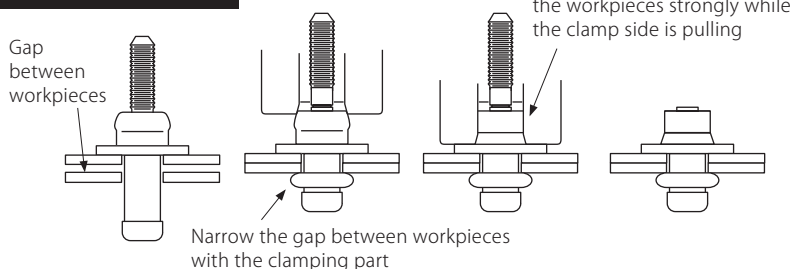
Types of Structural POP rivets

Types	Mandrel's axial force type	Widely clamped type	Filled-hole type
Illustration			
Names	HC rivets	HS rivets	UG rivets
Pages	P.17	P.18	P.19, 20
Features	- The flange is squeezed while the clamped part pulls the workpieces, resulting in high clinching force. - The parallel groove of the mandrel is made to be inserted into the body. This prevents the workpieces from loosening under vibration.	- The rivet body is clamped into the shape of the valve when fastening, resulting in high clinching force between workpieces. - The large clamped diameter results in high tensile force.	- This model is based on an internal locking mechanism that is highly resistant to vibration. - A wide fastening thick plate is used to reduce the number of parts used.

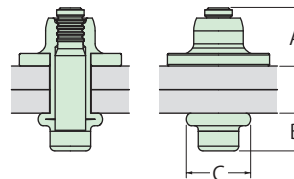
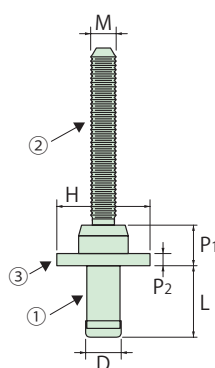
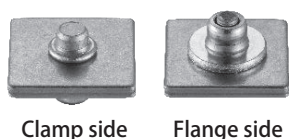
HCrivets®

- The flange is squeezed while the clamped part pulls the workpieces, resulting in high clinching force and no loosening under vibration.

Fastening process



Form after fastening



[Dimension after fastening (mm)]

Reference	A	B	C
At min. works	8.2	4.5	7.9
At max. works	6.8	4.0	7.6

Parts	Material	Surface Treatment
1. Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
2. Mandrel	Steel (SWCH)	Aluminum & Zinc composition
3. Washer	Steel (SWCH)	Zinc plating trivalent chrome



SHC-52M

RoHS Compliance

PAT.PENDING

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L (mm)	H (mm)	P1 (mm)	P2 (mm)	M (mm)	Reference Strength		
									Shear (N)	Tensile (N)	Clamp (N)
5.15 ^{+0.10} / _{-0.05}	5.3	28	1.2 - 2.8	10.6	13 ±0.5	6	1.6	3.4	12500	8900	3900
		44	2.8 - 4.4	12.1							
		60	4.4 - 6.0	13.7							
		76	6.0 - 7.6	15.3							

HSrivets®

- High clinching strength between workpieces can be provided by the bulb-shaped clamping.
- Provides higher tensile strength, higher shear strength and higher clinching strength.

For HS rivets

POP Rivet tool ProSet3400

【Nosepiece】

6 size dome head : PRN6P

8 size dome head : PRN8P

6 size countersunk : PRN6F

8 size countersunk : PRN8F



SD ■ HS (Dome head)



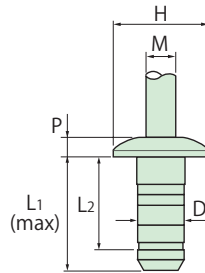
SK ■ HS (Countersunk)



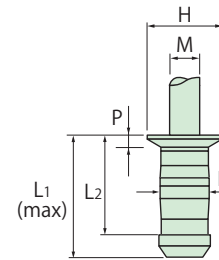
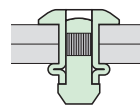
SD ■ HS

	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plating trivalent chrome

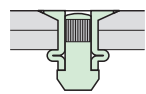
RoHS Compliance



Dome head (D)



Countersunk 120° (K)



Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.8 $\begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix}$	4.9 - 5.2	632	1.2 - 3.2	12.4	8.9	9.5 ± 0.4	2.1 ± 0.2	3.0	4750	4850
		648	2.8 - 4.8	14.0	10.5					
6.4 $\begin{smallmatrix} +0.17 \\ -0.10 \end{smallmatrix}$	6.6 - 7.0	848	2.8 - 4.8	15.9	11.4	13 ± 0.5	2.8 ± 0.2	4.0	12000	9000
		854	3.4 - 5.4	16.5	12.0					
		868	4.8 - 6.8	17.9	13.4					
		888	6.8 - 8.8	19.9	15.4					
		8108	8.8 - 10.8	22.9	18.4					
		8128	10.8 - 12.8	24.9	20.4					

Note : Hole diameter of HS in the workpiece is larger than that of the Standard type.

SK ■ HS

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.8 $\begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix}$	4.9 - 5.2	648	3.2 - 4.8	14.0	10.5	8.2 ± 0.4	1.3 ± 0.2	3.0	4750	4850
		664	4.8 - 6.4	15.6	12.1					
6.4 $\begin{smallmatrix} +0.17 \\ -0.10 \end{smallmatrix}$	6.6 - 7.0	848	2.8 - 4.8	16.5	12.0	10.0 ± 0.5	1.5 ± 0.2	4.0	5900	7000
		858	3.8 - 5.8	17.5	13.0					

Note : Hole diameter of HS in the workpiece is larger than that of the Standard type.

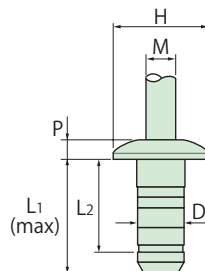
AD ■ AHS (Dome head)



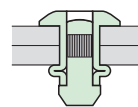
AD ■ AHS

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

RoHS Compliance



Dome head (D)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
6.4 $\begin{smallmatrix} +0.17 \\ -0.10 \end{smallmatrix}$	6.6 ~ 7.0	856	3.2 - 5.6	15.5	12	13 ± 0.5	2.8 ± 0.2	4.0	4100	3500
		8120	10.0 - 12.0	23.1	18.6					

Note : Hole diameter of HS in the workpiece is larger than that of the Standard type.

"UG" Rivet

- Ideal for vibrate applications such as vehicles and truck chassis because of inner lock mechanism.
- Enable to reduce parts by wide grip range.

For UG rivets

**POP Rivet tool
ProSet3400**

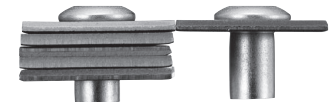
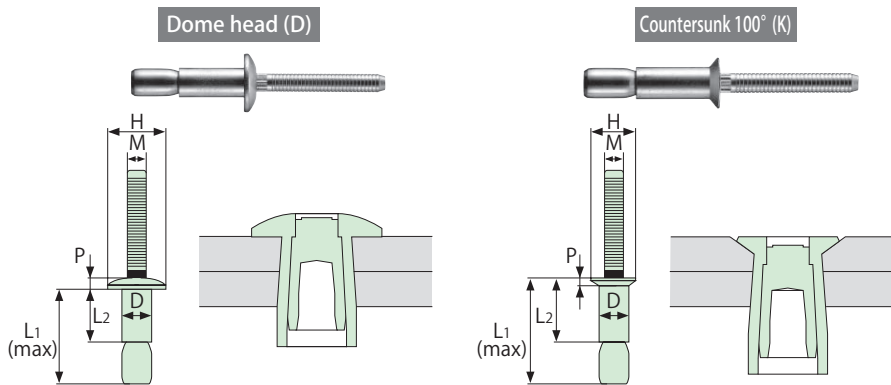
【Nosepiece】

6 size dome head : PRN6P

8 size dome head : PRN8PS

6 size countersunk : PRN6F

8 size countersunk : PRN8FS



Cover wide grip range by one size.



	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plating trivalent chrome

RoHS Compliance

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength		
									Shear(N)	Tensile(N)	Head hold(kN)
4.8 $^{+0.07}_{-0.05}$	4.9~5.1	SD-670-UG	1.6 - 7.0	19.1	10.1	9.5 ± 0.3	2.1 ± 0.15	3max	6500	5330	660
		SD-6110-UG	5.5 - 11.1	22.5	14.1						
		SD-6110-UGX	1.6 - 11.1	26.6	14.1						
6.4 $^{+0.17}_{-0}$	6.6~7.0	SD-895-UG	2.0 - 9.5	25.8	13.8	13 ± 0.4	2.8 ± 0.2	4max	11800	10000	1330
		SD-8160-UG	9.0 - 16.0	31.3	20.3						
		SD-8160-UGX	2.0 - 16.0	36.3	20.3						
4.8 $^{+0.07}_{-0.05}$	4.9~5.1	SK-685-UG	3.2 - 8.5	20.9	11.9	8.4 ± 0.4	1.7 $^{+0.1}_{-0.25}$	3max	6500	5330	660
		SK-6125-UG	7.5 - 12.5	24.6	16.2						
6.4 $^{+0.17}_{-0}$	6.6~7.0	SK-8120-UG	4.0 - 12.0	28.6	16.6	10 ± 0.5	2.0 $^{+0.1}_{-0.25}$	4max	11800	10000	1330
		SK-8185-UG	10.5 - 18.5	34.1	23.1						

Head hold : Push down the axis of mandrel head and measure the maximum load.



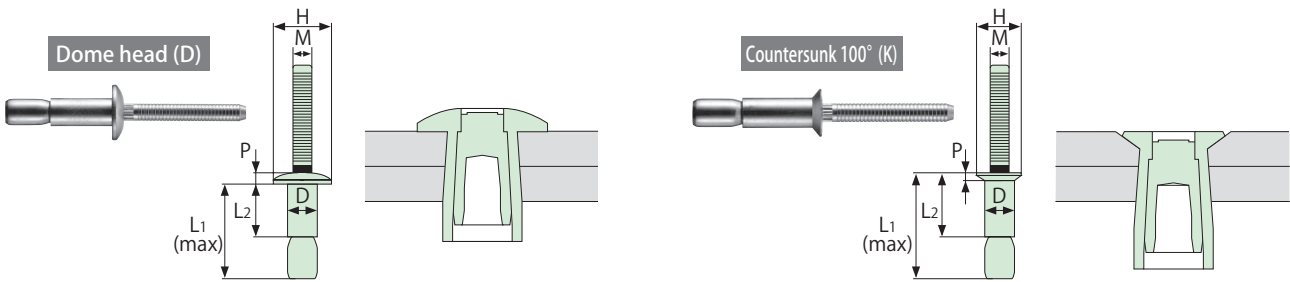
	Material	Surface Treatment
Rivet body	Aluminum (A5056)	—
Mandrel	Aluminum	—

RoHS Compliance

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength		
									Shear(N)	Tensile(N)	Head hold(kN)
4.8 $^{+0.07}_{-0.05}$	4.9~5.1	AD-670-UG	1.6 - 7.0	19.1	10.1	9.5 ± 0.3	2.1 ± 0.15	3max	3000	2220	220
		AD-6110-UG	5.5 - 11.1	22.5	14.1						
		AD-6110-UGX	1.6 - 11.1	26.6	14.1						
6.4 $^{+0.17}_{-0}$	6.6~7.0	AD-895-UG	2.0 - 9.5	25.8	13.8	13 ± 0.4	2.8 ± 0.2	4max	5780	4000	440
		AD-8160-UG	9.0 - 16.0	31.3	20.3						
		AD-8160-UGX	2.0 - 16.0	36.3	20.3						
4.8 $^{+0.07}_{-0.05}$	4.9~5.1	AK-685-UG	3.2 - 8.5	20.9	11.9	8.4 ± 0.4	1.7 $^{+0.1}_{-0.25}$	3max	3000	2220	220
		AK-6125-UG	7.5 - 12.5	24.6	16.2						
6.4 $^{+0.17}_{-0}$	6.6~7.0	AK-8120-UG	4.0 - 12.0	28.6	16.6	10 ± 0.5	2.0 $^{+0.1}_{-0.25}$	4max	5780	4000	440
		AK-8185-UG	10.5 - 18.5	34.1	23.1						

Head hold : Push down the axis of mandrel head and measure the maximum load.

Structural rivets



	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

RoHS Compliance

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength		
									Shear(N)	Tensile(N)	Head hold(kN)
4.8 $\begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix}$	4.9~5.1	SSD-670-UG	1.6 - 7.0	19.1	10.1	9.5 ±0.3	2.1 ±0.15	3max	5780	4220	440
		SSD-6110-UG	5.5 - 11.1	22.5	14.1						
		SSD-6110-UGX	1.6 - 11.1	26.6	14.1						
6.4 $\begin{smallmatrix} +0.17 \\ -0 \end{smallmatrix}$	6.6~7.0	SSD-895-UG	2.0 - 9.5	25.8	13.8	13 ±0.4	2.8 ±0.2	4max	10450	8000	880
		SSD-8160-UG	9.0 - 16.0	31.3	20.3						
		SSD-8160-UGX	2.0 - 16.0	36.3	20.3						
4.8 $\begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix}$	4.9~5.1	SSK-685-UG	3.2 - 8.5	20.9	11.9	8.4 ±0.4	1.7 $\begin{smallmatrix} +0.1 \\ -0.25 \end{smallmatrix}$	3max	5780	4220	440
		SSK-6125-UG	7.5 - 12.5	24.6	16.2						
6.4 $\begin{smallmatrix} +0.17 \\ -0 \end{smallmatrix}$	6.6~7.0	SSK-8120-UG	4.0 - 12.0	28.6	16.6	10 ±0.5	2.0 $\begin{smallmatrix} +0.1 \\ -0.25 \end{smallmatrix}$	4max	10450	8000	880
		SSK-8185-UG	10.5 - 18.5	34.1	23.1						

Head hold : Push down the axis of mandrel head and measure the maximum load.

