

Advanced Technical Leader

Beyond Technical Limitation

Products

Electrical Contacts

Brazing Filler Alloy



Electrical Contacts

Electrical contacts are present in any system in which a transfer of electricity occurs. Specific examples include circuit breakers, relays, switches, and electrical discharge machining (EDM) applications.



Clad Type



Solid Type

Key Features

- Good conductivity
- Resistance against oxidation, corrosion, and mechanical wear
- Cost efficiency
- Application-specific properties



Square-Type



Circle-Type

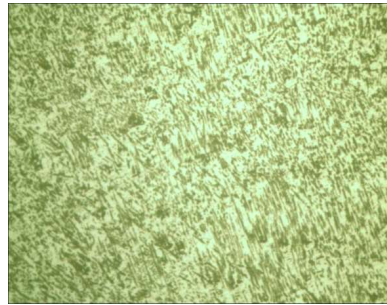


Square-Type

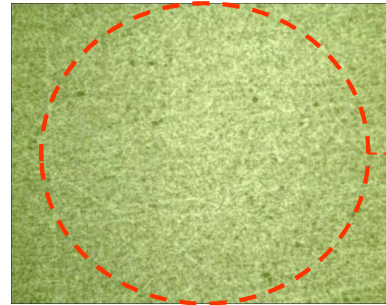


Electrical Contacts by Materials

Comparison between AgCdO and AgSnO₂In₂O

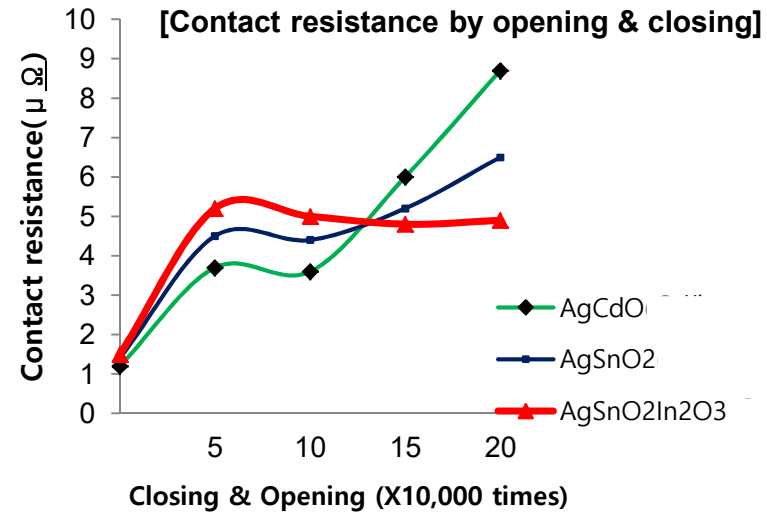
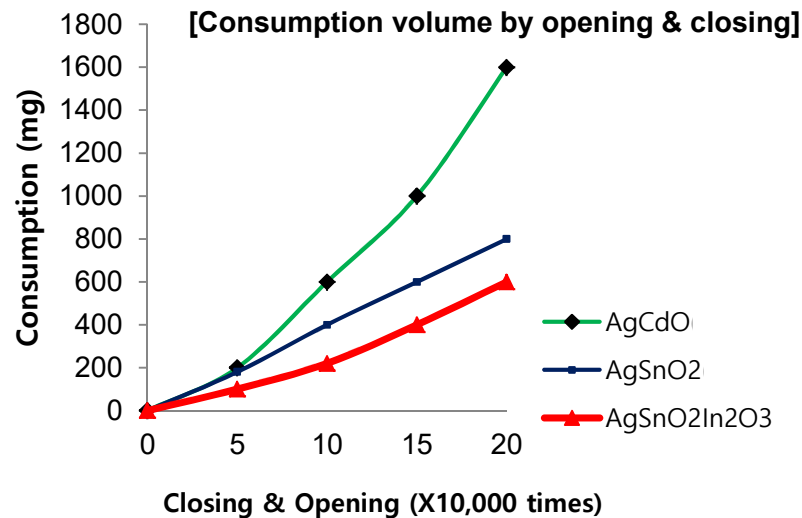


AgCdO
(X500)



AgSnO₂In₂O₃
(Cd-Free) (X500)

Microstructure of fine particles



Ag-SnO₂In₂O₃ Metal oxides developed by Shin Young Metal secures microstructure of fine particles providing longer lifetime than AgSnO₂



Electrical Contacts

Product Line-up

Ag

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
Ag	Ag 99.99%	10.5	26	106	Rivet/Plate	Home appliances, Switches for Rotary, Micro Relay, etc.

