

**ALLBRO**

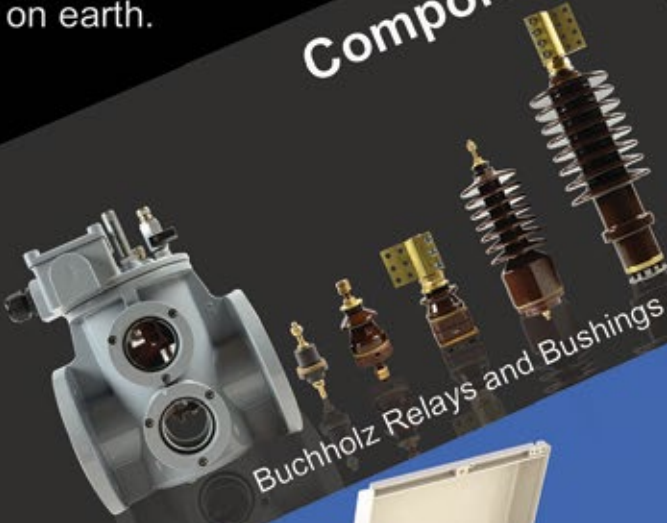
CATALOGUE  
EDITION 4

# TOUGH , STRONG, DURABLE

Established in 1978, Allbro employs more than 600 people and has 19,000 sqm of production facility.

Allbro engineers, designs, and manufactures solutions for some of the toughest environments on earth.

## Components for Transformers



Buchholz Relays and Bushings



Online DGA transformer monitor



Online transformer temperature monitor

## Enclosures for Metering and Distribution



AITilt & AllVault

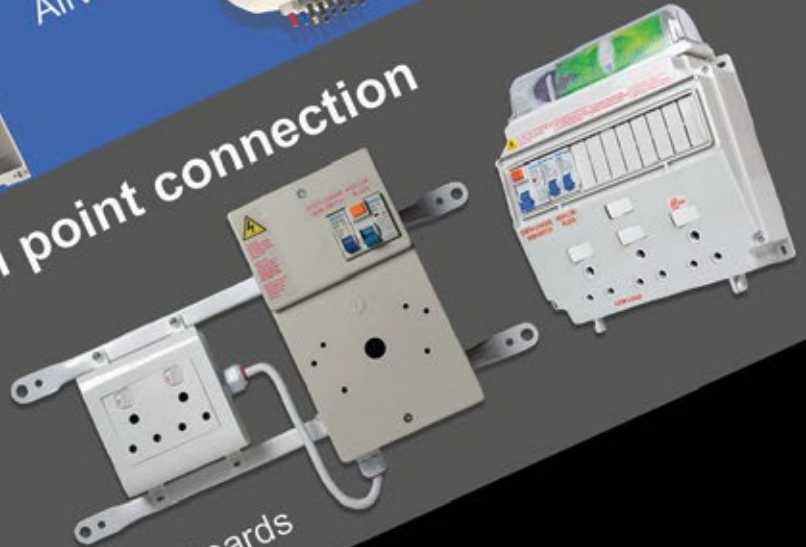


High security Enclosures

## Safe final point connection



Ready Boards



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**ALLBRO**



# Allbro Company History

- 1978 - Company founded out of an idea to manufacture insulated products to compete with epoxies, which were expensive, slow to produce and labour intensive. This was our first experience with GRP materials.
- 1979 - Breakthrough with new materials & designs on 11 Kv insulators which resulted in massive durability improvements where epoxy insulators were known to shatter.
- 1980 - Air type through bushings followed with more design breakthroughs that largely overcome partial discharge problems.
- 1983 - SABS permit is obtained proving compliance to SABS - 1037
- 1995 - Approval to supply bushings for Eskom.
- 1998 - Accredited ISO 9000 Company
- 2001 - Launch of Locks & Hinges division
- 2003- Launch of Enclosures & Custom Moulding division.
- 2011 - Acquisition of ABB's (York) enclosure business.
- 2013 - Acquisition of KoPONANG Convertors. (Including Toolmaking facility)  
- Launch of first Buchholz Relay made in South Africa
- 2014 - Launch of Manhole Access Chamber range
- 2015 - Completion of Allbrox enclosure range
- 2016 - Introduction of first high security Pole Top Box - AllVault





Designed and Manufactured in South Africa

*Since 1978*



Established in 1978 Allbro is a South African company with more than 600 employees and has 12,000 sqm of production facility. Allbro supplies key components that are used in almost every locally made transformer. With the acquisition of ABB's South African enclosure operation (York) in 2011, Allbro also became a leading supplier of non-metallic enclosures to the industrial and residential contracting trade. Brands like York, Okari, Enlec, Utilec, PSO1 and PSO2 are well known in the South African market and are all solely manufactured by Allbro in South Africa. Local manufacture to international standards means that products are suited to the rigors of a tough local environment. Over the last 3 years Allbro has invested heavily into modern Non-metallic enclosure systems for international markets. This has been on a level unprecedented in South African history.

### Enclosures



### Switchboard Accessories



### Insulators



### Transformer Equipment





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**Enlec**  
Polycarbonate Enclosures for Electronic & Electrical Applications



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Standard General Purpose GRP Enclosures



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**RL**  
Basic Hinged Enclosures



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Modular Wall Mounted GRP Enclosures



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**UB-40**  
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Round GRP  
Junction Boxes



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**Allbrox**  
All New Range of SMC Hinged Enclosures



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**Terminal Range**  
High Impact GRP Enclosures for Tough Environments



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**AllTilt**  
Pole Top Enclosures for Distribution and Metering



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Ready Boards and Passive Bases



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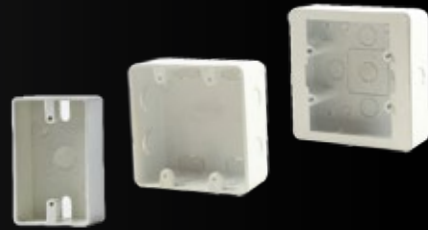


Weatherproof Socket Outlet Boxes



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Wall Boxes



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Pool Boxes



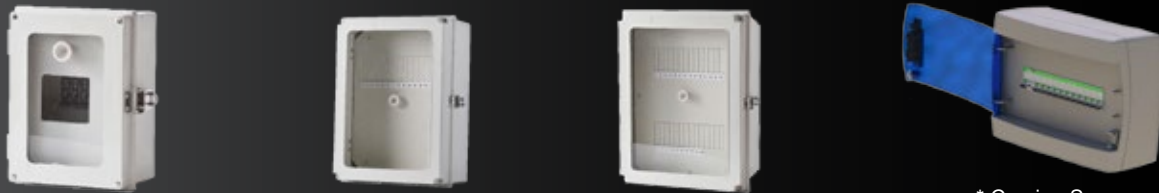
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Indoor Distribution Boards



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Weather Proof Distribution Boards



\* Coming Soon

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Empty Pole Boxes For Metering/Distribution/Termination



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Pre-Configured Pole Boxes For Distribution



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Legacy Products



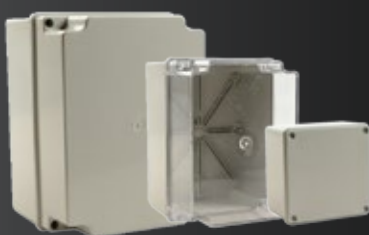
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AllVault



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Fablec



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Data Cable Management



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Enclosures

One of our core competencies is the design and manufacture of non-metallic electric enclosures. Various materials are used depending on environment and application.

**The two main families of materials can be separated into:**

- Plastics - Injection Moulded
- Glass Reinforced Polyester (GRP) - Compression Moulded

Hinges

**Plastics**

18 Injection moulding machines up to 400T.

Locks



Handles

Accessories

Rotary Operating  
Handles

GRP - Compression moulding 80 machines up to 800T.



Insulators

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\* Assembly



\* Stores

**Glass Reinforced Polyester (GRP)**

Modern industries demand structural materials that are lightweight, strong and versatile. Materials that resist corrosion and temperature extremes and which deliver freedom of design and low system costs. The ideal solution is a family of structural, fibre reinforced thermosets: SMC (Sheet Moulding Compound) and DMC (Dough Moulding Compound). These materials combine mechanical and physical properties with the lowest system cost, without compromising quality.

Exceptional electrical and UV properties make GRP the material of choice for outdoor electrical enclosures.

Allbro compounds its own SMC and DMC. Numerous formulations have been engineered to address different technical application challenges. Since DMC and SMC are composite materials, we are able to dramatically change aspects like strength, conductivity, surface finish, colour, chemical compatibility etc.

**Dough Moulding Compound (DMC)**  
**(Also known as BMC)**



**Sheet Moulding Compound (SMC)**



\* See Material Properties on Page 255 for detailed information

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**DMC compared to SMC**

DMC



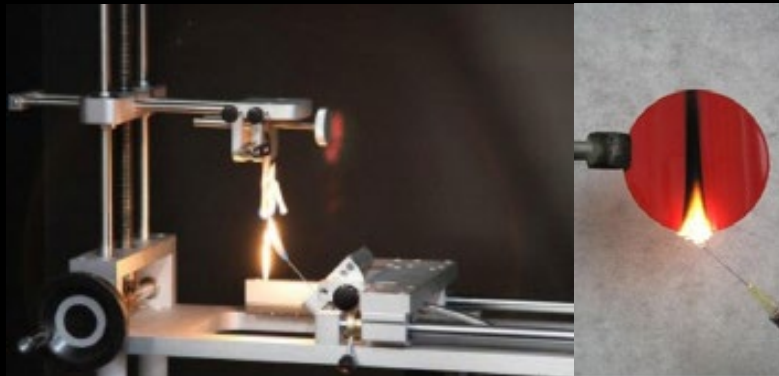
Fibre lengths 6, 12, 18 mm

SMC



Fibre lengths 25-50mm

**SANS 60695-11-10 Needle Flame Test or UL94 - Flame Resistance Test**



<b>5VA Surface Burn</b>	Burning stops within 60 seconds after five applications of five seconds each of a flame (larger than that used in Vertical burn testing) to a test bar. Test specimens MAY NOT have a burn-through (no hole). <b>This is the highest (most flame retardant) UL94 rating.</b>
<b>5VB Surface Burn</b>	Burning stops within 60 seconds after five applications of five seconds each of a flame (larger than that used in Vertical burn testing) to a test bar. Test specimens MAY HAVE a burn-through (a hole).
<b>V-0 Vertical Burn</b>	Burning stops within 10 seconds after two applications of ten seconds each of a flame to a test bar. NO flaming drips are allowed.
<b>V-1 Vertical Burn</b>	Burning stops within 60 seconds after two applications of ten seconds each of a flame to a test bar. NO flaming drips are allowed.
<b>V-2 Vertical Burn</b>	Burning stops within 60 seconds after two applications of ten seconds each of a flame to a test bar. Flaming drips ARE allowed.
<b>H-B Horizontal Burn</b>	Slow horizontal burning on a 3mm thick specimen with a burning rate of less than 3"/min or stops burning before the 5" mark. H-B rated materials are considered "self-extinguishing". <b>This is the lowest (least flame retardant) UL94 rating.</b>

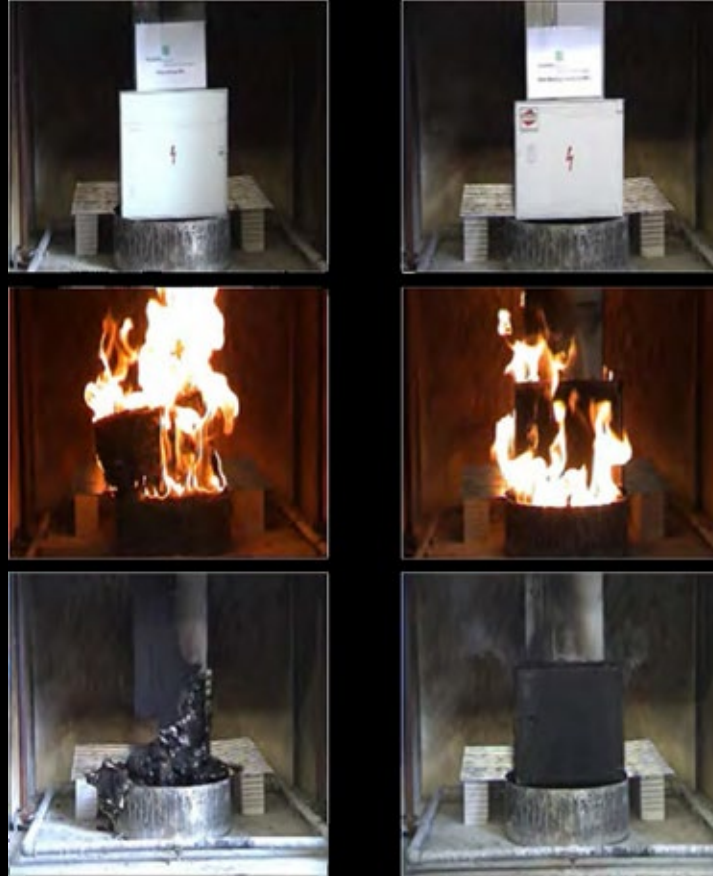


**Extended - Real Life Flammability Test**

While Needle flame is an interesting flammability test for plastics in general the test below shows how much better SMC performs against even the most advanced engineered V0 plastics

**Thermoplastic Cabinet UL94 V0**

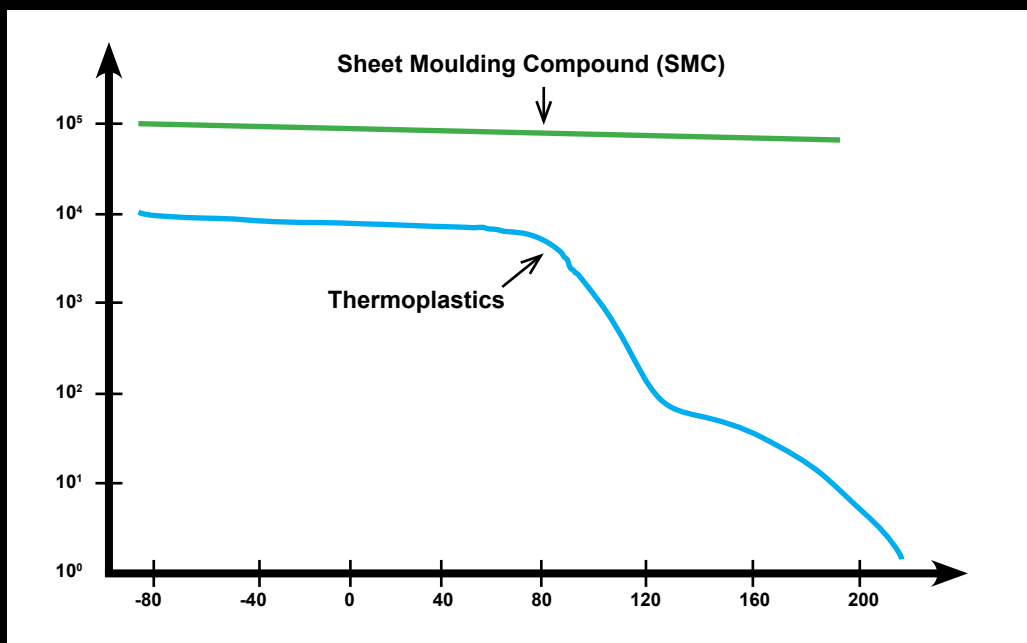
**SMC Cabinet**



4 minutes

25 minutes

**Retention of dimensional properties: GRP compared with plastics**



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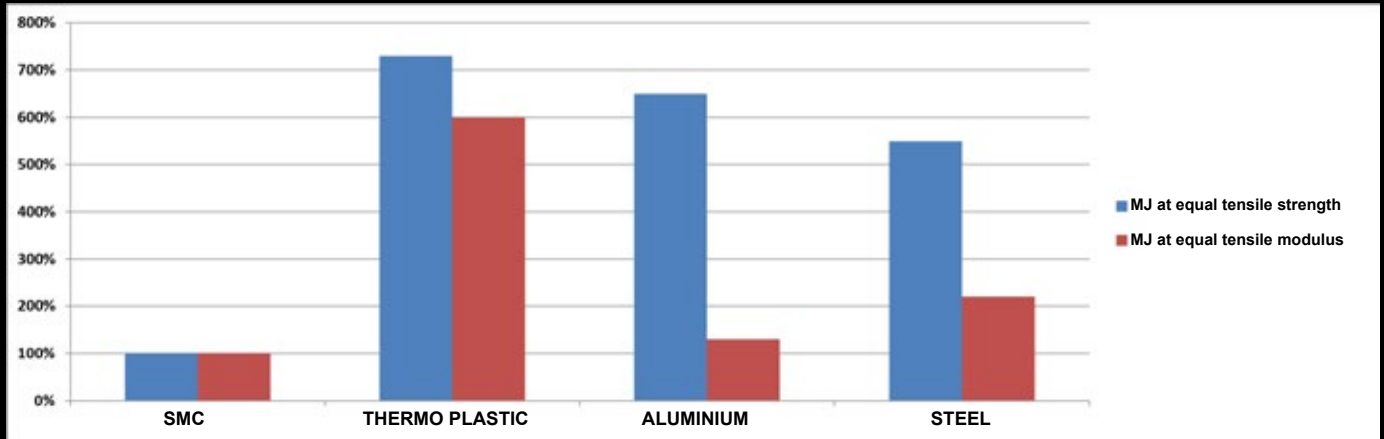
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“GRP is Green”

Energy use is an important element in the total environmental impact of a product. Producing materials from base materials requires energy in each step of the process. A way to compare the energy use for the production of a part is to calculate back to equal properties. In the graph below the relative use for producing a part with equal tensile strength and equal tensile stiffness is represented:



***“ a part produced in SMC requires 5-7 times less energy to be produced than producing the same part in steel, aluminium or thermoplastic materials at equal strength”***



Some of Allbro's Latest innovations using GRP Composite Material

AllVault

High Security Enclosures



Green Pillar

Part Number: PB676



Modular Fibre Management Underground Enclosure Systems



1063.06mm x 1185mm x 1034.07mm (H x W X D)

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\* SMC manufacturing line



## SMC and DMC manufacturing process

SMC is made as a continuous sheet. The resin paste is transferred to a doctor box where it is deposited onto a moving carrier film passing directly beneath. The doctor box controls the amount of the resin paste applied. Simultaneously, glass fibre rovings are fed into a rotary cutter above the resin-covered carrier film. Fibres are chopped to length (generally 25mm, or 50mm) and randomly deposited onto the resin paste. The amount of glass is controlled by the cutter and by the speed of the carrier film. Downstream from the chopping operation, a second carrier film is coated with resin paste and is laid, resin side down, on top of the chopped fibres. This stage of the process creates a resin paste and glass fibre 'sandwich' which is then sent through a series of compaction rollers where the glass fibres are consolidated with the resin paste and air is squeezed out of the sheet.

Sheet dimensions are normally 2-4 mm thick and 1.1 m wide. The length and weight of the SMC sheet is determined by moulder preference for handling and is usually stored on a 350kg (standard) up to 1500kg rolls or bi-folded (like computer paper) into large bins. Modern SMC production is a highly automated and computer regulated process. Before the SMC can be used for moulding it must mature. This maturation time is necessary to allow the relatively low-viscosity resin to chemically thicken. The SMC will be kept in a maturation room at a controlled temperature (normally 48 hours at 30°C) and typically requires two to five days to reach the desired moulding viscosity. Usually SMC has a shelf life ranging from several weeks to several months from the date of manufacture. The time frame can be extended or reduced depending on the SMC formulation and storage conditions. A storage temperature of no higher than 20°C is recommended.

Like SMC, DMC is a fibre reinforced composite material which primarily consists of an amalgam of thermosetting resin, chopped glass fibre reinforcement and filler in the form of a bulk material. Additional ingredients such as low profile additives, cure initiators, thickeners and mould release agent are added to enhance processing performance. DMC is less loaded with glass fibres than SMC and fibre length is shorter at 6 to 12mm. Filler loadings are higher than for SMC. There are several techniques for the batch production of DMC. The most common mixing process involves a Z-blade mixers which amalgamates the resin paste, fillers, additives and reinforcements into a mass material with a dough-like consistency. The bulk product is packed in plastic bags impermeable to styrene diffusion and supplied in bins. Like with SMC, it can be supplied in pre-weighed charges according to customer needs.

IEC 60529 is an international standard that was created for the purpose of clarifying the capability of an enclosure to protect the contents from solid and liquid bodies.

## IP ??



### Protection against solid bodies

	<b>0</b> No Protection
	<b>1</b> Protected against solid bodies larger than 50 mm (e.g. a hand)
	<b>2</b> Protected against solid bodies larger than 12 mm (e.g. a finger)
	<b>3</b> Protected against solid bodies larger than 2.5 mm (tools, wires)
	<b>4</b> Protected against solid bodies larger than 1 mm (fine tools, small wires)
	<b>5</b> Protected against dust (no harmful deposits)
	<b>6</b> Totally dust tight

### Protection against liquids

	<b>0</b> No Protection
	<b>1</b> Protected against vertically falling water droplets (condensation)
	<b>2</b> Protected against water droplets deflected at up to 15° from vertical
	<b>3</b> Protected against rainwater at up to 60° from vertical
	<b>4</b> Protection against water spray from all directions
	<b>5</b> Protected against low - pressure water jets from all directions
	<b>6</b> Protected against powerful water jets from all directions
	<b>7</b> Protected against the effects of immersion
	<b>8</b> Protected against prolonged effects of immersion under pressure

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Enclosures

No standard exists for enclosure access, so to make things easier we have created one of our own.

<b>Security Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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Hinges

**Open Access** - Enclosure can be opened without a tool.

Example:



Locks

<b>Security Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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**Limited Access** - Tool is required

Example:



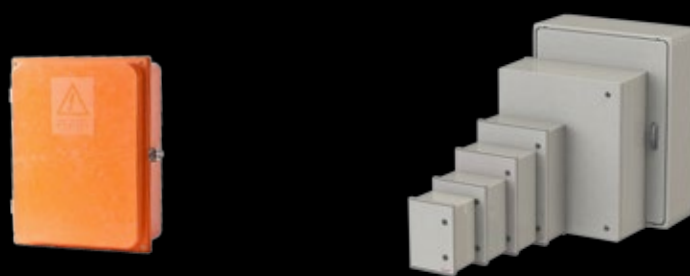
Handles

Accessories

<b>Security Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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**Limited Access** - Lockable

Example:



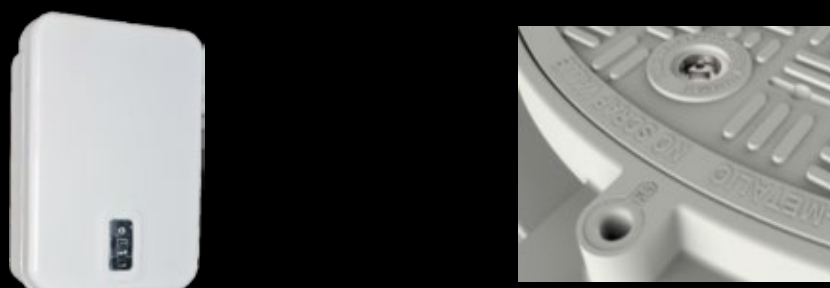
Rotary Operating Handles

Insulators

<b>Security Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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**Limited Access** - Lockable/Vandal Resistant/Remote Access control/Monitoring

Example:



Transformer Equipment

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<b>MATERIAL</b>	Polycarbonate			
<b>OPERATING TEMPERATURE</b>	- 20°C to + 110°C			
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0			
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	5-8 years (10-15 years - Indirect Exposure)			
<b>IP LEVEL</b>	IP66			
<b>SECURITY LEVEL</b>	1	2	3	4
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use			

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Mounting does NOT affect IP level (Many enclosures require drilling which compromises IP level)



1/4 Turn Stainless steel screws (Self tapping screws that deteriorate the plastic or plastic screws they mount for which are not durable)



17 Different sizes (Widest range in South Africa)



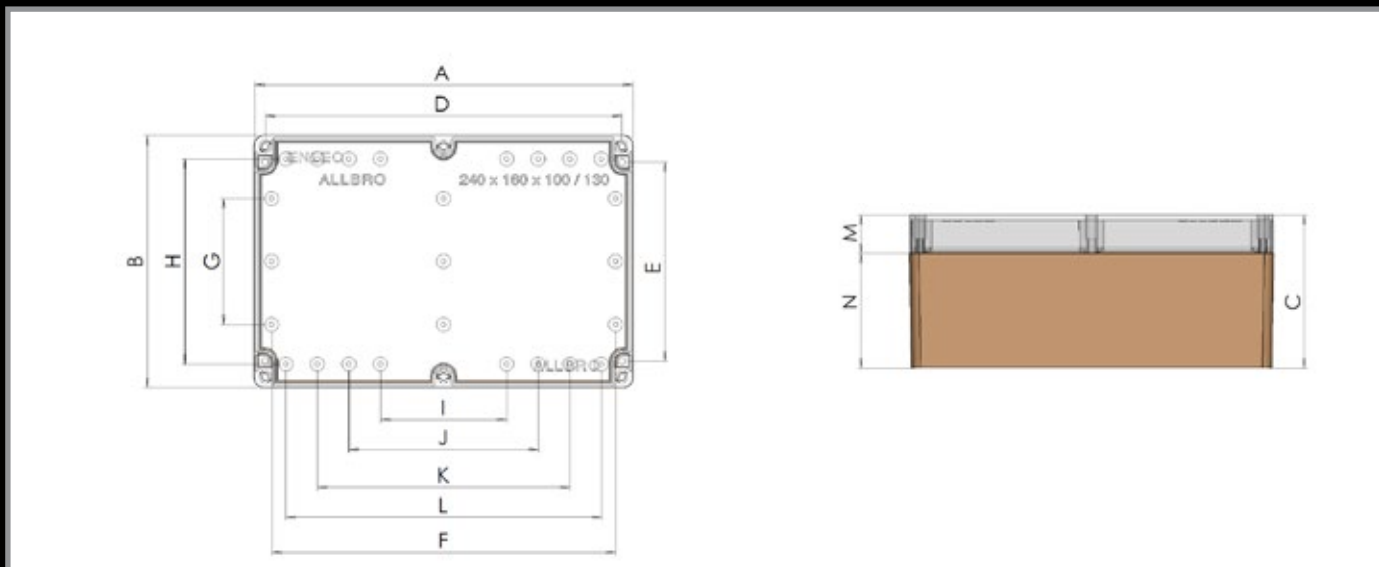
Clean surface for mounting equipment or lables unlike other plastic enclosures that have unsighting sprew/injection marks



Flame Retardant High Quality Polycarbonate Material (Base & Lid) See UL 94 (V0) and Needle Flame (V0) on page 10

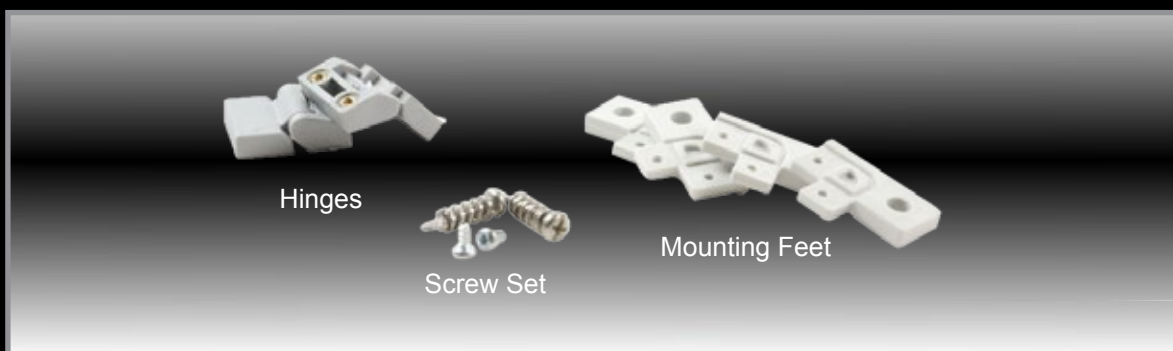
Halogen Free





Dimensions														Part Number		Part No
A (Height)	B (Width)	C (Depth)	D	E	F	G	H	I	J	K	L	M	N	Clear Lid IP66	Grey Lid IP66	Device Plate Sold Separately
80	80	55	68	50	58	N/A	58	N/A	N/A	N/A	40	15	40	ENL080806C	ENL080806P	ENL0808DP
120	80	55	106	46	96	N/A	58	N/A	N/A	40	80	15	40	ENL120806C	ENL120806P	ENL1208DP
120	80	90	106	46	96	N/A	58	N/A	N/A	40	80	15	75	ENL120809C	ENL120809P	ENL1208DP
120	120	55	106	86	100	40	98	N/A	N/A	N/A	80	15	40	ENL121206C	ENL121206P	ENL1212DP
120	120	90	106	86	100	40	98	N/A	N/A	N/A	80	15	75	ENL121209C	ENL121209P	ENL1212DP
160	80	55	146	46	136	N/A	58	N/A	N/A	60	120	15	40	ENL160806C	ENL160806P	ENL1608DP
160	80	90	146	46	136	N/A	58	N/A	N/A	60	120	15	75	ENL160809C	ENL160809P	ENL1608DP
160	120	90	146	86	136	N/A	90	N/A	N/A	N/A	120	15	75	ENL161209C	ENL161209P	ENL1612DP
160	160	90	146	126	140	80	130	N/A	N/A	N/A	120	15	75	ENL161609C	ENL161609P	ENL1616DP
200	120	90	186	86	176	40	90	N/A	N/A	116	160	15	75	ENL201209C	ENL201209P	ENL2012DP
200	150	90	186	116	N/A	56	118	N/A	N/A	80	160	15	75	ENL201509C	ENL201509P	ENL2015DP
240	120	100	226	86	218	40	90	80	120	160	200	25	75	ENL241210C	ENL241210P	ENL2412DP
240	160	100	226	126	218	80	130	80	120	160	200	25	75	ENL241610C	ENL241610P	ENL2416DP
240	160	130	226	126	218	80	130	80	120	160	200	55	75	ENL241613C	ENL241613P	ENL2416DP
300	230	100	286	196	278	150	200	140	180	220	260	25	75	ENL302310C	ENL302310P	ENL3023DP
300	230	130	286	196	278	150	200	140	180	220	260	55	75	ENL302313C	ENL302313P	ENL3023DP
360	200	150	346	166	338	120	170	200	240	280	320	50	100	ENL362015C	ENL362015P	ENL3620DP

Description	Part Number
ENL-Hinges	ENL-H
ENL-Mounting Feet	ENL-M
ENL-2 Set 4 Screw Combo	ENL-4
ENL-6 Set Screw Combo	ENL-6



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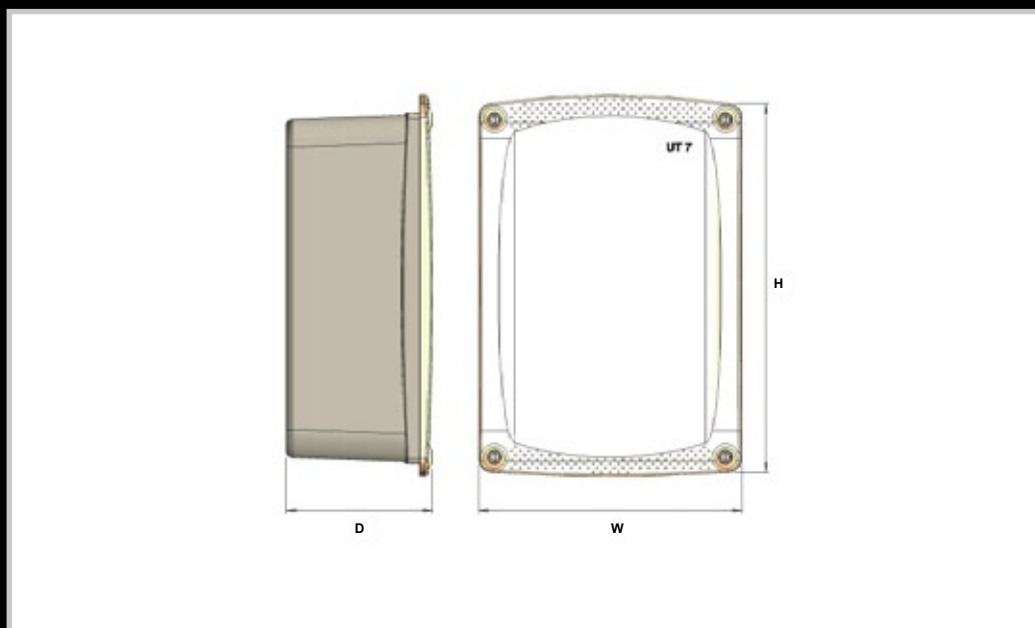
<b>MATERIAL</b>	DMC (Dough Moulding Compound)			
<b>OPERATING TEMPERATURE</b>	-50° C to + 200° C			
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0			
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	25 years +			
<b>IP LEVEL</b>	IP54 for slide lid application, IP65 for screw lid application			
<b>SECURITY LEVEL</b>	1	2	3	4
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use			



Note: Why slide lid? No gasket is used, so less chance of deterioration over several operations. Lifespan of IP level is increased.



Description	Part Number
UT Mounting Feet	UT-MF
UT4 Shroud Kit	UT4-DIN
UT4 Shroud 6 Way Samite	UT4-SAM
UT6 Shroud 8 Way Din	UT6-DIN
UT-6 Shroud 11 Way Samite	UT6-SAM
UT10 Shroud 24 Way Din	UT10-DIN
UT10 Shroud 32 Way Samite	UT10-SAM



Product Name	External Dimensions (mm)			Internal Dimensions (mm)			Screw Lid IP66	Slide Lid IP54	Per Box	Device Plate Sold Separately
	H	W	D	H1	W1	D1	Part Number	Part Number	Qty	Part Number
UT1	80	80	60	122	110	70	040-751	040-752	10	DEV-UT1
UT2	110	110	90	155	144	100	040-655	040-714	9	DEV-UT2
UT3	160	110	90	204	144	100	040-670	040-715	8	DEV-UT3
UT4	210	160	90	253	194	100	040-656	040-716	8	DEV-UT4
UT4 -D	211	160	180	253	194	186	040-753	040-761	6	DEV-UT4
UT5	210	210	125	257	246	136	040-657	040-717	6	DEV-UT5
UT6	260	210	125	307	246	136	040-658	040-718	4	DEV-UT6
UT7	310	210	125	357	246	136	040-671	040-719	4	DEV-UT7
UT8	310	260	165	359	298	176	040-672	040-720	2	DEV-UT8
UT9	310	310	165	359	348	176	040-673	040-721	2	DEV-UT9
UT10	410	410	165	459	448	176	040-674	040-722	2	DEV-UT10

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<b>MATERIAL</b>	DMC (Dough Moulding Compound)
<b>OPERATING TEMPERATURE</b>	-50° C to + 200° C
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	25 years +
<b>IP LEVEL</b>	IP54
<b>SECURITY LEVEL</b>	With RL the security level differs between products. Please note individual security rating.
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use

RL and AP series enclosures preceded the more modern and functional range of enclosures we call Allbrox. Although superceded for the most part, there are still some applications where these tried and tested versions are preferred.



Security Level: 2

Part Number	Description	H	W	D	Description	QTY
040-727	RL-1P	150	150	100	Plain (Screw fastened Lid)	20
040-726	RL-1HW/L	150	150	100	Hinged with window	20
040-725	RL-1HP	150	150	100	Hinged plain box	20



Security Level: 2

Part Number	Description	H	W	D	Description	QTY
040-730	RL-2P	200	145	100	Plain (Screw Fastened Lid)	4
040-728	RL-2HP	200	145	100	Hinged plain box	4
040-729	RL-2HW	200	145	100	Hinged with window	4
040-766	RL-2CP	200	145	165	Plain (Screw Fastened Lid)	4
040-764	RL-2CHP	200	145	165	Hinged plain box	4
040-765	RL-2CHW	200	145	165	Hinged with window	4

Note: C = Deep Base, Shallow Lid



Security Level: 2

Part Number	Description	H	W	D	Description	QTY
040-769	RL-3P	260	220	230	Plain (Screw fastened Lid)	3
040-767	RL-3HP	260	220	230	Hinged plain box	3
040-768	RL-3HW	260	220	230	Hinged with window	3



Security Level: 2

Part Number	Description	H	W	D	Description	QTY
040-733	RL-4P	350	250	160	Plain (Screw fastened Lid)	2
040-731/L	RL-HP	350	250	160	Hinged plain with latch	2
040-732/L	RL-4HW	350	250	160	Hinged window with latch	2
040-734	RL-4DHP	350	250	200	Hinged Deep plain box	4
040-735	RL-4DHW	350	250	200	Hinged with window Deep	4

Note: Special wired pole mounted enclosures available on request.





Security Level: 3

Part Number	Description	H	W	D	Description	QTY
040-738	RL-5P	390	300	200	Plain (Screw fastened Lid)	3
040-736/L	RL-5HP	390	300	200	Hinged plain with latch	3
040-737/L	RL-5HW	390	300	200	Hinged window with latch	3
040-741	RL-5BP	390	300	141	Plain (Screw fastened Lid)	3
040-739	RL-5BHP	390	300	141	Hinged plain box	3
040-740	RL-5BHW	390	300	141	Hinged with window	3

Note: B = Shallow Lid  
 Orange colour available on request - used here for illustration only.  
 Standard colour is GREY.



Security Level: 3

Part Number	Description	H	W	D	Description	QTY
040-640	RL-6D-P	480	315	200	Hinged plain box deep	1



Security Level: 3

Part Number	Description	H	W	D	QTY
AP2-A	AP2-A (DB-1 Shallow)	600	450	165	1



Security Level: 3

Part Number	Description	H	W	D	QTY
AP3-A	AP3-A (DB-1 Deep)	600	450	260	1
AP3-S	AP3-S (DB-1T Box - Thin)	600	450	75	1



Part Number	Description	H	W	D
020-293	PB-small B-A	27	124	22
020-292	PB-medium B-B	31	147	30
020-291	PB-large B-C	27	250	55
020-081	DMC DEVICE PLATE RL2 (DEV-D)	195	40	3
020-082	DMC DEVICE PLATE RL1 (DEV-C)	145	145	3
020-083	DMC DEVICE PLATE RL3A (DEV-G)	255	215	3
020-084	DMC DEVICE PLATE RL3 (DEV-H)	255	215	3
020-085	DMC DEVICE PLATE RL4 (DEV-O)	345	240	3
020-086	DMC DEVICE PLATE RL5 (DEV-Q)	385	295	3

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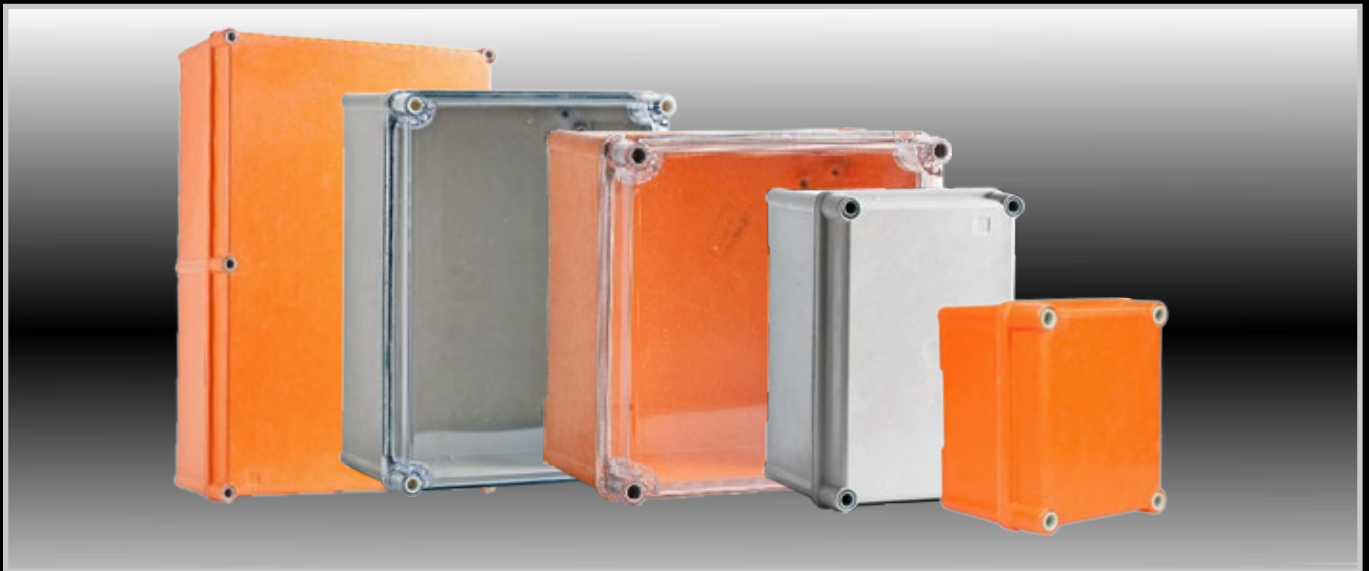
Enclosures

<b>MATERIAL</b>	DMC (Dough Moulding Compound)			
<b>OPERATING TEMPERATURE</b>	+200°C on DMC lids and +110°C on Polycarbonate Lids			
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0			
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	25 years +			
<b>IP LEVEL</b>	IP54			
<b>SECURITY LEVEL</b>	1	2	3	4
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use			

Hinges

Locks

Handles



Accessories

Dimensions			Base	Lid	7035 RAL Base		Orange Base		Qty Per Box	Device Plate (Sold Separately)	
H	W	D	D	D	Grey Lid	Clear Lid	Orange Lid	Clear Lid		SMC Version	Powder Coated Mild Steel
					IP 68	IP 68	IP 68	IP 68			
186	151	132	90	50	OK0-G	OK0-GC	OK0-O	OK0-OC	4	OKM-0	OKM-0M
260	165	160	135	45	OK1-G	OK1-GC	OK1-O	OK1-OC	4	OKM-1	OKM-1M
260	260	160	137	48	OK2-G	OK2-GC	OK2-O	OK2-OC	2	OKM-2	OKM-2M
340	260	160	135	50	OK3-G	OK3-GC	OK3-O	OK3-OC	2	OKM-3	OKM-3M
530	340	160	135	45	OK4-G	OK4-GC	OK4-O	OK4-OC	1	OKM-4	OKM-4M

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Part Number	Description
OKPH-G	DMC Hinge Set -Grey
OKPH-O	DMC Hinge Set -Orange
OKM-MS	Stainless Steel Mounting Brackets
OK-BP	Blind Plug
OK-G/SCREWS	Cover Sealing Screws
OKARI-HAND	Handle
OKI-INT	Interconnector



Weather & UV Resistant  
(20 Year outdoor life)



Halogen Free



External mounting  
system ensures  
IP level is not  
compromised



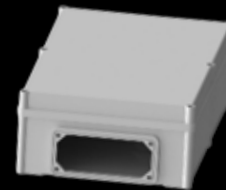
Flame Retardant



External Hinges can  
be added



Durable GRP Material



Multiple boxes can be joined  
using "INT" Interconnectors



Can be  
Colour Impregnated

# Terminal Boxes

## High Impact Enclosures for tough environments



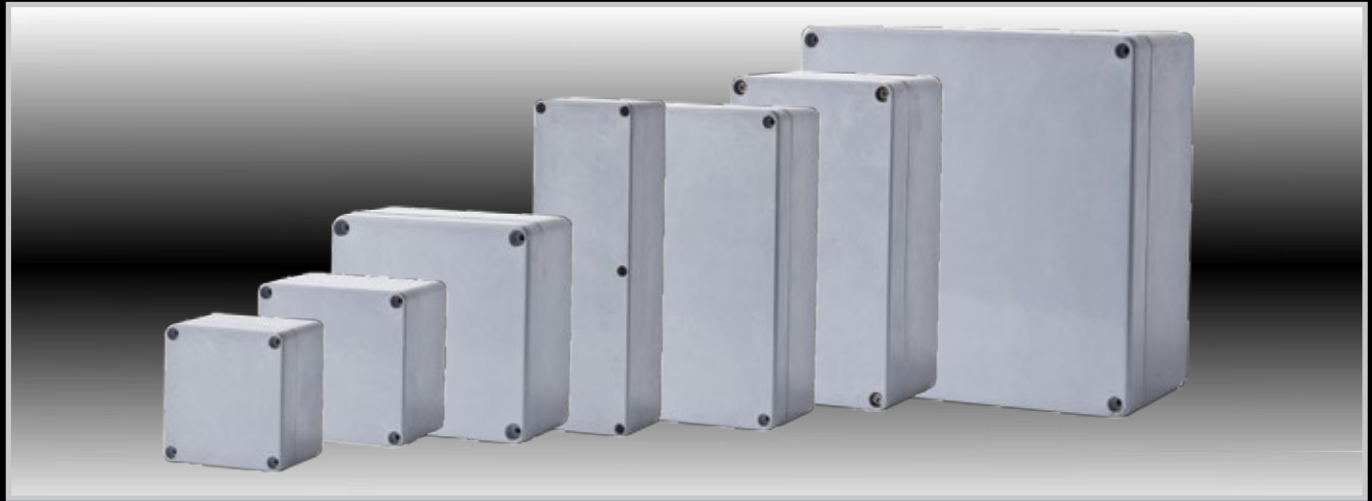
Enclosures

<b>MATERIAL</b>	DMC (Dough Moulding Compound)
<b>OPERATING TEMPERATURE</b>	-50° C to + 200° C
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	25 years +
<b>IP LEVEL</b>	IP68
<b>SECURITY LEVEL</b>	Security Level 1 for Round Enclosure and Security Level 2 for Square/Rectangle Enclosure
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use

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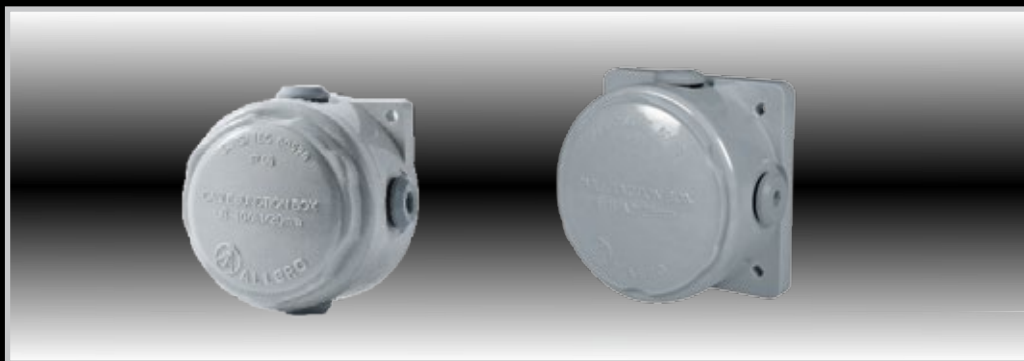
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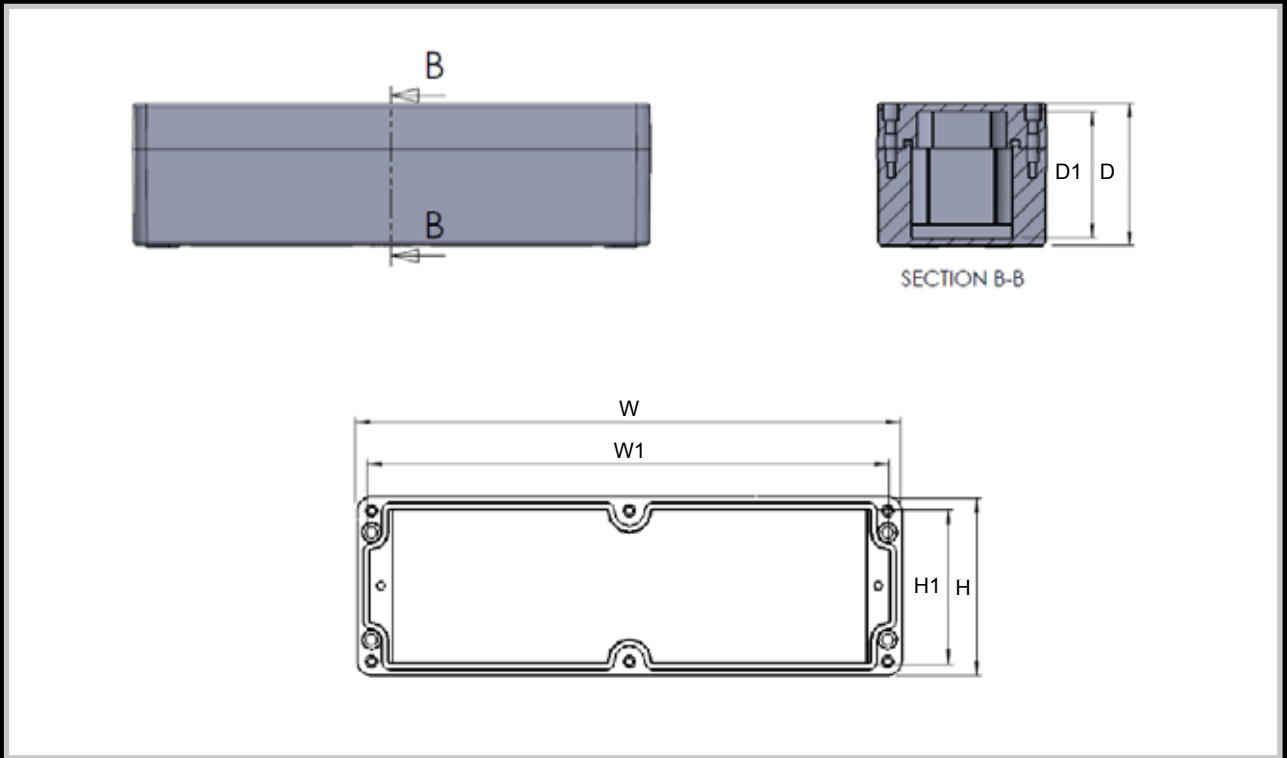
Transformer Equipment



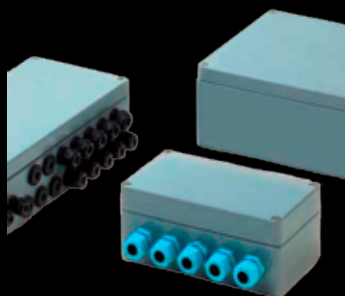
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Dimensions (mm)			Part Number	Description	IP Level	QTY PER BOX
H	W	D				
108	Round	68	040-702	UB40 (20mm)	68	20
135	Round	85.5	040-793	UB41 (25mm)	68	20





External Dimensions (mm)			Internal Dimensions (mm)			Part Number		IP Level	QTY PER BOX
H	W	D	H1	W1	D1	Black (Eex)	Grey		
75	80	61	65	70	56	0808KE/I	0808POK/I	68	10
75	110	64	65	100	54	0811KE/I	0811POK/I	68	10
75	160	61	65	150	54	0816KE/I	0816POK/I	68	10
75	190	61	65	180	54	0819KE/I	0819POK/I	68	10
75	230	63	65	220	54	0823KE/I	0823POK/I	68	10
120	125	90	110	115	80	1212KE/I	1212POK/I	68	10
120	220	95	110	210	85	1222KE/I	1222POK/I	68	10
160	160	95	147	147	86	1616KE/I	1616POK/I	68	10
160	260	95	146	246	86	1626KE/I	1626POK/I	68	10
160	360	95	146	346	86	1636KE/I	1636POK/I	68	10
160	560	95	146	550	86	1656KE/I	1656POK/I	68	10
250	255	128	237	242	113	2526KE/I	2526POK/I	68	10
250	400	128	237	387	113	2540KE/I	2540POK/I	68	10
250	600	128	237	587	121	2560KE/I	2560POK/I	68	10
410	400	128	387	397	113	4140KE/I	4140POK/I	68	10
250	255	163	237	242	149	2526KE/DI	2526POK/DI	68	10
250	400	163	237	387	149	2540KE/DI	2540POK/DI	68	10



\* Versions Available

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# Allbrox

## All New Range of SMC Hinged Enclosures



Enclosures

<b>MATERIAL</b>	SMC (Sheet Moulding Compound)			
<b>OPERATING TEMPERATURE</b>	-50° C to + 200° C			
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0			
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	25 years +			
<b>IP LEVEL</b>	Allbrox 3,4,5,6,7.1 is IP66 and Allbrox 8 is IP65			
<b>SECURITY LEVEL</b>	1	2	3	4
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use			

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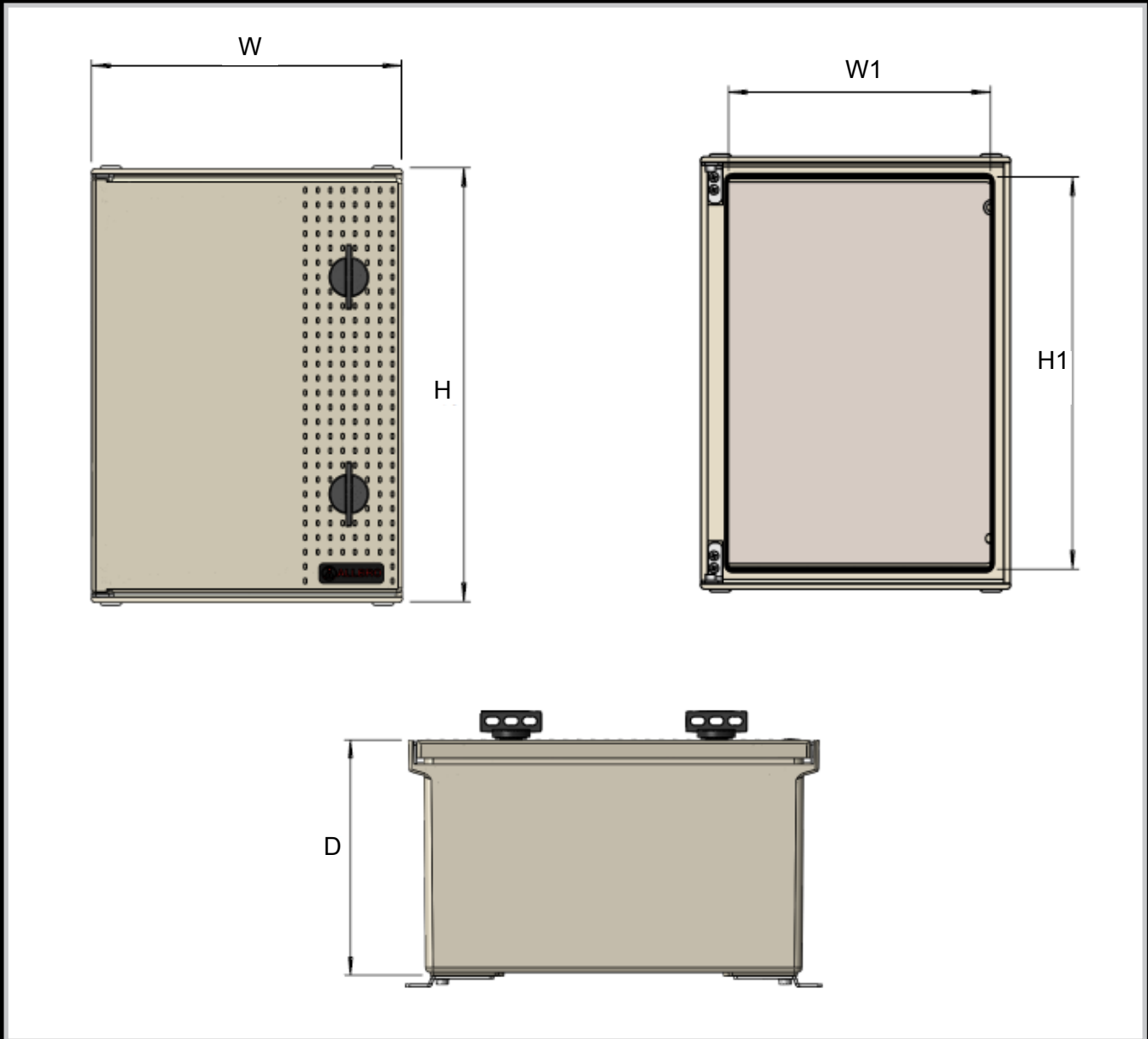
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Part Number	Description	W	H	D	W1	H1
ALL-003	Allbrox 3 with SMC Device plate	250	350	200	212	317
ALL-004	Allbrox 4 with SMC Device plate	300	400	200	262	364
ALL-005	Allbrox 5 with SMC Device plate	350	500	200	312	467
ALL-006	Allbrox 6 with SMC Device plate	400	600	200	362	567
ALL-007.1-P	Allbrox 7.1 Portrait with SMC Device plate	710	828	287	634	754
ALL-007.1-L	Allbrox 7.1 Landscape with SMC Device plate	828	710	287	754	634
ALL-008-P	Allbrox 8 Portrait with SMC Device plate	800	1000	320	710	910
ALL-008-L	Allbrox 8 Landscape SMC Device plate	1000	800	320	910	710

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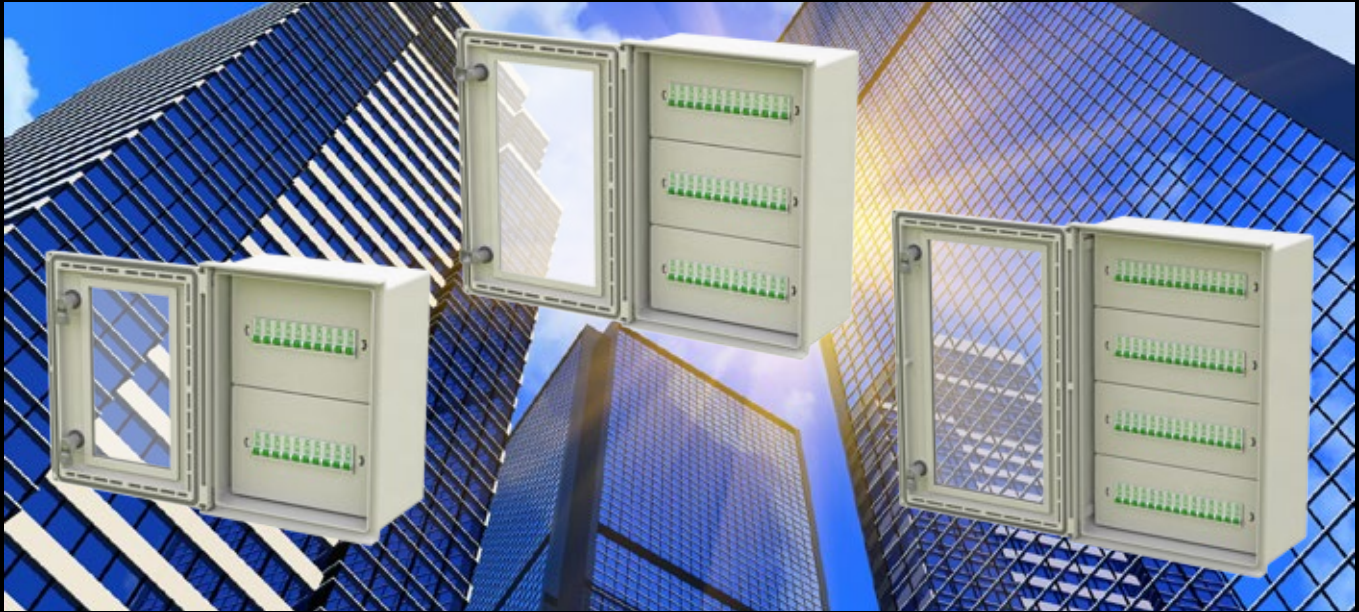
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**ALLBROX 4-6**

**Distribution Board Kit**



**Inner Doors**



**Allbrox Distribution Board Kit**

Part Number	Description	No. of Rows	MCB's Per Row	No. of Neutral Bars	No. of Earth Bars
ALL-004/DBK-A	Allbrox 4 Distribution Board Kit Assembled	2	10	3	2
ALL-004/DBK-F	Allbrox 4 Distribution Board Kit Flat Packed	2	10	3	2
ALL-005/DBK-A	Allbrox 5 Distribution Board Kit Assembled	3	13	4	4
ALL-005/DBK-F	Allbrox 5 Distribution Board Kit Flat Packed	3	13	4	4
ALL-006/DBK-A	Allbrox 6 Distribution Board Kit Assembled	4	15	3 and 1	10 and 30
ALL-006/DBK-F	Allbrox 5 Distribution Board Kit Flat Packed	4	15	3 and 1	10 and 30

**Allbrox Inner Door**

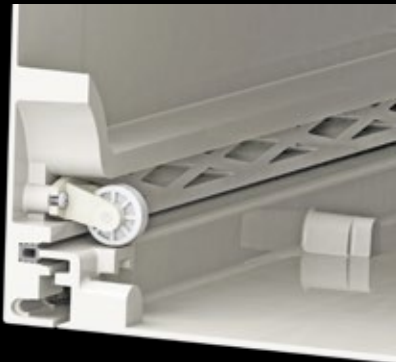
Part Number	Description
ALL-004/IN/DOOR	Allbrox 4 Inner Door
ALL-005/IN/DOOR	Allbrox 5 Inner Door
ALL-006/IN/DOOR	Allbrox 6 Inner Door

**Allbrox with PC Window**

Part Number	Description
ALL-003/CLEARPC	Allbrox 3 with clear Polycarbonate window
ALL-004/CLEARPC	Allbrox 4 with clear Polycarbonate window
ALL-005/CLEARPC	Allbrox 5 with clear Polycarbonate window
ALL-006/CLEARPC	Allbrox 6 with clear Polycarbonate window



**ALLBROX 7.1**



Door locator



Easily Removable door



Extra strength lid

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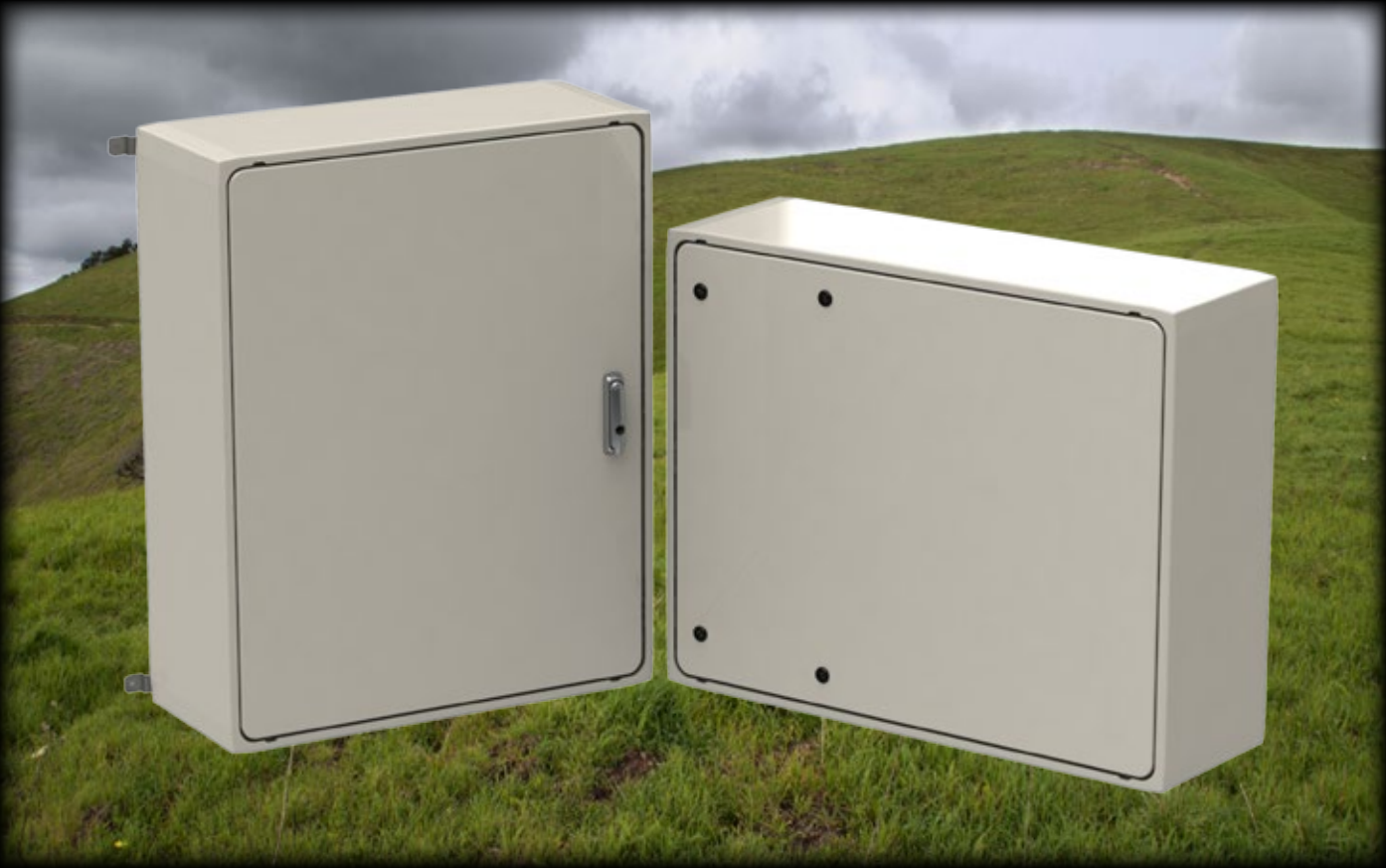
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**ALLBROX 8**



Door stay



Internal Stainless steel hinges.



Chrome handle locking mechanism.



Single cam individual locking system IP66



Single handle multi cam locking system IP65

<b>MATERIAL</b>	ABS Plastic			
<b>OPERATING TEMPERATURE</b>	-30° C to + 90° C			
<b>GLOW WIRE CAPABILITY / FLAMMABILITY</b>	960° / UL94 V0			
<b>EXPECTED UV LIFE (DIRECT EXPOSURE)</b>	2-3 Years (6 Years - Indirect exposure)			
<b>IP LEVEL</b>	IP55			
<b>SECURITY LEVEL</b>	1	2	3	4
<b>ENVIRONMENT (INDOOR/OUTDOOR)</b>	Indoor and Outdoor use			



Part Number	Description	H	W	D	QTY
FEP-0014	ABS Enclosure - Standard Grey Lid	100	100	70	80
FEP-0016	ABS Enclosure - Standard Grey Lid	100	100	90	60
FEP-0015	ABS Enclosure - Standard Transparent Lid	100	100	70	80
FEP-0017	ABS Enclosure - Standard Transparent Lid	100	100	90	60



Part Number	Description	H	W	D	QTY
FEP-0022	ABS Enclosure - Standard Grey Lid	190	140	90	20
FEP-0024	ABS Enclosure - Deep Grey Lid	190	140	135	16
FEP-0023	ABS Enclosure - Standard Transparent Lid	190	140	190	20
FEP-0025	ABS Enclosure - Deep Transparent Lid	190	140	135	16



Part Number	Description	H	W	D	QTY
FEP-0026	ABS Enclosure - Standard Grey Lid	240	190	100	10
FEP-0028	ABS Enclosure - Deep Grey Lid	240	190	155	4
FEP-0027	ABS Enclosure - Standard Transparent Lid	240	190	100	10

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Enclosures

The concept of ready boards was introduced in the mid 90's as a rapid way to deploy basic electrical access to a large portion of the community who were without this commodity. Allbro (York) was the first company in South Africa to create a technically sound commercially viable and large scale production for this concept. Allbro remains one of the largest producers of this product while actively working on creating more sophisticated and sustainable distribution methods for basic electrical supply to the community.

Hinges

## 2 Platforms

### RB - A

### RB-H

Locks

Handles



Accessories

### Available in different Bulkhead options (or no Bulkhead - No Lightswitch)

#### Standard Bulkhead

#### Slimline Bulkhead

**New CFL only Bulkhead - will not close with standard globes, forcing the consumer to use Low power CFL's**

Rotary Operating Handles

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Transformer Equipment

Part Number	Description	Part Number	Description	Part Number	Description
BUL-60W	60watt Bulkhead Ventilated	BUL-SLIMLINE	Slimline Bulkhead	LWB-001	CFL Bulkhead
BUL-100W	100watt Bulkhead Ventilated				

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Note: We invented these light fittings specifically for our ready boards but many markets now use them as stand alone light fittings.



Different Plugsets



SA Standard

13A Square Pin

Shucko

Different Mounting Options for Easy Deployment

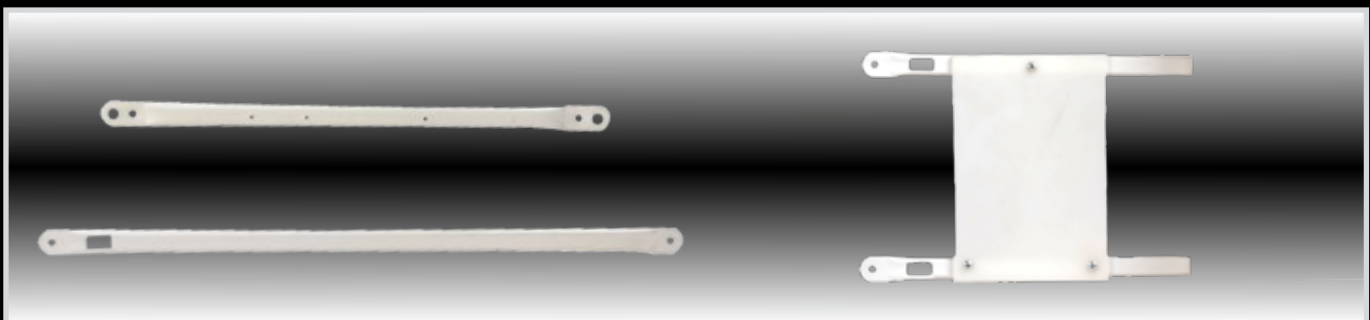
Compact SMC Backing Board

Large SMC Backing Board with Wiring Tunnel

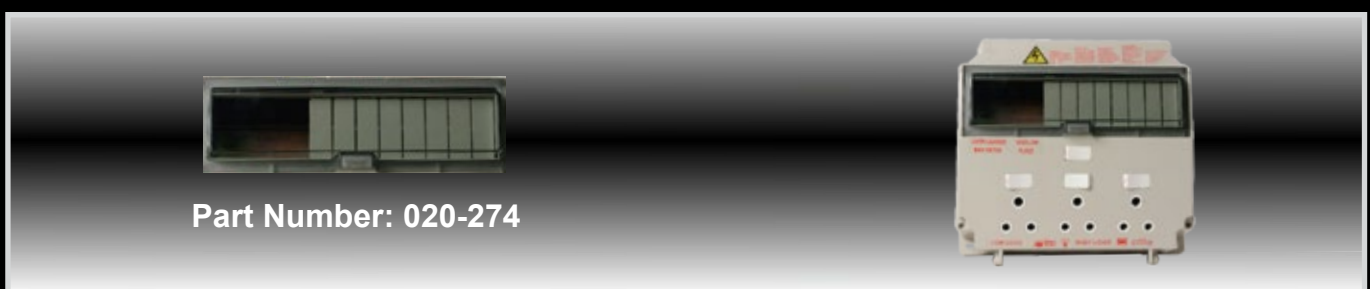


Rails

Rails with Perspex Meter Mounting Point



Optional Cover for RBH



Part Number: 020-274

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## Different Breaker Options



Swan

LS

Onesto

NUR

ABB

CBI

GE

Schneider

Chint

## Some PRE - configured Options



Part Number	Earth Leakage	MCB'S	No of 3 Pin Switched Socket Outlets	Bulkhead Light Fitting with Switch
040-705 (RBH1)	63A	2 x 20A	3	-
040-707 (RBH1B)	63A	2 x 20 A	3	1



Part Number	Earth Leakage	MCB'S	No of 3 Pin Switched Socket Outlets	Bulkhead Light Fitting with Switch
RB-AB10/63	63A	1 x 20A	3	-
RB-AB2/63	63A	1 x 20A	3	1

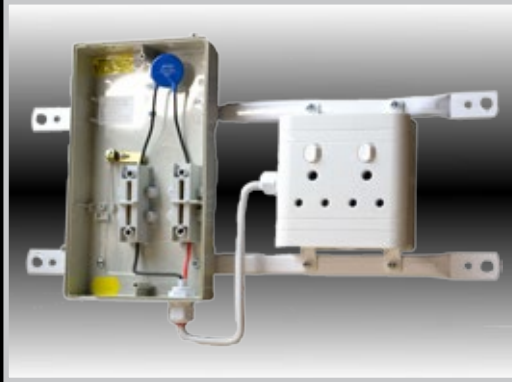
## Splitmeter Ready Board



Part Number	Earth Leakage	MCB'S	No of 3 Pin Switched Socket Outlets	Bulkhead Light Fitting with Switch
040-706	63A	1 x 20A	2	-

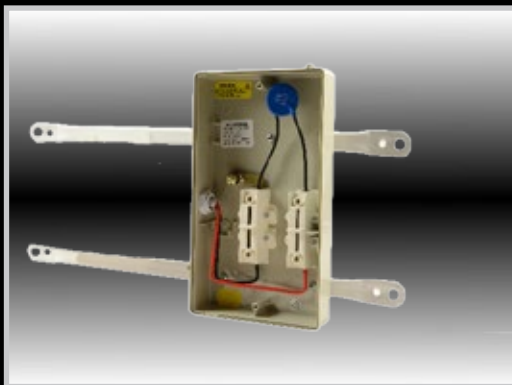
Universal Base for Pre- payment meters

Passive With Rails & Plugset



Part Number	Description	QTY
PAS	Passive Base with Rails and Plugset	1

Passive With Rails



Part Number	Description	QTY
PAS-1	Passive Base with Rails	1

Passive



Part Number	Description	QTY
PAS-2	Passive Base with glands and hole cover	1
PAS -3	Passive base with no rails, no glands, no hole cover	1

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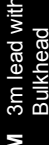






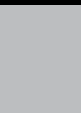














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To cater for the vast array of Ready Board configuration we have designed the table below:

Index	Transformer Equipment	Insulators	Rotary Operating Handles	Accessories	Breaker Type	Main Switch/Iso	Earth Leakage/Main	Hinges	Enclosures	
<b>RB</b> Ready Board	<b>H</b> Horizontal  <b>A</b> Vertical 	<b>0</b> No Bulkhead <b>B</b> Standard Bulkhead  <b>C</b> CFL-Round  <b>S</b> Slimline  <b>X</b> 5m Lead with Lampshade  <b>M</b> 3m lead with Bulkhead 	<b>0</b> None <b>G</b> Globe 14w CFL 	<b>0</b> None <b>L</b> Large SMC backing board  <b>S</b> Small SMC backing board  <b>R</b> Rails  <b>P</b> Rails with perspex mounting  <b>E</b> Rails with Passive  <b>M</b> Mounting Plate  <b>G</b> Rails with 4x4 plugset 	<b>Z</b> SA type  <b>S</b> Shuko type  <b>B</b> BS type 	<b>S</b> Swan  <b>A</b> ABB  <b>O</b> Onesto  <b>L</b> LS  <b>G</b> GE  <b>C</b> CBI  <b>N</b> NUR  <b>F</b> Schneider  <b>T</b> Chint  <b>0</b> None <b>i</b> Free Issue	<b>0</b> None <b>1</b> 1 x 25A MCB <b>2</b> 1 x 10A MCB <b>3</b> 1 x 16A 2P MCB <b>4</b> 1 x 40A MCB <b>5</b> 1 x 50A MCB <b>6</b> 1 x 63A MCB	<b>E</b> 63EL 63A DP EL Isol  <b>C</b> GL breaker combination <b>L</b> 40A EL <b>0</b> None	<b>0</b> None <b>1</b> 1 x 10A SP MCB <b>2</b> 1 x 20A SP MCB <b>3</b> 1 x 32A SP MCB <b>4</b> 1 x 6A SP MCB <b>5</b> 1 x 63A SP MCB <b>6</b> 1 x 16A SP MCB <b>7</b> 1 x 25A SP MCB	

**Note:**  
Please note that number indicates position & current rating of breaker.

**Example:**  
(22) = 2 x 20A  
(212) = 1 x 20A, 1 x 10A, 1 x 20A



## How the coding system works

### Example:

You are looking for the following requirements in your Ready Board:

- Horizontal configuration
- Standard Bulkhead
- With a Globe
- Large mounting plate
- SA type plug
- Swan breakers
- No mainswitch
- Earth Leakage
- 2 x 20A SP MCB
- 1 x 16A SP MCB
- 1 x 32A SP MCB

Your code is then created using the table on the previous page and looks like this:

# RBHBGLZS0E2263

\* Should you need any assistance please contact our sales department.



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H	W	D	Part Number	Description	QTY
85	130	70	040-609	PSO-1 (S15)	24
85	130	70	040-662	PSO-1/A with single socket outlet	24



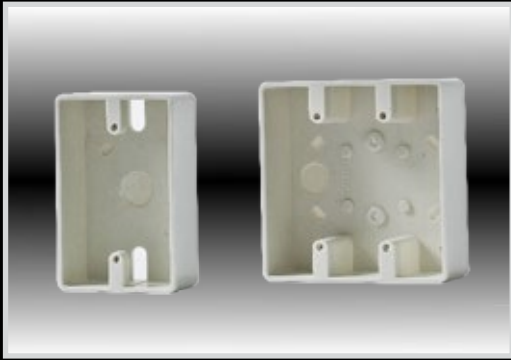
H	W	D	Part Number	Description	QTY
85	130	70	040-609/ISO	PSO-1/ ISO with 60 Amp Isolator	24



H	W	D	Part Number	Description	QTY
130	130	70	040-754	S15- Duo Empty Double socket outlet	12
130	130	70	040-770	S15/A- Duo with Double socket outlet	12



H	W	D	Part Number	Description	QTY
130	173	88	040-610	PSO-2 (F010)	12
130	173	88	040-663	PSO-2/A with double socket outlet	12



H	W	D	Part Number	Description	QTY
118	70	36	040-723	A-42 Single surface mount socket outlet box (DMC version)	20
118	118	36	040-724	A-44 Double surface mount socket outlet box (DMC version)	20



Part Number	Description	H	W	D	QTY
040-788	PVC 4x2 Wall Box	62	107	51	10
040-789	PVC 4x4 Wall Box	109	108	51	10



Part Number	Description	H	W	D	QTY
040-790	PVC 4x2 Extension Box	127	81	42	10
040-791	PVC 4x4 Extension Box	127	127	42	10



Part Number	Description	H	W	D	QTY
040-633	DMC ST - 1 box (S64)	149	109	55	40

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## Fitted Pool Boxes



H	W	D	Part Number	Description	QTY	
315	185	120	040-659	WP-1 with 125VA & Dial Timer	4	Pool-Fit
315	185	120	040-660	WP-1 with 125VA & Panasonic Timer	4	Pool-Fit
315	185	120	040-683	WP-1 with 300VA & Dial Timer	4	Pool-Fit
315	185	120	040-684	WP-1 with 300VA & Panasonic Timer	4	Pool-Fit

## Empty Pool Boxes



H	W	D	Part Number	Description	QTY	
315	185	120	040-617	WP-1 Din E+N Bar	6	Pool -Din
315	185	120	040-667	WP-1 Sam E+N Bar	6	Pool - Sam
315	185	120	040-668	WP-1 Din+Wood Block	6	Pool- 5way Din
315	185	120	040-669	WP-1 Sam+Wood Block	6	Pool- 6way Sam
315	185	120	040-689	WP-1 Din + Raised wooden block	6	Pool-Din wood



## New Fitted Pool Box

H	W	D	Part Number	Description	QTY	IP
220	250	100	040-771	DBH-1 Pool Fit (50VA)	1	54
220	250	100	040-785	DBH-1 Pool Fit (125VA)	1	54





H	W	D	Part Number	Description	IP Level	QTY
200	110	60	040-744	YB4 Din (Holds 4 Din type breakers)	31	20
200	110	60	040-758	YB5 Sam (Holds 5 Samite type breakers)	31	4



H	W	D	Part Number	Description	IP Level	QTY
240	190	70	040-759	YB6/11 Sam (Holds 11 Samite type breakers)	31	10



H	W	D	Part Number	Description	IP Level	QTY
365	255	73	040-363	MP-16 with E/N Bar Sam or Din (Holds 11 Din type breakers and 20 Samite type breakers)	31	5
365	255	73	040-704	MP-16 Screw on Lid (Holds 11 Din type breakers and 20 Samite type breakers)	31	5



H	W	D	Part Number	Description	IP	QTY
220	250	100	040-711	DBH-1 Outdoor DB without Circuit Breakers (Holds 12 Din Type breakers)	54	1

\* Hinged Lid



H	W	D	Part Number	Description	IP	QTY
215	150	80	040-690	F081-SAM (Holds 8 Samite type breakers)	54	8

\* Slide Lid

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## 12 Way Distribution Board



Hinges

H	W	D	Part Number	Description	IP	QTY
220	250	100	020-309	Flush mount distribution board with cover	65	1
220	250	100	020-310	Surface mount distribution board with cover	65	1

Locks

## 17 Way Distribution Board



Handles

H	W	D	Part Number	Description	IP	QTY
220	250	100	020-311	Flush mount distribution board with samite cover	65	1
220	250	100	020-312	Surface mount distribution board with samite cover	65	1

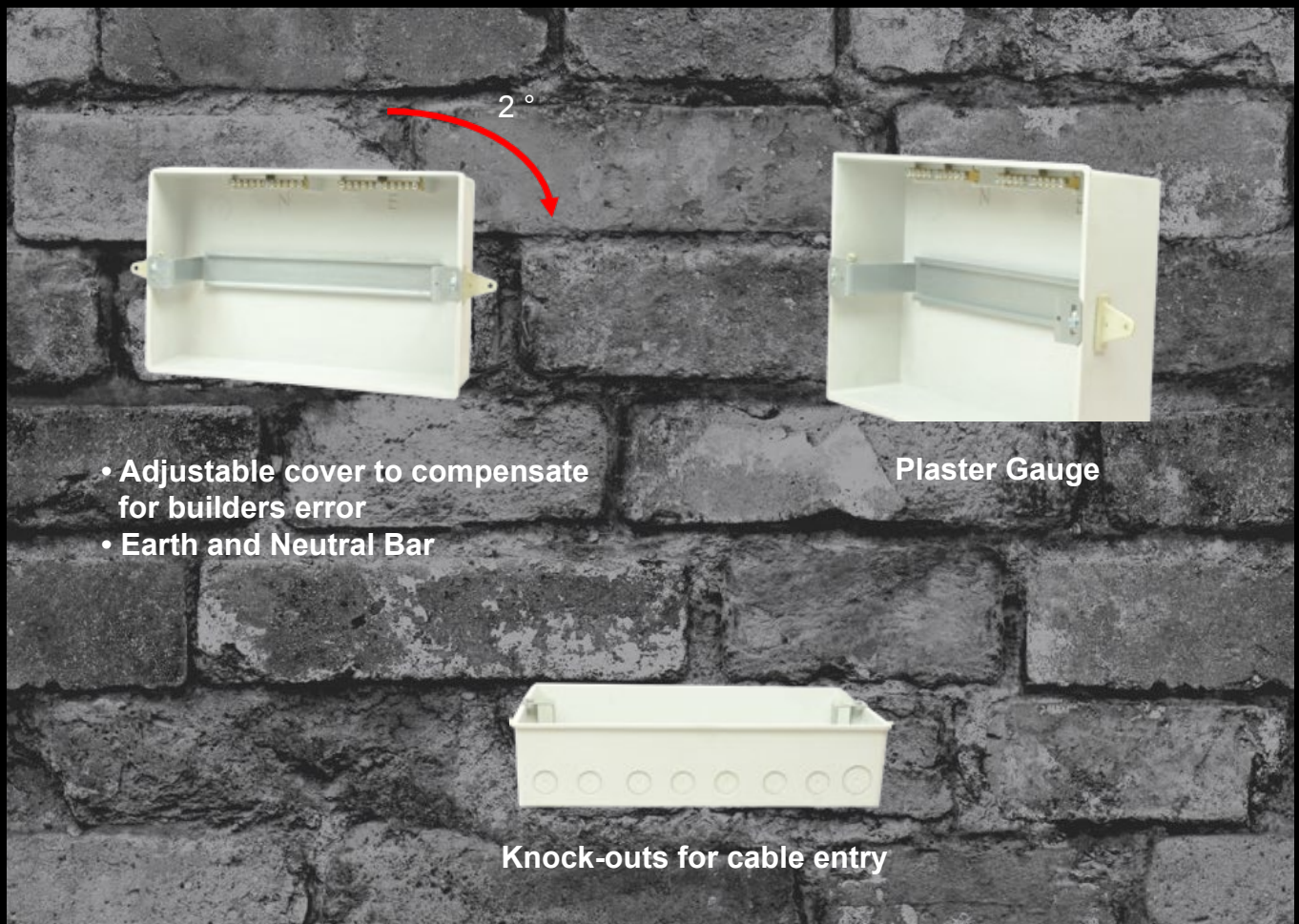
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- Adjustable cover to compensate for builders error
- Earth and Neutral Bar

Plaster Gauge

Knock-outs for cable entry



H	W	D	Part Number	Description	IP	QTY
200	110	60	040-760	WDB5- B 5 Way Sam Surface Box	65	4



H	W	D	Part Number	Description	IP	QTY
350	250	160	040-745	WDB8 - B 8 Way Din Surface Box	65	2



H	W	D	Part Number	Description	IP	QTY
350	250	160	040-746	WDB12-B 12 Way Sam Surface Box	65	2



H	W	D	Part Number	Description	IP	QTY
400	300	140	040-747	WDB20-B 20 Way Din Surface Box	65	2



H	W	D	Part Number	Description	IP	QTY
400	300	140	040-743	WDB24-B 24 Way Sam Surface Box	65	2

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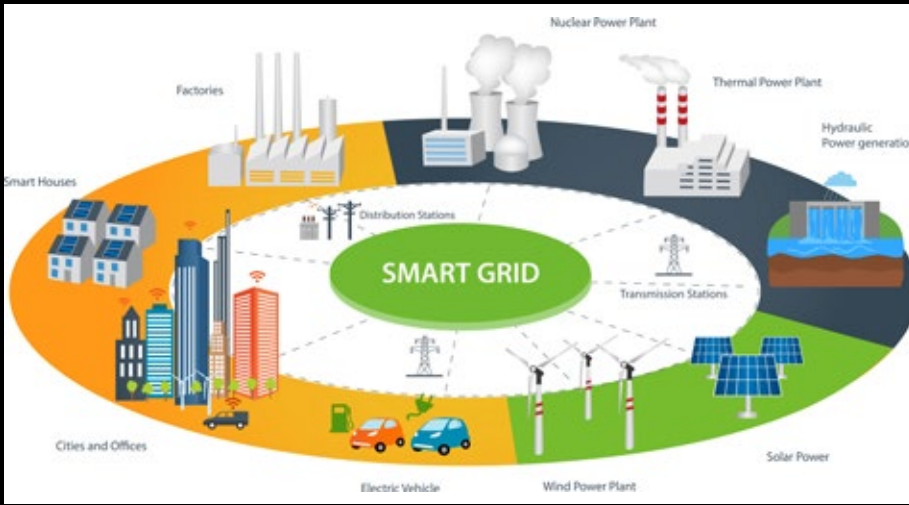
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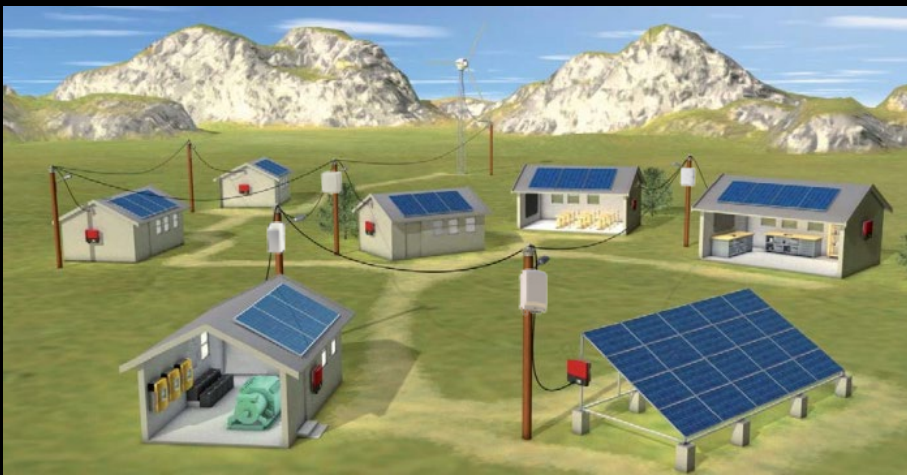
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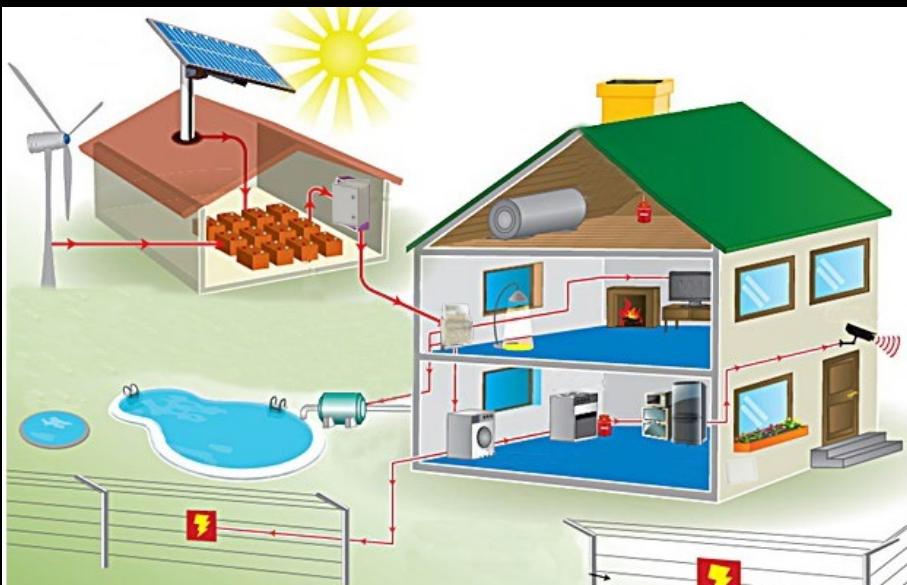
## SMART GRIDS



## MICRO/MINI GRIDS



## OFF GRID







Note: Backing Boards are a great way to pre-fit a solution for fast and reliable deployment.