Conductive Rivet

● SD ■ CD (Dome head)

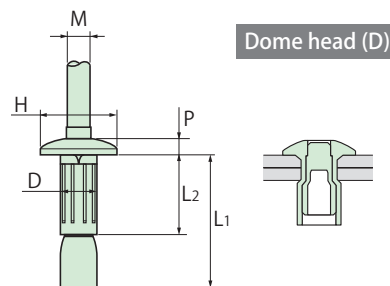


- The protrusion of the flange and rivet body cut into the surface-treat workpieces, allowing conduction between the surface-treated workpieces.



	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plating trivalent chrome

RoHS Compliance



PAT.PENDING Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength		
									Shear(N)	Tensile(N)	Head hold(kN)
6.4 $\begin{smallmatrix} +0.17 \\ -0 \end{smallmatrix}$	6.7~7.0	SD-864-CD	3.2 - 6.4	25.8	13.8	13 ±0.4	2.8 ±0.2	4.0	7400	7100	1600

Note : Hole size shows the diameter before surface treatment of the workpieces. Diameter should be minimum $\phi 6.6$ mm after surface treatment.

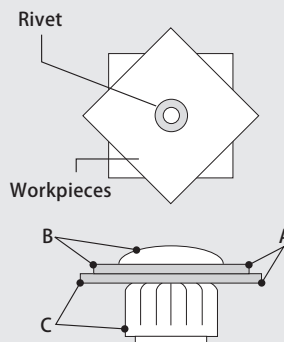
○ Test of Conductive Rivet

Workpieces : SPCCT2.3mm+SPCCT2.3mm
Surface treatment : Melamine Alkyd 100 μ m
Hole diameter : $\phi 7.0$ mm"both workpieces"

○ Average conductive measured values (m Ω)

Measuring point	A	B	C
	31	4	27

Note : This technical data is not guaranteed. The proper specifications may differ depending on work conditions, hole thickness, material and other factors.



Test method

Turn the fixed electricity between the measuring points and measure the voltage. Because of Voltage "V" = Electric "I" $\times$ Electric Resistance "R", Voltage "V" is equal to Electric Resistance "R" for this test.

Measuring point

A : Workpiece at flange side & workpiece at clamping side
B : Workpiece at flange side & rivet
C : Workpiece at clamping side & rivet

Closed

● AD (Dome head)



● AK (Countersunk)



● Because the rivet body covers the mandrel head, the mandrel head does not come off from the clamp side.

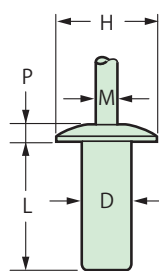


AD
AK

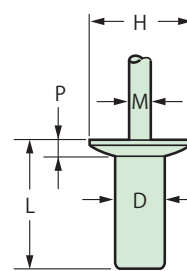
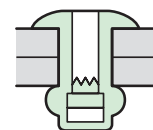
	Material	Surface Treatment
Rivet body	Aluminum (A5056)	—
Mandrel	Steel	—

⚠ Caution : Set appropriate nosepieces for Closed Rivets.

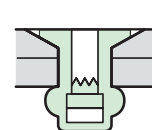
RoHS Compliance



Dome head (D)



Countersunk 120° (K)



Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L(mm)		H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk	Dome head	Countersunk		Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} / _{-0.11}	3.3	41	1.0 - 1.6	—	6.0	—	6.0 ±0.3	1.0 ±0.3	1.0 ±0.3	1.6	1120	1580
		42	1.6 - 3.2	1.6 - 3.2	7.6	8.6						
		43	3.2 - 4.8	3.2 - 4.8	9.2	10.2						
		44	4.8 - 6.4	4.8 - 6.4	10.8	11.8						
		45	6.4 - 8.0	6.4 - 8.0	12.4	13.4						
4.0 ^{+0.07} / _{-0.11}	4.1	52	1.2 - 3.2	2.2 - 3.2	8.0	9.4	8.0 ±0.4	1.4 ±0.3	1.4 ±0.3	2.2	1640	2480
		53	3.2 - 4.8	3.2 - 4.8	9.6	11.0						
		54	4.8 - 6.4	4.8 - 6.4	11.2	12.6						
		55	6.4 - 8.0	—	12.8	—						
4.8 ^{+0.07} / _{-0.11}	4.9	62	1.6 - 3.2	2.5 - 3.2	8.4	10.1	9.6 ±0.5	1.7 ±0.3	1.7 ±0.3	2.6	2340	3350
		63	3.2 - 4.8	3.2 - 4.8	10.0	11.7						
		64	4.8 - 6.4	4.8 - 6.4	11.6	13.2						
		65	6.4 - 8.0	6.4 - 8.0	13.1	14.8						
		66	8.0 - 9.6	8.0 - 9.6	14.7	16.4						
		68	9.6 - 12.8	9.6 - 12.8	17.9	19.6						
6.4 ±0.08	6.5	84	3.2 - 6.4	—	12.3	—	12.7 ±0.64	2.3 ±0.3	—	3.7	4110	6320
		86	6.4 - 9.6	—	15.5	—						

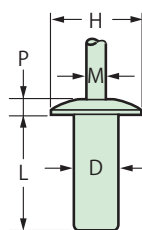
● AD AH (Dome head)



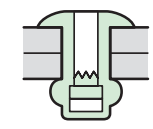
	Material	Surface Treatment
Rivet body	Aluminum (A1100)	—
Mandrel	Aluminum	—

⚠ Caution : Set appropriate nosepieces for Closed Rivets.

RoHS Compliance



Dome head (D)



AD AH

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
								Shear(N)	Tensile(N)
3.2 ^{+0.07} / _{-0.11}	3.3	42	1.0 - 3.2	7.6	6.0 ±0.3	1.0 ±0.3	1.8	550	570
4.0 ^{+0.07} / _{-0.11}	4.1	54	1.2 - 6.4	11.2	8.0 ±0.4	1.4 ±0.3	2.3	880	1100
4.8 ^{+0.07} / _{-0.11}	4.9	62	1.6 - 3.2	8.4	9.6 ±0.5	1.7 ±0.3	2.7	1230	1530
		64	3.2 - 6.4	11.6					
		66	6.4 - 9.6	14.7					
		68	9.6 - 12.8	17.9					

Closed

● AD ■ SSH (Dome head)



● AK ■ SSH (Countersunk)

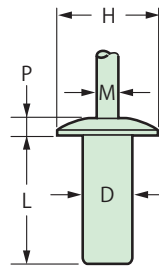


AD ■ SSH
AK ■ SSH

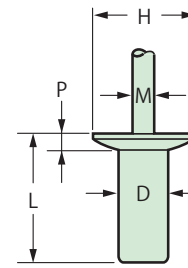
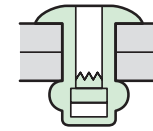
	Material	Surface Treatment
Rivet body	Aluminum (A5154)	—
Mandrel	Stainless steel	—

Caution : Set appropriate nosepieces for Closed Rivets.

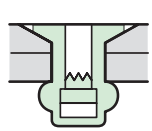
RoHS Compliance



Dome head (D)



Countersunk 120° (K)



Countersunk type is made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L(mm)		H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk	Dome head	Countersunk		Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.3	41	1.0 - 1.6	—	6.0	—	6.0 ±0.3	1.0 ±0.3	—	1.6	1080	1550
		42	1.6 - 3.2	1.6 - 3.2	7.6	7.6			1.0 ±0.3			
		43	3.2 - 4.8	3.2 - 4.8	9.2	9.2			1.0 ±0.3			
		44	4.8 - 6.4	4.8 - 6.4	10.8	10.8			1.0 ±0.3			
		45	6.4 - 8.0	—	12.4	—			—			
4.0 ^{+0.07} _{-0.11}	4.1	52	1.2 - 3.2	1.2 - 3.2	8.0	8.0	8.0 ±0.4	1.4 ±0.3	1.4 ±0.3	2.2	1550	2320
		53	3.2 - 4.8	3.2 - 4.8	9.6	9.6			1.4 ±0.3			
		54	4.8 - 6.4	4.8 - 6.4	11.2	11.2			1.4 ±0.3			
		55	6.4 - 8.0	—	12.8	—			—			
4.8 ^{+0.07} _{-0.11}	4.9	62	1.6 - 3.2	—	8.4	—	9.6 ±0.5	1.7 ±0.3	—	2.6	2150	3140
		63	3.2 - 4.8	—	10.0	—			—			
		64	4.8 - 6.4	4.8 - 6.4	11.6	11.6			1.7 ±0.3			
		65	6.4 - 8.0	6.4 - 8.0	13.1	13.1			1.7 ±0.3			
		66	8.0 - 9.6	8.0 - 9.6	14.7	14.7			1.7 ±0.3			
		68	9.6 - 12.8	9.6 - 12.8	17.9	17.9			1.7 ±0.3			

● SSD ■ SSH (Dome head)

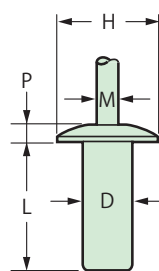


SSD ■ SSH

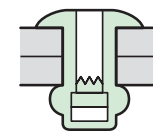
	Material	Surface Treatment
Rivet body	Stainless steel (Austenite)	—
Mandrel	Stainless steel	—

Caution : Set appropriate nosepieces for Closed Rivets.

RoHS Compliance



Dome head (D)



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
								Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.3	41	1.0 - 1.6	6.6	6.4 ±0.3	0.7 ±0.2	2.0	2470	2730
		42	1.6 - 3.2	8.0					
		43	3.2 - 4.8	9.7					
		44	4.8 - 6.4	11.3					
		45	6.4 - 8.0	12.9					
4.0 ^{+0.07} _{-0.11}	4.1	52	1.6 - 3.2	8.6	8.0 ±0.4	0.9 ±0.3	2.3	3410	4320
		53	3.2 - 4.8	10.2					
		54	4.8 - 6.4	11.8					
4.8 ^{+0.07} _{-0.11}	4.9	62	1.6 - 3.2	9.2	9.6 ±0.5	1.1 ±0.3	3.0	4800	5780
		63	3.2 - 4.8	10.8					
		64	4.8 - 6.4	12.5					
		66	6.4 - 9.5	15.5					

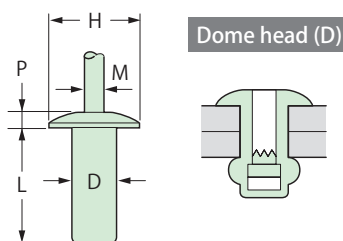
Closed

●SD H (Dome head)



	Material	Surface Treatment
Rivet body	Steel (ELCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plating trivalent chrome

RoHS Compliance



Dome head (D)

For SD53H

POP Rivet tool
ProSet2500A

【Nosepiece】

PRN524

【Jaw】

PRG540-46B

【Jaw Pusher】

PRS2500-33



Made to order Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
								Shear(N)	Tensile(N)
4.0 $\begin{smallmatrix} +0.08 \\ -0.10 \end{smallmatrix}$	4.1	53	3.2 - 4.8	9.8	7.8 ± 0.4	1.6 ± 0.2	2.2	2000	2700

※For fastening SD53H, the above mentioned POP rivet tool with the appropriate nosepiece is necessary.

Cap Rivet



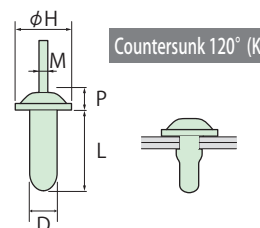
●The cap rivet is an HR rivet with a plastic cap on the body, providing water resistance.

Note: The data may differ depending on work conditions. Water-resistance testing under actual conditions is necessary.

	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Steel	Zinc plated*
Cap	Refer to the following list	—

RoHS Compliance

*The surface treatment of part which includes "GJB" is GEOMET®+JL. GEOMET® is a registered trademark of NOF METAL COATINGS GROUP.



Countersunk 120° (K)

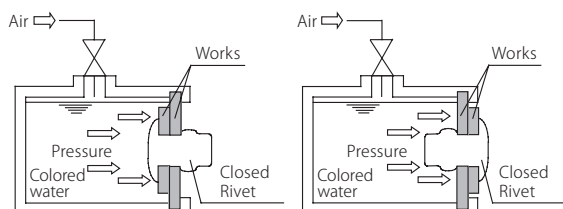
PAT. Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. 	Grip Range (mm)	L (mm)	H (mm)	P (mm)	M (mm)	Cap		Reference Strength	
								Material	Color	Shear(N)	Tensile(N)
4.1	4.3	N2C-AD-43-HR-80H-3R	1.2 - 3.2	10.8	9.0	1.6	1.9	PA66	Natural	690	1030
5.0	5.2	NCAP6-AD54HR-LF	1.0 - 4.0	13.4	13.0	2.0	2.3	PA66	Natural	1150	1680
		NCAP6-AD56L-HR-LF-GJB	4.0 - 7.0	18.0							
		TCAP6-AD56L-HR-LF-GJB	4.0 - 7.0	18.0							
6.0	6.2	N2C-AD-64-HR-135H-WR	1.0 - 3.2	14.2	13.5	2.6	2.9	PA66	Natural Black	1600	2360
		TCAP7BK-AD64HR-135H-WR	1.0 - 3.2	14.2				TPE			

Note : Hole diameter of Cap Rivet in the workpiece is larger than that of the Standard type.

Water-resistant data

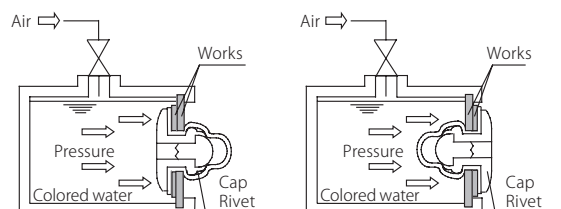
Waterproof function of Closed Rivet (except stainless steel body) is equivalent to IPX7.



No water leakage at the test of IPX7

Water-resistant data

Waterproof function of cap Rivet is equivalent to IPX8.