Ag-Cu

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
AgCu10	Ag-90 Cu-10	10.3	62	86	Rivet/Plate	Home appliances, Switches for Rotary, Electrical Contactor, Micro Relay, etc.
AgCu20	Ag-80 Cu-20	10.2	85	82		
AgCuNi0.5	AgCu-24.5 Ni-0.5	10.1	115	68		
AgCu40	AgCu40	9.8	95	82		

Ag-CdO

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
SY-120	Ag-88 CdO-12	10.2	75	75	Rivet	Relay for AC, Switches, Home appliances, Motor Breaker, etc.
SY-150	Ag-85 CdO-15	10.1	85	60	Rivet	
SY-170	Ag-83 CdO-17	10.1	90	60	Rivet	
SY-161	Ag-81.5 Mox-18.5	10.1	100	60	Plate	Circuit Breaker, Electrical Switch, Current Limiter, etc.



Electrical Contacts

Product Line-up ※ Below materials are produced only in 2 companies including Shin Young in Korea.

Ag-Ni

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
AgNi10	Ag-90 Ni-10	10.3	65	91	Rivet/Plate	Small Home Appliances, Circuit Breaker, Rotary Switch, Industrial Relay, etc.
AgNi15	Ag-85 Ni-15	10.3	73	88		
AgNi20	Ag-80 Ni-20	10.2	80	83		

Ag-ZnO

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
SY-100	Ag-90 Mox-10	9.6	87	75	Rivet/Plate	Switch, Breaker, Smart Meter, Electrical Contactor, Magnet Switch, etc.

Ag-SnO₂

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
SP-120	Ag-88 Mox-12	10	90	85	Rivet/Plate	Relay for AC, Switch, Breaker for Home appliances, etc.

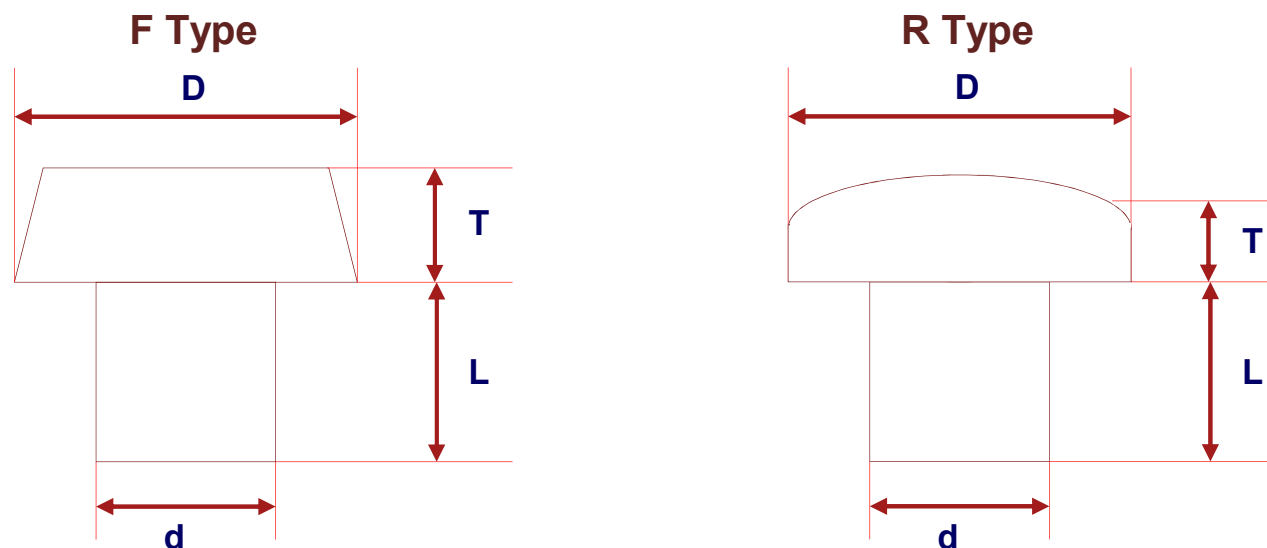
Ag-SnO₂In₂O₃

Item	Chemical Composition	Density	Hv	Electrical Conductivity	Product	Use
SY-103	Ag-89 Mox-11	10.1	110	70	Rivet/Plate	AC/DC Relay, Switch, Relay for Automotive, Magnet Switch, Circuit Breaker, etc.