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Enclosures	Part Number and Description	H (mm)	W (mm)	D (mm)
Hinges	Part Number: 040-644 SAP Number: 0168788 CB11 - 1-2 Way pole top box with 1x50A breaker	200	100	90
Locks	Part Number: 040-677 SAP Number: 0168574 CB21 - 2-4 Way pole top box with 1x50A breaker	200	100	90
Handles	Part Number: 040-639 SAP Number: 0168787 CB4 - 4 Way pole top box with 1x125A breaker	350	218	136
Rotary Operating Handles	Part Number: 040-682 SAP Number: 0168710 CB458 - 5-8 Way pole top box with 2x50A breaker	350	218	136
Insulators				
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## Slide Lid Type (Empty)

Part Number and Description	Front Closed	Front Open	Back	H (mm)	W (mm)	D (mm)
Part Number: 040-645 CB44 - Single meter empty enclosure				235	105	120
Part Number: 040-794 CB45 - Single meter empty enclosure				325	169	133
Part Number: BUN5-1S5P BUN5 - 5 Way empty enclosure				309	209	121
Part Number: BUN-6WAY BUN6 - 6 Way Samite empty enclosure				309	209	121
Part Number: BUN-9WAY BUN9 - 9 Way Samite empty enclosure				340	260	150
Part Number: 040-643 CB9 - Empty enclosure				295	140	85
Part Number: 040-637 CB1 Slide Lid - Empty enclosure				255	185	120
Part Number: 040-636 CB2 - Empty enclosure				410	300	200

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# Pole Top Enclosures for Distribution and Metering Hinged Type - Normal Duty

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Part Number	Description	H	W	D
040-903	TILT 3	350	218	136
040-904	TILT 5	350	310	136
040-905	TILT 6	480	355	149

## Wall Mounting or Pole Mounting - (No Additional Parts Required for Either Method)



Pole Mounting



Wall Mounting





AIITilt 6 3-phase



AIITilt 6 3-phase



AIITilt 6 4-way splitmeter



AIITilt 6 4-way

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The value and complexity of equipment deployed across vast geographical areas has increased massively. The need to protect the function of these networks and devices has been met with all sorts of interesting ideas. Some challenges have been brilliantly overcome, but no solution has been able to completely address the convergence of the challenges that exist in this environment.

### Often-overlooked or forgotten challenges

**Vandalism:** Due to the high value of enclosure content, bypassing a smart meter, disabling a surveillance system or simply stripping the contents for sale on the black market are growing global realities.

**Access Control:** Ease of access for authorised personnel is often adversely affected when trying to address vandalism challenge. Monitoring and tracking of authorised personnel is important as criminal elements sometimes gain authorised status.

**IP Level (Water and Dust):** While companies do their utmost to solve new challenges the primary function of the enclosure is sometimes forgotten. Electrical systems fail because of three main factors, Temperature, water and dust. The latter two are addressed by the international standard IEC61529 (SANS IEC 61529). Enclosures that are hand-made differ from each other and simply do not seal consistently.

**UV resilience and weatherability:** Accelerated UV testing is primarily a measure of colour degradation. However, real life exposure has to cope with temperature cycling, rain and particle rich wind. International standards do not currently exist to test this, leaving real life long-term field trials to provide the only genuine test of an enclosure's ability to withstand the elements.

**Human contact risk / shock hazard:** When the solution to vandalism involves metallic materials there is a serious risk for personnel and public to come into contact with live electrical circuits. When such an enclosure is on a pole the risk for the person working at height is exaggerated.

**Flammability:** Some plastic materials are able to absorb impact very well. If one strikes a garden refuse bin with a hammer it just bounces off. The cautionary embossed words on the lid "No hot ash" point to a serious flaw in using such materials within an electrical network. All electrical enclosures are supposed to be non-flammable or at least self-extinguishing. Most utility companies require compliance to IEC 62208, which stipulates the parameters of glow wire testing and flammability. Using these materials specifically to address vandalism would incorrectly suppose that vandals only have access to hammers and not matches.

**Weight:** Whilst modern composites constantly deliver greater strength to weight performance there is no way to get around the fact that weight is added when increasing the strength of a mechanical part. Keeping this weight down to a level that allows installation and does not compromise the pole or wall structure is a real challenge.

**Signal interference:** Some materials create a faraday cage effect and interfere with signals that often form part of the function of the installed equipment. Antennae that are mounted outside the enclosure are a vulnerable point that also attract unwanted attention.

### Announcement

Solving the above challenges is complicated and the resulting solution normally becomes costly bringing the price into question.

AllVault is the name given to the latest innovation. Experience learned while pioneering composite mahole chamber design allowed Allbro to create what we believe is the strongest composite enclosure ever to be sold commercially.


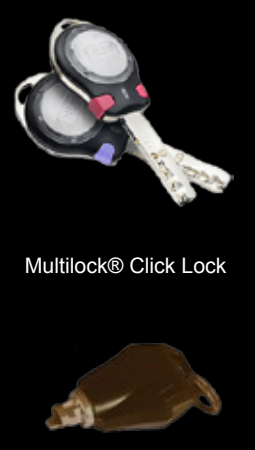
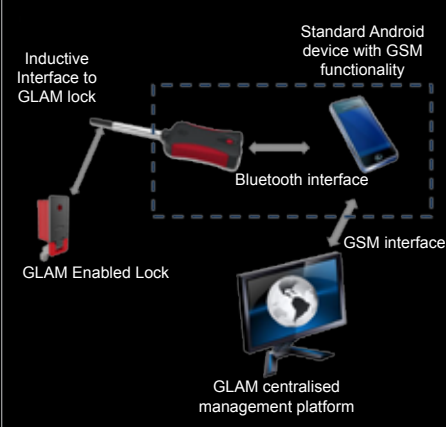
AllVault has been designed to address every one of the above challenges. The cost of lost revenue is not measured in the time and capital it takes to replace infrastructure. Systems that are bypassed or are out of order represent enormous values that can never be recovered. The financial case to be made to justify investment in this area is a very straightforward conclusion to prove.

# Pole Top Enclosures for Distribution and Metering Hinged Type - Heavy Duty



Part Number	Description	H	W	D
040-906	AllVault empty with mechanical nut (IP 66)	581	403	201

AllVault is a world first. This high security outdoor box is made to offer exceptional protection from dust, water and unwanted personnel. The structure of the box is as important as the locking system and access control. Various locking systems have been catered for.

<u>Mechanical</u>	<u>Central Access Control and Tracking</u>	<u>Full GPS Based Access Control</u>
<p><b>Simple and Effective Mechanical Locking Options</b></p>  <p>Coded Nuts (1000 variations) with magnetic caps works like coded wheel mag nuts</p>	<p><b>Dock and Trace key systems that allow central tracking of technician activity on weekly/cyclical basis.</b></p>  <p>Multilock® Click Lock</p> <p>Rayonics® Dockable Key</p>	<p><b>Live GPS based Access Control System</b></p>  <p>Inductive Interface to GLAM lock</p> <p>Standard Android device with GSM functionality</p> <p>Bluetooth interface</p> <p>GLAM Enabled Lock</p> <p>GLAM centralised management platform</p>

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Enclosures

More modern ranges like Utilec (page 20 ) and Terminal (page 26 ) were designed to replace several of these products. Some clients still prefer the older models for specific applications so we have decided to include them in the latest catalogue.

Hinges

## Slide Lids

Locks



Handles

040-607	UB-1
190 x 170 x 157 ( H, W, D )	
040-608	UB-2
310 x 335 x 100 ( H, W, D )	

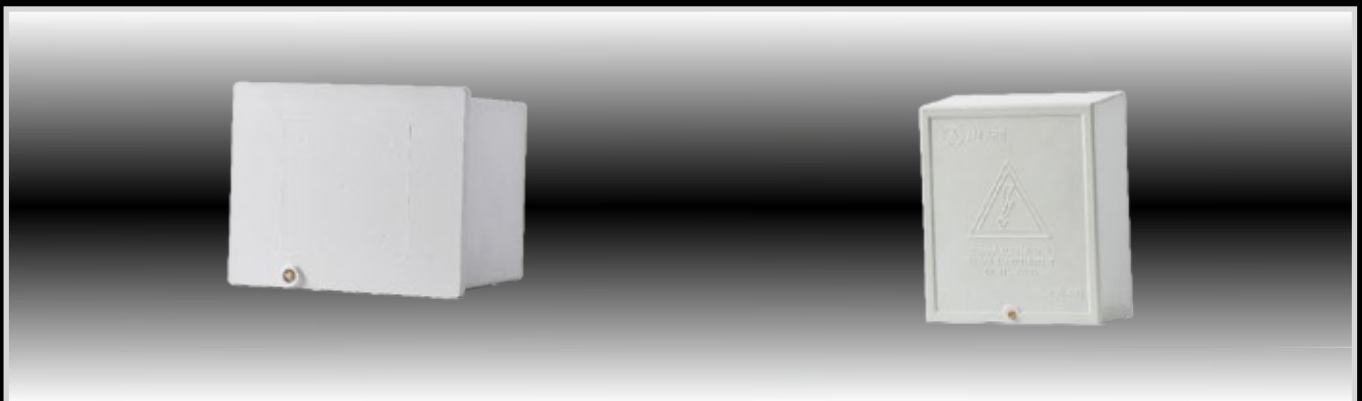
040-615	UB-4boxes/lid (U2)
315 x 185 x 120 ( H, W, D )	
040-666	UB-4s/lid with wood (U2-M)
315 x 185 x 120 ( H, W, D )	

040-661	UB-7boxes/lid Trilock (ut-s1)
305 x 305 x 155 ( H, W, D )	
040-623	UB-7boxes/lid COMPLETE (U7-A)
305 x 305 x 155 ( H, W, D )	

Accessories

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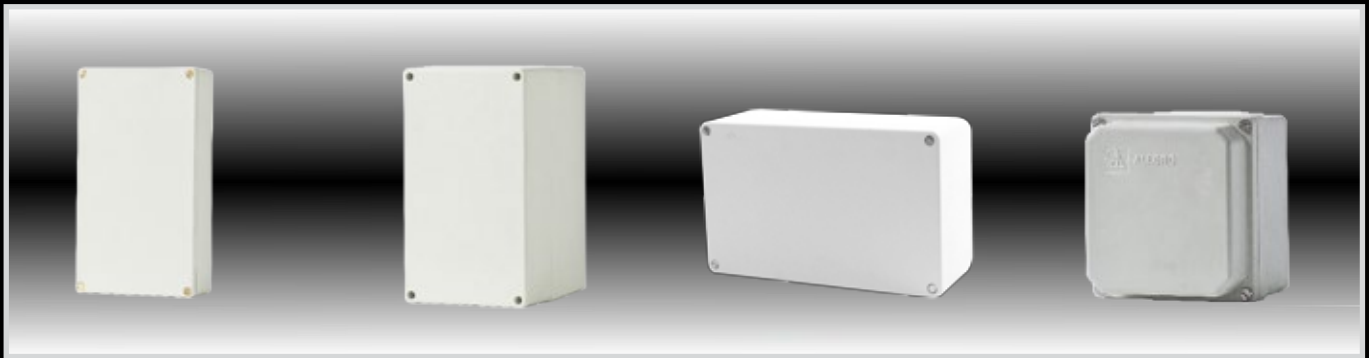
040-624	UB-8Telkom Small Lid
195 x 245 x 216 ( H, W, D )	
040-625	UB-9Telkom Large Lid
212 x 365 x 250 ( H, W, D )	

040-701	CB60 (S60)
160 x 140 x 60 ( H, W, D )	

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## Screw Lids



040-756	S11
200 x 110 x 40 ( H, W, D )	

040-757	MPS13Deep (S13DEEP)
230 x 130 x 160 ( H, W, D )	
040-653	MPS13box (S13)
230 x 130 x 120 ( H, W, D )	

040-654	MPS14box (S14)
260 x 160 x 93 ( H, W, D )	

040-605	PB-1box
100 x 97 x 77 ( H, W, D )	
040-606	PB-2box
141 x 97 x 77 ( H, W, D )	



040-630	UB-4Ascrew on lid (U2-S1)
315 x 185 x 120 ( H, W, D )	

040-762	EMB1-BTelephoneDB with board (UB5-B)
400 x 300 x 100 ( H, W, D )	

040-703	RF-1Rooftop box
108 x 65 ( H, W, D )	



040-601	MPAbox (S10)
170 x 106 x 78 ( H, W, D )	
040-602	MPBbox (S12)
205 x 155 x 70 ( H, W, D )	
040-603	MPCbox (S3S)
305 x 205 x 110 ( H, W, D )	

040-626	MPEbox (J1)
87 x 87 x 50 ( H, W, D )	

040-600	MPXbox (S5B)
120 x 80 x 55 ( H, W, D )	
040-755	MPXDeep (S5DEEP)
110 x 70 x 80 ( H, W, D )	

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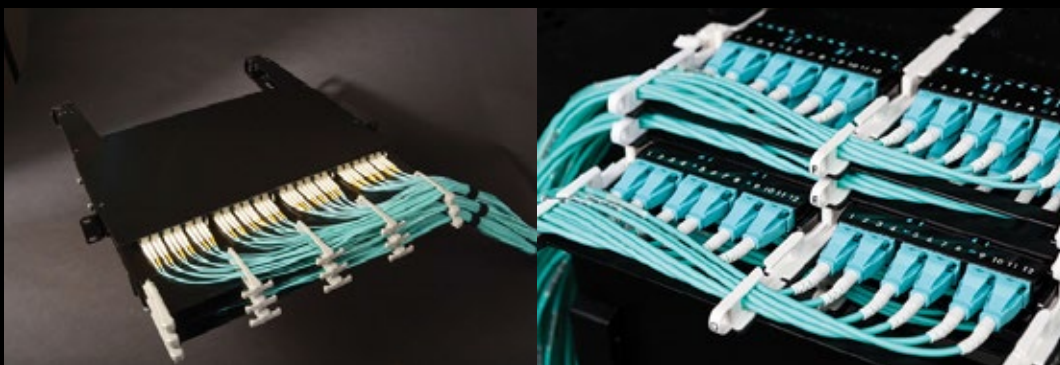
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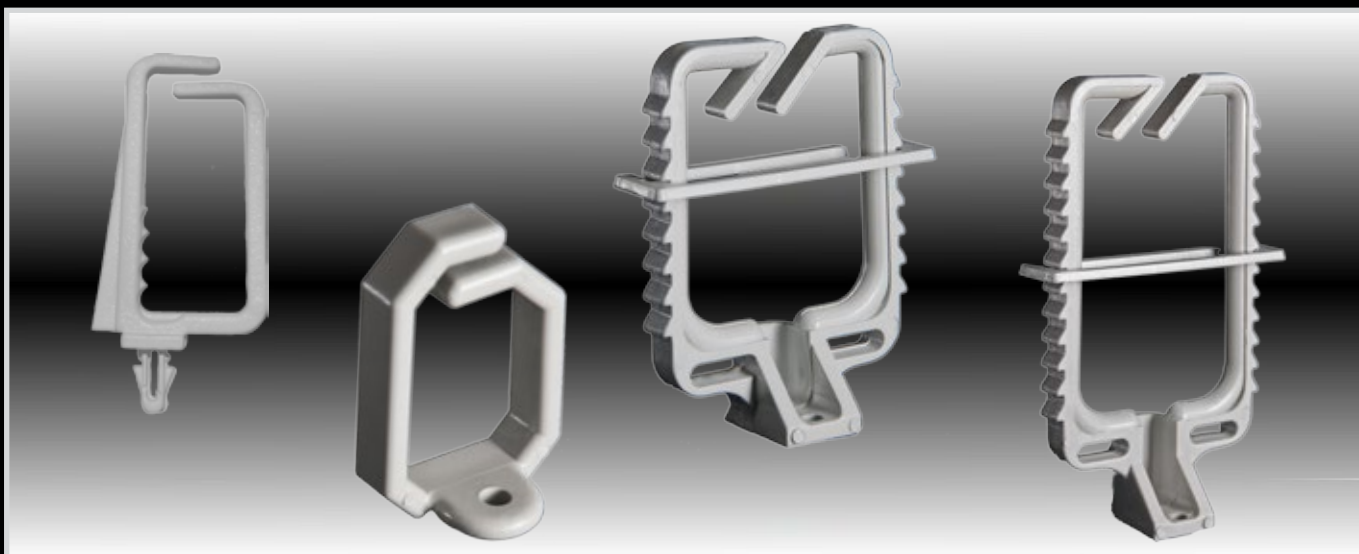
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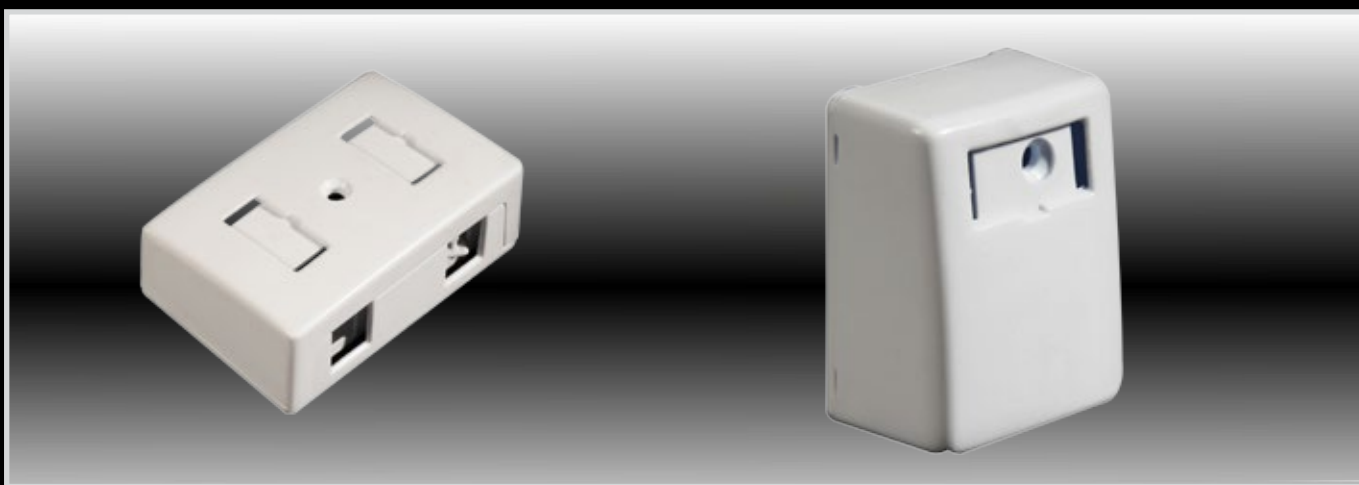
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\* Examples of similar applications



Part Number	Description
FTP-0004	100 PR Jumper Guide
FTP-0005	100 PR Jumper Guide Clip
FTP-0006	300 PR Jumper Guide
FTP-0008	600 PR Jumper Guide



Part Number	Description
FTP-0010	RJ45 - Single Wall Outlet
FTP-0011	RJ45 - Double Wall Outlet

# 2

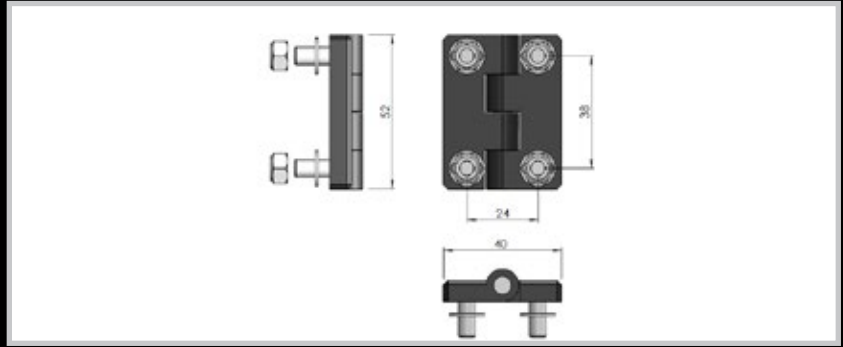
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 <p>1010168 Pg. 60</p>	 <p>083-002 Pg.61</p>	 <p>150.32.60 Pg.61</p>	 <p>89.178.203 Pg.61</p>	 <p>40540 Pg.61</p>	 <p>60.60.36 Pg.62</p>
 <p>90.60.36 Pg.62</p>	 <p>6037 Pg.62</p>	 <p>5052-0 Pg.60</p>	 <p>4944-0 Pg.60</p>	 <p>40.64.64 Pg.60</p>	 <p>1010071 Pg.64</p>
 <p>1010073 Pg.64</p>	 <p>1010075 Pg.64</p>	 <p>HB32 - HB100 Pg.65</p>	 <p>HB32PC - HB100PC Pg.65</p>	 <p>083-007 Pg.66</p>	 <p>083-005 Pg.66</p>
 <p>1010126 Pg.67</p>	 <p>1010125 Pg.67</p>	 <p>083-006 Pg.68</p>	 <p>1010176 Pg.68</p>	 <p>1010180 Pg.68</p>	 <p>HB82B19H Pg.69</p>
 <p>HB82B24H Pg.69</p>	 <p>HB44B24H Pg.69</p>	 <p>641510 Pg.70</p>	 <p>643210 Pg.70</p>	 <p>645010 Pg.70</p>	 <p>302058B Pg.71</p>
 <p>423825B Pg.71</p>	 <p>40110 Pg.72</p>	 <p>3010 Pg.72</p>	 <p>410110/B Pg.72</p>	 <p>1010122 Pg.73</p>	 <p>1010127 Pg.73</p>

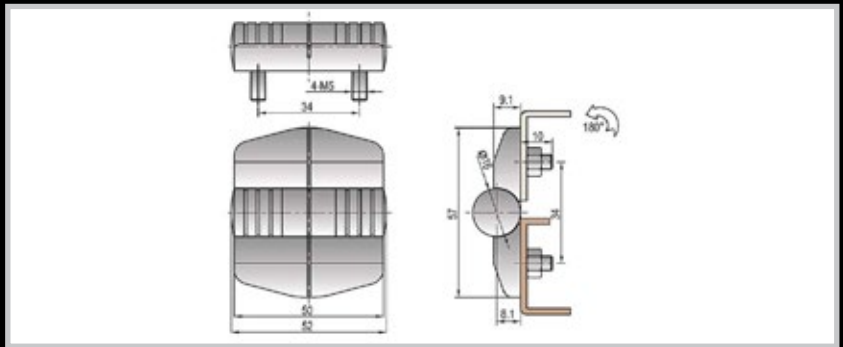


 <p>1010151 Pg.74</p>	 <p>1010150 Pg.74</p>	 <p>230201 Pg.75</p>	 <p>20021 Pg.75</p>	 <p>60011 Pg.75</p>	 <p>7001 Pg.76</p>
 <p>3501 Pg.76</p>	 <p>6001 Pg.76</p>	 <p>1010185 Pg.77</p>	 <p>083-004 Pg.74</p>	 <p>AL250-6 Pg.77</p>	 <p>90.80.5 Pg.78</p>
 <p>WTLH60SS Pg.78</p>	 <p>WTRH60SS Pg.78</p>	 <p>MS50-150 SS50-150 Pg.81</p>	 <p>1010145 Pg.80</p>	 <p>1010182 Pg.80</p>	 <p>GDH40MM Pg.81</p>
 <p>083-003 Pg.81</p>					

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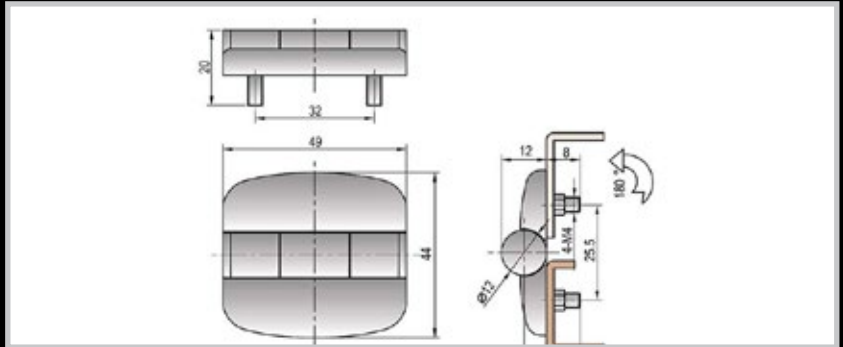


Part Number	Description
1010168	ZDC, black powder coated, MS 6mm studs and fasteners
1010168S/S	Full stainless steel 6mm studs
1010168N	Nylon black with stainless steel 6mm studs and fasteners



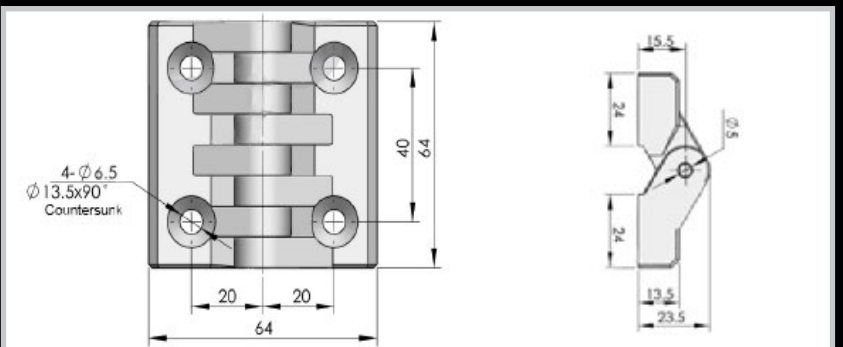
**Remarks:**  
Available in black textured powder coated.

Part Number	Description
5052-0	Black powder coated with plastic waterproof cover



**Remarks:**  
Available in black textured powder coated.

Part Number	Description
4944-0	Black powder coated with plastic waterproof cover and threaded studs



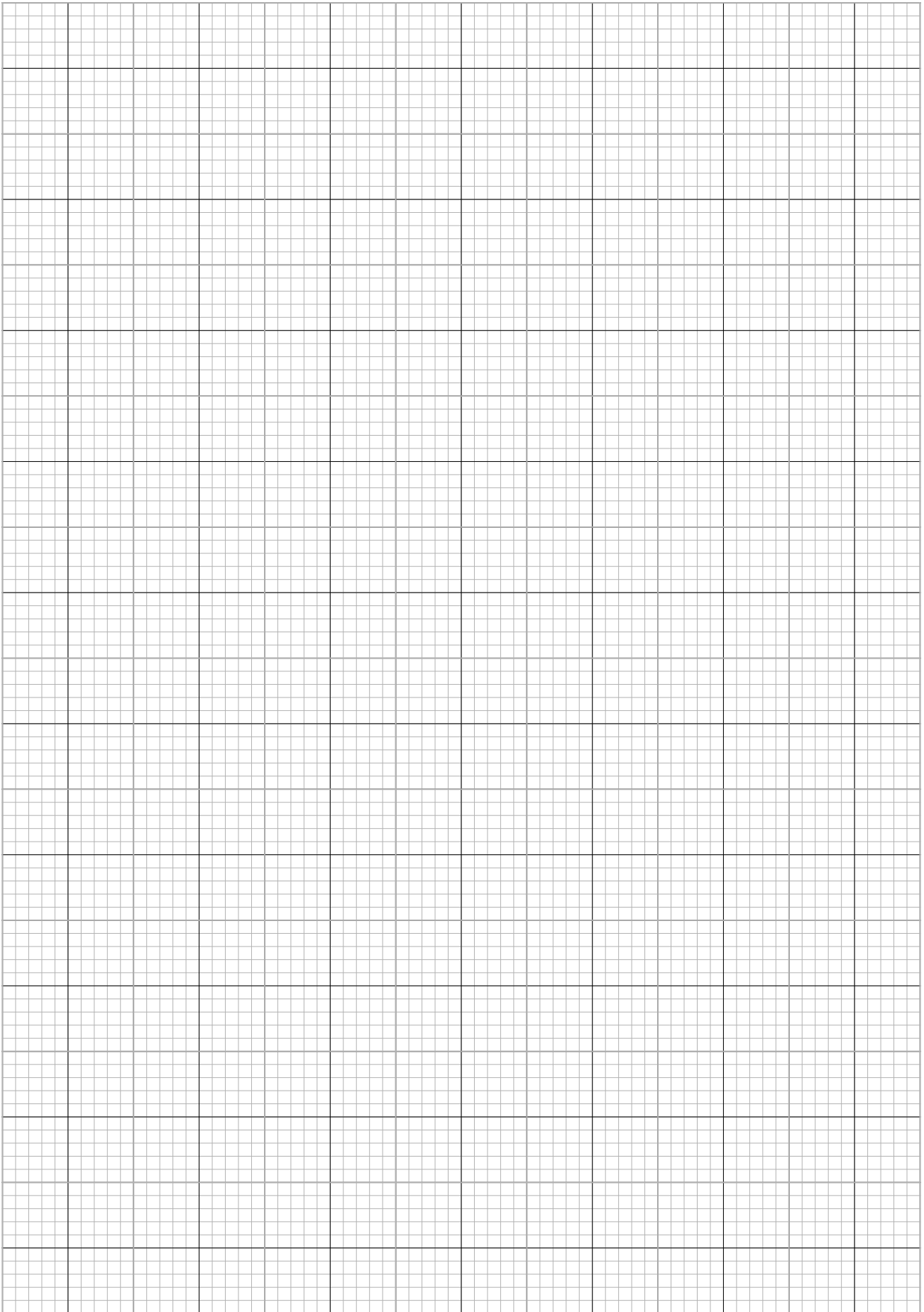
Part Number	Description
40.64.64	Black PA hinge with steel pin, opening angle 180°



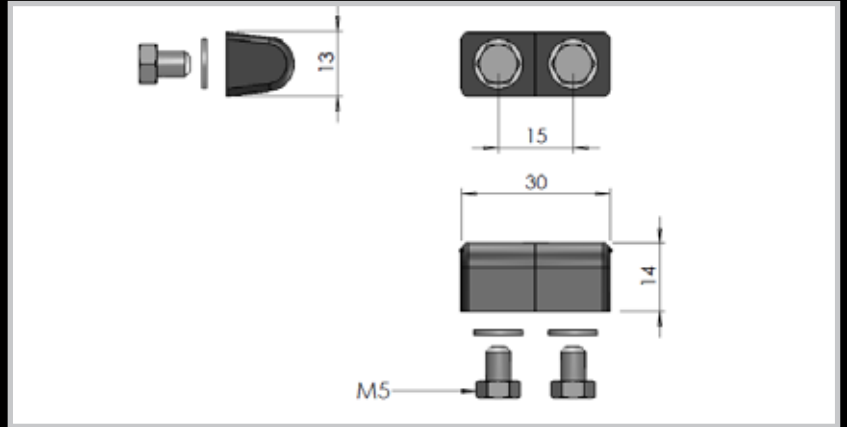




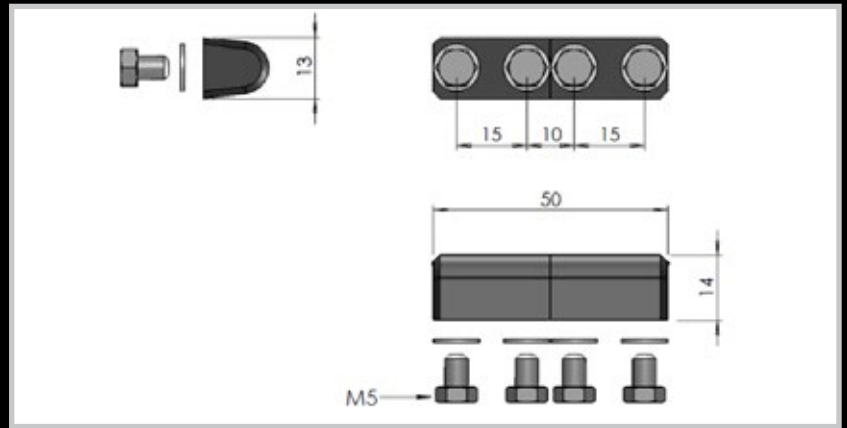
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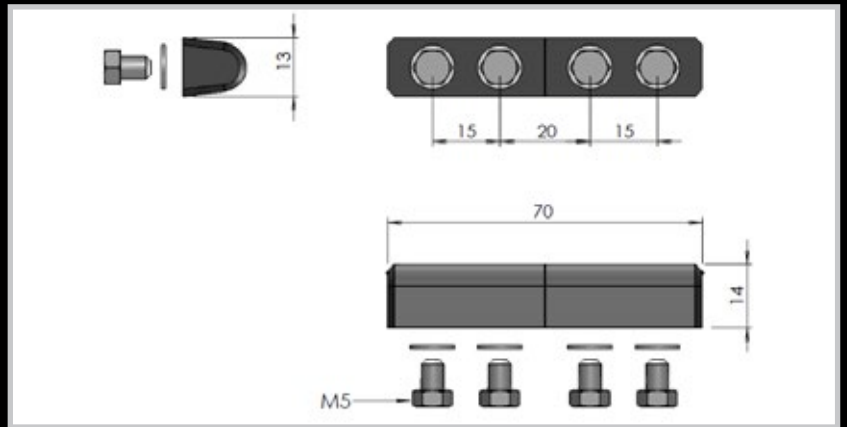
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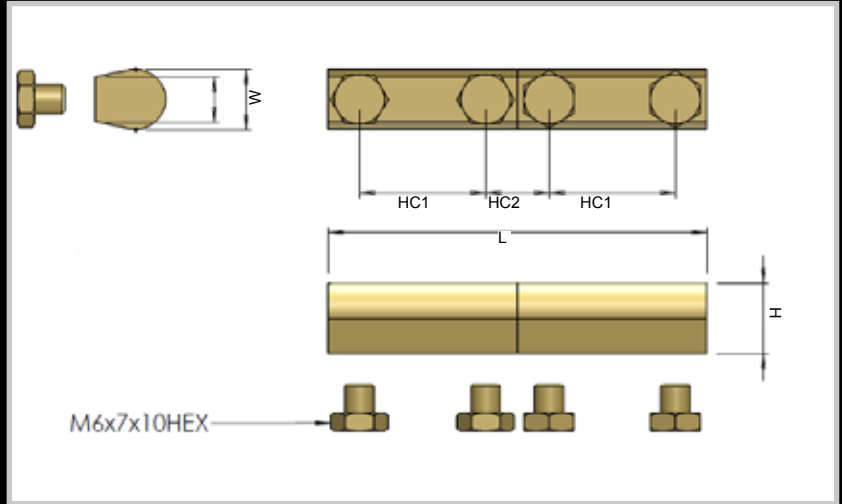
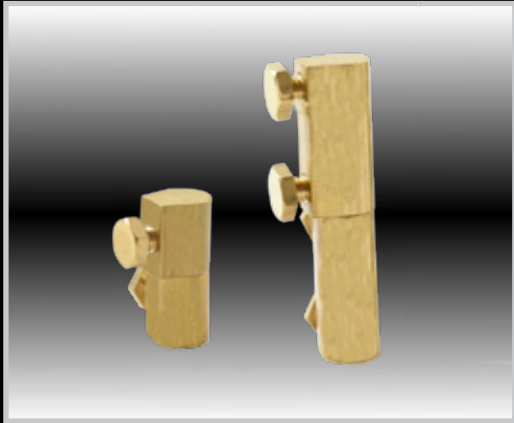
Part Number	Description
1010071	ZDC Black powder coated MS stud and fastener 5mm



Part Number	Description
1010073	ZDC Black powder coated MS stud and fastener 5mm



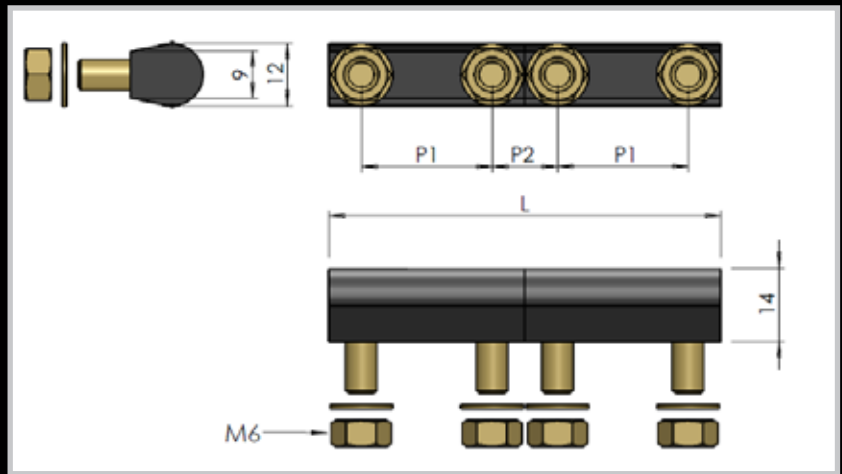
Part Number	Description
1010075	ZDC Black powder coated MS stud and fastener 5mm



Part Number	Description	L (mm)	W (mm)	W2 (mm)	H (mm)	HC1 (mm)	HC2 (mm)
HB32	Brass natural with brass Hex screws	32	12	9	14	16	/
HB60/SCREW	Brass natural with brass Hex screws	60	12	9	14	20	10
HB75	Brass natural with brass Hex screws	75	12	9	14	25	12.5
HB100	Brass natural with brass Hex screws	100	12	9	14	25	25



**Remarks:**  
Comes with 6 mm studs



Part Number	Description	L (mm)	W2 (mm)	W1 (mm)	H (mm)	P1 (mm)	P2 (mm)
HB32P/C	Brass Black powder coated with 6mm studs	32	12	9	14	20	10
HB60P/C	Brass Black powder coated with 6mm screws	60	12	9	14	20	10
HB75P/C	Brass Black powder coated with 6mm studs	75	12	9	14	25	12.5
HB100P/C	Brass Black powder coated with 6mm studs	100	12	9	14	25	25

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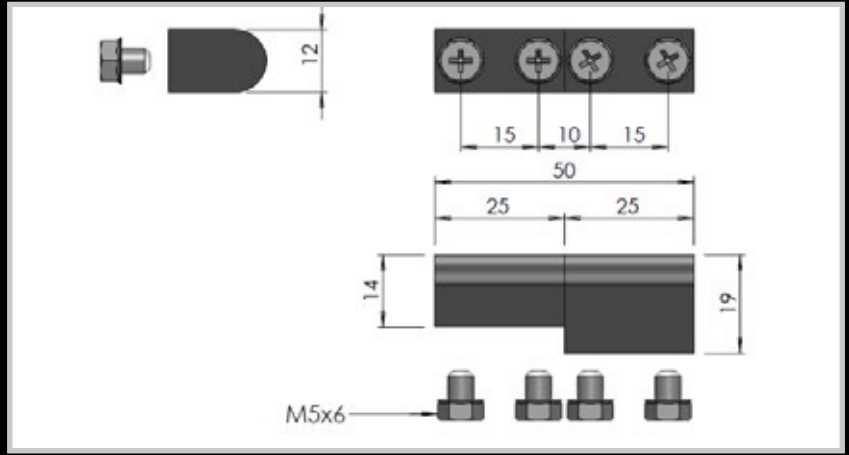
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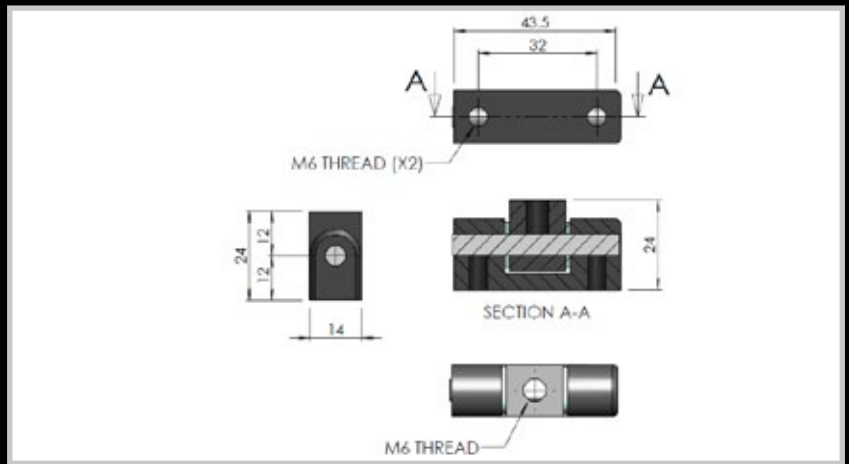
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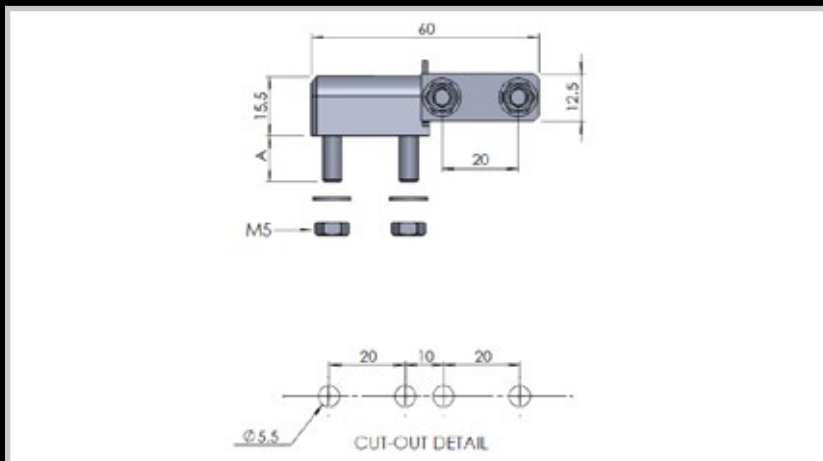


Part Number	Description
083-007/12MM	50mm Stepped hinge ,ZDC Black powder coated Brass pin MS 5x6mm fasteners
083-007/15MM	50mm Stepped hinge ,ZDC Black powder coated Brass pin MS 5x6mm fasteners

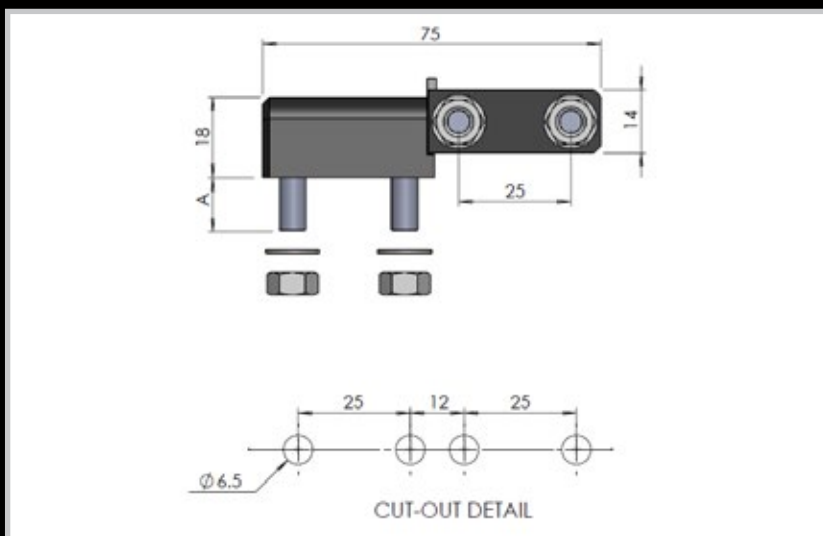


Part Number	Description
083-005	ZDC Black powder coated 6mm countersunk threaded holes





Part Number 60mm	Description	Stud (mm)
1010126	ZDC, Black powder coated MS 5mm stud and fasteners	12
1010126S/S	Complete stainless steel 5mm stud and fasteners	12
<b>SHORT STUD</b>		
1010126 - S	ZDC, Black powder coated MS 5mm stud and fasteners	9
1010126S/S - S	Complete stainless steel 5mm stud and fasteners	9



Part Number 75mm	Description	Stud (mm)
1010125	ZDC, Black powder coated MS 6mm stud and fasteners	15
1010125S/S	Complete stainless steel 6mm stud and fasteners	15
1010125/N	Nylon Black, Stainless steel 6mm stud and fasteners	15
<b>SHORT STUD</b>		
1010125 - S	ZDC, Black powder coated MS 6mm stud and fasteners	9
1010125S/S - S	Complete stainless steel MS 6mm stud and fasteners	9
1010125N - S	Nylon Black, Stainless steel 6mm stud and fasteners	9

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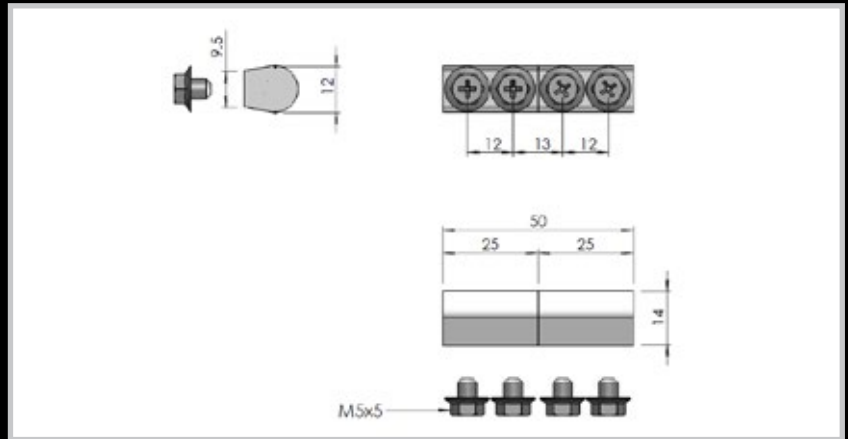
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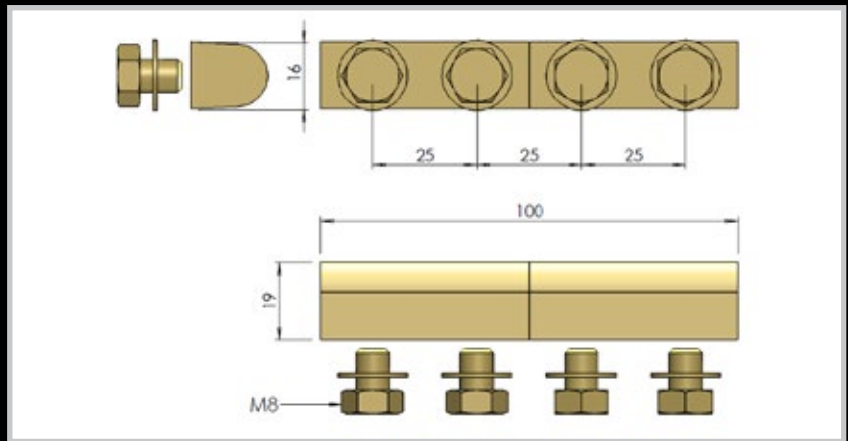
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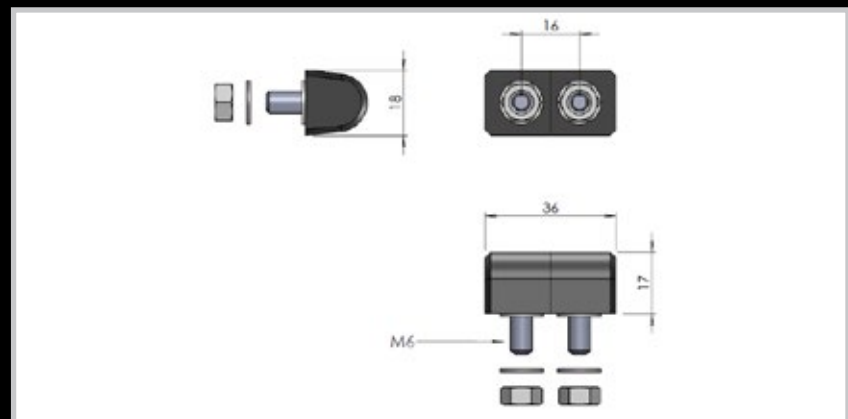
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Part Number	Description
083-006	MS hinge, Brass pin Galvanized, MS 5x5mm fasteners



Part Number	Description
1010176	Brass, Natural.M8 fasteners
1010176/MS100	Brass bolt on part and MS weldable part
1010176S/S	Complete stainless steel M8 Fasteners

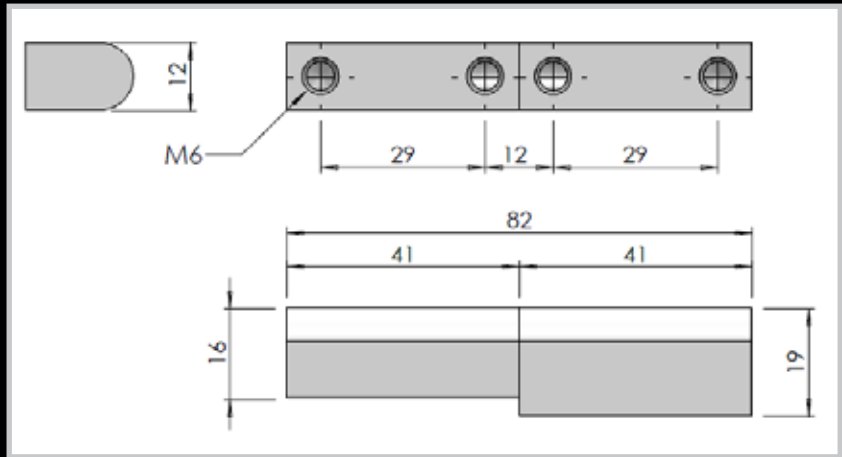


Part Number	Description
1010180	ZDC Black powder coated MS stud and fastener 6mm
1010180/N	Nylon Black, stainless stud and fastener 6mm



Hinge screw types available:

Part Number	A (mm)	B (mm)
SW6X7	7	10
SW6X8	8	13.5
SW6X10	10	13.5

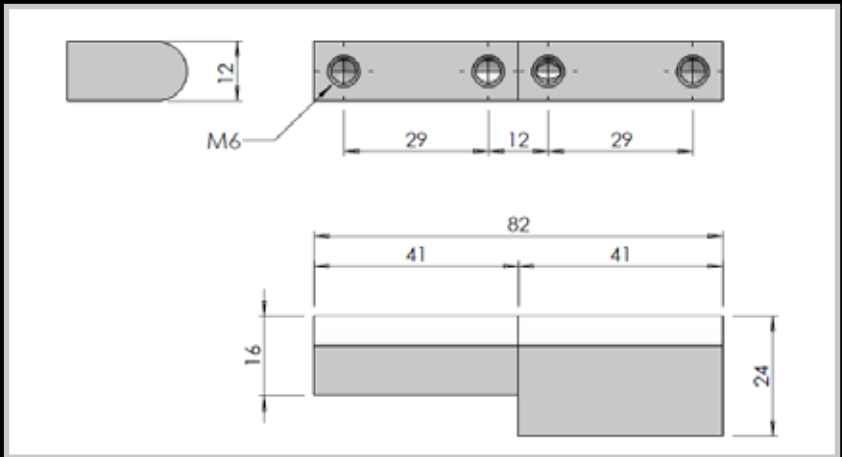


Part Number	Description
HB82B19H	Brass chrome plated 6mm threaded holes
HB82S/S19H	Stainless steel with 6mm threaded holes

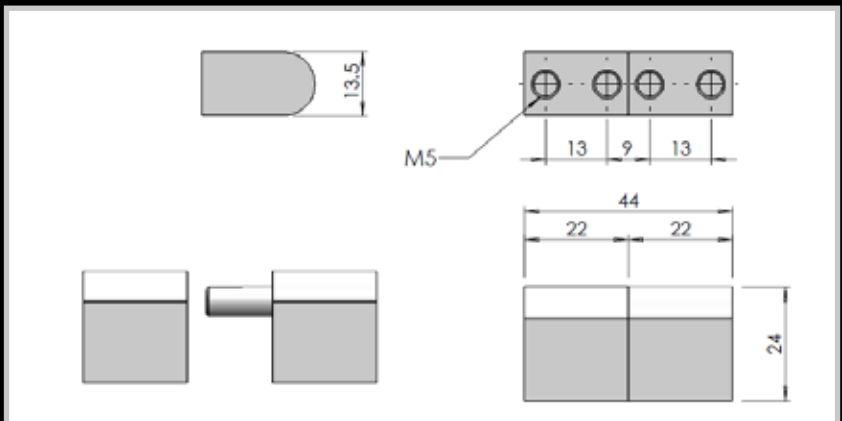


Hinge screw types available:

Part Number	A (mm)	B (mm)
SW6X7	7	10
SW6X8	8	13.5
SW6X10	10	13.5



Part Number	Description
HB82B24H	Brass chrome plated 6mm threaded holes



Part Number	Description
HB44B24H	Complete Brass chrome plated 5mm threaded holes

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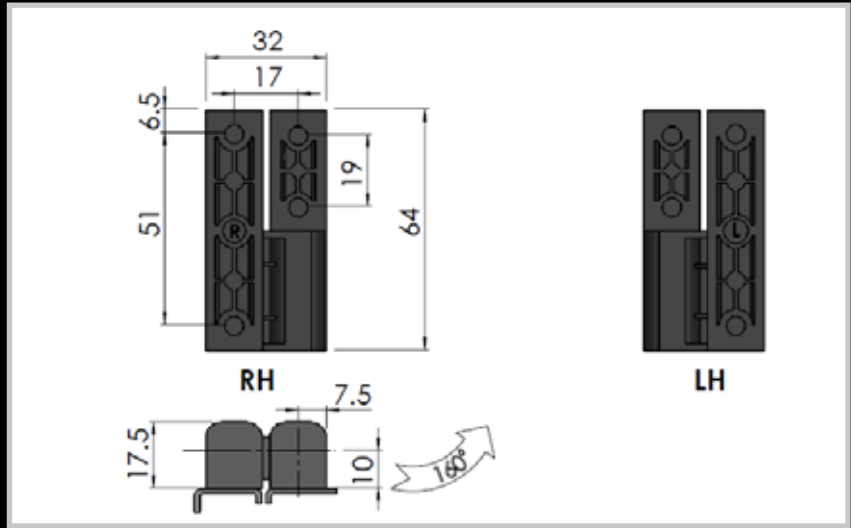
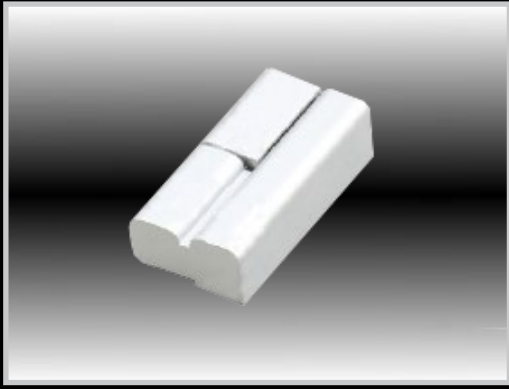
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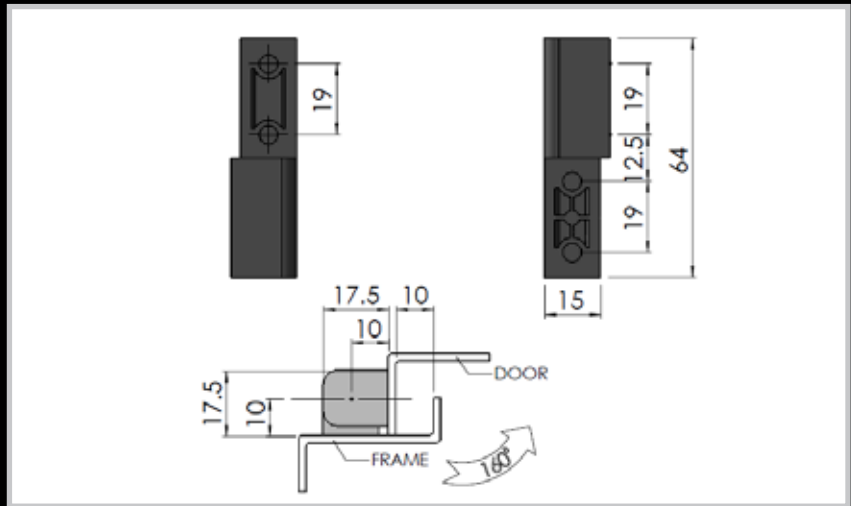
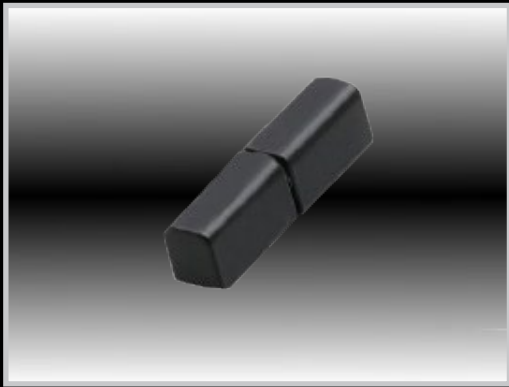
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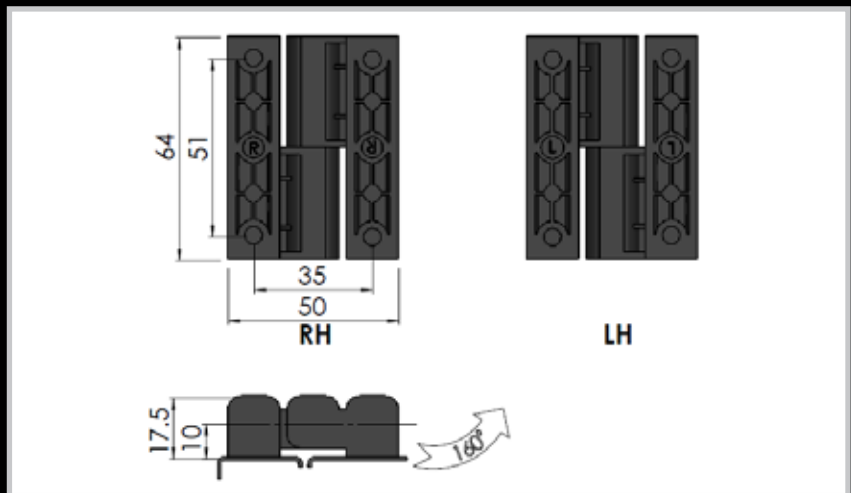
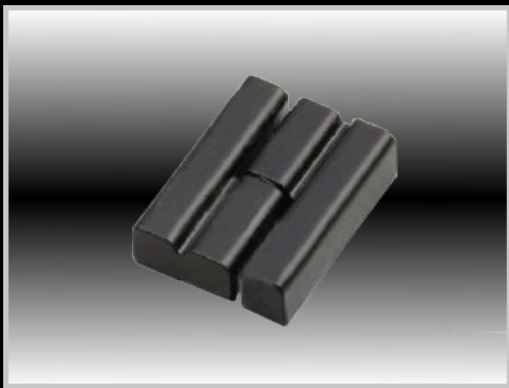
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Part Number	Description
641510B	Black powder coated ZDC Offset hinge
641510C	Chrome ZDC Offset hinge



Part Number	Description
643210B	Black powder coated ZDC Coaxial hinge
643210C	Chrome ZDC Coaxial hinge

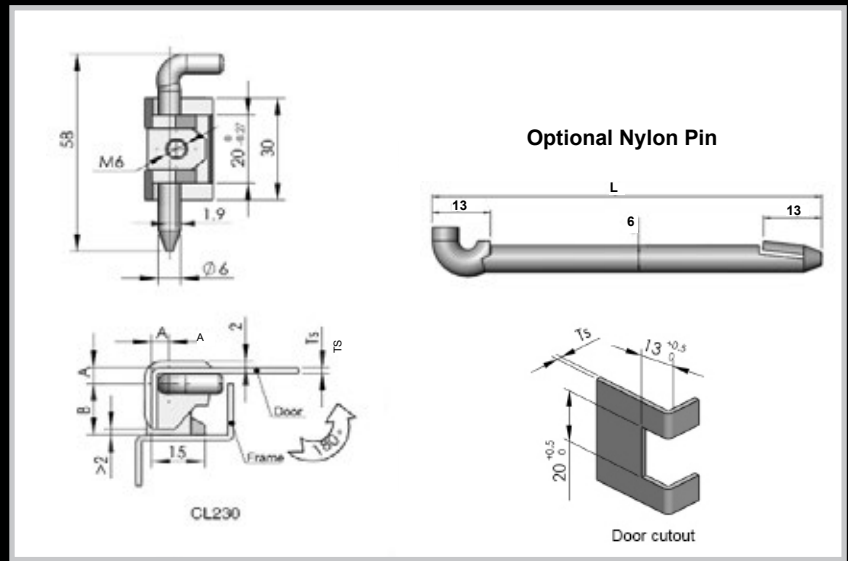


Part Number	Description
645010B	Black powder coated ZDC Symmetric hinge
645010C	Chrome ZDC Symmetric hinge



Optional Nylon Pin

Part Number	L (mm)
NP57	57
NP78	78

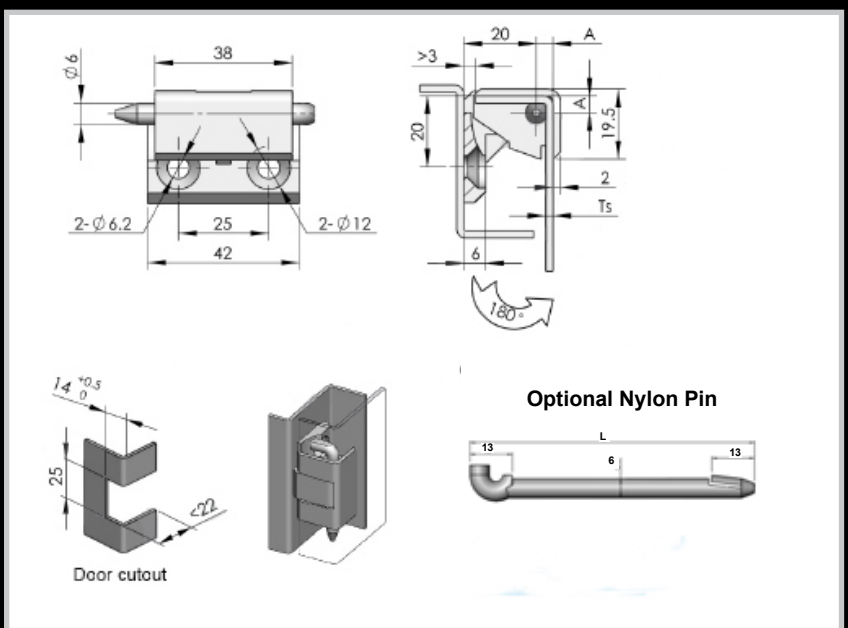


Part Number	Description	TS	A	B
302058B-15	Semi concealed hinge ZDC black powder coated with steel pin	1.5	4.6	15
302058B-15.2	Semi concealed hinge ZDC black powder coated with steel pin	2	5.1	15
302058B-17	Semi concealed hinge ZDC black powder coated with steel pin	1.5	4.6	17
302058B-17.2	Semi concealed hinge ZDC black powder coated with steel pin	2	5.1	17
302058B-19	Semi concealed hinge ZDC black powder coated with steel pin	1.5	4.6	19
302058B-19.2	Semi concealed hinge ZDC black powder coated with steel pin	2	5.1	19



Optional Nylon Pin

Part Number	L (mm)
NP57	57
NP78	78



Part Number	Description	A
423825B.2	Black powder coated, Ts=2	5.1
423825B.3	Black powder coated, Ts=3	6.1
423825B.1	Black powder coated, Ts=1	4.6

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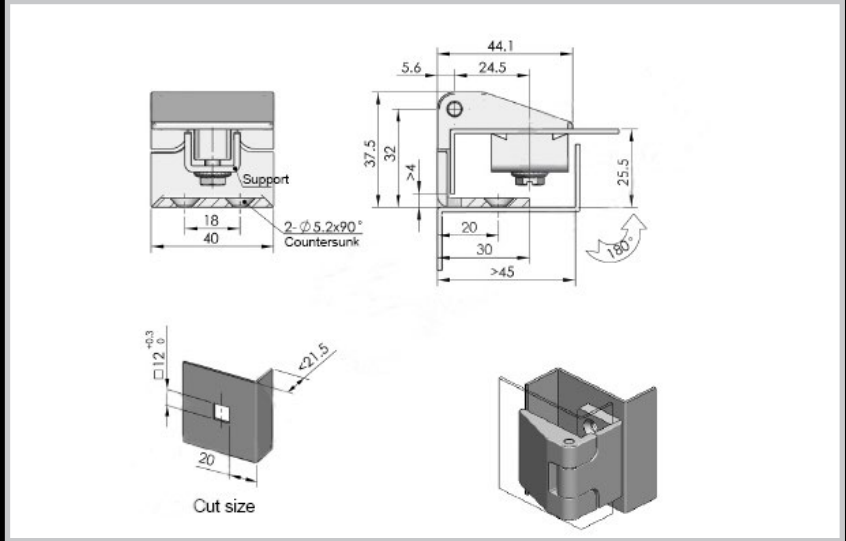
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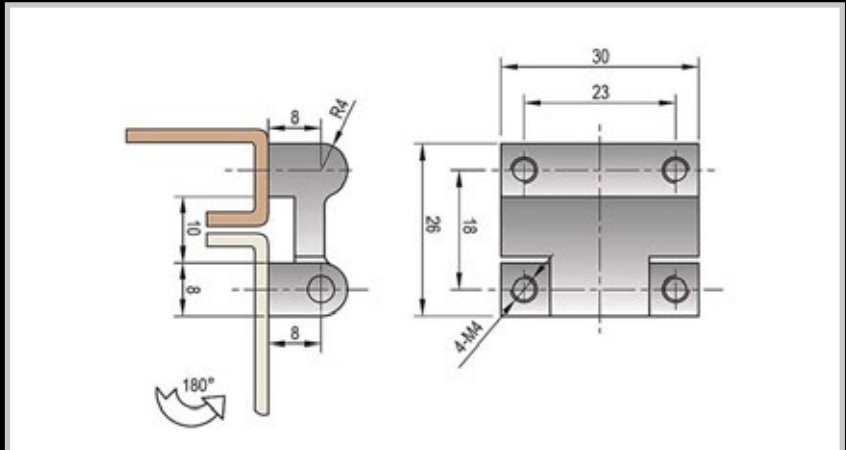
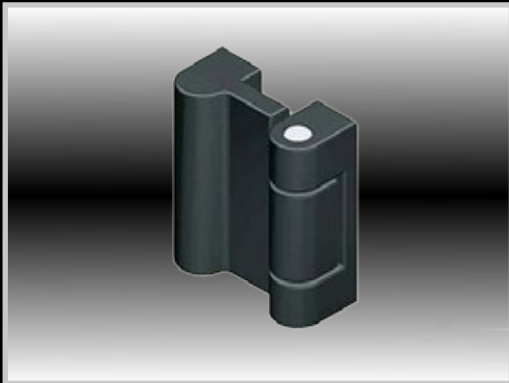
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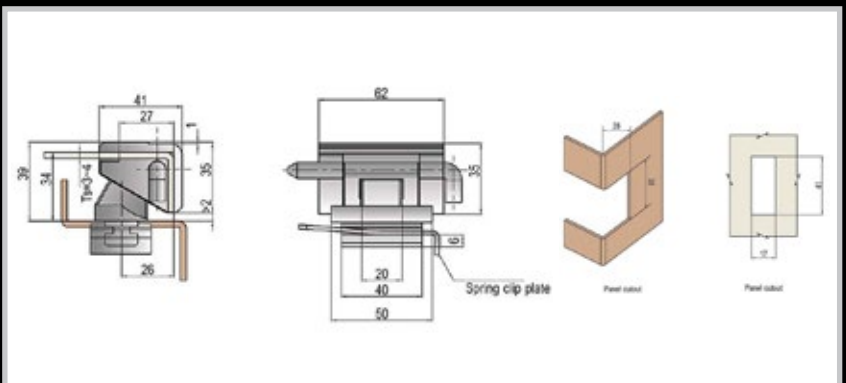
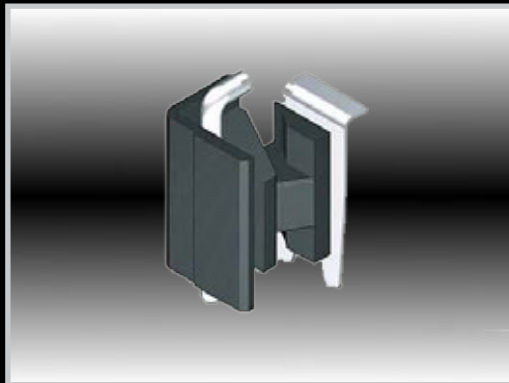
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Part Number	Description
40110	Black powder coated



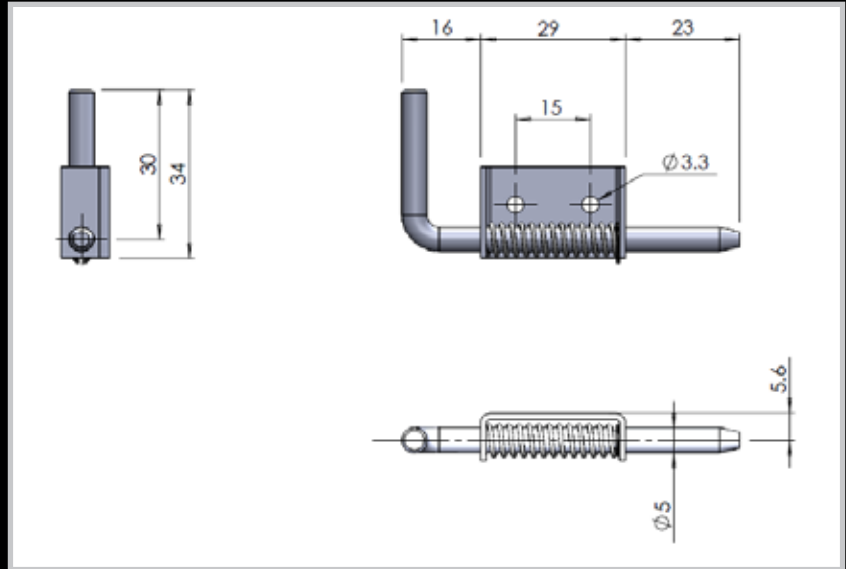
Part Number	Description
3010	Black powder coated



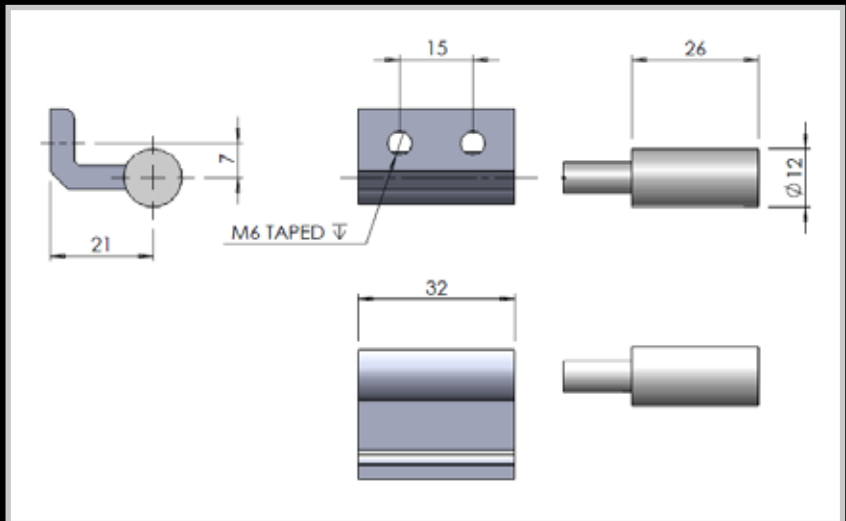
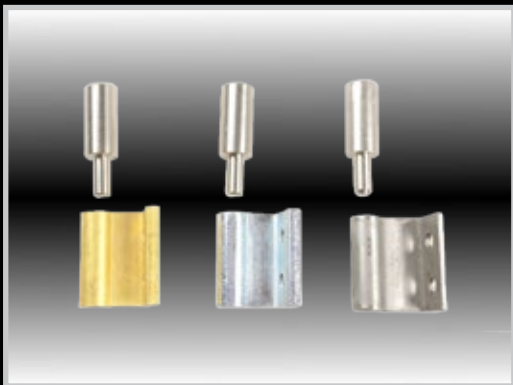
Part Number	Description
410110/B	Black powder coated with a spring clip plate



**Remarks:**  
Spring loaded



Part Number	Description
1010122	MS Body, Spring and L- Pin.
1010122/SPECIAL	MS yellow passivated tapped spring and L- pin
1010122SP/PLATE	MS body, tapped spring, L- pin and Plate



Part Number	Description
1010127	MS pin ZDC body
1010127M/SBODY	MS body
1010127M/SCOMPL	MS pin and body
1010127M/S	MS body , S/S pin
1010127M/SBRASS	MS pin and Brass body
1010127S/SBRASS	Stainless steel pin and brass body
1010127S/SCOMPL	SS pin and body

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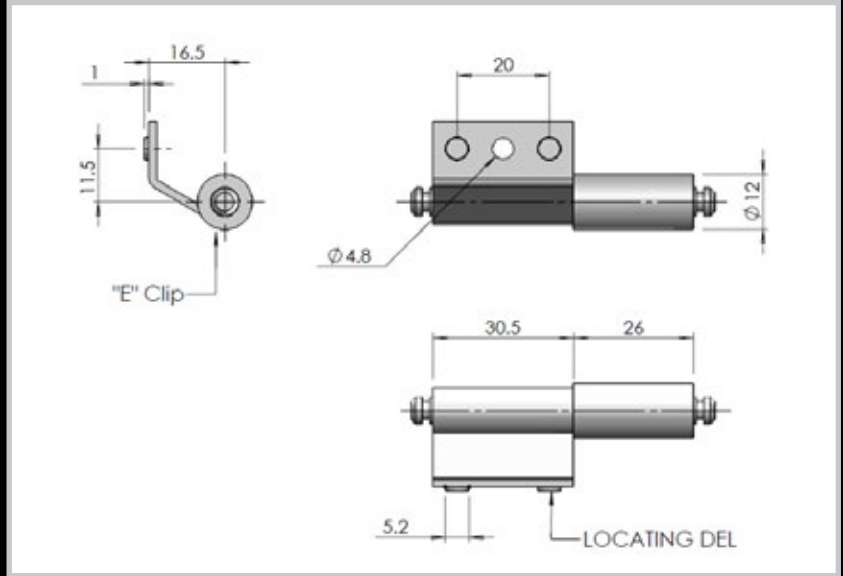
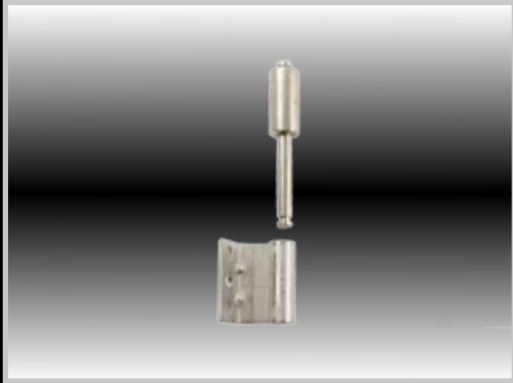
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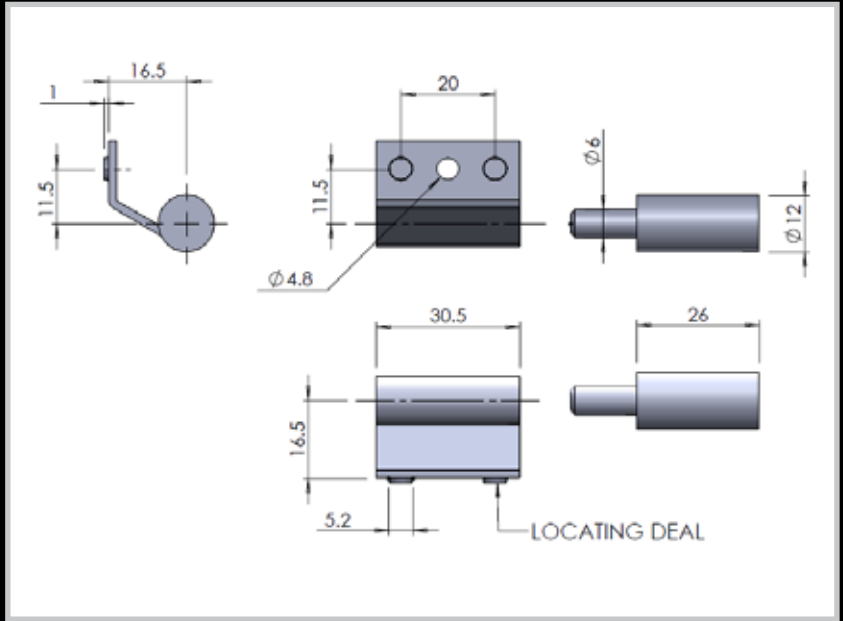
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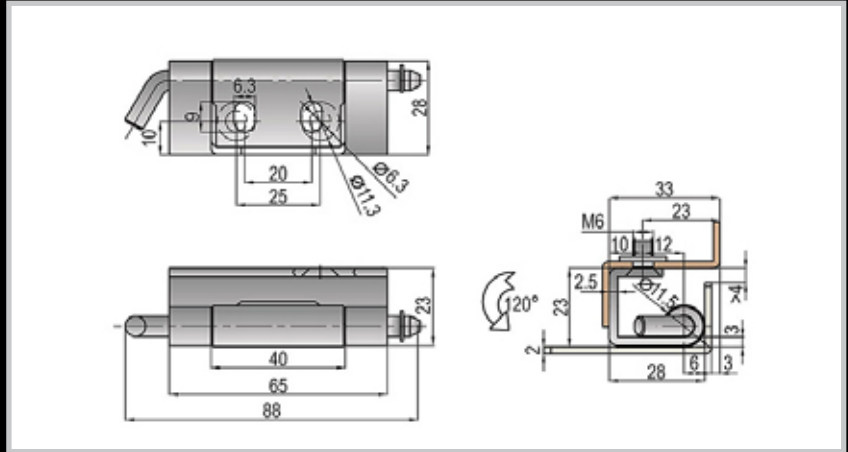
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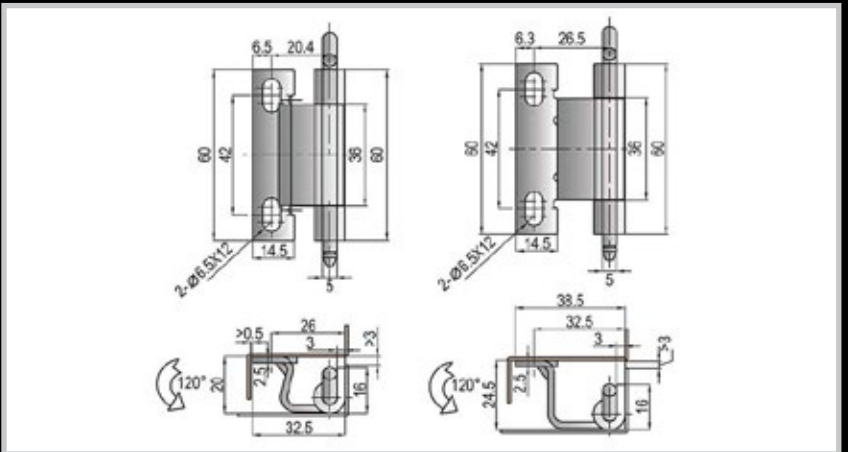
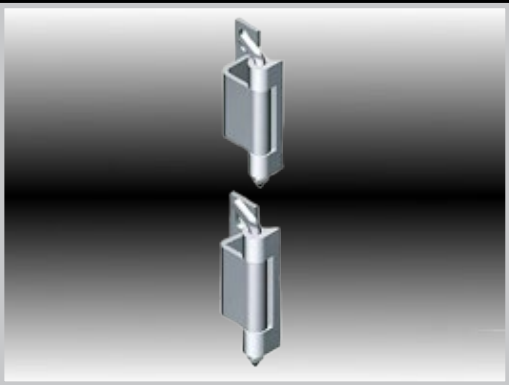
Part Number	Description
1010151	Weld on MS natural with "E" clip
1010151SS	Weld on Stainless steel natural with "E" clip



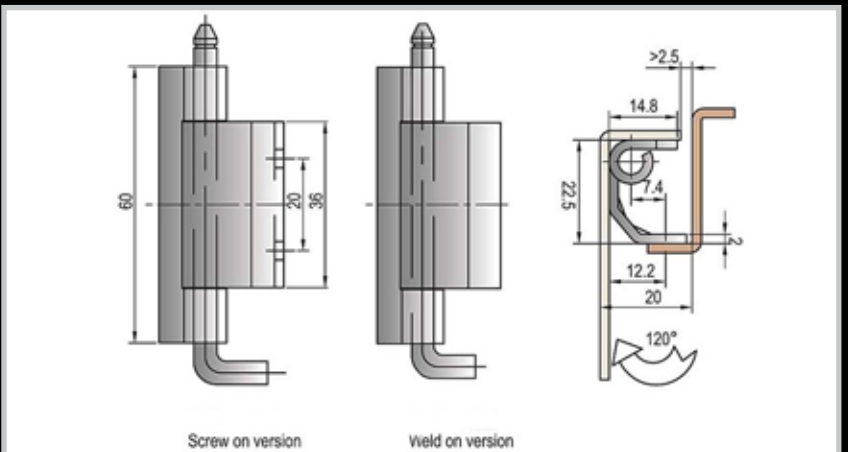
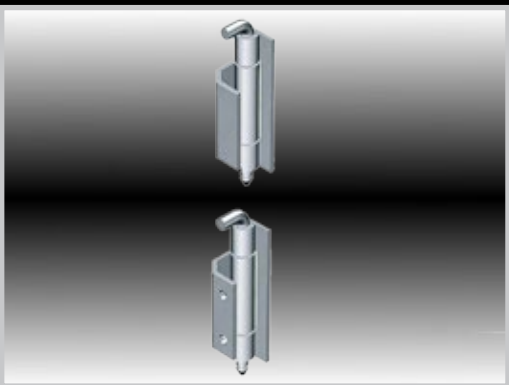
Part Number	Description
1010150M/S	Weld on MS natural
1010150S/S	Weld on Stainless steel natural



Part Number	Description
230201	MS zinc plated with L-pin



Part Number	Description
20021	20mm , MS zinc plated with L-pin
24022	24mm, MS zinc plated with L-pin



Part Number	Description
60011	Screw on version, Stainless steel
60012	Weld on version, Stainless steel

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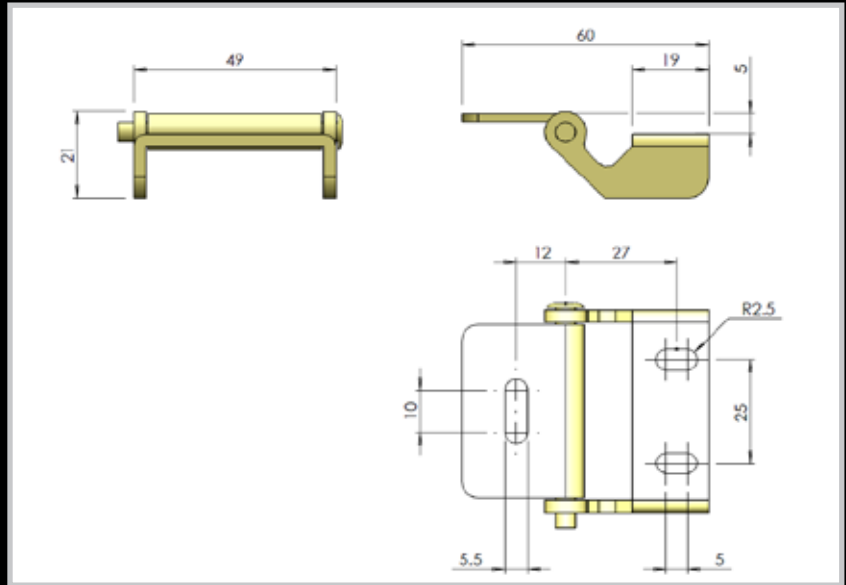
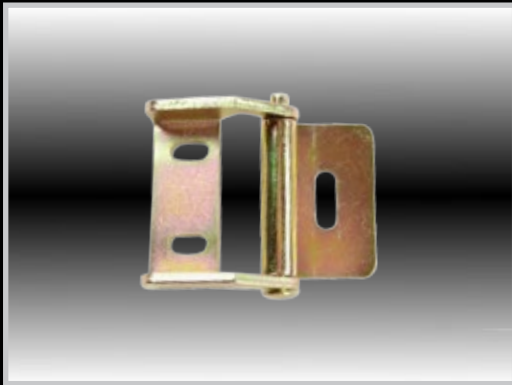
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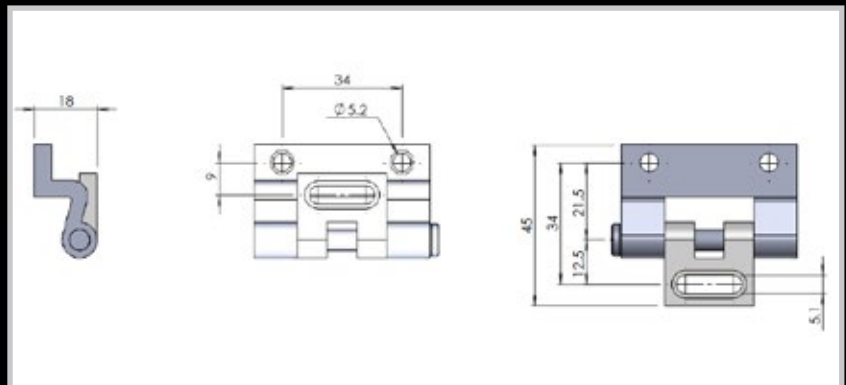
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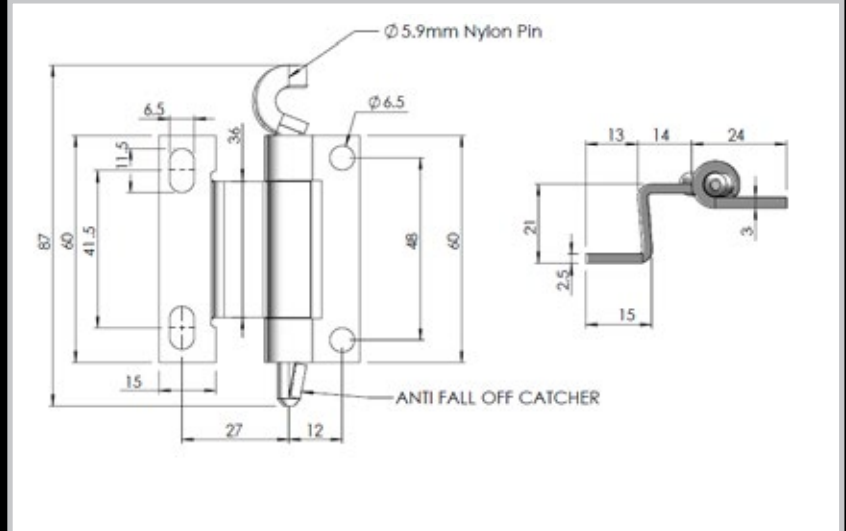