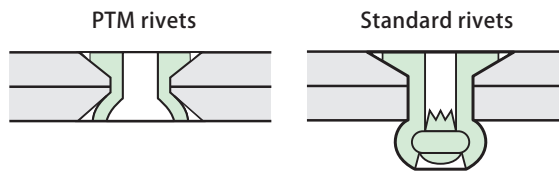
No water leakage at the test of IPX8

Low Height Clamping

PTM (Pull-through mandrel) rivet

- Both flange & clamp side are flat, contributing to an improved design.
- To be used properly, both flange & clamp side of workpieces must be countersunk.
- Mandrel head passes inside the rivet body when fastening.

Comparison of fastening shape



For PTM rivets

POP Rivet tool
ProSet1600A

【Nosepiece】
PRN4K-SK30M

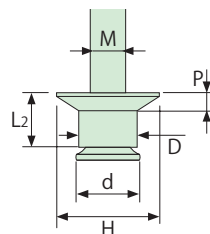


SK PTM (Countersunk)



	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plated

RoHS Compliance



Countersunk 120° (K)



Flange side



Clamp side



Side



SK PTM

PAT.PENDING

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	d Max (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.0 ^{+0.17} _{-0.10}	3.3	30M20	1.5 - 2.0	3.27	2.3	5.2	0.8	1.83	※	※
		30M25	2.0 - 2.5		2.8					
		30M30	2.5 - 3.0		3.3					
		30M35	3.0 - 3.5		3.8					
		30M40	3.5 - 4.0		4.3					

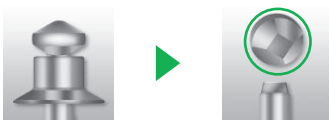
※Reference strength may differ depending on workpiece material, thickness, hole size, and other conditions.

※In case only the flange side workpiece is countersunk, but the clamp side workpiece is not countersunk, "Grip Range" should be switched to the following.

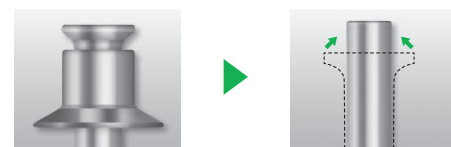
SK30M25PTM : 1.2~1.7mm / SK30M30PTM : 1.7~2.2mm / SK30M35PTM : 2.2~2.7mm / SK30M40PTM : 2.7~3.2mm

Unlike with FBHM (previous model), no disposal of mandrel head is necessary since the mandrel head passes inside the rivet body.

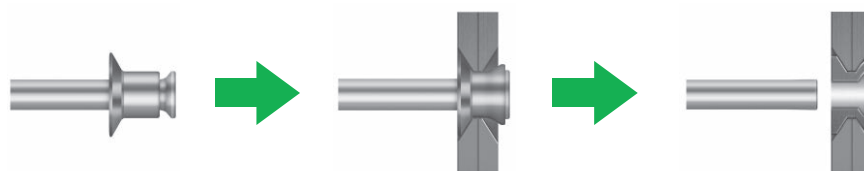
Previous FBHM
Need the mandrel head disposal



New PTM
No need the mandrel head disposal



Fastening process



Low Height Clamping

BHM Rivet (Dome head)

● TAP-D ■ BHM

● SD ■ BHM

● SSD ■ BHM



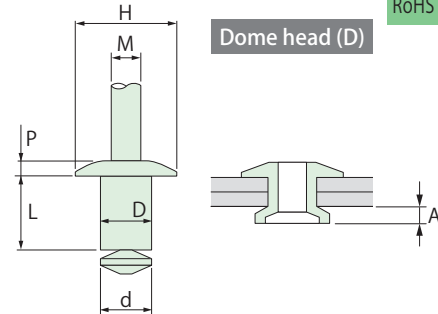
- The clamp height can be low with the specially shaped mandrel head removed from the rivet when fastening.



TAP-D ■ BHM
SD ■ BHM
SSD ■ BHM

	Material	Surface Treatment
Rivet body	Aluminum	—
	Steel	Zinc plating trivalent chrome
	Stainless steel	—
Mandrel	Steel	Zinc plated

*The BHM Rivet is designed to each customer's specifications. The rivet number and strength may differ depending on workpiece material, thickness, hole size, and other conditions. If you have any technical questions, please contact us.



RoHS Compliance

Made to order Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	d Max (mm)	A (mm)	L (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
2.0 ±0.07	Min φ2.1	TAP-D20M ■	2.0	※	※	3.8 ±0.2	0.7 ±0.15	1.1	※	※
2.4 ^{+0.07} _{-0.11}	Min φ2.55	TAP-D3 ■	2.45	※	※	4.8 ±0.25	0.7 ±0.2	1.4	※	※
3.2 ^{+0.07} _{-0.11}	Min φ3.45	TAP-D4 ■	3.4	※	※	6.4 ±0.3	0.9 ±0.2	1.8	※	※
		SD 4 ■	3.35					1.9		
		SSD 4 ■	3.4					1.9		
4.0 ^{+0.07} _{-0.11}	Min φ4.2	TAP-D5 ■	4.05	※	※	8.0 ±0.4	1.2 ±0.2	2.3	※	※
		SSD 5 ■						2.4		
4.8 ^{+0.07} _{-0.11}	Min φ5.0	TAP-D6 ■	4.85	※	※	9.6 ±0.5	1.4 ±0.2	2.7	※	※
		SD 6 ■						2.9		

※The rivet number and strength may differ depending on workpiece material, thickness, hole size, and other conditions.
Note : Hole diameter of BHM in the workpiece is larger than that of the Standard type.

SMH Rivet

● TAP-K-41-HR-20T-SMH (Dome head)



● TAP-D-52-HR-36T-SMH (Countersunk)

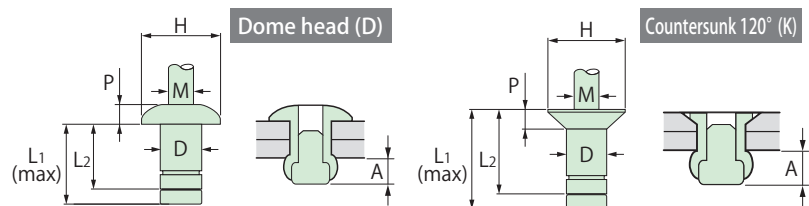


- With the thin mandrel head, the clamp height can be low with removing the mandrel head from the rivet body.



	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Steel	Zinc plated

RoHS Compliance



* SMH Rivets are designed for each customer's specifications. If you have technical questions, please contact us.

Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	A Minimum (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
										Shear(N)	Tensile(N)
※	※	TAP-K-■-HR-■T-SMH	※	※	※	※	※	※	※	※	※
※	※	TAP-D-■-HR-■T-SMH	※	※	※	※	※	※	※	※	※

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

[Reference]

Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	A Minimum (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
										Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.4	TAP-K-41-HR-20T-SMH	2.0	7.6	4.9	2.0	5.3	0.8	1.9	690	1030
4.0 ^{+0.07} _{-0.11}	4.2	TAP-D-52-HR-36T-SMH	3.6	9.7	6.9	2.5	8.0	1.2	2.3	1150	1680

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

Soft Set Rivet

● PAD ■ ABS (Dome head)



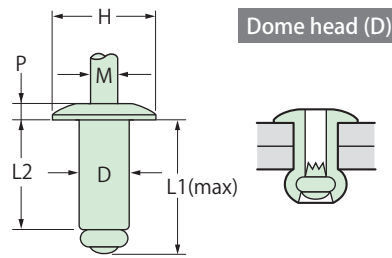
- PAD is a soft set rivet suitable for fastening resin workpieces, especially for PCB and connectors. The rivet body is made of aluminum A1100 which reduces metal dust when fastened.



PAD ■ ABS

	Material	Surface Treatment
Rivet body	Aluminum (A1100)	—
Mandrel	Aluminum	—

RoHS Compliance



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
2.5 ^{+0.07} _{-0.11}	2.6	25M3-43H-C	3.2 - 4.8	10.7	7.3	4.3 ^{+0.1} _{-0.2}	0.7 ^{+0.1} _{-0.2}	1.5	270	330
		25M4-43H-C	4.8 - 6.4	12.3	8.9					
		25M5-43H-C	6.4 - 8.0	14.8	11.4					
3.0 ^{+0.07} _{-0.11}	3.1	30M3	3.2 - 4.8	12.5	8.1	6.0 ±0.3	0.9 ±0.2	1.8	310	420
		30M4	4.8 - 6.4	14.2	9.8					
		30M5	6.4 - 8.0	16.0	11.6					
3.2 ^{+0.07} _{-0.11}	3.3	44	4.8 - 6.4	14.2	9.8	6.4 ±0.3	0.9 ±0.2	1.9	360	490

CC Rivet

● PAD ■ HR-CC (Dome head)



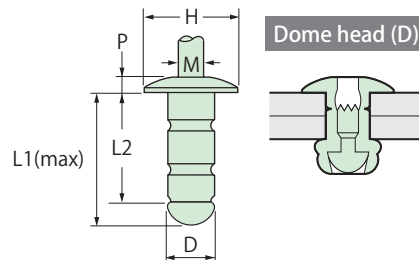
- The CC Rivet is specially developed for fastening semiconductors. It does not affect semiconductor elements during fastening and sufficient heat release effect can be obtained. The rivet body is made of aluminum A1100 which reduces metal dust when fastened.



PAD ■ HR-CC

	Material	Surface Treatment
Rivet body	Aluminum (A1100)	—
Mandrel	Aluminum	—

RoHS Compliance



Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
3.0 ^{+0.09} _{-0.08}	3.2	30M3	1.6 - 4.8	11.4	8.5	6.0 ±0.3	0.9 ±0.2	1.8	420	500
		30M5	4.0 - 8.0	14.9	12.0					

Note : Hole diameter of HR in the workpiece is larger than that of the Standard type.

Ejector Rivet

● BD25M ■ ABHM-EJ (Dome head)



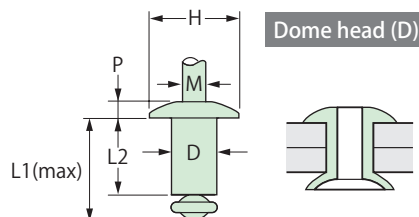
- Ideal fastening for ejector movement. The clamp height can be low with the specially shaped mandrel head removed from the rivet when fastening.



BD25M ■ ABHM-EJ

	Material	Surface Treatment
Rivet body	Brass (C-2600)	Nickel plating
Mandrel	Aluminum	—

RoHS Compliance



Made to order Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
2.5 ^{+0.05} _{-0.10}	2.6	25M ■	※	※	※	4.0	0.8	1.5	※	※

※ The rivet number and strength may differ depending on workpiece material, thickness, hole size and other conditions.

For Soft Works such as plastics

TLrivets®

- TL Rivet collapses widely outward forming three legs. Effective for fastening soft or thin workpieces to prevent dropping from deformed holes of workpieces.

● AD ■ TL (Dome head)

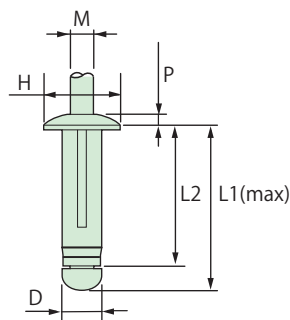


	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

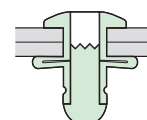
RoHS Compliance



Clamp side



Dome head (D)



AD ■ TL

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.1 ^{+0.07} / _{-0.11}	4.3	54	0.5 - 6.4	22.3	18.2	8.0 ±0.4	1.2 ^{+0.3} / _{-0.2}	2.3	800	1000
		56	5.6 - 9.6	25.7	21.6					
4.9 ^{+0.09} / _{-0.10}	5.1	64	0.6 - 6.4	22.7	18.4	9.6 ±0.4	1.4 ^{+0.3} / _{-0.2}	2.9	1100	1450
		66	5.6 - 9.6	25.5	21.2					
		68	8.8 - 12.8	29.0	24.7					

Note : Hole diameter of TL in the workpiece is larger than that of the Standard type.

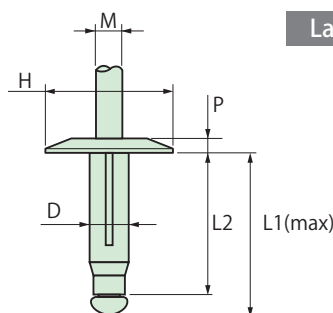
● AD ■ TL-LF (Dome head)



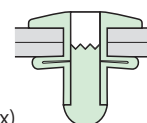
	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Aluminum	—

RoHS Compliance

- This is a large flange-type TL Rivet.
Effective with workpieces having a little bigger hole at the rivet flange.



Large Flange (LF)



AD ■ TL-LF

Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.1 ^{+0.07} / _{-0.11}	4.3	54	0.5 - 6.4	22.3	18.4	12.0	1.5 ±0.3	2.3	470	700
		64	0.5 - 6.4	22.7	18.4					
4.9 ^{+0.17} / _{-0.07}	5.1	66	5.6 - 9.6	25.5	21.2	15.9	1.9 ±0.3	2.9	850	1100

Note : Hole diameter of TL in the workpiece is larger than that of the Standard type.

For Soft Works such as plastics

SW Rivet

● TAP-D ■ SW (Dome head)



● TAP-K ■ SW (Countersunk)



- Open wide to set workpieces during fastening. Effective for fastening soft or thin workpieces.