Electrical Contacts

Standard Specification for Rivet Contact Point (Solid Type)



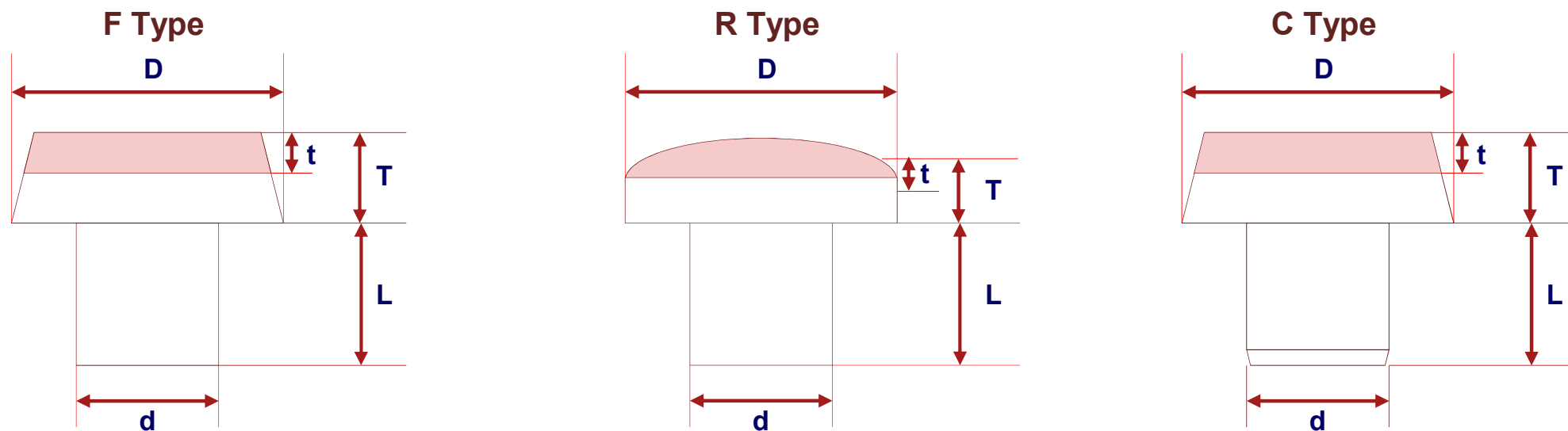
$D \pm 0.1(\text{mm})$ (Head Diameter)	$T \pm 0.05(\text{mm})$ (Head Thickness)	$d \pm 0.05(\text{mm})$ (Shank Diameter)	$L \pm 0.1(\text{mm})$ (Shank Length)	F	R
2.0	0.5	1.2	1.5	F	3R
2.0	0.6	1.2	1.5	F	3R
2.5	0.8	1.5	1.5	F	3R
3.0	0.8	1.5	1.5	F	8R
3.0	1.0	1.5	1.5	F	8R
3.5	0.8	2.0	2.0	F	10R
3.5	1.0	2.0	2.0	F	10R
4.0	1.0	2.0	2.0	F	10R
4.0	1.2	2.0	2.0	F	10R
4.5	1.0	2.5	2.5	F	15R
4.5	1.2	2.5	2.5	F	15R
5.0	1.2	2.5	2.5	F	20R
6.0	1.5	3.0	3.0	F	20R

※ Custom dimensions can be manufactured upon request.



Electrical Contacts

Standard Specification for Rivet Contact Point (Clad Type)



$D \pm 0.1(\text{mm})$ (Head Diameter)	$T \pm 0.05(\text{mm})$ (Head Thickness)	$d \pm 0.05(\text{mm})$ (Shank Diameter)	$L \pm 0.1(\text{mm})$ (Shank Length)	t(mm)	d	C	F	R
2.4	0.7	1.2	1.0	0.35	-	-	F	3R
3.0	1.0	1.5	2.0	0.4~0.45	-	-	F	8R
3.5	1.0	1.8	2.0	0.4~0.55	-	-	F	10R
4.0	1.0	2.0	2.0	0.5	-	-	F	10R
5.0	1.0	2.5		0.55	-	-	F	20R
4.0	1.0	1.9	1.8	0.45	1.6	0.8	F	10R
4.5	1.0	2.5	1.8		2.2	0.3	F	10R
5.0	1.0	2.5		0.55	2.1	0.8	F	20R

※ Custom dimensions can be manufactured upon request.



Manufacturing Process

Rivet Contact Points

Step 1: Contact Point Material(WIRE)

1.Melting

Melt materials by determined chemical composition



2.Inspection for chemical composition

Inspect chemical composition of the alloy



3.Extrusion

Extrude Billet into Wire



4.Drawing

Draw Wire by appropriate diameter(Φ)



※ We manufacture materials by ourselves.
※ We have distinctive know-how for heading and post processing.

Step 2: Manufacture Rivet Contact Point and Post Processing

5.Heading

Heading Ag alloy Wire and Cu Wire



6.Grease removal

Remove oil from contact point



7.Heat treatment

Strengthen bonding strength by heat treatment



8.Barrel

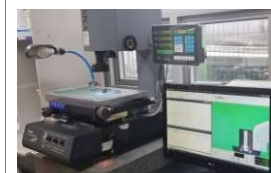
Remove burr and polish surface of contact point



Step 3: Inspection/Packing

9.Inspection

Inspect size and appearance



10.Packing

Packing by customer's requested spec