Part Number	Description
1010185	MS Galvanized



Part Number	Description
083-004	ZDC Galvanized
083-004REVERSE	ZDC Galvanized

**Remarks:**  
Pin is in opposite direction for reversal use.



Part Number	Description
AL250-6	Mild Steel Concealed hinge with a Nylon Pin

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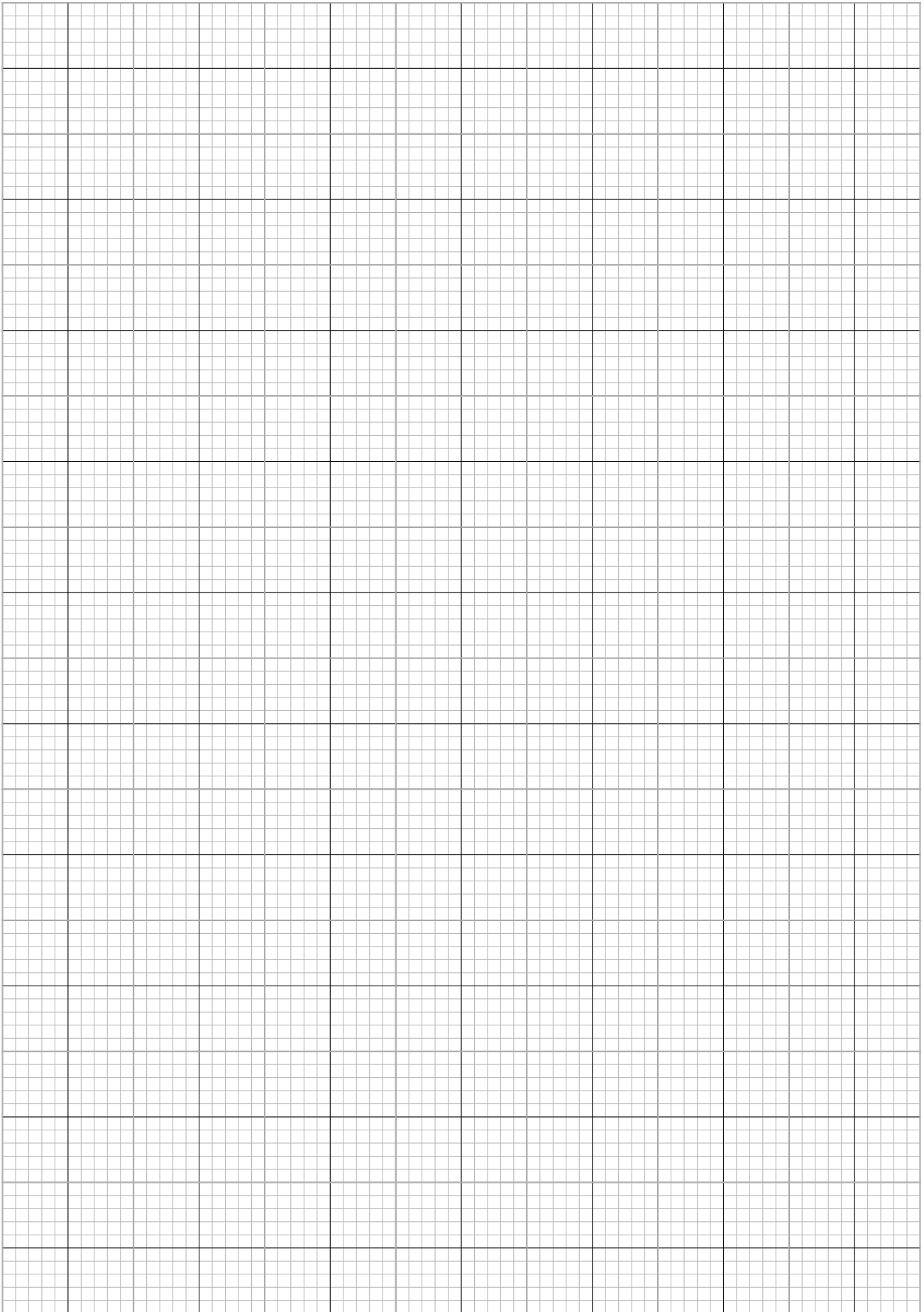
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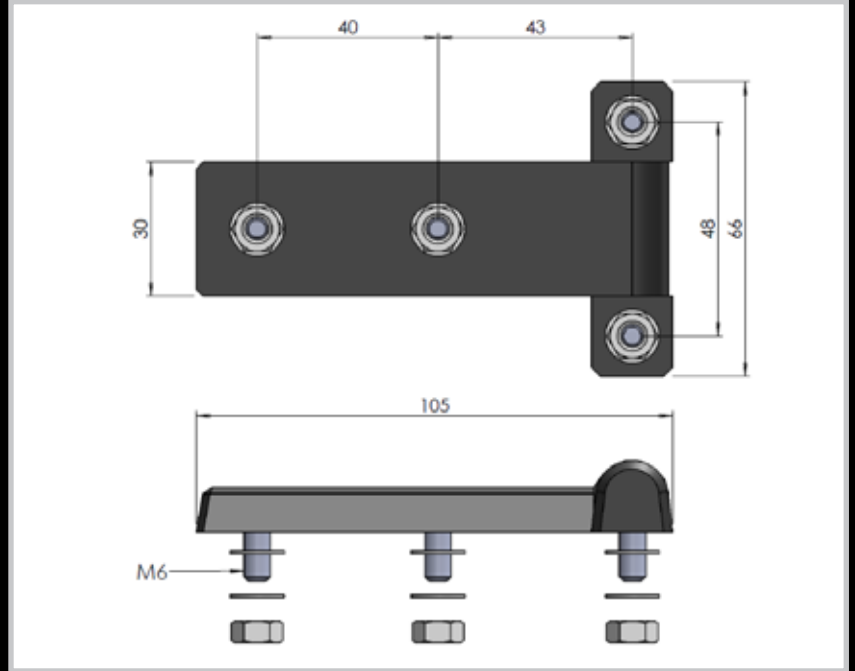
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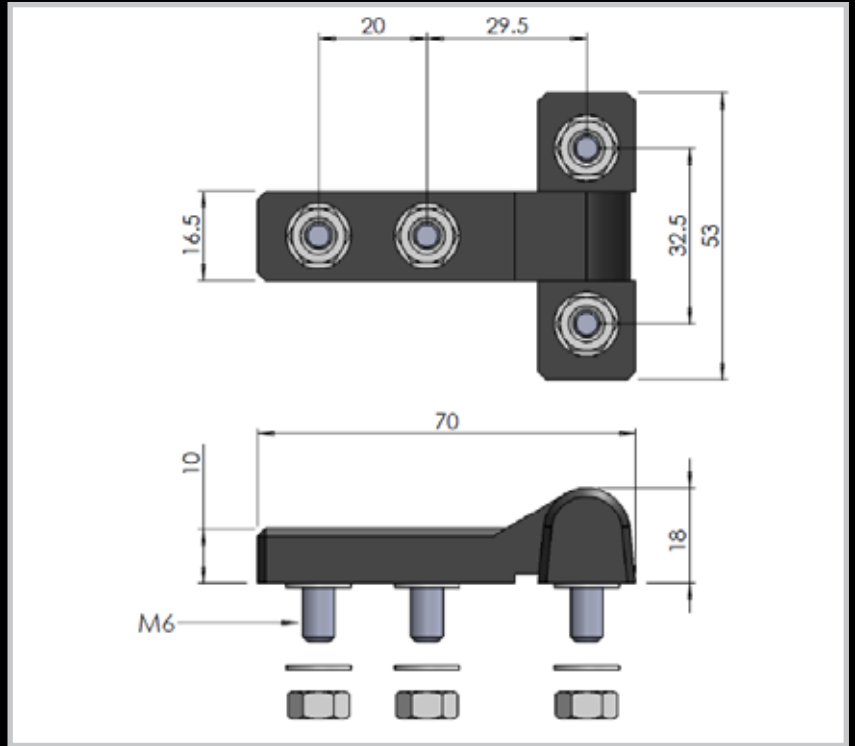
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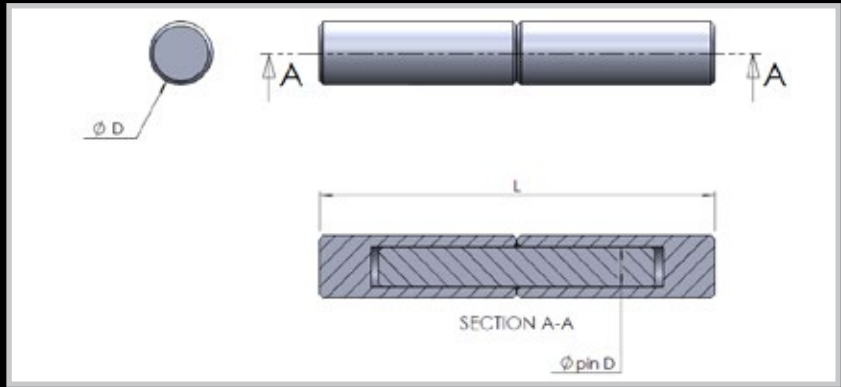


Part Number	Description
1010145	ZDC, 6mm studs black powder coated
1010145S/S	Complete stainless steel 6mm studs



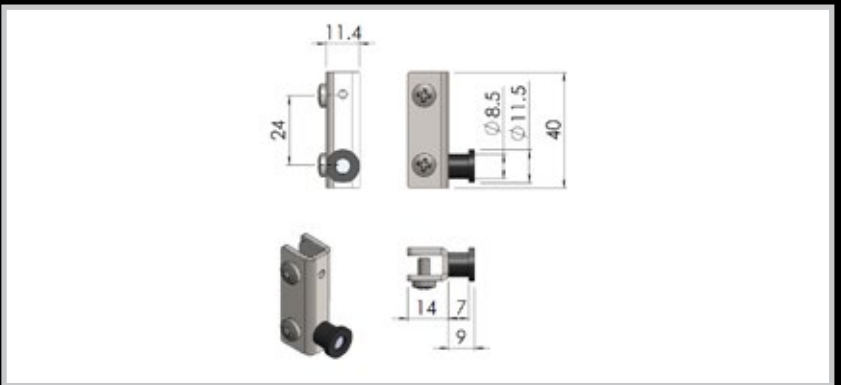
Part Number	Description
1010182	ZDC, 6mm studs black powder coated
1010182S/S	Complete stainless steel 6mm studs
1010182/N	Nylon Black 6mm stainless studs and fasteners

## Bullet Hinges



Part Number	Description	L (mm)	D (mm)	Pin D (mm)
M/S50	MS body and Stainless steel pin	50	8	5
M/S70	MS body and Stainless steel pin	70	12	6.35
M/S100	MS body and Stainless steel pin	100	16	10
M/S150	MS body and Stainless steel pin	150	20	10
S/S50	Stainless steel body and Stainless steel pin	50	8	5
S/S70	Stainless steel body and Stainless steel pin	70	12	6.35
S/S100	Stainless steel body and Stainless steel pin	100	16	10
S/S150	Stainless steel body and Stainless steel pin	150	20	10

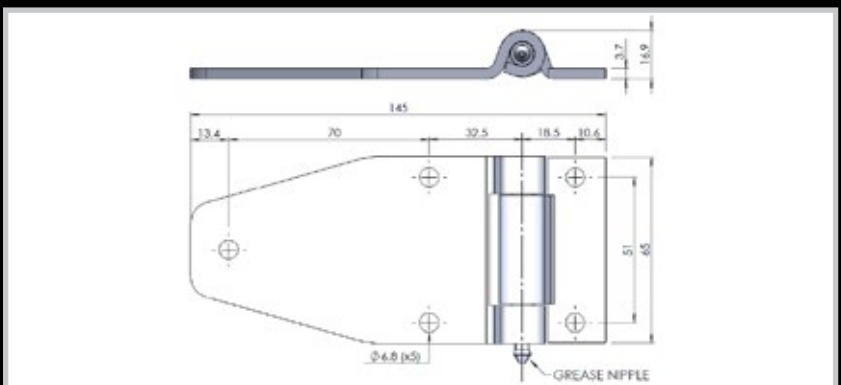
## Glass Door Hinge



**Remarks:**  
40mm Glass door hinge with fasteners.  
Comes as a set top and bottom.

Part Number	Description
GDH40MM	MS Chrome plated

## Heavy Duty Flap Hinge



**Remarks:**  
High IP rating due to rubber gasket.  
Increased lubrication through the use of the grease nipple.

Part Number	Description
083-003	MS with Stainless steel pin, rubber gasket and grease nipple.
083-003S/S	Complete stainless steel with rubber gasket and grease nipple.

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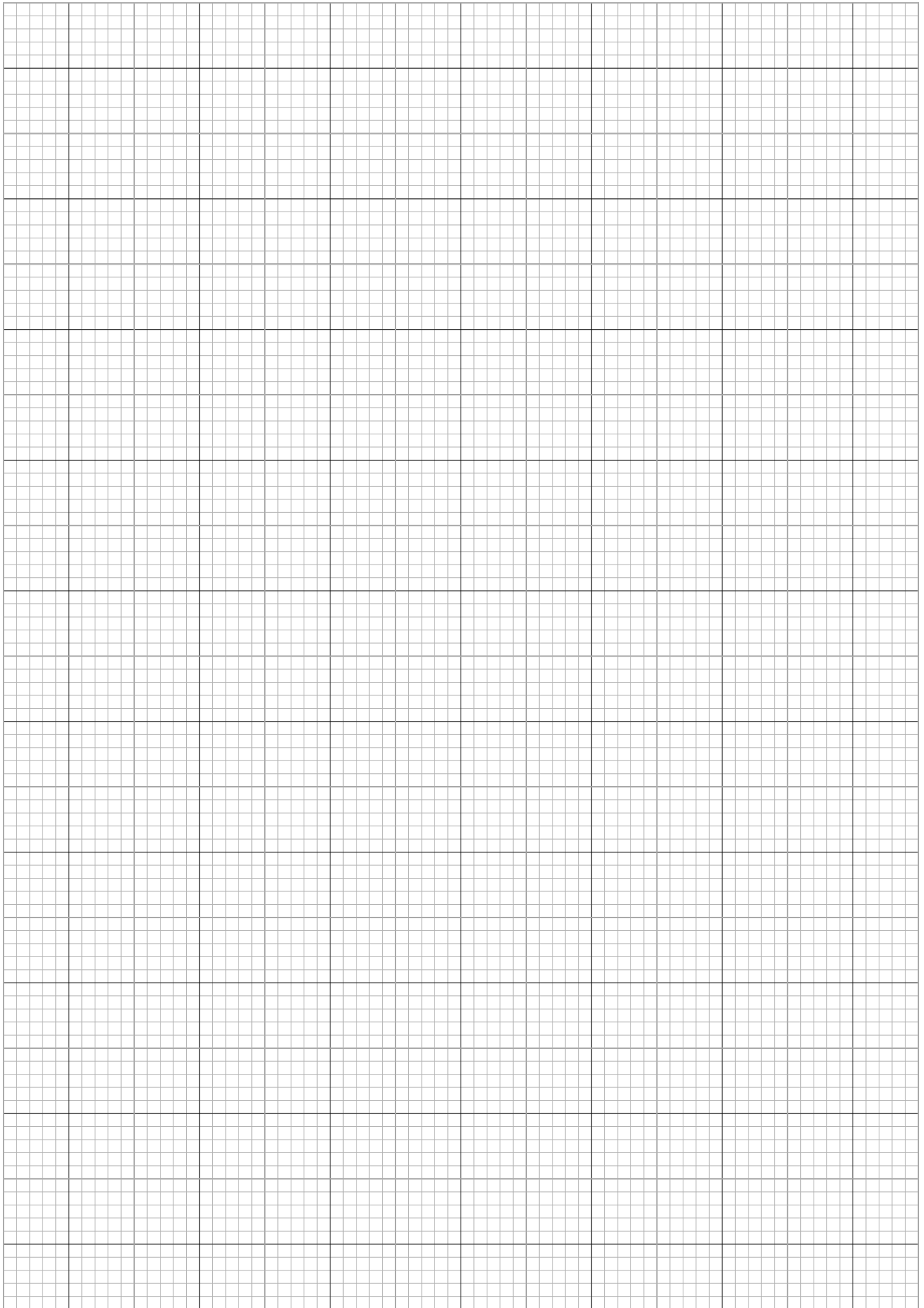
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 22.1.018P Pg.88	 22.1.026P Pg.88	 22.1.026P-DB Pg.88	 22.1.12.06-20MM Pg.89	 22.1.18B/B6.18 Pg.89	 22.1.25.18 Pg.89
 22.3.18B/B6.18 Pg.90	 22.1.18B/CS.22 Pg.90	 22.1.18B/C8.22 Pg.91	 22.1.18B/C8S.18 Pg.91	 22.3.18B/C8.18 Pg.92	 22.3.18B/SS6.18 Pg.92
 22.1.18B/SS6.18 Pg.93	 22.1.18B/C8S.18 Pg.94	 22.1.18B/B4D.20 Pg.94	 22.1.18B/C2.18 Pg.93	 22.3.25.W/P Pg.96	 22.3.25.W/K Pg.97
 22.3.28.K/N.B Pg.97	 22.3.25.L/W Pg.97	 22.2.25.B/K Pg.97	 87.2.09.B/K Pg.98	 86.2.29.B/K Pg.98	 86.2.50.B/K Pg.98
 13.05.15 Pg.99	 16.3.38.W/COM Pg.99	 16.3.13.W/K Pg.99	 22.5.28.06 Pg.100	 1010186 Pg.100	 22.1.55.6.COMP Pg.101
 97.10.K Pg.102	 90.114.201 Pg.102	 86.124.30 Pg.103	 72.00.130 Pg.104	 71.1.85B/K Pg.105	 91.1.108C/K Pg.105

 30.210.10.B/K Pg.106	 35.110.10.B/K Pg.106	 84.1.30.B/K Pg.107	 19.3.112.P Pg.107	 16.1.401.01 Pg.108	 16.1.012.06 Pg.108
 16.3.401.01 Pg.109	 222309 Pg.110	 8.5.271.01N Pg.110	 25.5.201.04 Pg.111	 221000 Pg.111	 1010106/16 Pg.112
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 222622/20/60066 Pg.115	 222622N/20SS Pg.116	 222628/20/SS Pg.116	 1010175 Pg.117	 22.04.08.1S/S Pg.117	 16.4.432.01/MS/3H Pg.118
 16.4.432.01 Pg.119	 22.4.00.08.1 Pg.119	 20.7.331.01 Pg.120	 10111KZK190 Pg.121	 10111P Pg.121	 10222 Pg.122
 10333 Pg.123	 10444 Pg.124	 FNSH/HOOK Pg.125	 FNSH/65 Pg.125	 50.2.23.P.B/K Pg.125	 150.2.20.B/K Pg.126

 <p>50.4.23.B/P Pg.126</p>	 <p>164.1.50.N/K Pg.126</p>	 <p>145.1.47.CK/RLS Pg.127</p>	 <p>160.1.50.BK/RLS Pg.127</p>	 <p>148.1.109.BK/RLS Pg.128</p>	 <p>44.2.01.K/RLS Pg.128</p>
 <p>50.2.19.B/RL Pg.129</p>	 <p>50.2.165.K/RL Pg.129</p>	 <p>130.1.124CK Pg.130</p>	 <p>120.1.100.ZN/BK Pg.130</p>	 <p>46.3.39.Z/P Pg.130</p>	 <p>49.10.K Pg.131</p>
 <p>49.00.0 Pg.131</p>	 <p>39.1.3B Pg.131</p>	 <p>61.10.2.SS/K Pg.132</p>			





## A New Era in Swing Handles

Founded in 1978, Allbro is a South African based manufacturer of components for the electrical distribution industry.

In 2001, stemming from our passion for electric enclosures, Allbro developed, and began to manufacture, a range of Locks and Hinges. Through cutting edge technology and innovative design, Allbro quickly established itself as a leader in this field and has continued to create and produce products which are ahead of their time.

Featured below are Allbro's all new range of Swing Handles:



Quality Chrome Plated | Superior 316 Grade Stainless Steel | Standard 92260 and CL501 Barrel Types  
User Friendly | Anti-Hammer and Anti-Vibration System

Also Available from Allbro:  
Quarter Turn Locks, Compression Latches, L and T Handles, Lever Locks,  
Pedestal Hinges, External Hinges, Concealed Hinges, Bullet Hinges



Enclosures

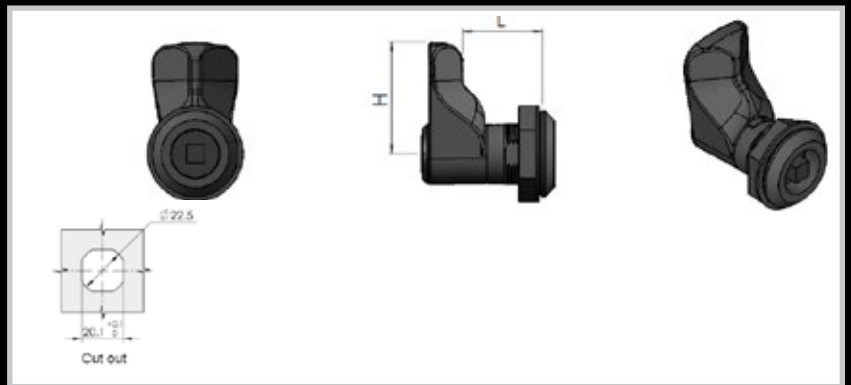


Hinges

Locks

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.018P	Polyamide	Black	Square	6	18	35
22.1.015P	Polyamide	Black	Square	6	15	40

Handles

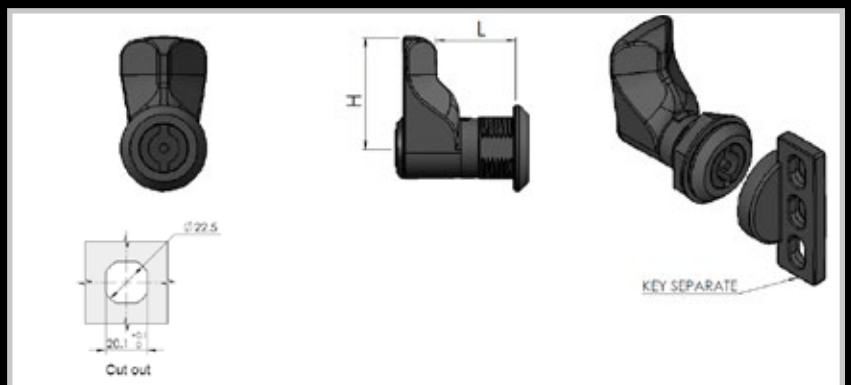


Accessories

Rotary Operating Handles

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.026P	Polyamide	Black	Square	6	36	26

Insulators



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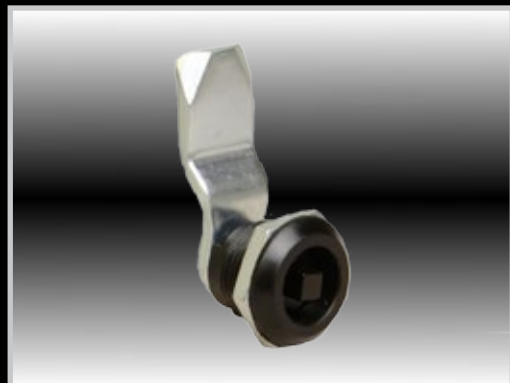
Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.026P-DB	Polyamide	Black	Double Bit	6	36	26

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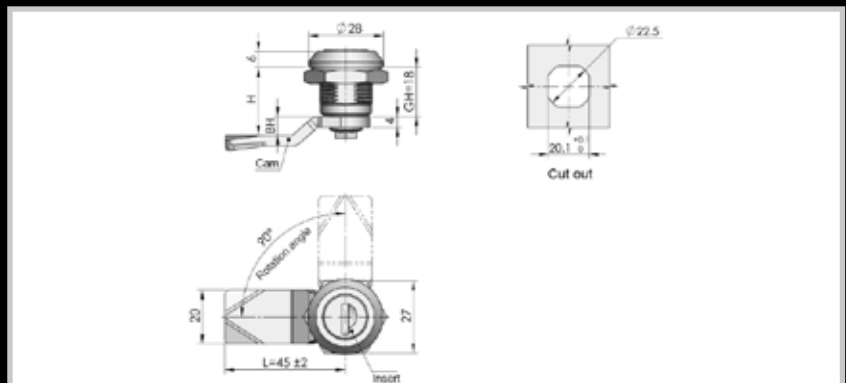


**Remarks:**  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.12.06	ZDC	Black powder coated	Square	6	12	20



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/B6.18	ZDC	Black powder coated	Square	6	18	45
22.1.18B/B6.20	ZDC	Black powder coated	Square	6	20	45
22.1.18B/B6.22	ZDC	Black powder coated	Square	6	22	45
22.1.18B/B6.25	ZDC	Black powder coated	Square	6	25	45
22.1.18B/B6.36	ZDC	Black powder coated	Square	6	36	45
22.1.18B/B6.41	ZDC	Black powder coated	Square	6	41	45
22.1.18B/B6.47	ZDC	Black powder coated	Square	6	47	45
22.1.18B/B6.50	ZDC	Black powder coated	Square	6	50	45



Part Number	Material	Finish	Insert Type	Insert size (mm)
22.1.25.18B/K	ZDC	Black powder coated	Slotted	-

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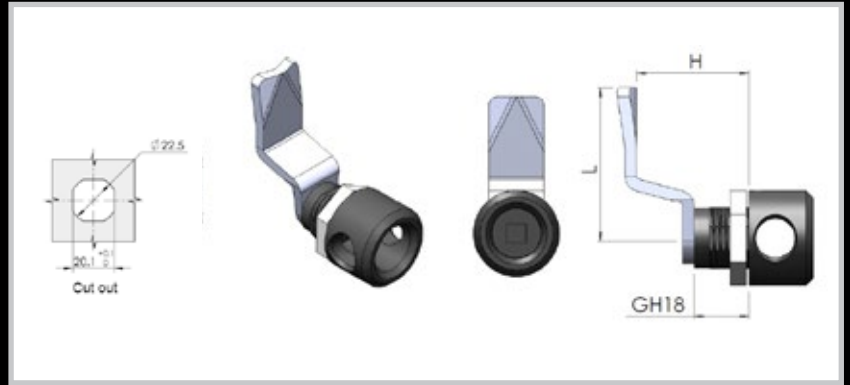
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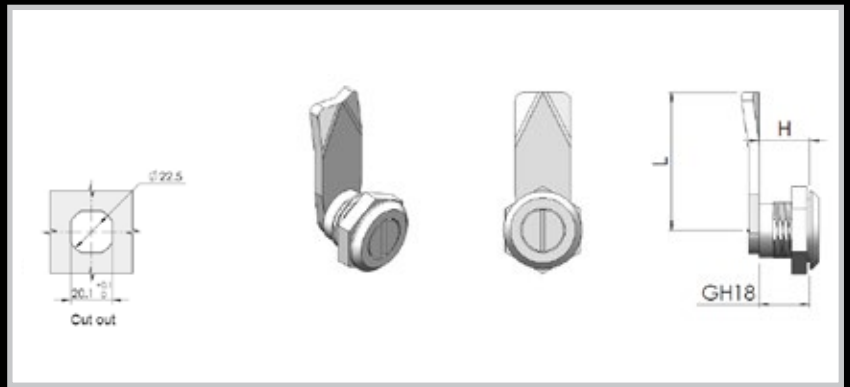
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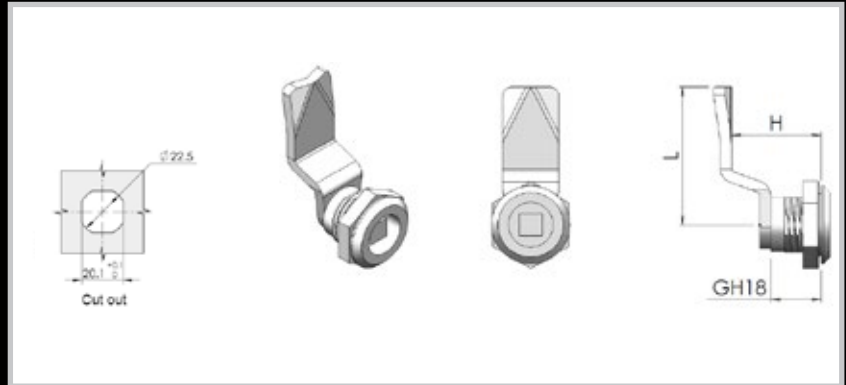
**Remarks:**  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.3.18B/B6.18	ZDC	Black Powder Coated	Square	6	18	45
22.3.18B/B6.20	ZDC	Black Powder Coated	Square	6	20	45
22.3.18B/B6.22	ZDC	Black Powder Coated	Square	6	22	45
22.3.18B/B6.25	ZDC	Black Powder Coated	Square	6	25	45
22.3.18B/B6.36	ZDC	Black Powder Coated	Square	6	36	45
22.3.18B/B6.41	ZDC	Black Powder Coated	Square	6	41	45
22.3.18B/B6.47	ZDC	Black Powder Coated	Square	6	47	45
22.3.18B/B6.50	ZDC	Black Powder Coated	Square	6	50	45



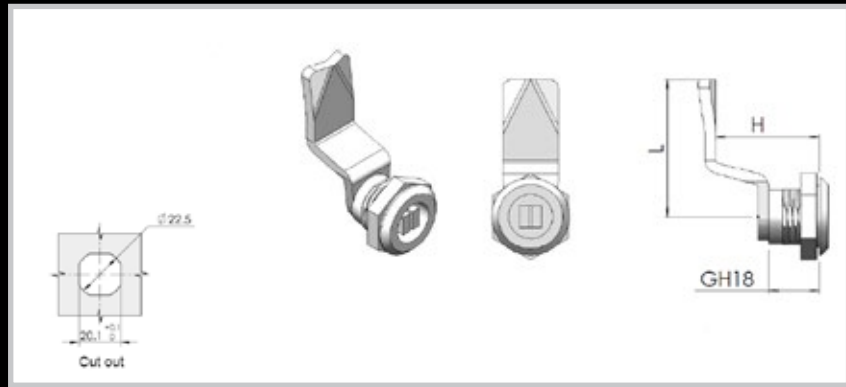
**Remarks:**  
Available in chrome and black.  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/CS.18	ZDC	Chrome	Slotted	-	18	45
22.1.18B/CS.20	ZDC	Chrome	Slotted	-	20	45
22.1.18B/CS.22	ZDC	Chrome	Slotted	-	22	45
22.1.18B/CS.25	ZDC	Chrome	Slotted	-	25	45
22.1.18B/CS.36	ZDC	Chrome	Slotted	-	36	45
22.1.18B/CS.41	ZDC	Chrome	Slotted	-	41	45
22.1.18B/CS.47	ZDC	Chrome	Slotted	-	47	45
22.1.18B/CS.50	ZDC	Chrome	Slotted	-	50	45



**Remarks:**  
Available in chrome and black.  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/C8.18	ZDC	Chrome	Square	6 or 8	18	45
22.1.18B/C8.20	ZDC	Chrome	Square	6 or 8	20	45
22.1.18B/C8.22	ZDC	Chrome	Square	6 or 8	22	45
22.1.18B/C8.25	ZDC	Chrome	Square	6 or 8	25	45
22.1.18B/C8.36	ZDC	Chrome	Square	6 or 8	36	45
22.1.18B/C8.41	ZDC	Chrome	Square	6 or 8	41	45
22.1.18B/C8.47	ZDC	Chrome	Square	6 or 8	47	45
22.1.18B/C8.50	ZDC	Chrome	Square	6 or 8	50	45



**Remarks:**  
Quick assembly with 8mm square drive and coin slot combination.  
Available in chrome and black.  
For drive options refer to page 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/C8S.18	ZDC	Chrome	Square Slotted	8	18	45
22.1.18B/C8S.20	ZDC	Chrome	Square Slotted	8	20	45
22.1.18B/C8S.22	ZDC	Chrome	Square Slotted	8	22	45
22.1.18B/C8S.25	ZDC	Chrome	Square Slotted	8	25	45
22.1.18B/C8S.36	ZDC	Chrome	Square Slotted	8	36	45
22.1.18B/C8S.41	ZDC	Chrome	Square Slotted	8	41	45
22.1.18B/C8S.47	ZDC	Chrome	Square Slotted	8	47	45
22.1.18B/C8S.50	ZDC	Chrome	Square Slotted	8	50	45

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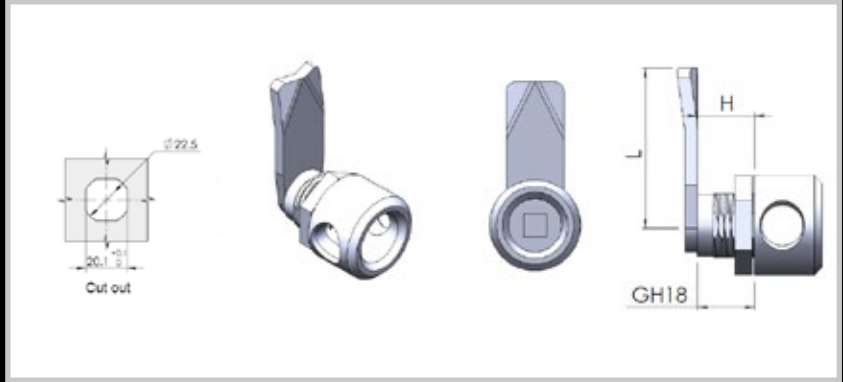
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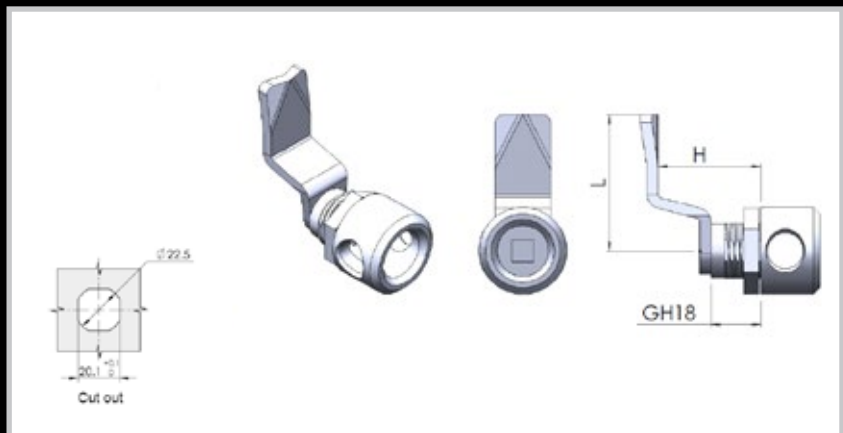


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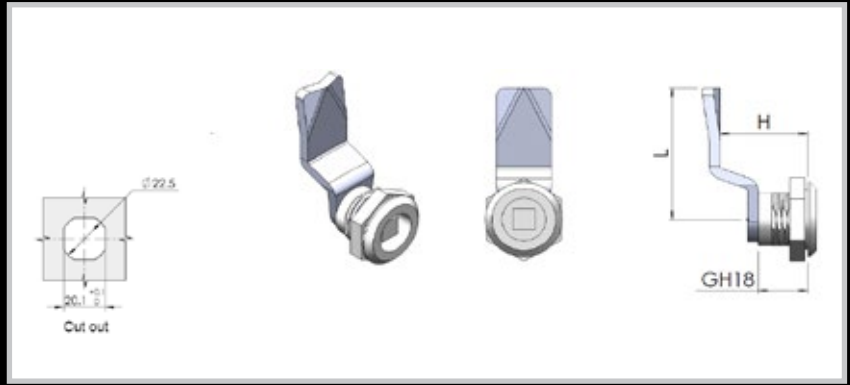
**Remarks:**  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.3.18B/C8.18	ZDC	Chrome	Square	8	18	45
22.3.18B/C8.20	ZDC	Chrome	Square	8	20	45
22.3.18B/C8.22	ZDC	Chrome	Square	8	22	45
22.3.18B/C8.25	ZDC	Chrome	Square	8	25	45
22.3.18B/C8.36	ZDC	Chrome	Square	8	36	45
22.3.18B/C8.41	ZDC	Chrome	Square	8	41	45
22.3.18B/C8.47	ZDC	Chrome	Square	8	47	45
22.3.18B/C8.50	ZDC	Chrome	Square	8	50	45



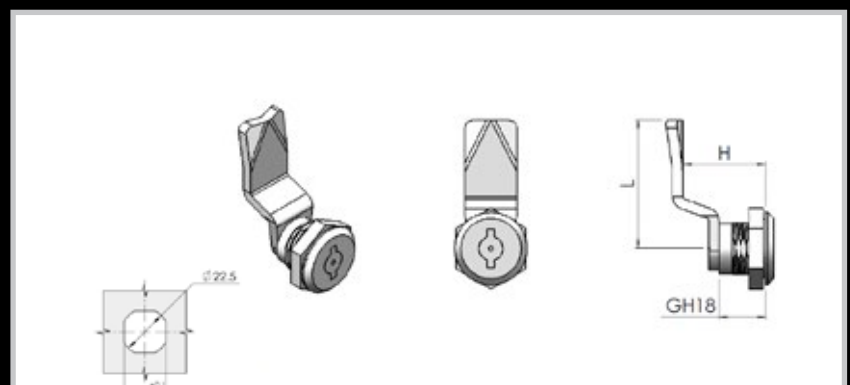
**Remarks:**  
Quick assembly quarter turn with a 8 mm and 6mm slotted drive.  
For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.3.18B/SS6.18	Stainless Steel	Natural	Slotted	6	18	45
22.3.18B/SS6.20	Stainless Steel	Natural	Slotted	6	20	45
22.3.18B/SS6.22	Stainless Steel	Natural	Slotted	6	22	45
22.3.18B/SS6.25	Stainless Steel	Natural	Slotted	6	25	45
22.3.18B/SS6.36	Stainless Steel	Natural	Slotted	6	36	45
22.3.18B/SS6.41	Stainless Steel	Natural	Slotted	6	41	45
22.3.18B/SS6.47	Stainless Steel	Natural	Slotted	6	47	45
22.3.18B/SS6.50	Stainless Steel	Natural	Slotted	6	50	45
22.3.18B/SS8.18	Stainless Steel	Natural	Slotted	8	18	45
22.3.18B/SS8.20	Stainless Steel	Natural	Slotted	8	20	45
22.3.18B/SS8.22	Stainless Steel	Natural	Slotted	8	22	45
22.3.18B/SS8.25	Stainless Steel	Natural	Slotted	8	25	45
22.3.18B/SS8.36	Stainless Steel	Natural	Slotted	8	36	45
22.3.18B/SS8.41	Stainless Steel	Natural	Slotted	8	41	45
22.3.18B/SS8.47	Stainless Steel	Natural	Slotted	8	47	45
22.3.18B/SS8.50	Stainless Steel	Natural	Slotted	8	50	45



**Remarks:**  
 316 Stainless Steel  
 For drive options refer to pages 135,136,137

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/SS6.18	Stainless Steel	Natural	6	Square	18	45
22.1.18B/SS6.20	Stainless Steel	Natural	6	Square	20	45
22.1.18B/SS6.22	Stainless Steel	Natural	6	Square	22	45
22.1.18B/SS6.25	Stainless Steel	Natural	6	Square	25	45
22.1.18B/SS6.36	Stainless Steel	Natural	6	Square	36	45
22.1.18B/SS6.41	Stainless Steel	Natural	6	Square	41	45
22.1.18B/SS6.47	Stainless Steel	Natural	6	Square	47	45
22.1.18B/SS6.50	Stainless Steel	Natural	6	Square	50	45
22.1.18B/SS8.18	Stainless Steel	Natural	8	Square	18	45
22.1.18B/SS8.20	Stainless Steel	Natural	8	Square	20	45
22.1.18B/SS8.22	Stainless Steel	Natural	8	Square	22	45
22.1.18B/SS8.25	Stainless Steel	Natural	8	Square	25	45
22.1.18B/SS8.36	Stainless Steel	Natural	8	Square	36	45
22.1.18B/SS8.41	Stainless Steel	Natural	8	Square	41	45
22.1.18B/SS8.47	Stainless Steel	Natural	8	Square	47	45
22.1.18B/SS8.50	Stainless Steel	Natural	8	Square	50	45



**Remarks:**  
 Spring Loaded Quarter Turn Lock IP 65

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
22.1.18B/C2.18	Chrome	Natural	Double Bit	6	18	45
22.1.18B/C2.20	Chrome	Natural	Double Bit	6	20	45
22.1.18B/C2.25	Chrome	Natural	Double Bit	6	25	45
22.1.18B/C2.30	Chrome	Natural	Double Bit	6	30	45

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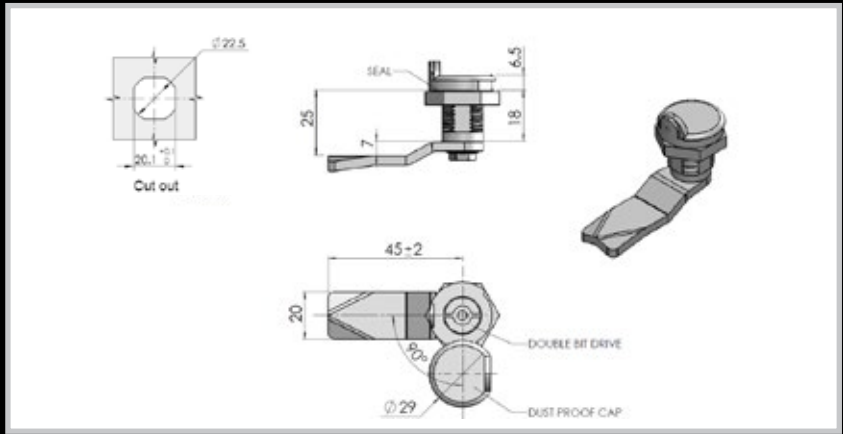
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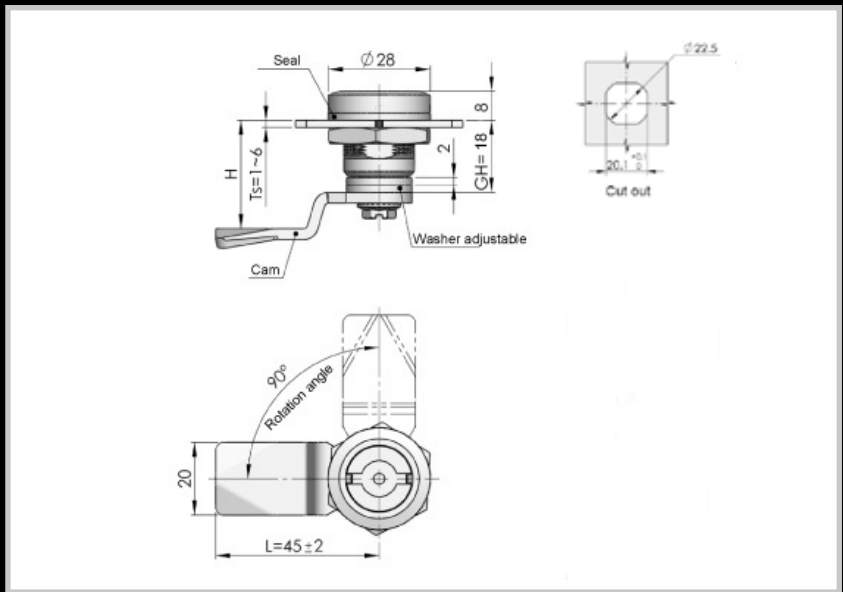
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Part Number	Material	Finish	Insert Type	Insert size (mm)
22.6.18B/C8S.18	Chrome	Natural	Double Bit	8
22.6.18B/C8S.20	Chrome	Natural	Double Bit	8
22.6.18B/C8S.22	Chrome	Natural	Double Bit	8
22.6.18B/C8S.25	Chrome	Natural	Double Bit	8
22.6.18B/C8S.36	Chrome	Natural	Double Bit	8
22.6.18B/C8S.41	Chrome	Natural	Double Bit	8
22.6.18B/C8S.47	Chrome	Natural	Double Bit	8
22.6.18B/C8S.50	Chrome	Natural	Double Bit	8

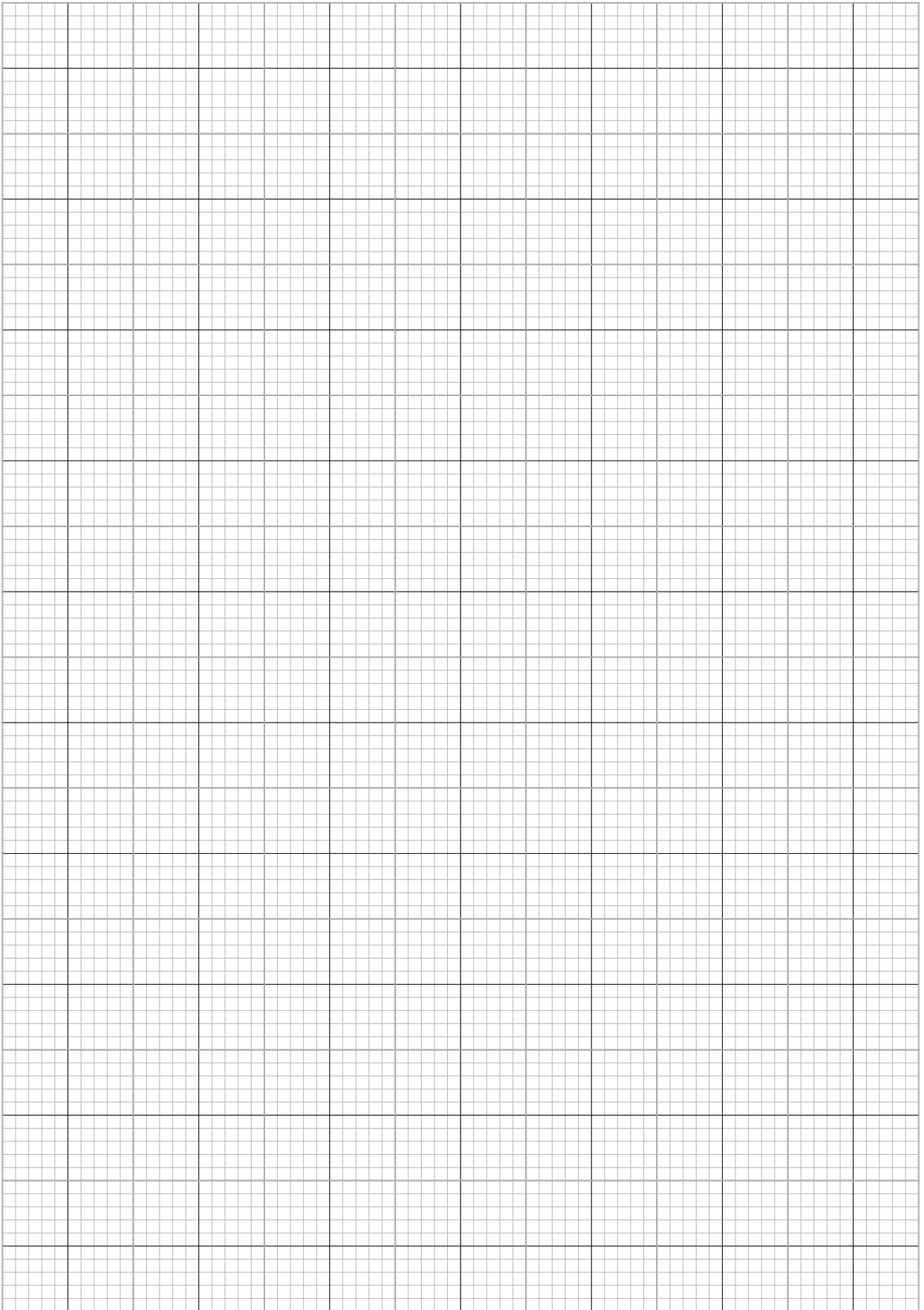


**Remarks:**  
Padlockable version also available.  
Please refer to pages 135,136,137 for more drive options.

Part Number	Material	Finish	Insert Type	Insert size (mm)
22.1.18B/B4D.20	ZDC	Black P/C	Double Bit	4
22.1.18B/B4D.25	ZDC	Black P/C	Double Bit	4
22.1.18B/B4D.36	ZDC	Black P/C	Double Bit	4
22.1.18B/B4D.41	ZDC	Black P/C	Double Bit	4

Part Number	Material	Finish	Insert Type	Insert size (mm)
22.1.18B/B8T.20	ZDC	Black P/C	Triangular	8
22.1.18B/B8T.25	ZDC	Black P/C	Triangular	8
22.1.18B/B8T.36	ZDC	Black P/C	Triangular	8
22.1.18B/B8T.41	ZDC	Black P/C	Triangular	8

**Notes:**



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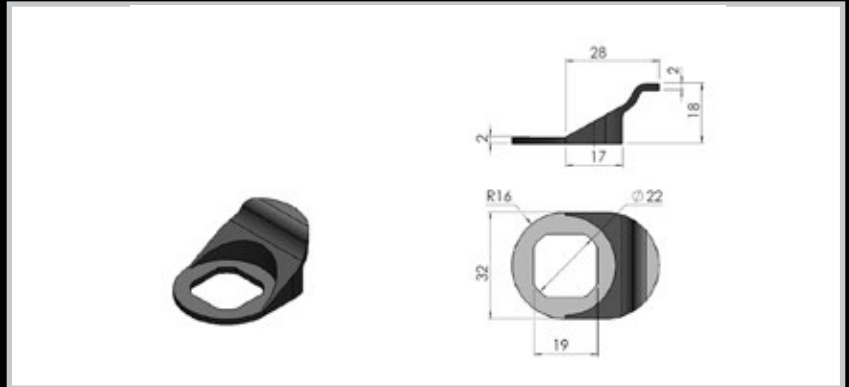
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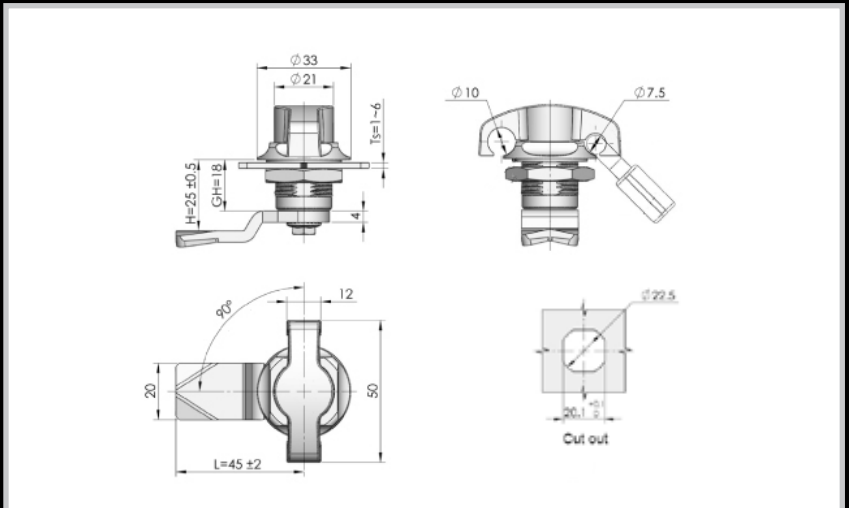
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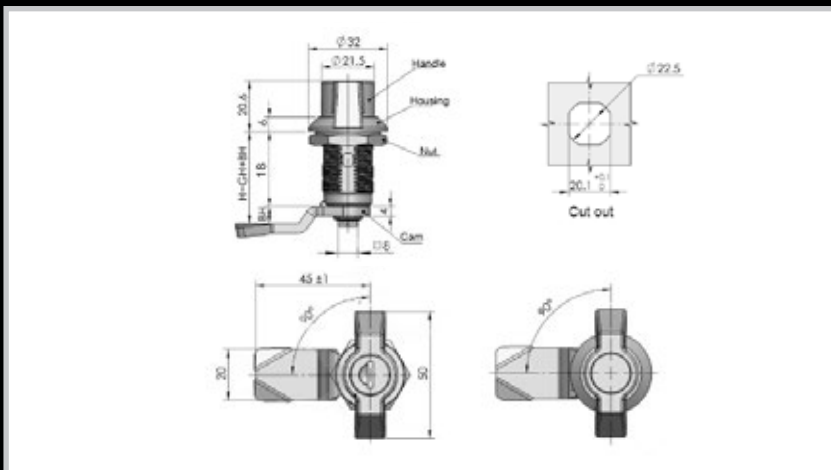
Part Number	Description
FP.22	PA Finger pull to suite 22 series locks and compression latches



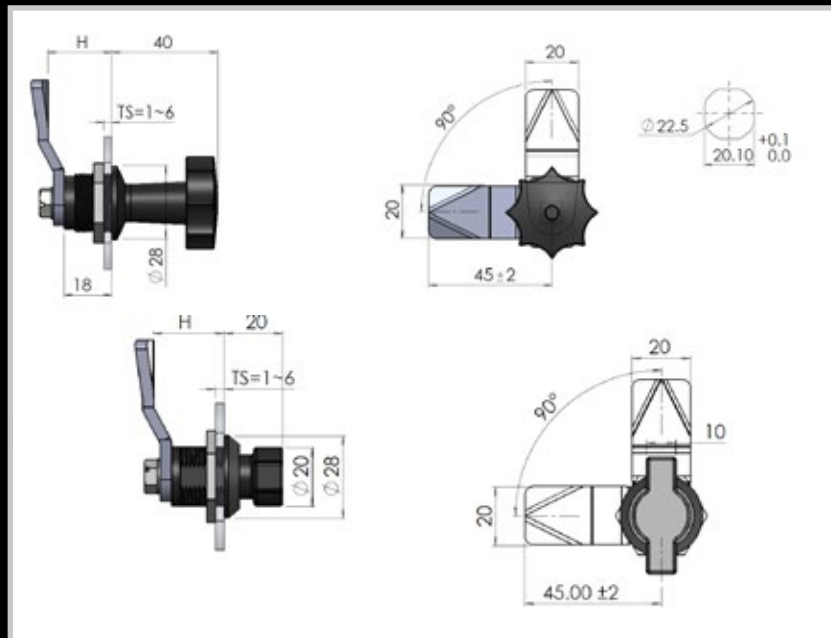
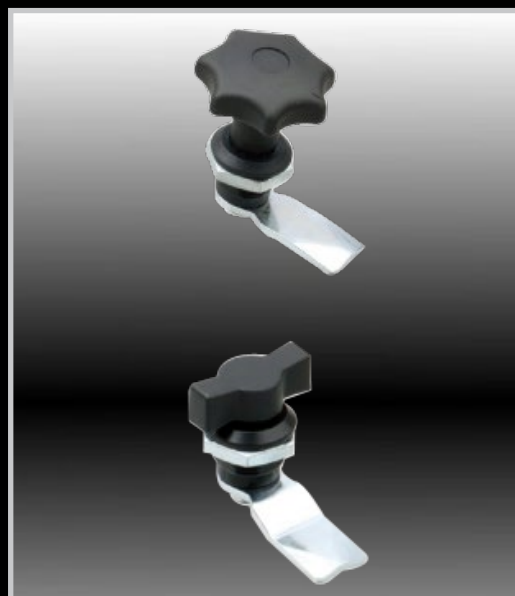
Part Number	Description
22.3.25W/P	Padlockable wing knob



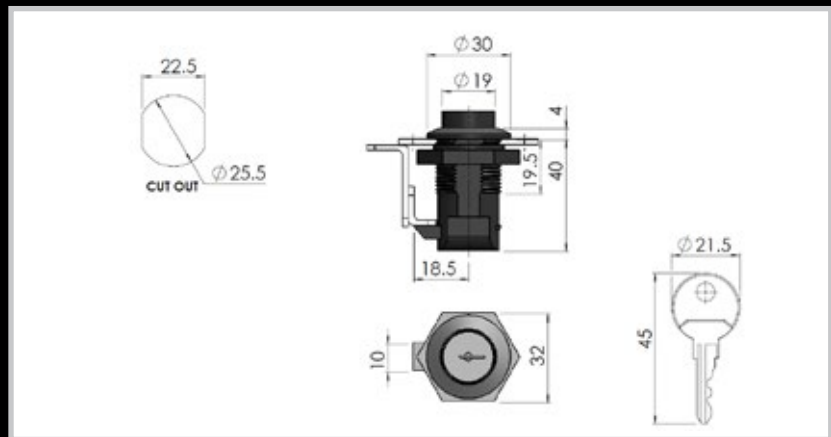
**Wing Knob**



Part Number	Description
22.3.25.W/K	Key Lockable wing knob



Part Number	Description
22.3.28.K/N.B	Knob handle
22.3.25.L/W	Quarter-turn wing knob , Large



Part Number	Description
22.2.25.B/K	Push Button Latch Lockable

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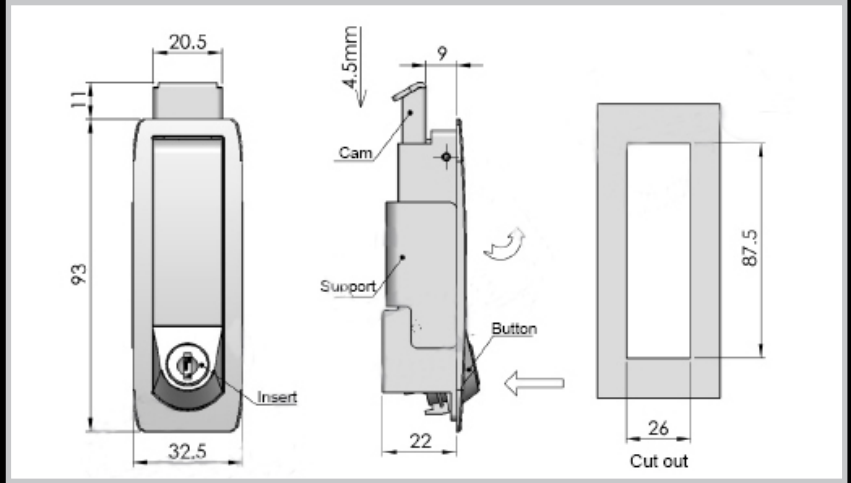
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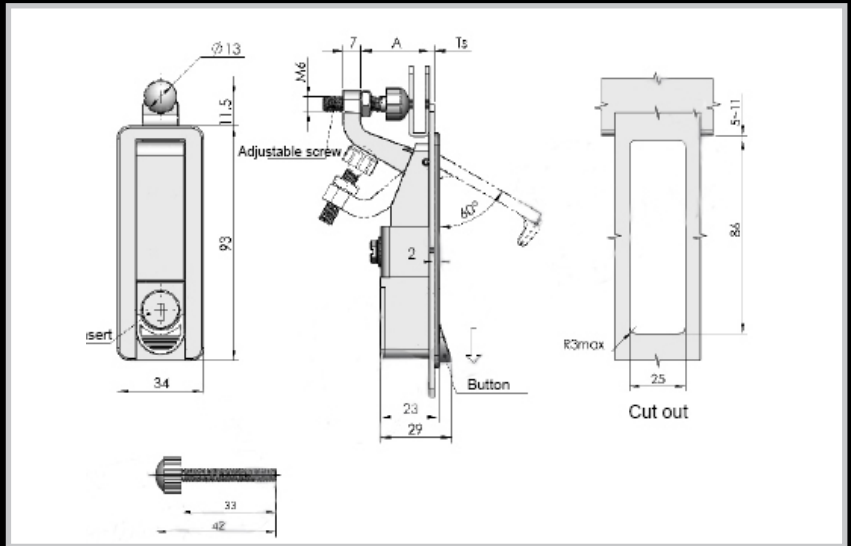
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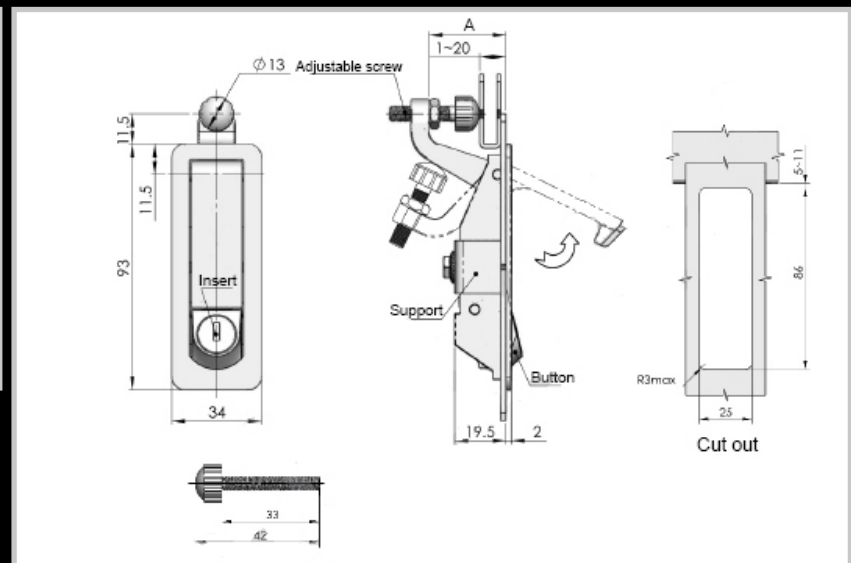
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Part Number	Description
87.2.09.B/K	Key lockable push button handle. Sand blast black



Part Number	Description
86.2.29.B/K	Key lockable push handle with adjustable depth, black powder coated



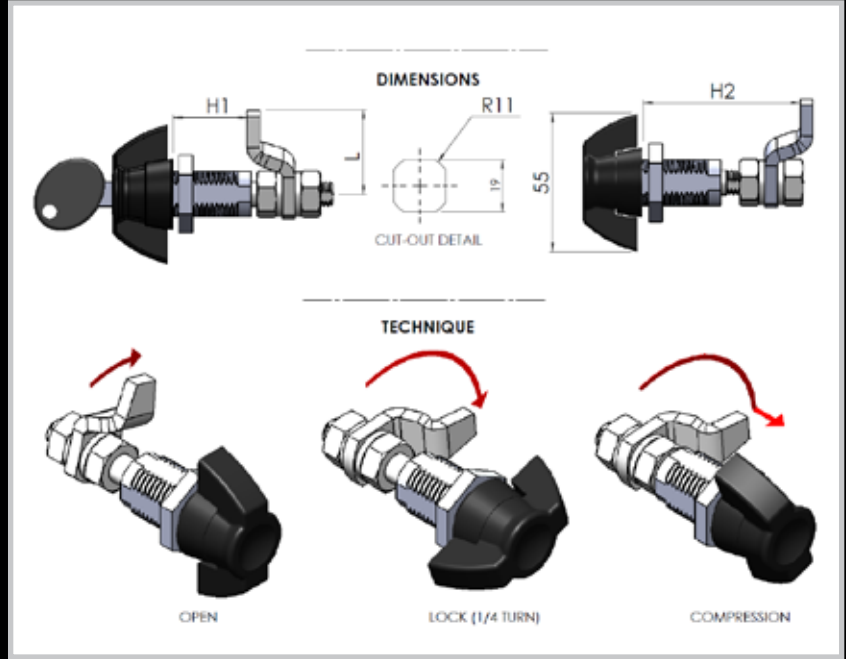
Part Number	Description
86.2.50.B/K	Key lockable push handle with adjustable depth, black powder coated



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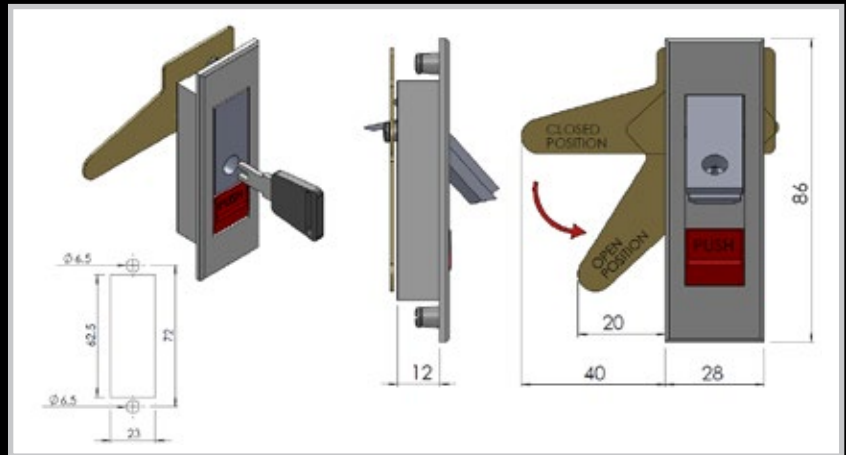
**Remarks:**  
Compression latch with 6mm compression and adjustable grip range. Available in key lockable and non-lockable.



Part Number	Description	H1	H2	L
22.5.28.06	ZDC Black powder coated wing knob, ZDC body and MS cam	30	65	33
22.5.28.06K (LOCKABLE)	ZDC Black powder coated wing knob, ZDC body and MS cam	30	65	33



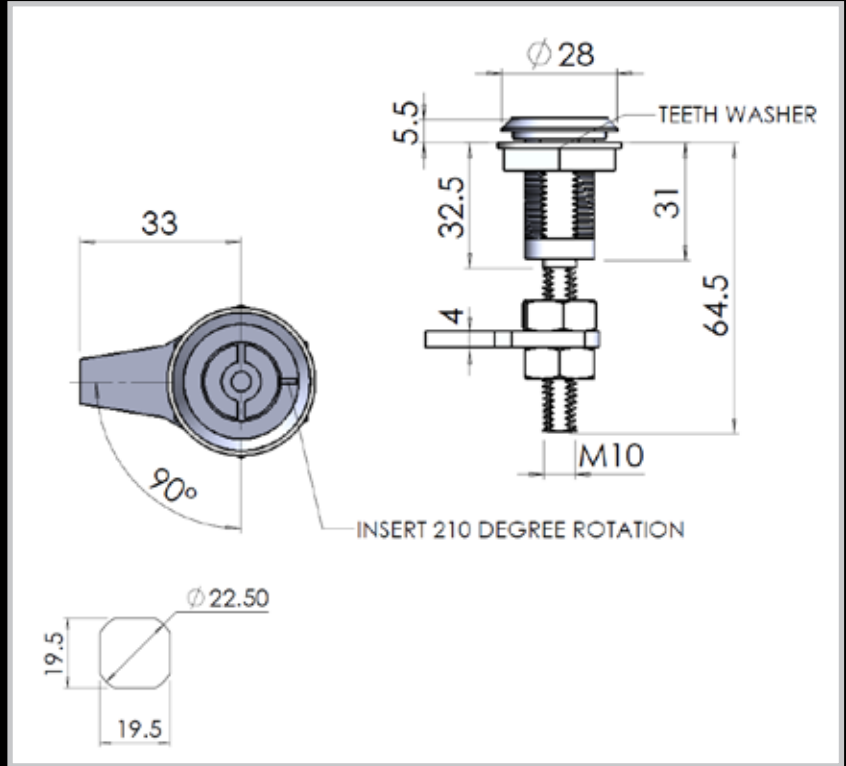
**Remarks:**  
Quick release flush lever lock.



Part Number	Description
1010186	ZDC housing and insert PA button and MS cam.



**Remarks:**  
For drive options refer to pages 135,136,137



Part Number	Material	Finish	Insert Type	Insert size (mm)
22.1.55.6.COMP	ZDC	Black powder coated	Square	6
22.1.55.4.COMP	ZDC	Black powder coated	Double Bit	4
22.1.55.8.COMP	ZDC	Black powder coated	Square	8
22.1.55.8T.COMP	ZDC	Black powder coated	Triangular	8
22.1.55.S.COMP	ZDC	Black powder coated	Slotted	-

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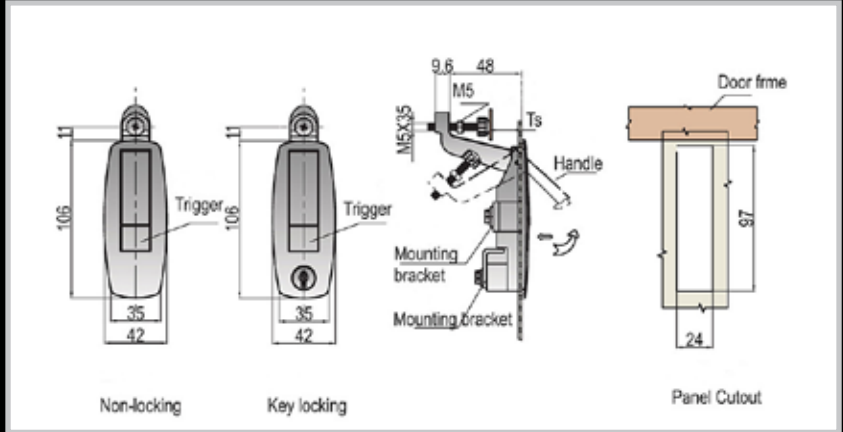
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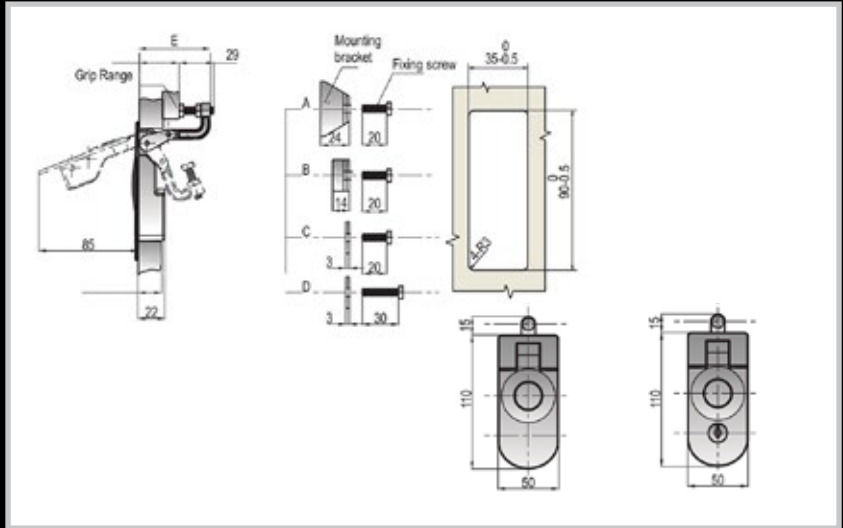
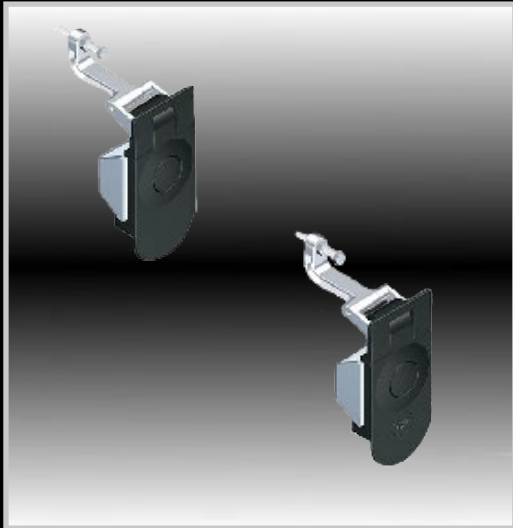
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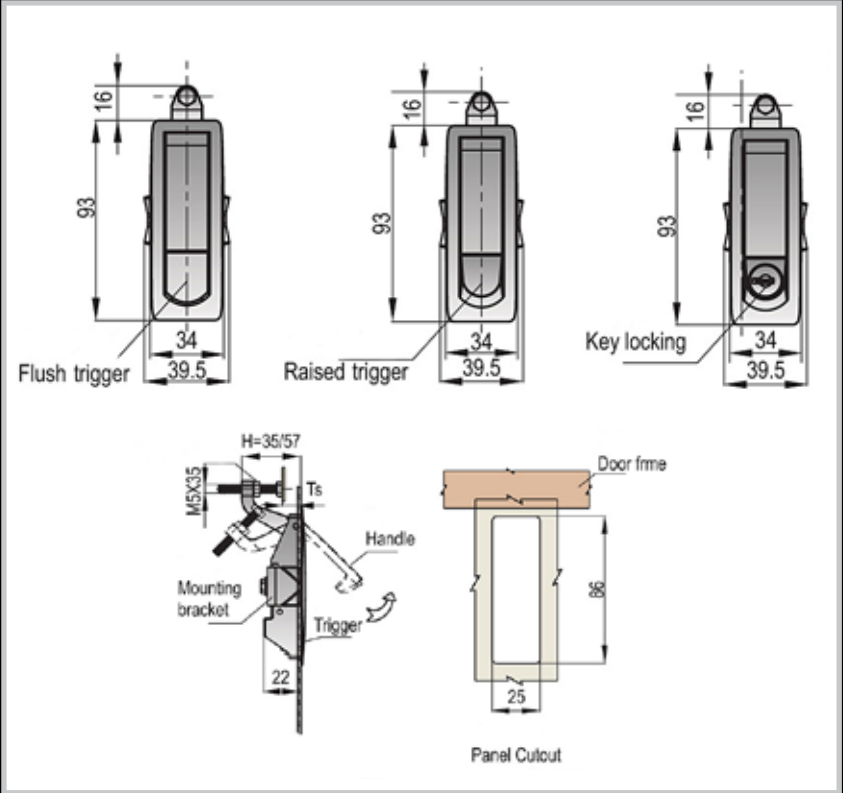
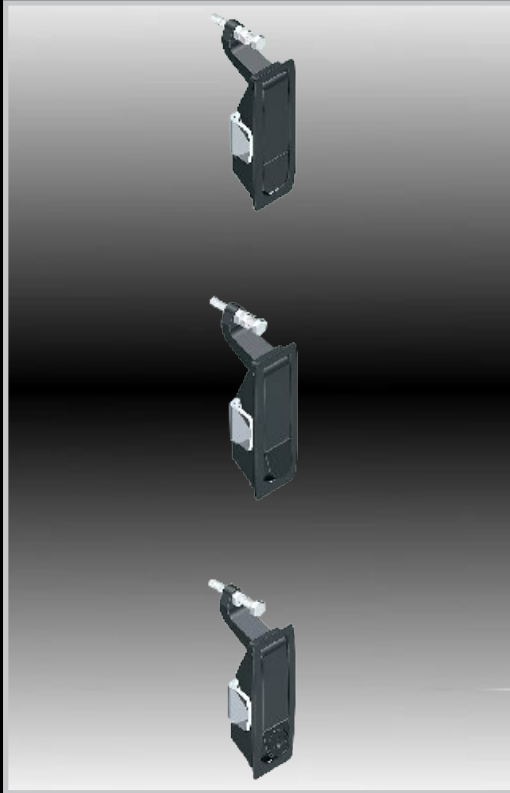
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Part Number	Description
97.10.K	Key locking , Mild Steel
97.00.0	Non locking, Mild steel



Product Number	Description	Panel Thickness	Grip Range	Mounting Bracket
		min-max	min-max	
90.114.201	Non locking	1-11	1-14	A
90.214.201	Key locking	1-11	1-14	A
90.114.202	Non locking	11-21	1-14	B
90.214.202	Key locking	11-21	1-14	B



**Remarks:**  
Available in short and long cam option.

Product Number	Trigger Style	
Chrome	Black Powder Coated	
86.124.30	86.124.10	Non locking raised trigger
86.224.30	86.224.10	Non locking flush trigger
86.324.30	86.324.10	Key locking
86.424.30	86.424.10	Key locking
86.524.30	86.524.10	Tooling secured

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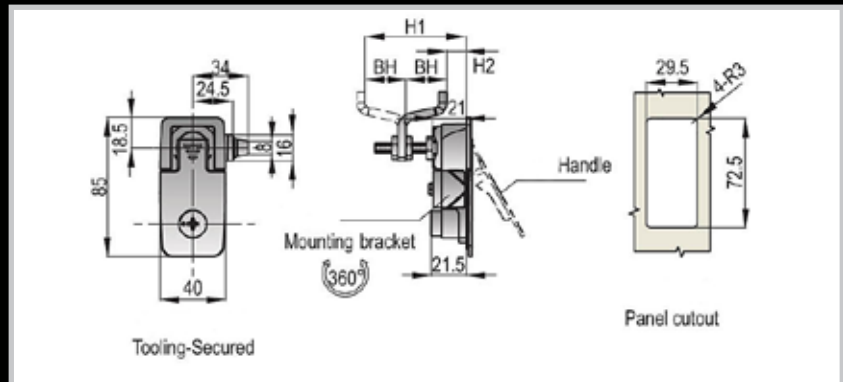
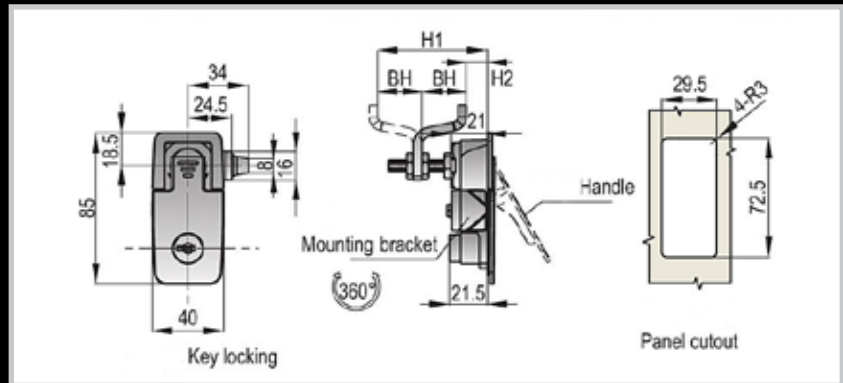
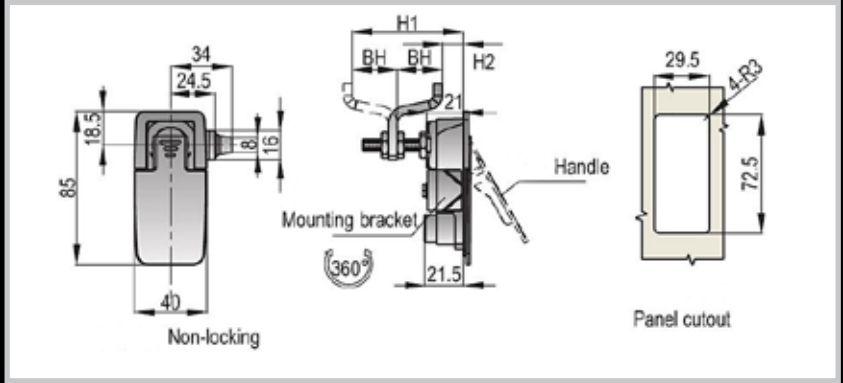
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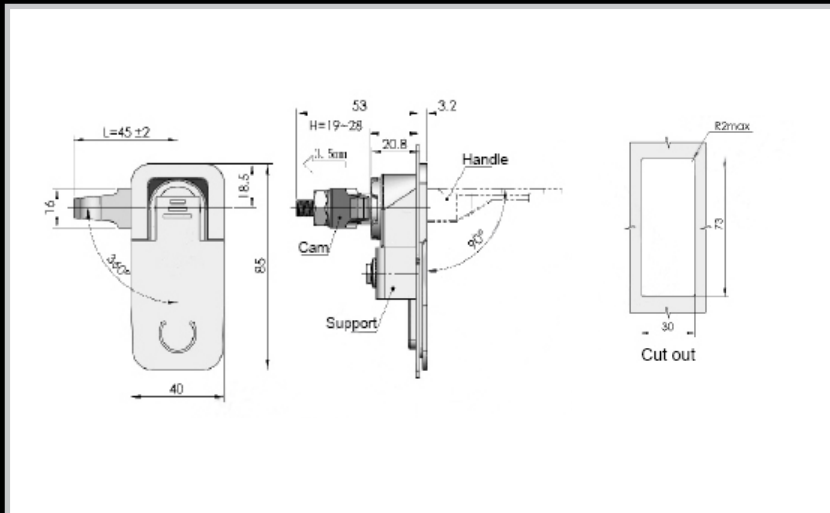
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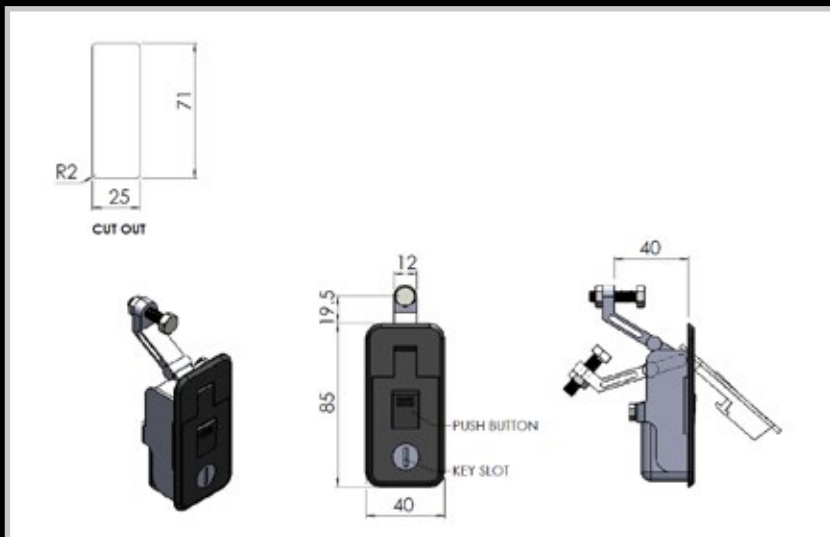
Product Number	Cylinder Style		Cam Reversed		Cam Forward	
	Chrome	Black Powder Coated	min - max		min - max	
72.00.130	72.00.110	Non-locking	56 - 66		6-16	
72.00.230	72.00.210	Non-locking	46 - 56		16 - 26	
72.00.330	72.00.310	Non-locking	36 - 46		26 - 36	
72.10.130	72.10.110	Key lockable	56 - 66		6 - 16	
72.10.230	72.10.210	Key lockable	46 - 56		6 - 16	
72.10.330	72.10.310	Key lockable	36 - 46		26 - 36	
72.11.130	72.11.110	Tooling Secured	56 - 66		6 - 16	
72.11.230	72.11.210	Tooling Secured	46 - 56		16 - 26	
72.11.330	72.11.310	Tooling Secured	36 - 46		26 - 36	



Part Number	Description
72.2.28.B	Non locking compression latch, Black powder coated



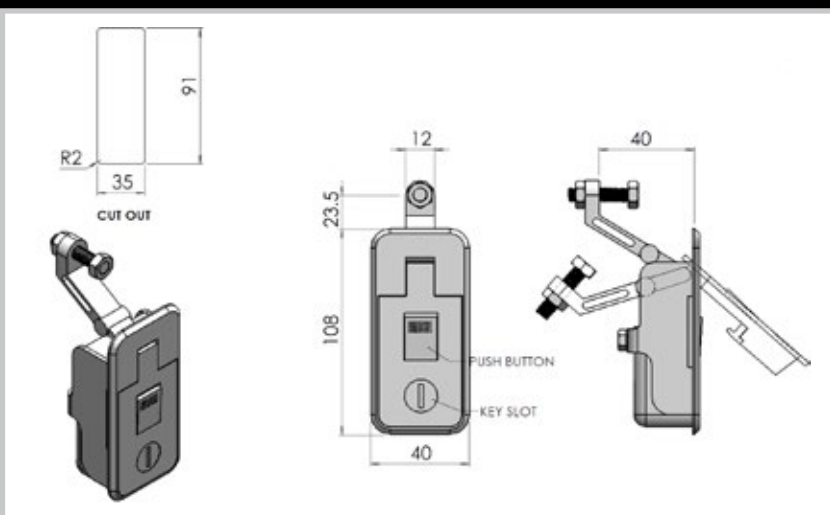
**Remarks:**  
Quick release flush compression lock.  
Available in Chrome or Black.