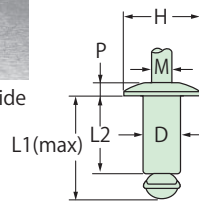
TAP-D ■ SW
TAP-K ■ SW

	Material	Surface Treatment
Rivet body	Aluminum (A5154)	—
Mandrel	Steel	Zinc plated

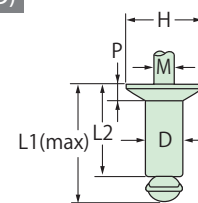
RoHS Compliance



Clamp side



Dome head (D)



Countersunk 120° (K)



Countersunk type is made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)		L1 (mm)	L2 (mm)	H (mm)	P(mm)		M (mm)	Reference Strength	
			Dome head	Countersunk				Dome head	Countersunk		Shear(N)	Tensile(N)
3.2 ^{+0.07} _{-0.11}	3.4	42	1.0 - 2.9	—	10.7	6.3	6.4 ± 0.3	0.9 ± 0.2	1.1 ± 0.2	1.8	960	1080
		43	1.0 - 4.5	2.9-4.5	12.4	8.0						
		44	4.5 - 6.1	4.5-6.1	14.2	9.8						
		46	6.1 - 9.3	6.1-9.3	17.8	13.4						
		48	9.3 - 12.5	9.3-12.5	21.4	17.0						
4.0 ^{+0.07} _{-0.11}	4.2	52	1.2 - 2.9	—	11.3	6.9	8.0 ± 0.4	1.2 ± 0.2	1.4 ± 0.2	2.3	1440	1570
		53	1.2 - 4.5	1.6 - 4.5	13.0	8.6						
		54	4.5 - 6.1	4.5 - 6.1	14.8	10.4						
		56	6.1 - 9.3	6.1 - 9.3	18.4	14.0						
		58	9.3 - 12.5	9.3-12.5	22.0	17.6						
4.8 ^{+0.07} _{-0.11}	5.0	63	1.6 - 4.5	2.3-4.5	14.7	9.3	9.6 ± 0.5	1.4 ± 0.2	1.6 ± 0.2	2.7	2290	2270
		64	4.5 - 6.1	4.5-6.1	16.5	11.1						
		66	6.1 - 9.3	6.1-9.3	20.1	14.7						
		68	9.3 - 12.5	—	23.6	18.2						
		610	12.5-15.7	—	27.0	21.6						

Note : Hole diameter of SW in the workpiece is larger than that of the Standard type.

Hole Lock Rivet

● SD ■ HL (Dome head)



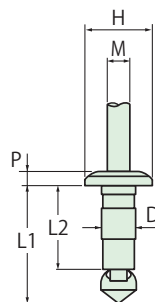
- Fastening soft material works of which holes do not penetrate can be possible.



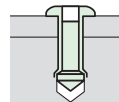
SD ■ HL

	Material	Surface Treatment
Rivet body	Steel (SWCH)	Zinc plating trivalent chrome
Mandrel	Steel	Zinc plated

RoHS Compliance



Dome head (D)



PAT.PENDING
Made to order Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L1 (mm)	L2 (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
									Shear(N)	Tensile(N)
4.0 ^{+0.17} _{-0.05}	4.3~4.4	52	—	12.5max	9.8	8.0 ± 0.3	1.5 ± 0.2	2.3	※	※

※Reference strength may differ depending on workpiece material, thickness, hole size, and other conditions.

For Soft Works such as plastics

POM plastic rivets

POP-POLYRiv®

● PD ■ TL



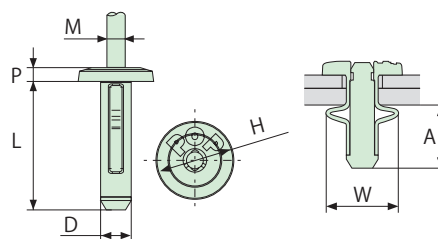
- Can be used in areas requiring calcium chloride for POM.



PD ■ TL

	Material	Surface Treatment
Rivet body	Plastic (POM)	—
Mandrel	Plastic (POM)	—

RoHS Compliance



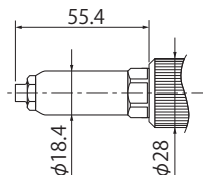
PAT.PENDING Dome head only

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range(mm)	L (mm)	H (mm)	P (mm)	M (mm)	Reference Strength	
								Shear (N)	Tensile (N)
4.8	5.0 ±0.1	5030	1.5 - 3.0	20	12	2	2.6	460	390
		5045	3.0 - 4.5	21.5					
		5060	4.5 - 6.0	23					

For POP-POLYRiv®

POP Rivet tool ProSet1600A-PL

- Length : 272mm
- Weight : 1.08kg
- Air pressure : 0.5-0.6Mpa [Nosepiece: PRN5K]



Reference

A (mm)		W (mm)	
Min. thickness	Max. thickness	Min. thickness	Max. thickness
12.0	11.0	14.0	12.5

Flange and three expanding legs (attachment portion) allow stable fastening to base material.



Rivet With Clip

Clip Rivet



● Clip Rivet is an HR Rivet with a plastic clip on the rivet body. The plastic clip can be attached to thin workpiece with high water-resistant function.

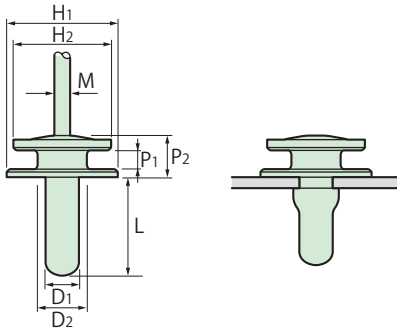
Note : The data may differ depending on work conditions.
Water-resistance testing under actual conditions is necessary.



	Material	Surface Treatment
Rivet body	Aluminum (A5052)	—
Mandrel	Steel	Zinc plated*
Cap	PA66	—

* The surface treatment of part which includes "GJB" is GEOMET®+JL. GEOMET® is a registered trademark of NOF METAL COATINGS GROUP.

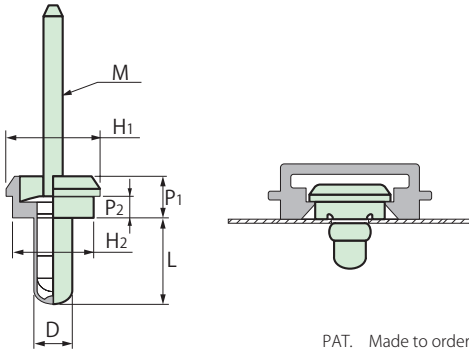
RoHS Compliance



PAT. Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L (mm)	D2 (mm)	P1 (mm)	P2 (mm)	H1 (mm)	H2 (mm)	M (mm)	Reference Strength	
											Shear(N)	Tensile(N)
5.0	5.2	N2WC-AD56L-HRLF-GJB	1.0 - 4.0	14.0	7.0	2.7	6.0	16.0	14.0	2.3	1150	1680

Note : Hole diameter of Clip Rivet in the workpiece is larger than that of the Standard type.



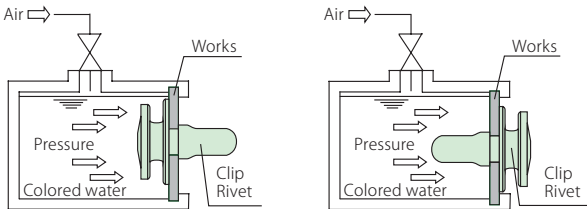
PAT. Made to order

Rivet Diameter D(mm)	Hole Size (mm)	Rivet No. ■	Grip Range (mm)	L (mm)	P1 (mm)	P2 (mm)	H1 (mm)	H2 (mm)	M (mm)
5.0	5.2	AD54HR-LM31650	0.75	12.6	5.7	3.0	11.8	10.2	2.3
		AD54HR-65H68600	0.8	13.6	8.0	5.2	10.2	8.6	

※Hole size and grip range should be inspected based on the results of a functional test conducted under actual conditions.

Water-resistant data

Waterproof function of Clip Rivet is equivalent to IPX8.



No water leakage at the test of IPX8

Test Methods / Galvanic Corrosion

Strength testing methods for POP rivets

Test Conditions

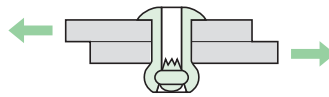
● Workpiece

Material : quenched steel plate Hrc46 or over
Workpiece thickness : 80-100% of maximum workpiece thickness
Diameter of holes in workpiece : Refer to the catalog.

● Test machine

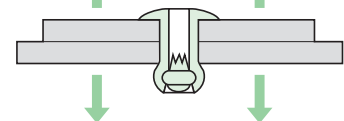
Test machine : The machine specified as JIS B7721
Test speed : 15 mm/min

Shear test



Test methods : Apply shearing load in the direction of the arrows using the tensile test machine and measure the maximum load when the body of POP rivet fractures.

Tensile test



Test methods : Using the specified jig, apply a tensile load in the direction of the arrows with the tensile test machine, and measure the maximum load when the flange of the POP rivet fractures.

Galvanic Corrosion (Corrosion by different metals)

- When metals of different types are dipped into conductive liquid while in contact with each other, low-potential (disnoble) metal and high-potential (noble) metal are charged (+) and (-), thereby composing a local cell, ionizing the metal at the (+) side and dissolving it (corrosion). Such corrosion is called galvanic corrosion, or electro-chemical corrosion, or more popularly, electrolytic corrosion.

Conditions Causing Electrolytic Corrosion (General Environment)

- (1) There is a large potential difference.
- (2) Temperature and humidity are high. Acidity is high.
- (3) The area of the metal at the (+) side is small.
- (4) Salt particles are included in the atmosphere.

Permissible Combination of Different Metals

According to MIL-STD-171A, combinations of different metals are restricted as shown in the table on P.16. Normally, the preferred potential difference between different metals is less than 0.1V.

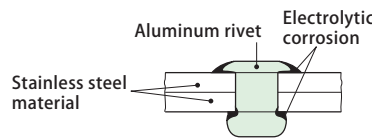
Prevention of Galvanic Corrosion

- Select rivet material that has same potential or small difference in potential.
- Cover either material with metal material of the same potential or with small potential difference as that of the other material. (By plating etc.)
- Insulate Rivet and workpiece with paint.
- Insulate insulation material such as resin. (Coating, bushing, etc.)
- Insulate metal with intermediate potential difference between both materials (by plating, coating, bushing, etc.)
- Select combination with noble metal at the rivet body.

Example of Electrolytic Corrosion of Rivet Junctions

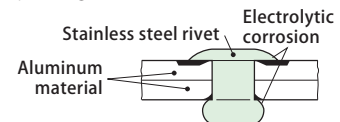
① Aluminum rivet and stainless steel material

The aluminum rivet is significantly corroded where it contacts the workpiece. This is a bad combination.



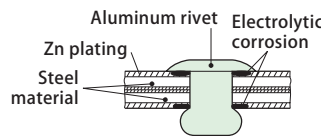
② Stainless steel rivet and aluminum material

Although the aluminum workpiece is corroded at the part in contact with the rivet, the rate of corrosion is small when the area of the workpiece is large. Therefore, the combination is applicable depending on environmental conditions.



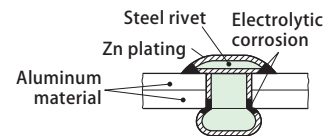
③ Aluminum rivet and steel material (Zn plated)

The steel material (Zn plated) is corroded at the part in contact with the rivet. After that, the aluminum rivet is corroded progressively. Although the combination is rather a bad example, it can withstand long term use if the environmental conditions are favorable.



④ Steel rivet (Zn plated) and aluminum material

The steel rivet (Zn plated) is corroded at the part in contact with the workpiece, then the aluminum workpiece is corroded. However, the rate of corrosion is so small that such a combination is allowable according to environmental conditions.



The combination examples shown above might be used to join outdoor constructions, external parts of automobiles, maritime ship parts, etc. Therefore, designers are requested to take thorough precautions. Any of the combinations above can be satisfactorily applied to general indoor electrical appliances. If you have any technical questions, please do not hesitate to contact us.

Permissible Combination of Different Metals (MIL-STD-171A)

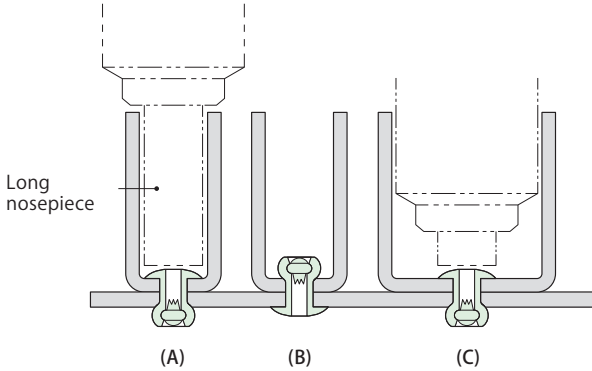
	METAL	ELECTRODE POTENTIAL(V)	PERMISSIBLE COMBINATIONS
1	Ni, Ni plating, Ni-Cu-P (Monel), Cu-Ni alloy, Ti	-0.15	
2	Cu, Cu plating, Ni-Cr alloy, Austenite base SS (SUS304, etc.)	-0.20	
3	Brass (C2600, etc.), bronze (C5101, etc.)	-0.25	
4	Brass (C2800, etc.), bronze (C5212, etc.)	-0.30	
5	18%SS (SUS430, etc.)	-0.35	
6	Cr plating, 12% SS (SUS410, etc.)	-0.45	
7	Sn plating, solder plating	-0.50	
8	Pb, Pb plating High Pb alloy	-0.55	
9	Drumlin base Al (A2000 base, 7000 base)	-0.60	
10	Carbon steel, low-alloy steel	-0.70	
11	Al other than Drumlin base (A5000 base, etc.)	-0.75	
12	Al other than Si (A1000 base etc.) Cd plating	-0.80	
13	Hot Zn plating	-1.05	
14	Zn direct alloy, Zn plating	-1.10	
15	Mg, Mg alloy	-1.60	

○ Noble ● Disnoble Combinations of metals connected with lines are permissible.

Relationship between rivet and workpiece

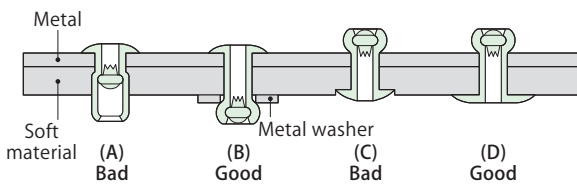
Channel Material

If the tool does not reach the bottom of a channel material, use the long nosepiece. (A) The maximum applicable diameter of the long nosepiece is the same as the diameter of the rivet flange and the maximum length is 20mm. In this case, use the long mandrel rivet. If method (A) is not applicable, set the rivet from the opposite side (B). In (C), a standard rivet and tool can be used.