Part Number	Description
71.1.85C/K	Chrome plated ZDC
71.1.85B/K	Black Powder Coated ZDC



**Remarks:**  
Quick release flush compression lock.  
Available in Chrome or Black.



Part Number	Description
91.1.108C/K	Chrome plated ZDC
91.1.108B/K	Black Powder Coated ZDC

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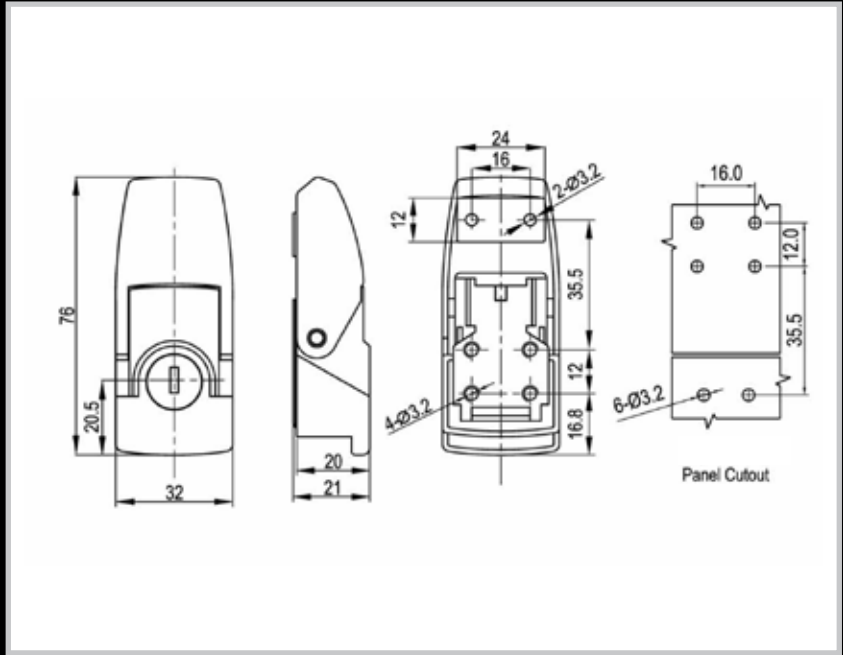
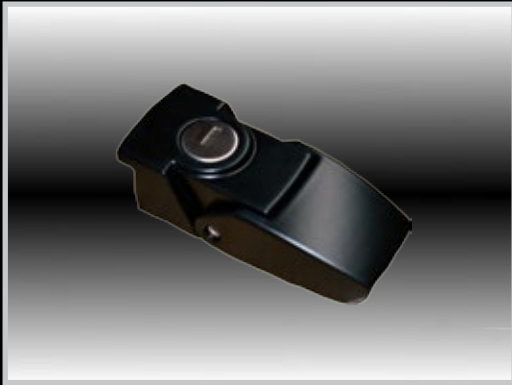
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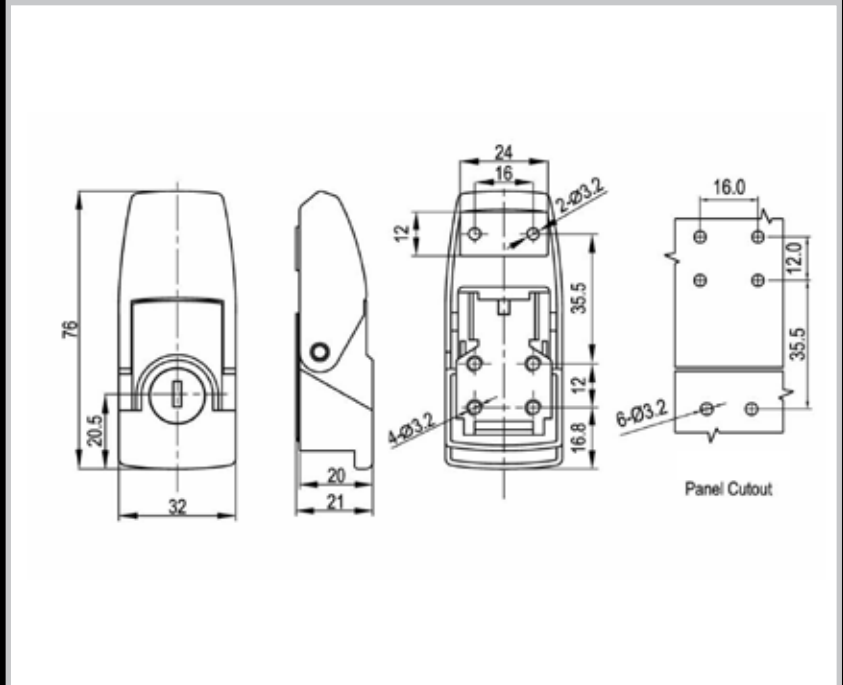
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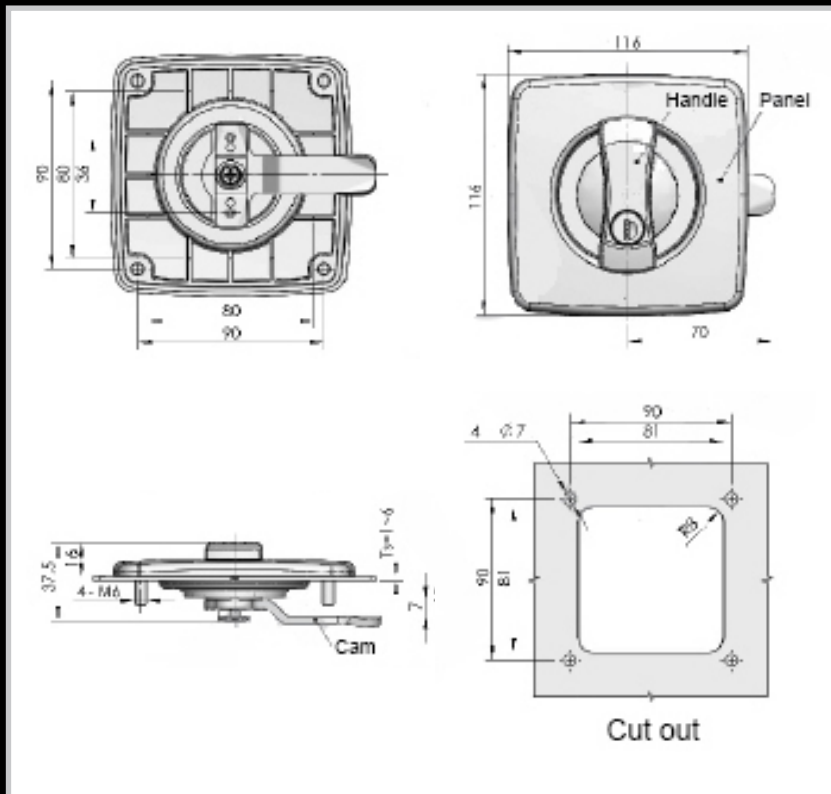


Part Number	Description
30.210.10.B/K	Black powder coated, key locking
30.200.10.B	Black powder coated, non locking
30.210.40.C/K	Chrome, key locking
30.200.40.C	Chrome, non locking

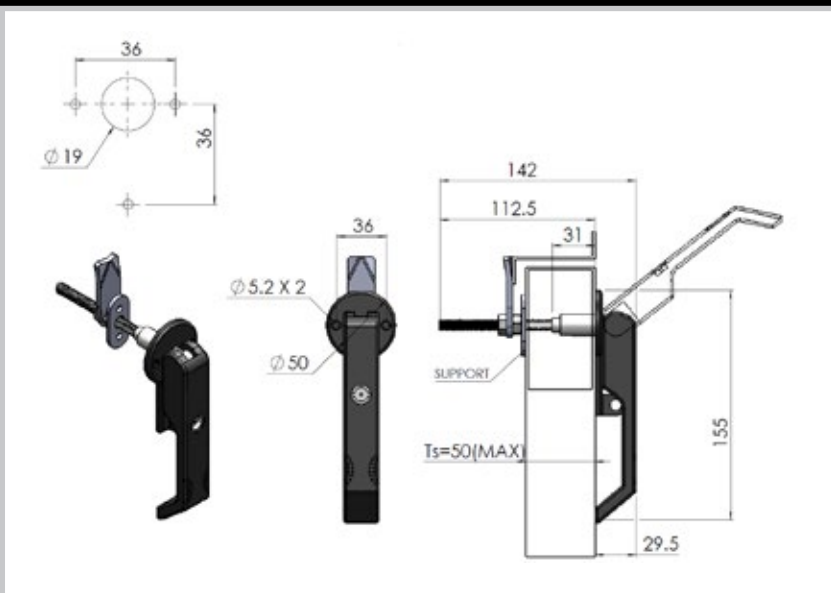


Part Number	Description
35.110.10.B/K	Black powder coated, key locking
35.100.10.B	Black powder coated, non locking
35.110.40.C/K	Chrome, key locking
35.100.40.C	Chrome, non locking





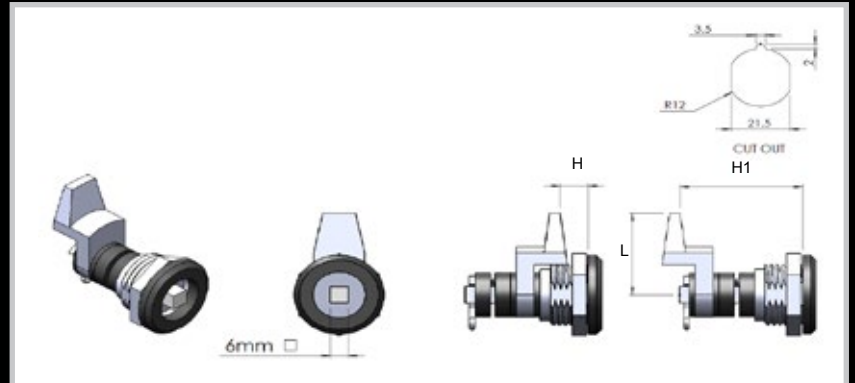
Part Number	Description
84.1.30.B/K	Black PA housing and handle, zinc plated steel support



Part Number	Description
19.3.112.P	Padlockable quarter-turn compression handle with double bit drive

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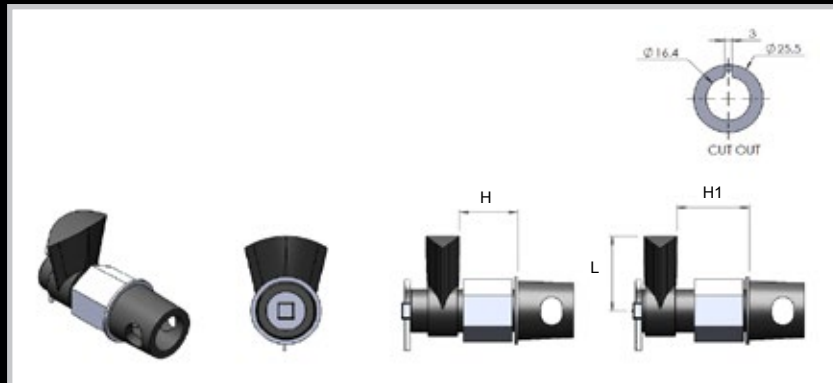


**Remarks:**  
Please refer to pages 135,136,137 for the selection of the interchangeable cams.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
16.1.401.01	ZDC	Black Powder Coated	Square	6	21	29	30
16.1.531.01	ZDC	Black Powder Coated	Square	6	21	41	30
16.1.401.04n/z	ZDC	Black Powder Coated	Square	6	10	42	34
16.1.531.04n/z	ZDC	Black Powder Coated	Square	6	10	53	34
16.1.401.05n/z	ZDC	Black Powder Coated	Square	6	10	42	48
16.1.531.05n/z	ZDC	Black Powder Coated	Square	6	10	53	48
16.1.401.06	ZDC	Black Powder Coated	Square	6	17	35	49
16.1.531.06	ZDC	Black Powder Coated	Square	6	17	47	49
16.1.401.08	ZDC	Black Powder Coated	Square	6	17	35	49
16.1.531.08	ZDC	Black Powder Coated	Square	6	17	47	49
16.1.401.09n/z	ZDC	Black Powder Coated	Square	6	22	32	37
16.1.531.09n/z	ZDC	Black Powder Coated	Square	6	22	44	37



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
16.1.012.06	ZDC	Black powder coated	Coin Slot	-	12	30
16.1.017.06	ZDC	Black powder coated	Coin Slot	-	17	30
16.1.028.06	ZDC	Black powder coated	Coin Slot	-	28	30



**Remarks:**

Please refer to pages 135,136,137 for the selection of the interchangeable cams.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
16.3.401.01	ZDC	Black Powder Coated	Square	6	21	29	30
16.3.531.01	ZDC	Black Powder Coated	Square	6	21	41	30
16.3.401.04n/z	ZDC	Black Powder Coated	Square	6	10	42	34
16.3.531.04n/z	ZDC	Black Powder Coated	Square	6	10	53	34
16.3.401.05n/z	ZDC	Black Powder Coated	Square	6	10	42	48
16.3.531.05n/z	ZDC	Black Powder Coated	Square	6	10	53	48
16.3.401.06	ZDC	Black Powder Coated	Square	6	17	35	49
16.3.531.06	ZDC	Black Powder Coated	Square	6	17	47	49
16.3.401.08	ZDC	Black Powder Coated	Square	6	17	35	49
16.3.531.08	ZDC	Black Powder Coated	Square	6	17	47	49
16.3.401.09n/z	ZDC	Black Powder Coated	Square	6	22	32	37
16.3.531.09n/z	ZDC	Black Powder Coated	Square	6	22	44	37

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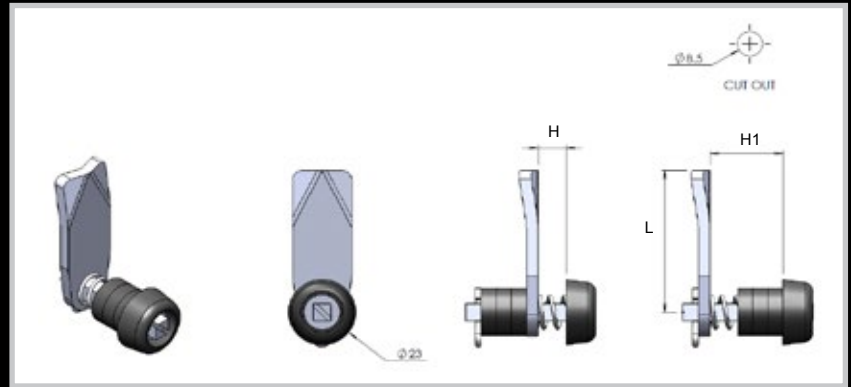
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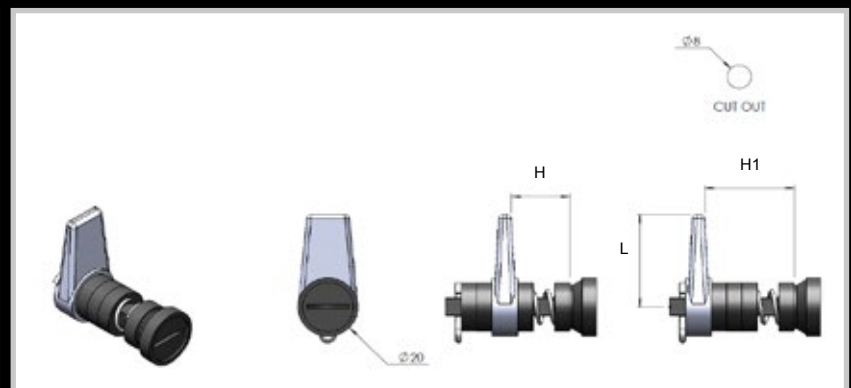
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### Spring Loaded Locks



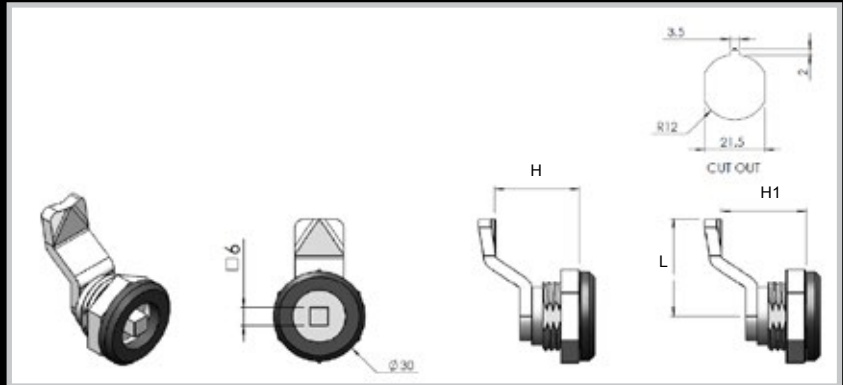
**Remarks:**  
Spring loaded latch with adjustable depths.

Part Number	Material	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
222309	Polyamide body, Mild steel shaft and cam	Square	6	8	25	34

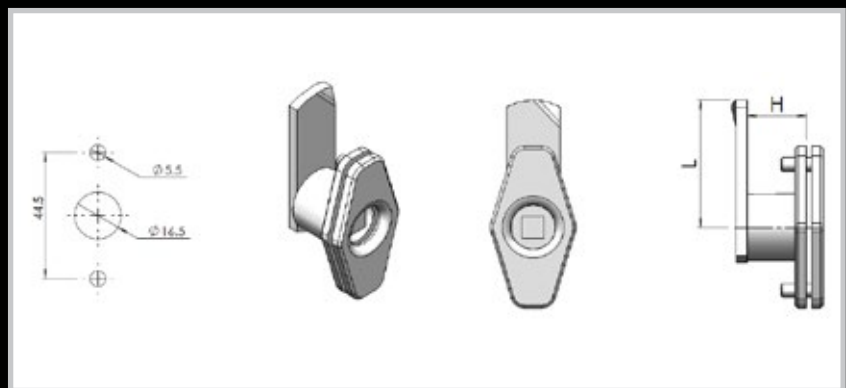


**Remarks:**  
Spring loaded coin lock with adjustable depths.

Part Number	Material	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
8.5.271.01N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	5	13	30
8.5.371.01N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	5	23	30
8.5.271.04Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	1.5	27	34
8.5.371.04Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	1.5	37	34
8.5.271.05Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	1.5	27	48
8.5.371.05Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	1.5	37	48
8.5.271.06	Polyamide body, Mild steel shaft and cam	Coin Slot	8	4	28	49
8.5.371.06	Polyamide body, Mild steel shaft and cam	Coin Slot	8	4	38	49
8.5.271.09Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	5	16	37
8.5.371.09Z/N	Polyamide body, Mild steel shaft and cam	Coin Slot	8	5	26	37



Part Number	Material	Insert Type	Insert size (mm)	H (mm)	L (mm)
25.5.201.04	ZDC body, Mild steel cam	Square	6	20	31
25.5.251.04	ZDC body, Mild steel cam	Square	6	25	31
25.5.281.04	ZDC body, Mild steel cam	Square	6	28	31



**Remarks:**  
Municipal meter box lock.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
221000	Mild Steel	Natural	Square	8	22	45

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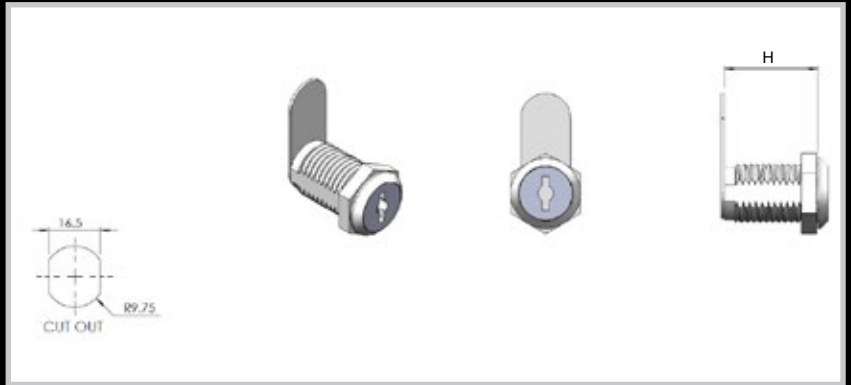
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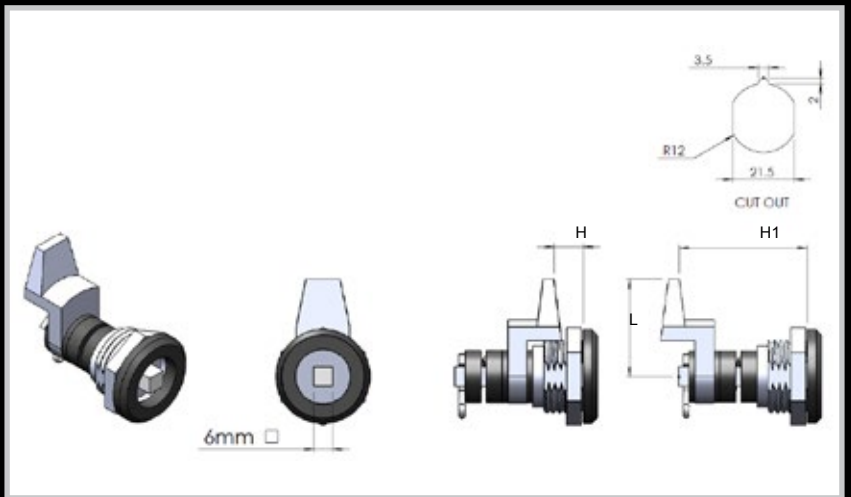
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**Remarks:**  
Cam lock available in key different and key alike.

Part Number	Material	Insert Type	Insert size (mm)	H (mm)
<b>SAME KEY</b>				
1010106/16/SK	ZDC	Slotted	-	16
1010106/20/SK	ZDC	Slotted	-	20
1010106/25/SK	ZDC	Slotted	-	25
1010106/30/SK	ZDC	Slotted	-	30
<b>DIFFERENT KEY</b>				
1010106/16/DK	ZDC	Slotted	-	16
1010106/20/DK	ZDC	Slotted	-	20
1010106/25/DK	ZDC	Slotted	-	25
1010106/30/DK	ZDC	Slotted	-	30



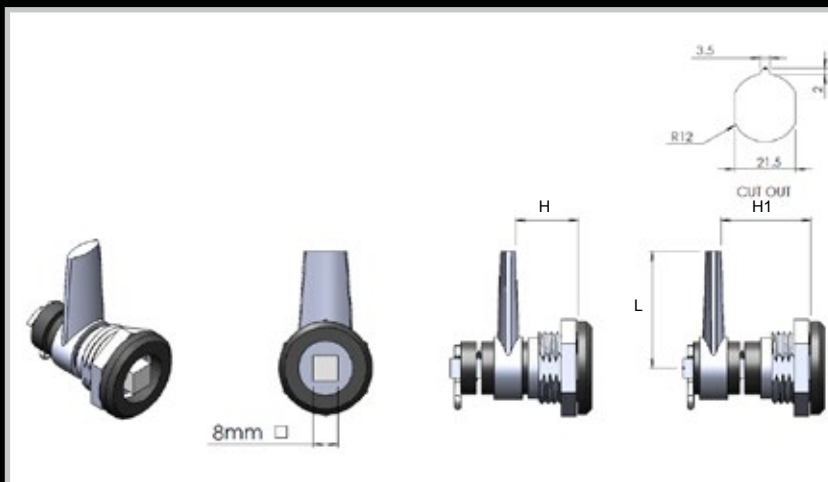
**Remarks:**  
Please refer to pages 135,136,137 for the selection of the interchangeable cams.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
25.65.401.01	ZDC	Black powder coated	Square	6	16	25	30
25.65.401.04n/z	ZDC	Black powder coated	Square	6	9	41	34
25.65.401.05n/z	ZDC	Black powder coated	Square	6	9	41	48
25.65.401.06	ZDC	Black powder coated	Square	6	13	31	49
25.65.401.08	ZDC	Black powder coated	Square	6	13	31	49
25.65.401.09n/z	ZDC	Black powder coated	Square	6	17	28	37





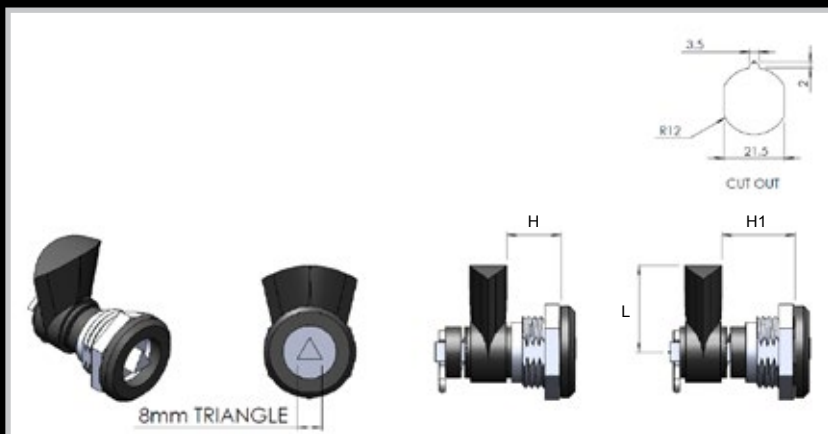
**Remarks:**  
Please refer to pages 135,136,137 for the selection of the interchangeable cams.



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
25.65.402.01	ZDC	Black powder coated	Square	8	16	25	30
25.65.402.04n/z	ZDC	Black powder coated	Square	8	9	41	34
25.65.402.05n/z	ZDC	Black powder coated	Square	8	9	41	48
25.65.402.06	ZDC	Black powder coated	Square	8	13	31	49
25.65.402.08	ZDC	Black powder coated	Square	8	13	31	49
25.65.402.09n/z	ZDC	Black powder coated	Square	8	17	28	37



**Remarks:**  
Please refer to pages 135,136,137 for the selection of the interchangeable cams.



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	H1 (mm)	L (mm)
25.65.403.01	ZDC	Black powder coated	Triangle	8	16	25	30
25.65.403.04n/z	ZDC	Black powder coated	Triangle	8	9	41	34
25.65.403.05n/z	ZDC	Black powder coated	Triangle	8	9	41	48
25.65.403.06	ZDC	Black powder coated	Triangle	8	13	31	49
25.65.403.08	ZDC	Black powder coated	Triangle	8	13	31	49
25.65.403.09n/z	ZDC	Black powder coated	Triangle	8	17	28	37

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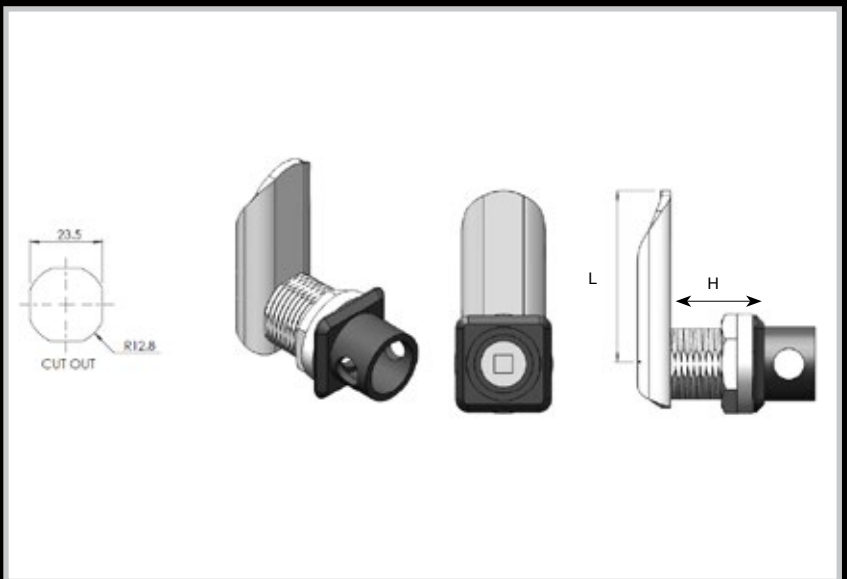
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**Remarks:**  
IP 65 panel lock with a 6mm square drive, explosion proof.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
25.A65.270.10	Mild Steel	Black powder coated flange	Square	6	27	31
25.A65.450.10	Mild Steel	Black powder coated flange	Square	6	45	31



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)	L (mm)
25.B65.270.10	Mild Steel	Black powder coated flange	Square	6	27	48
25.B65.450.10	Mild Steel	Black powder coated flange	Square	6	45	48



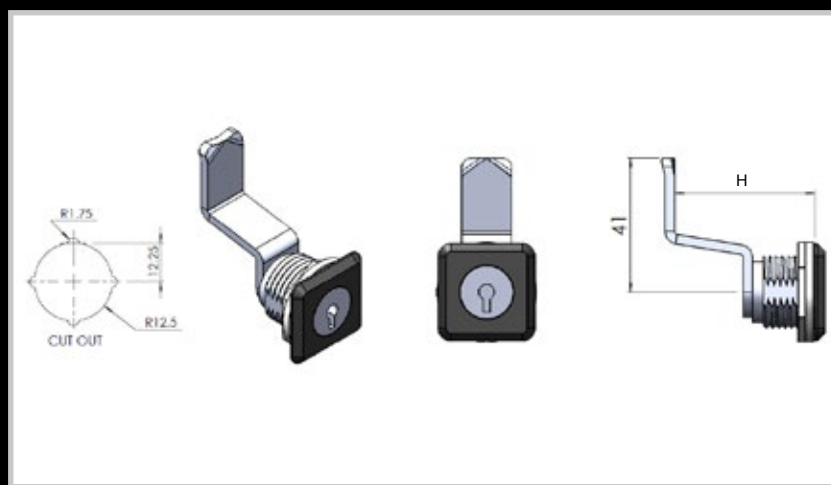
**Remarks:**  
IP 65 panel lock with 6mm square drive.



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)
222622/20	ZDC	Black powder coated	Square	6	20
222622/22	ZDC	Black powder coated	Square	6	22
222622/25	ZDC	Black powder coated	Square	6	25
222622/36	ZDC	Black powder coated	Square	6	36
222622/41	ZDC	Black powder coated	Square	6	41
222622/45	ZDC	Black powder coated	Square	6	45
222622N/20	Nylon	Black powder coated	Square	6	20
222622N/22	Nylon	Black powder coated	Square	6	22
222622N/25	Nylon	Black powder coated	Square	6	25
222622N/36	Nylon	Black powder coated	Square	6	36
222622N/41	Nylon	Black powder coated	Square	6	41
222622N/45	Nylon	Black powder coated	Square	6	45



**Remarks:**  
IP65 panel lock barrel and key driven.



Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)
222622/20/60066	ZDC	Black powder coated	Slotted	-	20
222622/22/60066	ZDC	Black powder coated	Slotted	-	22
222622/45/60066	ZDC	Black powder coated	Slotted	-	45
222622/20/60125	ZDC	Black powder coated	Slotted	-	20
222622/22/60125	ZDC	Black powder coated	Slotted	-	22
222622/45/60125	ZDC	Black powder coated	Slotted	-	45

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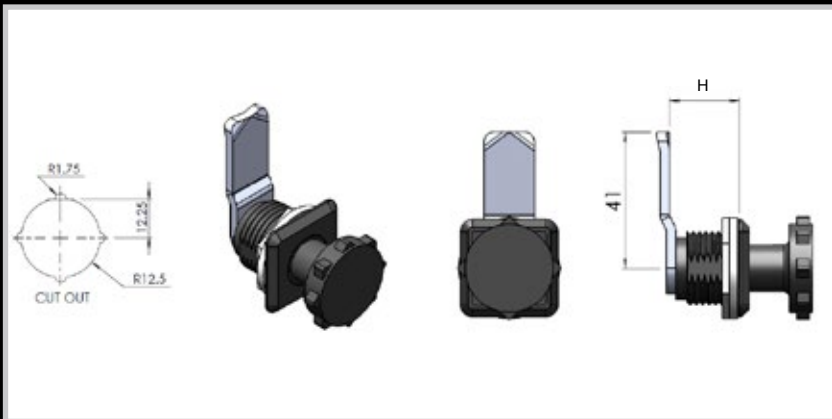
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**Remarks:**  
IP 65 panel lock with D31 knob.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)
222622N/20SS	Nylon	Black Powder Coated	-	-	20
222622/HW/22D31	ZDC	Black Powder Coated	-	-	20

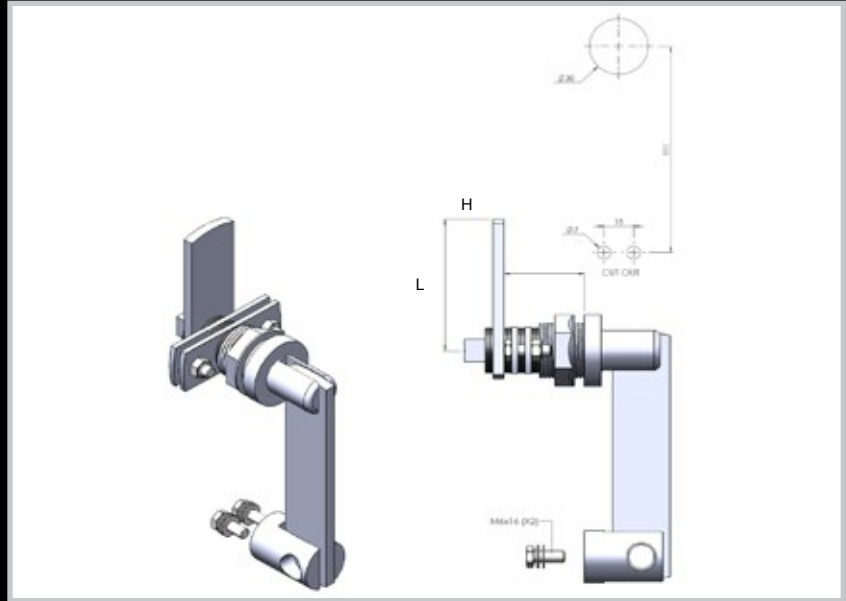


**Remarks:**  
IP 65 padlockable panel lock with a 6mm square drive.

Part Number	Material	Finish	Insert Type	Insert size (mm)	H (mm)
222628/20	ZDC	Black Powder Coated	Square	6	20
222628/22	ZDC	Black Powder Coated	Square	6	22
222628/25	ZDC	Black Powder Coated	Square	6	25
222628/36	ZDC	Black Powder Coated	Square	6	36
222628/41	ZDC	Black Powder Coated	Square	6	41
222628/45	ZDC	Black Powder Coated	Square	6	45
222628N/20	ZDC	Black Powder Coated	Square	6	20
222628N/22	ZDC	Black Powder Coated	Square	6	22
222628N/25	ZDC	Black Powder Coated	Square	6	25
222628N/36	ZDC	Black Powder Coated	Square	6	36
222628N/41	ZDC	Black Powder Coated	Square	6	41
222628N/45	ZDC	Black Powder Coated	Square	6	45



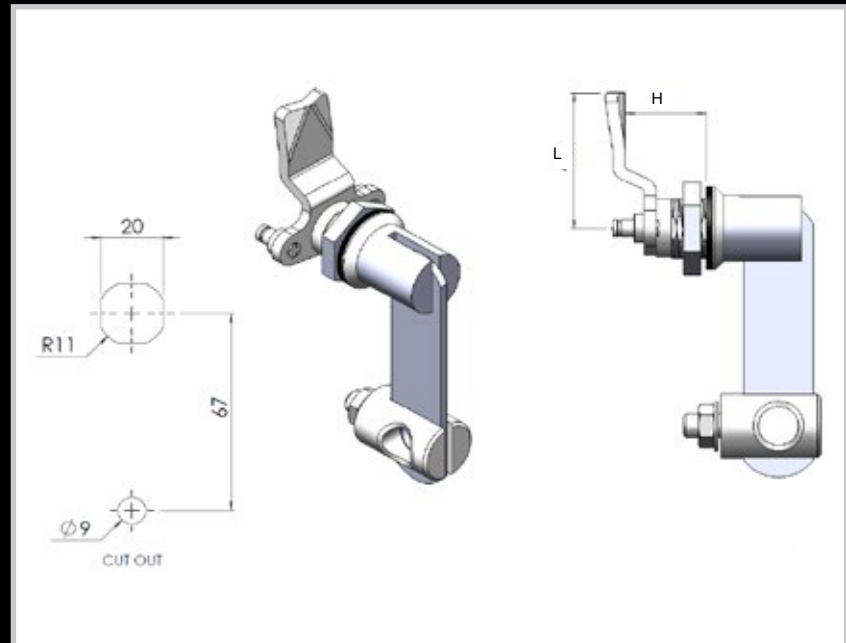
**Remarks:**  
Heavy duty lever lock available in ZDC or stainless steel.



Part Number	Description	H (mm)	L (mm)
1010175	ZDC body and MS Cam	45	70
1010175S/S	Complete Stainless steel	45	70
1010175T/S	Mild Steel with threaded shaft	45	70
1010175S/S-T/S	Stainless steel with threaded shaft	45	70



**Remarks:**  
IP65 quarter turn lever lock Eskom approved.  
Refer to pages 135,136,137 for cam selection.



Part Number	Description	L (mm)	H (mm)
22.4.08.STRTS/S	Complete stainless steel	46	22
22.4.08.STEPS/S	Complete stainless steel	46	26

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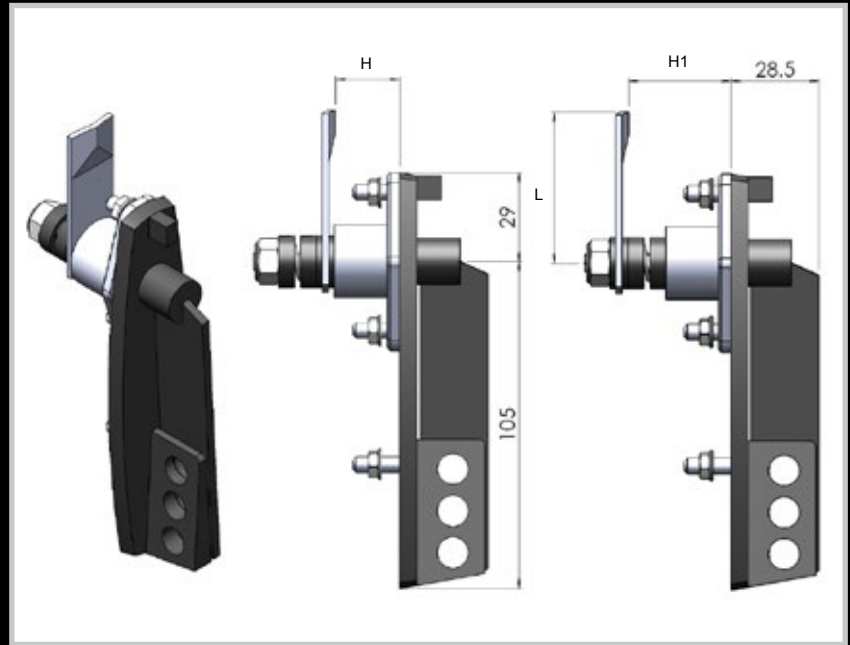
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**Remarks:**  
Municipal safety lever lock with a 3 hole locking system.



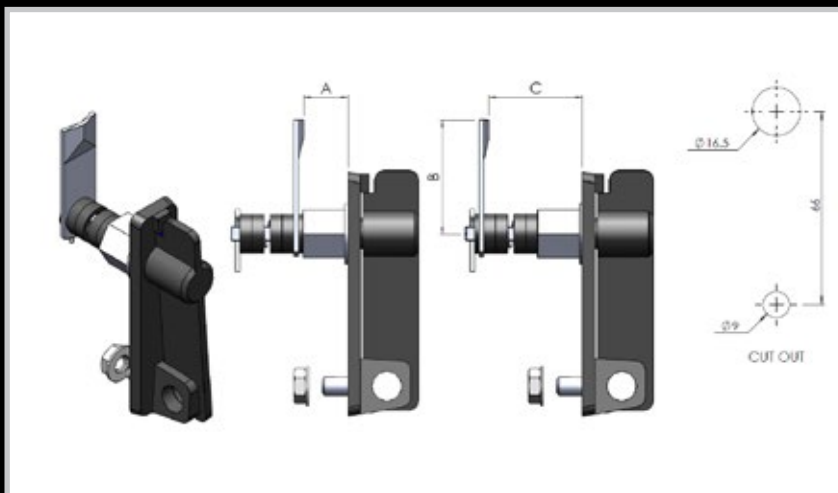
Part Number	Description	H (mm)	L (mm)	H1 (mm)
16.4.432.01/MS/3H	ZDC body with MS cam	30	35	30
16.4.432.02/MS/3H	ZDC body with MS cam	22	38	32
16.4.432.03/MS/3H	ZDC body with MS cam	28	40	38
16.4.432.04/MS/3H	ZDC body with MS cam	25	30	31
16.4.432.05/MS/3H	ZDC body with MS cam	25	31	50
16.4.432.06/MS/3H	ZDC body with MS cam	22	55	48
16.4.612.01/MS/3H	ZDC body with MS cam	30	50	30
16.4.612.02/MS/3H	ZDC body with MS cam	20	50	32
16.4.612.03/MS/3H	ZDC body with MS cam	28	52	38
16.4.612.04/MS/3H	ZDC body with MS cam	25	64	31
16.4.612.05/MS/3H	ZDC body with MS cam	25	64	50
16.4.612.06/MS/3H	ZDC body with MS cam	22	55	48
16.4.432.01/SS/3H	Complete stainless steel body and cam	30	35	30
16.4.432.02/SS/3H	Complete stainless steel body and cam	22	38	32
16.4.432.03/SS/3H	Complete stainless steel body and cam	28	40	38
16.4.432.04/SS/3H	Complete stainless steel body and cam	25	30	31
16.4.432.05/SS/3H	Complete stainless steel body and cam	25	31	50
16.4.432.06/SS/3H	Complete stainless steel body and cam	22	55	48
16.4.612.01/SS/3H	Complete stainless steel body and Cam	30	35	30
16.4.612.02/SS/3H	Complete stainless steel body and Cam	22	38	32
16.4.612.03/SS/3H	Complete stainless steel body and Cam	28	40	38
16.4.612.04/SS/3H	Complete stainless steel body and Cam	25	30	31
16.4.612.05/SS/3H	Complete stainless steel body and Cam	25	31	50
16.4.612.06/SS/3H	Complete stainless steel body and Cam	22	55	48





**Remarks:**

Light duty lever lock with adjustable depths, refer to pages 135,136,137 for cam selection.

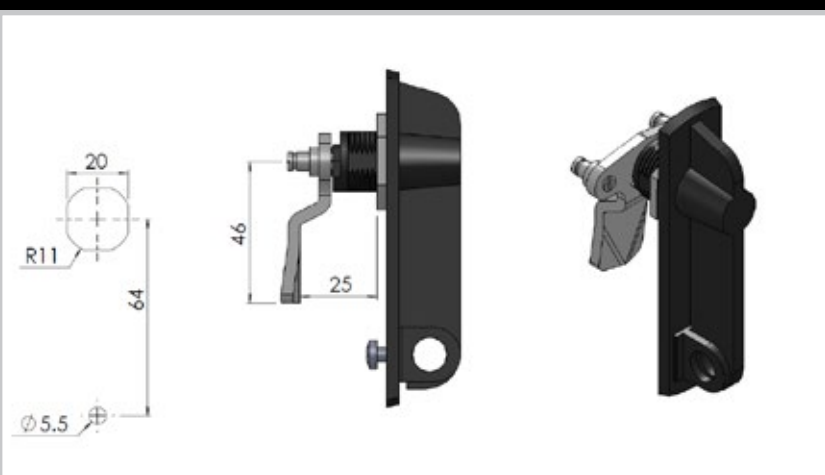


Part Number	Description	A (mm)	B (mm)	C (mm)
16.4.432.01	ZDC Body with MS cam,Black powder coated	22	30	30
16.4.612.01	ZDC Body with MS cam,Black powder coated	22	50	30
16.4.432.04n/z	ZDC Body with MS cam,Black powder coated	11	47	34
16.4.612.04n/z	ZDC Body with MS cam,Black powder coated	11	65	34
16.4.432.05n/z	ZDC Body with MS cam,Black powder coated	11	47	48
16.4.612.05n/z	ZDC Body with MS cam,Black powder coated	11	65	48
16.4.432.06	ZDC Body with MS cam,Black powder coated	17	37	49
16.4.612.06	ZDC Body with MS cam,Black powder coated	17	55	49
16.4.432.08	ZDC Body with MS cam,Black powder coated	17	37	49
16.4.612.08	ZDC Body with MS cam,Black powder coated	17	55	49
16.4.432.09n/z	ZDC Body with MS cam,Black powder coated	22	35	37
16.4.612.09n/z	ZDC Body with MS cam,Black powder coated	22	53	37



**Remarks:**

Refer to pages 135,136,137 for 3 point locking cam selection.



Part Number	Description	L (mm)	H (mm)
22.4.00.08	ZDC Black powder coated, MS cam Galvanized	46	25

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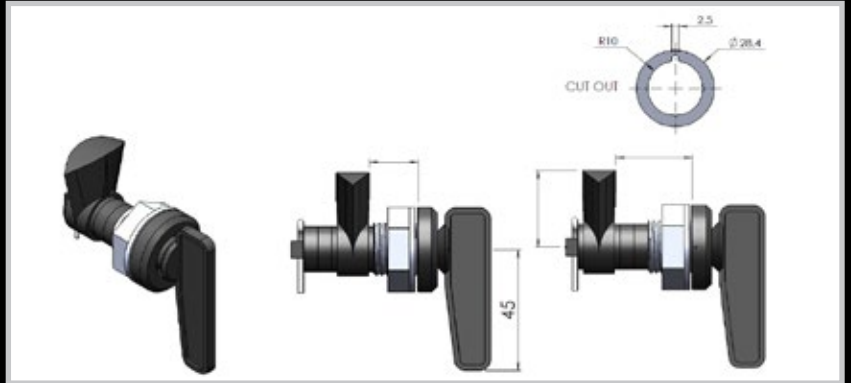
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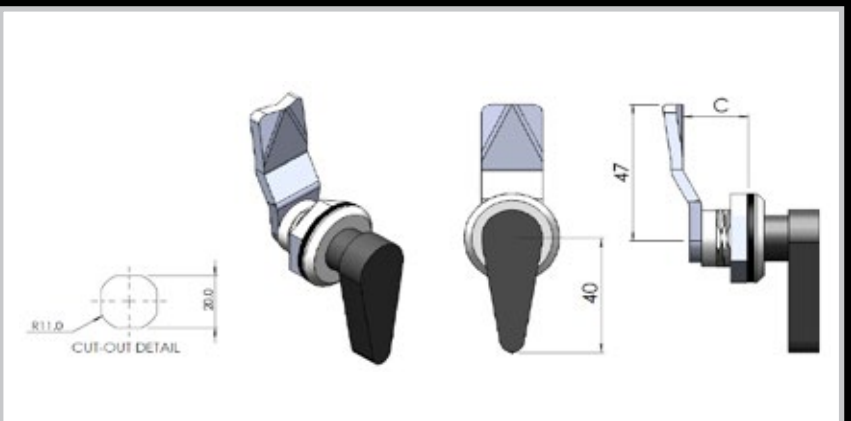
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**Remarks:**  
Mini lever lock with adjustable depths, refer to pages 135,136,137 for cam selection.

Part Number	Description	L (mm)	H (mm)	H1 (mm)
20.7.331.01	ZDC body and lever, Black powder coated	30	17	28
20.7.561.01	ZDC body and lever, Black powder coated	30	17	45
20.7.331.04n/z	ZDC body and lever, Black powder coated	34	7	43
20.7.561.04n/z	ZDC body and lever, Black powder coated	34	7	59
20.7.331.05n/z	ZDC body and lever, Black powder coated	48	6	43
20.7.561.05n/z	ZDC body and lever, Black powder coated	48	6	59
20.7.331.06P	ZDC body and lever, Black powder coated	49	13	35
20.7.561.06	ZDC body and lever, Black powder coated	49	13	49
20.7.331.08	ZDC body and lever, Black powder coated	49	13	35
20.7.561.08	ZDC body and lever, Black powder coated	49	13	49
20.7.331.09n/z	ZDC body and lever, Black powder coated	37	18	33
20.7.561.09n/z	ZDC body and lever, Black powder coated	37	18	48



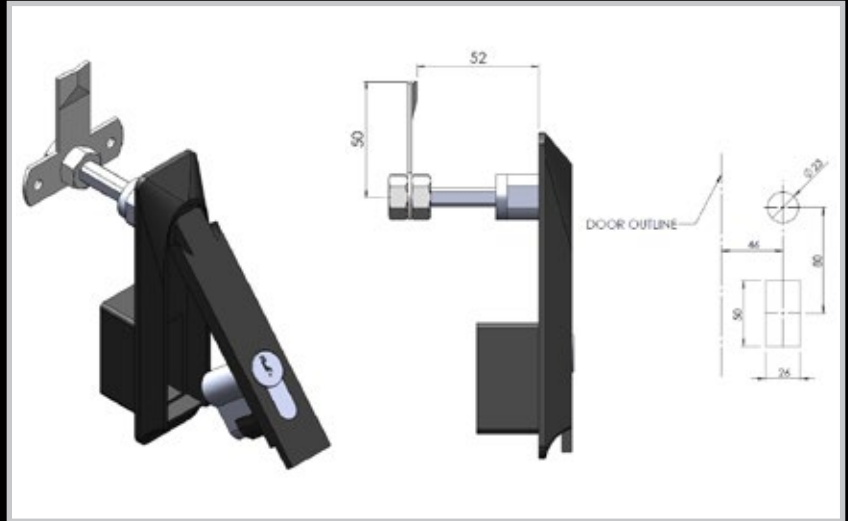
**Remarks:**  
Mini lever lock with adjustable depths, refer to pages 135,136,137 for cam selection.

Part Number	Description	L (mm)	H (mm)
T26.20	ZDC Body with stainless steel cam	47	20
T26.22	ZDC Body with stainless steel cam	47	22
T26.25	ZDC Body with stainless steel cam	47	25
T26.36	ZDC Body with stainless steel cam	47	36
T26.41	ZDC Body with stainless steel cam	47	41
T26.45	ZDC Body with stainless steel cam	47	45



**Remarks:**

Available in 4 finishes, black base with black handle, black base with chrome handle, complete chrome, stainless steel.

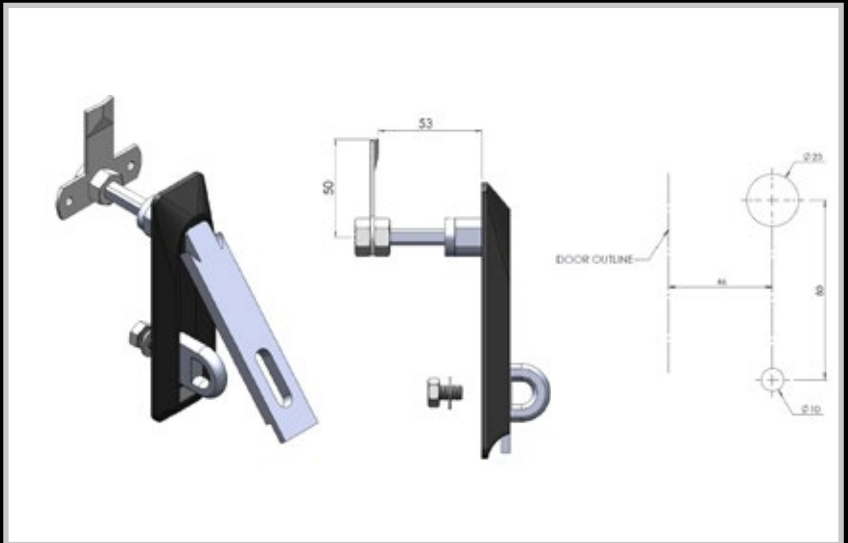


Part Number	Description
10111KZK190	ZDC body with M/S cam shaft
10111KZK191	ZDC body with M/S cam shaft
10111KZK192	ZDC body with M/S cam shaft
10111KZK193	ZDC body with M/S cam shaft
10111KZK194	ZDC body with M/S cam shaft
10111KZK195	ZDC body with M/S cam shaft



**Remarks:**

Available in 4 finishes, black base with black handle, black base with chrome handle, complete chrome, stainless steel.



Part Number	Description	Material and Finish
10111P	Flush padlockable swing handle with 3 point locking cam	ZDC body with M/S cam shaft
10111PB	Flush padlockable swing handle with 3 point locking cam	Black Base with Black Handle
10111PB/C	Flush padlockable swing handle with 3 point locking cam	Black Base with Chrome Handle
10111PC	Flush padlockable swing handle with 3 point locking cam	Complete Chrome
10111PS/S	Flush padlockable swing handle with 3 point locking cam	Stainless Steel

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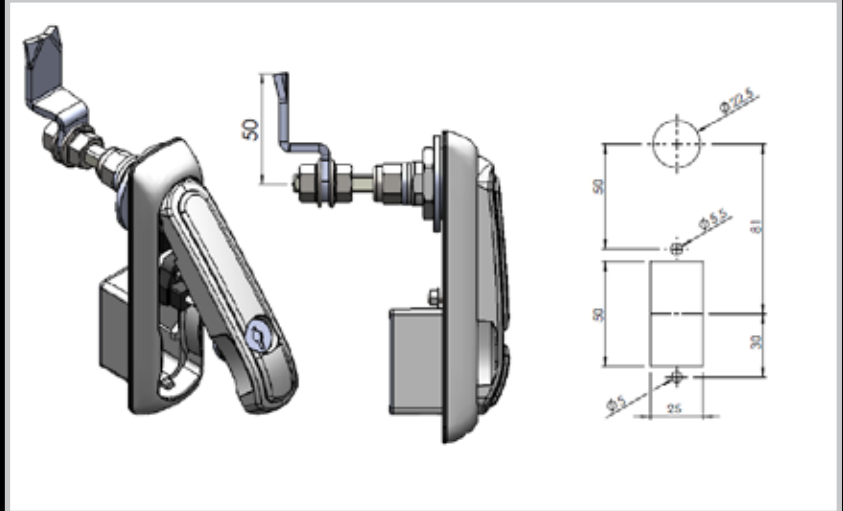
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# Swing Handles

## New Akira Range



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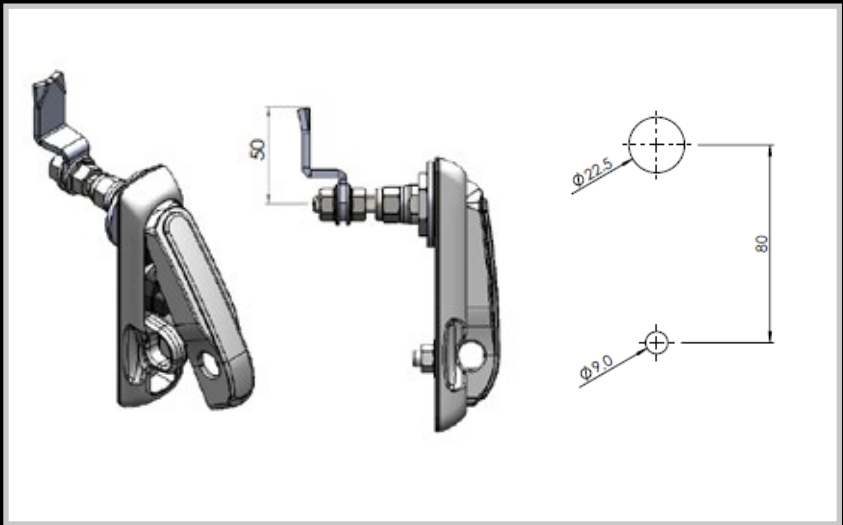


**Remarks:**

**AKIRA LOCKING SWING HANDLES**

- Quality chrome plated and superior 316 grade stainless steel models available.
- Standard 92268 and CL001 barrel types.
- Half-Euro cylinder types in 92268 & CL001 key.
- Sleek, modern styling.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.

Part Number	Description
10222KC/CL001	Chrome swing handle locking with standard CL001 barrel
10222KC/92268	Chrome swing handle locking with standard 92268 barrel
10222KSSHEC	316 Stainless steel swing handle locking with Half-Euro cylinder Key 92268 and CL001 available
10222KHEC	Chrome swing handle locking with Half-Euro cylinder. Key 92268 and CL001 available



**Remarks:**

**AKIRA PADLOCKING SWING HANDLES**

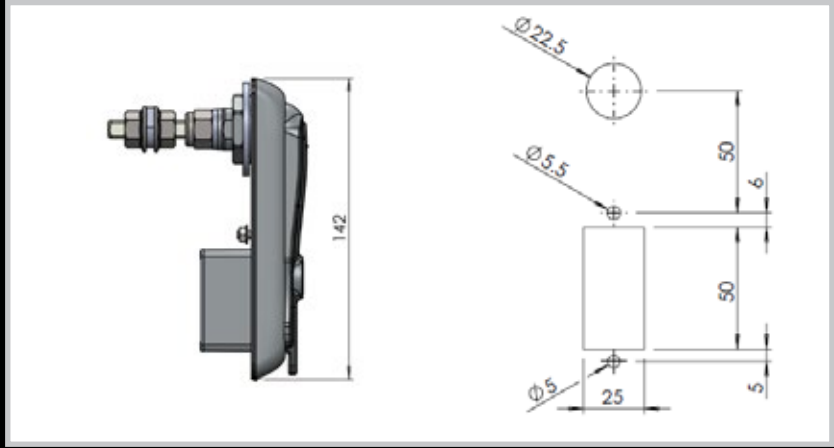
- Quality chrome plated and superior 316 grade stainless steel models available.
- Sleek modern styling with concealed padlock Hasp for added security.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.

Part Number	Description
10222PS/S	316 Stainless steel swing handle padlockable
10222PC	Chrome swing handle padlockable
10222PB	Padlockable swing handle with black finish



**Remarks:**

- Quality chrome plated and superior 316 grade stainless steel models available.
- Standard 92268 and CL001 barrel types.
- Half-Euro cylinder types in 92268 & CL001 key.
- Sleek, modern styling.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.

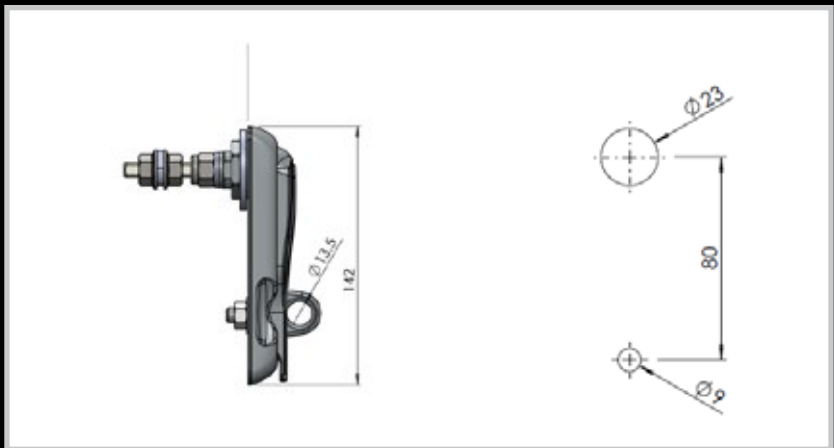


Part Number	Description
10333K/CL001	Chrome swing handle locking with standard CL001 barrel
10333K/92268	Chrome swing handle locking with standard 92268 barrel



**Remarks:**

- Quality chrome plated and superior 316 grade stainless steel models available.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.



Part Number	Description
10333PC	Chrome swing handle padlockable
10333PB	Padlockable swing handle with black finish
10333PS/S	316 Stainless steel swing handle padlockable

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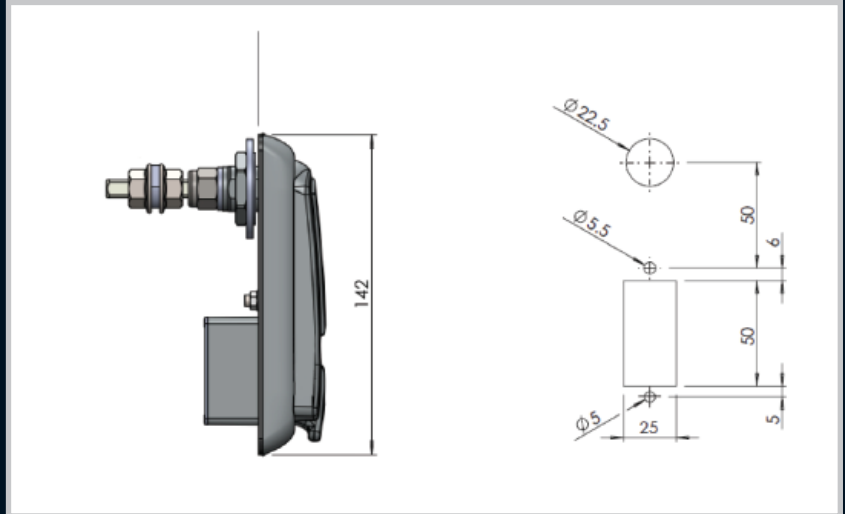
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**Remarks:**

- Quality chrome plated and superior 316 grade stainless steel models available.
- Standard 92268 and CL001 barrel types.
- Half-Euro cylinder types in 92268 & CL001 key.
- Sleek, modern styling.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.

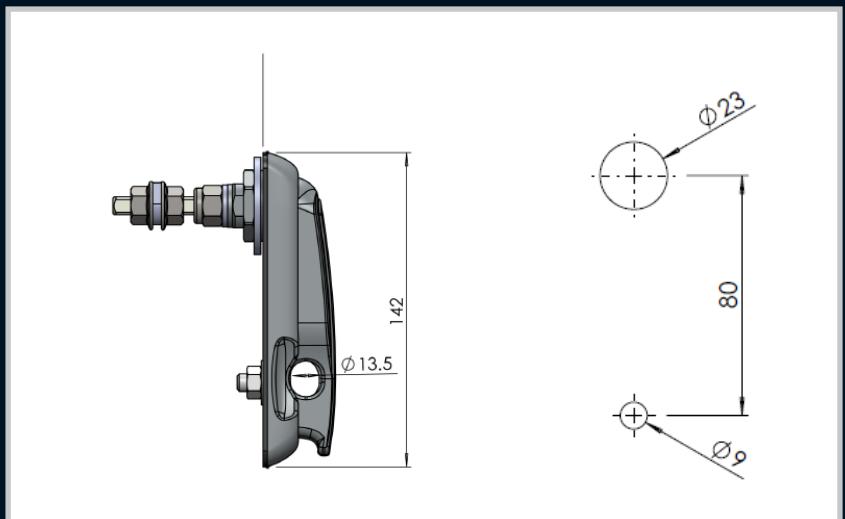


Part Number	Description
10444KSSHEC/CL001	316 Stainless steel swing handle locking with Half-Euro cylinder with CL001 barrel
10444SSHEC/92268	316 Stainless steel swing handle locking with Half-Euro cylinder with 92268 barrel
10444KHEC/CL001	Chrome swing handle locking with Half-Euro cylinder with CL001 barrel
10444KHEC/92268	Chrome swing handle locking with Half-Euro cylinder with 92268 barrel
10444K/WOC	Chrome swing handle Half-Euro with no cylinder
10444S/SWOC	316 Stainless steel swing handle Half-Euro with no cylinder



**Remarks:**

- Quality chrome plated and superior 316 grade stainless steel models available.
- Sleek modern styling with concealed padlock Hasp for added security.
- Smooth, user friendly operation with snap shut Anti-tamper and Anti-vibration system.



Part Number	Description
10444PC	Chrome swing handle padlockable
10444PB	Padlockable swing handle with black finish
10444PS/S	316 Stainless steel swing handle padlockable

**\* Kindly note that some of our products may not be available in your country. Please contact our sales department to enquire as to the availability of specific products.**

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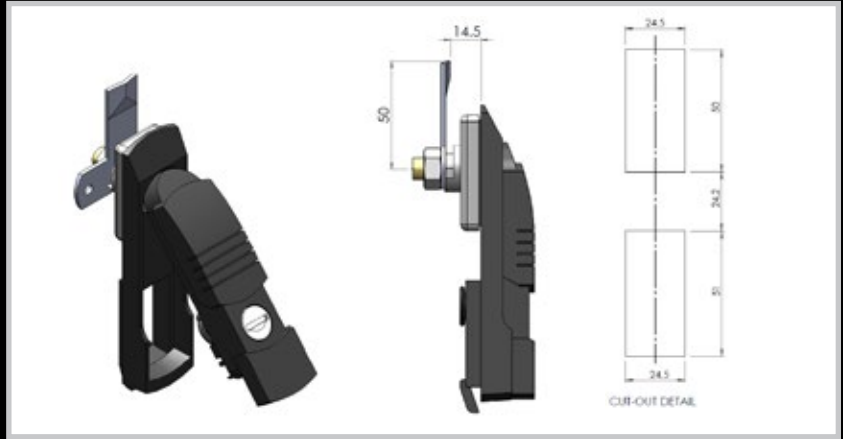
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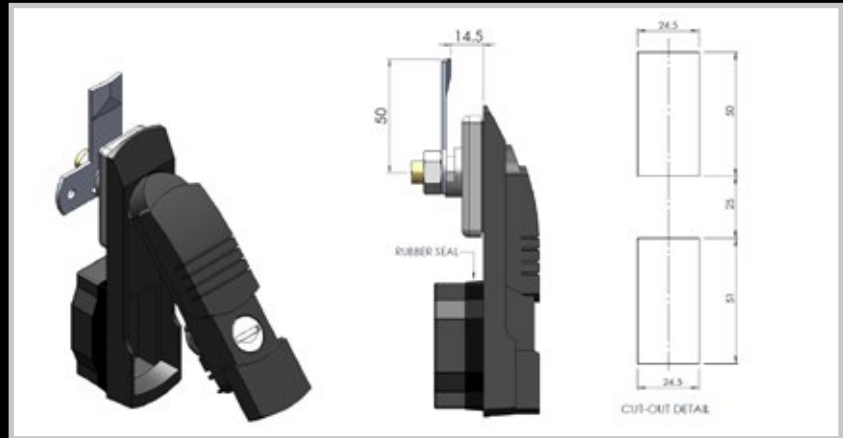
**Remarks:**  
Quick Assembly swing handle.  
Available in key alike and key different.



Part Number	Material and Finish	Description
FNSH/HOOK/SK	Nylon Matt Black	Swing handle with profile cylinder, slide dust cap and hook for quick fitment
FNSH/HOOK/DK	Nylon Matt Black	Swing handle with profile cylinder, slide dust cap and hook for quick fitment



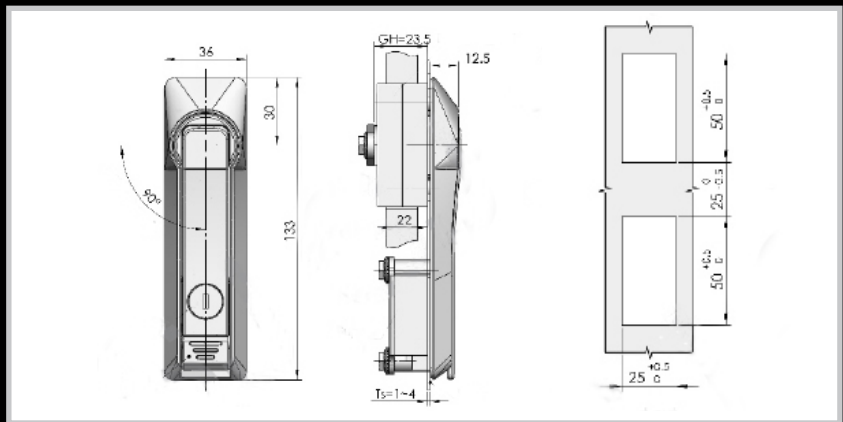
**Remarks:**  
IP65 swing handle.  
Available in key alike and key different.



Part Number	Material and Finish	Description
FNSH/65	Nylon Matt black	Swing handle with profile cylinder, slide dust cap and rubber gasket with cap for IP65 rating



**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number



Part Number	Description
50.2.23.P.B/K	Key lockable flush swing handle with push button , Black
50.2.23.P.B/K-92268	Key lockable flush swing handle with push button , Black
50.2.23.P.C/K	Key lockable flush swing handle with push button , Chrome
50.2.23.B/K	Key lockable swing handle 90 degree rotation , Black
50.2.23.C/K	Key lockable swing handle 90 degree rotation , Chrome

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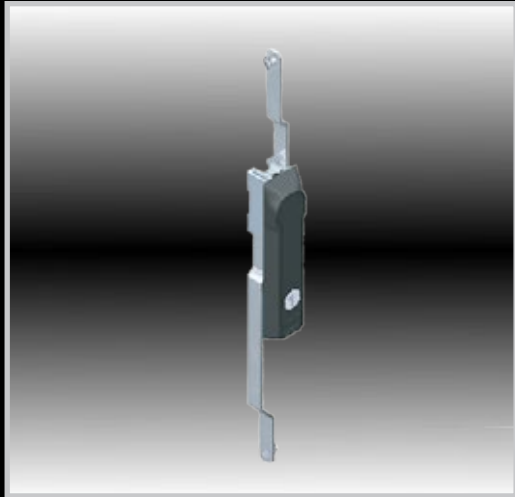
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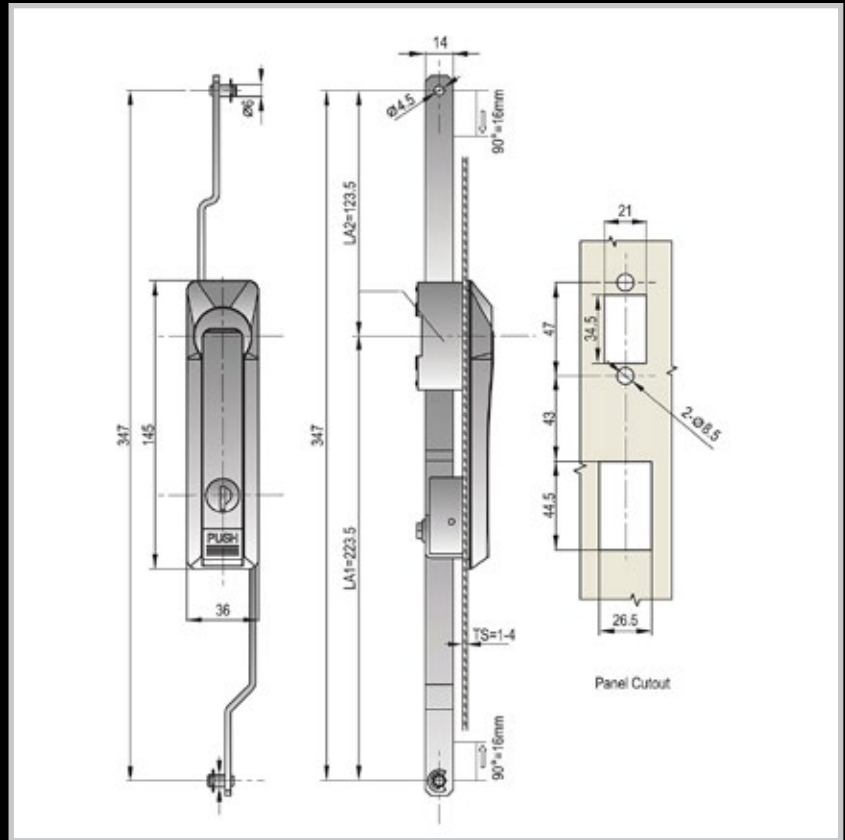


# Swing Handles



**Remarks:**

Available in key alike and key different.  
For key different option add "D" to part number

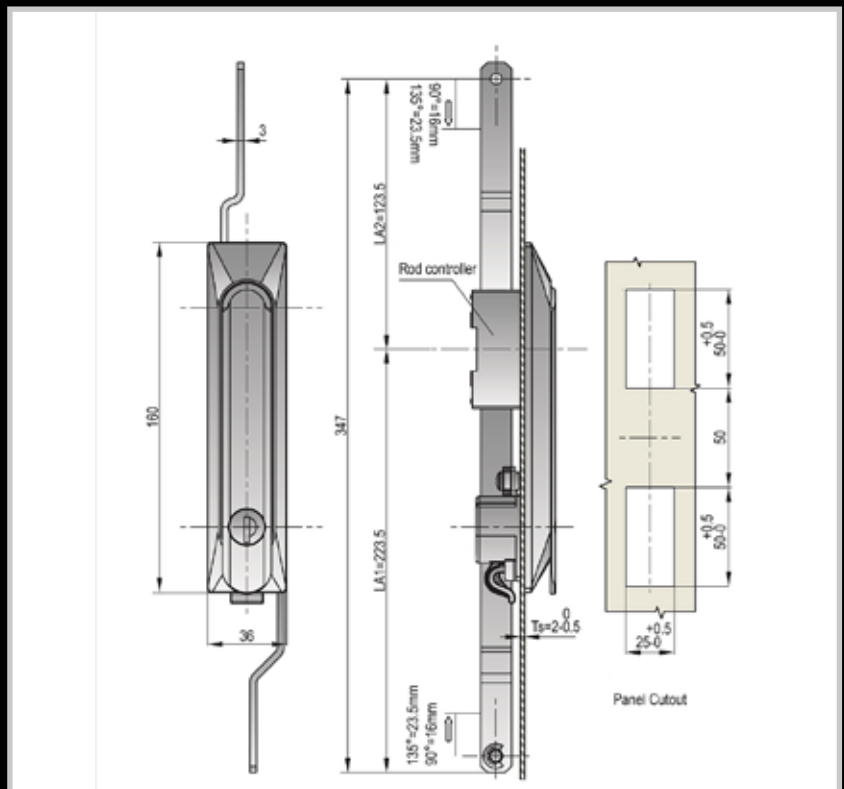


Part Number	Description
145.1.47.CK/RLS	Chrome, key lockable
145.1.47.BK/RLS	Black powder coated, key lockable



**Remarks:**

Available in key alike and key different.  
For key different option add "D" to part number



Part Number	Description
160.1.50.BK/RLS	Black powder coated , Key lockable

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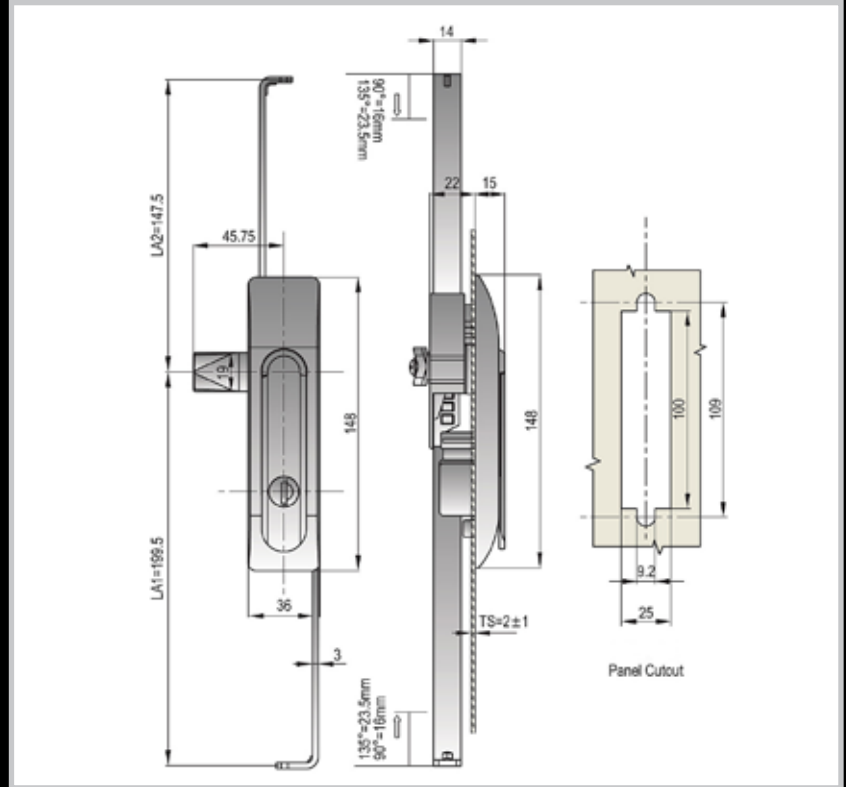
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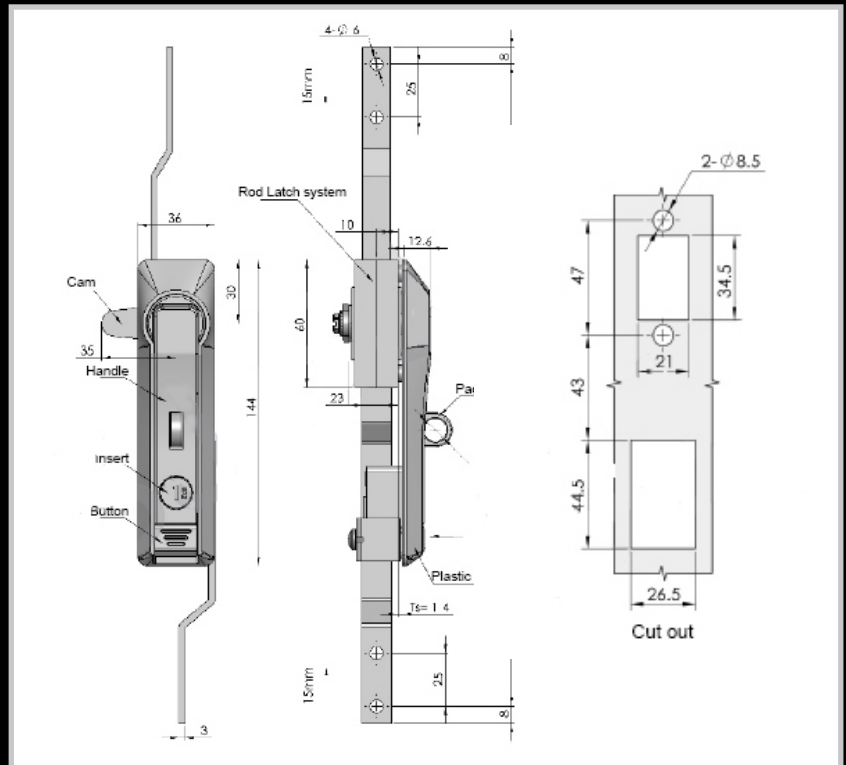
**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number



Part Number	Description
148.1.109.BK/RLS	Black powder coated, key lockable



**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number

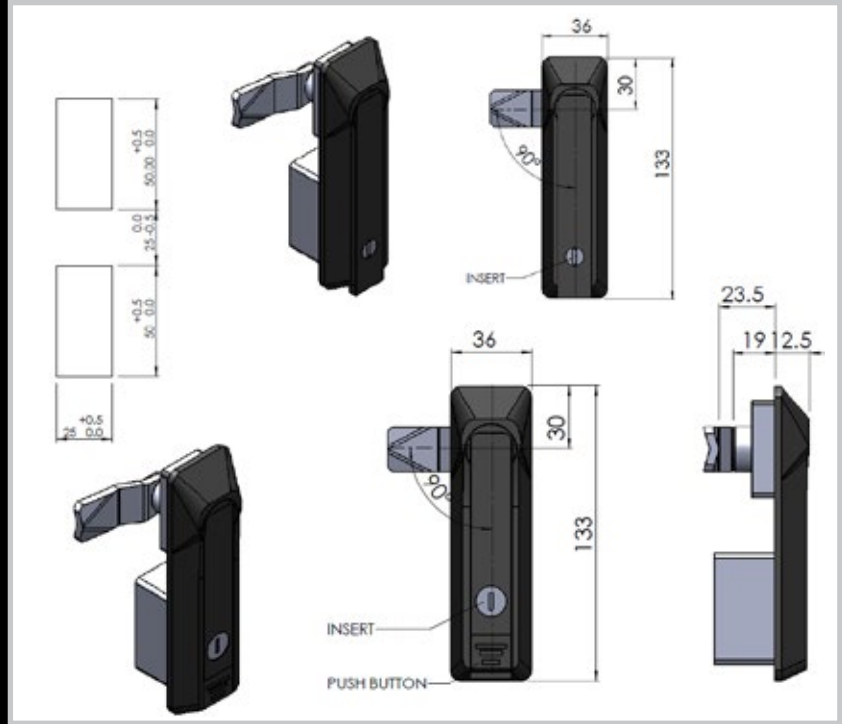


Part Number	Description
44.2.01.K/RLS	3 point rod latch system, key lockable swing handle ZDC (without padlock)
44.3.01.K/RLS	3 point rod latch system, key lockable swing handle ZDC (with padlock)

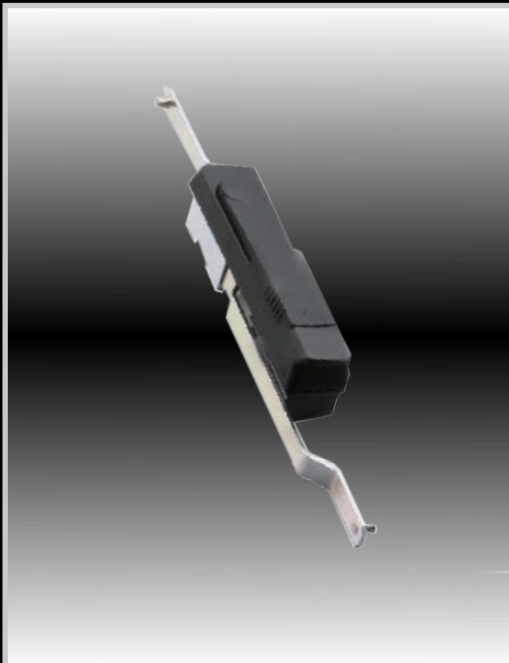


**Remarks:**

Available in key alike and key different. For key different option add "D" to part number

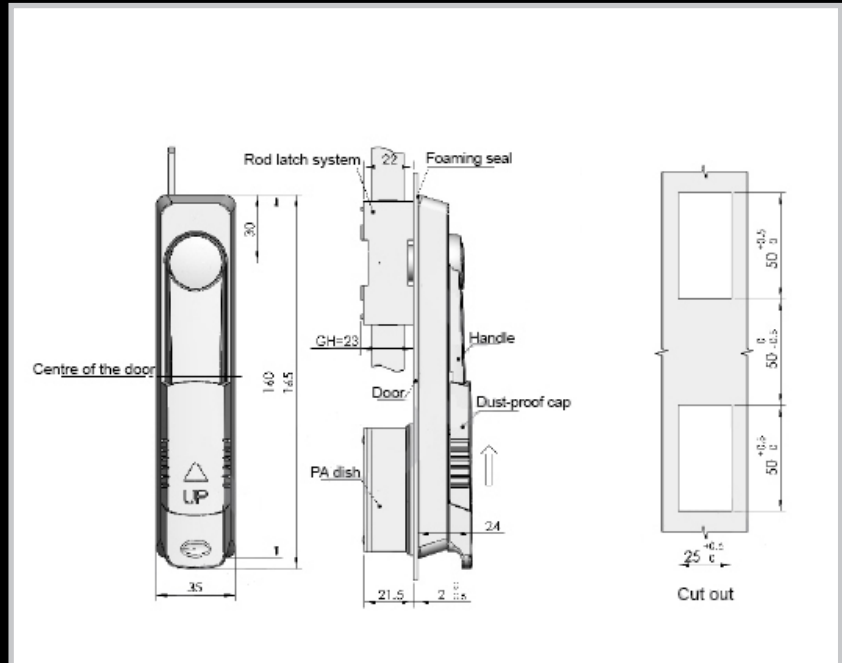


Part Number	Description
50.2.19.B/RL	Swing handle Black ZDC, with button, optional rod latch system
50.2.19.WB/RL	Swing handle Black ZDC, without button, optional rod latch system
50.2.19.WB	Swing handle Black ZDC, without button
50.2.19.B	Swing handle Black ZDC, with button



**Remarks:**

Available in key alike and key different. For key different option add "D" to part number



Part Number	Description
50.2.165.K/RL	Swing handle Black, PA, key lockable with rod latch system

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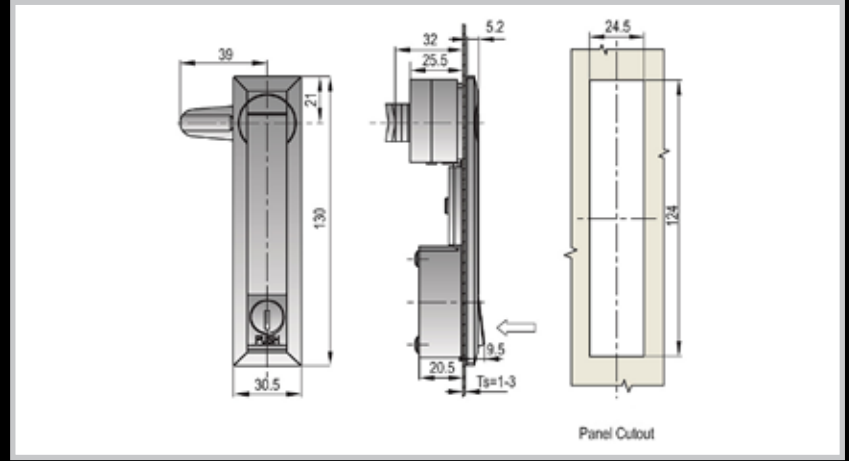
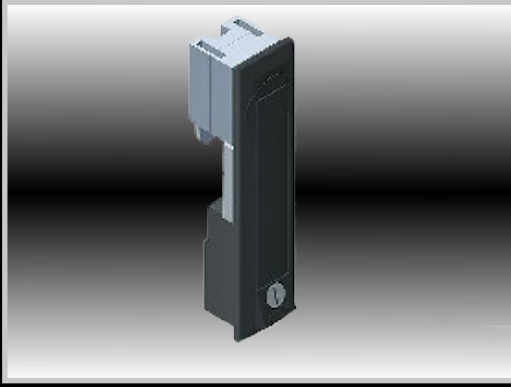
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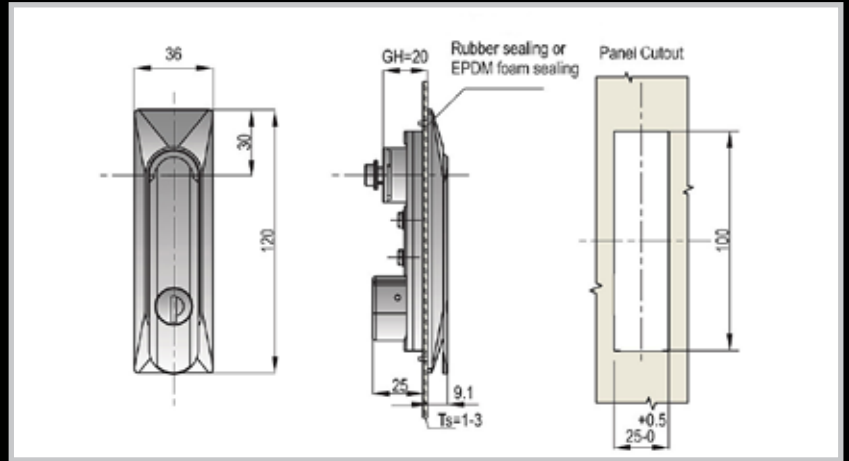
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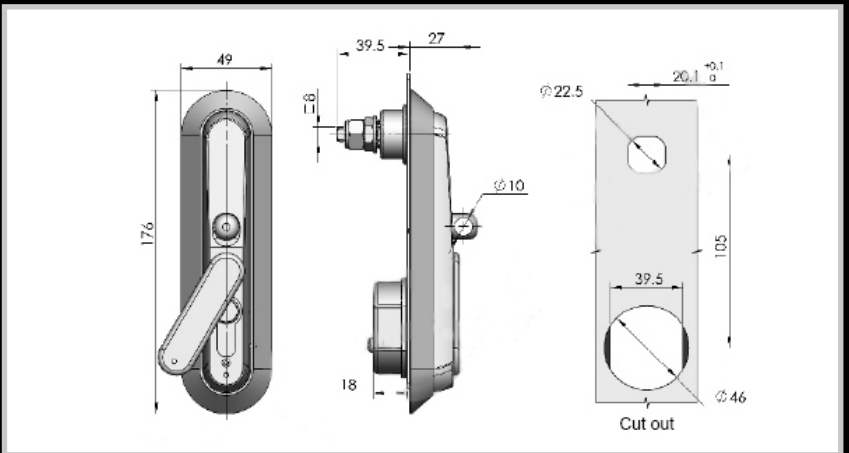
**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number

Part Number	Description
130.1.124CK	Chrome, key lockable
130.1.124BK	Black powder coated, key lockable



**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number

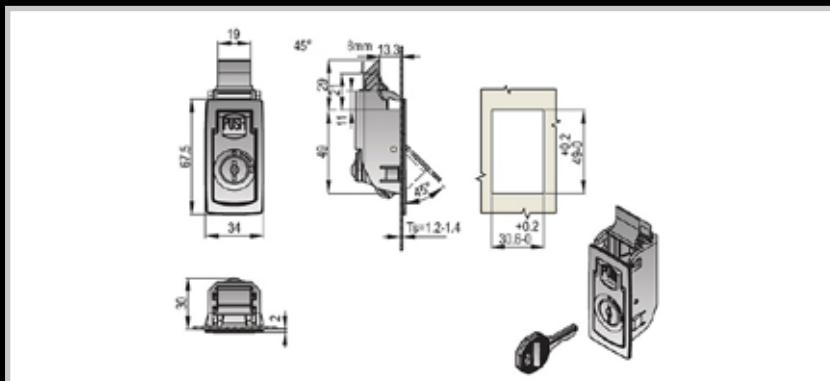
Part Number	Description
120.1.100.ZN/BK	Zinc handle with Nylon housing, key lockable
120.1.100.Z/BK	Full Zinc, key lockable



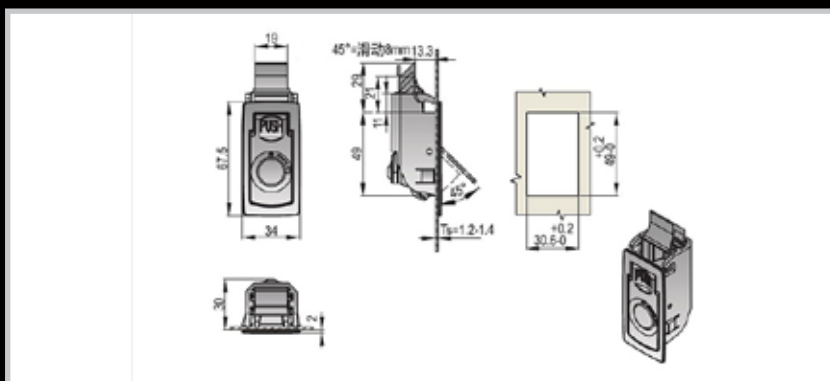
**Remarks:**  
Available in key alike and key different.  
For key different option add "D" to part number

Part Number	Description
46.3.39.Z/P	ZDC handle and housing (with padlock)
46.2.39.PA	ZDC handle and PA housing (without padlock)
46.3.39.PA/P	ZDC handle and PA housing (with padlock)

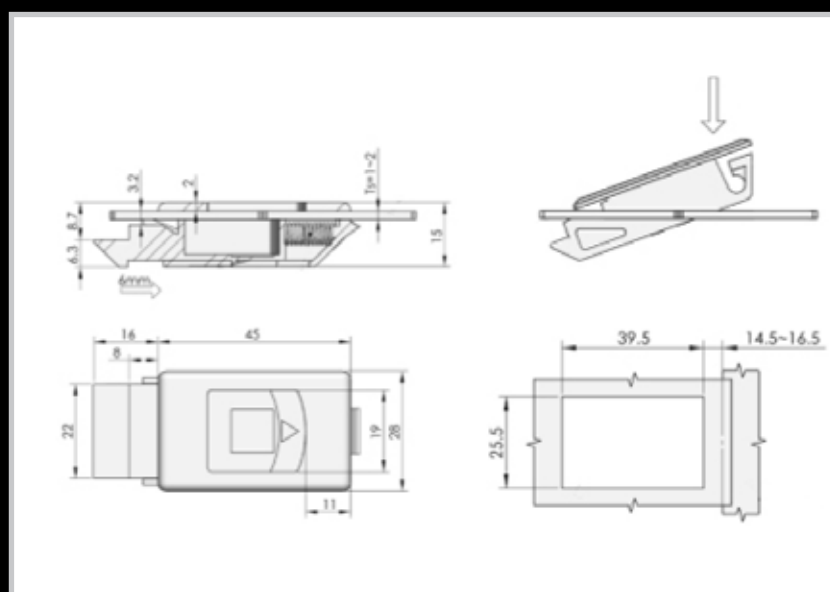




Part Number	Description
49.10.K	Key locking , Black PA



Part Number	Description
49.00.0	Non locking, Black PA



Part Number	Description	Material and Finish
39.1.3B	Push to close snap-in lock	PA Black

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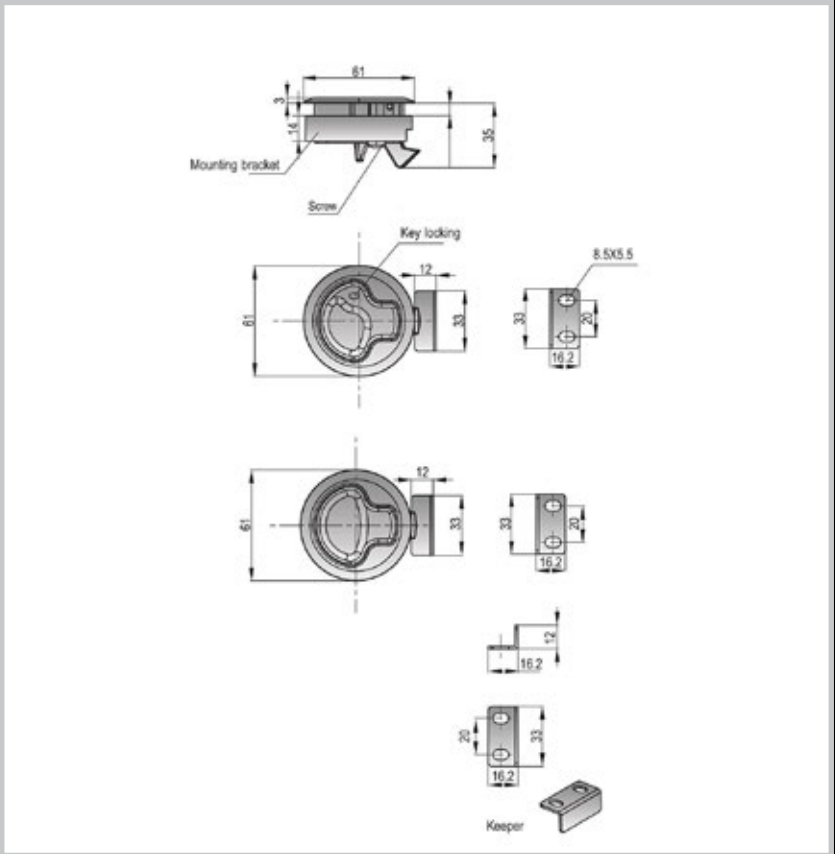
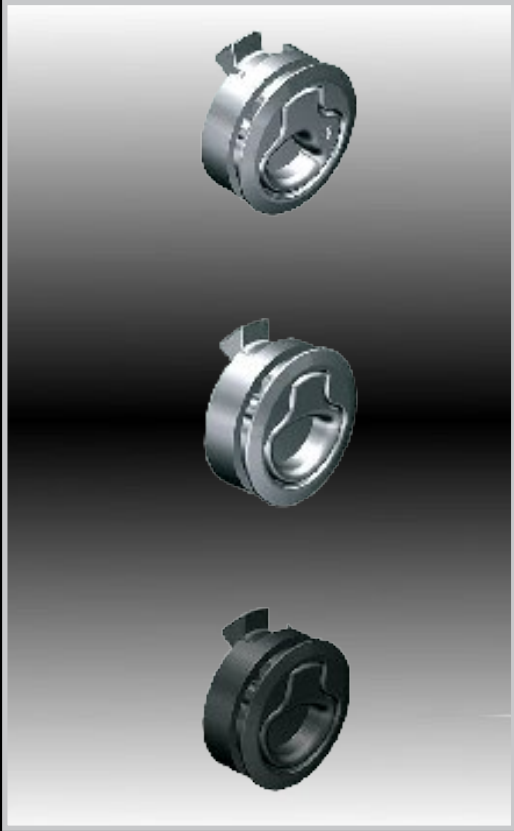
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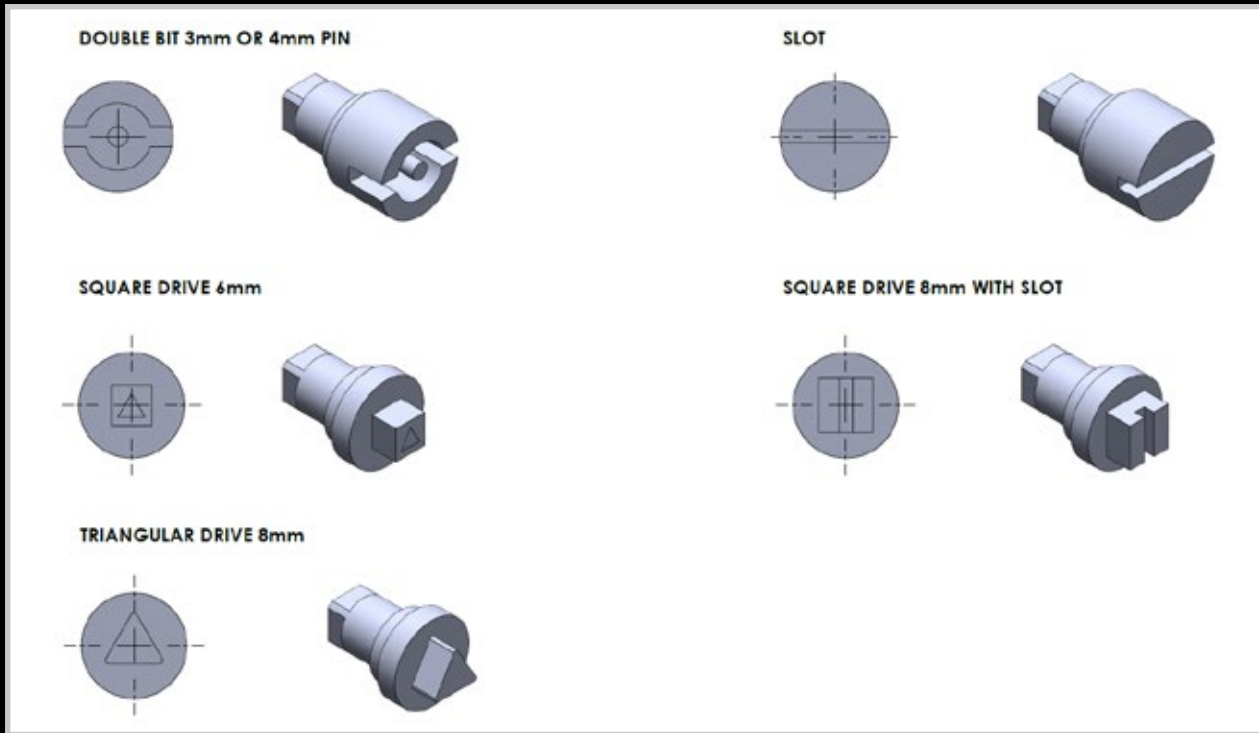
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**Remarks:**  
Available in Stainless steel, PA black and grey.  
For the non locking items, remove the "K" in the product numbers.

Product Number	Description	Panel Thickness
		min - max
61.10.2.SS/K	Key locking, Stainless steel	2-7
61.10.2.PAB/K	Key locking, PA Black	2-7
61.10.2.PAG/K	Key locking, PA Grey	2-7
61.10.7.SS/K	Key locking, Stainless steel	7-12
61.10.7.PAB/K	Key locking, PA Black	7-12
61.10.7.PAG/K	Key locking, PA Grey	7-12
61.10.12.SS/K	Key locking, Stainless steel	12-17
61.10.12.PAB/K	Key locking, PA Black	12-17
61.10.12.PAG/K	Key locking, PA Grey	12-17
61.10.17.SS/K	Key locking, Stainless steel	17-22
61.10.17.PAB/K	Key locking, PA Black	17-22
61.10.17.PAG/K	Key locking, PA Grey	17-22

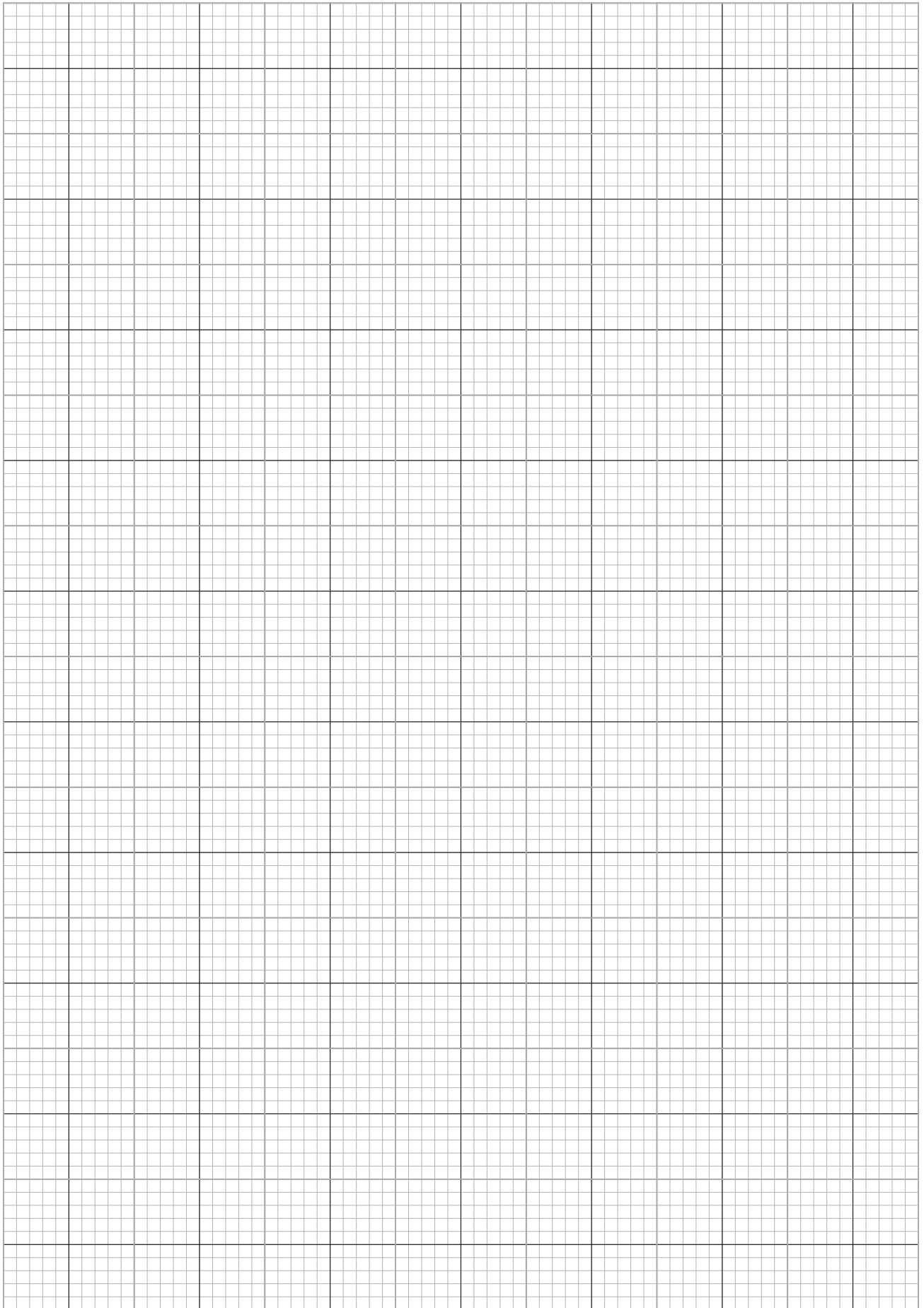


**Remarks:**

Drives are available in ZDC, PA or stainless steel.

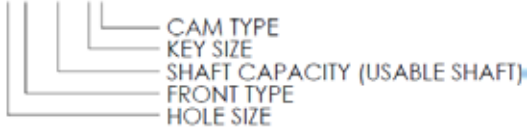


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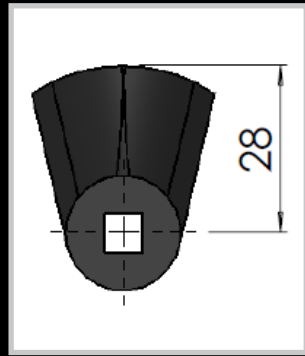


**LOCKS CODING SYSTEM**  
CODE NUMBER

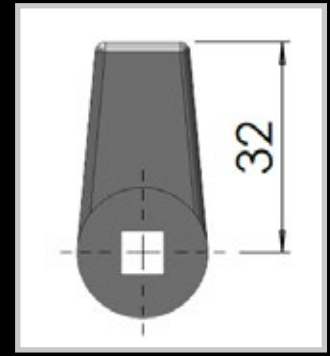
16.1.431.01



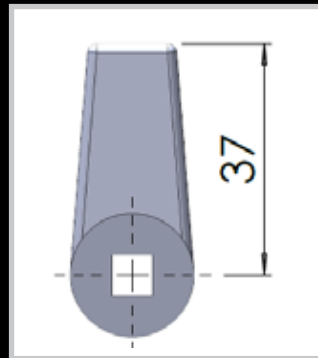
Cams to fit 16 series locks



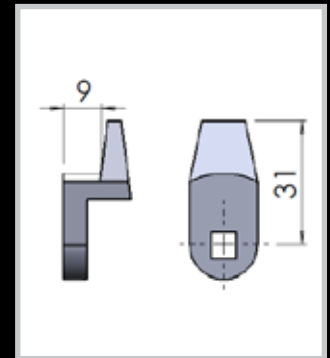
Part Number	Material and Finish	Description
CAM01N	Nylon black	Cam to suit series 16



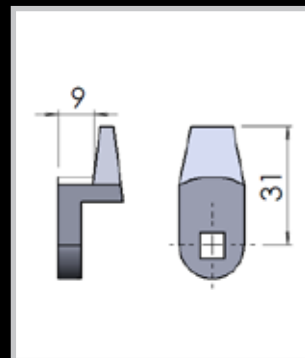
Part Number	Material and Finish	Description
CAM02N	Nylon black	Tapered cam to suit series 16



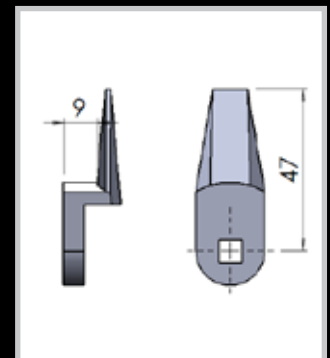
Part Number	Material and Finish	Description
CAM03Z	ZDC Galvanised	Tapered cam to suit series 16



Part Number	Material and Finish	Description
CAM04N	Nylon black	Cam with a 9mm step to suit series 16



Part Number	Material and Finish	Description
CAM04Z	ZDC matt silver	Cam with a 9mm step cam to suit series 16



Part Number	Material and Finish	Description
CAM05N	Nylon black	Cam with a 9mm step to suit series 16

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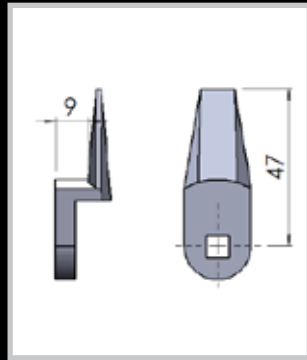
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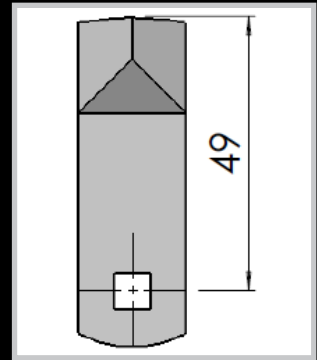
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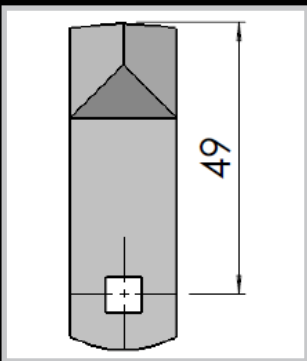
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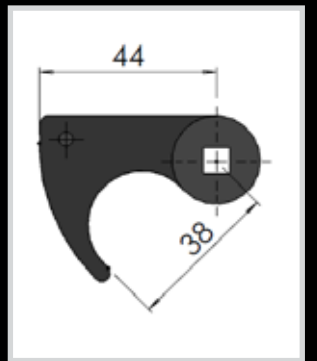
Part Number	Material and Finish	Description
CAM05Z	ZDC Galvanized	Cam with a 9mm step to suit series 16



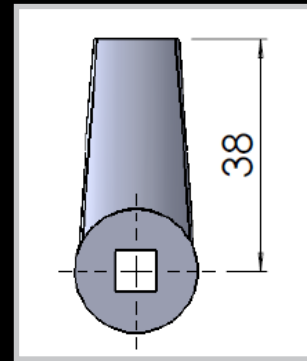
Part Number	Material and Finish	Description
CAM06M/S	Mild steel natural finish	Cam to suit handle 1011108



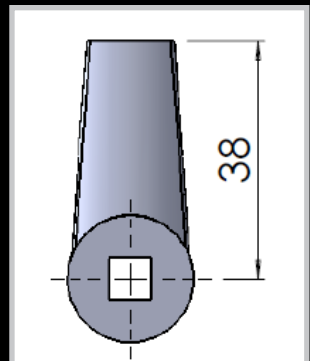
Part Number	Material and Finish	Description
CAM06S/S	Stainless steel natural finish	Cam to suit handle 1011108



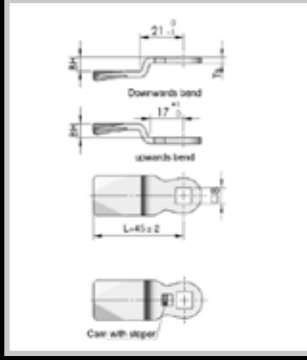
Part Number	Material and Finish	Description
CAM07N	Nylon black	Hooked cam to suit 16 series



Part Number	Material and Finish	Description
CAM09N	Nylon black	Cam to suit 16 series



Part Number	Material and Finish	Description
CAM09Z	ZDC Galvanized	cam to suit 16 series

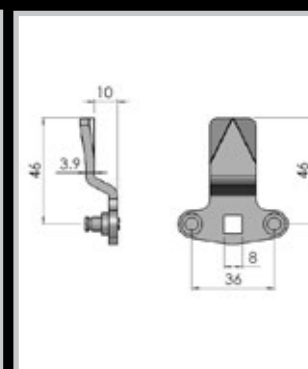
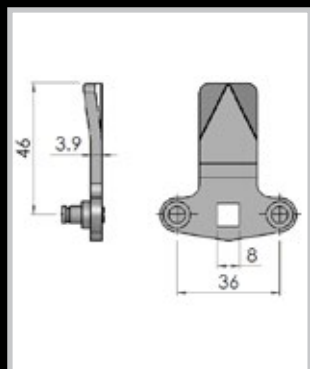


Part Number	Material and Finish	Description
CAM08/4	Mild steel	4mm bend
CAM08/12	Mild steel	12mm bend

**Remarks:**  
All other BH dimensions available on request.

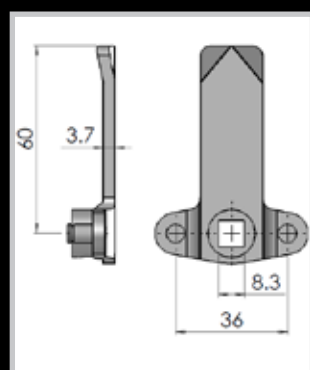


**3 Point locking cams**  
 ( For use with locking rods on page 170 - 171 )



Part Number	Material and Finish	Description
CAM08M/S8PSTR	Mild steel natural finish	3 point cam
CAM08S/S8PSTR	Stainless steel natural finish	3 point cam

Part Number	Material and Finish	Description
CAM08M/S8STEP	Mild steel natural finish	3 point cam
CAM08S/S8STEP	Stainless steel natural finish	3 point cam
CAM08/4.3	Mild steel with a 4mm bend	3 point cam
CAM08/12.3	Mild steel with a 12mm bend	3 point cam



Part number	Material and Finish	Description
CAM08M/SPINS	Mild steel natural finish	3 point cam

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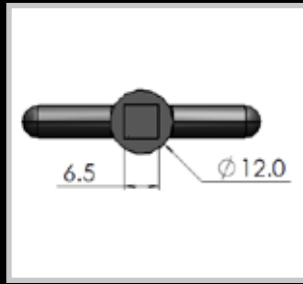
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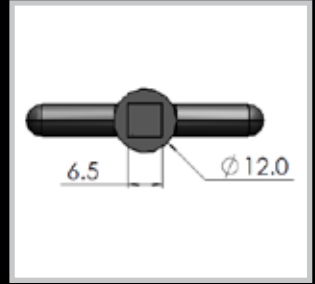
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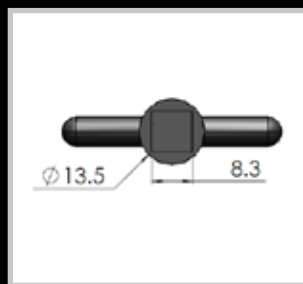
Part Number	Material and Finish	Description
6.1.12.1	ZDC Galvanized	T shaped key 57mm long to unlock all quarter turn series with a 6mm square drive

Hinges



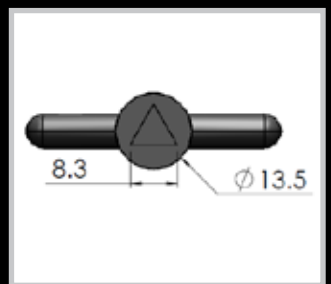
Part Number	Material and Finish	Description
6.1.12.2	Poly carbonate	T shaped key 57mm long to unlock all quarter turn series with a 6mm square drive

Locks



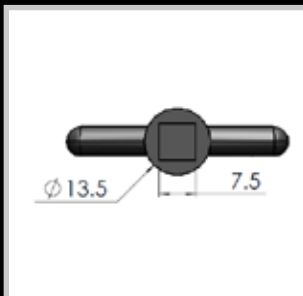
Part Number	Material and Finish	Description
8.2.135.1	ZDC Galvanized	T shaped key 57mm long to unlock all quarter turn series with a 8mm square drive

Handles



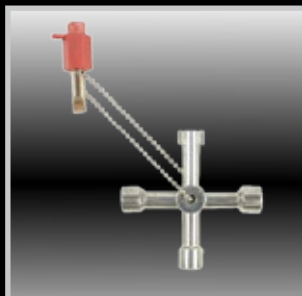
Part Number	Material and Finish	Description
8.3.135.1	ZDC Galvanized	T shaped key 57mm long to unlock all quarter turn series with a 8mm Triangular drive

Accessories



Part Number	Material and Finish	Description
7.2.135.1	ZDC Galvanized	T shaped key 57mm long to unlock all quarter turn series with a 7mm square drive

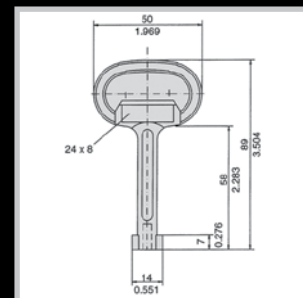
Rotary Operating Handles



Part Number	Description
6WAY5.135.1	ZDC 8mm & 6mm square, 8mm tri, double bit and screwdriver adaption

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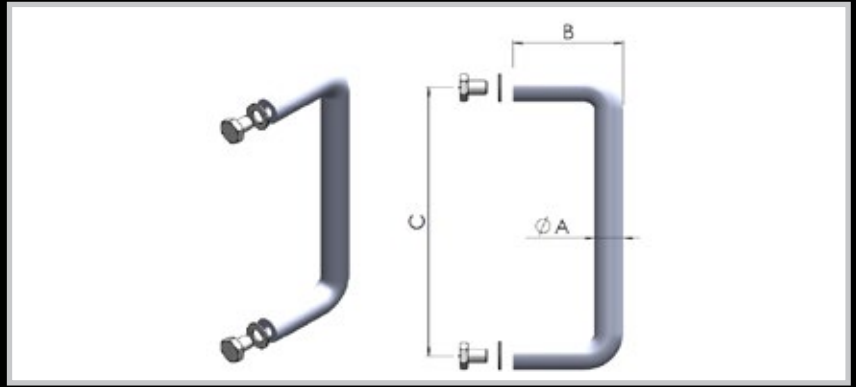
Part Number	Material and Finish	Description
4.1.135.1	ZDC Galvanized	Double bit key

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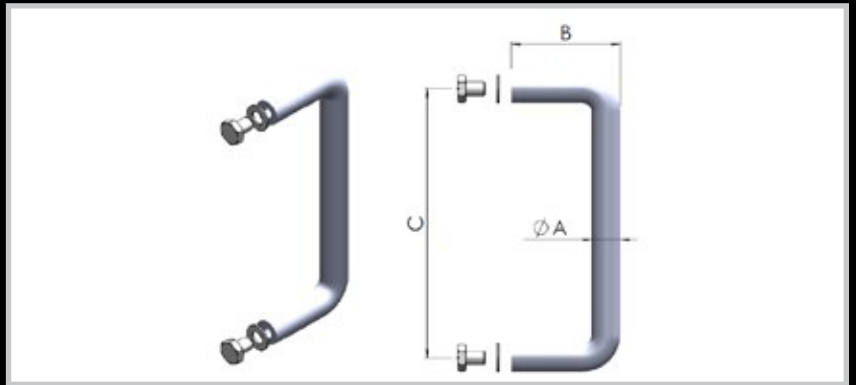
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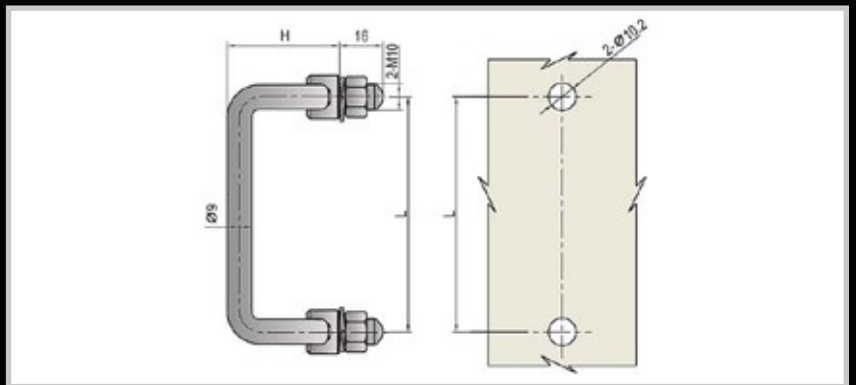
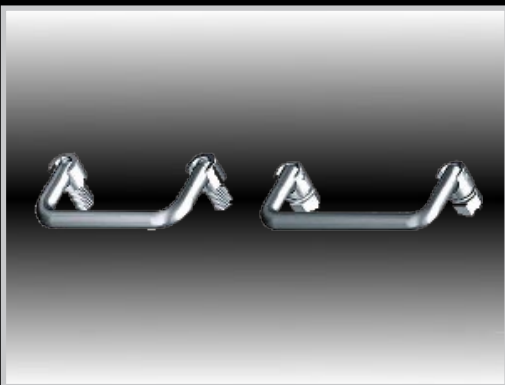
					
1010041 - 1010045 Pg.141	1010051 - 1010055 Pg.141	1010061 Pg.141	9401 Pg.142	1010120 Pg.142	56.116.S/H Pg.142
					
16.150.46.B Pg.143	22.3.19.K/C Pg.144	27.3.45.K/D/C.C Pg.144	22.3.105.25.P/P/K Pg.144	22.3.23.94.K/D/C Pg.145	22.3.31.100.K/C Pg.145
					
22.3.36.105 Pg.145	12.L115S/92268 Pg.146	22.L115S/92268 Pg.146	12.L115SP/AC Pg.146	22.L115SP/AC Pg.147	22.L115/92268/CAM Pg.147
					
22.3.31.58.K/C Pg.148	22.3.37.78 Pg.148	22.T60/92268/CAM Pg.148	12.T60S/92268 Pg.149	22.T.60S/92268 Pg.149	12.T.100S/CL001 Pg.149
					
100.1.58.C/K Pg.150	96.1.15/92268 Pg.150	115.1.105/92268 Pg.150			



Part number	Description	A	B	C	Washer	Screw
1010041	Chrome Plated	6	30	50	M4	M4 X 10
1010042	Chrome Plated	6	30	75	M4	M4 X 10
1010142-8	Chrome Plated	8	30	75	M4	M4 X 10
1010043	Chrome Plated	10	40	100	M5	M5 X 12
1010044	Chrome Plated	12	46	115	M6	M5 X 12
1010045	Chrome Plated	12	60	200	M6	M5 X 12



Part number	Description	A	B	C	Washer	Screw
1010051	Black Powder Coated	6	30	50	M4	M4 X 10
1010052	Black Powder Coated	6	30	75	M4	M4 X 10
1010053	Black Powder Coated	10	40	100	M5	M5 X 12
1010054	Black Powder Coated	12	46	115	M6	M6 X 12
1010055	Black Powder Coated	12	60	200	M6	M5 X 12



Part Number Chrome	Part Number Stainless Steel	L (mm)	H (41.5)	H (51.5)
1010061	1010071	87	141	151
1010062	1010072	100	241	251
1010063	1010073	120	341	351
1010064	1010074	135	441	451
1010065	1010075	150	541	551

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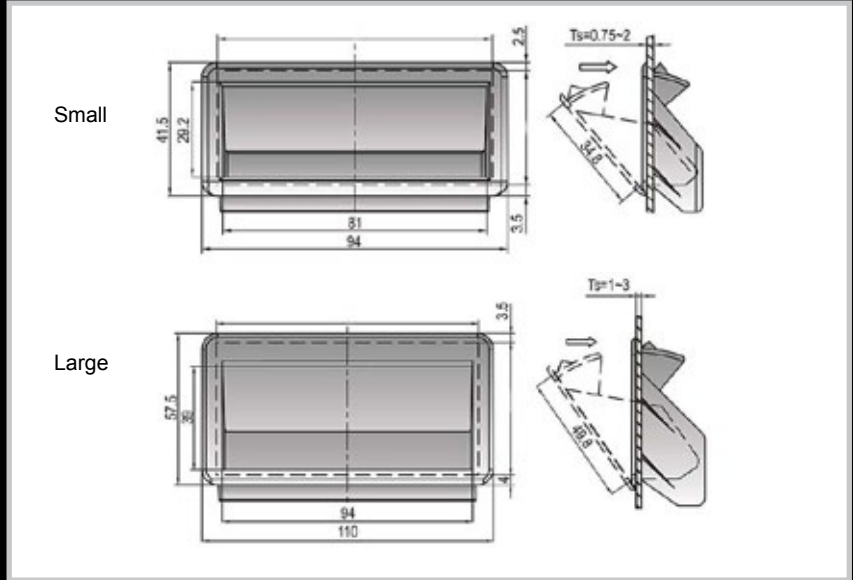
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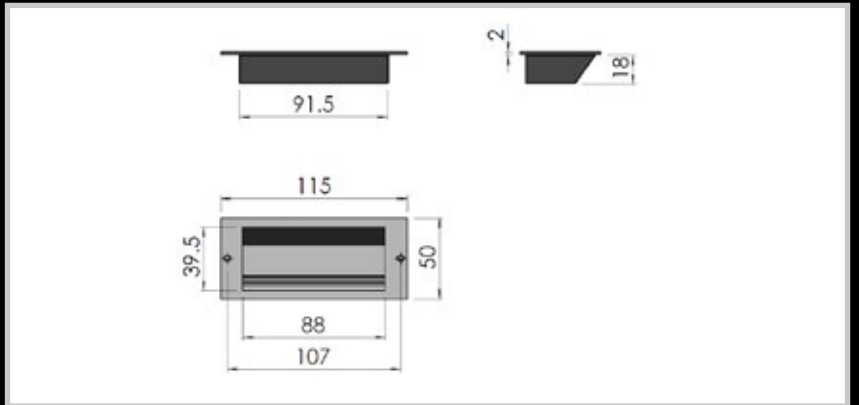
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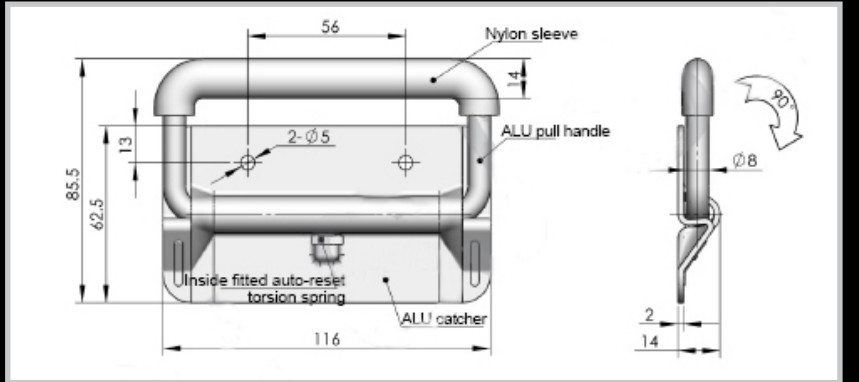
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Part Number	Description
9401	Small
11002	Large

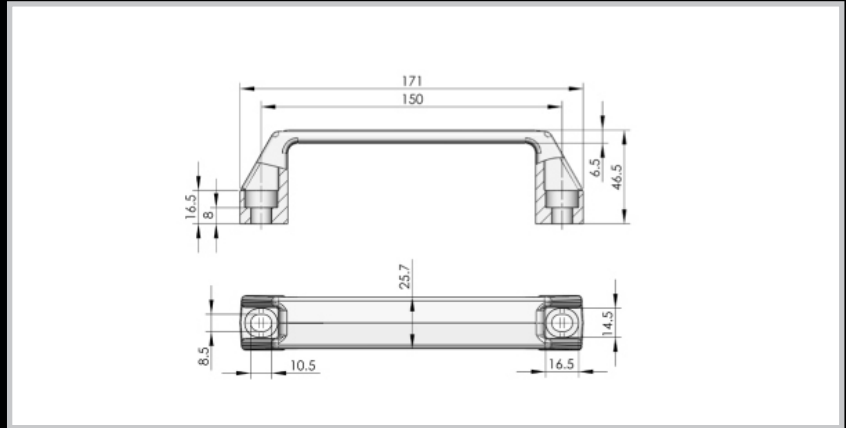


Part Number	Description
1010120	Black plastic with aluminium strip

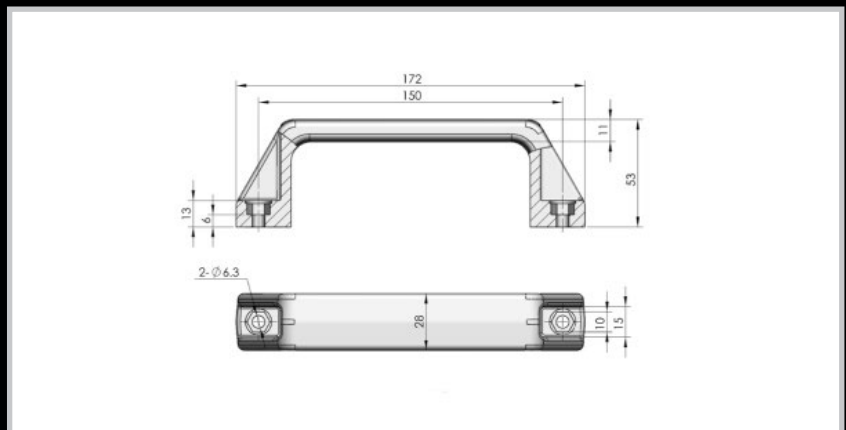


Part Number	Description
56.116.S/H	Spring loaded flush grab handle

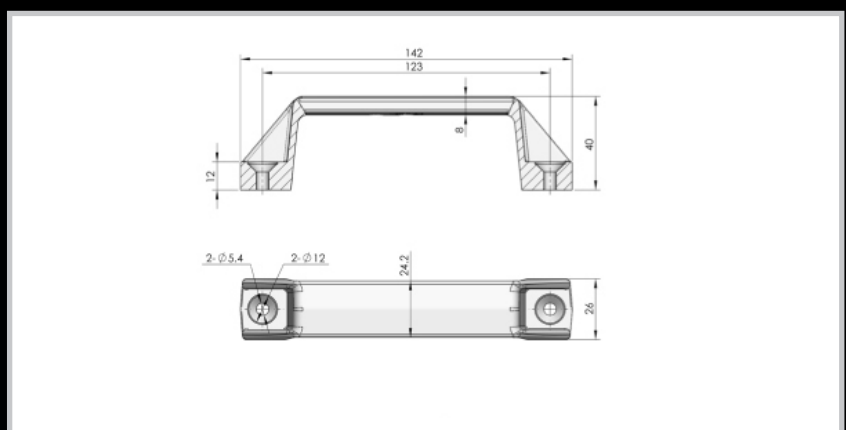




Part Number	Description
16.150.46.B	Large plastic grab handle



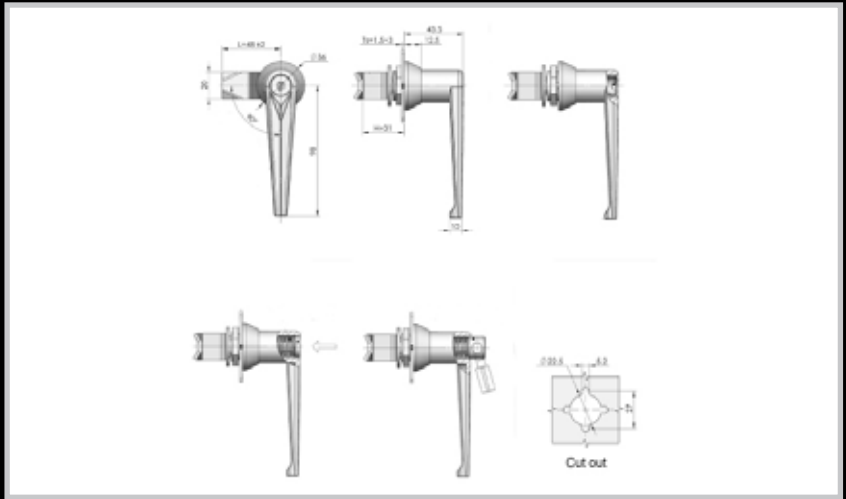
Part Number	Description
13.150.53.B	Medium plastic grab handle



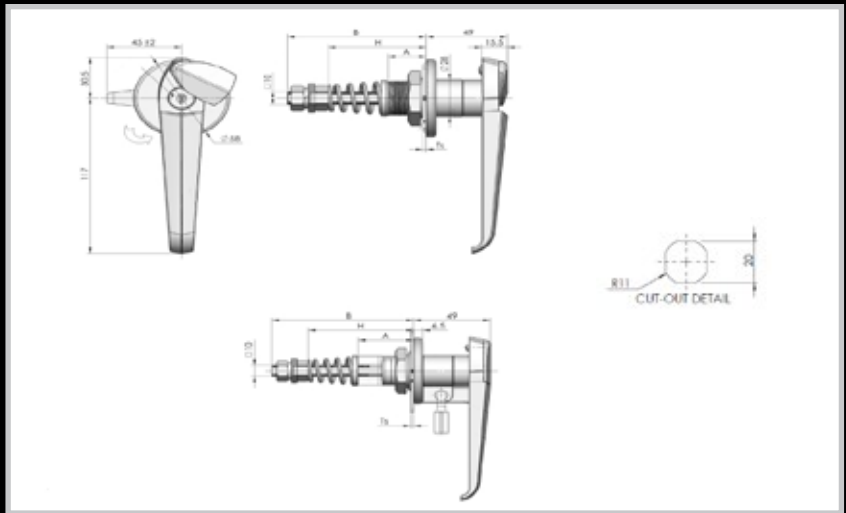
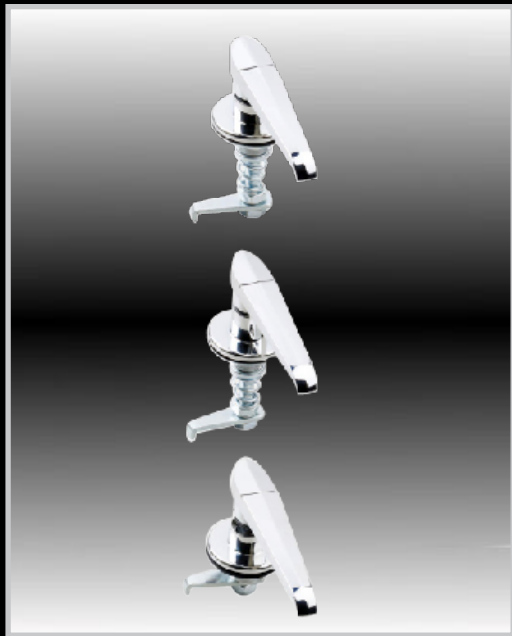
Part Number	Description
12.123.40.B	Small plastic grab handle

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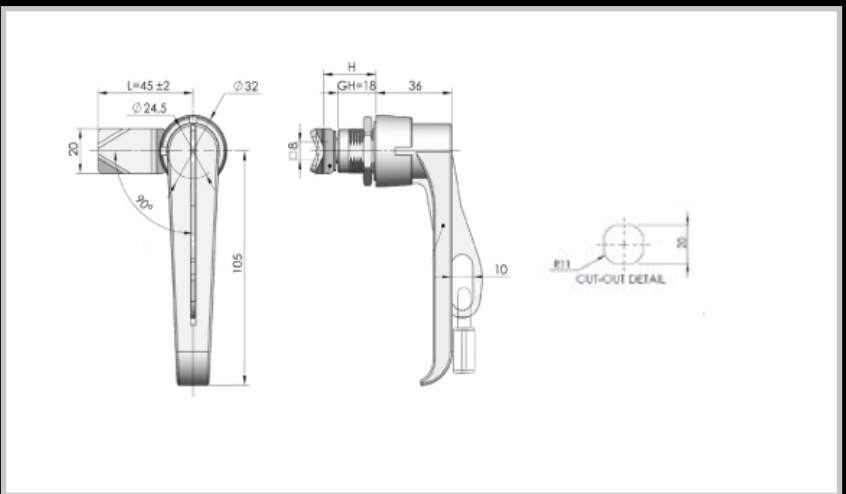
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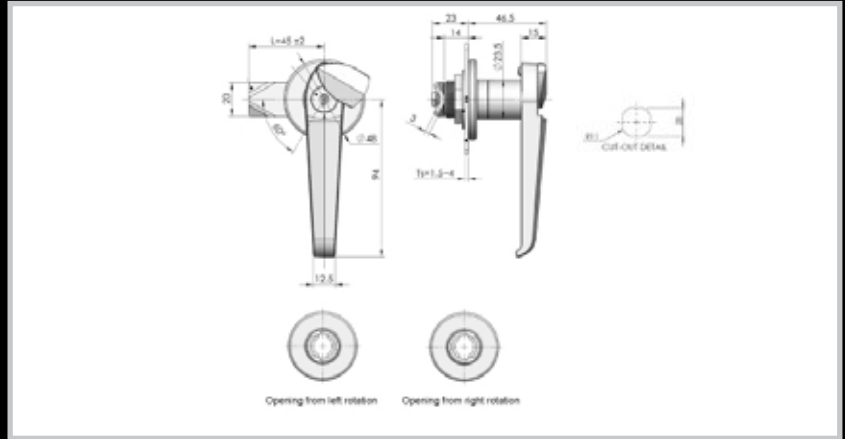
Part Number	Description
22.3.19.K/C	Key lockable L-handle Chrome



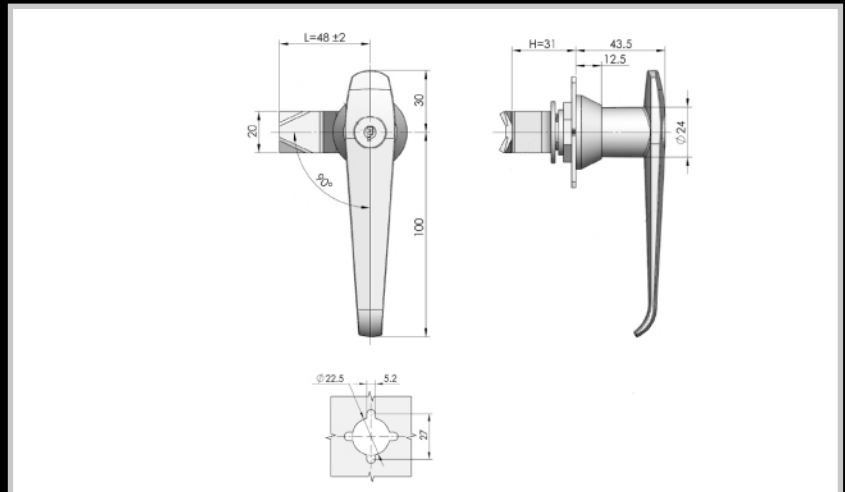
Part Number	Description
27.3.45.K/D/C.C	Key lockable compression L-handle with dust cap adjustable depth, Chrome
27.3.45.K/DK.C	Key and Padlockable compression L-handle with dust cap, adjustable depth
27.3.45.K/D/C	Key lockable L-handle with dust cap 117mm, Chrome



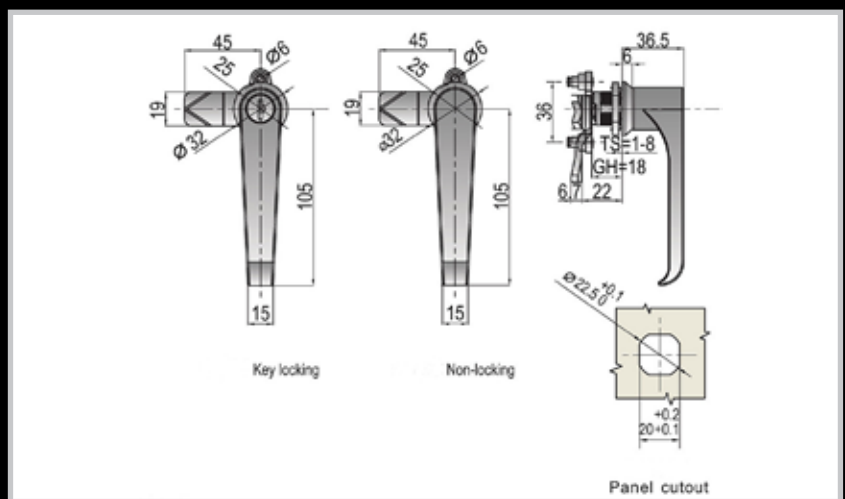
Part Number	Description
22.3.105.25.PP/K	Padlockable L-handle , Chrome



Part Number	Description
22.3.23.94.KDC	Key lockable L-handle with dust cap 94mm, Chrome



Part Number	Description
22.3.31.100.K/C	Key lockable L-handle 100mm, Chrome



Part Number	Description
22.3.36.105K/B	Black powder coated ZDC housing and handle, MS cam, Key locking
22.3.36.105K/C	Chrome plated ZDC housing and handle, MS cam, Key locking
22.3.36.105B	Black powder coated ZDC housing and handle, MS cam, Non locking
22.3.36.105C	Chrome plated ZDC housing and handle, MS cam, Non locking
22.3.36.105SS	Stainless Steel housing and handle, Stainless steel cam, non locking

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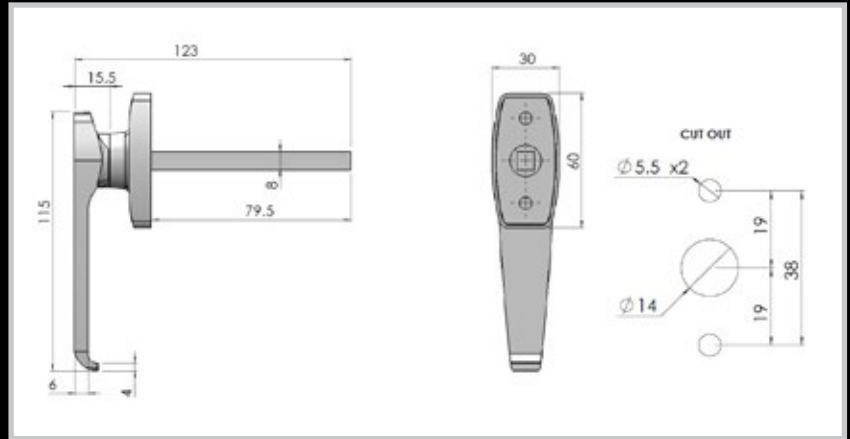
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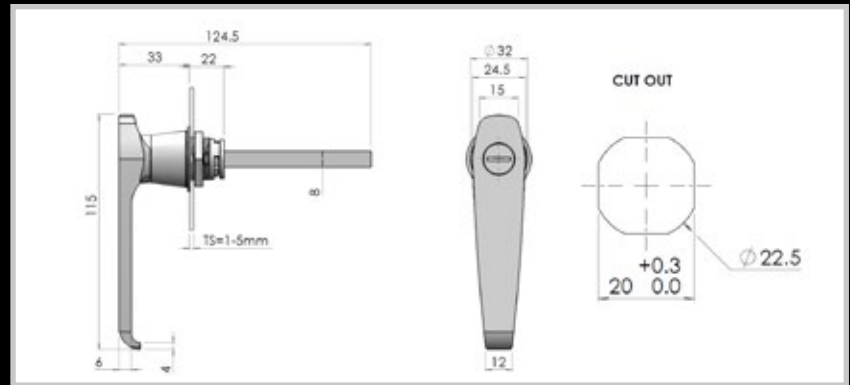
**Remarks:**  
Key options:  
Key 92268  
Key CL001

Part Number	Description
12.L115S/92268	L handle Chrome Locking Concealed Fix With Spindle
12.L115S/CL001	L Handle Chrome Locking Concealed Fix With Spindle

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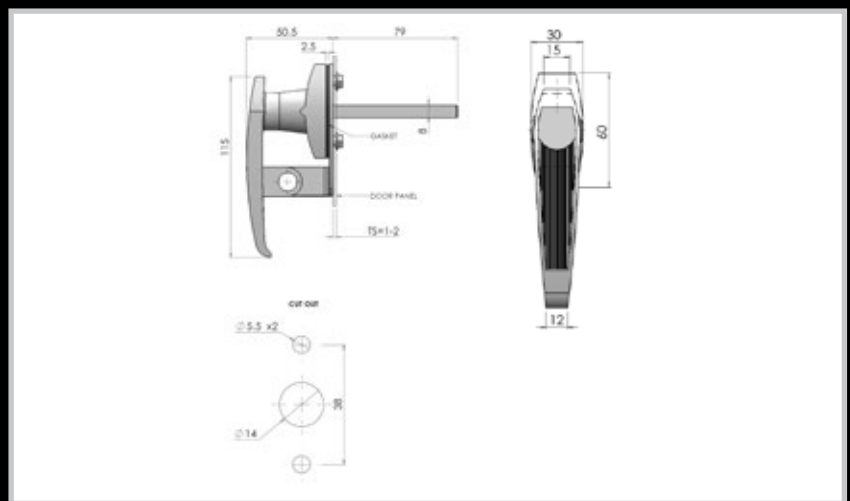
**Remarks:**  
Key options:  
Key 92268  
Key CL001

Part Number	Description
22.L115S/92268	L handle Chrome Locking 1/4 Turn Fix With Spindle
22.L115S/CL001	L Handle Chrome Locking 1/4 Turn Fix With Spindle

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**Remarks:**  
Movement options:  
A/C - Anti-clockwise to unlock  
C/W - Clockwise to unlock

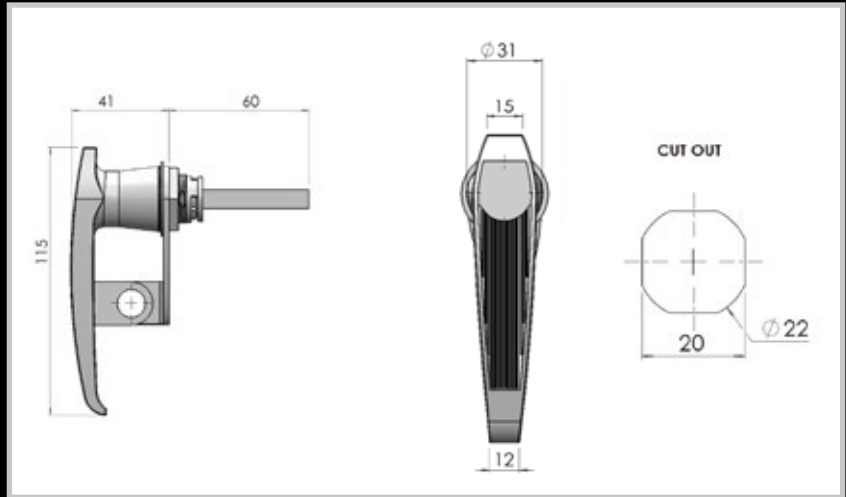
Part Number	Description
12.L115SP/AC	L Handle Padlockable Concealed Fix With Spindle A/C To Unlock
12.L115SP/CW	L Handle Padlockable Concealed Fix With Spindle C/W To Unlock

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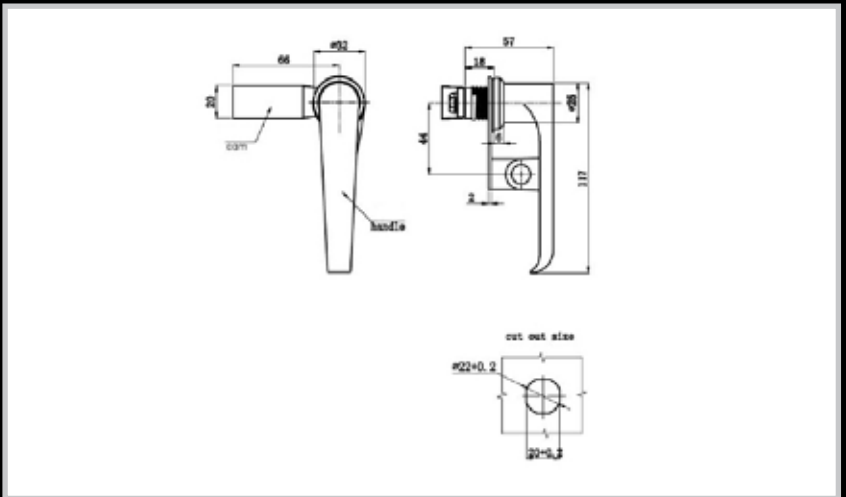
**Remarks:**  
 Movement options:  
 A/C - Anti-clockwise to unlock  
 C/W - Clockwise to unlock



Part Number	Description
22.L115SP/AC	L-handle padlock 1/4 turn fix with spindle A/C to Unlock
22.L115SP/CW	L-handle padlock 1/4 turn fix with spindle C/W to Unlock



**Remarks:**  
 Movement options:  
 A/C - Anti-clockwise to unlock  
 C/W - Clockwise to unlock



Part Number	Description
22.L115/92268/CAM	L Handle Chrome Locking 1/4 Turn Fix No Spindle With Cam
22.L115P/CW/CAM	L Handle Padlockable 1/4 Turn Fix No Spindle C/W To Unlock With Cam
22.L115P/AC/CAM	L Handle Padlockable 1/4 Turn Fix No Spindle A/C To Unlock With Cam

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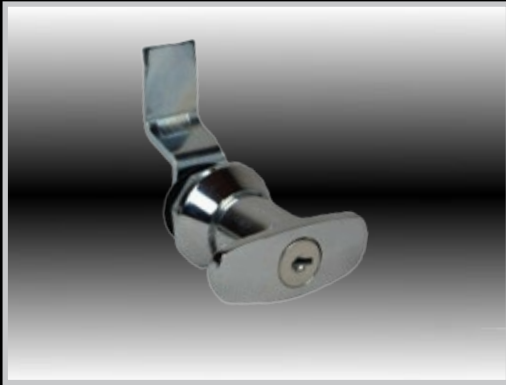
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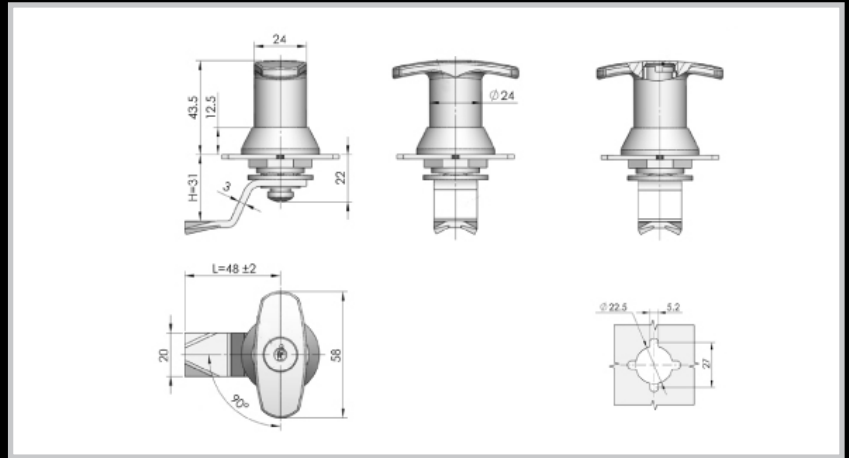
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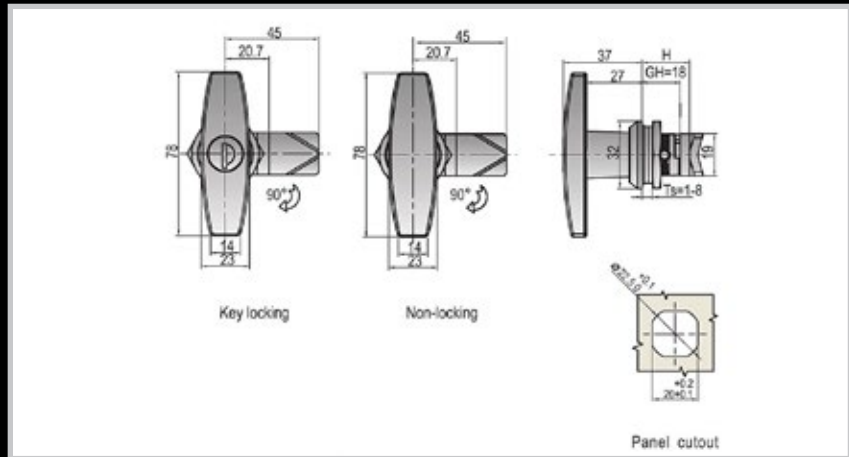
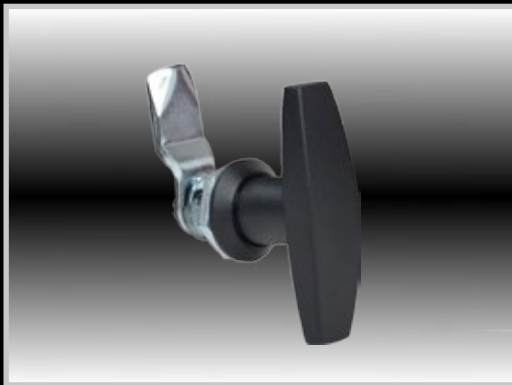
## T - Handle



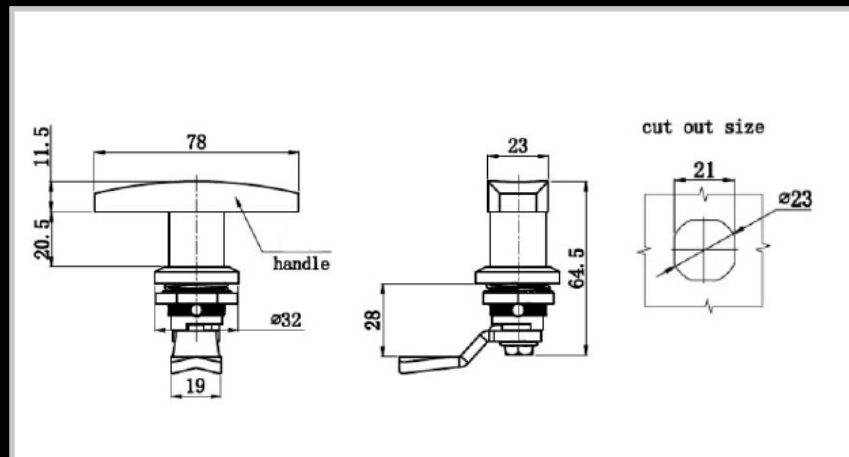
**Remarks:**  
For cam options refer to pages 135,136,137



Part Number	Description
22.3.31.58.K/C	Key lockable T-handle, Chrome

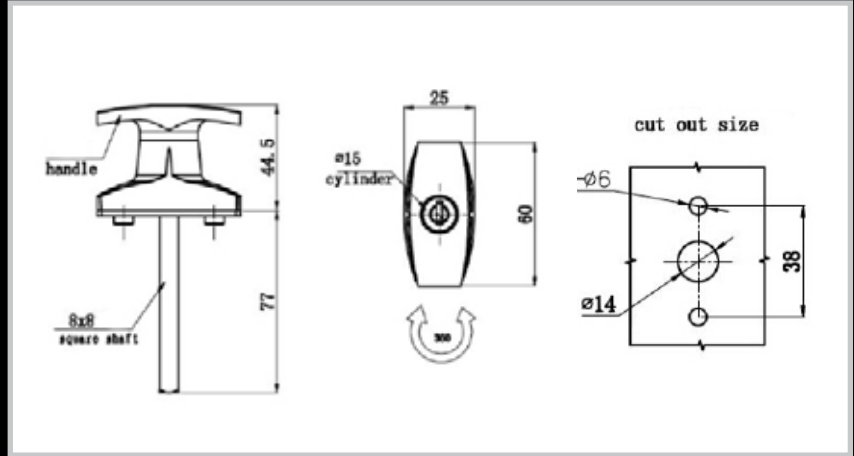


Part Number	Description
22.3.18.BK.78	Black powder coated ZDC housing and handle, MS cam, Key locking
22.3.30.60B	Black powder coated ZDC housing and handle, MS cam, Non locking



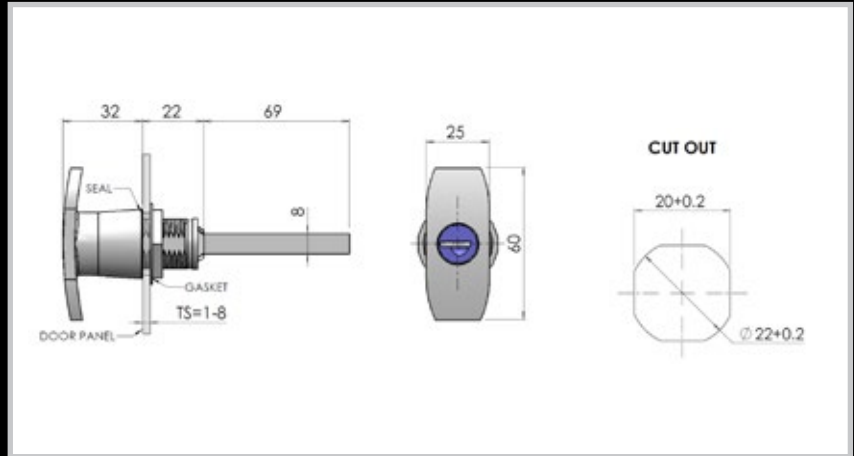
Part Number	Description
22.T60/92268/CAM	T-Handle chrome locking 1/4 turn fix no spindle with cam





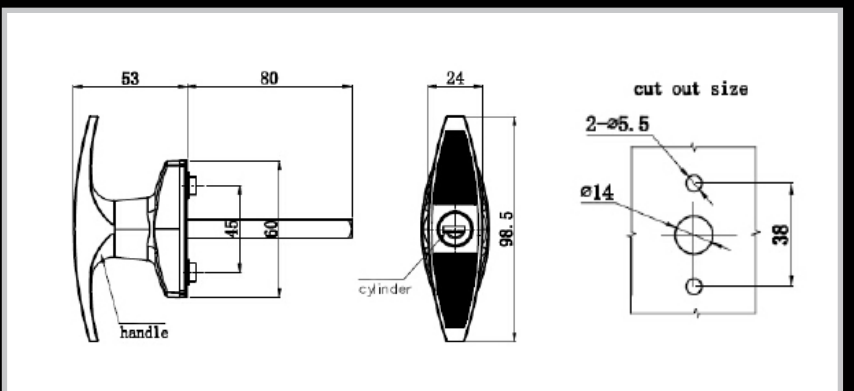
Part Number	Description
12.T.60S/92268	T-handle chrome locking concealed fix with spindle key 92268
12.T.60S/CL001	T-handle chrome locking concealed fix with spindle key CL001

## Mini T - Handle



Part Number	Description
22.T.60S/92268	T-handle chrome locking 1/4 turn fix with spindle key 92268
22.T.60S/CL001	T-handle chrome locking 1/4 turn fix with spindle key CL001

## Large T - Handle



**Remarks:**  
**Concealed Fix , Movement 180 Degrees**  
 Key options:  
 Key 92268  
 Key CL001

Part Number	Description
12.T.100S/CL001	Large T-handle chrome locking concealed fix with spindle key CL001
12.T.100S/92268	Large T-handle chrome locking concealed fix with spindle key 92268

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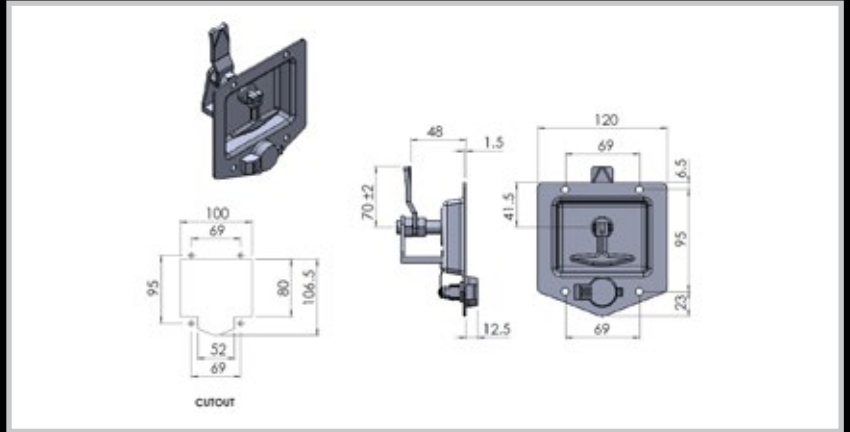
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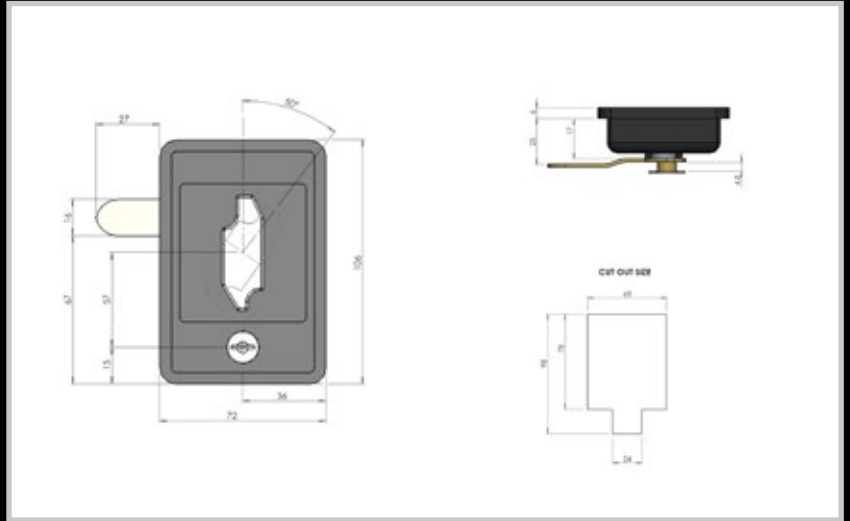
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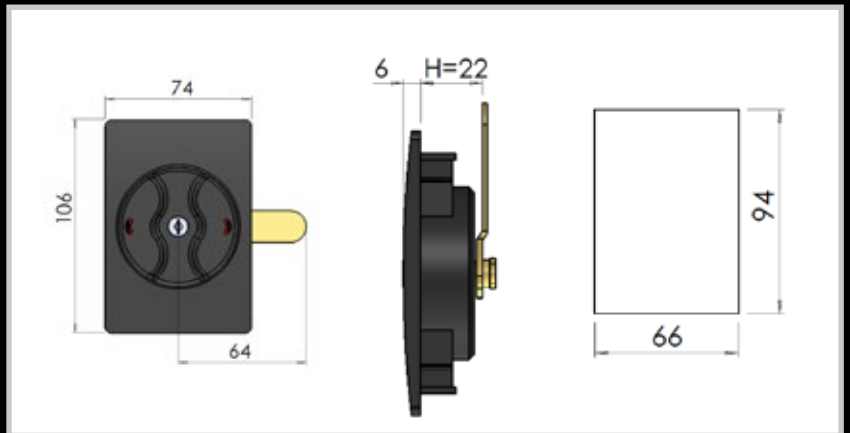
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Part Number	Description
100.1.58.C/K	Key lockable flush adjustable paddle latch with T- handle , Chrome



Part Number	Description
96.1.15/92268	Black zinc flush handle keyed 92268
96.1.15/CL001	Black zinc flush handle keyed CL001



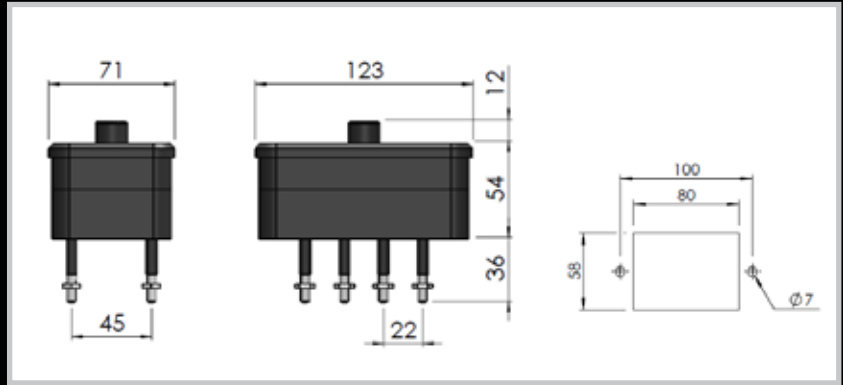
Part Number	Description
115.1.105/92268	Black plastic flush handle keyed 92268
115.1.105/CL001	Black plastic flush handle keyed CL001

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## Accessories

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 010-101 Pg.156	 004-575 Pg.157	 004-580 Pg.157	 002-111 Pg.157	 Door Stay Pg.158	 083-010 Pg.160
 083-009 Pg.160	 083-011 Pg.160	 007-401 Pg.161	 007-402 Pg.161	 007-403 Pg.161	 007-404 Pg.161
 007-408 - 007-412 Pg.162	 007-405 Pg.164	 007-406 Pg.164	 007-407 Pg.164	 ENB-DE6 Pg.165	 ENB-SE6 Pg.166
 020-271 Pg.167	 302500 Pg.167	 7WAY/B165 Pg.167	 020-254 - 020-255 Pg.168	 010-061 Pg.168	 011-028 Pg.168
 020-268 Pg.168	 301095 - 302125 Pg.169	 ENB-7WB Pg.169	 Rods Pg.170	 Rod Accessories Pg.172 - 173	 Jumper Bar Pg.174

**PK-2 Test Block**



Part Number	Description
083-012	PK-2 (FOUR WAY TEST BLOCK)

**APPLICATION**

For mounting on switchboard panels for use in conjunction with proper test equipment to facilitate the testing of ac instruments, meters and relays.

**FEATURES**

Type PK-2 test blocks are essentially 4-pole and 6-pole jacks, provided with moulded phenolic covers that have internal plug contacts, which make a through connection when the cover is in place. The contacts in the blocks are of the line - pressure type and provide positive contact with minimum contact resistance. For current circuits, auxiliary contacts are used which automatically short circuit the current transformer when the cover or plug is removed.

Routine testing can be accomplished simply by removing the cover and substituting the properly connected test plug; normal connections are restored by replacing the cover Contact rating is 250 volts, 10 amperes continuously.

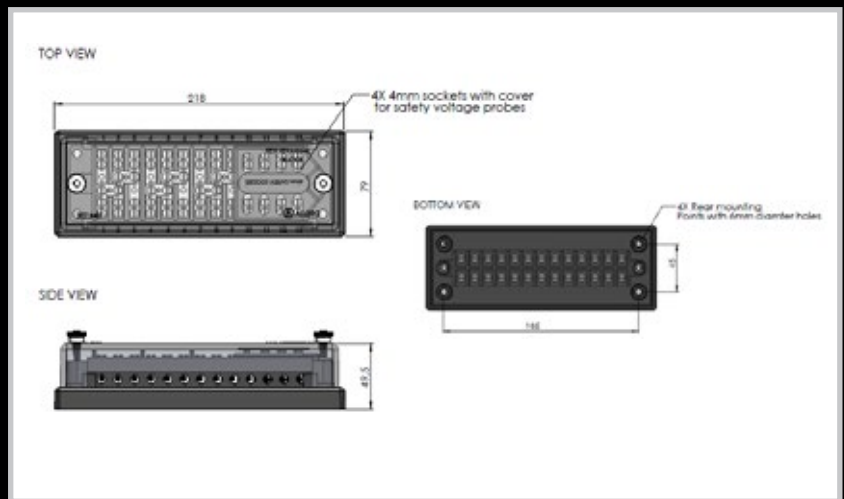
A hole in cover allows for securing against unauthorized use.

Included with each test block is a kit which includes:

- 1) Mounting screws and nuts, Mild Steel – Zinc Plated
- 2) Connection nuts and washers, Brass – Nickel Plated
- 3) Auxiliary links, contacts, jumpers and fixing screws, Brass – Silver Plated

ALL ELECTRO PLATING 0.005 – 0.008mm

**PK-3C Test Block**



Part Number	Description
083-013	PK-3C 13 Way test block rear mount clear

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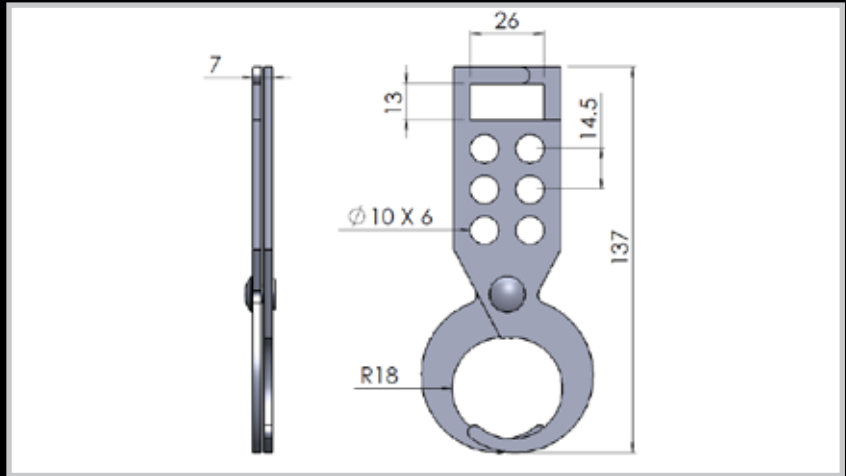
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**Safety Lock Out Calipar**

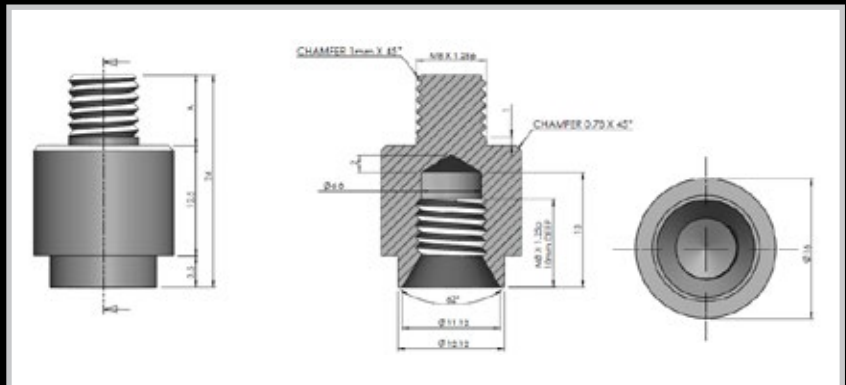


**Remarks:**

This product is used in conjunction with our rotary operating handle range for MCB'S & ELCB'S and an additional safety feature. It can facilitate 6 padlocks with a maximum of 8mm diameter shank. This item is recommended and accepted by NOSA.

Part Number	Description
082-001	Natural Mild Steel

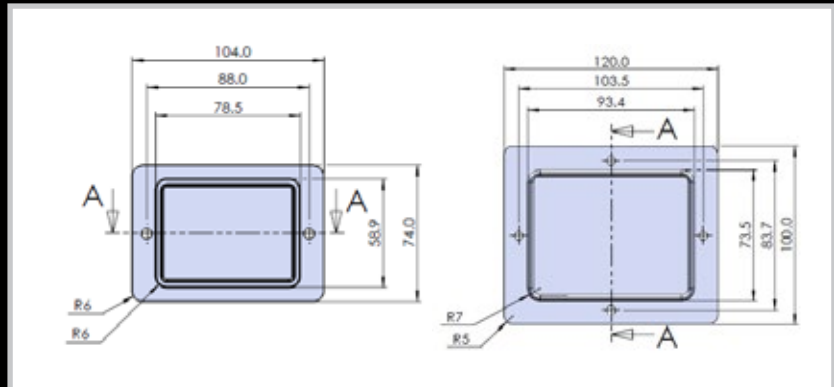
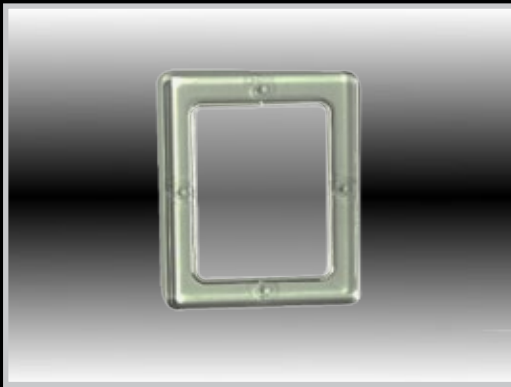
**Chassis Studs**



Part Number	Description
020-087	M8-M/S-8mm Thread Length
020-088	M8-S/S-8mm Thread Length
020-089	M8-M/S-12mm Thread Length
020-090	M8-S/S-12mm Thread Length
020-091	M8-S/S-19mm Thread Length
020-092	M8-M/S-19mm Thread Length



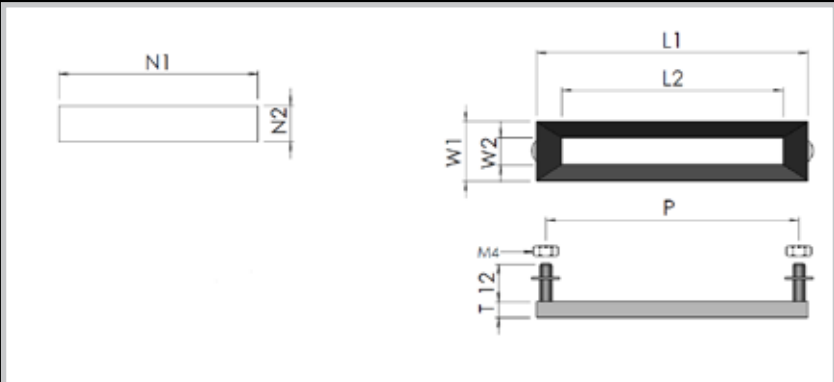
**Kiosk Windows**



**Remarks:**  
Clear kiosk meter window.

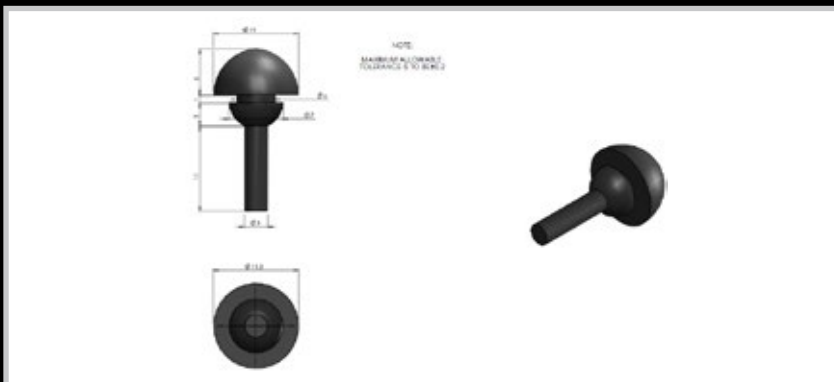
Part Number	Description
CKW74/104	Clear UV stabilized Polycarbonate
CKW100/120	Clear UV stabilized Polycarbonate

**Label Holders**



Part Number	Description	L1	P	L2	W1	W2	N1	N2	T	D1
222610	ZDC Black	138	132	119	31	19	125	25	5.5	M4
222610S	ZDC Black	88	82	71	19	8.5	76	12.5	7	M4
222610L	ZDC Black	163	157	144	46	34	150	40	5.5	M4

**Door Bumper**



**Remarks:**  
Recommended cut-out is 7mm.

Part Number	Description
11BUMPER	Rubber shore hardness 70

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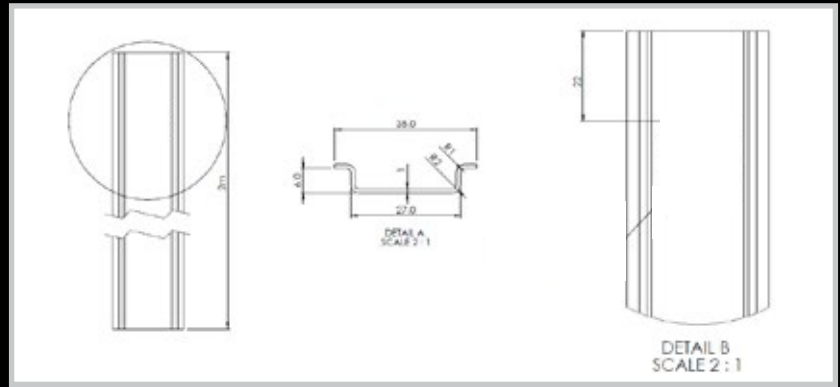
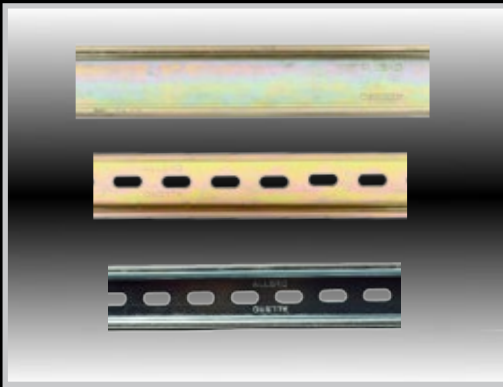
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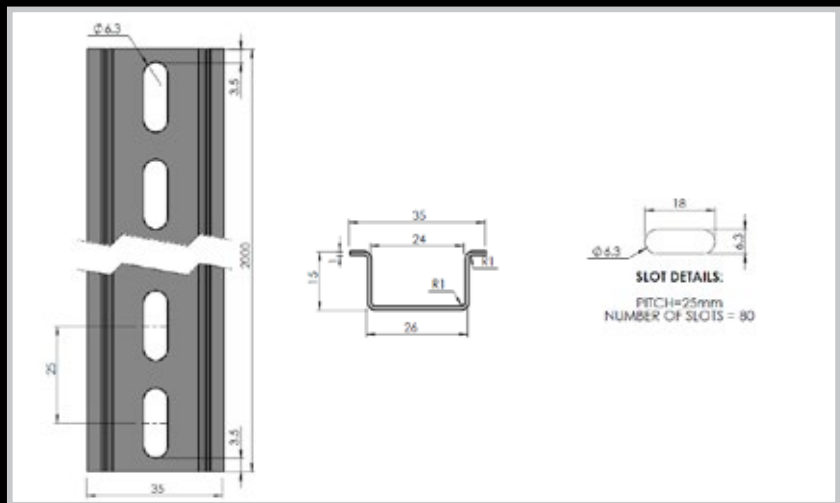
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## Din Rail



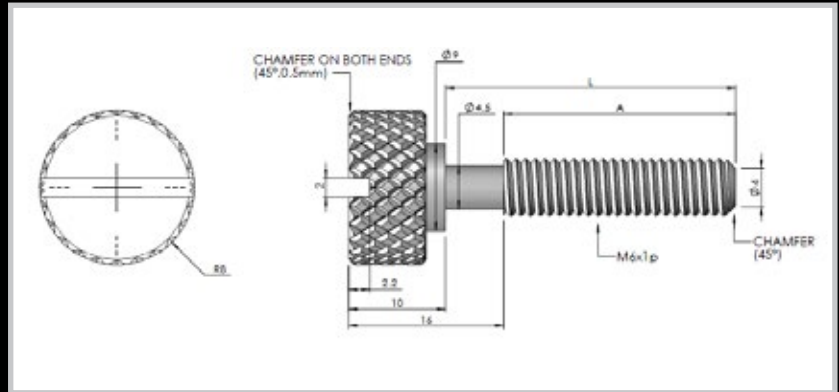
### Remarks:

Available in slotted and non-slotted.