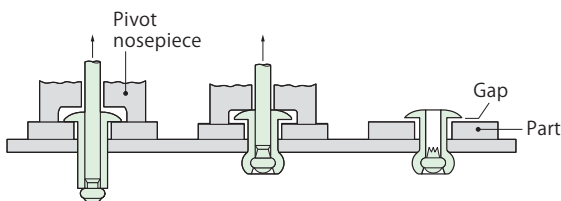
Soft workpieces

When a standard type rivet is used to set a soft material onto a metal material, fracture of the soft material should be prevented when setting (A). When the soft material is positioned at the clamp side, use a metal washer (B). When it is located at the flange side, use a large flange (D) to distribute the stress.



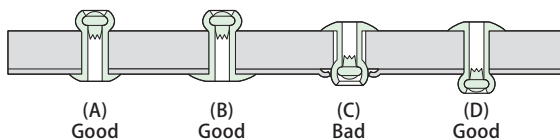
Pivot Fastening

When a fastened part needs to be rotated, use the pivot nosepiece to provide a small gap.



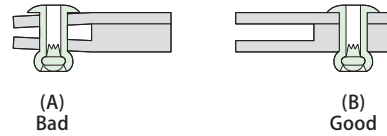
Thick Plate and Thin Plate

When a thick plate metal plate is fastened with a thin metal plate, it is best to locate the stronger thick plate side at the fastened side (A). In particular, when the diameter of a hole in a thin plate side is large, use the large flange (B). When the thin plate is located at the fastened side, it is important to make the diameter of the thick plate side smaller (D) to prevent a fracturing of the thin plate (C).



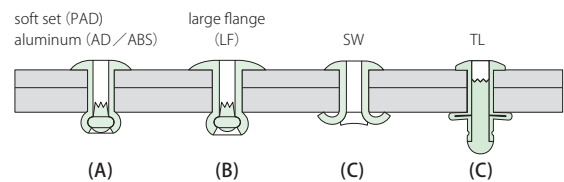
Gap Fastening

The fastening shown in (A) is not suitable for POP Rivets because of the high clinching force. Select (B).



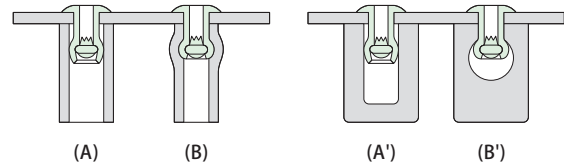
Resin Material

Select a soft set aluminum rivet (A), large flange rivet (B), SW rivets (C) or TL rivet (D) according to the strength of the resin workpiece. The standard rivets are also applicable to a high-strength resin material.



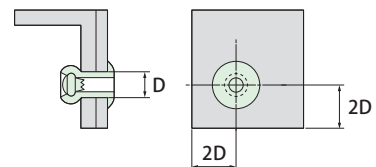
Fastening in Blind Hole

Taking advantage of the swollen rivet diameter after setting, it is possible to apply the rivets to straight-through holes (A and A'). However, for (B) or (B') it is best to have a large setting force.



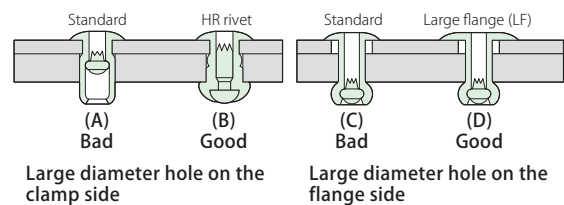
Edge Distance

To make the best use of the strength provided by a rivet, take at least minimum distance twice the rivet diameter D from the rivet center to the end of the workpiece.



Diameter of the Workpiece Hole

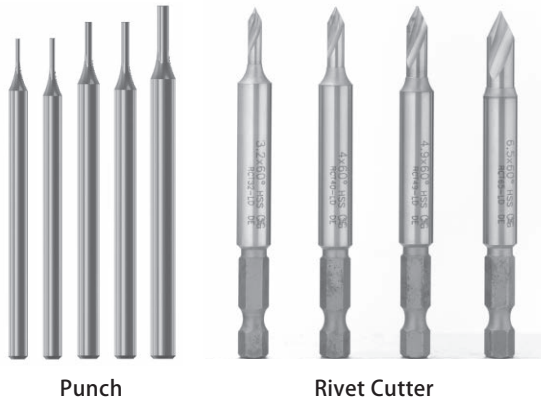
The standard diameter of the hole in the workpiece is the rivet diameter +0.1mm (or +0.2mm). However, a maximum increment of +0.4mm is allowed according to the material, plate thickness, and rivet size. When the diameter of the hole at the clamp side is larger, the mandrel (A) might penetrate. Therefore, HR rivet (B) is more suitable. Use a large flange (D) with a large diameter on the flange side.



Removing POP Rivets

Use Rivet Cutter Kit (Rivet Cutter + Punch) to remove POP rivets.

- Tool revolutions per minute should be adjusted between 500 rpm and 1,000 rpm to maximize the tool function and lifespan.
- When removing steel, stainless steel and HR rivets with a punch, workpieces might be damaged. Please be careful, especially with thin workpieces.



Punch

Rivet Cutter

Rivet Cutter Kit

Rivet Diameter (mm)	Rivet Cutter Kit No.	
	A+B For Open Rivet	A+C For Closed Rivet
3.2	RCK32-0	RCK32-C
4.0	RCK40-0	RCK40-C
4.8	RCK48-0	RCK48-C
6.4	RCK64-0	RCK64-C

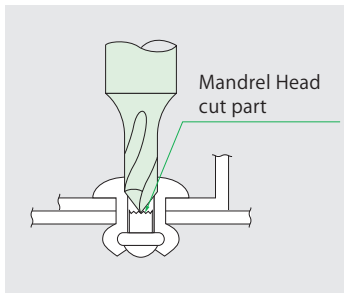
* Rivet Cutter Kit is a set that includes Rivet cutter and the following punches.

Rivet Cutter · Punch

Rivet Diameter (mm)	Rivet Cutter No.	Punch No.	
	A	B For Open Rivet	C For Closed Rivet
3.2	RCT32-LD	MPP180	MPP140
4.0	RCT40-LD	MPP225	MPP180
4.8	RCT49-LD	MPP260	MPP225
6.4	RCT65-LD	MPP380	MPP260

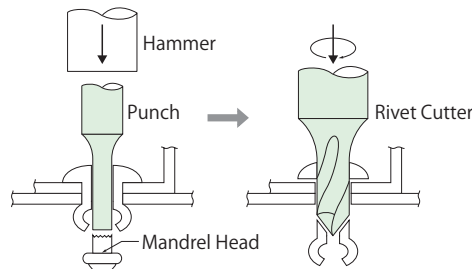
Removing Methods

- Use this method if the workpiece is thin, and the rivet flange can not be drilled properly because the point of the Rivet Cutter hits the mandrel.



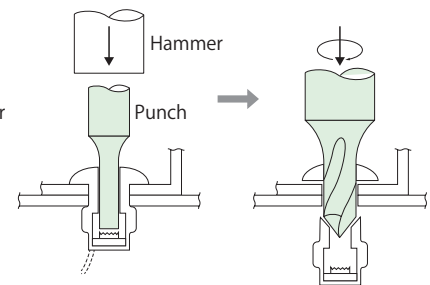
Open Rivet

- 1 Push out the mandrel head with the punch.
- 2 Then drill the rivet flange and remove it with the Rivet Cutter.

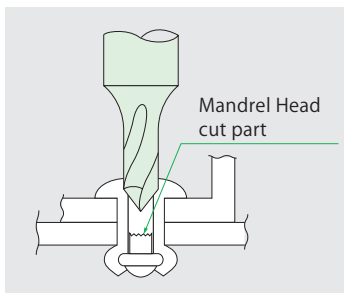


Closed Rivet

- 1 Push out the mandrel head with the punch.
- 2 Then drill the rivet flange and remove it with the Rivet Cutter.

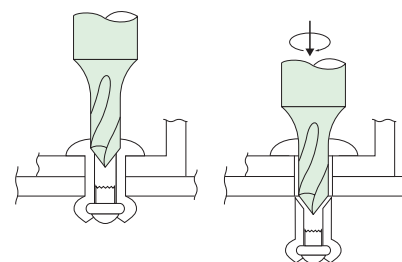


- Use this method if the workpiece is thick, and the rivet flange can be drilled before the point of the Rivet Cutter hits the mandrel.



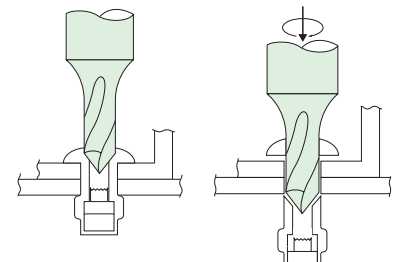
Open Rivet

- 1 Drill the rivet flange and remove it with the Rivet Cutter.



Closed Rivet

- 1 Drill the rivet flange and remove it with the Rivet Cutter.



Guide for POP Rivet tools

			φ2.0	φ2.4	φ3.0(3.2)	φ4.0	φ4.8	φ6.4	
ProSet 1600A	Air hydraulic								1.05kg
ProSet 2500A	Air hydraulic								1.31kg
ProSet 3400	Air hydraulic								2.00kg
ProSet 3400-8S	Air hydraulic								2.00kg
PowerLink 1500i	Air hydraulic								0.79kg
PB2500	Battery charging								1.70kg
ER600A	Electric								2.10kg
PS15	Manual								0.60kg
PS20	Manual								2.10kg
PS40	Manual								1.90kg

※The above is used as a guide for fastening standard rivets (made of aluminum and steel).

Standard

High Retention
"HR"

Structural rivets

Closed

Low Height
Clamping

For PCB

For Soft Works

With Clip

Technical Data

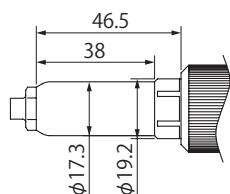
Fastening Tools

POP Rivet tools

ProSet1600A

- Length : 272mm
- Height : 227mm
- Weight : 1.05kg
- Air pressure : 0.5 ~ 0.6MPa

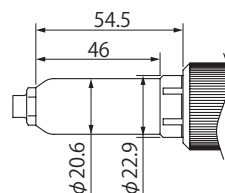
Air hydraulic



ProSet2500A

- Length : 304mm
- Height : 259mm
- Weight : 1.31kg
- Air pressure : 0.5 ~ 0.6MPa

Air hydraulic



(Option) Optional jaws and jaw pushers are recommended for fastening stainless steel mandrels.

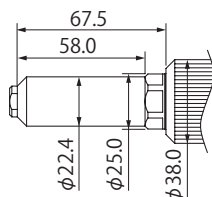
Rivet No.	Rivet Diameter	Jaw	Jaw Pusher
4	φ3.2	* PRG540-46B	* PRS2500-33
5	φ4.0		
6	φ4.8	* PRL650-01	* PRS2500-32

Rivet tool	Standard						High Retention					Structural rivets				Closed	
	TAP-BS AD-BS-LF	TAP-SSBS	AD-ABS AD-ABS-LF	SD-BS SD-BS-LF	SSD-BS/ SSBS SSD-BS/ SSBS-LF	TCP-BSB TCP-BS	TAP-HR TAP-HR-LF	AD-AHR	SD-HR SD-HR-LF	SSD-SSHR	TAP-SSHR- LF	SD-HS	AD-AHS	UG	SD-CD	AD	AD-AH
ProSet 1600A	20M~5	3~4	3~5	3~5	4	4~5	4~5	4	4	—	—	—	—	—	—	4	4~5
ProSet 2500A	30M~6	4~6	4~6	30M~6	4~6	4~5	4~6	4~6	4~6	4~5	6	—	—	—	—	4~6	4~6
ProSet 3400	6~8	6	—	6~8	6	—	6~8	—	5~6	5~6	6	6~8	8	6~8	8	6~8	—
ProSet 3400-8S	8	—	—	6~8	6	—	6~8	—	6~8	6	6	6~8	8	—	—	8	—
PowerLink 1500i	20M~4	3~4	3~4	3~4	—	4	4	—	—	—	—	—	—	—	—	4	4
PB2500	3~6	3~6	3~6	3~6	4~6	4~5	4~6	4~6	4~6	4	6	—	—	—	—	4~6	4~6
ER600A	3~6	3~6	3~6	3~6	4~5	4~5	4~6	4~5	4~5	4	6	—	—	—	—	4~6	4~6
PS15	20M~6	3~6	3~6	3~6	4~5	4~5	4~6	4~5	4~5	4	6	—	—	—	—	4~5	4~6
PS20 PS40	30M~8	4~6	4~6	30M~8	4~6	4~5	4~8	4~6	4~6	4~6	6	—	8	—	—	4~8	4~6

ProSet3400 / ProSet3400-8S

- Length : 333mm
- Height : 315mm
- Weight : 2.00kg
- Air pressure : 0.5 ~ 0.6MPa

Air hydraulic



ProSet3400

* UG, SD-HS and SD-CD can be fastened.
SD8 ■ HR is not possible.

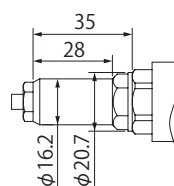
ProSet3400-8S

* SD8 ■ HR can be fastened.
UG and SD-CD are not possible.

PowerLink1500i

- Length : 355mm
- Width : 108mm
- Weight : 0.79kg
- Air pressure : 0.45 ~ 0.55MPa

Air hydraulic



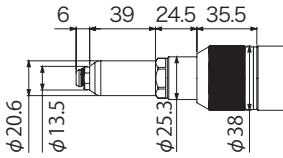
PB2500



- Length : 320mm
- Height : 240mm
- Weight : 1.7kg
(including battey)

- Battery pack (standard) :
DC18.0V、1.5Ah
- Battery pack (optional) :
DC18.0V、3.0Ah

Battery charging ※ Optional "Belt Hook Kit (Tp134-500)" is ready.



(Option) Optional jaws and jaw pushers are recommended for fastening stainless steel mandrels.

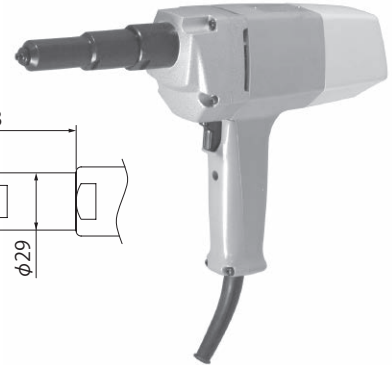
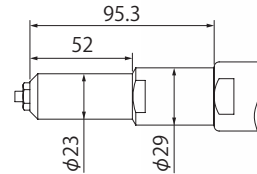
Rivet No.	Rivet Diameter	Jaw	Jaw Pusher Assembly
4	φ3.2	*PRG540-46B	*TP124-638
5	φ4.0		*TP124-618
6	φ4.8	*PRL650-01	*TP124-620



ER600A

- Length : 340mm
- Height : 215mm
- Weight : 2.10kg
- Voltage : AC100V

Electric

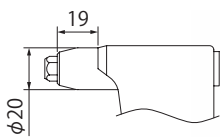


Rivet tool	Closed				Low Height Clamping					For PCB			For Soft Works			Clip
	AD-SSH	SSD-SSH	CD	Cap	SK-PTM	TAP-BHM	SD-BHM	SSD-BHM	TAP-SMH	PAD-ABS	PAD-HR-CC	BD	AD-TL AD-TL-LF	TAP-SW	SD-HL	Clip rivet
ProSet 1600A	4~5	4	4	4~5	30M	20M~5	4	4	4~5	25M~4	30M	25M	5	4~5	—	5
ProSet 2500A	4~6	4~6	4~6	4~6	30M	4~6	4~6	4~5	4~5	30M~4	30M	—	5~6	4~6	5	5
ProSet 3400	6	6	6	—	—	6	6	—	—	—	—	—	—	—	5	—
ProSet 3400-8S	—	6	—	—	—	—	6	—	—	—	—	—	—	—	—	—
PowerLink 1500i	4	—	4	4	30M	20M~4	4	—	4	25M~4	30M	25M	—	4	—	—
PB2500	4~6	4~6	4~6	4~6	30M	3~6	4~6	4~5	4~5	25M~4	30M	25M	5~6	4~6	5	5
ER600A	4~6	4~5	4~6	4~6	30M	3~6	4	4~5	4~5	25M~4	30M	25M	5~6	4~6	5	5
PS15	4~6	4~5	4~5	4~6	30M	20M~6	4	4~5	4~5	25M~4	30M	25M	5~6	4~6	5	5
PS20 PS40	4~6	4~6	4~6	4~6	30M	4~6	4~6	4~5	4~5	30M~4	30M	—	5~6	4~6	5	5

PS15

- Length : 82mm
- Height : 250mm
- Weight : 0.60kg

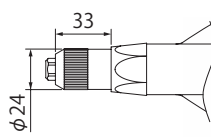
Manual



PS20

- Length : 815mm (lengthen)
310mm (shrink)
- Width : 190mm
- Weight : 2.10kg

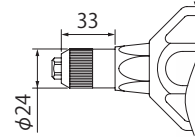
Manual



PS40

- Length : 510mm
- Width : 155mm (open)
605mm (close)
- Weight : 1.90kg

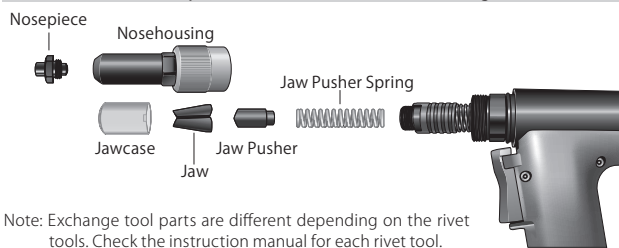
Manual



POP Rivet Tool Parts List

- Please select the proper tool parts depending on the POP Rivet size, mandrel diameter, etc

– Example of the inside of the rivet tool housing –



Note: Exchange tool parts are different depending on the rivet tools. Check the instruction manual for each rivet tool.

Marked * : Option

ProSet 1600A

Rivet				Nosepiece		Jaw	Jaw Pusher	
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole
Open	20M■	φ2.0	φ1.1	*PRN214	φ1.4	*PRG402-02	PRS1600-69	φ1.9
	3■	φ2.4	φ1.4	PRN314	φ1.7	PRG402-8A		
	25M■	φ2.5	φ1.5					
	30M■PTM	φ3.0	φ1.8	*PRN4K-SK30M	φ2.5		PRS1600-68	φ2.9
	30M■ / 30■		φ1.8	PRN414	φ2.2			
	Closed	4■	φ3.2					
φ3.2			φ1.6	*PRN424	φ1.8			
			φ1.8	*PRN434	φ2.0			
		Open	5■	φ4.1	φ2.0	PRN414		
φ4.0 / φ4.1 φ4.9 / φ5.2				φ2.3	PRN514	φ2.7		
				φ2.4				
Closed	5■	φ4.0	φ2.2	*PRN524	φ2.4			
		φ5.0	φ2.3	*PRN534	φ2.5			
				φ2.3				

ProSet 2500A

Rivet				Nosepiece		Jaw	Jaw Pusher	
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole
Open	30M ■ PTM	φ 3.0	φ 1.8	*PRN4K-SK30M	φ 2.5	13300	PRS2500-69	φ 2.9
	30M ■ / 30 ■		φ 1.8					
	4 ■	φ 3.2	φ 1.8	PRN414	φ 2.2			
			φ 1.9					
φ 3.2		φ 2.2	*PRN4K	φ 2.5				
		φ 1.6	*PRN424	φ 1.8				
	φ 1.8	*PRN434	φ 2.0					
	φ 2.0							
Closed	φ 4.1	φ 1.9	PRN414	φ 2.2				
		φ 2.3						
	5 ■	φ 4.0 / φ 4.1 φ 4.9 / φ 5.2	φ 2.4	PRN514	φ 2.7			
			φ 2.7					
φ 4.0		φ 2.8	*PRN5K	φ 3.1				
		φ 2.2	*PRN524	φ 2.4				
	φ 2.3							
	φ 5.0	*PRN534	φ 2.5					
Open	6 ■	φ 4.8 / 4.9	φ 2.7	PRN614	φ 3.3	PRS2500-68	φ 3.9	
			φ 2.9					
			φ 3.2	*PRN6K	φ 3.8			
			φ 3.4	*PRN624	φ 2.9			
φ 2.6			*PRN634	φ 3.0				
φ 2.7								
Closed			φ 6.0	φ 3.0				
				φ 2.9	PRN614			φ 3.3

ProSet 3400

Rivet				Nosepiece		Jaw	Jaw Pusher		
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole	
Open	5 ■	φ4.0	φ2.7 φ2.8	*PRN5K	φ3.1	PRL650-01	*FAN276-064	φ2.9	
Open	6 ■	φ4.8、4.9	φ2.7 φ2.9 φ3.0	*PRN6F	φ3.4		DPN276-079	φ4.6	
		φ4.8 SK/AK/SSK-6-UG	φ3.0	*PRN6P					
		φ4.8 SD/AD/SSD-6-UG(X)	φ3.0	*PRN6K	φ3.8				
		Closed	φ4.8、4.9	φ3.2 φ3.4	*PRN624				φ2.9
				φ3.0 φ3.0	*PRN6F				φ3.4
Open	8 ■	φ6.4	φ3.8 φ3.9 φ4.0	PRN8F	φ4.3				
		φ6.4 SD/AD/SSD-8-UG(X)	φ4.0	*PRN8P5					
		φ6.4 SK/AK/SSK-8-UG		*PRN8F5					
		φ6.4 SD-8-WG/CD		PRN8P					
		Closed		φ6.4					φ3.7

ProSet 3400-8S

Rivet				Nosepiece		Jaw	Jaw Pusher	
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole
Open	6 ■	φ4.8	φ2.9	*PRN6F	φ3.4	PRL650-01	DPN276-167	φ5.1
Closed			φ3.2	*PRN6F	φ3.8			
			φ3.4	*PRN6K	φ3.8			
			φ3.0	*PRN6F	φ3.4			
Open	8 ■	φ6.4	φ3.8	PRN8F	φ4.3			
			φ3.9					
			φ4.0	PRN8S	φ5.0			
			φ4.6					
Closed	φ3.7	*PRN822	φ4.3					

Power Link 1500i

Rivet				Nosepiece		Jaw	Jaw Pusher	
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole
Open	20M ■	φ2.0	φ1.1	*PRN214	φ1.4	*PRG402-02	*PL1500i-02 / 20M	φ1.6
	3 ■	φ2.4	φ1.4	PRN314	φ1.7	PRG402-8A	PL1500i-02	φ2.4
	25M ■	φ2.5	φ1.5	*PRN4K-SK30M	φ2.5			
	30M ■ PTM	φ3.0	φ1.8		φ2.2			
	30M ■ / 30 ■	φ3.2	φ1.8		φ2.2			
Closed	4 ■	φ3.2	φ1.9	PRN414	φ2.2			
		φ3.2	φ1.6	*PRN424	φ1.8			
		φ3.2	φ1.8	*PRN434	φ2.0			
		φ4.1	φ1.9	PRN414	φ2.2			
		φ4.1	φ1.9	PRN414	φ2.2			

Marked* : Option

**PB
2500**

Rivet				Nosepiece		Jaw	Jaw Pusher				
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole			
Open	3■	φ2.4	φ1.4	*TP124-539	φ1.7	*PRG540-46B	*TP124-547	φ1.9			
	25M■	φ2.5	φ1.5								
	30M■ / 30■	φ3.0	φ1.8	TP124-540	φ2.2	13300	TP124-635	φ2.3			
	4■	φ3.2	φ1.8								
			φ1.9								
φ2.2			TP124-541				φ2.7	TP124-548	φ2.9		
φ1.6			*TP124-544				φ1.8				
Closed	4■	φ3.2	φ1.8	*TP124-615	φ2.0		TP124-635	φ2.3			
			φ2.0								
			φ1.9	TP124-540	φ2.2		TP124-548	φ2.9			
			Open	5■	φ4.1				φ2.3	TP124-541	φ2.7
									φ2.4		
φ2.7	TP124-542	φ3.3									
φ2.8											
Closed	5■	φ4.0	φ2.2	*TP124-545	φ2.4	TP124-549	φ3.9				
			φ2.3								
			φ5.0					φ2.3			
Open	6■	φ4.8	φ2.7	TP124-542	φ3.3	TP124-549	φ3.9				
			φ2.9								
			φ3.2	*TP124-543	φ3.8						
			φ3.4								
			Closed	6■	φ4.9			φ2.6	*TP124-546	φ2.9	
φ2.7											
φ3.0	TP124-542	φ3.3									
φ3.9											

**ER
600A**

Rivet				Nosepiece		Jaw	Jaw Pusher							
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole						
Open	3■	φ2.4	φ1.4	*PRN314	φ1.7	PRG540-46B	ER600-05C	φ3.4						
	25M■	φ2.5	φ1.5											
	30M■PTM	φ3.0	φ1.8	*PRN4K-SK30M	φ2.5									
	30M■ / 30■		φ1.8	PRN414	φ2.2									
	Closed	4■	φ3.2		φ1.9				*PRN4K	φ2.5				
				φ2.2	*PRN424					φ1.8				
				φ1.6	*PRN434					φ2.0				
				φ1.8	PRN414					φ2.2				
φ2.0			Open	5■					φ4.0 / φ4.1 φ4.9 / φ5.2	φ2.3	PRN514	φ2.7		
φ2.4										*PRN5K	φ3.1			
φ2.7											*PRN524	φ2.4		
φ2.8					*PRN534							φ2.5		
Closed	φ4.0	φ2.2	Open						6■			φ4.8 / 4.9	φ2.7	PRN614
		φ2.3								φ2.9			*PRN624	
		φ2.6								*PRN634	φ3.0			
		φ2.7			PRN614					φ3.3				
Closed	φ6.0	φ2.9												

PS15

Rivet				Nosepiece		Jaw	Jaw Pusher		
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole	
Open	20M■	φ2.0	φ1.1	*TZ074-828	φ1.4	FAM400-084	DPM400-086	φ5.0	
	3■	φ2.4	φ1.4	DPM400-A08	φ2.0				
	25M■	φ2.5	φ1.5						
	30M■ / 30■	φ3.0	φ1.8	DPM400-B08	φ2.2				
			φ1.9						
	Closed	4■	φ3.2	φ2.2	DPM400-C08				φ2.7
				φ1.6	DPM400-A08				φ2.0
			φ3.2	φ1.8					
			φ2.0						
Open	5■	φ4.0 / φ4.1 φ4.9 / φ5.2	φ1.9	DPM400-B08	φ2.2				
				φ2.3	DPM400-C08				φ2.7
				φ2.4					
				φ2.7	DPM400-D08				φ3.2
				φ2.8					
			Closed						φ2.2
	φ2.3								
	φ5.0	φ2.3							
Open		φ4.8 / 4.9			φ2.7				DPM400-D08
				φ2.9					
				φ2.6					
				φ2.7					
Closed			φ2.9						
			φ6.0						