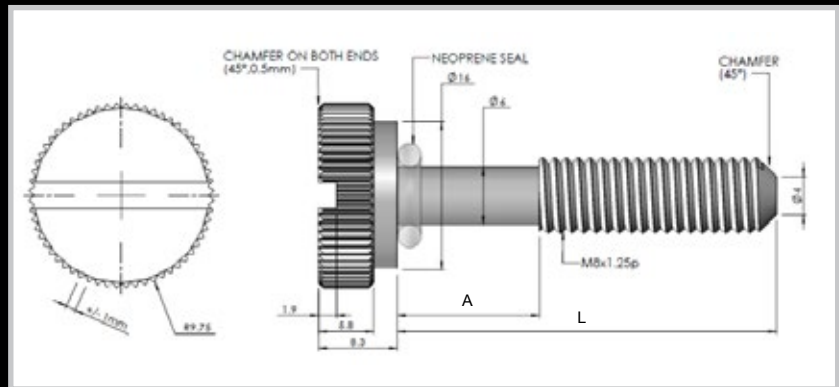


Part Number	Description	Material and Finish
010-101	Din Rail slotted 2 metre length Silver	Mild Steel, Galvanized
010-102	Din Rail slotted 2 metre length Gold	Mild Steel, Galvanized
010-105	Din rail without slots 2 metre length Gold	Mild Steel, Galvanized
010-075	15mm Deep Din Rail environmental silver 2 metre length	Mild Steel, Galvanized

Thumb Screws

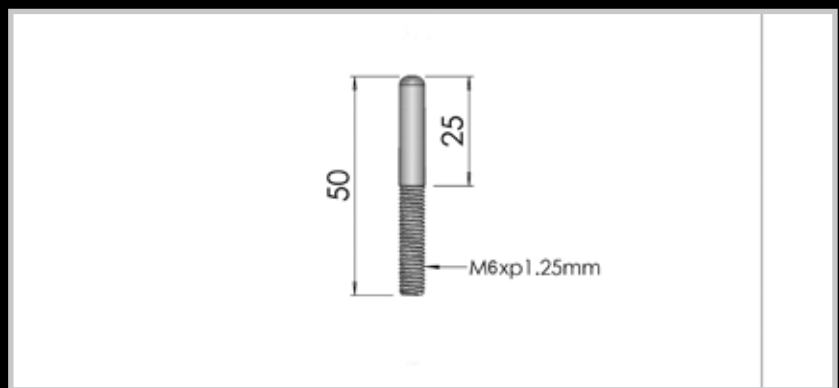
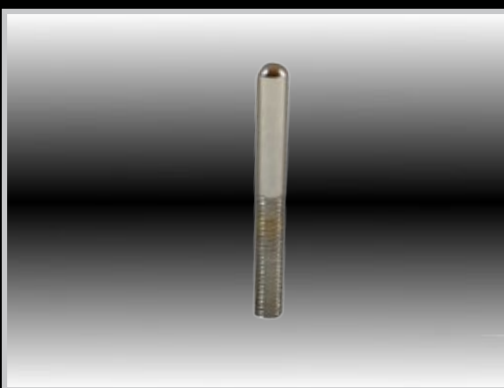


Part Number	Description	L (mm)	A (mm)
004-575	6 mm Brass, Chrome Plated	30	24
004-587	6 mm Brass, Chrome Plated	35	29
004-588	6mm Brass, Chrome Plated	40	34
004-588L	6mm Brass, Chrome Plated (19.5mm Head)	40	34
004-589	6mm Brass, Chrome Plated	50	44
004-589L	6mm Brass, Chrome PLated (19.5mm Head)	50	44



Part Number	Description	L (mm)	A (mm)
004-580/M8TS	M8 x 40mm with O-ring	40	15

Locating Pin



Part Number	Material and Finish	Description
002-111	Brass Chrome Plated	M6 Locating Pin

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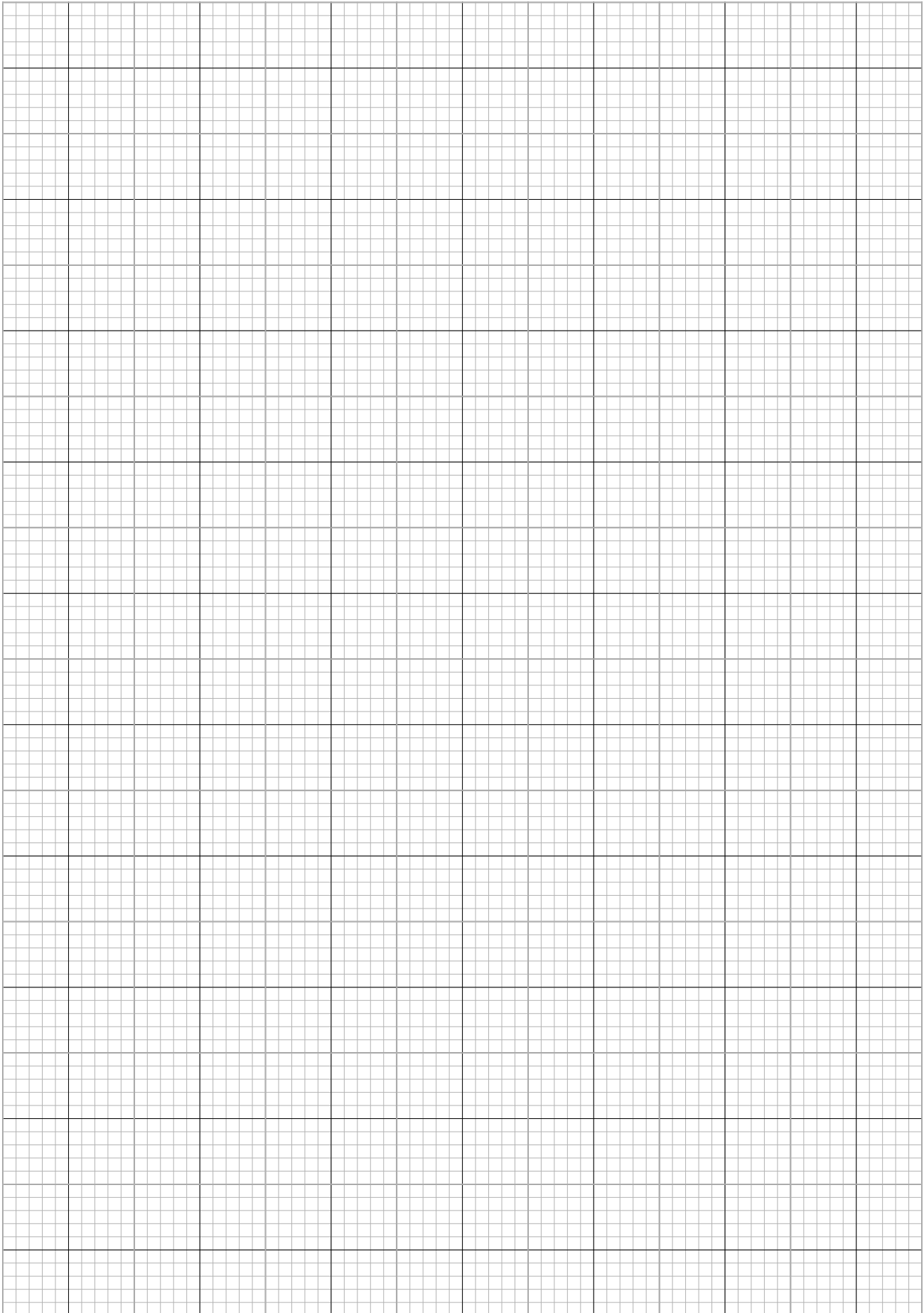
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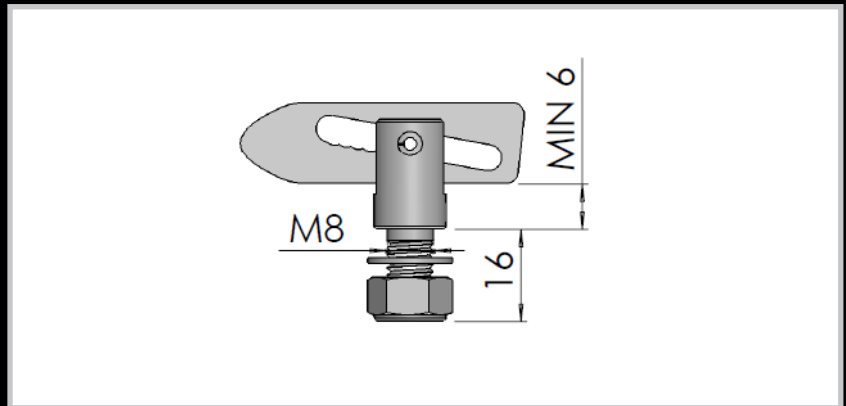
**Notes:**



Enclosures

## Anti - Luce Fasteners

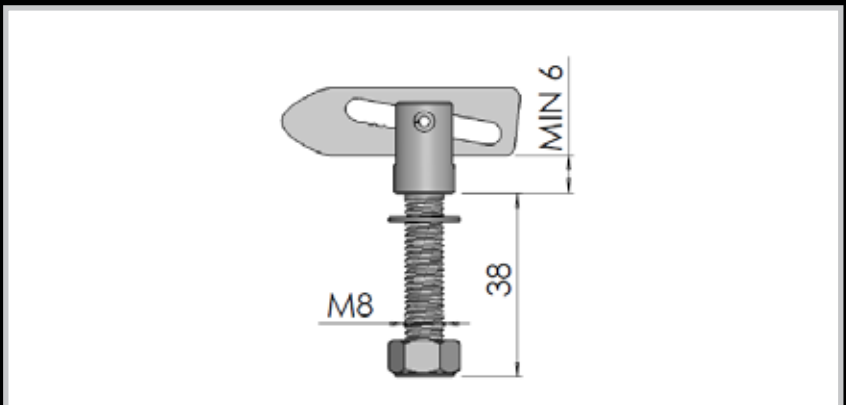
Hinges



Locks

Part Number	Description	L (mm)
083-010	M8	16

Handles

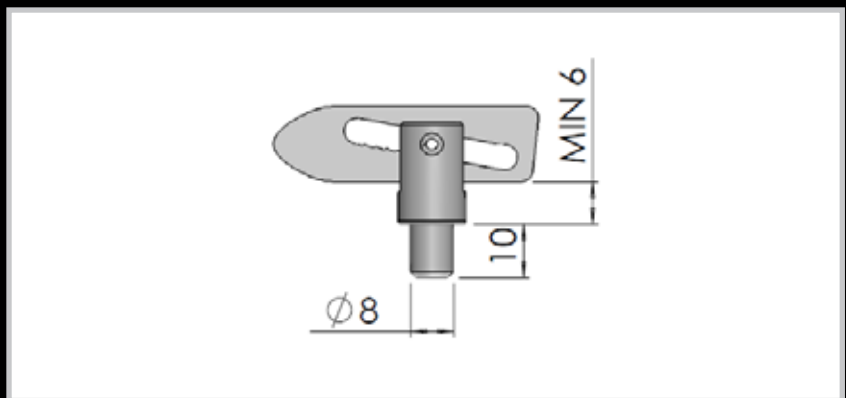


Accessories

Part Number	Description	L (mm)
083-009	M8	38

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Part Number	Description	L (mm)
083-011	No Thread	10

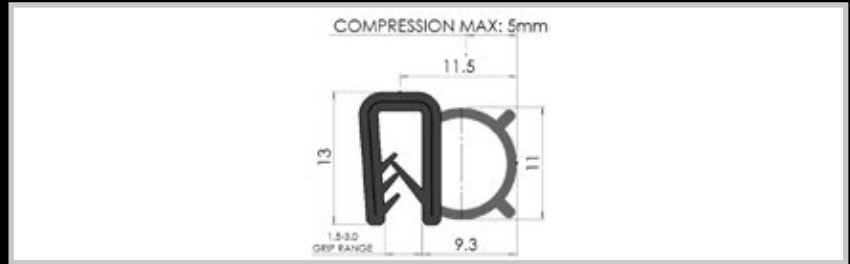
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**Rubber Sealing**



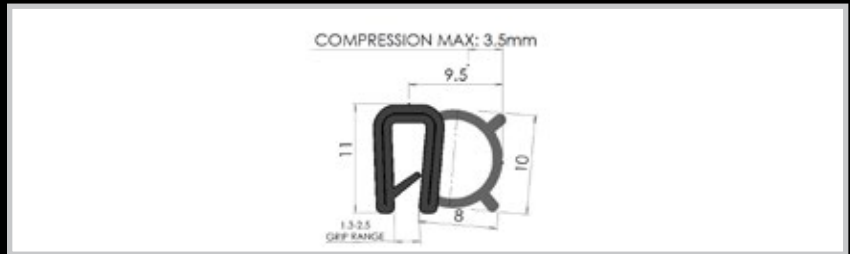
**Remarks:**  
Side Mount.



Part Number	Description
007-401	EPDM, with metal core, Soft foam rubber, black



**Remarks:**  
Side Mount.



Part Number	Description
007-402	EPDM, with metal core, Soft foam rubber, black



**Remarks:**  
Top Mount.



Part Number	Description
007-403	EPDM, With metal core, Soft foam rubber, black



**Remarks:**  
Top Mount.



Part Number	Description
007-404	EPDM, With metal core, Soft foam rubber, black

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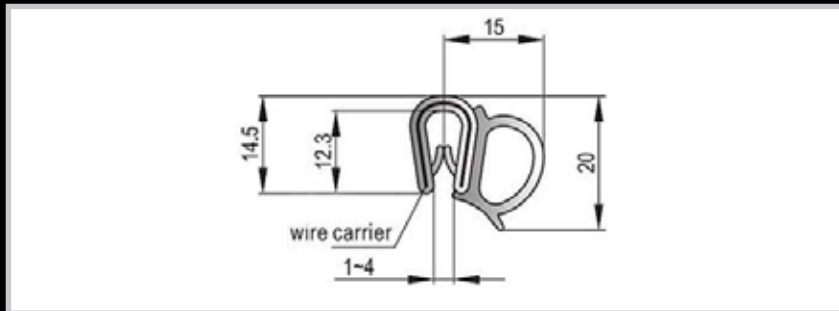
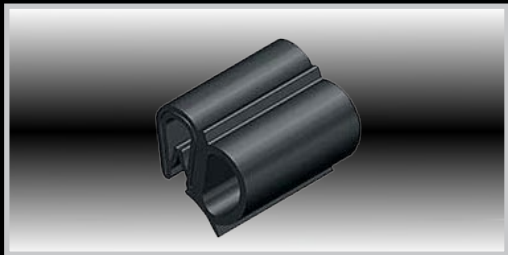
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**Remarks:**  
Side Mount

Part Number	Description
007-408	EPDM, With metal core, Soft foam rubber, black

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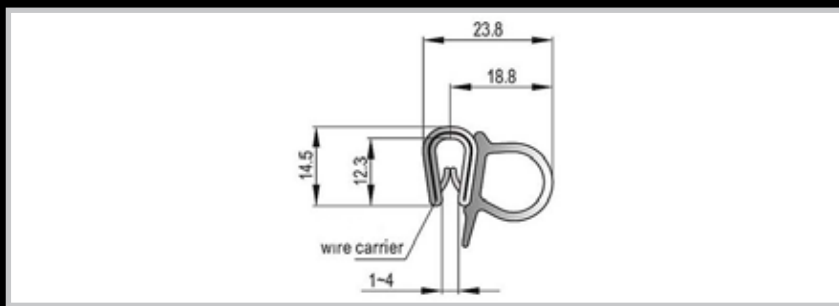
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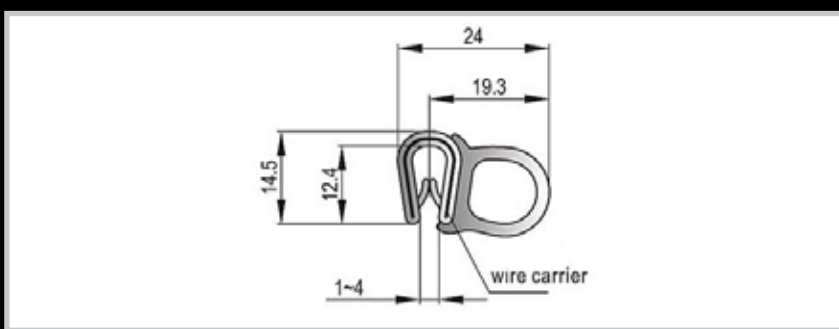
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**Remarks:**  
Side Mount

Part Number	Description
007-409	EPDM, With metal core, Soft foam rubber, black

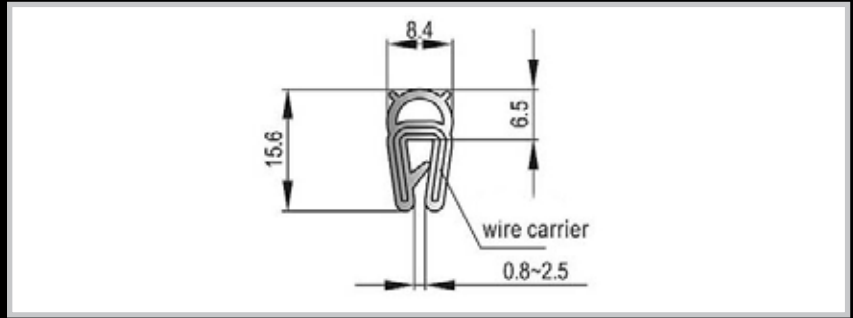


**Remarks:**  
Side Mount

Part Number	Description
007-410	EPDM, With metal core, Soft foam rubber, black



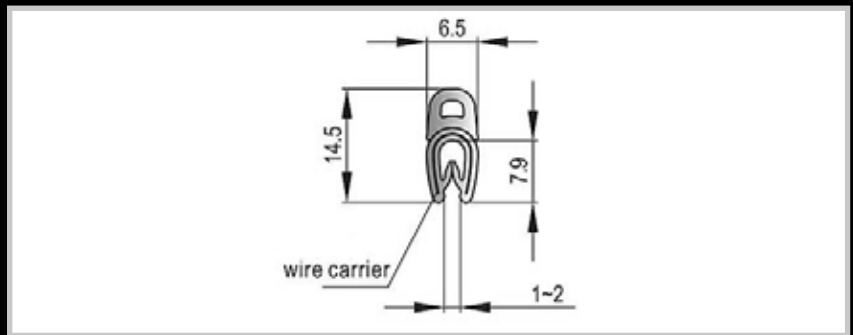
Remarks:  
Top Mount



Part Number	Description
007-412	EPDM, With metal core, Soft foam rubber, black



Remarks:  
Top Mount



Part Number	Description
007-411	EPDM, With metal core, Soft foam rubber, black

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**Rubber Edges**

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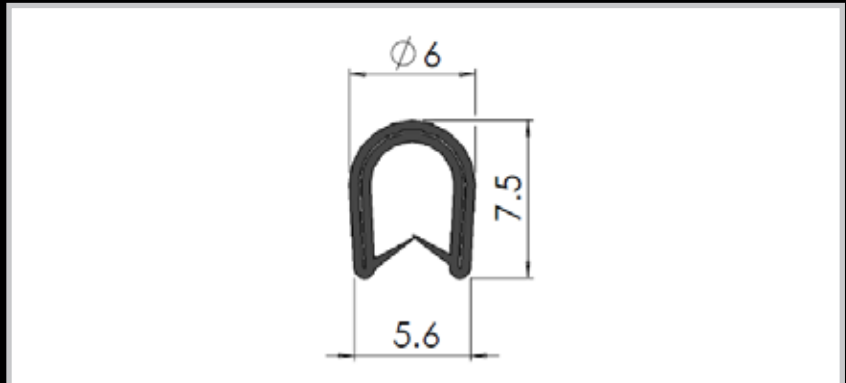
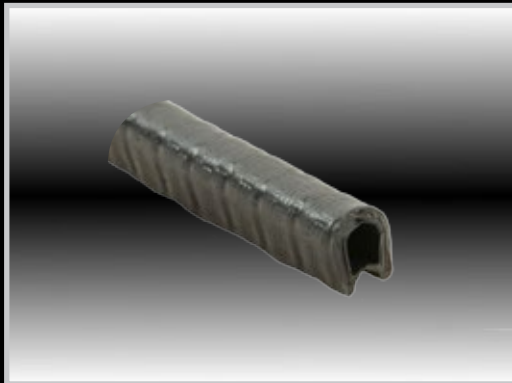
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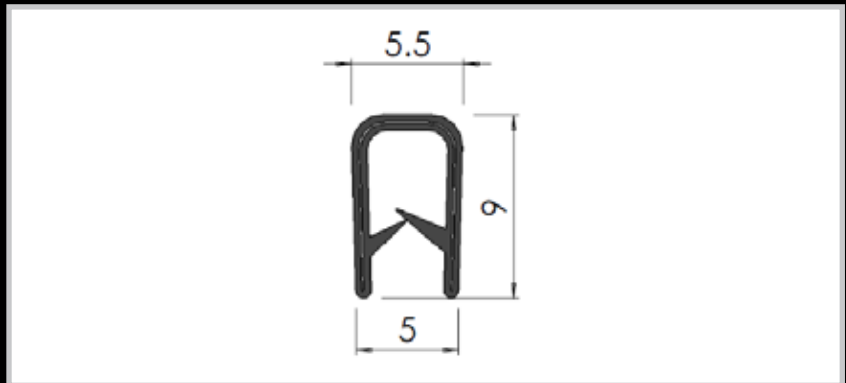
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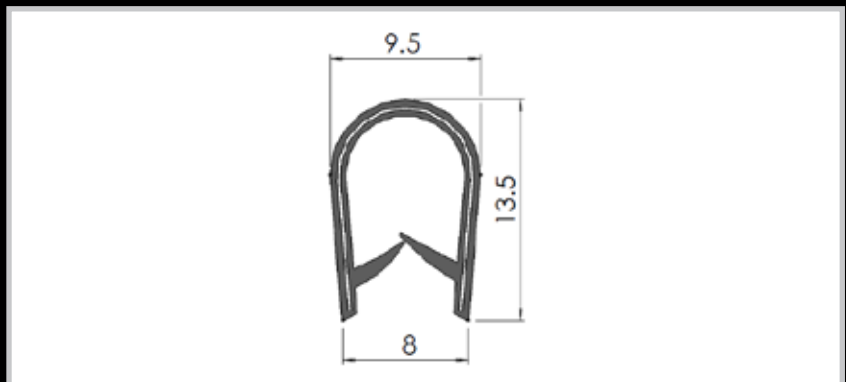
Remarks:  
Small Edge.

Part Number	Description
007-405	EPDM, Black



Remarks:  
Medium Edge.

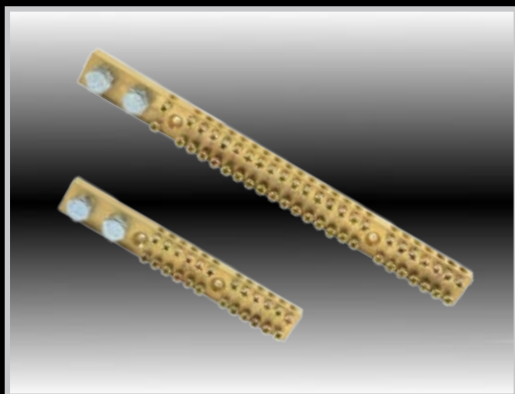
Part Number	Description
007-406	EPDM, Black



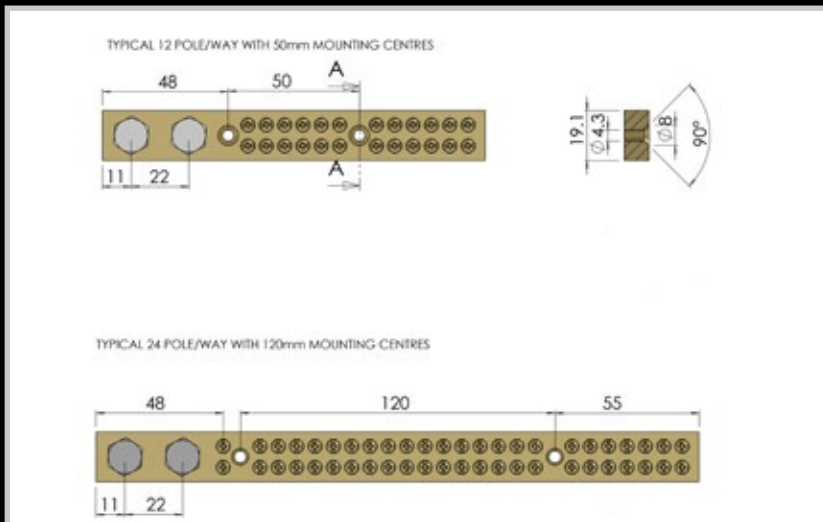
Remarks:  
Large Edge.

Part Number	Material and Finish
007-407	EPDM, Black

**DE Series Neutral Bars**



**Remarks:**  
 2x M8 Screws for 165 Amp cables.  
 2x M4 Posi- drive screws per numbered tunnel.  
 Bar size: 19.1 x 9.5mm brass.



Part Number	Description
ENB-DE6	DE range - Neutral Bar 6 Way
ENB-DE12	DE range - Neutral Bar 12 Way
ENB-DE18	DE range - Neutral Bar 18 Way
ENB-DE24	DE range - Neutral Bar 24 Way
ENB-DE30	DE range - Neutral Bar 30 Way
ENB-DE36	DE range - Neutral Bar 36 Way
ENB-DE42	DE range - Neutral Bar 42 Way
ENB-DE48	DE range - Neutral Bar 48 Way
ENB-DE54	DE range - Neutral Bar 54 Way
ENB-DE60	DE range - Neutral Bar 60 Way
ENB-DE72	DE range - Neutral Bar 72 Way
ENB-DE84	DE range - Neutral Bar 84 Way
ENB-DE96	DE range - Neutral Bar 96 Way
ENB-DE108	DE range - Neutral Bar 108 Way

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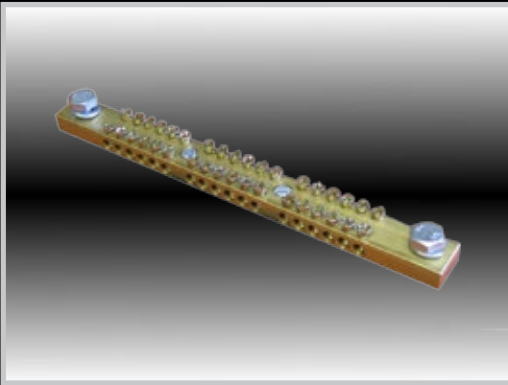
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**SE Series Neutral Bars**

Hinges



Locks

**Remarks:**  
 2x M8 Screws for 165 Amp cables.  
 2x M4 Posi- drive screws per numbered tunnel.  
 Bar size: 19.1 x 9.5mm brass.

Handles

Accessories

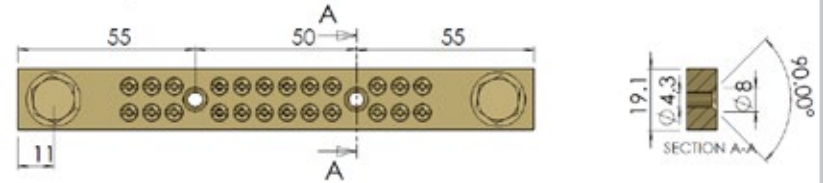
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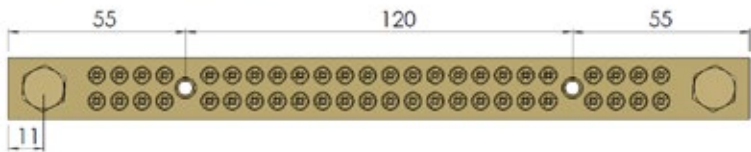
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TYPICAL 12 POLE/WAY WITH 50mm MOUNTING CENTRES



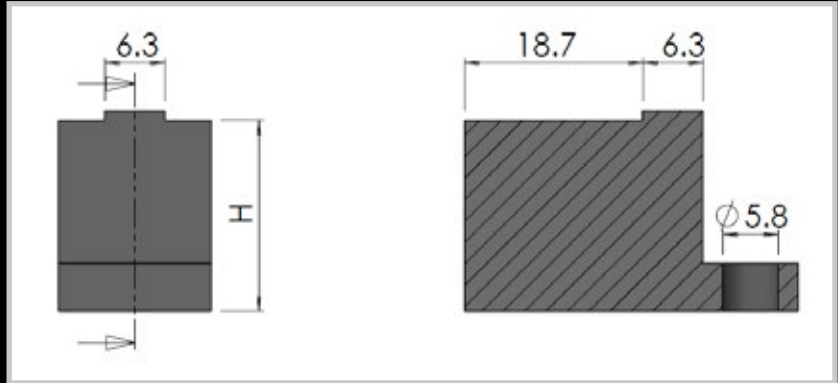
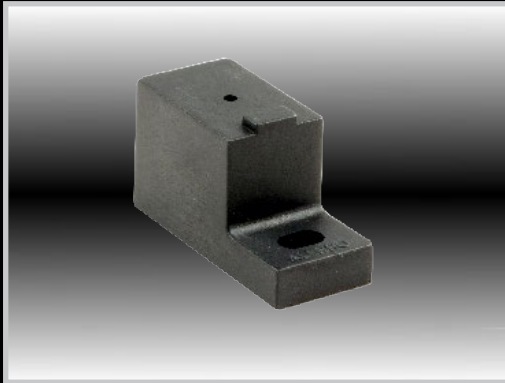
TYPICAL 24 POLE/WAY WITH 120mm MOUNTING CENTRES



Part Number	Description
ENB-SE6	SE range - Neutral Bar 6 Way
ENB-SE12	SE range - Neutral Bar 12 Way
ENB-SE18	SE range - Neutral Bar 18 Way
ENB-SE24	SE range - Neutral Bar 24 Way
ENB-SE30	SE range - Neutral Bar 30 Way
ENB-SE36	SE range - Neutral Bar 36 Way
ENB-SE42	SE range - Neutral Bar 42 Way
ENB-SE48	SE range - Neutral Bar 48 Way
ENB-SE54	SE range - Neutral Bar 54 Way
ENB-SE60	SE range - Neutral Bar 60 Way
ENB-SE72	SE range - Neutral Bar 72 Way
ENB-SE84	SE range - Neutral Bar 84 Way
ENB-SE96	SE range - Neutral Bar 96 Way
ENB-SE108	SE range - Neutral Bar 108 Way

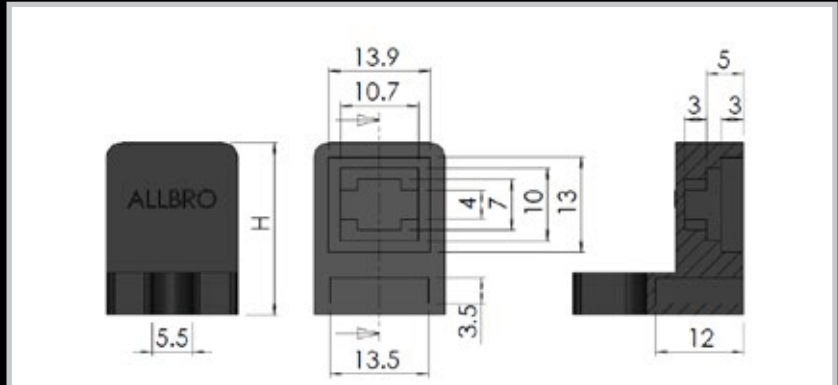
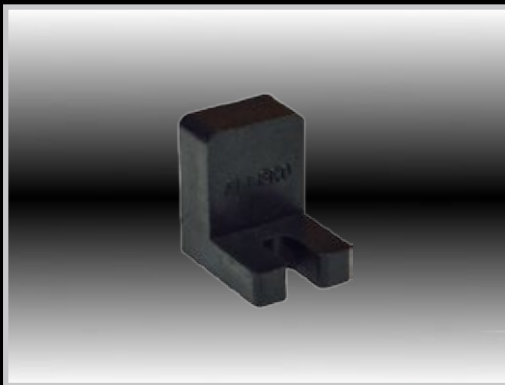


Insulator Support

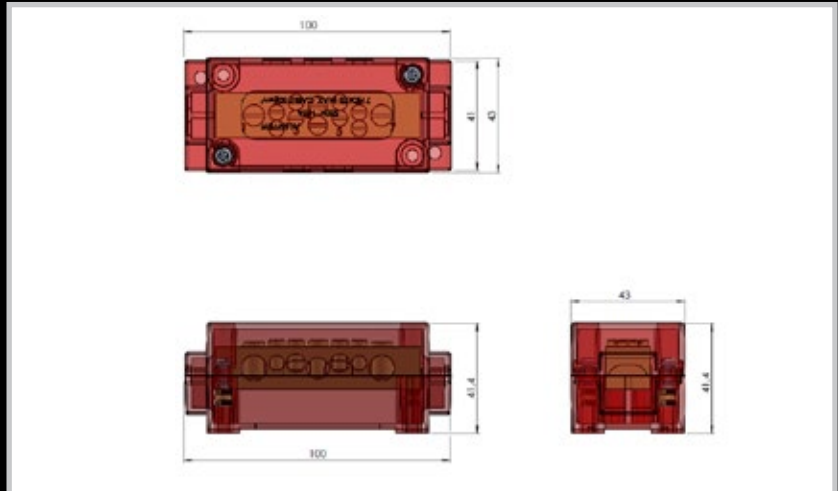


**Remarks:**  
Recommended as an optional for SE neutral bar series.

Part Number	Description	H (mm)
020-271	Type T5 Support Insulator	24



Part Number	Description	H (mm)
302500	Type T3 Support Insulator	24



Part Number	Description
7WAY/B165	Enclosed 7 way 165 amp Black
7WAY/R165	Enclosed 7 way 165 amp Red

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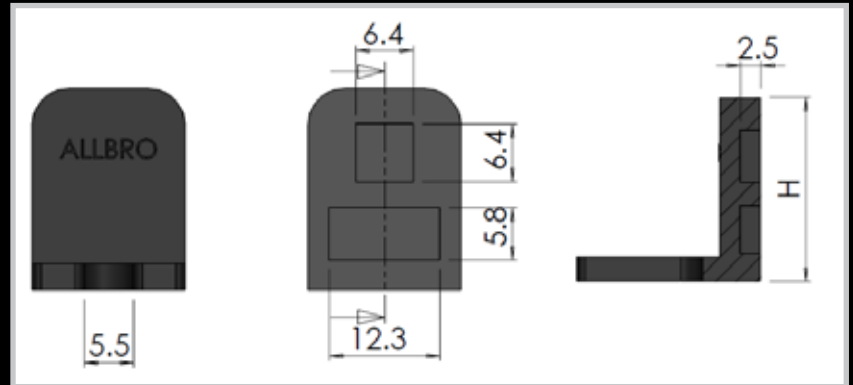
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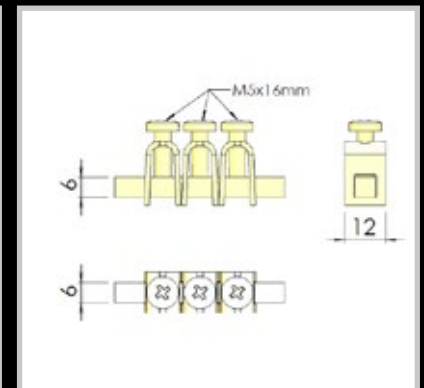
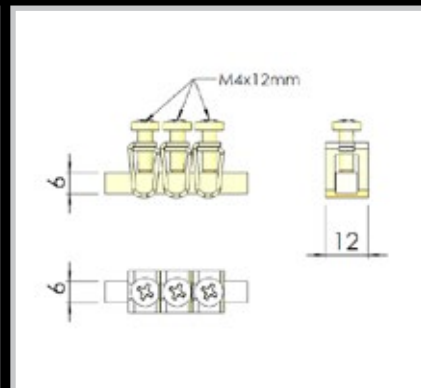
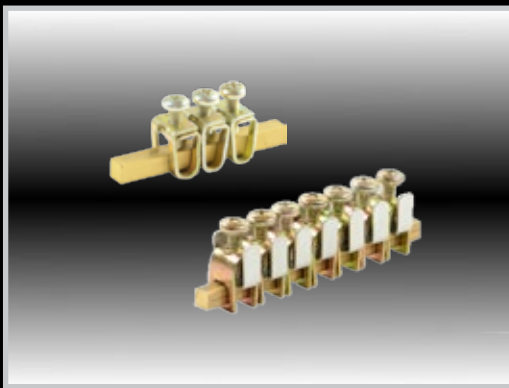
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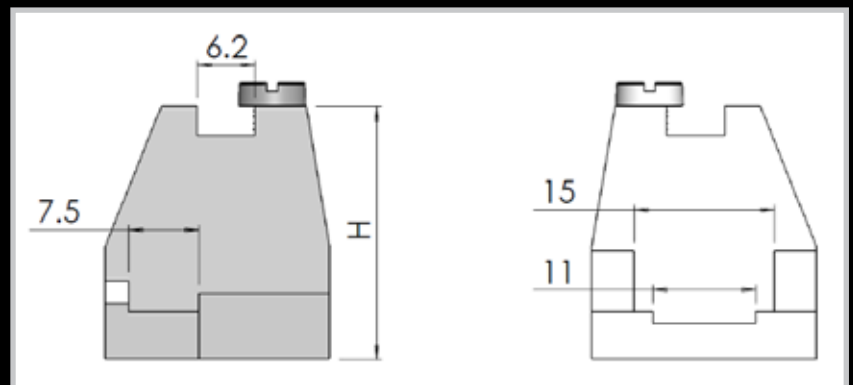
**Insulator Support**



PART NUMBER	DESCRIPTION	H (mm)
020-254	Type T1 Support Insulator	23
020-255	Type T2 Support Insulator	30

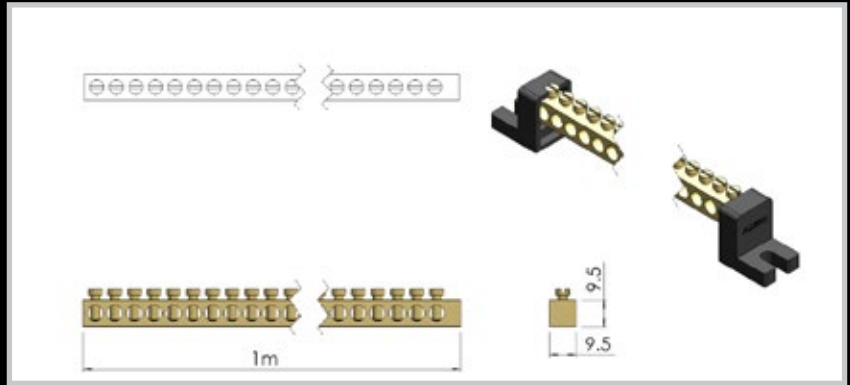


PART NUMBER	DESCRIPTION
010-061	16mm Fitsalls
011-028	25mm Saddles



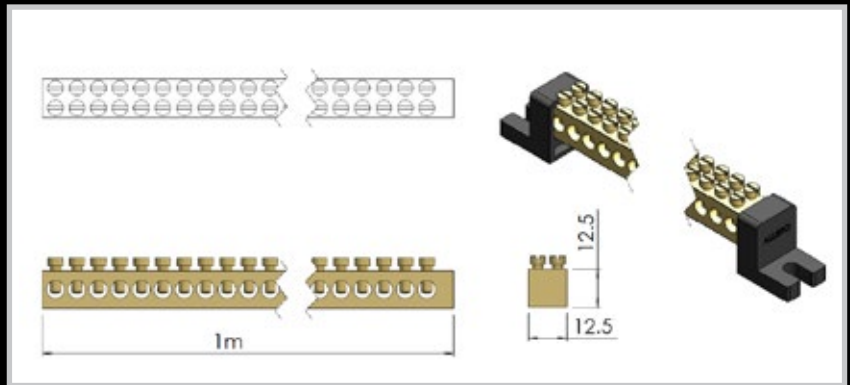
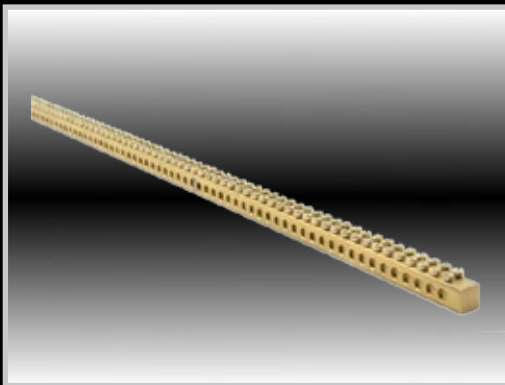
PART NUMBER	DESCRIPTION	H (mm)
020-268	Type T4 Support Insulator	27

**Earth and Neutral Bars**



**Remarks:**  
Type T3 Insulator recommended as an optional extra.

Part Number	Description
3021095	Brass Single Row Earth and Neutral Bar

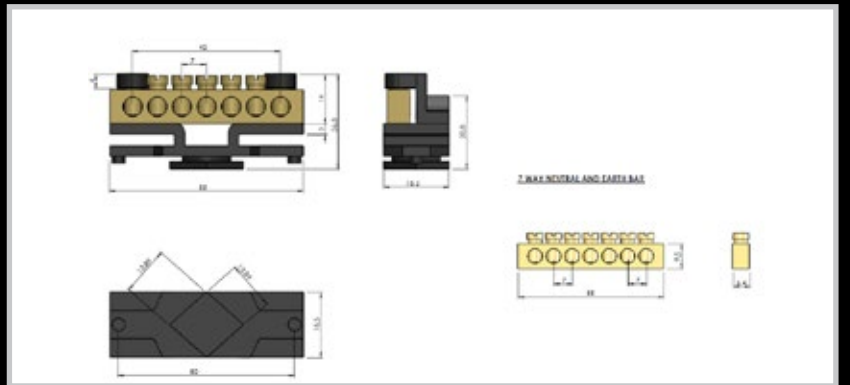
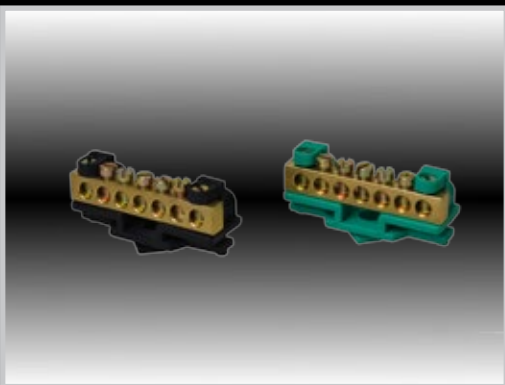


**Remarks:**  
Type T3 Insulator recommended as an optional extra.

Part Number	Description
302125	Brass Double Row Earth and Neutral Bar

Note: Allbro sells Neutral Bars in 1m lengths. Many companies sell this in 500mm lengths. This is an important consideration when comparing prices.

**7 Way Neutral and Earth Bar with Carrier**



Part Number	Description
ENB-7WB	7 Way black neutral bar carrier
ENB-7WG	7 Way green earth bar carrier

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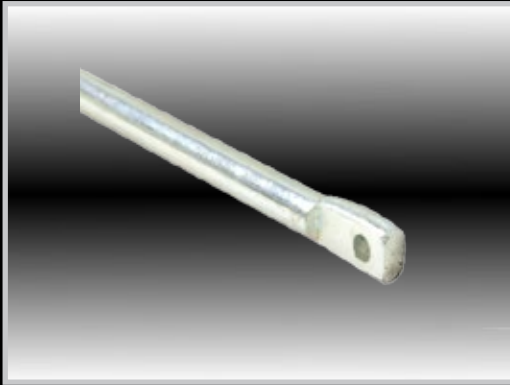
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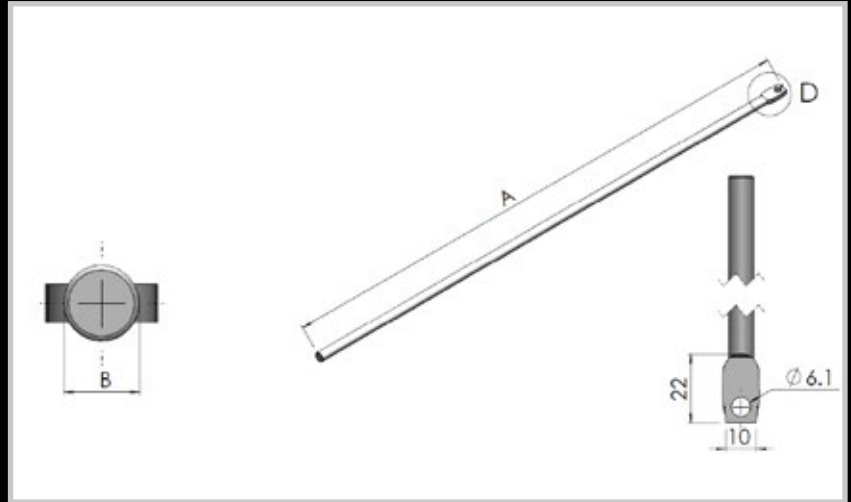
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## Rods only



### Remarks:

It has a 8mm diameter.  
Refer to page 137 for compatible cams.

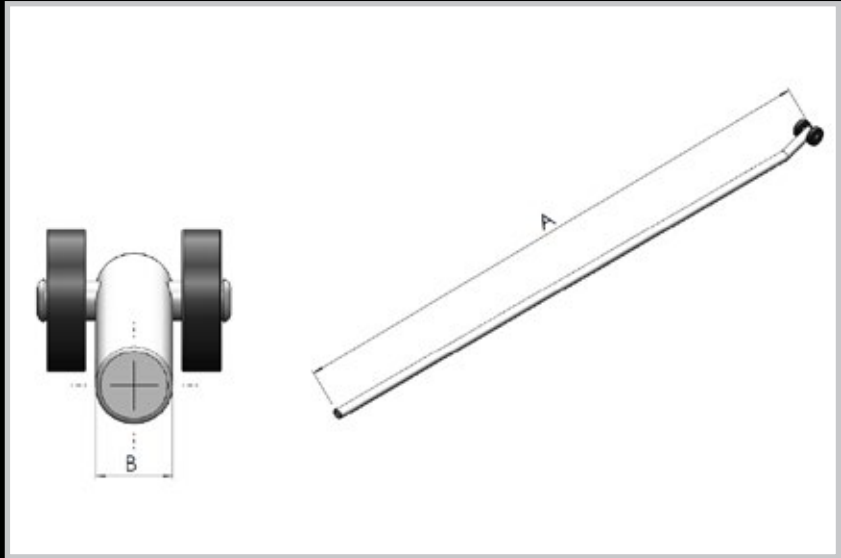


Part Number	Description	Material and Finish
1010130/ROD	Rod only 200mm	Mild Steel
1010130S/SROD	Rod only 200mm	Stainless Steel
1010131/ROD	Rod only 320mm	Mild Steel
1010131S/SROD	Rod only 320mm	Stainless Steel
1010132/ROD	Rod only 450mm	Mild Steel
1010132S/SROD	Rod only 450mm	Stainless Steel
1010133/ROD	Rod only 520mm	Mild Steel
1010133S/SROD	Rod only 520mm	Stainless Steel
1010134/ROD	Rod only 720mm	Mild Steel
1010134S/SROD	Rod only 720mm	Stainless Steel
1010135/ROD	Rod only 1000mm	Mild Steel
1010135S/SROD	Rod only 1000mm	Stainless Steel
1010136/ROD	Rod only 1300mm	Mild Steel

**Locking Rods with Rollers**



**Remarks:**  
8mm Mild steel, 8mm 316 Grade stainless steel. Available with Nylon or steel wheels. Refer to page 137 for compatible cams.



Part Number	Description	Material and Finish
1010130R/ROD	Rod only 200mm with rollers	Mild Steel
1010131R/ROD	Rod only 320mm with rollers	Mild Steel
1010132R/ROD	Rod only 450mm with rollers	Mild Steel
1010133R/ROD	Rod only 520mm with rollers	Mild Steel
1010134R/ROD	Rod only 720mm with rollers	Mild Steel
1010135R/ROD	Rod only 1 000mm with rollers	Mild Steel
1010135R/1200	Rod only 1 200mm with rollers	Mild Steel
1010135R/1200SW	Rod only 1 200mm with rollers with stainless steel wheels	Mild Steel
1010135RS/S1200	Stainless steel rod 1 200mm with rollers	Stainless Steel
1010136R/ROD	Rod only 1300mm with rollers	Mild Steel
1010136R/SW	Rod only 1 300mm with rollers with stainless steel wheels	Mild Steel
1010136RS/S	Stainless steel rod 1 300mm with rollers	Stainless Steel

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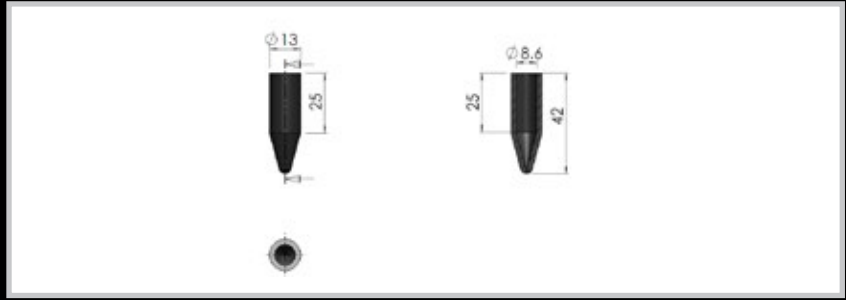
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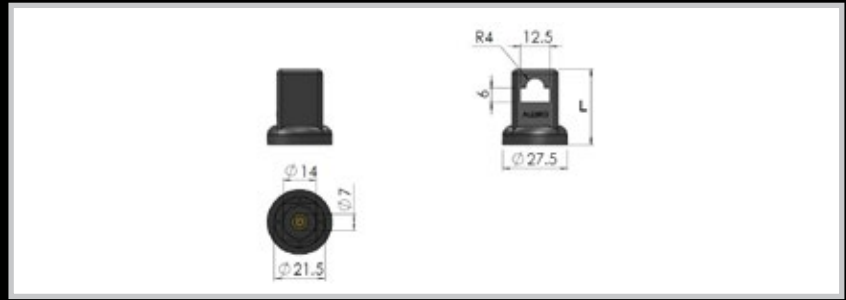
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**Rods Accessories**

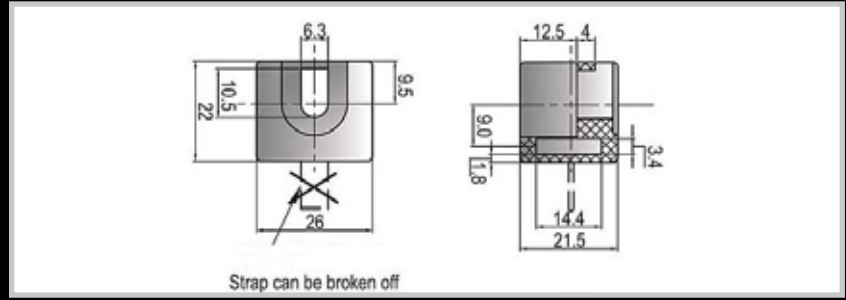
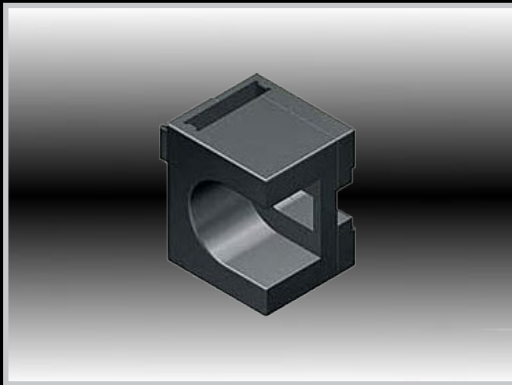


Part Number	Description
1000111	Rod End Tip

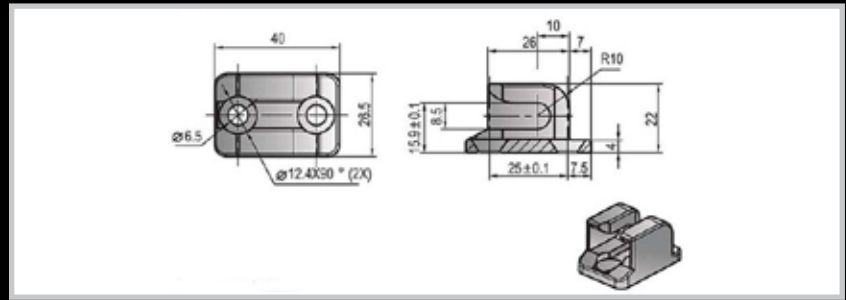
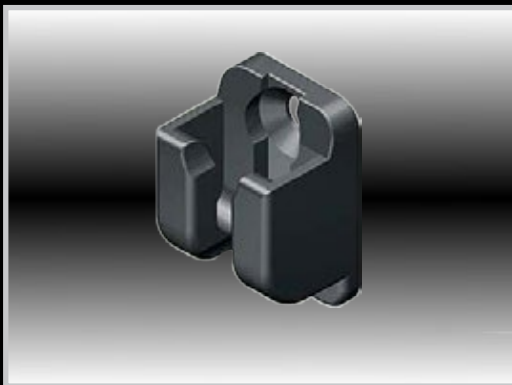


Part Number	Description	L (mm)
1000114	Rod Guide	32
1000114/38	Rod Guide	38

**Remarks:**  
1000114 is a flush mounted guide.  
1000114/38 is recessed mounted.

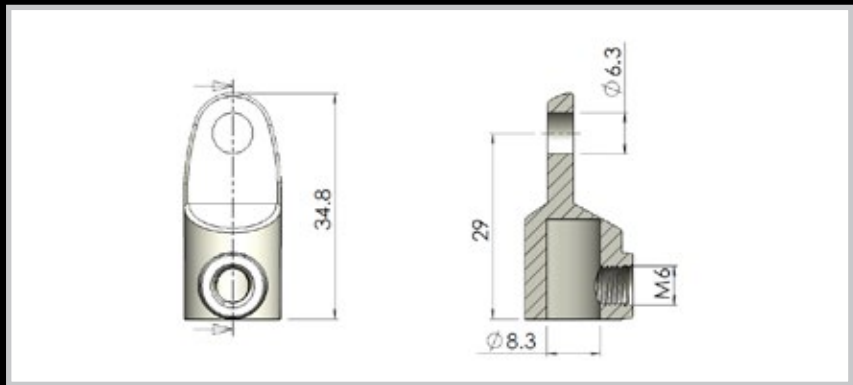


Part Number	Description
1000122	Nylon rod guide for flat bar

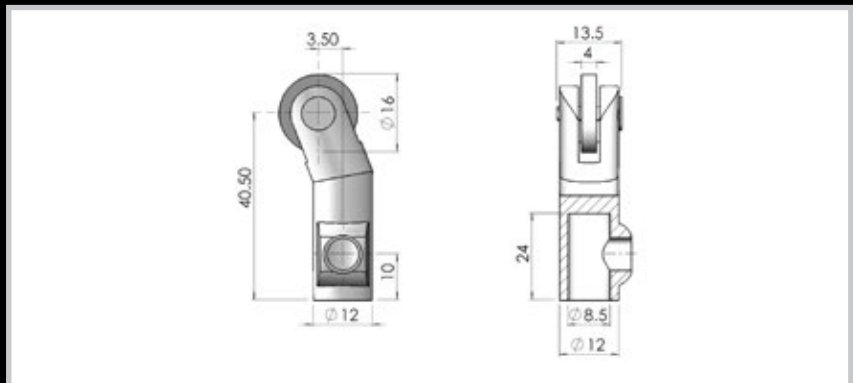
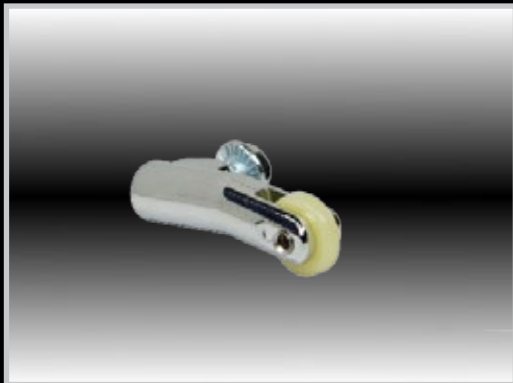


Part Number	Description
1000126	ZDC flat bar locking guide
1000126-R	ZDC flat bar locking guide , raised

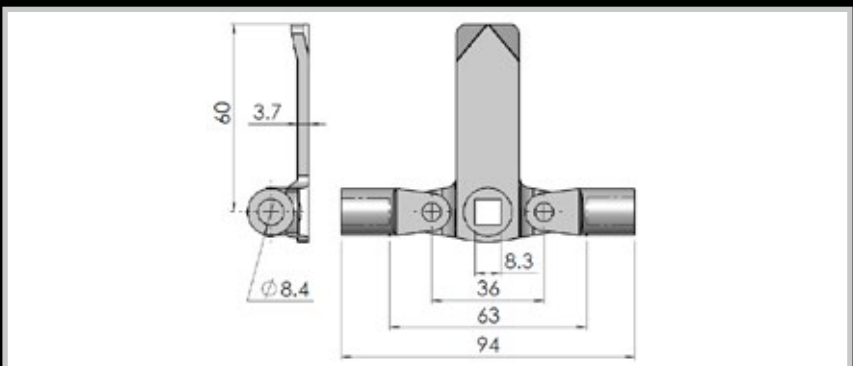




Part Number	Description
017-053	Rod Adaptor



Part Number	Description
A.RG007	Roller Rod End Attachment



Part Number	Material and Finish	Description
CAM08M/S8COMP	Mild steel natural finish	3 point cam with Rod adaptors
CAM08S/S8COMP	Full stainless steel natural finish	3 point cam with Rod adaptors

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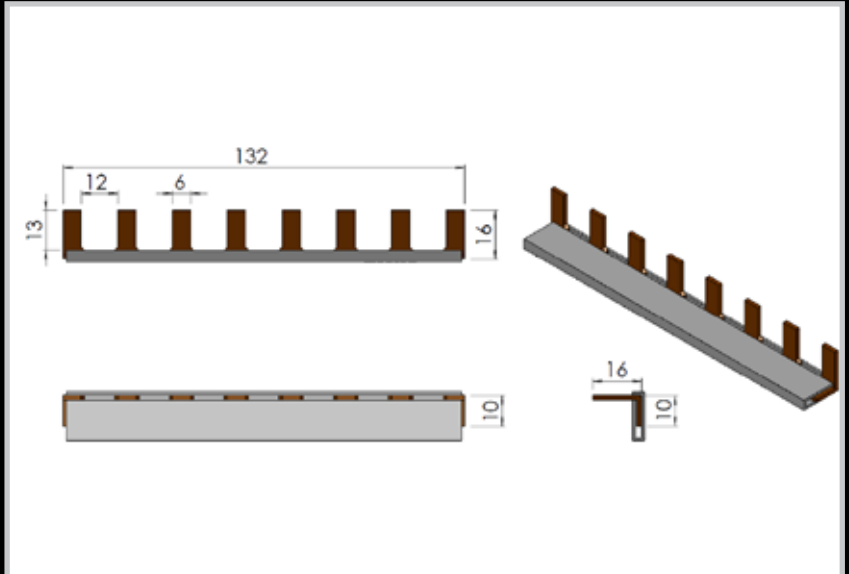
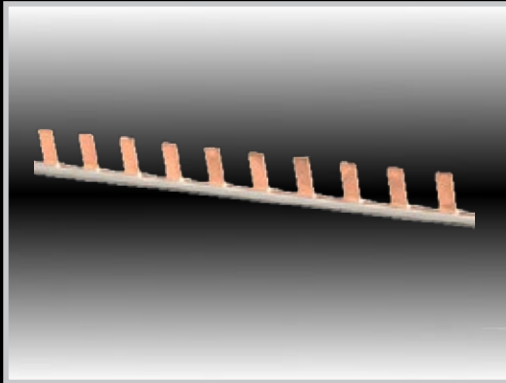
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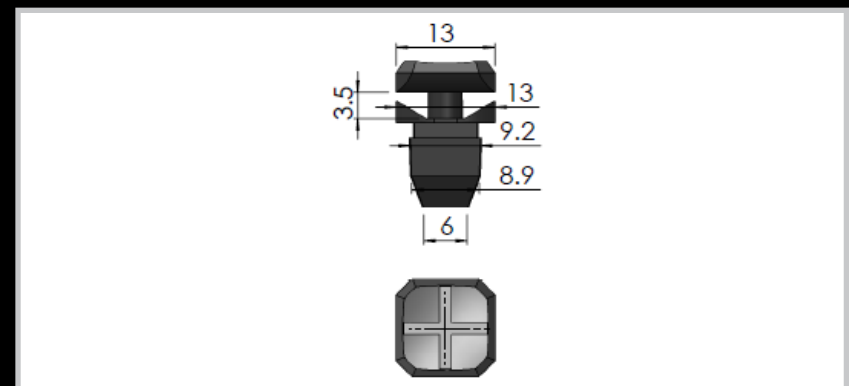
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Remarks:  
Number of poles: 54

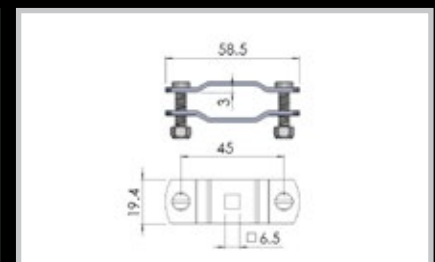
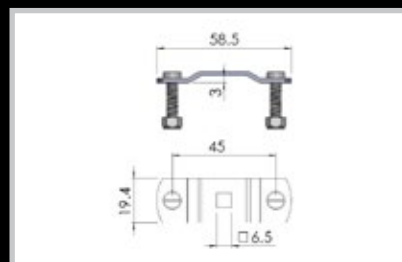
Part Number	Description	Material and Finish
010-103	Comb Jumper Bar	Insulated Copper

### Arrow Fastener



Remarks:  
Quarter - turn captive quick release fastener, for applications such as blanking plates in server cabinets.

Part Number	Description
1000110	Arrow fastener / Plastic stopper



Part number	Description
1000123	Single Lever Plate
1000136	Double Lever Plate

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## Rotary Handles

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Other Code	Part Number	MCCB's and ELCB's
12MEC.1245	MB/ 040-801	NF125 / 160 / 250 (SGW / HGW)
12MEC.1045	MC/040-802	NF160 / 250 & NV250 (CWA/SWA/HWA)
12MEC.1145	MD/040-803	NF63 / NV63 (SWA/HWA)
		NF125 & NV125 (CWA/SWA/HWA)
12MEC.0645	ME/040-804	NF400/630 & NV400/630 (CPA/SPA/CEP/SEP/HEP)
12MEC.0845	MF/040-805	NF800 / NV800 (CPA/SPA/CEP/SEP/HEP)
12MEC.0945	MG/040-806	NF1000SS & NF1250SS



Other Code	Part Number	MCCB's
12CH.7245	CA/ 040-820	F15D, F25D, F35D, F65D, F100D
12CH.7445	CB/040-821	JS25, J25S
12CH.7545	CC/040-822	K25D, K35D, K65D, K100D
12CH.7645	CF/040-825	L40DAN



Range Sentron & Sirius

Range 3KL Series CFS

Other Code	Part Number
12 SIE.VL160X	SA/ 040-810
12 SIE.VL160/VL250	SB/040-811
12 SIE.VL630	SC/040-812
12 SIE.VL400	SD/040-813
12 SIE.7051	SAS/040-830
12 SIE.7151	SBS/040-831
12 SIE.7251	SCS/040-832

Other Code	Part Number
12 SIE.5051	SIA/ 040-835 (M6 SQ)
12 SIE.5251	SIB/040-836 (M8 SQ)
12 SIE.5551	SIC/040-837 (M10 SQ)
12 SIE.6151	SID/040-838 (M12 SQ)

Range 3RV 13 CB'S

Range 3VT MCB'S

Other Code	Part Number
3RV13-5LM10	SE/ 040-814 20A
3RV13-7AN10	SF/040-815 100A
3RV13-73GL10	SG/040-816 400A
3RV13-837JN10	SH/040-817 630A

Other Code	Part Number
3VT1 7-2DE	SI/040-818 160A
3VT2 725	SJ/040-819 250A
3VT3 763	SK/040-820 630A
3VT4 710/716	SL/040-821 1000/1600A



Other Code	Part Number	MCCB's
NS80	GA/ 040-840	NS80
NS100, NS160, NS250	GB/040-841	NS100, NS160, NS250
NS400, NS630	GC/040-842	NS400, NS630
NS630, NS1600	GD/040-843	NS630, NS1600

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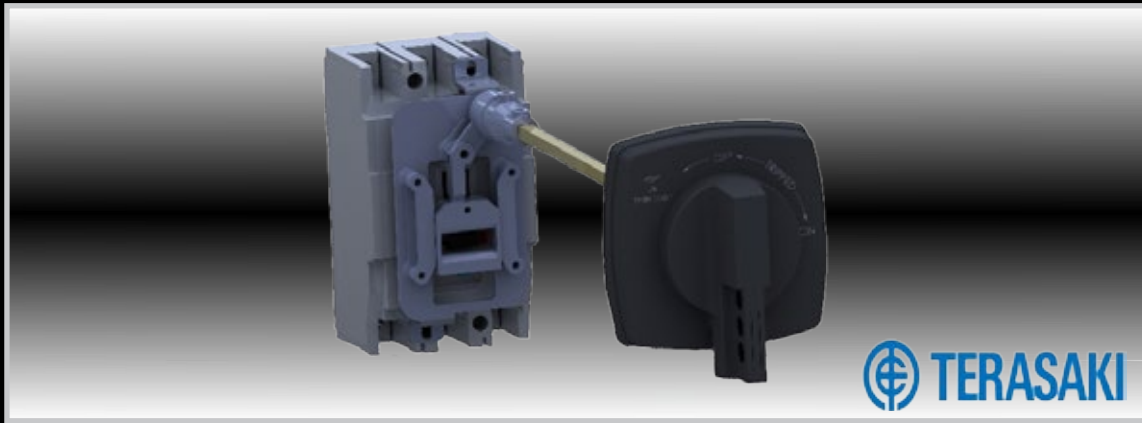
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Part Number	Description
040-852	Terasaki E160A Small
040-853	Terasaki E250A Large

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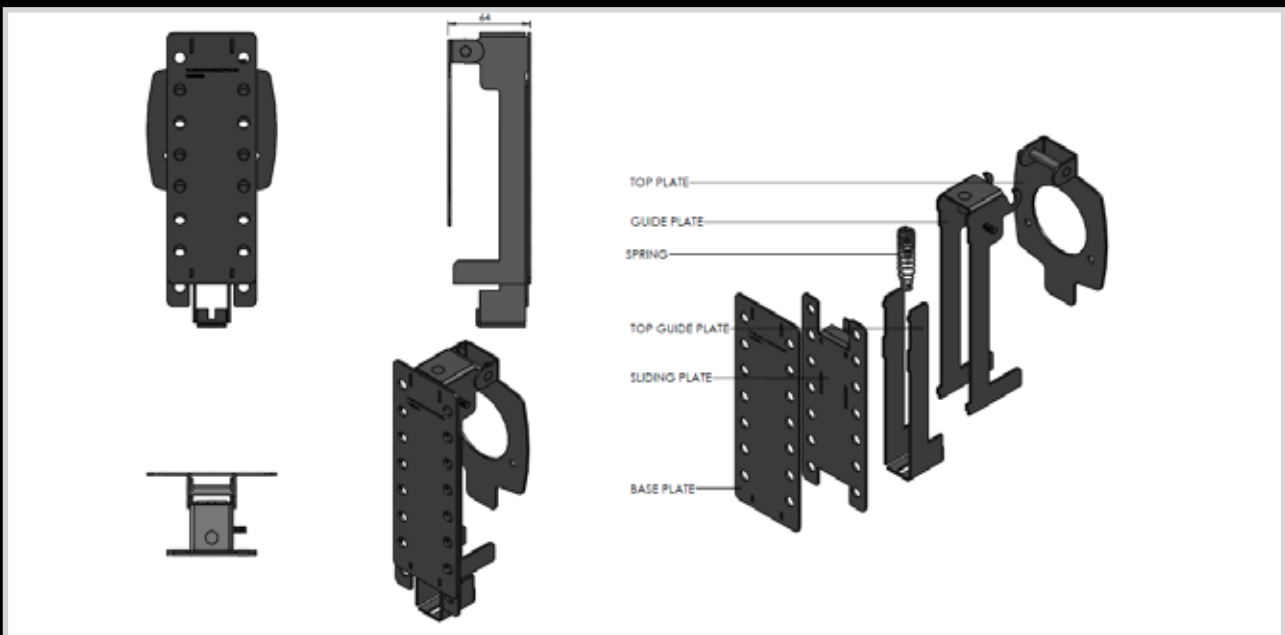
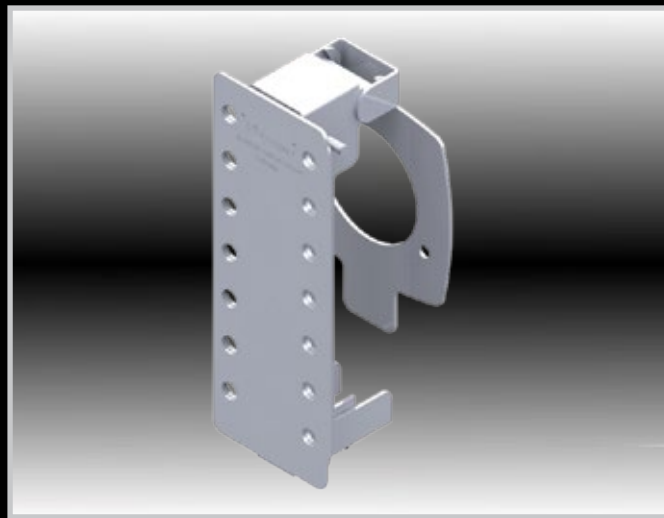
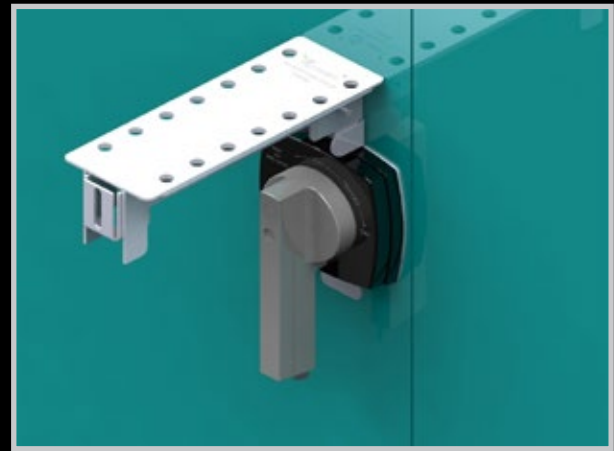
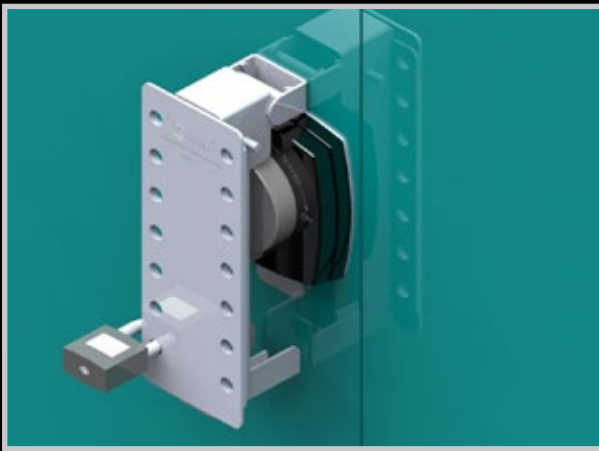
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Additional lockout system used in conjunction with Allbro Rotary handles

## Size - Long



- Robust stainless steel Lockout device for door- mounted handle types
- Consist of a robust stainless steel kit to lockout the handle to prevent ny tampering
- 14 Padlocks for long handle
- Can be retro-fitted on existing or new installations as a removable or permanent fixture

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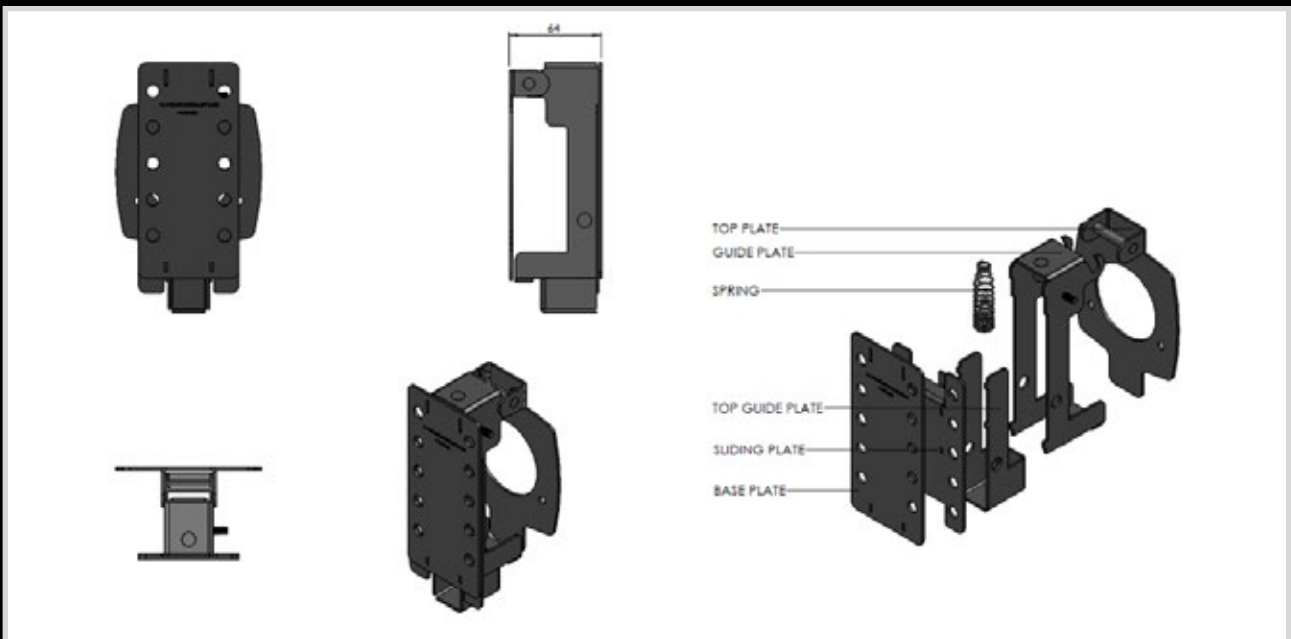
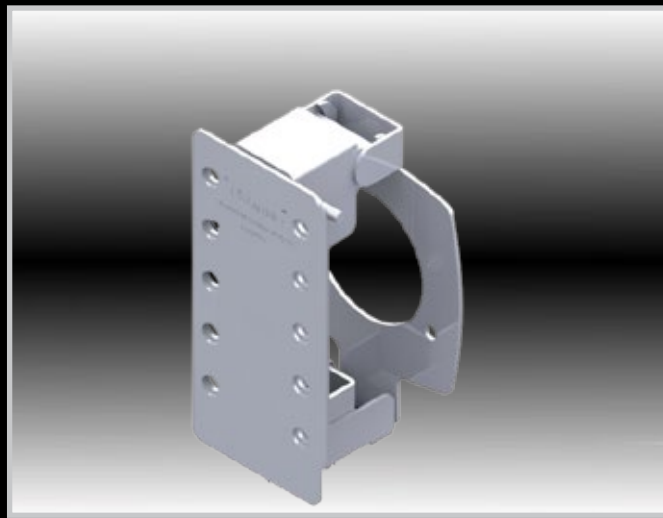
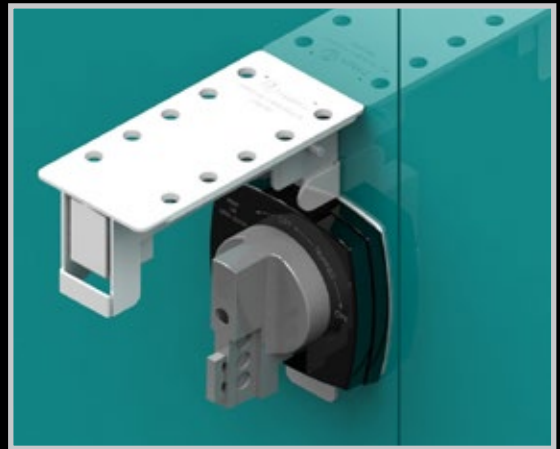
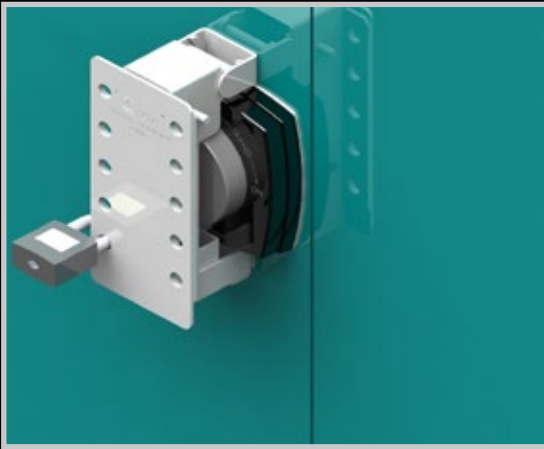
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## Size - Short

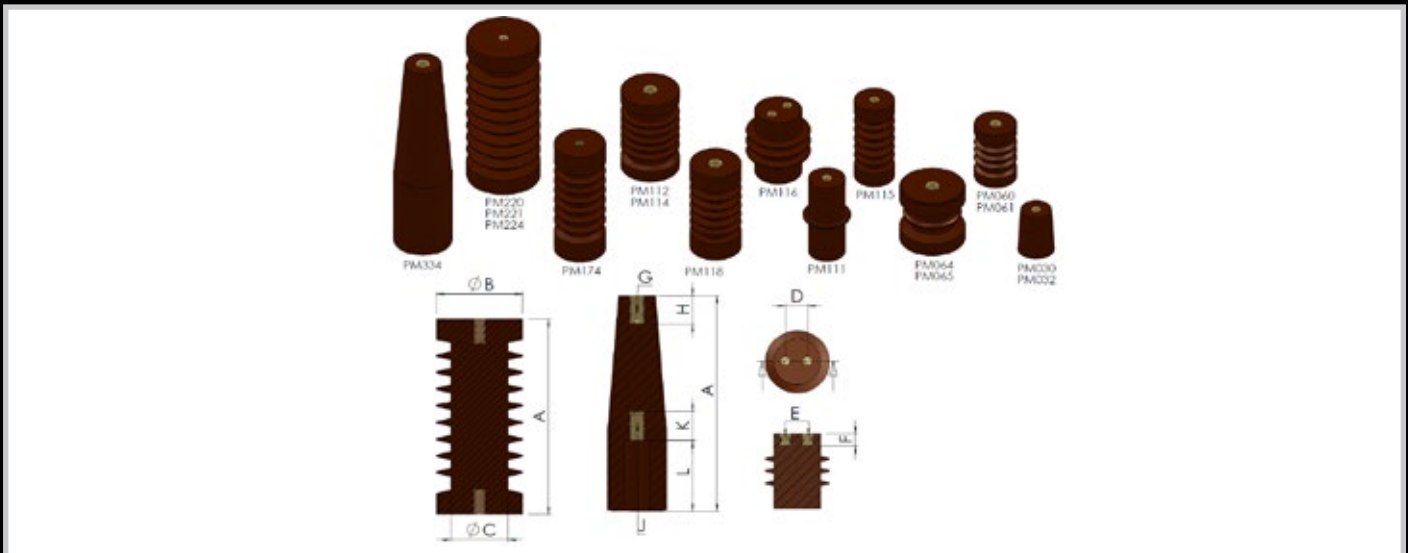


Part Number	Description
1011109	Plantsafe Handle Small
1011110	Plantsafe Handle Large

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## Insulators

					
PM Pg.183	PM Pg.183	B Pg.184	SP Pg.185	SL Pg.186	SPL Pg.187
					
CP Pg.188	CL & CPL Pg.189	GL Pg.190	GP Pg.191	GPL Pg.192	HP Pg.193
					
HPL & HL Pg.194	IL Pg.195	SM Pg.196	WP Pg.197	OP Pg.198	VP & VL Pg.199
					
KNOBS Pg.200	RED STEPPED Pg.201	RED STEPPED Pg.201	3 CEN BUSBARS Pg.202	BUSBAR SUPPORT Pg.202	AL BUSBAR SUPPORT Pg.203
					
FUSES Pg.204					



PART NUMBER	CAT N°	NOMINAL VOLTAGE	NO. OF SHEDS	A	B	C	D	E	F	G	H	J	K	L	B.I.L kv	MIN FAIL Kn	UNIT MASS
050-180	PM030	3.3kV	-	70	50	42	-	-	-	M10	14	M10	14	-	45	4	228g
050-181	PM032	3.3kV	-	70	50	40	25	M8	12	-	-	M8	12	-	45	4	246g
050-100	PM060	6.6kV	3	90	57	45	-	-	-	M12	17	M12	17	-	60	4	354
050-116	PM061	6.6kV	3	90	55	40	32	M8	12	-	-	M8	12	-	60	4	344g
050-111	PM064	6.6kV	1	90	90	60	50	M10	14	-	-	M10	14	-	60	5	862g
050-104	PM065	6.6kV	3	90	55	45	32	M8	12	-	-	M12	17	-	60	4	352g
050-120	PM111	11kV	1	127	60	50	-	-	-	M10	22	M10	22	-	75	8	516g
050-142	PM112	11kV	5	130	80	62	-	-	-	M16	22	M20	32	-	95	12	1002g
050-133	PM114	11kV	5	130	80	62	46	M10	14	M16	22	M20	32	20	95	12	1002g
050-134	PM115	11kV	5	130	55	-	32	M6	10	M10	22	M16	32	14	95	-	416g
050-126	PM116	11kV	4	130	63	87	30	M10	17	M10x2	-	M10x2	17	-	95	-	840g
050-128	PM118	15kV	5	142	70	70	40	M8	12	M10	25	M16	30	-	95	9.5	850g
050-143	PM174	17.5kV	6	175	70	50	36	M6	10	M10	22	M16	40	20	125	-	985g
050-140	PM220	22kV	8	215	100	80	-	-	-	M16	22	M6	22	-	150	12	2480g
050-121	PM221	22kV	8	215	100	80	-	M12	25	-	-	M12	25	-	150	12	2480g
050-141	PM224	22kV	8	215	100	80	50	M10	14	M16	22	M20	32	20	150	12	2480g
050-161	PM334	33kV	-	295	80	50	-	-	-	M12	34	M16	32	98	200	9	2216g

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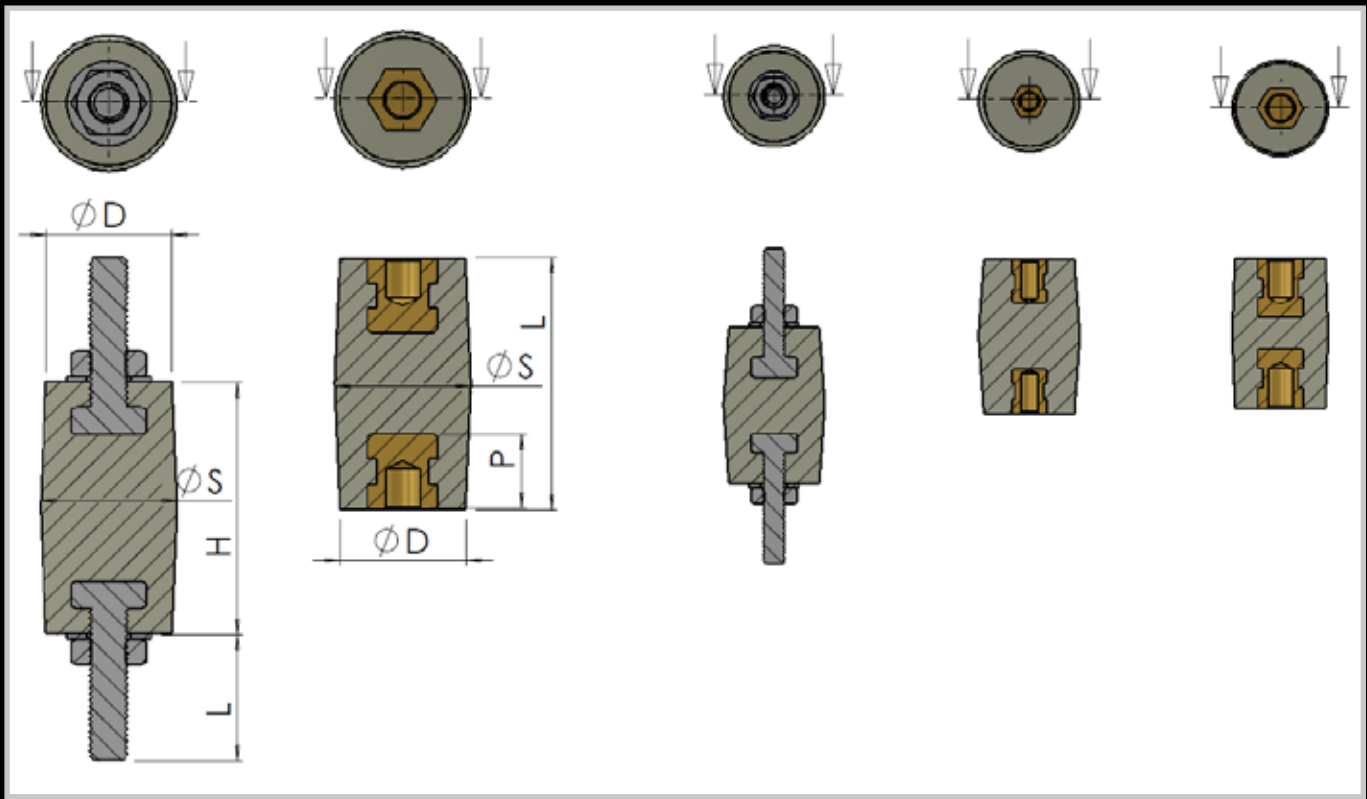
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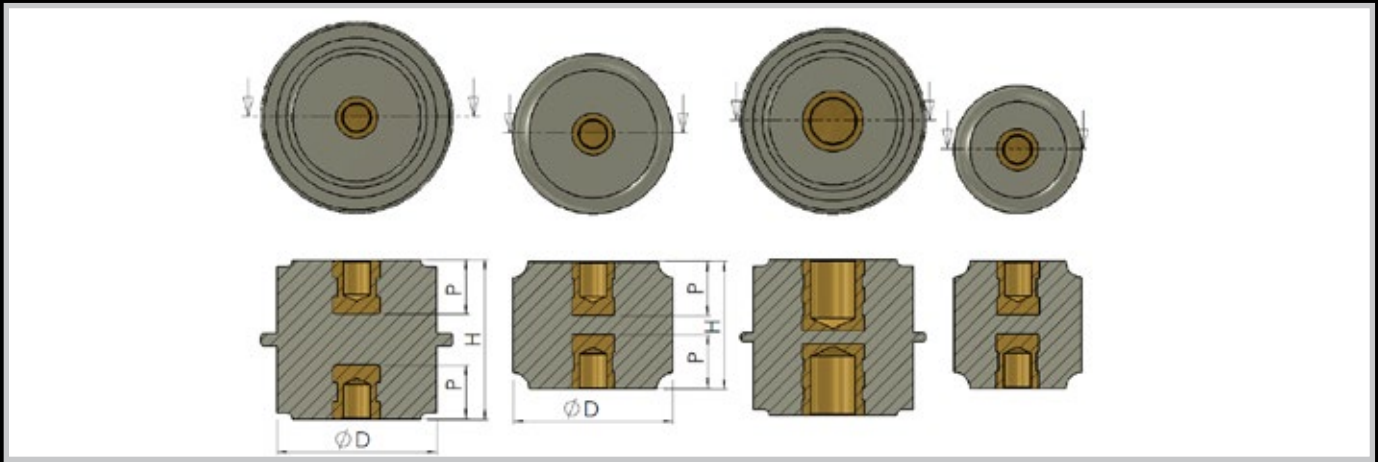
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PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	SHED DIAMETER S	STUD LENGTH L	INSERT DEPTH P	UNIT MASS	STD PACK
050-018	BL-8	50	25	28	25	-	86g	50
050-017	BP-8	50	25	28	-	13	66g	50
050-015	BP-5	30	17	20	-	8	18g	200
050-015/BK	BP-5BK	30	17	20	-	8	18g	200
050-206	BP-6	30	17	20	-	11	18g	50
050-206/BK	BP-6BK	30	17	20	-	11	18g	50
050-016	BL-5	30	17	20	15	-	18g	50