**PS20
PS40**

Rivet				Nosepiece		Jaw	Jaw Pusher		
Type	Rivet No.	Diameter	Mandrel	Part No.	Hole	Part No.	Part No.	Hole	
Open	4	30M / 30	3.0	1.8	DPM400-B10	2.3	FAM400-020	DPM400-047	4.8
			3.2	1.9					
		3.2	2.2	DPM400-B10	2.3				
			1.6			DPM400-C10			
4.1		1.8	DPM400-C10	2.8					
		2.0			DPM400-D10	3.3			
5		1.9	DPM400-C10	2.8					
		2.3			DPM400-D10	3.3			
4.9 / 5.2	2.4	DPM400-C10	2.8						
	2.7			DPM400-C10	2.8				
5.0	2.2	DPM400-D10	3.3						
	2.3			DPM400-E10	3.8				
6	4.8 / 4.9	2.7	DPM400-D10			3.3			
		2.9		DPM400-D10	3.3				
7	4.8 / 4.9	3.2	DPM400-D10			3.3			
		3.4		DPM400-D10	3.3				
8	6.4	2.6	DPM400-F10			4.6			
		2.7		DPM400-F10	4.6				
9	6.4	3.0	DPM400-F10			4.6			
		3.7		DPM400-F10	4.6				
10	6.4	2.9	DPM400-F10			4.6			
		3.8		DPM400-F10	4.6				
11	6.4	3.9	DPM400-F10			4.6			
		4.0		DPM400-F10	4.6				
12	6.4	3.7	DPM400-F10			4.6			
		4.0		DPM400-F10	4.6				
13	6.4	4.0	DPM400-F10			4.6			
		4.3		DPM400-F10	4.6				
14	6.4	4.3	DPM400-F10			4.6			
		4.6		DPM400-F10	4.6				
15	6.4	4.6	DPM400-F10			4.6			
		4.9		DPM400-F10	4.6				
16	6.4	4.9	DPM400-F10			4.6			
		5.2		DPM400-F10	4.6				
17	6.4	5.2	DPM400-F10			4.6			
		5.5		DPM400-F10	4.6				
18	6.4	5.5	DPM400-F10			4.6			
		5.8		DPM400-F10	4.6				
19	6.4	5.8	DPM400-F10			4.6			
		6.1		DPM400-F10	4.6				
20	6.4	6.1	DPM400-F10			4.6			
		6.4		DPM400-F10	4.6				
21	6.4	6.4	DPM400-F10			4.6			
		6.7		DPM400-F10	4.6				
22	6.4	6.7	DPM400-F10			4.6			
		7.0		DPM400-F10	4.6				
23	6.4	7.0	DPM400-F10			4.6			
		7.3		DPM400-F10	4.6				
24	6.4	7.3	DPM400-F10			4.6			
		7.6		DPM400-F10	4.6				
25	6.4	7.6	DPM400-F10			4.6			
		7.9		DPM400-F10	4.6				
26	6.4	7.9	DPM400-F10			4.6			
		8.2		DPM400-F10	4.6				
27	6.4	8.2	DPM400-F10			4.6			
		8.5		DPM400-F10	4.6				
28	6.4	8.5	DPM400-F10			4.6			
		8.8		DPM400-F10	4.6				
29	6.4	8.8	DPM400-F10			4.6			
		9.1		DPM400-F10	4.6				
30	6.4	9.1	DPM400-F10			4.6			
		9.4		DPM400-F10	4.6				
31	6.4	9.4	DPM400-F10			4.6			
		9.7		DPM400-F10	4.6				
32	6.4	9.7	DPM400-F10			4.6			
		10.0		DPM400-F10	4.6				
33	6.4	10.0	DPM400-F10			4.6			
		10.3		DPM400-F10	4.6				
34	6.4	10.3	DPM400-F10			4.6			
		10.6		DPM400-F10	4.6				
35	6.4	10.6	DPM400-F10			4.6			
		10.9		DPM400-F10	4.6				
36	6.4	10.9	DPM400-F10			4.6			
		11.2		DPM400-F10	4.6				
37	6.4	11.2	DPM400-F10			4.6			
		11.5		DPM400-F10	4.6				
38	6.4	11.5	DPM400-F10			4.6			
		11.8		DPM400-F10	4.6				
39	6.4	11.8	DPM400-F10			4.6			
		12.1		DPM400-F10	4.6				
40	6.4	12.1	DPM400-F10			4.6			
		12.4		DPM400-F10	4.6				
41	6.4	12.4	DPM400-F10			4.6			
		12.7		DPM400-F10	4.6				
42	6.4	12.7	DPM400-F10			4.6			
		13.0		DPM400-F10	4.6				
43	6.4	13.0	DPM400-F10			4.6			
		13.3		DPM400-F10	4.6				
44	6.4	13.3	DPM400-F10			4.6			
		13.6		DPM400-F10	4.6				
45	6.4	13.6	DPM400-F10			4.6			
		13.9		DPM400-F10	4.6				
46	6.4	13.9	DPM400-F10			4.6			
		14.2		DPM400-F10	4.6				
47	6.4	14.2	DPM400-F10			4.6			
		14.5		DPM400-F10	4.6				
48	6.4	14.5	DPM400-F10			4.6			
		14.8		DPM400-F10	4.6				
49	6.4	14.8	DPM400-F10			4.6			
		15.1		DPM400-F10	4.6				
50	6.4	15.1	DPM400-F10			4.6			
		15.4		DPM400-F10	4.6				
51	6.4	15.4	DPM400-F10			4.6			
		15.7		DPM400-F10	4.6				
52	6.4	15.7	DPM400-F10			4.6			
		16.0		DPM400-F10	4.6				
53	6.4	16.0	DPM400-F10			4.6			
		16.3		DPM400-F10	4.6				
54	6.4	16.3	DPM400-F10			4.6			
		16.6		DPM400-F10	4.6				
55	6.4	16.6	DPM400-F10			4.6			
		16.9		DPM400-F10	4.6				
56	6.4	16.9	DPM400-F10			4.6			
		17.2		DPM400-F10	4.6				
57	6.4	17.2	DPM400-F10			4.6			
		17.5		DPM400-F10	4.6				
58	6.4	17.5	DPM400-F10			4.6			
		17.8		DPM400-F10	4.6				
59	6.4	17.8	DPM400-F10			4.6			
		18.1		DPM400-F10	4.6				
60	6.4	18.1	DPM400-F10			4.6			
		18.4		DPM400-F10	4.6				
61	6.4	18.4	DPM400-F10			4.6			
		18.7		DPM400-F10	4.6				
62	6.4	18.7	DPM400-F10			4.6			
		19.0		DPM400-F10	4.6				
63	6.4	19.0	DPM400-F10			4.6			
		19.3		DPM400-F10	4.6				
64	6.4	19.3	DPM400-F10			4.6			
		19.6		DPM400-F10	4.6				
65	6.4	19.6	DPM400-F10			4.6			
		19.9		DPM400-F10	4.6				
66	6.4	19.9	DPM400-F10			4.6			
		20.2		DPM400-F10	4.6				
67	6.4	20.2	DPM400-F10			4.6			
		20.5		DPM400-F10	4.6				
68	6.4	20.5	DPM400-F10			4.6			
		20.8		DPM400-F10	4.6				
69	6.4	20.8	DPM400-F10			4.6			
		21.1		DPM400-F10	4.6				
70	6.4	21.1	DPM400-F10			4.6			
		21.4		DPM400-F10	4.6				
71	6.4	21.4	DPM400-F10			4.6			
		21.7		DPM400-F10	4.6				
72	6.4	21.7	DPM400-F10			4.6			
		22.0		DPM400-F10	4.6				
73	6.4	22.0	DPM400-F10			4.6			
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		23.5		DPM400-F10	4.6				
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		23.8		DPM400-F10	4.6				
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		24.7		DPM400-F10	4.6				
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		25.0		DPM400-F10	4.6				
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		25.9		DPM400-F10	4.6				
86	6.4	25.9	DPM400-F10			4.6			
		26.2		DPM400-F10	4.6				
87	6.4	26.2	DPM400-F10			4.6			
		26.5		DPM400-F10	4.6				
88	6.4	26.5	DPM400-F10			4.6			
		26.8		DPM400-F10	4.6				
89	6.4	26.8	DPM400-F10			4.6			
		27.1		DPM400-F10	4.6				
90	6.4	27.1	DPM400-F10			4.6			
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91	6.4	27.4	DPM400-F10			4.6			
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92	6.4	27.7	DPM400-F10			4.6			
		28.0		DPM400-F10	4.6				
93	6.4	28.0	DPM400-F10			4.6			
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95	6.4	28.6	DPM400-F10			4.6			
		28.9		DPM400-F10	4.6				
96	6.4	28.9	DPM400-F10			4.6			
		29.2		DPM400-F10	4.6				
97	6.4	29.2	DPM400-F10			4.6			
		29.5		DPM400-F10	4.6				
98	6.4	29.5	DPM400-F10			4.6			
		29.8		DPM400-F10	4.6				
99	6.4	29.8	DPM400-F10			4.6			
		30.1		DPM400-F10	4.6				
100	6.4	30.1	DPM400-F10			4.6			
		30.4		DPM400-F10	4.6				
101	6.4	30.4	DPM400-F10			4.6			
		30.7		DPM400-F10	4.6				
102	6.4	30.7	DPM400-F10			4.6			
		31.0		DPM400-F10	4.6				
103	6.4	31.0	DPM400-F10			4.6			
		31.3		DPM400-F10	4.6				
104	6.4	31.3	DPM400-F10			4.6			
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105	6.4	31.6	DPM400-F10			4.6			
		31.9		DPM400-F10	4.6				
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		32.2		DPM400-F10	4.6				
107	6.4	32.2	DPM400-F10			4.6			
		32.5		DPM400-F10	4.6				
108	6.4	32.5	DPM400-F10			4.6			
		32.8		DPM400-F10	4.6				
109	6.4	32.8	DPM400-F10			4.6			
		33.1		DPM400-F10	4.6				
110	6.4	33.1	DPM400-F10			4.6			
		33.4		DPM400-F10	4.6				
111	6.4	33.4	DPM400-F10			4.6			
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112	6.4	33.7	DPM400-F10			4.6			
		34.0		DPM400-F10	4.6				
113	6.4	34.0	DPM400-F10			4.6			
		34.3		DPM400-F10	4.6				
114	6.4	34.3	DPM400-F10			4.6			
		34.6		DPM400-F10	4.6				
115	6.4	34.6	DPM400-F10			4.6			
		34.9		DPM400-F10	4.6				
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		35.2		DPM400-F10	4.6				
117	6.4	35.2	DPM400-F10			4.6			
		35.5		DPM400-F10	4.6				
118	6.4	35.5	DPM400-F10			4.6			
		35.8		DPM400-F10	4.6				
119	6.4	35.8	DPM400-F10			4.6			
		36.1		DPM400-F10	4.6				
120	6.4	36.1	DPM400-F10			4.6			
		36.4		DPM400-F10	4.6				
121	6.4	36.4	DPM400-F10			4.6			

Special Nosepieces for POP Rivet tools

○ Nosepieces for Colored POP rivets

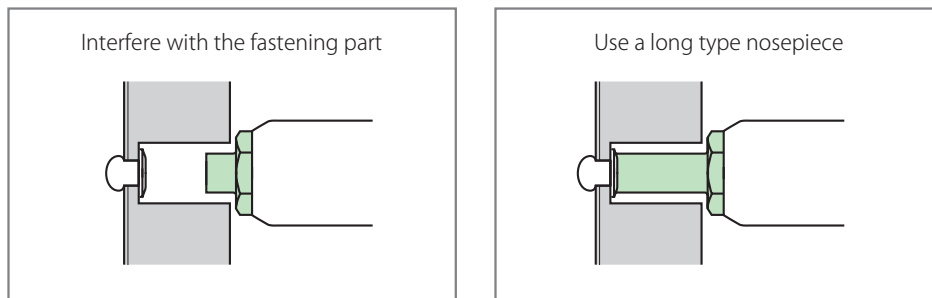
- Fastening a color POP rivet with a standard nosepiece may leave a mark (discoloration or peeling) on the rivet flange. To alleviate such markings, we provide nosepieces designed specifically for color rivets. (Made to order)

※ Please contact us for technical inquiries of "Colored rivets & Nosepiece for Color rivets".
 ※ Following Nosepieces for Colored rivets are for standard type dome head rivets only.
 Applicable products: Colored types of "TAPD-BS, TAPD-SSBS, AD-ABS, SD-BS, SSD-SSBS".

COLOR314	COLOR414	COLOR514	COLOR614

○ Long type Nosepieces for tools

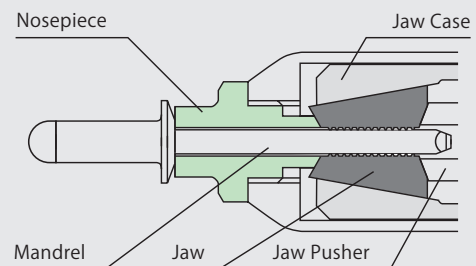
- In cases where a standard nosepiece interferes with the fastening part, use a long nosepiece. (Made to order)



"Mechanism for fastening POP rivets"

When fastening POP rivets, need a mandrel margin large enough for the jaw to firmly grip the rivet mandrel as shown in the figure on the right.

Therefore need to change the mandrel length according to the length of the long nosepiece.



※ Please contact us for technical inquiries of "Long Mandrel rivets & Nosepiece for Long Mandrel rivets".
 ※ Following Nosepieces for Long Mandrel rivets are for standard type dome & countersunk head rivets only.
 Applicable products: Long Mandrel types of "TAPD/K-BS, TAPD/K-SSBS, AD/K-ABS, SD/K-BS, SSD/K-BS, SSD/K-SSBS".

Parts	A(mm)	Parts	A(mm)	Parts	A(mm)	Parts	A(mm)
PRN314-10	10	PRN414-10	10	PRN514-10	10	PRN614-10	10
PRN314-15	15	PRN414-15	15	PRN514-15	15	PRN614-15	15
PRN314-20	20	PRN414-20	20	PRN514-20	20	PRN614-20	20

Options for PROSET tools

Standard

High Retention
"HR"

Structural rivets

Closed

Low Height
Clamping

For PCB

For Soft Works

With Clip

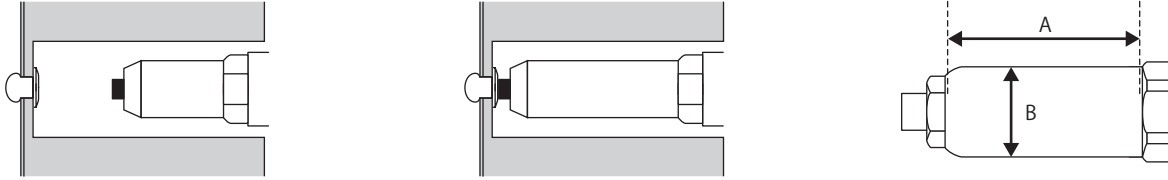
Technical Data

Fastening tools

○ Front End Extension Kit for ProSet1600A & ProSet2500A

- In case the normal size nose housing interferes with the fastening part, use a front-end extension kit that extends the nose housing by + 50 mm.