PART NUMBER	TYPE & THREAD SIZE	H	D	P	L	STUD /INSERT	UNIT MASS (g)	STD PACK
050-088	SP-5/BK	25	20	9	-	M5	16	50
050-087	SP-5/BL	25	20	9	-	M5	16	50
050-086	SP-5/R	25	20	9	-	M5	16	50
050-031	SP-5/W	25	20	9	-	M5	16	50
050-055	SP-6/BK	40	20	12	-	M6	26	50
050-054	SP-6/BL	40	20	12	-	M6	26	50
050-053	SP-6/R	40	20	12	-	M6	26	50
050-007	SP-6/W	40	20	12	-	M6	26	50
050-061	SP-8/BK	40	30	15	-	M8	40	100
050-060	SP-8/BL	40	30	15	-	M8	40	100
050-059	SP-8/R	40	30	15	-	M8	40	100
050-009	SP-8/W	40	30	15	-	M8	40	100
050-033	SP-10/S1/W	63	40	16	-	M10	155	100
050-347	SP-10/S1/R	63	40	16	-	M10	155	100
050-034	SP-10/S2/W	75	40	16	-	M10	182	100
050-348	SP-10/S2/R	75	40	16	-	M10	182	100
050-228	SP-10/S3/W	40	50	16	-	M10	135	50
050-067	SP-10/BK	40	40	16	-	M10	80	100
050-066	SP-10/BL	40	40	16	-	M10	80	100
050-065	SP-10/R	40	40	16	-	M10	80	100
050-011	SP-10/W	40	40	16	-	M10	80	100
050-073	SP-12/BK	50	50/60	16	-	M12	190	50
050-072	SP-12/BL	50	50/60	16	-	M12	190	50
050-071	SP-12/R	50	50/60	16	-	M12	190	50
050-013	SP-12/W	50	50/60	16	-	M12	190	50

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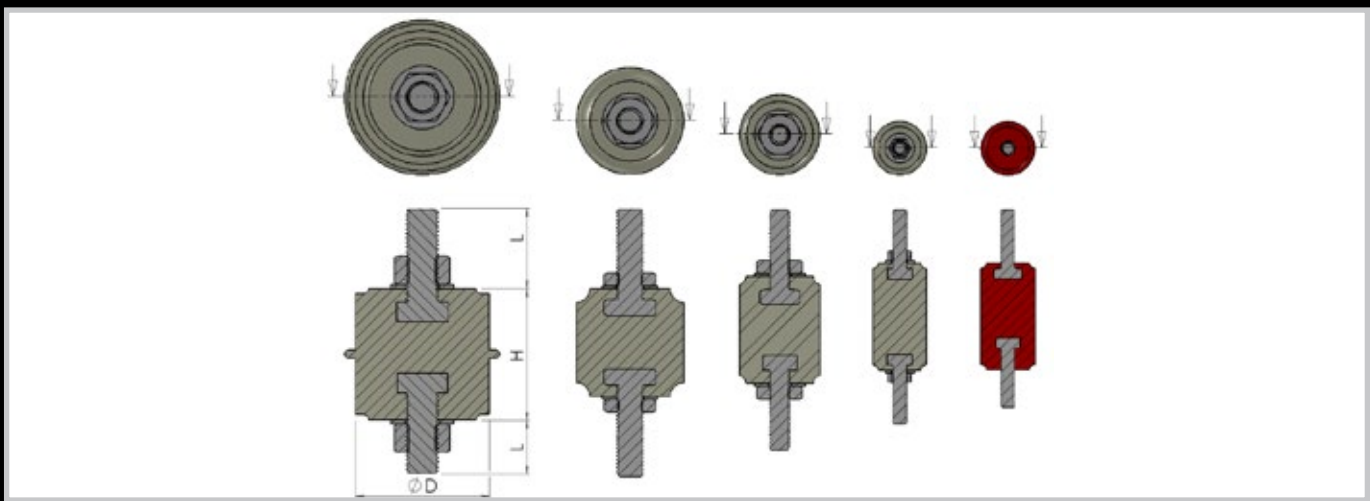
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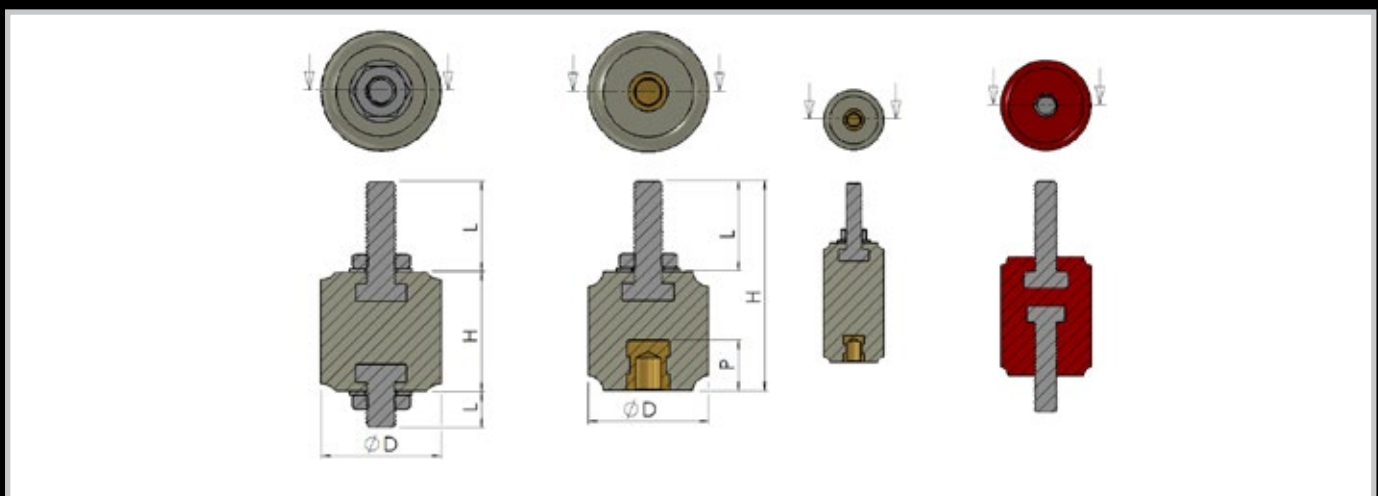
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050-056	SL-6R	40	20	20	M6	26g	50
050-008	SL-6W	40	20	20	M6	26g	50
050-058	SL-6/BK	40	20	20	M6	26g	50
050-057	SL-6/BL	40	20	20	M6	26g	50
050-010	SL-8/W	40	30	25	M8	40g	100
050-064	SL-8/BK	40	30	25	M8	40g	100
050-063	SL-8/BL	40	30	25	M8	40g	100
050-062	SL-8/R	40	30	25	M8	40g	100
050-012	SL-10/W	40	40	30	M10	80g	100
050-070	SL-10/BK	40	40	30	M10	80g	100
050-069	SL-10/BL	40	40	30	M10	80g	100
050-068	SL-10/R	40	40	30	M10	80g	100
050-219	SL-10/S1	40	40	30	M10	80g	100
050-210	SL-12/W	50	50/60	16	M12	190g	50
050-278	SL-12/BK	50	50/60	16	M12	190g	50
050-277	SL-12/BL	50	50/60	16	M12	190g	50
050-276	SL-12/R	50	50/60	16	M12	190g	50



PART NUMBER	TYPE & THREAD SIZE	H	D	P	L	STUD /INSERT	UNIT MASS	STD PACK
050-315	SPL-6/BK	40	20	12	20	M6	26g	50
050-314	SPL-6/BL	40	20	12	20	M6	26g	50
050-313	SPL-6/R	40	20	12	20	M6	26g	50
050-198	SPL-6/W	40	20	12	20	M6	26g	50
050-318	SPL-8BK	40	30	15	25	M8	40g	100
050-317	SPL-8/BL	40	30	15	25	M8	40g	100
050-316	SPL-8/R	40	30	15	25	M8	40g	100
050-199	SPL-8/W	40	30	15	25	M8	40g	100
050-343	SPL-8 S/STEEL WHITE	40	30	15	25	M8	40g	100
050-344	SPL-8 S/STEEL RED	40	30	15	25	M8	40g	100
050-345	SPL-8S/STEEL BLUE	40	30	15	25	M8	40g	100
050-346	SPL-8 S/STEEL BLACK	40	30	15	25	M8	40g	100
050-321	SPL-10/BK	40	30	17	30	M10	80g	100
050-320	SPL-10/BL	40	40	17	30	M10	80g	100
050-319	SPL-10/R	40	40	17	30	M10	80g	100
050-200	SPL-10/W	40	40	17	30	M10	80g	100
050-295	SPL-10S/STEEL RED	40	40	17	30	M10	80g	100
050-296	SPL-10S/STEEL BLUE	40	40	17	30	M10	80g	100
050-297	SPL-10S/STEEL WHITE	40	40	17	30	M10	80g	100
050-304	SPL-10S/STEEL BK	40	40	17	30	M10	80g	100
050-324	SPL-12/BK	50	50/60	16	20/30	M12	190g	50
050-323	SPL-12/BL	50	50/60	16	20/30	M12	190g	50
050-322	SPL-12/R	50	50/60	16	20/30	M12	190g	50
050-201	SPL-12/W	50	50/60	16	20/30	M12	190g	50

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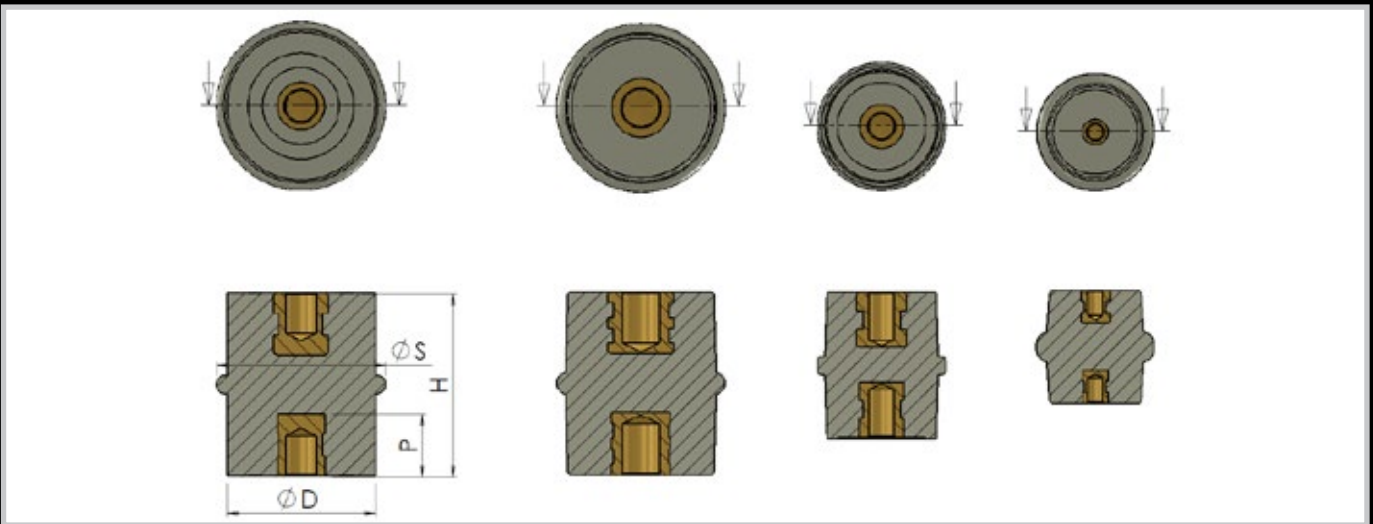
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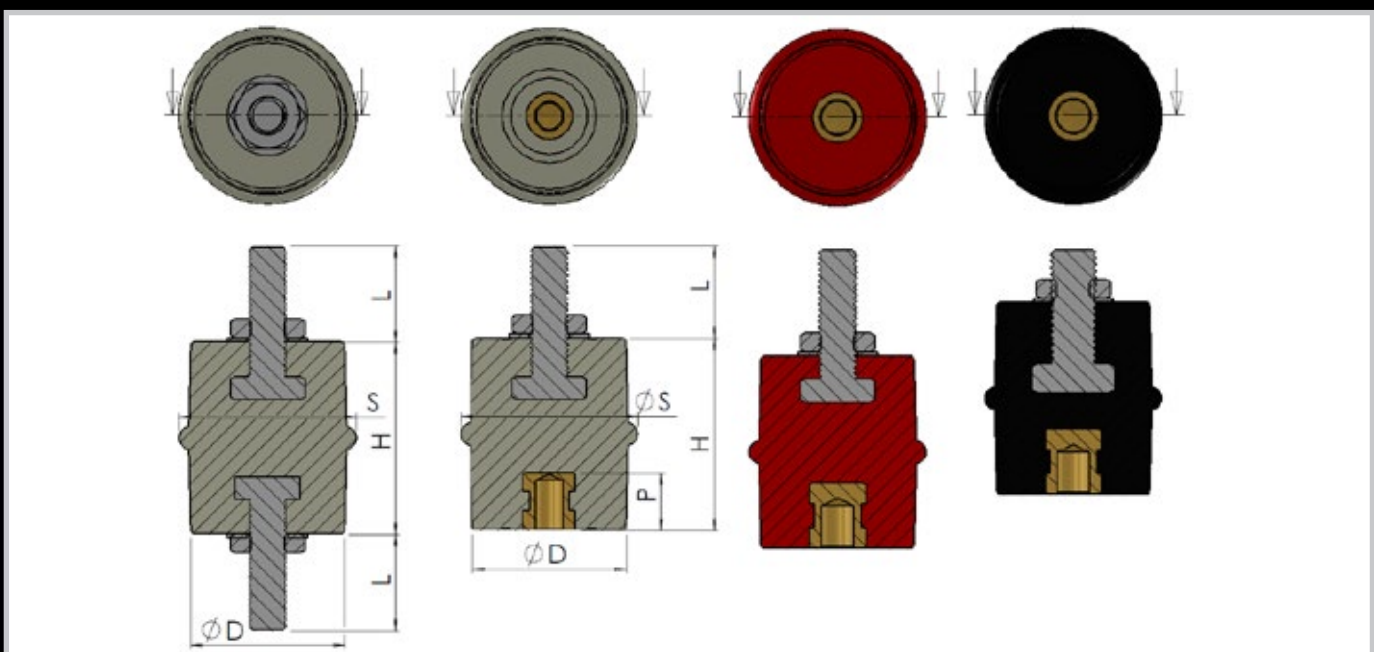
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050-099	CP-6/W	31	25	30	-	11	34g	100
050-099/BL	CP-6/BL	31	25	30	-	11	34g	100
050-099/R	CP-6/R	31	25	30	-	11	34g	100
050-333	CP-6/BK	31	25	30	-	11	34g	100
050-190	CP-8	41	30	35	-	13	68g	100
050-191	CP-10/W	50	40	45	-	12	138g	50
050-305	CP-10/R	50	40	45	-	12	138g	50
050-325	CP-10/BK	50	40	45	-	12	138g	50
050-326	CP-10/BL	50	40	45	-	12	138g	50
050-194	CP-10/12	50	45	45	-	16	236g	50
050-192	CP-12	60	45	60	-	16	236g	50
050-195	CP-12/10	60	45	60	-	15	235g	40
050-213	CP-12/16	60	45	60	-	20	250g	40
050-193	CP-16/W	60	45	60	-	20	250g	40
050-193/BK	CP-16/BK	60	45	60	-	20	250g	40



PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	SHED DIAMETER	STUD LENGTH L	INSERT DEPTH P	UNIT MASS
050-217	CL-6	31	25	30	M6	11	34g
050-196	CL-10	50	40	45	30	-	138g
050-197	CPL-10/W	50	40	45	25	15	138g
050-254	CPL-10 S/S BK	50	40	45	30	14	138g
050-252	CPL-10 S/S BL	50	40	45	30	14	138g
050-253	CPL-10 S/S R	50	40	45	30	12	138g
050-251	CPL-10 S/S W	50	40	45	30	12	138g

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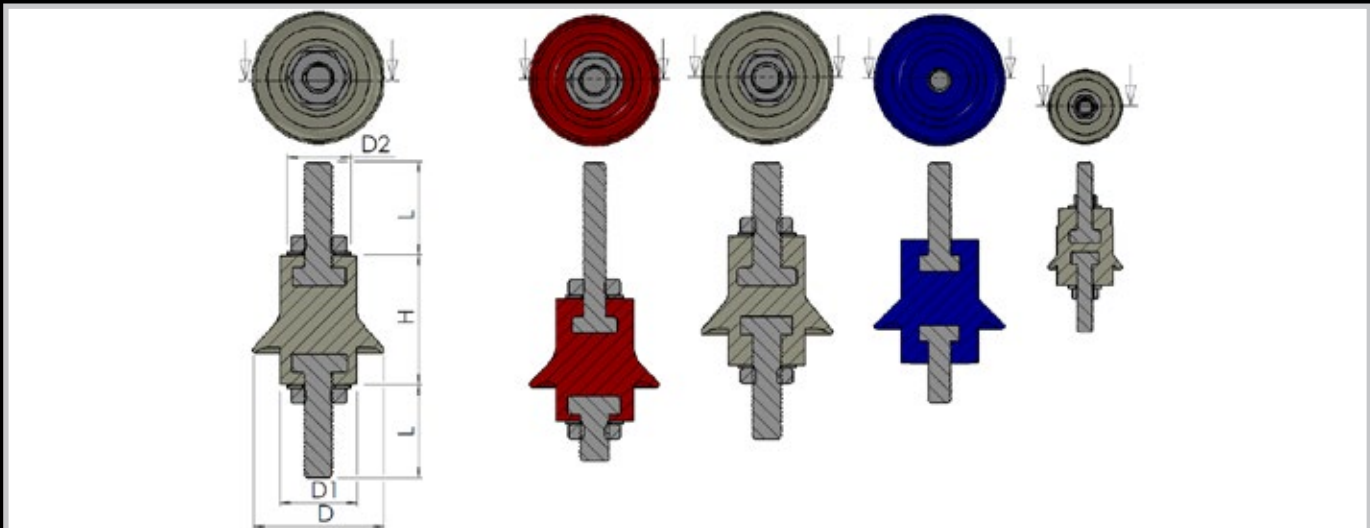
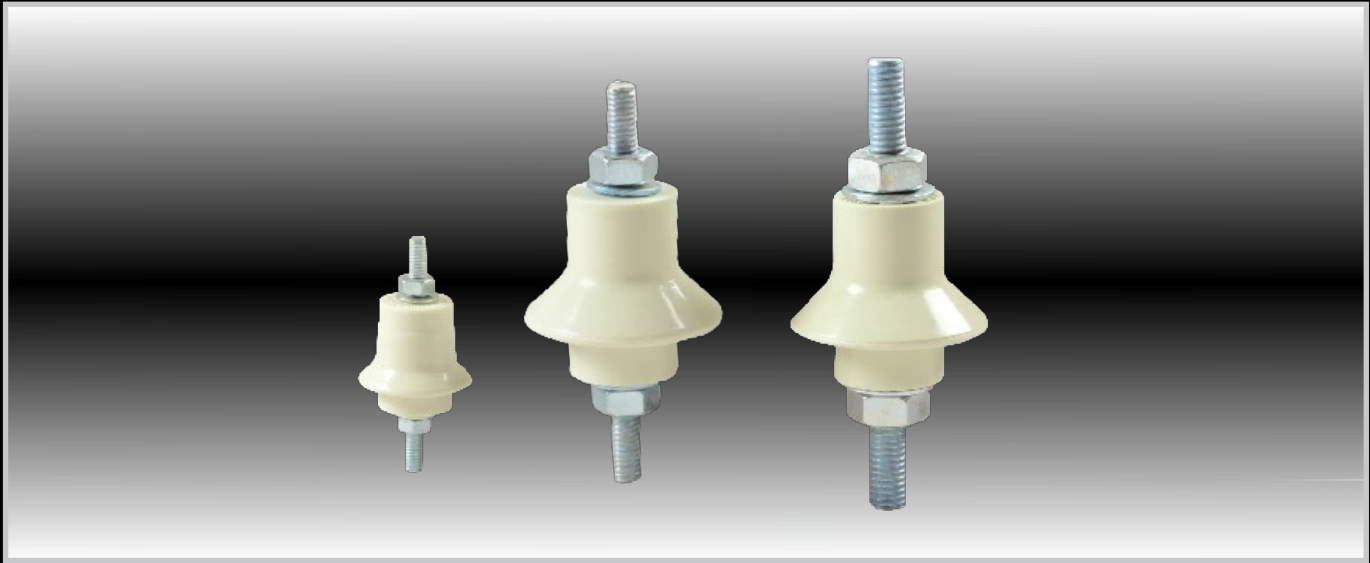
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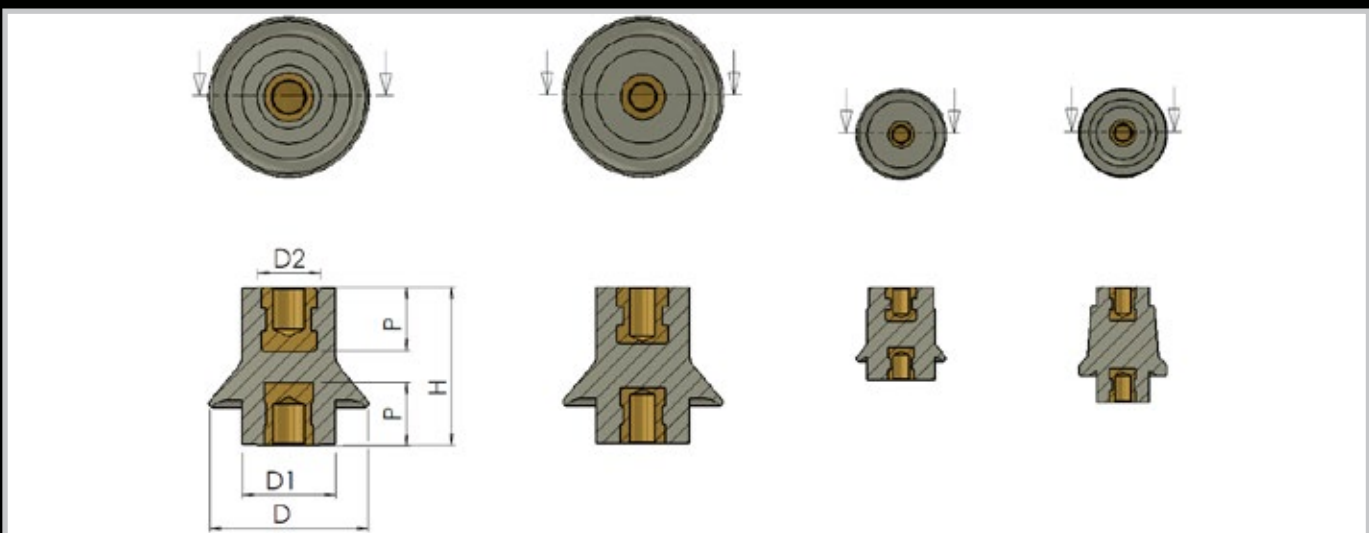
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PART NUMBER	TYPE & THREAD SIZE	H	D	P	L	D1	D2	UNIT MASS	STD PACK
050-040	GL-5/BK	25	26	-	15	17	15	22g	100
050-039	GL-5/BL	25	26	-	15	17	15	22g	100
050-038	GL-5/R	25	26	-	15	17	15	22g	100
050-002	GL-5/W	25	26	-	15	17	15	22g	100
050-046	GL-8/BK	42	45	-	25	25	15	90g	100
050-045	GL-8/BL	42	45	-	25	25	15	90g	100
050-044	GL-8/R	42	45	-	25	25	15	90g	100
050-004	GL-8/W	42	45	-	25	25	15	90g	100
050-052	GL-10/BK	42	45	-	30	25	15	114g	100
050-051	GL-10/BL	42	45	-	30	25	15	114g	100
050-050	GL-10/R	42	45	-	30	25	15	114g	100
050-006	GL-10/W	42	45	-	30	25	15	114g	100





PART NUMBER	TYPE & THREAD SIZE	H	D	P	L	D1	D2	UNIT MASS	STD PACK
050-037	GP-5/BK	25	26	8	-	17	15	16g	100
050-036	GP-5/BL	25	26	8	-	17	15	16g	100
050-035	GP-5/R	25	26	8	-	17	15	16g	100
050-001	GP-5/W	25	26	8	-	17	15	16g	100
050-270	GP-5/RAISED BL	31	17	8	-	14	9	17g	100
050-271	GP-5/RAISED BK	31	17	8	-	14	9	17g	100
050-272	GP-5/RAISED R	31	17	8	-	14	9	17g	100
050-043	GP-8/BK	42	45	15	-	25	15	68g	100
050-042	GP-8/BL	42	45	15	-	25	15	68g	100
050-041	GP-8/R	42	45	15	-	25	15	68g	100
050-003	GP-8/W	42	45	15	-	25	15	68g	100
050-049	GP-10/BK	42	45	17	-	25	15	78g	100
050-048	GP-10/BL	42	45	17	-	25	15	78g	100
050-047	GP-10/R	42	45	17	-	25	15	78g	100
050-005	GP-10/W	42	45	17	-	25	15	78g	100

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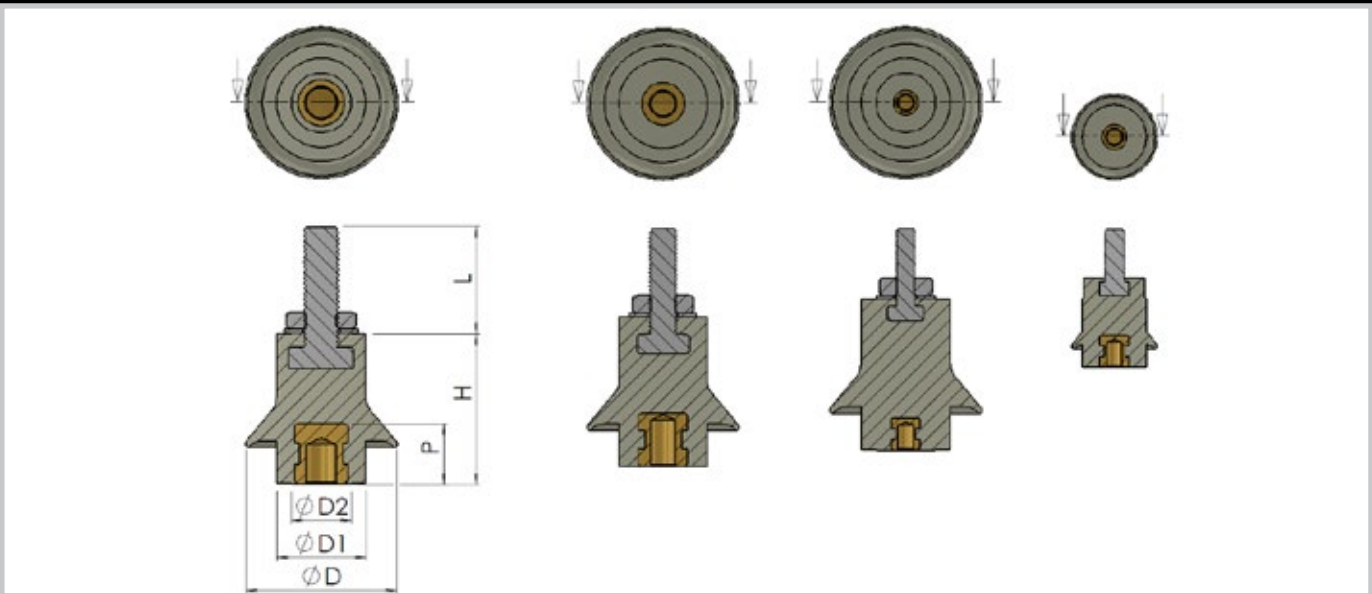
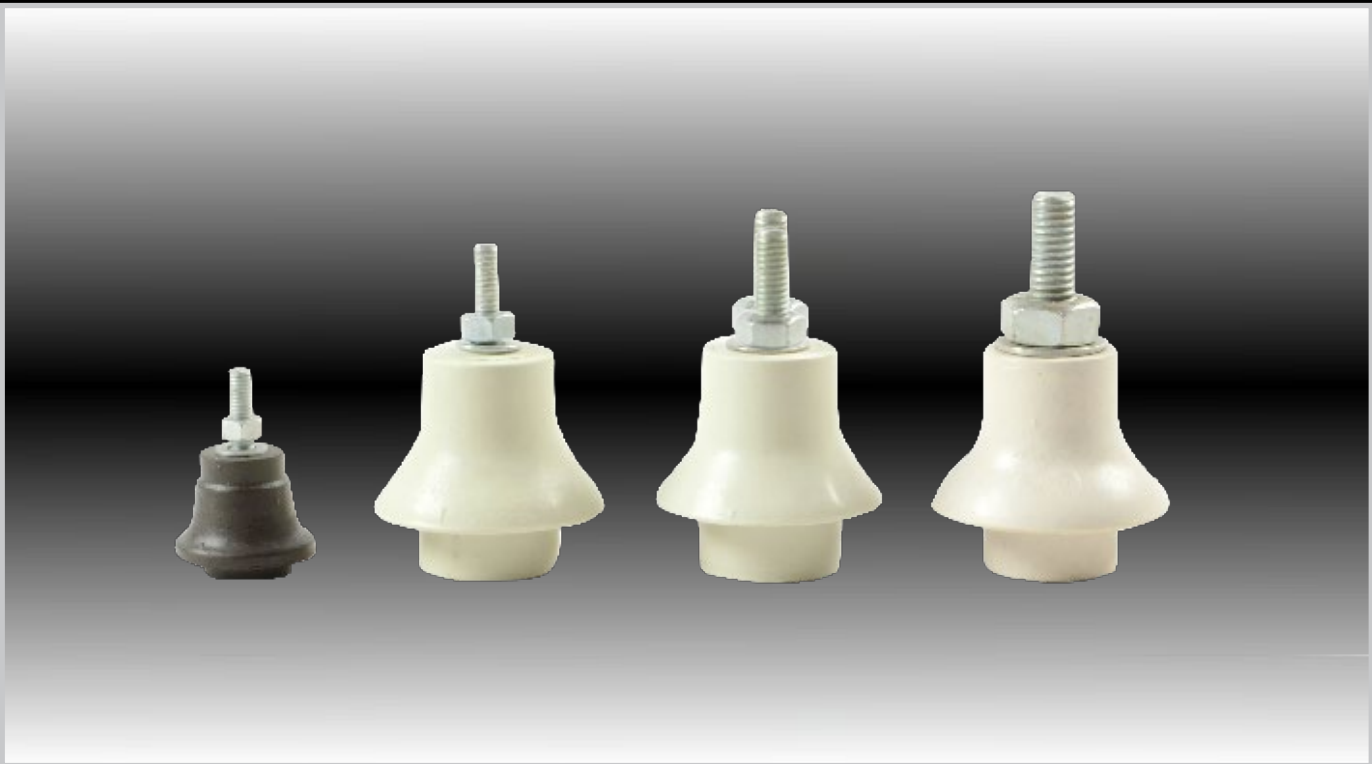
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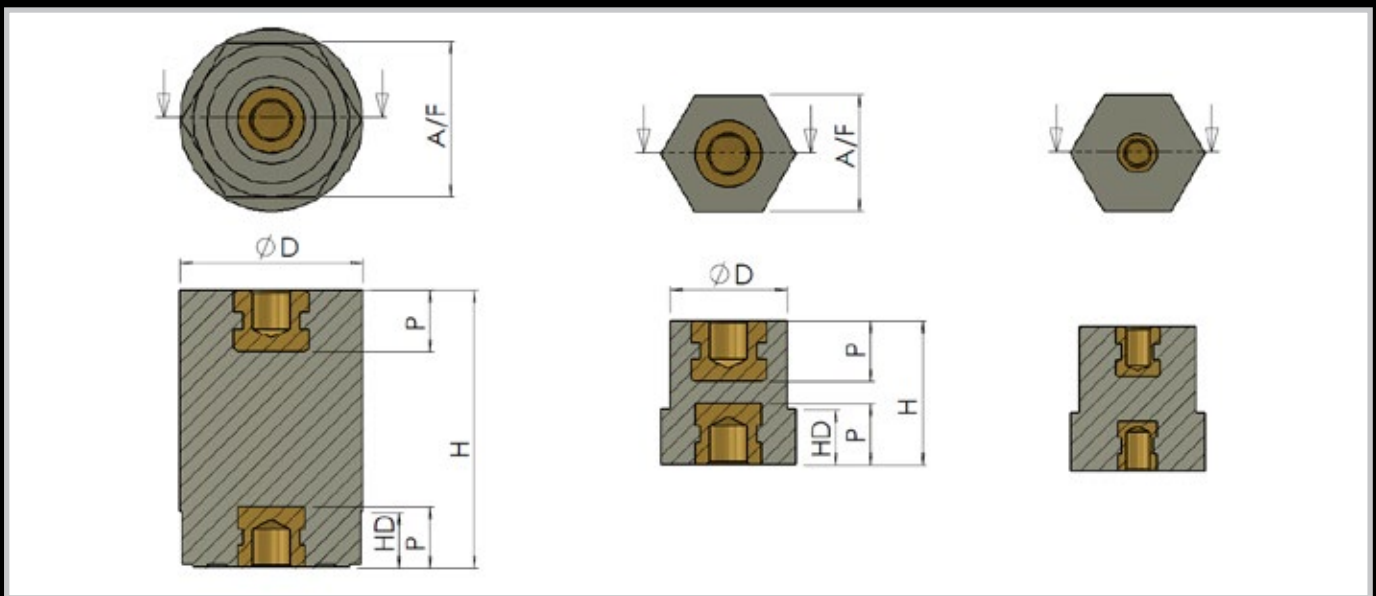
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PART NUMBER	TYPE & THREAD SIZE	H	D	P	L	D1	D2	UNIT MASS	STD PACK
070-185	GPL-5W	25	26	8	16	17	15	19g	100
050-300	GPL-6W	25	45	8	16	25	15	64g	100
050-298	GPL-6R	25	45	8	16	25	15	64g	100
050-299	GPL-6BL	25	45	8	16	25	15	64g	100
050-327	GPL-6BK	25	45	8	16	25	15	64g	100
050-216	GPL-8W	25	45	8	16	25	15	76g	100
050-214	GPL-10W	25	45	8	16	25	15	100g	100



PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	HEX DEPTH HD	STUD LENGTH L	INSERT DEPTH P	ACROSS FLATS
050-030	HP-8/W	50	33	10	-	9	28
050-083	HP-8/R	50	33	10	-	9	28
050-083/10R	HP-8/10R	50	33	10	-	10	28
050-084	HP-8/BL	50	33	10	-	9	28
050-085	HP-8/BK	50	33	10	-	9	28
050-310	HP-6/8	25	33	10	-	9	28
050-093	HP-6	26	20	10	-	9	21
050-273	HP-6 R	26	20	10	-	9	21
050-274	HP-6 BL	26	20	10	-	9	21
050-275	HP-6 BK	26	20	10	-	9	21

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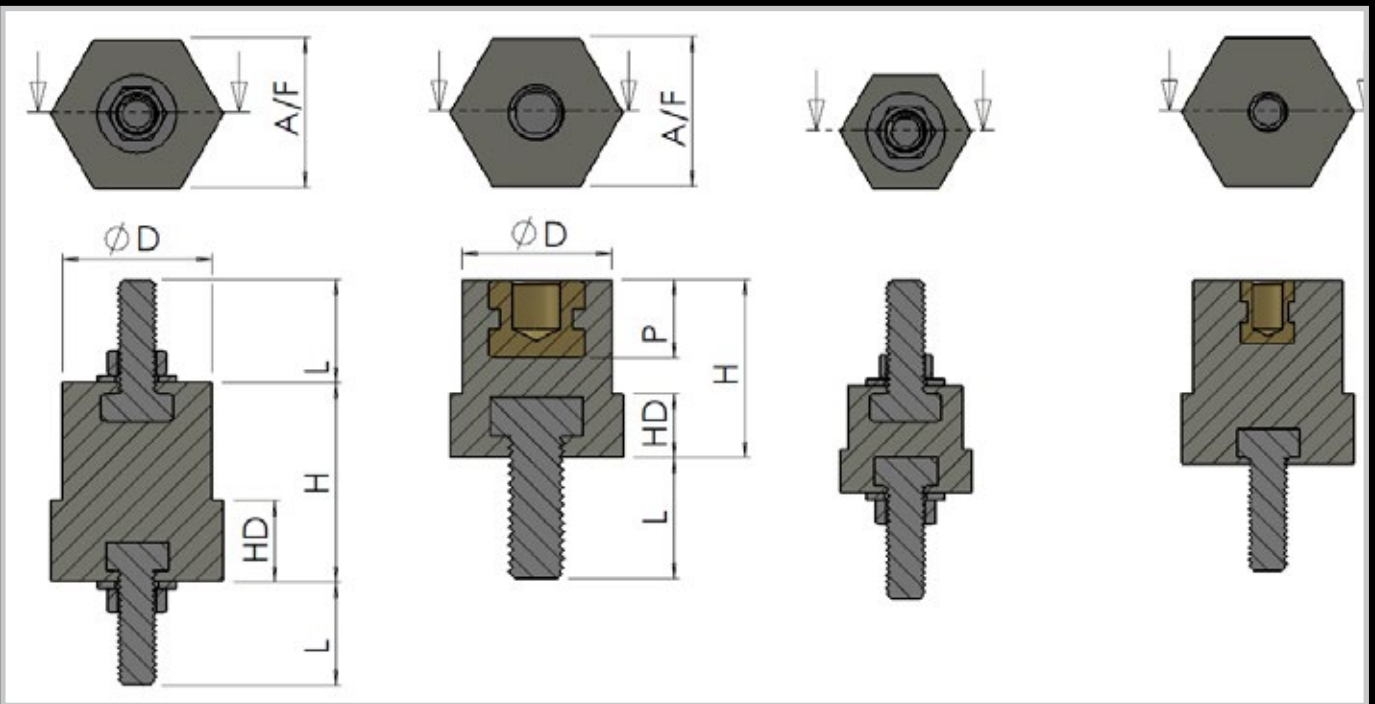
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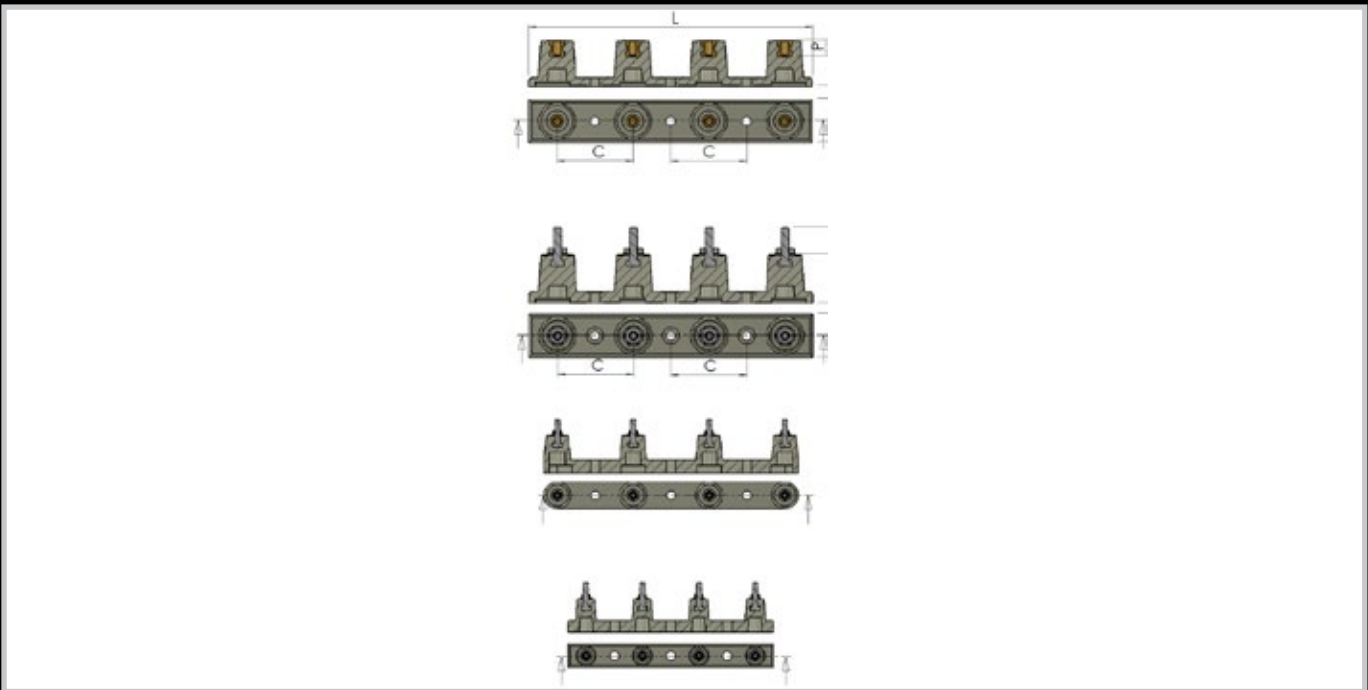
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PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	HEX DEPTH HD	STUD LENGTH L	INSERT DEPTH P	ACROSS FLATS
050-095	HPL-6	20	20	10	15	10	21
050-098	HPL-6/8	25	20	10	17	11	21
050-092	HL-5	15	15	6	15	-	16
050-094	HL-6W	28	20	6	15	-	21



PART NUMBER	TYPE & THREAD SIZE	L	C	W	H	STUD LENGTH	UNIT MASS	INSERT DEPTH P	STD PACK
050-020	IL-6/2	235	70	25	34	16	182g	-	25
050-021	IL-8	262	70	40	40	25	354g	-	10
050-019	IL-6	190	52	22	30	15	120g	-	50
050-309	IP-8	262	70	40	40	-	349g	15	10
050-307	IP-6	190	52	22	30	-	105g	11	50

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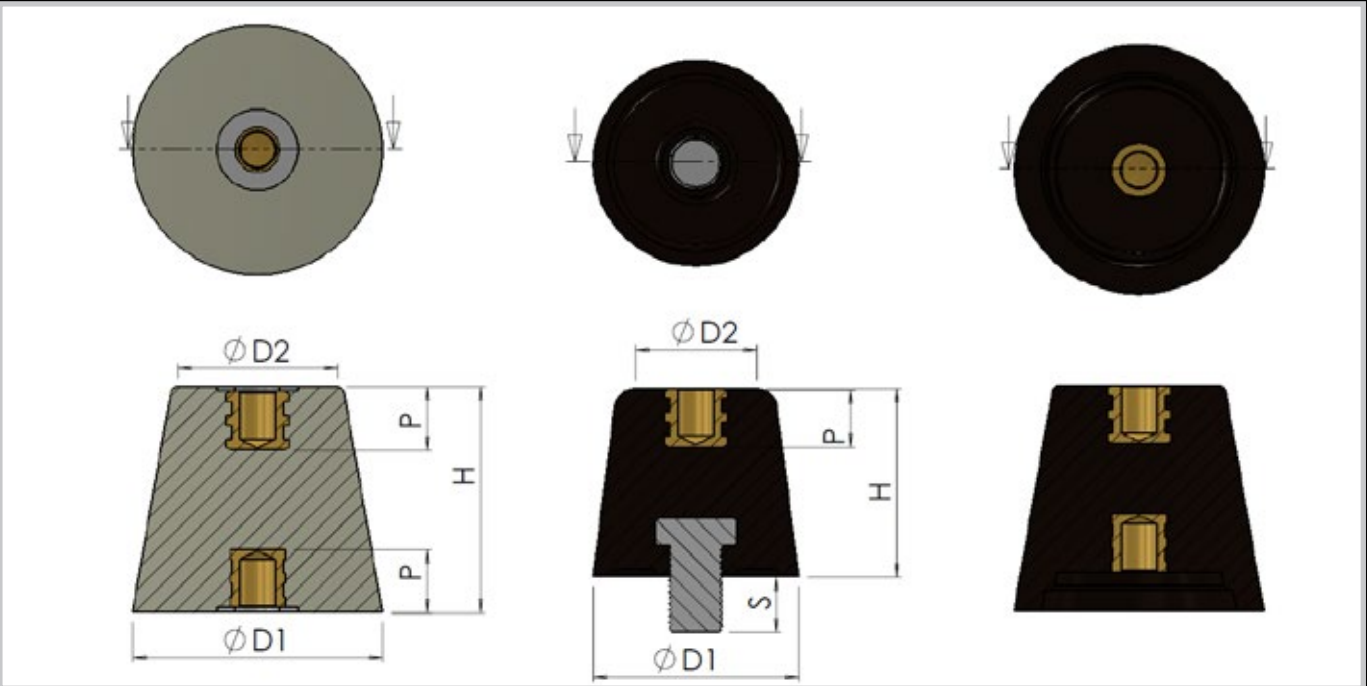
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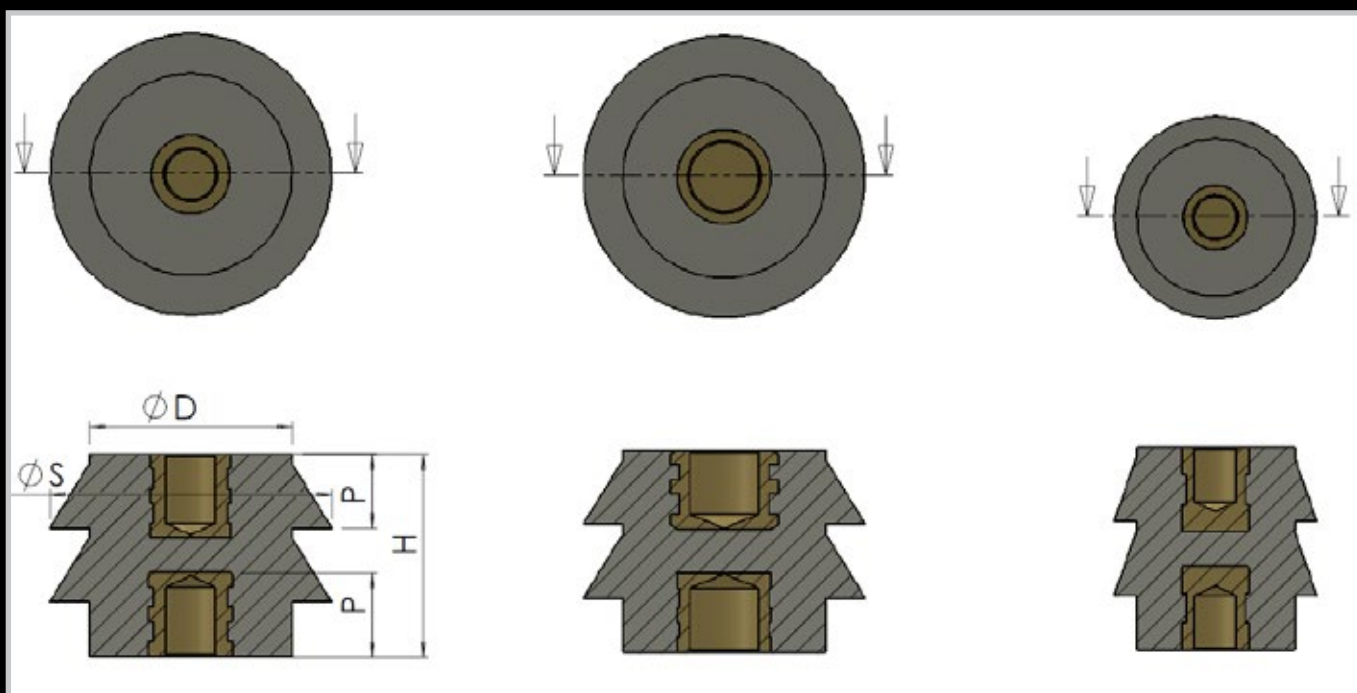
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PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D1	DIAMETER D2	STUD LENGTH L	INSERT DEPTH P	UNIT MASS	STD PACK
050-022	SM-1000	55	60	42	12	12	260g	50
050-023	SM-2000	60	72	50	-	12	390	50
050-024	SM-2000 M12	60	72	50	-	16	390	50





PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	SHED DIAMETER S	STUD LENGTH L	INSERT DEPTH P	UNIT MASS	STD PACK
050-202	WP-10	41	32	41	-	12	88g	50
050-203	WP-12/10	41	41	57	-	16/12	152g	20
050-204	WP-12/16	41	41	57	-	16/16	160g	50

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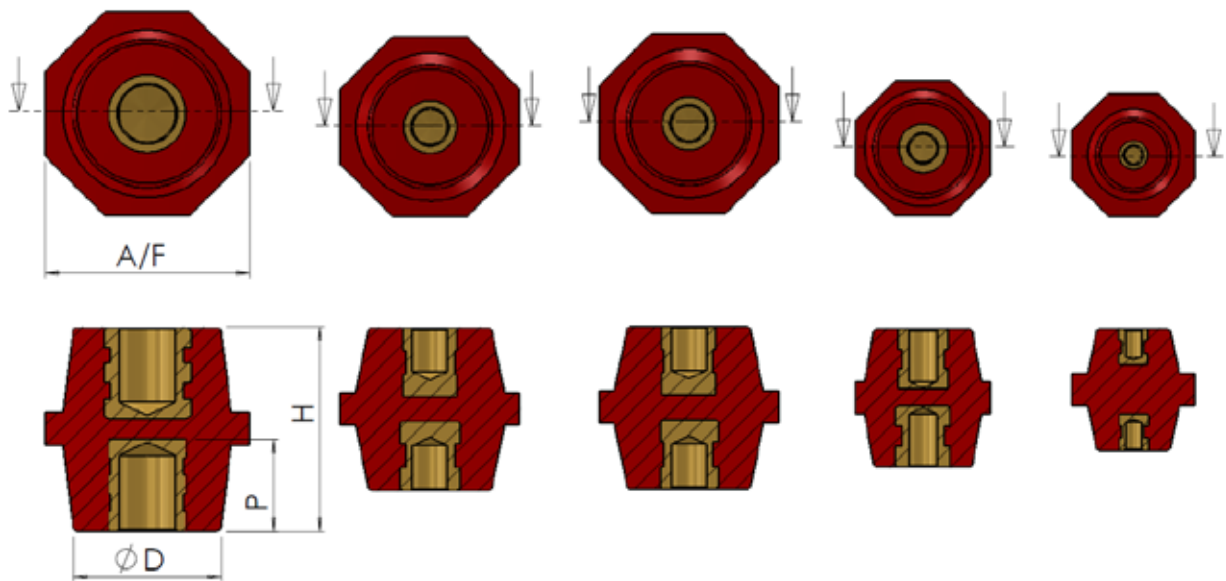
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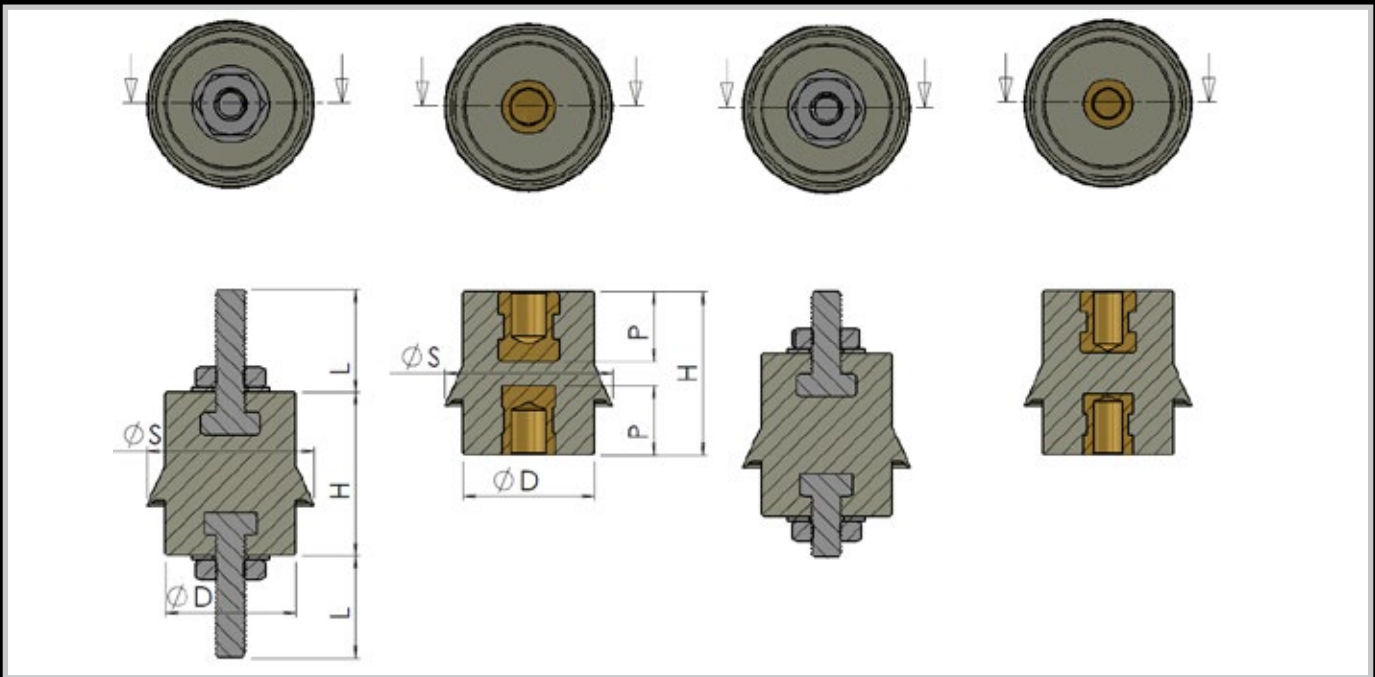
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PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	ACROSS FLATS	INSERT DEPTH P	UNIT MASS	STD PACK
050-337	OP-6	30	20	30	9	30g	200
050-338	OP-8	35	25	32	11	52g	100
050-370	OP-8/10	35	25	32	15	52g	100
050-359	OP-8/40	40	26	30	10	61.2g	100
050-240	OP-8/50H/35AF	50	35	32	15	52g	100
050-339	OP-10	40	30	44	12	92g	50/100
050-341	OP-12	52	35	50	16	140g	50
050-349	OP-12/8	50	35	50	15	128g	50
050-340	OP-12/10	50	35	50	12	133g	50
050-360	OP-13/8	51	29	36	9.5	86g	50
050-361	OP-13/10	51	28/29	36	11	88g	50
050-362	OP-14/8	76	35	50	9.5	224g	50
050-363	OP-14/10	76	35	50	11	226g	50



PART NUMBER	TYPE & THREAD SIZE	HEIGHT H	DIAMETER D	SHED DIAMETER	STUD LENGTH L	INSERT DEPTH P	UNIT MASS	STD PACK
050-028	VP-8/W	40	30	41	-	11	78g	100
050-077	VP-8/R	40	30	41	-	11	78g	100
050-078	VP-8/BL	40	30	41	-	11	78g	100
050-079	VP-8/BK	40	30	41	-	11	78g	100
050-029	VL-8/W	40	30	41	25	-	102g	100
050-080	VL-8/R	40	30	41	25	-	102g	100
050-081	VL-8/BL	40	30	41	25	-	102g	100
050-082	VL-8/BK	40	30	41	25	-	102g	100
050-224	VP-10	40	30	41	-	16	80g	100

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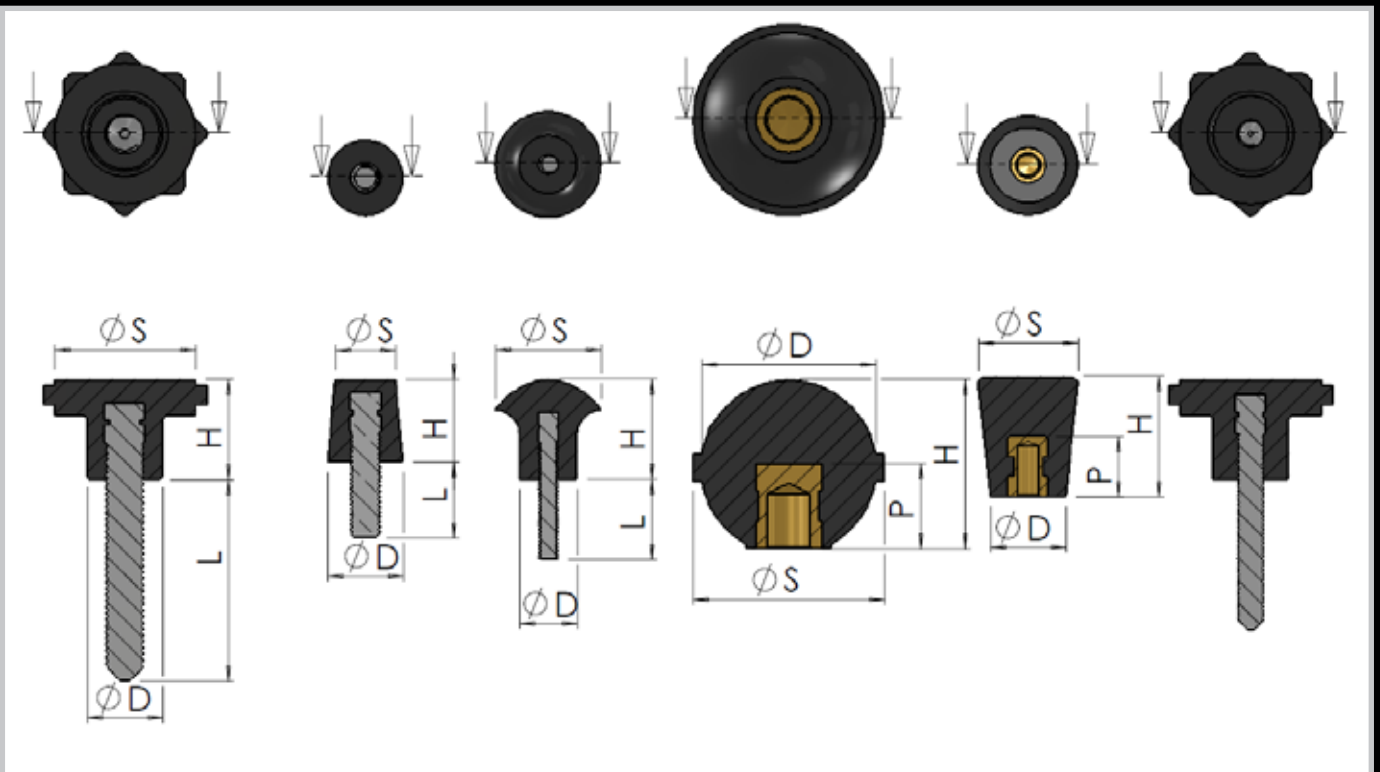
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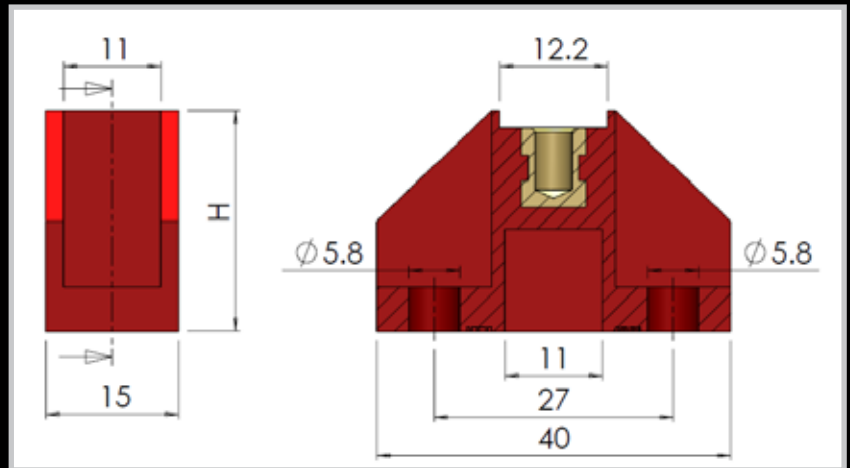
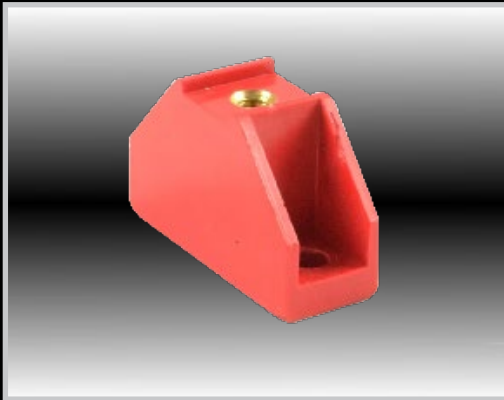
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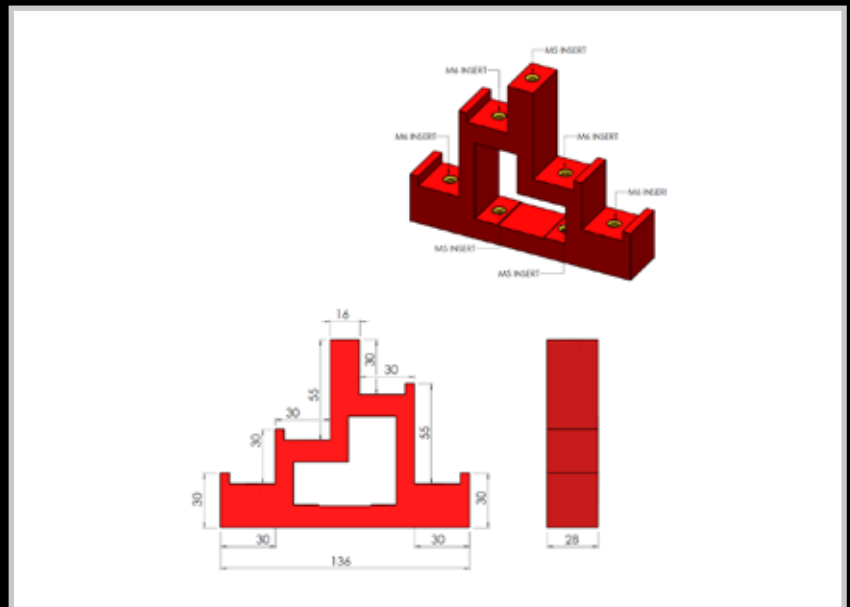
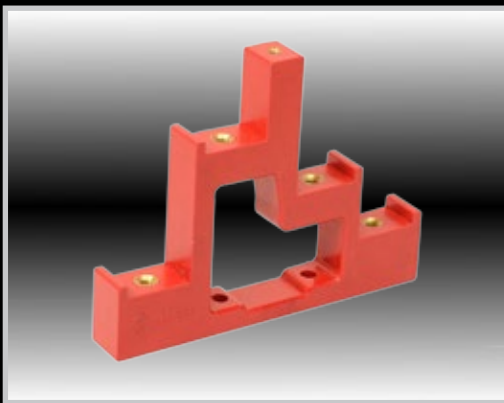
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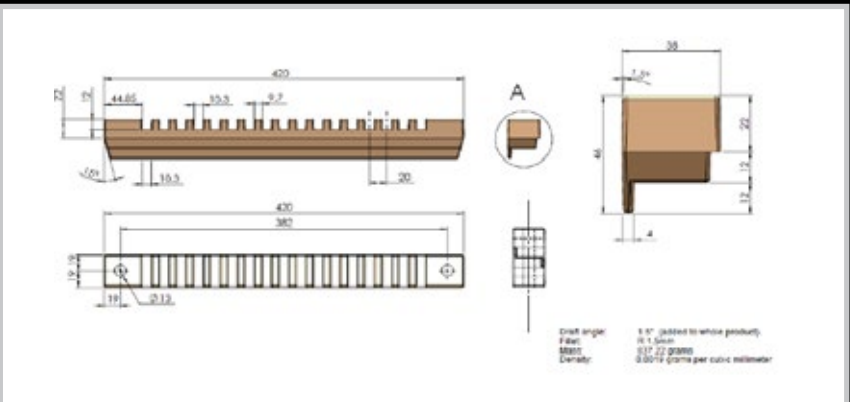
PART NUMBER	TYPE & THREAD SIZE	STUD SIZE	HEIGHT H (mm)	DIAMETER D (mm)	SHED DIAMETER S (mm)	STUD LENGTH L (mm)	INSERT DEPTH P (mm)	UNIT MASS
020-329	K4	M4	18	12/20	22	15	10	22g
050-239	K6 x 30	M6	20	15	28	30	-	20g
050-232	K8 x 40	M8	20	15	28	40	-	32g
050-301	K8 x 50	M8	20	15	28	50	-	32g
050-311	K6	M6	24	15	20	-	12	22g
050-249	K10	M10	34	34	38	-	17	35g
070-141	HAND WHEEL	M10	55	23	100	-	17	130g



Part Number	Description
050-354	Red Stepped Insulator



Part Number	Description
050-172	Red stepped Insulator



Part Number	Description
070-309	UBS 10

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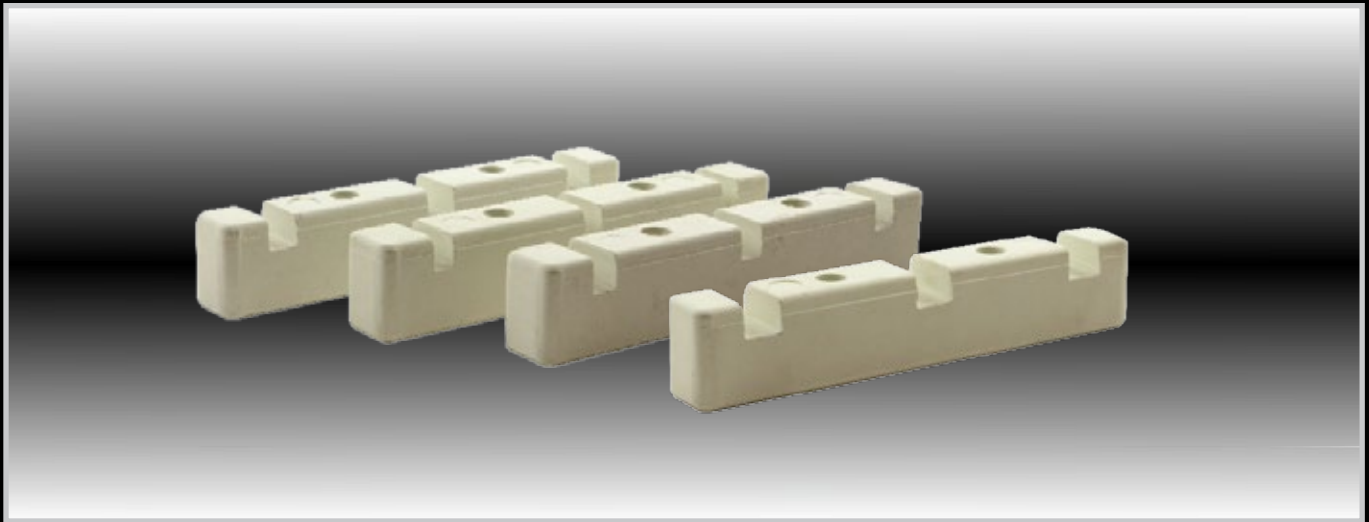
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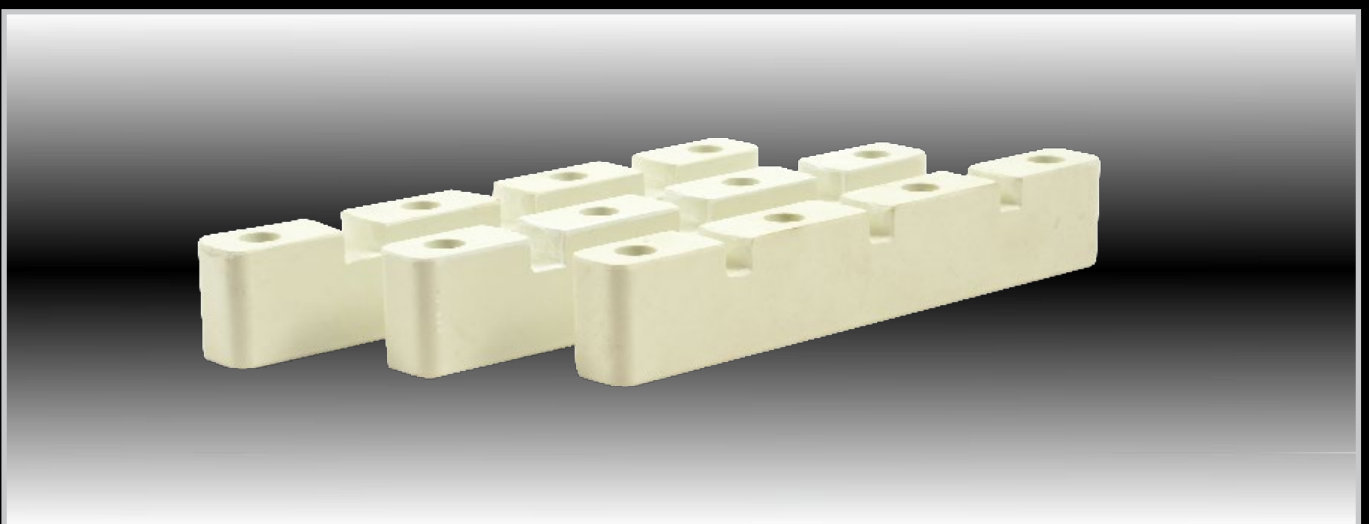
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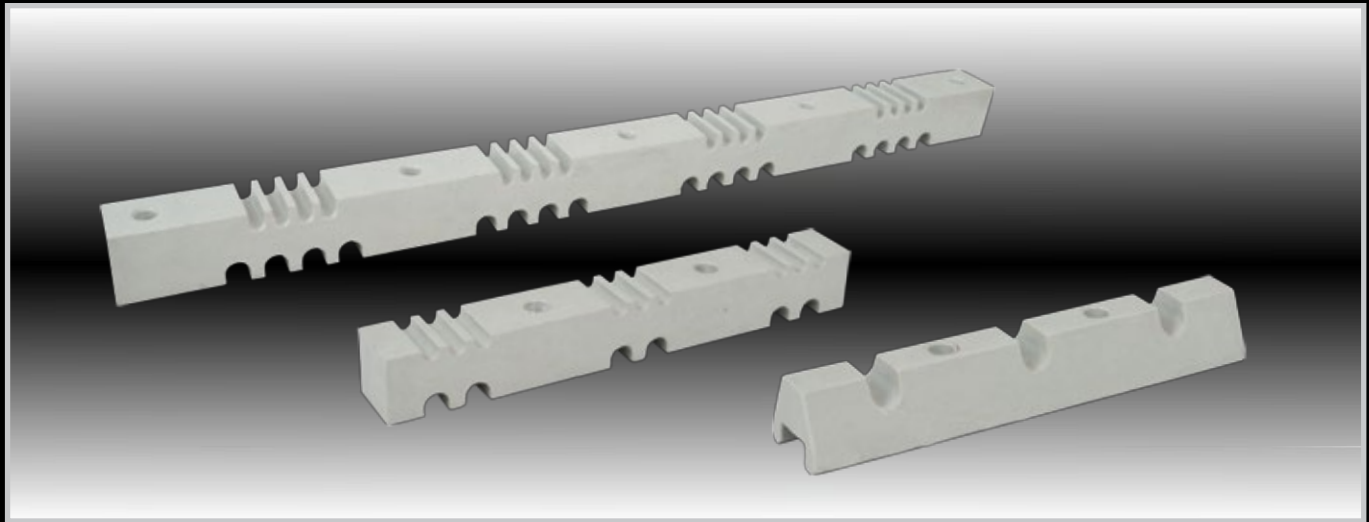


PART NUMBER	DESCRIPTION	NO.OF SLOTS / PHASE	SIZE OF SLOTS (mm)	CLAMP HOLES	UNIT MASS (g)
050-026	3 CEN 7	1	7	2	0.25
050-233	3 CEN RAISED 7	1	7	2	0.35
050-229	3 CEN 10	1	10	2	0.25
050-234	3 CEN RAISED 10	1	10	2	0.35
050-230	3 CEN 12	1	12	2	0.25
050-235	3 CEN RAISED 12	1	12	2	0.35
050-231	3 CEN 14	1	14	2	0.25
050-236	3 CEN RAISED 14	1	14	2	0.35



PART NUMBER	DESCRIPTION	NO.OF SLOTS / PHASE	SIZE OF SLOTS (mm)	CLAMP HOLES	UNIT MASS (g)
070-049	B/B Supp DRG 441303 A	1	9	2	0.73
070-053	B/B Supp DRG 41302 A	1	7	2	0.73
070-054	B/B Supp DRG A 441304 REV 2	3	9	4	0.30
070-055	B/B Supp DRG A 441305 REV 2	3	11	4	0.30





PART NUMBER	DESCRIPTION	NO.OF SLOTS / PHASE	SIZE OF SLOTS (mm)	CLAMP HOLES	UNIT MASS
050-367	AL180/7mm	3	7	2	160g
050-364	AL180/11mm	3	11	2	160g
050-365	AL270	6 and 9	12.6 and 8	2	486g
050-366	AL600	16 and 16	12.5 and 8	5	1.194kg

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PART NUMBER	DESCRIPTION	AMPS	VOLTS
FH32	Din Fuse Holder 10 x 38 - 1 Pole RT18-32 with Lamp	32 A	690 V
FH63	Din Fuse Holder 14 x 51- 1 Pole RT18-63 with Lamp	63 A	690 V
F2A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	2 A	-
F4A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	4 A	-
F6A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	6 A	-
F10A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	10 A	-
F16A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	16 A	-
F20A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	20 A	-
F32A	Ceramic Fuse to Suit RT18 Circuit Breaker Fuse Holder	32 A	-
F63A	Ceramic Fuse to Suit RT18 - 63 14 x 51 Circuit Breaker Fuse Holder	63 A	-

**Remarks:**

3 Pole Fuse Holder Kits available on request.

Part Number: 3POLE/KIT-32A

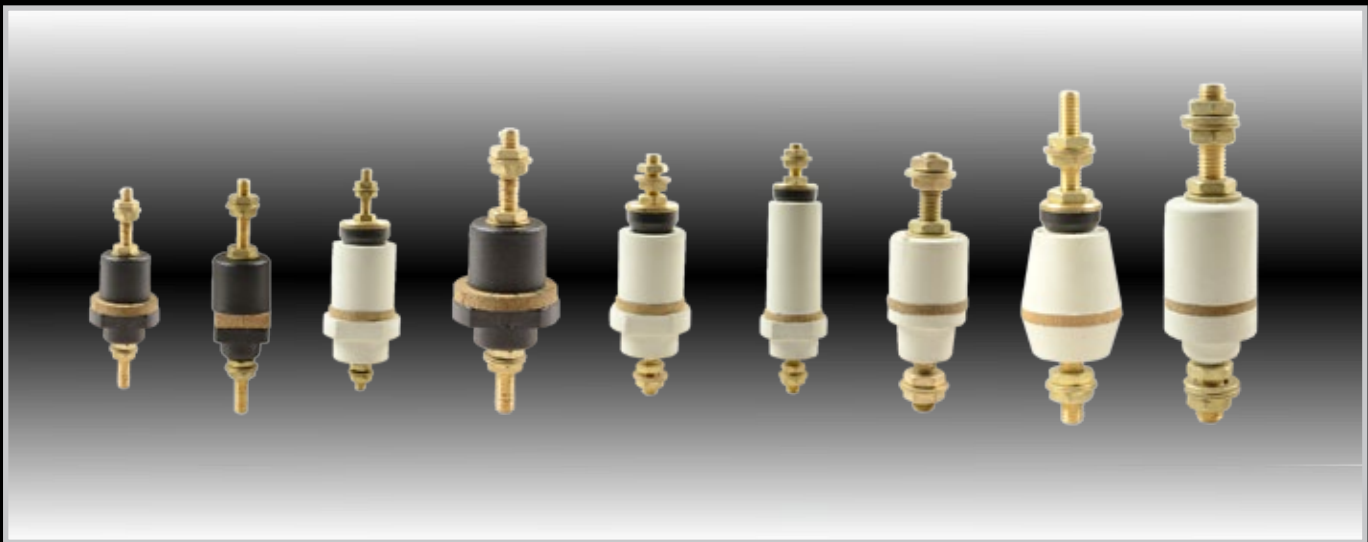
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## Transformer Equipment

 600V Pg.207	 1.1Kv Pg.208	 1.1Kv Pg.208	 3.6Kv Pg.209	 12Kv Pg.209	 24Kv Pg.210
 36Kv Pg.210	 Air-to-air Pg.211	 Cable box Pg.211	 DIN Pg.212	 EN Pg.213	 AU Pg.214 - 215
 Offset Bushings Pg.216	 Wildlife Guards Pg.216	 Rotary Tap Switches Pg.217	 Rotary Tap Switches Pg.218	 Rotary Tap Switches Pg.219	 Rotary Tap Switches Pg.220
 Rotary Tap Switches Pg.221	 Linear Tap Switches Pg.221	 Rotary Tap Switches Pg.222	 Oil Gauges Pg.223	 Ball Valve Pg.223	 Ball Valve Pg.224
 Brass Plug Pg.224	 Radiator Valve Pg.224	 Weld On Boss Pg.224	 Breathers Pg.225	 Thermometers BM80 Pg.227	 Thermometers with Contacts Pg.227
 Thermometer F036 Pg.228	 Pocket Housing and Boss Assembly Pg.228	 Buchholz Relays Pg.229	 Pressure Relief Valve Pg.235	 Magnetic Oil Gauges Pg.238	

## 600V Terminal Immersed Bushings



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	MATERIAL	TANK HOLE SIZE
040-006	B6	0.6	45	PA6 Black Nylon	15
040-035	BS6	0.6	45	PA6 Black Nylon	12
040-007	B8	0.6	60	PA6 Black Nylon	21
040-008	B10	0.6	80	DMC	22
040-009	B12	0.6	120	DMC	25
040-025	NB6	0.6	45	DMC	19
040-026	NB8	0.6	60	DMC	19
040-034	NB8 - 3.3	3.3	60	DMC	19
040-027	NB10	0.6	80	DMC	22

\* Note: Detailed drawings available on request

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## 1.1Kv Outdoor Immersed Bushings



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE
040-322	SAD120	1.1	120	31
040-312	SX160	1.1	160	31
040-323	SAD250	1.1	250	31
040-324	SAD330	1.1	330	31
040-315	SB500	1.1	500	45
040-316	SB630	1.1	630	45
040-326	SBD630	1.1	630	40
040-317	SC850 + Brass Flag	1.1	850	50
040-318	SC1250 + Brass Flag	1.1	1250	50
040-361	SD1600 + Brass Flag	1.1	1600	70
040-320	SD2500 + Brass Flag	1.1	2500	70
040-319	SD2900 + Brass Flag	1.1	2900	70
040-356/A	SD3500 + Brass Flag	1.1	3500	70

\* Note: Detailed drawings available on request



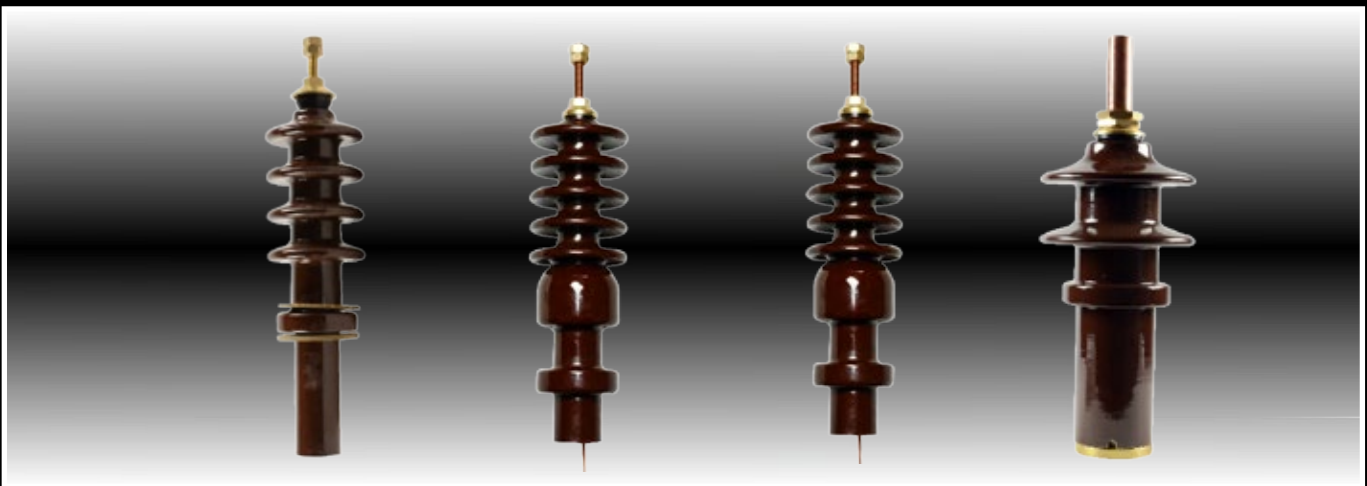
## 3.6Kv Outdoor Immersed Bushings



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE
040-207	SE250	3.6	250	40
040-348	SE330	3.6	330	40
040-351	LE630	3.6	630	41
040-366	SE1250	3.6	1250	70
040-231	SE2500	3.6	2500	70
040-365	SE2900	3.6	2900	70

## 12Kv Outdoor Immersed Bushings

**DL = Draw Lead**  
**DL+T = Draw Lead + Tail**



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	CREEPAGE PER Kv (mm)
040-337	LF120	12	120	50	-
040-359	SFL250	12	250	55	31
040-352/R	SFLF250 DL	12	30	50	31
040-352/E	SFLF250 DL + T	12	30	50	31
040-354	SFLF250 Solid	12	250	50	31
040-358	LF630	12	630	60	25
040-357	LF1250	12	1250	75	25
040-232	LF2500 Long	12	2500	117	31
040-458	LF2900 Long	12	2900	117	31

\* Note: Detailed drawings available on request

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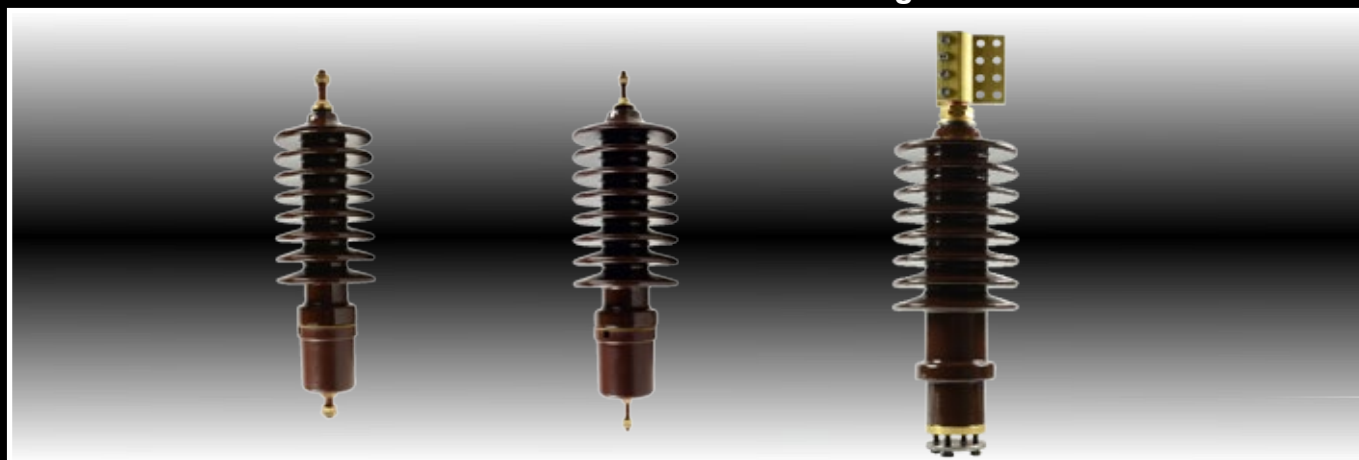
## 24Kv Outdoor Immersed Bushings

**DL = Draw Lead**  
**DL+T = Draw Lead + Tail**



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	CREEPAGE PER Kv (mm)
040-331	SG250	24	250	90	31
040-353	SGF250 DL	24	30	80	31
040-353/R	SGF250 DL + T	24	30	80	31
040-355	SGF250 Solid	24	250	80	31

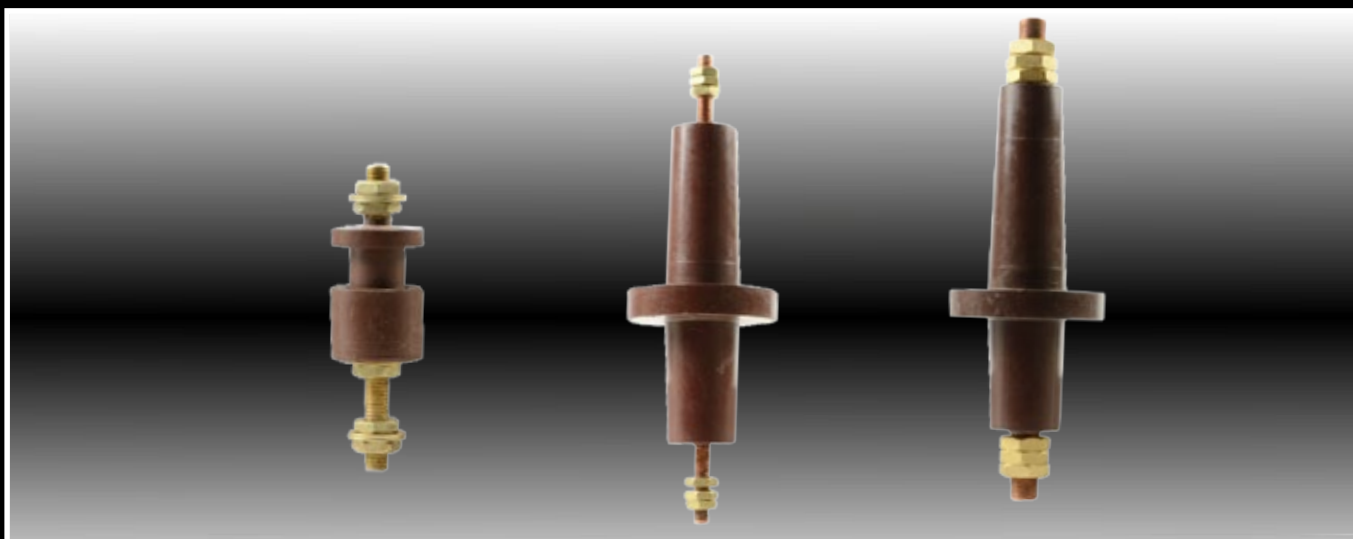
## 36Kv Outdoor Immersed Bushings



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	CREEPAGE IN mm PER Kv
040-222	LH250 DL + T	36	30	90	31
040-221	LHC250	36	250	90	31
040-341	LH630	36	630	90	31
040-342	LHC630	36	630	90	31
040-544	LH1250 Long DL	36	630	117	31
040-541	LH1250 Long	36	1250	117	31
040-545	LH1250 Long SR	36	1250	117	31
040-546	LH2500 Long DL	36	630	117	31
040-540	LH2500 Long	36	2500	117	31
040-547	LH2500 Long SR	36	2500	117	31
040-362	LJ250	48	250	90	31