In case the normal size nose housing interferes. ⇒ Front End Extension Kit will help you to fasten.



POP Rivet tool	Part numbers of Front End Extension Kit	Front End Extension Kit spec.		Normal size nose housing spec.	
		A(mm)	B(mm)	A(mm)	B(mm)
For ProSet1600A	PRS1600-101	88	φ 17.3	38	φ 17.3
For ProSet2500A	PRS2500-101	96	φ 20.7	46	φ 20.6

○ Corner Head & Corner Head Adapter Kit (For ProSet2500A, ProSet3400)

- Enable to fasten at the limited access applications

Applicable sizes	Corner Head	Adapter Kit	
		For ProSet2500A	For ProSet3400
Under 4 size(φ 3.2)	PRH830	PRH830-2500	—
Under 6 size(φ 4.8)	PRH840	PRH840-2500	PRH840-3400
Under 8 size(φ 6.4)	PRH850	—	PRH850-3400

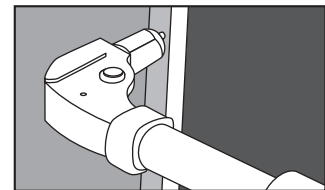
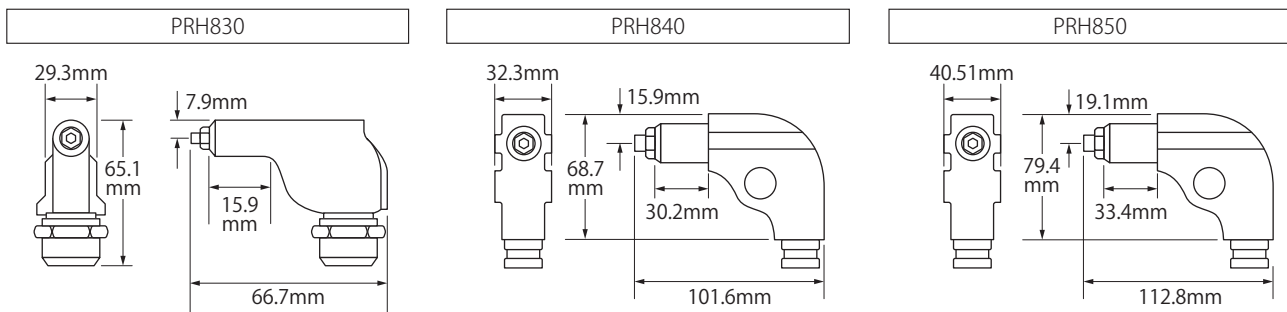


Image of limited access application



※Combine "Corner Head" and "Adaptor Kit" into the appropriate ProSet tool.
※Recommend you to request us the assembly operation of ProSet Corner Head.

○ Deflector Kit for Proset1600A, ProSet2500A & ProSet3400

- If you are to discharge the mandrel from the front of the tool (nosepiece) and do not need a mandrel collector, prevent mandrel dispersions.

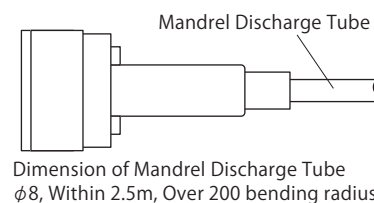
POP Rivet tool	Deflector Kit
For ProSet1600A	PRS1600-104
For ProSet2500A	
For ProSet3400	FAN276-166



○ Mandrel Discharge Tube Kit (For Proset1600A, ProSet2500A, ProSe3400)

- This method is designed to discharge mandrels with a tube, but without housing the mandrels in the mandrel collector.

POP Rivet tool	Mandrel Discharge Tube Kit	Applicable sizes
For ProSet1600A	ProSet1600A-TE-KIT	For each size
For ProSet2500A	ProSet2500A-TE-KIT-5	For 4 & 5 size (Under φ2.4 mandrel)
	ProSet2500A-TE-KIT-6S	For 5 & 6S size (Over φ2.4 mandrel)
For ProSet3400	ProSet3400-TE-KIT	For 8 size



Rivet Kwik-II Rivet supply machine

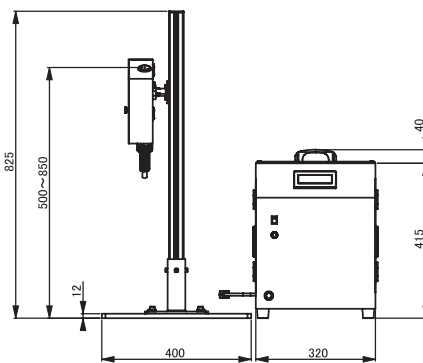
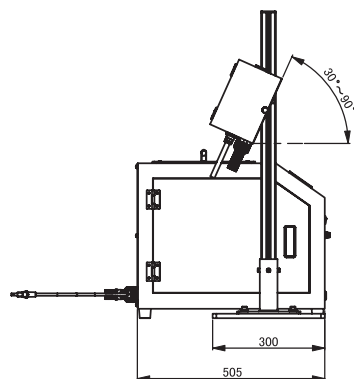
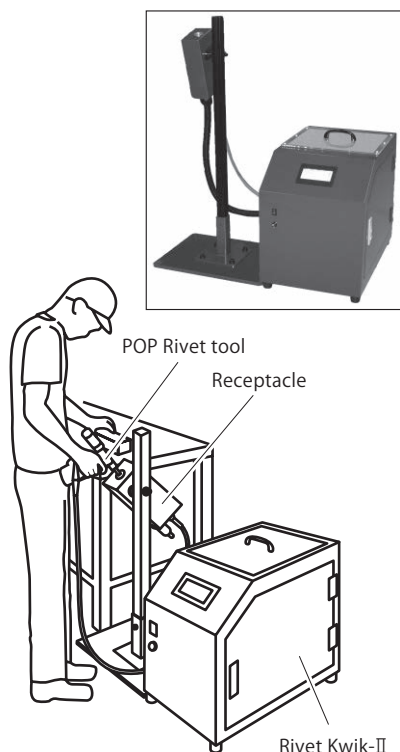
Made to order

Merit

POP Rivets can be set into the nosepiece of the Rivet tool automatically, soon after setting the Rivet tool into the receptacle of Rivet Kwik. Since the POP Rivets can be set into the tool nosepiece while preparing the works with the other hand, Rivet Kwik reduces work time. Because of its stable supply cycle, Rivet Kwik can be easily used by low-skilled workers.

Spec.

Voltage : AC100V 50/60Hz
Air pressure : 0.5 ~ 0.6Mpa
Air consumption (ANR): Approx. 2L each
(excluding air consumption by POP rivet tool)
Rivet supplying capacity : Approx. 30 pcs./min
Weight : Approx.23.5kg
(excluding receptacle and tool stand)



Applicable tools

Model	POP Rivet tool
RivetKwik- II -4S	ProSet1600A
RivetKwik- II -4L	ProSet2500A
RivetKwik- II -5S	ProSet1600A
RivetKwik- II -5L	ProSet2500A
RivetKwik- II -6L	ProSet2500A

※Please check each tool's fastening sizes using manuals.

Applicable rivets

Rivet types	Rivet parts	Sizes		
		41~44	52~54	62~64
Standard	TAP-D (K) -B5/SSBS	○	○	○
	TAP-D (K) -SSBS	○	○	○
	AD (AK) -ABS	○	○	○
	SD (SK) -BS	○	○	○
	SSD (SSK) -B5/SSBS	○	○	○
High Retention	TAP-D (K) -HR	△	△	△
	AD (AK) -AHR	○	○	○
	SD (SK) -HR	○	○	○
	SSD (SSK) -SSHR	○	○	○

Note : Please let us know your fastening rivet type and we can tell you if Rivet Kwik can be used or not.
●Specifications subject to change without notice.

Rivet Kwik-PF Rivet supply machine parts feeder model

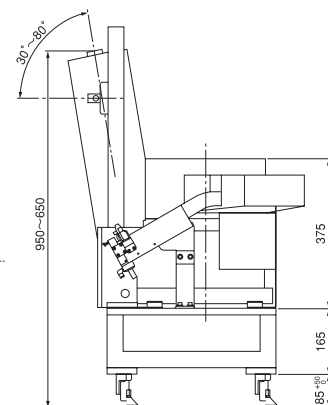
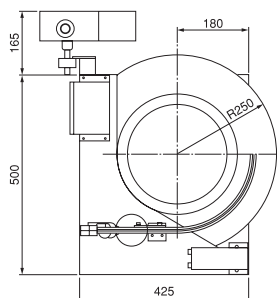
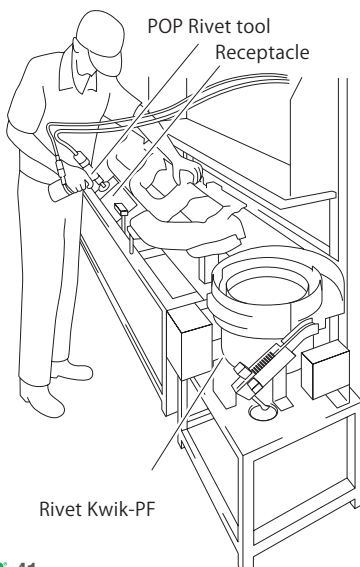
Made to order

Merit

POP Rivets can be set into the nosepiece of the Rivet tool automatically, soon after setting the Rivet tool into the receptacle of Rivet Kwik. Rivet Kwik-PF is designed for situations where your fastening rivet can not be used by Rivet Kwik. As shown in the left drawing, the receptacle can be separated from the parts feeder.

Spec.

Voltage : AC100V 50/60Hz
Air pressure : 0.45 ~ 0.55Mpa
Rivet supplying capacity :
20 ~ 30pcs./min
Weight : Approx.70kg



Note : Please let us know your fastening rivet type and we can tell you if Rivet Kwik can be used or not.
●Specifications subject to change without notice.

Certified ISO

NPR's high quality and precision products are manufactured at our advanced production lines. Our comprehensive QC facilities and strict quality control system allows us continue to supply high-quality products. NPR is certified ISO9001/TS16949, ISO14001.

Certified ISO 19001 / TS 16949

[Products]

POP rivets, POP nuts, Inserts fasteners,
Welding studs, Plastic fasteners

[Register]

Toyohashi Plant of NIPPON POP RIVETS
AND FASTENERS LTD.

[Policy]

- 1) In remembering to be imaginative and creative, we continue to commercialize a series of innovative, cost-efficient fastening systems in an attempt to make a difference for our customers and society.
- 2) Thanks to the dedicated teamwork of our production, marketing, and engineering personnel, we continue our attempts to improve productivity, thereby meeting the various requirements of our customers.
- 3) Through all of our processes (production, marketing, and engineering), we aim to become an industrial fastener manufacturer that gives top priority to quality and the environment.



Certified ISO 14001

[Register]

Toyohashi Plant of NIPPON POP RIVETS AND FASTENERS LTD.

[Policy]

Under the corporate policy of "contributing to society by helping to innovate production engineering with our junction technology" as an industrial fastener manufacturer, the Toyohashi Plant of NIPPON POP RIVETS AND FASTENERS LTD. works to combine conservation of the global environment with its business through company operations under its corporate policy, in an attempt to be useful to the international community. Regarding the environmental impact of its business, the company primarily promotes its environmental conservation under the following guidelines:

- 1) In all operations, promote the conservation of resources, recycling, waste reduction, and energy conservation.
- 2) Promote eco-friendly designs and production processes.
- 3) Set and work to achieve environmental objectives and targets, and strive to accomplish continuous improvement.
- 4) Observe relevant environmental legal requirements and other requirements that we support, establish voluntary management regulations as necessary, and work on further environmental conservation.
- 5) Strive to conserve the environment in the community and promote beautification as a member of the community.
- 6) Ensure that these environmental principles are made known to all personnel working in our factories and open to the public.



Product line-ups of NIPPON POP RIVETS AND FASTENERS LTD.

POP® X Avdel® Blind Rivets

One side fastening method realizing
precision & fast assembling lines

■ Sizes : $\phi 2.0$ $\phi 2.4$ $\phi 2.5$ $\phi 3.0$ $\phi 3.2$ $\phi 4.0$
 $\phi 4.8$ $\phi 6.4$ $\phi 10.2$

■ Materials : Aluminum,
Steel, Stainless steel,
Copper



Plastic Clips

Design and fabrication based on
responding to the customer's specifications

Plastic Clips : Insulator clip / Molding clip /
Screw grommet / Carpet clip / Harness clip /
Push clip / Pipe clip / Trim clip



X Avdel® Speed Fasteners

Rivet supply tape tool
system

NeoSpeed® / Rivscrew®

■ Sizes : $\phi 2.4$ $\phi 2.8$ $\phi 3.0$
 $\phi 3.2$ $\phi 4.0$ $\phi 4.8$

■ Materials : Aluminum,
Steel, Stainless steel



Stud Welding Systems

Realizing stabilized stud welding of the
drawn arc type



POP® X Avdel® Blind Nuts

Nuts can be set to thin metal or plastic
workpieces by one-sided operation

■ Sizes : M3 M4 M5 M6 M8
M10 M12

■ Materials : Aluminum,
Steel, Stainless steel



Self Piercing Riveting Systems

Most advanced joining method
to replace spot welding



KALEI® Press Fastener series

Press-fitting nuts into metal workpieces
unsuitable for welding

■ Kalei nut screw sizes : M2.0 M2.5 M2.6
M3 M4 M5 M6 M8 M10 M12 M16 M20

■ Kalei nut materials : Steel,
Stainless steel



X Avdel® Blind Sealing Plugs Avseal®

One sided attaching sealing plugs

■ Sizes : M4 M5 M6 M7 M8
M9 M10 M11 M12

■ Size : Aluminum(rivet) / Steel(stem)



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