**\* Note: Detailed drawings available on request**

## Air- to-air Type



PART NUMBER	DESCRIPTION	Kv RATING (Um)	CURRENT RATING	TANK HOLE SIZE	PF - 60 SEC	STEM DIAMETER
070-392	FB10 Flame Proof	1.1	80	21	7.5Kv	M10
040-015	AA-062/250	7.2	250	50	18Kv	M12
040-019	AA-062-630	7.2	630	50	18Kv	M20
040-016	AA-112/250	12	250	50	30Kv	M12
040-017	AA-112/630	12	630	50	30Kv	M20
040-014	AA-113/250	12	250	50	30Kv	M12
040-020	AA-113/630	12	630	50	30Kv	M20

\* Note: Detailed drawings available on request

## Cable Box Type



PART NUMBER	DESCRIPTION	Kv RATING (Um)	CURRENT RATING	TANK HOLE SIZE	BIL	STEM DIAMETER
040-208	SM250	12Kv *	250	50	N/A	M12
040-005	IM250	12Kv	250	50	N/A	M12
040-032	CF1	22Kv	630	72	N/A	OD=20 , Tapped M12

\* 7.2Kv Outdoor Rating \* Note: Detailed drawings available on request

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## DIN Bushing Range



**Note:**  
**Bushings are manufactured to DIN 42530, 42539, 42531, 42532, 42533, 42534**

PART NUMBER	DESCRIPTION	Kv RATING	I RATING	TANK HOLE SIZE	BIL	PF DRY	PF WET	CREEPAGE	STEM CONNECT
DT 1/250	DIN 42530 1/250	1	250	-	-	-	-	60	M12
DT 1/630	DIN 42530 1/630	1	630	45	-	-	-	75	M20
DT 1/1000	DIN 42530 1/1000	1	1000	56	-	-	-	75	M30
DT 1/2000	DIN 42530 1/2000	1	2000	70	-	-	-	75	M42
DT 1/3150	DIN 42530 1/3150	1	3150	90	-	-	-	75	M48
DT 3/250	DIN 42539 3/250	3	250	39	40	14	10	120	M12
DT 3/630	DIN 42539 3/630	3	630	45	40	14	10	120	M20
DT 3/1000	DIN 42539 3/1000	3	1000	56	40	14	10	125	M30
DT 3/2000	DIN 42539 3/2000	3	2000	70	40	14	10	125	M42
DT 3/3150	DIN 42539 3/3150	3	3150	90	40	14	10	125	M48
DT 3/4500	DIN 42539 3/4500	3	4500	119	40	14	10	130	M55
DT 3/6500	DIN 42539 3/6500	3	6500	119	40	14	10	130	M75
10NF250	DIN 42531 10NF250	12	250	78	75	28	-	305	M12
10NF630	DIN 42532 10NF630	12	630	90	75	28	-	305	M20
10NF1000	DIN 42533 10NF1000	12	1000	110	75	28	-	295	M30
10NF2000	DIN 42533 10NF2000	12	2000	135	75	28	-	295	M42
10NF3150	DIN 42533 10NF3150	12	3150	135	75	28	-	295	M48
20NF250	DIN 42531 20NF250	24	250	78	125	50	-	450	M12
20NF630	DIN 42532 20NF630	24	630	90	125	50	-	440	M20
20NF1000	DIN 42533 20NF1000	24	1000	110	125	50	-	445	M30
20NF2000	DIN 42533 20NF2000	24	2000	135	125	50	-	445	M42
20NF3150	DIN 42533 20NF3150	24	3150	135	125	50	-	445	M48
30NF250	DIN 42531 30NF250	36	250	78	170	70	-	607	M12
30NF630	DIN 42532 30NF630	36	630	90	170	70	-	662	M20
30NF1000	DIN 42533 30NF1000	36	1000	110	170	70	-	635	M30
30NF2000	DIN 42533 30NF2000	36	2000	135	170	70	-	635	M42
30NF3150	DIN 42533 30NF3150	36	3150	135	170	70	-	635	M48
52/1000	DIN 42534 52KV 1000	52	1000	135	250	95	-	950	M30
52/2000	DIN 42534 52KV 2000	52	2000	135	250	95	-	950	M42
52/3150	DIN 42534 52KV 3150	52	3150	135	250	95	-	950	M48

## EN Bushing Range



**Note:**  
Bushings are manufactured to EN50180 and EN50386

PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	BIL	PF DRY	PF WET	CREEPAGE	STEM CONNECT
EN 1/250	EN 50386 1/250	1.1	250	28	20	10	10	55	M12 / M12
EN 1/250 P	EN 50386 1/250 P	1.1	250	28	20	10	10	55	M12 / 23x23x5
EN 1/630	EN 50386 1/630	1.1	630	45	20	10	10	55	M20 / M20
EN 1/630 P	EN 50386 1/630 P	1.1	630	45	20	10	10	55	M20 / 32x32x9
EN 1/1250	EN 50386 1/1250	1.1	1250	56	20	10	10	75	M30 / 70 ø x 10
EN 1/1000 P	EN 50386 1/1000 P	1.1	1000	56	20	10	10	75	M30 / 57x57x12
EN 1/1250 P	EN 50386 1/1250 P	1.1	1250	56	20	10	10	75	M30 / 57x57x12
EN 1/2000	EN 50386 1/2000	1.1	2000	70	20	10	10	75	M42 / 100x100x15
EN 1/2000 P	EN 50386 1/2000 P	1.1	2000	70	20	10	10	75	M42 / 80x30x15
EN 1/3150	EN 50386 1/3150	1.1	3150	90	20	10	10	75	M48 / 110x110x15
EN 1/3150 P	EN 50386 1/3150 P	1.1	3150	90	20	10	10	75	M48 / 120x30x15
EN 1/4000	EN 50386 1/4000	1.1	4000	118	20	10	10	85	M55 / 160x160x24
EN 12/250 P2	EN 50180 12/250 P2	12	250	80	75	-	28	240	M12/M12
EN 12/250 P4	EN 50180 12/250 P4	12	250	80	75	-	28	372	M12/M12
EN 12/630 P2	EN 50180 12/630 P2	12	630	90	75	-	28	240	M20/M20
EN 12/630 P4	EN 50180 12/630 P4	12	630	90	75	-	28	372	M20/M20
EN 12/1250 P4	EN 50180 12/1250 P4	12	1250	110	75	-	28	372	M30/M30
EN 12/2000 P4	EN 50180 12/2000 P4	12	2000	135	75	-	28	372	M42/M42
EN 12/3150 P4	EN 50180 12/3150 P4	12	3150	135	75	-	28	372	M48/M48
EN 24/250 P2	EN 50180 24/250 P2	24	250	80	125	-	50	480	M12/M12
EN 24/250 P4	EN 50180 24/250 P4	24	250	80	125	-	50	744	M12/M12
EN 24/630 P2	EN 50180 24/630 P2	24	630	90	125	-	50	480	M20/M20
EN 24/630 P4	EN 50180 24/630 P4	24	630	90	125	-	50	744	M20/M20
EN 24/1250 P4	EN 50180 24/1250 P4	24	1250	110	125	-	50	744	M30/M30
EN 24/2000 P4	EN 50180 24/2000 P4	24	2000	135	125	-	50	744	M42/M42
EN 24/3150 P4	EN 50180 24/3150 P4	24	3150	135	125	-	50	744	M48/M48
EN 36/250 P2	EN 50180 36/250 P2	36	250	80	150	-	70	720	M12/M12
EN 36/250 P4	EN 50180 36/250 P4	36	250	80	150	-	70	1116	M12/M12
EN 36/630 P2	EN 50180 36/630 P2	36	630	90	150	-	70	720	M20/M20
EN 36/630 P4	EN 50180 36/630 P4	36	630	90	150	-	70	1116	M20/M20
EN 36/1250 P4	EN 50180 36/1250 P4	36	1250	110	150	-	70	1116	M30/M30
EN 36/2000 P4	EN 50180 36/2000 P4	36	2000	135	150	-	70	1116	M42/M42
EN 36/3150 P4	EN 50180 36/3150 P4	36	3150	135	150	-	70	1116	M48/M48

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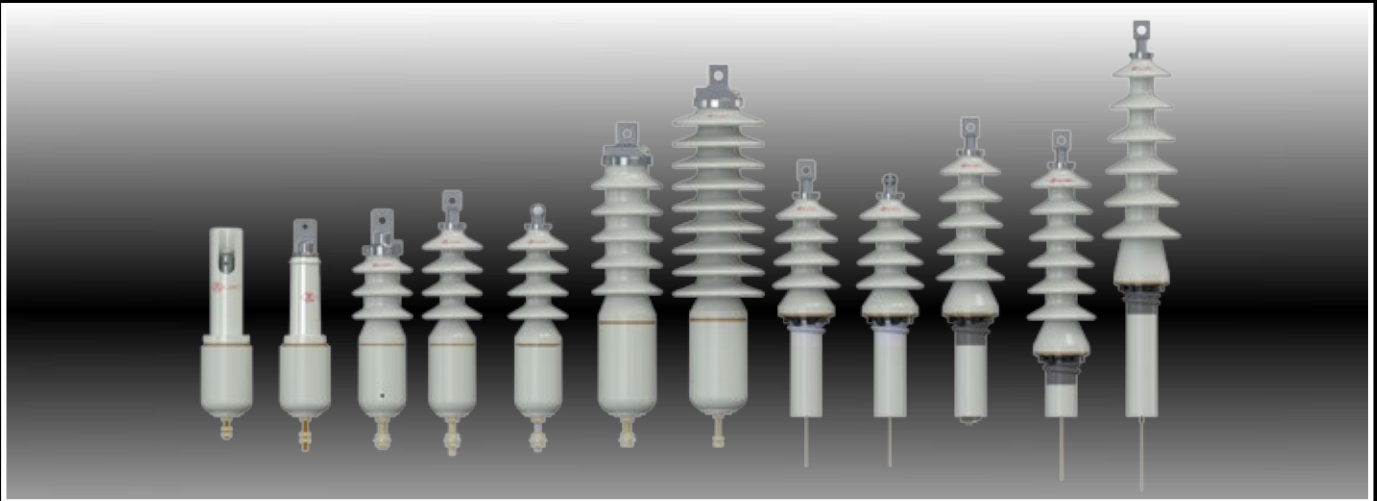
## AU LV Bushing Range



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	BIL	PF	CREEPAGE
040-369/X	AU 0K6-120 1H14CU Bushing	600V	120A	29	10Kv	4Kv	>70
040-369/XT1	AU 0K6-120 2H14CU Bushing	600V	120A	29	10Kv	4Kv	>70
040-369/XA1	AU 0K6-120 1H11BR Bushing	600V	80A	29	10Kv	4Kv	>70
040-369/XA2	AU 0K6-120 1H11CU Bushing	600V	120A	29	10Kv	4Kv	>70
040-370/X	AU 3K6-200 1H14 Bushing	3.6Kv	200A	48	40Kv	16Kv	>105
040-370/XA1	AU 3K6-200 1H11 Bushing (A)	3.6Kv	200A	48	40Kv	16Kv	>105
040-371/X	AU 3K6-500 1H14 Bushing	3.6Kv	500A	48	40Kv	16Kv	>105
040-371/XA1	AU 3K6-500 2H14 Bushing (A)	3.6Kv	500A	48	40Kv	16Kv	>105
040-387/XE	AU 3K6-800 1H14 Bushing (E)	3.6Kv	800A	79	40Kv	16Kv	>115
040-375/X	AU 3K6-300 Bushing	3.6Kv	300A	48	40Kv	16Kv	>105
040-376/XW	AU 3K6-1000 Bushing S1H14 Bushing (W)	3.6Kv	1000A	72	40Kv	16Kv	>105
040-376/X	AU 3K6-1050 1H22 Bushing	3.6Kv	1050A	79	40Kv	16Kv	>115
040-376/XE	AU 3K6-1050 1H14 Bushing	3.6Kv	1050A	79	40Kv	16Kv	>115
040-376/XE2	AU 3K6-1050 2H14 Bushing (E)	3.6Kv	1050A	79	40Kv	16Kv	>115
040-376/XA2	AU 3K6-1050 1H18 Bushing (A)	3.6Kv	1050A	79	40Kv	16Kv	>115
040-379/XW	AU 3K6-1400 1H14 Bushing (W)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-380/XW	AU 3K6-1400 2H14 Bushing (W)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-381/XW	AU 3K6-1400 2H14 Bushing (W-SP)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-381/XE	AU 3K6-1400 2H14 Bushing (E)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-382/XW	AU 3K6-1400 1H18 Bushing (W)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-383/XW	AU 3K6-1400 2H18 Bushing (W)	3.6Kv	1400A	79	40Kv	16Kv	>115
040-377/X	AU 3K6-2000 4H14 Bushing	3.6Kv	2000A	79	40Kv	16Kv	>115
040-377/XE	AU 3K6-2000 4H14 Bushing (E)	3.6Kv	2000A	79	40Kv	16Kv	>115
040-384/XW	AU 3K6-2700 2H22 Bushing (W)	3.6Kv	2700A	92	40Kv	16Kv	>120
040-388/XE	AU 3K6-3150 2H22 Bushing (E)	3.6Kv	3150A	92	40Kv	16Kv	>120



## AU HV Bushing Range



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	BIL	PF	CREEPAGE
040-372/X	AU 12K-30 Bushing	12Kv	30A	71	75Kv	30Kv	>410
040-372/XE	AU 12K-30 CF Bushing (E)	12Kv	30A	71	75Kv	30Kv	>410
040-372/XW	AU 12K-30 Bushing (W)	12Kv	30A	71	75Kv	30Kv	>410
040-385/XW	AU 12K-300A 3S Bushing (W)	12Kv	300A	60	75Kv	30Kv	>285
040-386/XE	AU 12K-30A 4S-PF Bushing (E)	12Kv	30A	60	75Kv	30Kv	>345
040-389/XE	AU 12K-30A 4S-CF Bushing (E)	12Kv	30A	60	75Kv	30Kv	>345
040-394/XE	AU 12K-200 4S Bushing (E)	12Kv	200A	60	75Kv	30Kv	>345
040-390/XW	AU 12K-300A 4S Bushing (W)	12Kv	300A	60	75Kv	30Kv	>345
040-391/XE	AU 12K-160 CB Bushing (E)	12Kv	160A	60	75Kv	30Kv	>160
040-393/XE	AU 11K-160 Shrouded Bushing (E)	12Kv	160A	60	75Kv	30Kv	>160
040-373/X	AU 24K-30 Bushing	24Kv	30A	71	125Kv	50Kv	>530
040-373/XE	AU 24K-30 CF Bushing (E)	24Kv	30A	71	125Kv	50Kv	>530
040-373/XW	AU 24K-30 Bushing (W)	24Kv	30A	71	125Kv	50Kv	>530
040-399/XW	AU 24K-300 5S Bushing (W)	24Kv	300A	80	125Kv	50Kv	>480
040-374/X	AU 24K-30 XS Bushing	24Kv	30A	71	125Kv	50Kv	>640
040-374/XW	AU 24K-30 XS Bushing (W)	24Kv	30A	71	125Kv	50Kv	>640
040-378/X	AU 36K-30 Bushing	36Kv	30A	71	170Kv	70Kv	>720
040-368/X	AU 44KV-120 9S Bushing	44Kv	120A	80	170Kv	77Kv	>1067

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## Offset Bushings



PART NUMBER	DESCRIPTION	Kv RATING	CURRENT RATING	TANK HOLE SIZE	BIL	PF	CREEPAGE
040-395/X	AU 12K-30 Offset Bushing	12Kv	30A	70	75Kv	30Kv	>706
040-396/X	AU 12K-30 Offset Bushing	12Kv	30A	70	75Kv	30Kv	>660
040-397/X	AU 36K-30 Offset Bushing	24Kv	30A	70	125Kv	50Kv	>1036
040-398/X	AU 36K-30 Offset Bushing	24Kv	30A	70	125Kv	50Kv	>990

## Wildlife Guards

The Wildlife Guards are optimized for wildlife protection on over-head distribution systems rated 25Kv and less. These guards are designed to mount securely between the first and second shed (nearest the high voltage terminal) on primary bushings and arresters.



PART NUMBER	DESCRIPTION
WLG-140	Wildlife Guard Shed Mount - 136mm
WLG-230	Wildlife Guard Shed Mount - 116mm

**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
**B = RIGHT HAND**

## Rotary Tap Switches

### Contact Arrangement Types

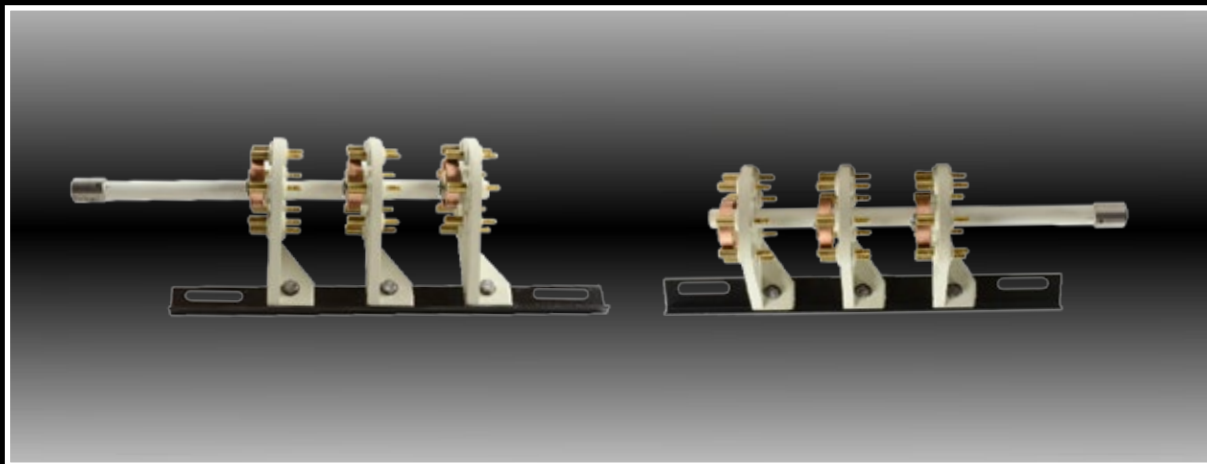
All Rotary Tap - Switches are available with two types of moving contacts as indicated below:



Standard Contact Arrangement



Butterfly Contact Arrangement



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-522	RTS 22 Kv 100A 1Ph - Type A	22	100	1	A	Steel	Std
040-523	RTS 22 Kv 100A 1Ph - Type B	22	100	1	B	Steel	Std
040-508 BC	RTS 22Kv 100A 3Ph - Type A / 90° / BC	22	100	3	A	Steel	Butterfly
040-505	RTS 22Kv 100A 3Ph - Type A / MB	22	100	3	A	Moulded	Std
040-528	RTS 22Kv 100A 3Ph - Type A	22	100	3	A	Steel	Std
040-530	RTS 22Kv 100A 3Ph - Type AB	22	100	3	AB	Steel	Std
040-530 BC	RTS 22Kv 100A 3Ph - Type AB / BC	22	100	3	AB	Steel	Butterfly
040-506 BC	RTS 22Kv 100A 3Ph - Type B / 90° / BC	22	100	3	B	Steel	Butterfly
040-501	RTS 22Kv 100A 3Ph - Type B / MB	22	100	3	B	Moulded	Std
040-527	RTS 22Kv 100A 3Ph - Type B	22	100	3	B	Steel	Std

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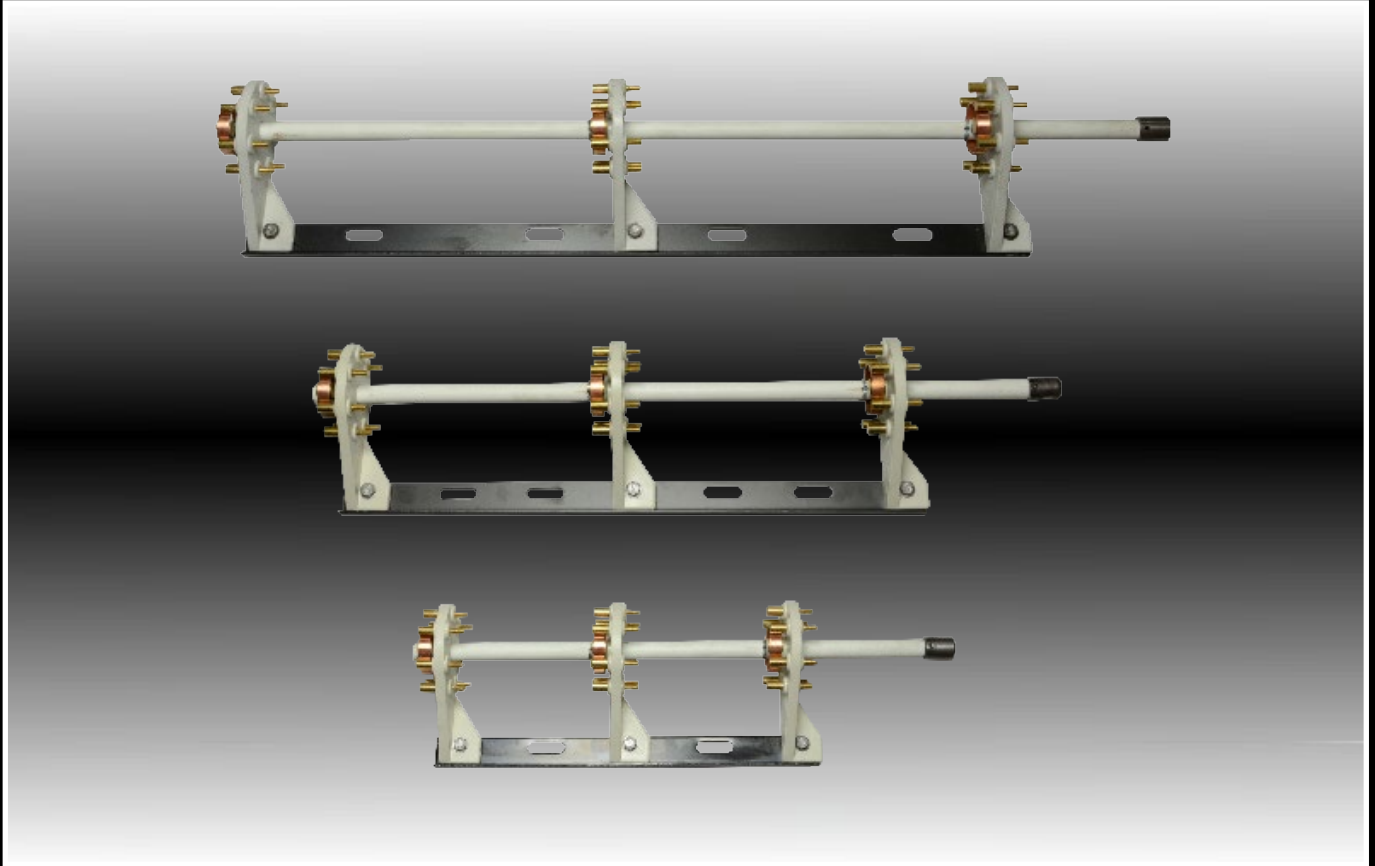
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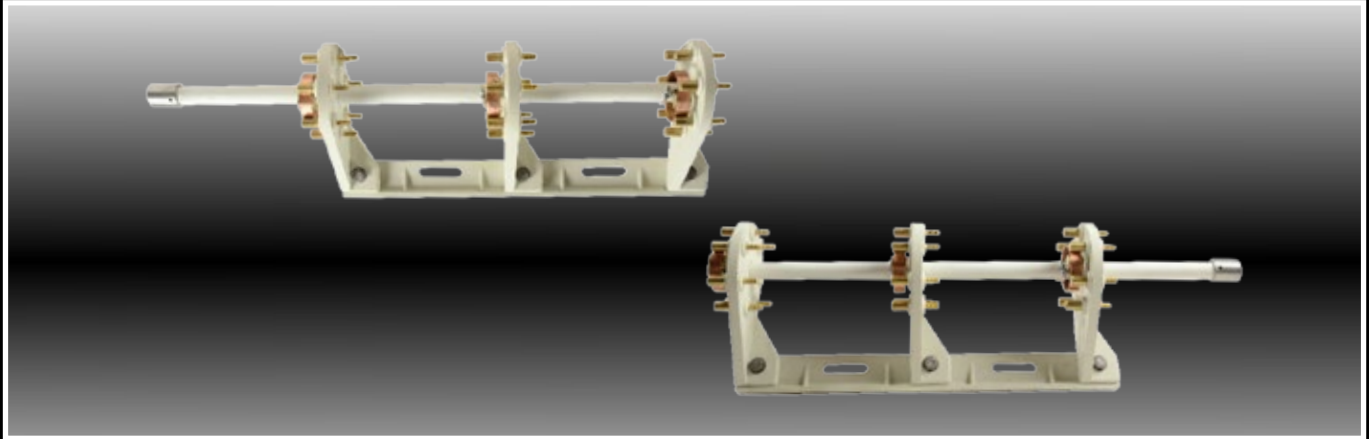
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**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
**B = RIGHT HAND**

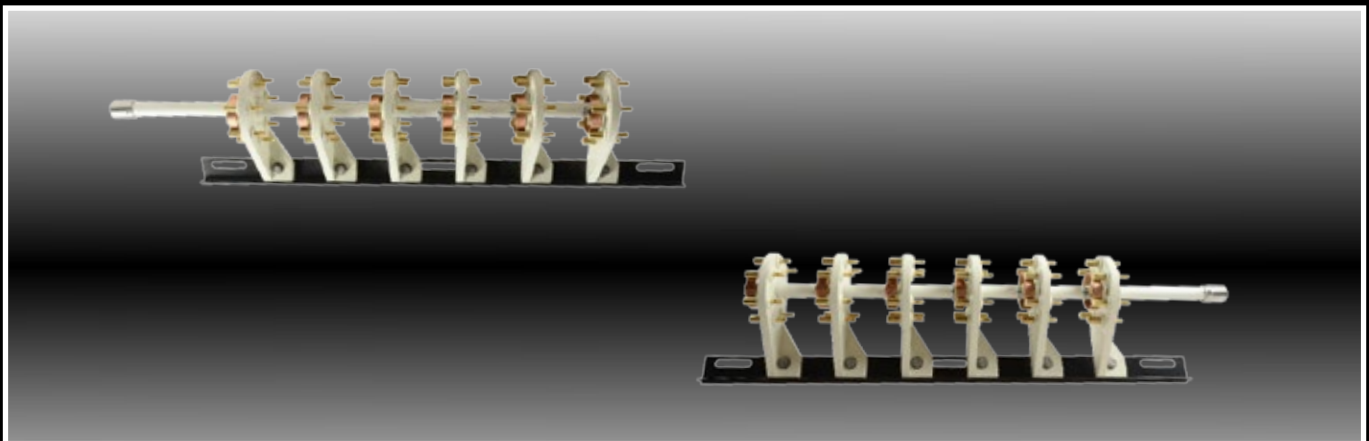


PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-534	RTS 22Kv 100A 3Ph ( 180 CNT ) Type AB	22	100	3	AB	Steel	Std
040-533	RTS 22Kv 100A 3Ph ( 270 CNT ) Type AB	22	100	3	AB	Steel	Std
040-532	RTS 22Kv 100A 3Ph ( 360 CNT ) Type AB	22	100	3	AB	Steel	Std
040-521	RTS 22Kv 100A 3Ph (180 CNT) Type A	22	100	3	A	Steel	Std
040-518	RTS 22Kv 100A 3Ph (180 CNT) Type B	22	100	3	B	Steel	Std
040-520	RTS 22Kv 100A 3Ph (270 CNT) Type A	22	100	3	A	Steel	Std
040-517	RTS 22Kv 100A 3Ph (270 CNT) Type B	22	100	3	B	Steel	Std
040-519	RTS 22Kv 100A 3Ph (360 CNT) Type A	22	100	3	A	Steel	Std
040-516	RTS 22Kv 100A 3Ph (360 CNT) Type B	22	100	3	B	Steel	Std

**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
**B = RIGHT HAND**



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-512	RTS 33Kv 100A 3Ph - Type A / MB	33	100	3	A	Moulded	Std
040-529 BC	RTS 33Kv 100A 3Ph - Type AB / BC	33	100	3	AB	Moulded	Butterfly
040-529	RTS 33Kv 100A 3Ph - Type AB / MB	33	100	3	AB	Moulded	Std
040-500	RTS 33Kv 100A 3Ph - Type B / MB	33	100	3	B	Moulded	Std



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-513	RTS 22Kv 100A 6Ph - Type A	22	100	6	A	Steel	Std
040-531	RTS 22Kv 100A 6Ph - Type AB	22	100	6	AB	Steel	Std
040-502	RTS 22Kv 100A 6Ph - Type B	22	100	6	B	Steel	Std

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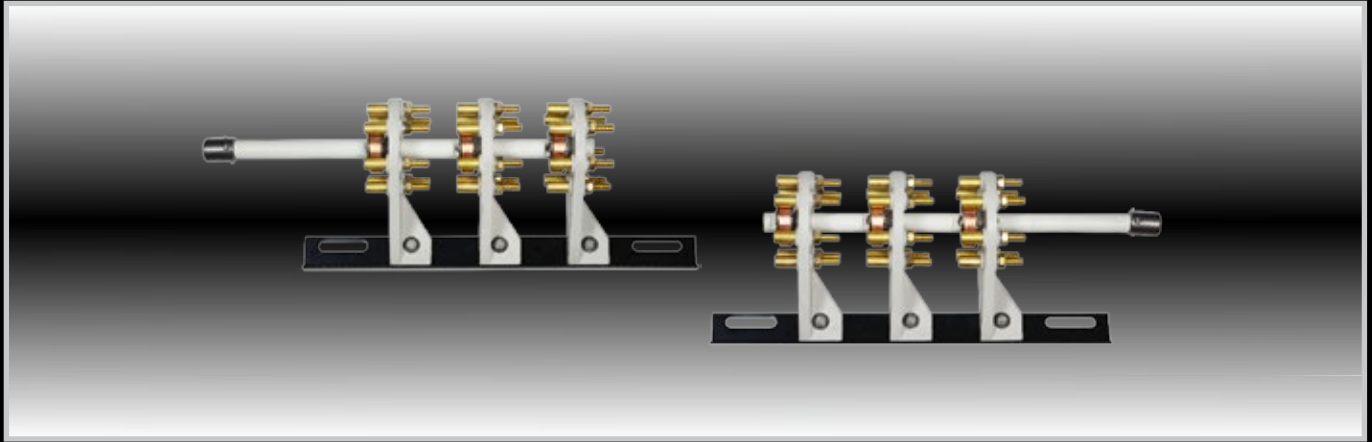
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**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
**B = RIGHT HAND**

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PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-509 BC	RTS 22Kv 150A 3Ph - Type A / 90° / BC	22	150	3	A	Steel	Butterfly
040-510 BC	RTS 22Kv 150A 3Ph - Type A / BC	22	150	3	A	Steel	Butterfly
040-511 BC	RTS 22Kv 150A 3Ph - Type B / 90° / BC	22	150	3	B	Steel	Butterfly
040-507 BC	RTS 22Kv 150A 3Ph - Type B / BC	22	150	3	B	Steel	Butterfly

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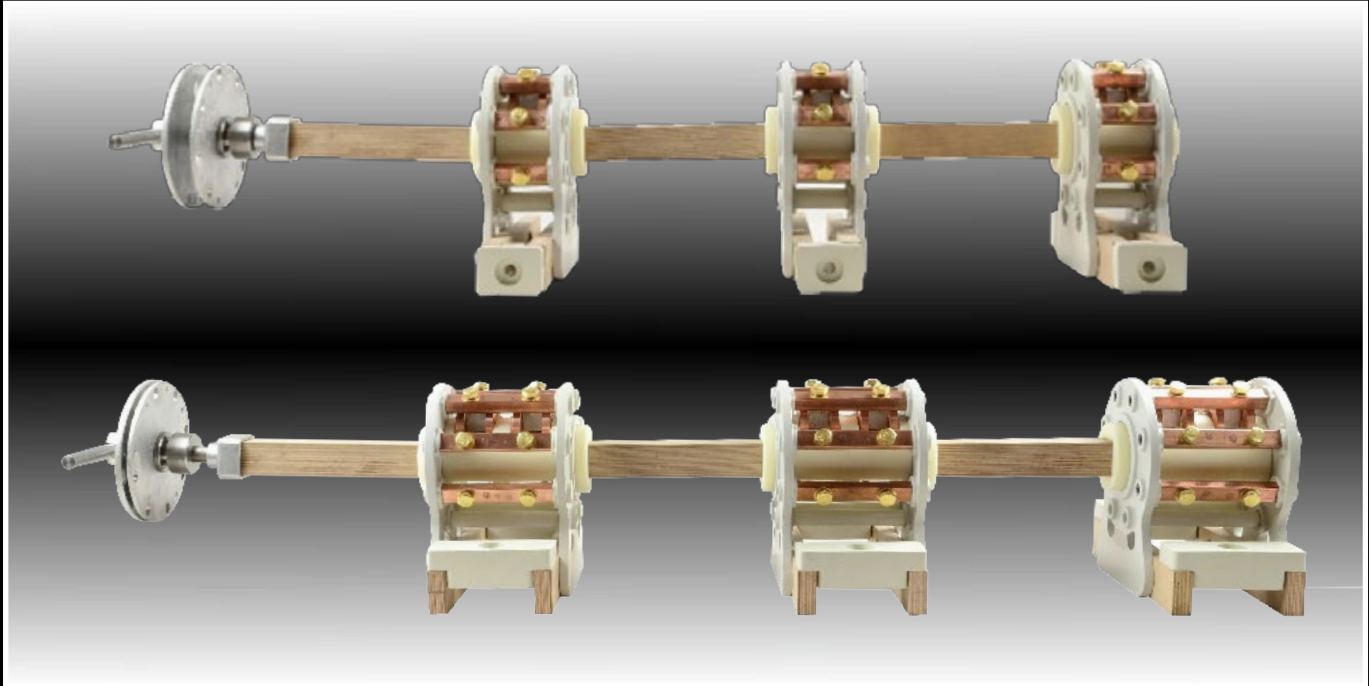
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PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-514 BC	RTS 22Kv 300A 3Ph - Type A / BC	22	300	3	A	Steel	Butterfly
040-538 BC	RTS 22Kv 300A 3Ph - Type AB / BC	22	300	3	AB	Steel	Butterfly
040-503 BC	RTS 22Kv 300A 3Ph - Type B / BC	22	300	3	B	Steel	Butterfly

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**SC = Slide Contact**  
**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
**B = RIGHT HAND**



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-543	RTS 88Kv 315A 3Ph - Type AB	88	315	3	AB	Permali	T - Type
040-542	RTS 88Kv 630A 3Ph - Type AB	88	630	3	AB	Permali	T - Type

## Linear Tap Switches



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-526	LTS 22Kv 30A 2Ph 5Pos	22	30	2	N/A	Nylon	Linear
040-525	LTS 22Kv 30A 3Ph 5Pos	22	30	3	N/A	Nylon	Linear

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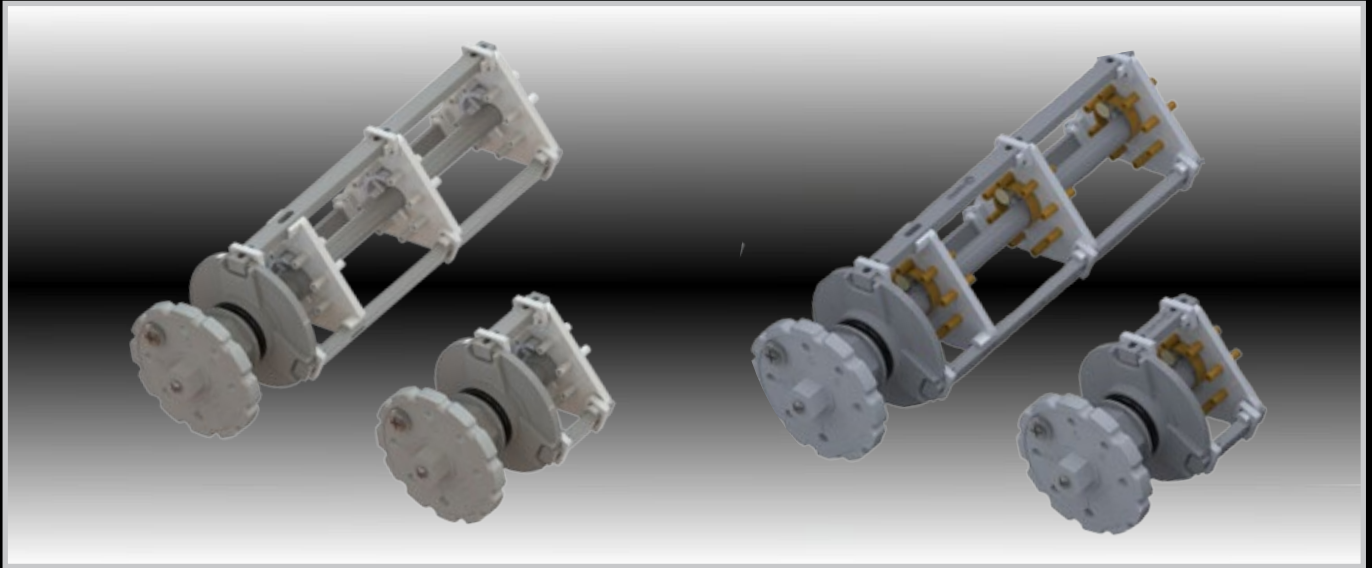
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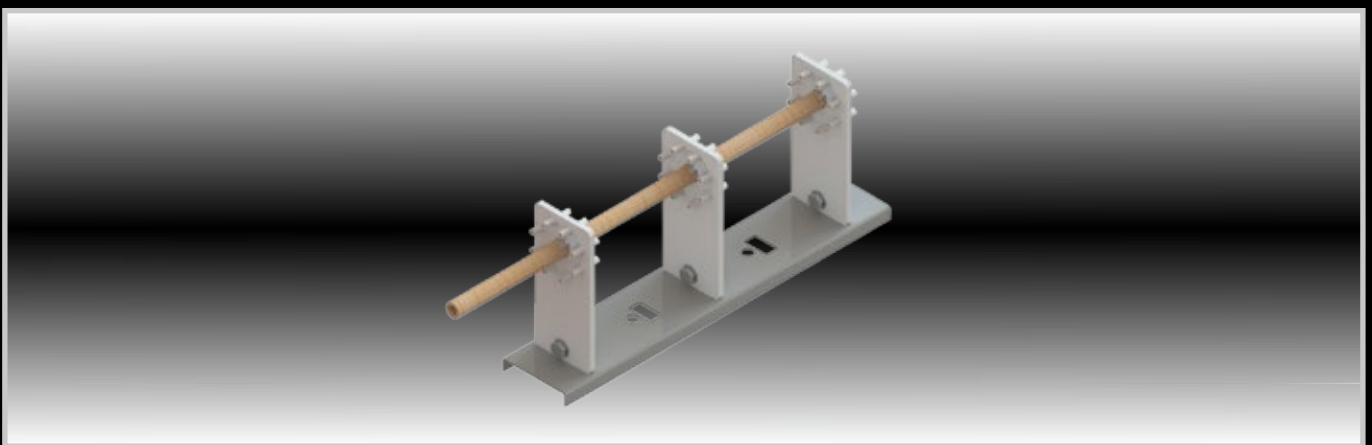
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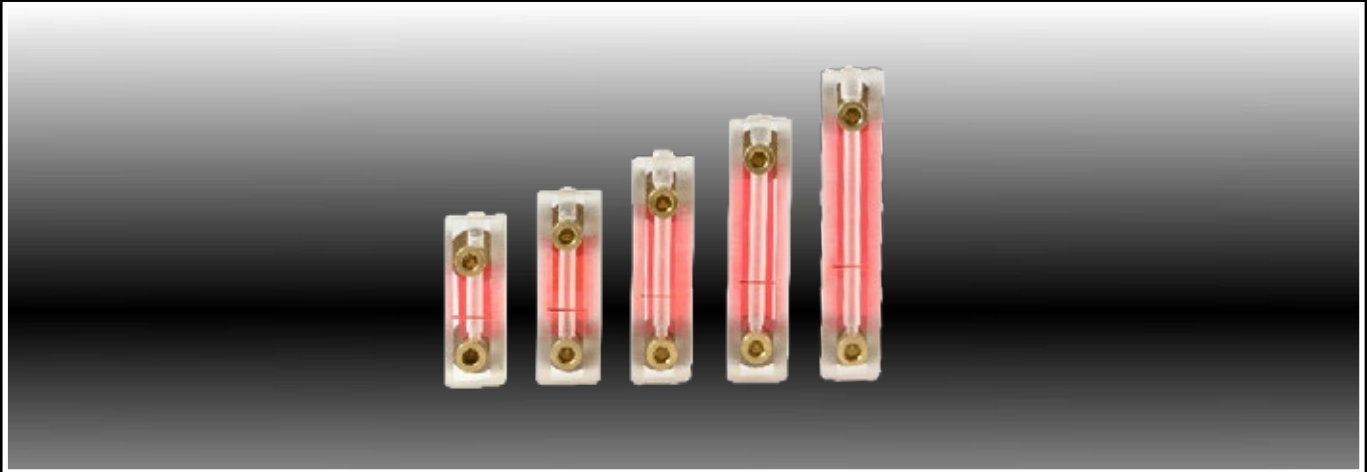
**RTS = Rotary Tap Switch**  
**LTS = Linear Tap Switch**  
**MB = Moulded Bracket**  
**BC = Butterfly Contact**  
**A = LEFT HAND**  
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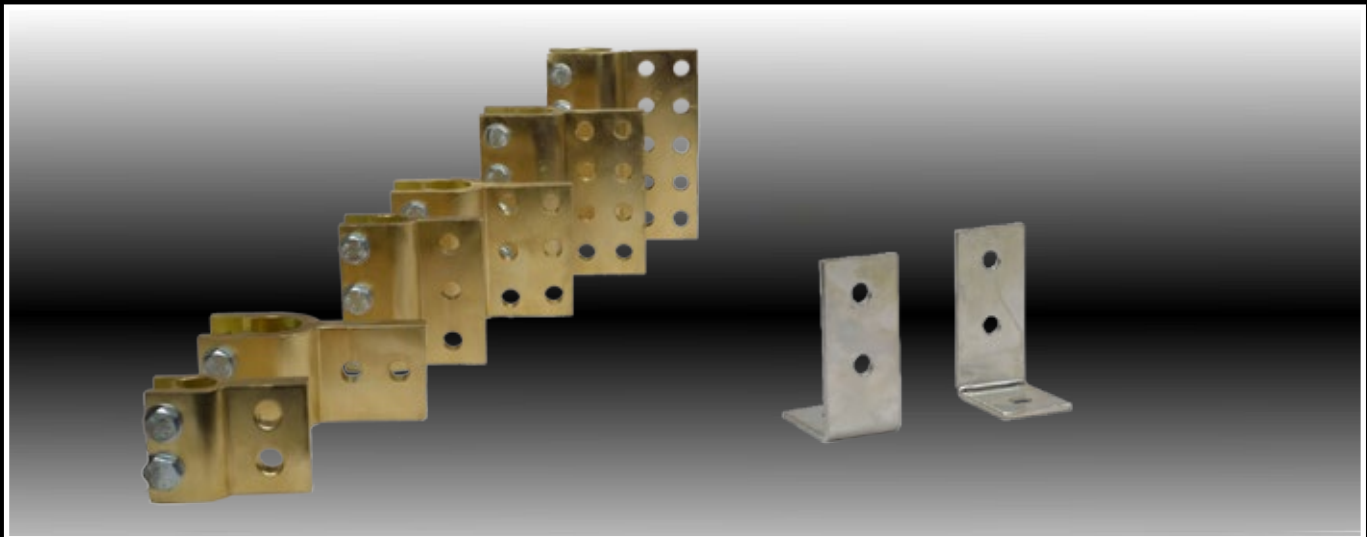
PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	BRACKET	CONTACT
040-580X	RTS 33Kv 60A 1PH 7 POS - SC	33	60A	1	N/A	N/A	Slide
040-581X	RTS 33Kv 60A 3PH 7 POS - SC	33	60A	3	N/A	N/A	Slide
040-585X	RTS 33Kv 60A 1PH 7POS - RC/DP	33	60A	1	N/A	N/A	Slide
040-586X	RTS 33Kv 60A 3PH 7POS - RC/DP	33	60A	3	N/A	N/A	Slide



PART NUMBER	DESCRIPTION	Kv	CURRENT	PHASE	TYPE	CONTACT
040-582/X	RTS 33Kv 60A 3Ph 7 POS - SC/SP	33	60A	3	AB	Slide
040-583/X	RTS 6.6Kv 60A 3Ph 7 POS - SC/SP	6.6	60A	3	AB	Slide
040-584/X	RTS 33Kv 60A 1Ph 7 POS - SC/SP	33	60A	1	AB	Slide



PART NUMBER	DESCRIPTION	BOLT CENTERS	TOTAL LENGHT	LINE HEIGHT
LOG-50	Oil Gauge 50	50	90	17
LOG-63	Oil Gauge 63	63	103	21
LOG-80	Oil Gauge 80	80	120	27
LOG-100	Oil Gauge 100	100	140	33
LOG-125	Oil Gauge 125	125	165	42
LOG-144	Oil Gauge 144	144	184	48
LOG-180	Oil Gauge 180	180	220	60
LOG-230	Oil Gauge 230	230	270	77
LOG-288	Oil Gauge 288	288	328	96
LOG-360	Oil Gauge 360	360	400	120



PART NUMBER	DESCRIPTION	TYPE	FLAG HEIGHT	HOLE SIZE
010-077	SAD250 Flag	Copper L Shape	110mm	13mm Diameter
010-078	SAD330 Flag	Copper L Shape	110mm	15mm Diameter
010-079	SB 500 Flag	Copper L Shape	110mm	19mm Diameter
010-080	SB 630 Flag	Copper L Shape	110mm	21mm Diameter
010-003	SC850 /1250 Flag	Brass "Y" Extrusion	60mm	21mm Diameter
010-088	SC1250 Flag	Brass "Y" Extrusion	60mm	38mm Diameter
010-098	SD1600 Flag	Brass "Y" Extrusion	100mm	27mm Diameter
010-004	SD2500 Flag	Brass "Y" Extrusion	100mm	38mm Diameter
010-151	SD2900 Flag	Brass "Y" Extrusion	135mm	38mm Diameter
010-076	SD3500 Flag	Brass "Y" Extrusion	172mm	38mm Diameter

Enclosures

Hinges

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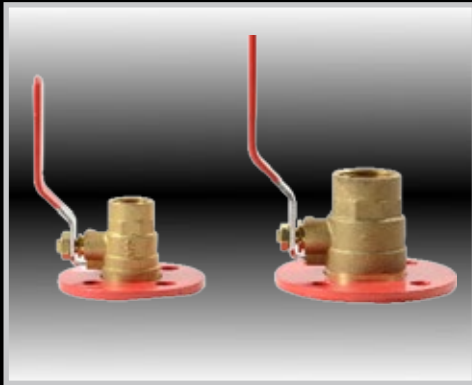
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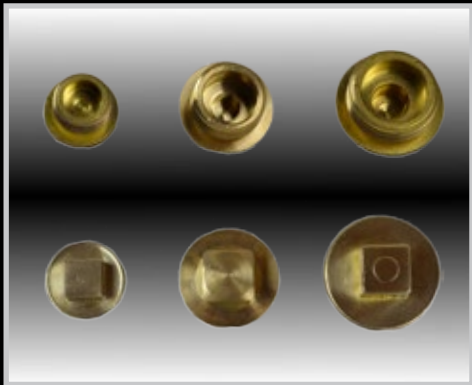
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PART NUMBER	DESCRIPTION
021-402	0.5" Ball Valve Only (15mm)
021-403	0.5" Ball Valve Single Fixed Flange (15mm)
021-419	0.5" Ball Valve Single Rotating Flange (15mm)
021-409	0.5" Ball Valve Double Flange (15mm)
021-406	1" Ball Valve Only (25mm)
021-404	1" Ball Valve Single Fixed Flange (25mm)
021-420	1" Ball Valve Single Rotating Flange (25mm)
021-410	1" Ball Valve Double Flange (25mm)

Locks



PART NUMBER	DESCRIPTION	THREAD
002-059	0.5" Brass Plug	0.5" BSP
002-136	0.75" Brass Plug	0.75" BSP
002-055	1" Brass Plug	1" BSP

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Accessories



PART NUMBER	DESCRIPTION	ORI FACE Ø	H	L	NO. OF STUDS	STUD SIZE (mm)	STU PCD (mm)	STUD CTC (mm)
040-368	Radiator Valve 80x125	73mm	125	125	4	16	125	88
040-367	Radiator Valve 80x138	76mm	138	138	4	16	146	103

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PART NUMBER	DESCRIPTION	ORIFACE Ø (mm)	H (mm)	THREAD
002-057	20mm Weld on Boss	20	30	M12
002-058	25mm Weld on Boss	25	30	M12

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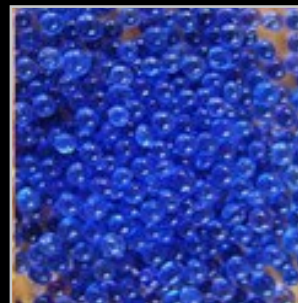


Silica Gel:  
The breathers contain the latest EU & ESKOM specified grade of gel.

PART NUMBER	DESCRIPTION	CAPACITY IN LITERS
021-600	SA90	1600
021-601	SA100-1	2400
021-602	SA100-2	3800
021-603	SA100-3	5700
021-604	SA100-4	7600
021-605	SA100-5	9600
021-606	SA100-6	11600



Amber Silica Dehydrating Beads



Blue Silica Dehydrating Beads

PART NUMBER	DESCRIPTION
001-056	Blue Silica Dehydrating Beads (per kg)
001-306	Amber Silica Dehydrating Beads (per kg)

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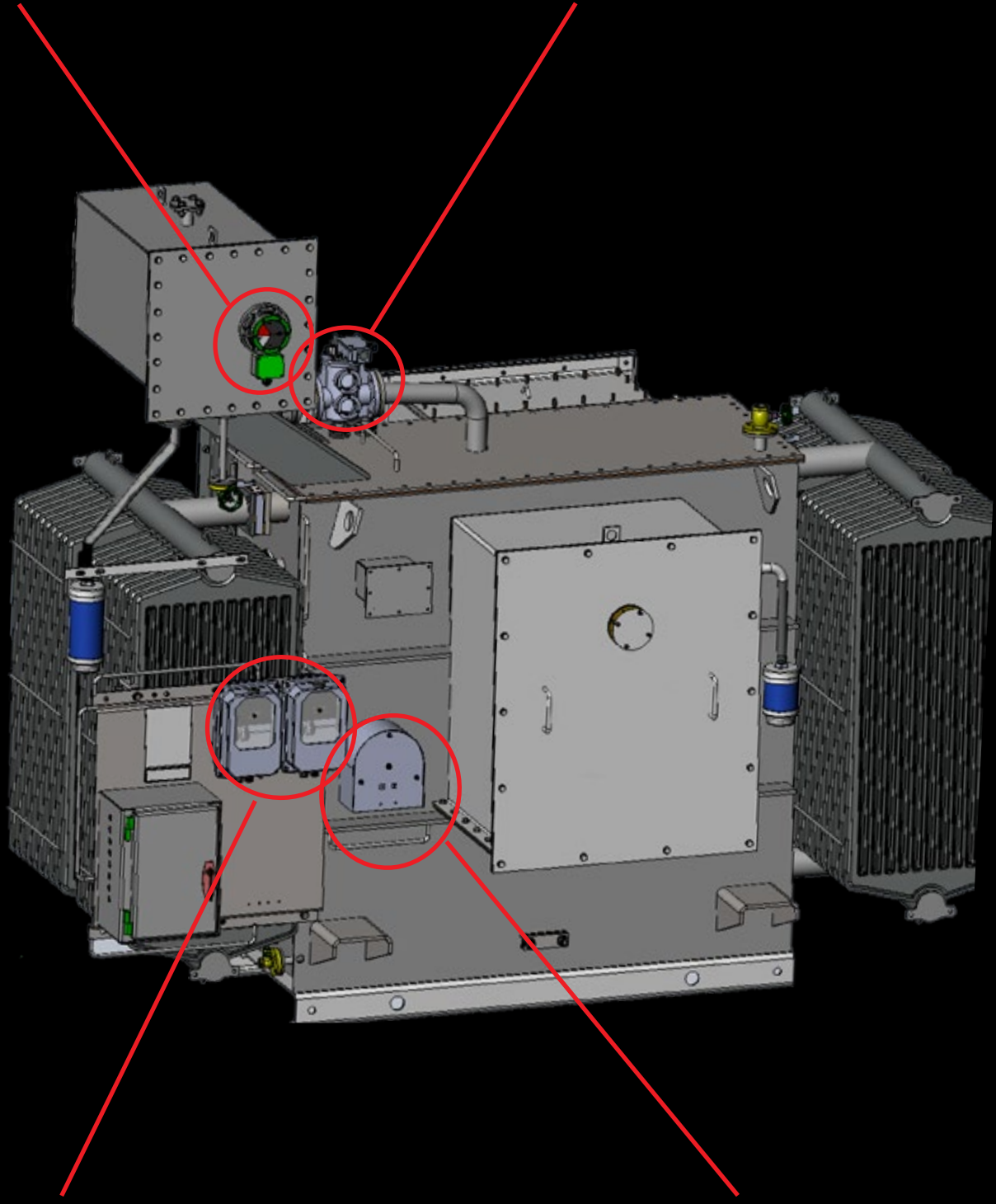
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**Magnetic Oil Gauge**

**Buchholz Relay**



**Thermometers**

**Pressure Relief Valves**



## Indication Only Thermometers



PART NUMBER	DESCRIPTION	RANGE ( Deg Celcius )
021-002	Thermometer BM80	0 to 120
021-003	Thermometer BM100	0 to 120

## Thermometers with Contacts (for Telemetry)



PART NUMBER	DESCRIPTION	RANGE ( Deg Celcius )	NO. OF CONTACTS	TYPE OF CONTACT	BULB TYPE
021-012	Thermometer F035-AKM Bi Metal 2C	0 to 120	2	Change Over	Direct Mount
021-005	Thermometer 1184	0 to 120	2	Normally Open	Direct Mount
021-008	Thermometer MTVT 84	0 to 120	2	Change Over	Direct Mount
021-006	Thermometer 1187	0 to 120	2	Normally Open	1.5m Capillary
021-004	Thermometer MSRT 100	0 to 120	2	Change Over	1.5m Capillary
021-018	Thermometer 1187-T Spring mounted	0 to 120	2	Normally Open	1.5m Capillary

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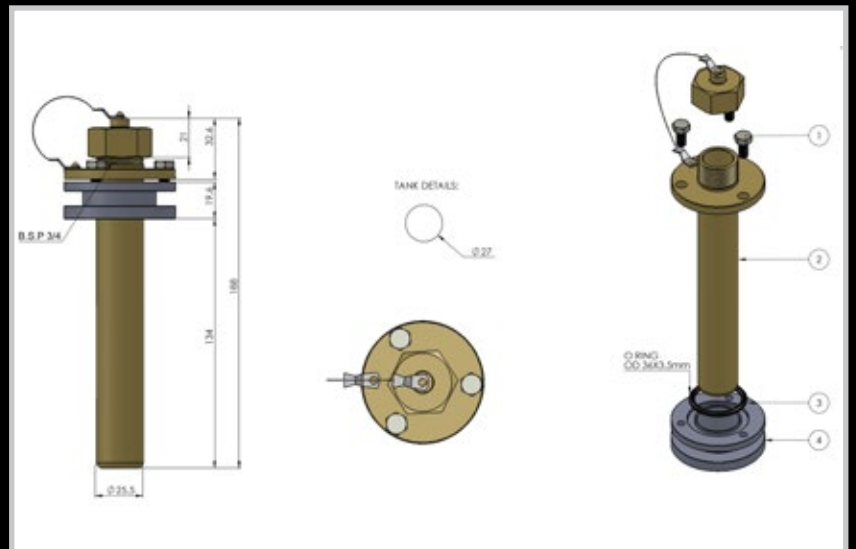


PART NUMBER	DESCRIPTION	RANGE ( Deg Celcius )	NO. OF CONTACT	TYPE OF CONTACT	BULB TYPE
021-013	Thermometer F036-AKM Oti 2C 5M	0 to 120	2	Change Over	5m Capillary
021-014	Thermometer F036-AKM Wti 2C 5M	0 to 120	2	Change Over	5m Capillary
021-015	Thermometer F036-AKM Oti 4C 12M	0 to 120	4	Change Over	12m Capillary
021-016	Thermometer F036-AKM Wti 4C 12M	0 to 120	4	Change Over	12m Capillary

### Pocket Housing and Boss Assembly

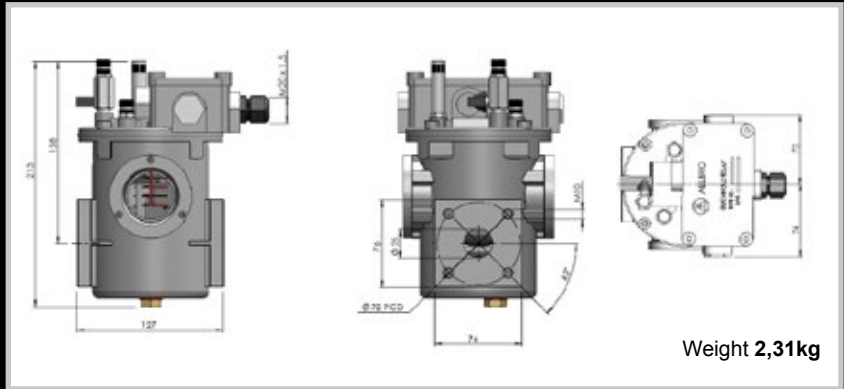


**Remarks:**  
Suggested tank hole size 27mm Diameter.



PART NUMBER	DESCRIPTION
021-001	Temperature Pocket Housing and Boss

## BS 25

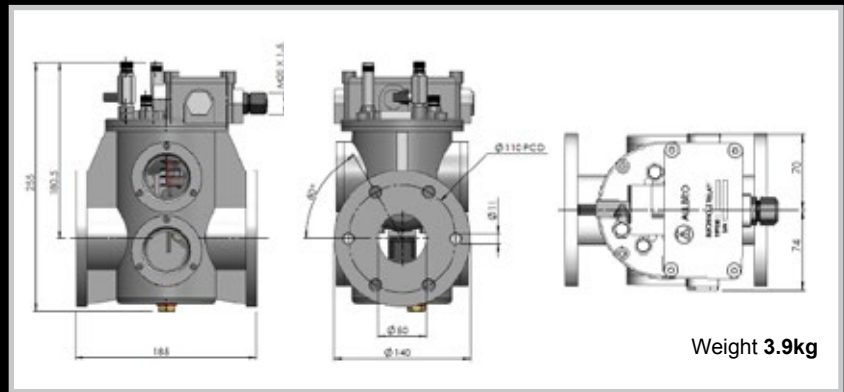


PART NUMBER	DESCRIPTION
021-114	Buchholz Relay Model BS25HA
021-115	Buchholz Relay Model BS25MA
021-115/E	Buchholz Relay BS25MA / E
021-400	Buchholz Valve 25mm
021-426	Buchholz Valve 25mm (60mm FTF)

**Remarks:**

- MA = Magnetic - normally open contacts
- HA = Mercury - normally open contacts

## BS 50

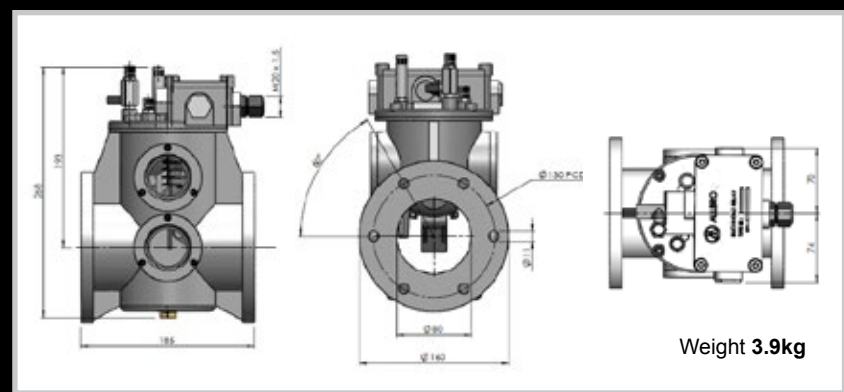


PART NUMBER	DESCRIPTION
021-116	Buchholz Relay Model BS50HA
021-117	Buchholz Relay Model BS50MA
021-117/E	Buchholz Relay BS50MA / E
021-401	Buchholz Valve 50mm
021-427	Buchholz Valve 50mm (60mm FTF)

**Remarks:**

- MA = Magnetic - normally open contacts
- HA = Mercury - normally open contacts

## BS 80



PART NUMBER	DESCRIPTION
021-119/E	Buchholz Relay BS80MA / E
021-428	Buchholz Valve 80mm (60FTF)

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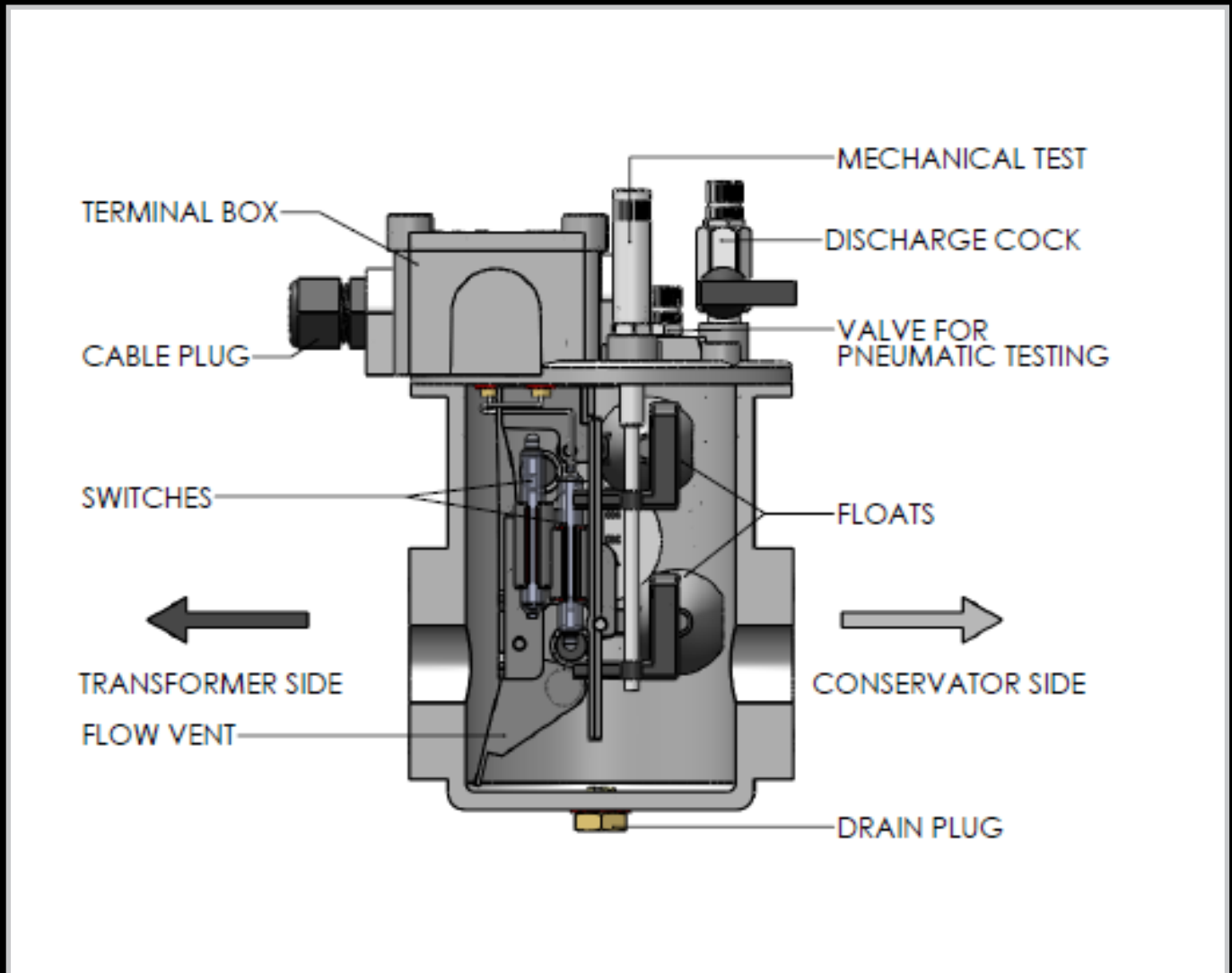
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Enclosures	<p>The generation of gas in an oil filled transformer is a clear indication of a problem. The gas may be a result of the following:</p> <ul style="list-style-type: none"> <li>• <b>Decomposition / degradation of solid , or liquid insulation inside the transformer due to overheating, or arcing.</b></li> <li>• <b>From the outside towards the pipeline.</b></li> <li>• <b>From the oil itself due to unsatisfactory de-gassing prior to filling.</b></li> </ul>
Hinges	<p><b>Rapid oil movement in the pipeline towards the conservator is caused by an internal arc, short circuit, or hot spot which must be correctly addressed.</b></p> <p><b>Oil leaks from the transformer are environmentally unacceptable and a fire hazard will lead to transformer failure.</b></p>
Locks	<p><b>To indicate any of the above malfunctions we have developed a Buchholz relay to comply fully with the latest CENELEC EN 50216-1 and EN 50216-2 standards.</b></p> <p><b>The relay incorporates the very latest technology in its construction.</b></p> <p><b>PRINCIPAL OF OPERATION</b></p>
Handles	<p>The Buchholz relay is sited in the pipework between the transformer and its conservator and it is filled with oil during normal transformer operation. When gas is generated in the transformer it rises towards the conservator and collects in the upper chamber of the relay. The oil level drops and the top float triggers alarm switch.</p> <p>Gas shall not freely pass from the relay body and escape into the pipework before the alarm contact has operated. The trip contact shall operate at a steady oil flow as indicated in Table 3.</p>
Accessories	<p>This operation shall not be adversely affected when the alarm contact has already closed and gas is escaping freely. In the event of an oil leak the Buchholz relay will only operate after the conservator has exhausted all of its oil. In order to check this eventually it is recommended that an RDR MK II automatic shutter valve is fitted between the Buchholz and the conservator.</p> <p>Specific information on this product are available on request.</p> <p><b>CONSTRUCTION</b></p>
Rotary Operating Handles	<p>The Buchholz relay is an assembly of two machined aluminium alloy castings that effect a perfect oil seal.</p> <ol style="list-style-type: none"> <li>1) The main body of the relay is fitted with tempered glass inspection windows with graduated scale markings in cubic centimeters to indicate the internal volume. The oil drain plug is located at the bottom of the main body.</li> <li>2) The top cover carries the frame which contains the moving parts of the relay. These comprise the two floats and their associated switches encapsulated in glass bulbs, one calibrated flow valve and two permanent magnets.</li> </ol>
Insulators	<p>The cover carries:</p> <ol style="list-style-type: none"> <li>(4) a gas discharge valve with G1/8" in male thread with protective cap.</li> <li>(5) A valve for pneumatically testing the alarm and insulation circuits, with protective cap.</li> <li>(2) A push rod for mechanically tripping the alarm and the insulation circuits, with protective cap.</li> </ol> <p>A terminal box which as standard contains 4 numbered M6 terminals and one earth terminal.</p>
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## EXTERNAL COATING AND PROTECTION

To the external aluminium alloy parts is given a phosphate treatment prior to applying one coat of vinyl enamel, colour RAL 7001. This treatment has proved more than satisfactory over the years for the majority of applications including desert and tropical situations.

However, in particularly severe applications (>500h salt fog) such as applications in corrosive atmospheres (acids) a suitable epoxy primer is recommended. (This should be discussed at the time of selection).

All external brass fittings are plated and all nuts are made in stainless steel.

Enclosures

## RELAY SELECTION

The size and type of relay to be used will depend on the transformer rating and oil volume. Suggestions are given in the following table but the final choice is often as a result of the transformer manufacturers experience.

MVA TRANSFORMER POWER	NOMINAL DIAMETER
Up to 5	25
From 5 up to 20	50
From 20 to 50	80

Hinges

## TECHNICAL DATA

Locks

- The relay pipework is typically mounted at 2,5 degrees to the horizontal. A positive inclination of up to 5 degrees to the horizontal axis is admissible.
- Operating pressure - 1 bar, tested to 2,5 bar for 2 minutes at 100 deg C.
- Gas volume to trip alarm:

BUCHHOLTZ RELAY TYPE	GAS VOLUME NECESSARY TO TRIP THE ALARM
BS 25	170÷230
BS 50, BS 80	250÷300

Handles

- Rate of oil flow in m/s to trip insulation. In the following table standard values are highlighted with an 'O' available, on request with an 'X' and not available with a '/'. +/- 15% tolerance at 20°C with oil viscosity according to IEC296.

INSIDE PIPE DIAMETER	1,0 m/s	1,5 m/s	2,0 m/s
25	o	x	x
50	o	x	x
80	o	x	x

Accessories

Rotary Operating Handles

- The relay operates within 0,5 seconds.
- Oil temperature between -25 and +115 deg C.
- Ambient temperature between -25 and +60 deg C.
- Degree of Protection IP65 to EN 60529.

## SWITCH ELECTRICAL DATA

Rated switch current is 2 A r.m.s. with max. 10 A r.m.s. as short term 30 ms current value.  
Breaking power is specified in the following table:

VOLTAGE	CURRENT	BREAKING POWER
220 Vd.c. (min. 12V)	2 A for 10000 maneuvers	250 W
230 V a.c. (min.12V)	6 A for 1000 maneuvers	400 VA

Insulators

Dielectric contact voltage as specified in the following table:

	SHORT TERM INDUSTRIAL FREQUENCY LEAKAGE TEST Kv / 1min. (r.m.s)	RESISTANCE VOLTAGE PER PULSE Kv (peak)
Between circuits and ground	2.5	5
Across open contacts	1	3

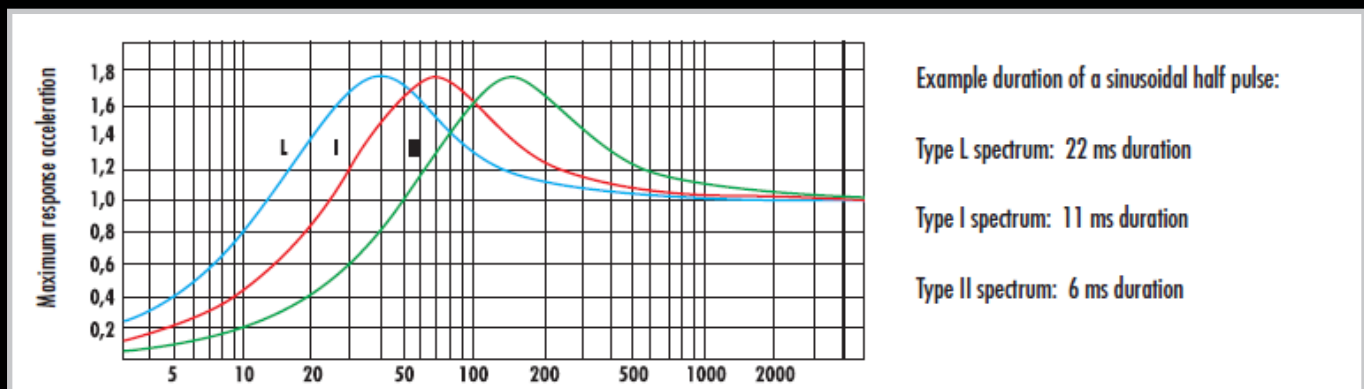
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The following Type Tests have been performed on the relay.

- Measurement of the volume of gas necessary to trip the alarm.
- 500 hr salt fog.
- Electromagnetic Field Test. Relay does not trip in field strength up to 25 mT (ref EN 50216-2).
- Stationary sinusoidal mechanical vibrations. Tests according to EN 60721-3-4 standards have been performed.
  - a) class 4M4 (4M6 on request) vibration test applied in sites where vibrations are transmitted from machinery and vehicles. Not suitable for machines exposed to high vibration and shock levels. Three-axis movement was impressed to the relay using special equipment with stationary sinusoidal vibrations from 2 to 200 Hz. Movement had a constant 3 mm (6 mm peak-peak) amplitude in the range from 2 to 9 Hz whereas above this frequency it had constant 10 m/s<sup>2</sup> acceleration. The alarm and release switches did not trip.
  - b) non-stationary vibration tests with vertical shock with 100 m/s<sup>2</sup> acceleration with type I spectrum (duration 11 ms) as shown in the graph below. Alarm and release contacts did not trip. On demand we are able to manufacture Buchholz relays with special features and test values higher than the ones stated above.



- A seismic test was also performed according to EN 50216-1 standards that refers to EN 60068-3-3 class 0, level 2 standards. The test consists of application of a 9 m/s<sup>2</sup> horizontal acceleration and a 4.5 m/s<sup>2</sup> vertical acceleration, increasing frequency one octave per minute. No activation of alarm or release switches was encountered.
- Pressure Withstand Test 2.5 bar for 2 minutes with oil at 100 deg C.
- Vacuum Withstand Test of 2500 Pa for 24 hrs.
- Rate of oil flow test to operate trip contacts, (as shown in table 3).
- Test to show the relay is insensitive to oil flow from conservator to transformer.
- Electrical tests per table 5.

## ROUTINE TESTS

- The following Routine Tests are applied to all relays.
- Hydraulic seal test in mineral oil at 90 deg C and 100 kpa pressure for 30 minutes.
  - Contact operation via mechanical push rod.
  - Contact operation by lowering the oil.
  - Rate of oil flow to trip contacts.
  - Electrical withstand test between contacts (as table 5).
  - Electrical withstand test between contacts and earth (as table 5).
- An individual routine Test Report is shipped with each relay

## RELAY OPERATING TEST

The following site Tests can be performed when the relay is installed on the transformer:  
 The Alarm and Trip contacts can be tested manually by the push rod (2) - mechanical test, or (only for alarm contact) by the introduction of air into the relay through valve (5) - pneumatic test.  
 A bicycle pump can be utilised for this test.  
 To effectively test the rate of flow of oil is a complex test requiring specialised equipment. Should this test be required other than as a type test then we can perform this on request at the time of the order.

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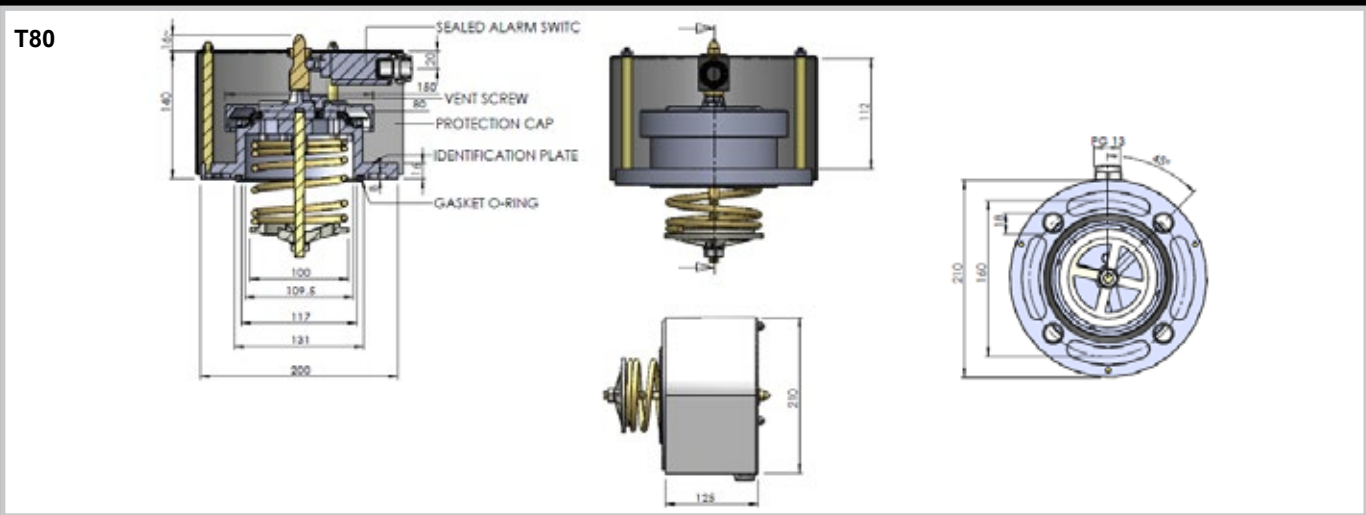
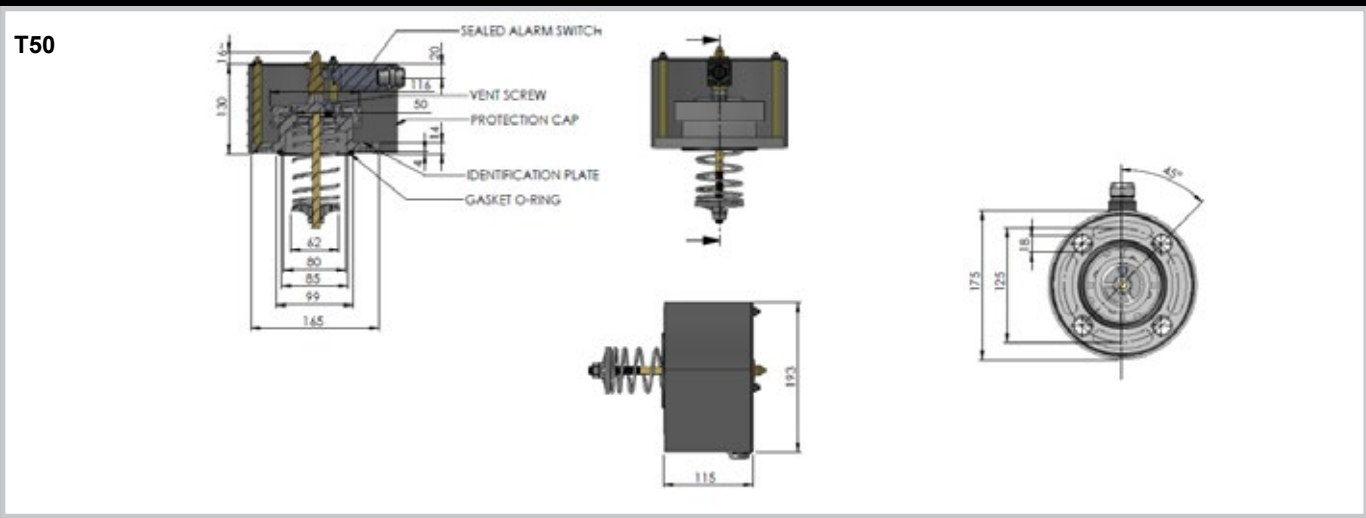
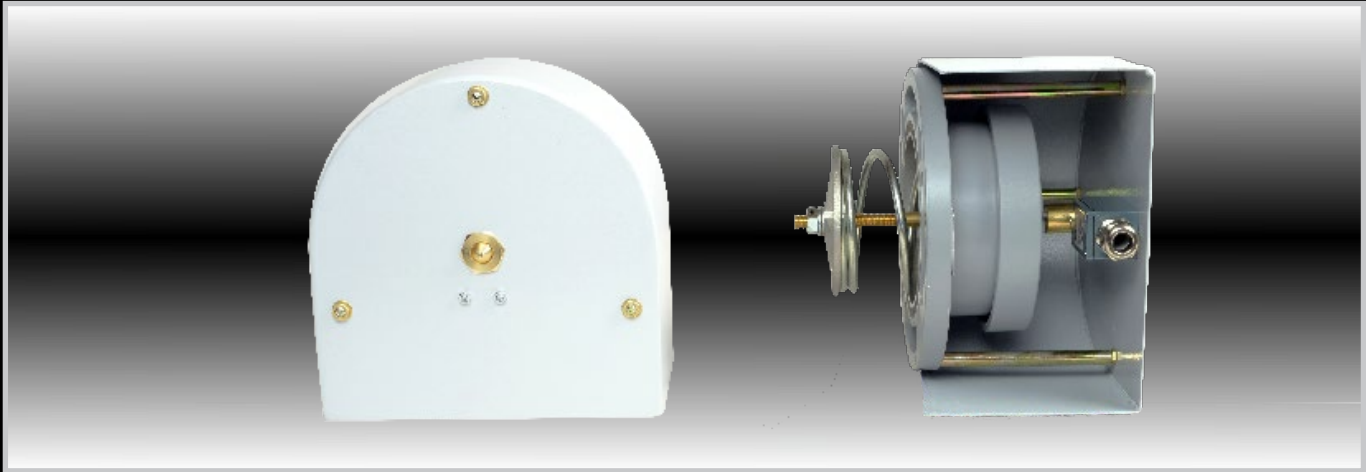
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Enclosures	<p style="text-align: center;"><b>INSTALLATION INSTRUCTIONS</b></p> <p>The following installation procedures must be observed for proper relay operation:</p> <ul style="list-style-type: none"> <li>• The red arrow on the relay must point towards the conservator.</li> <li>• The relay must always be full of oil, which means that the minimum oil level in the conservator must be higher than the relays breather valve.</li> <li>• The recommended inclination of the relay pipework is 2.5 degrees from the horizontal.</li> <li>• The pipe from the transformer to the relay must exit the transformer at the highest point.</li> <li>• The pipeline upstream from the relay has to be straight and with a length equal to 5-10 times the pipeline diameter, at least.</li> </ul> <p>Down stream from the relay, pipeline length has to be 3 times the pipeline diameter, only. It must rise up towards the conservator.</p>
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PART NUMBER	DESCRIPTION	Operating Pressure	Maximum Capacity	Switch I max	Switch V max	Switch Config
021-200	T50 Pressure Relief Valve	70Kpa	3000 L	5A	500VAC	1 C / Over
021-201	T80 Pressure Relief Valve	70Kpa	9000 L	5A	500VAC	1 C / Over

**Remarks:**

We can set T50 and T80 devices to the following pressures on request: 55Kpa, 90Kpa, 125Kpa

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Enclosures	<p>ALLBRO "T" valves are used to control pressures inside tanks. They are used where accidental, instantaneous and uncontrolled increases in pressure may create the danger of explosion. They are designed to discharge the pressure increases that have taken place to the exterior in a very short time period (a few thousandths of a second). They are widely used in the metal tanks of oil-cooled electric transformers. Sudden and violent short circuits inside these tanks, in fact, instantly generate an enormous amount of gas with a great increase in interior pressures. If the pressure cannot discharge to the exterior there is danger that the transformer may explode, with all the possible harm and damages this may cause. This danger can be prevented by installing one or more valves with discharge sizes proportional to the volume of oil contained in the transformer. It is always good practice to install these valves in all situations where internal pressure values must not exceed specific safety limits.</p>
Hinges	<p><b>CONSTRUCTION</b></p> <p>Our valves are totally protected against external corrosion and against penetration of foreign bodies between cover and protective cap. This ensures perfect operating efficiency even for extended periods of time.</p>
Locks	<p><b>TYPE "T" VALVES</b></p> <p>These consist of a flanged body and a corrosion-proof aluminium alloy disk. A brass rod that holds the spring is applied to the central part of the disk.</p> <p>There are two gaskets in the valve: a special shaped upper gasket and a lip seal.</p>
Handles	<p>When the valve is closed the upper gasket is pressed against the disk. The shape of the gasket permits a perfect seal even if the disk lifts 1-2 mm. The disk also makes a seal against the lip seal gasket as it moves upwards. If, due to interior pressure, the disk rises beyond this amount then the upper seal is no longer maintained while the lip seal remains. At this instant the surface of the washer invested by internal pressure is multiplied in area as is the total force applied on the spring. This causes total and instantaneous opening of the valve which consequently discharges excess pressures to the exterior. When pressure has been discharged the disk, pushed back by the spring, lowers down and closes the valve. As the disk moves downwards it first closes against the side gasket and then against the upper gasket. This latter gasket, because of its special shape, is pressed down 1-2 mm. and the disk moves further down, breaking the seal on the lip seal gasket. This releases any pressure that may have been trapped between the two gaskets. Now the valve is ready to intervene again.</p>
Accessories	<p><b>Total valve opening</b></p> <p>Valve opening is total each time the valve operates for pressure settings between 20 and 90kPa. The discharge opening area, for each valve operation, is equal to that for higher pressure settings even when pressure settings are lower than 20 kPa. If, however, pressures are generated inside the tank that are much higher than the setting then the spring, further compressed, allows the closing disk to create even larger discharge areas when it operates.</p>
Rotary Operating Handles	<p><b>Operating performance</b></p> <p>Nominal operating pressure: the pre-fixed overpressure value shall be agreed between supplier and purchaser within the standard range from 20 up to 90 kPa, with 10 kPa steps, with a tolerance of - 5 kPa to + 7 kPa.</p> <p><b>Routine tests</b></p> <p>It is necessary to carry on operational tests, with compressed air:</p> <ul style="list-style-type: none"> <li>· to check the correct functioning of the device at the operating pressure value</li> <li>· to check the functioning of the optic signal and of the electric contacts.</li> </ul>
Insulators	<p><b>INSTALLATION GUIDELINES</b></p> <p>Our valves come in 2 sizes and have different discharge areas. This allows users to select the type that is best suited for the volume of oil contained in the tank. The following gives guideline values:</p>
Transformer Equipment	<p>Volume of oil tank: Type of valve          up to 3000 dm<sup>3</sup> 50 T*          up to 9000 dm<sup>3</sup> 80 T*</p> <p>* These guideline sizes are based on experience.</p>
Index	<p>We recommend using multiple valves when oil volumes exceed these levels. It is always good practice to use multiple valves with smaller discharge areas rather than a single valve with a large area. The reason for this, in the case of transformers, is that it is better to install one valve above each winding column since these are the points where maximum interior pressures are generated in case of a short circuit. Instantaneous valve opening implies direct contact between the closing disk and oil. For this reason the valves are equipped with a screw to bleed out air that may accumulate during oil tank filling procedures.</p>

## PRESSURE SETTINGS

Standard pressure settings, for each type of valve, may vary from 20 to 90 kPa (approximately 0.2-0.9 Atm.)  
Valves with non-standard pressure settings are manufactured on request.

## GUARD AGAINST JETS OF HOT OIL

It is good practice, to prevent harm to persons or property from violent jets of hot oil evacuating from the valve, for valve discharges to be directed towards points properly designed to receive the discharge. Our valves are furnished with a steel powder coated protective cap for this purpose. This cap, which does not offer any impediment to the discharge, permits you to direct the discharge flow towards the point you desire.

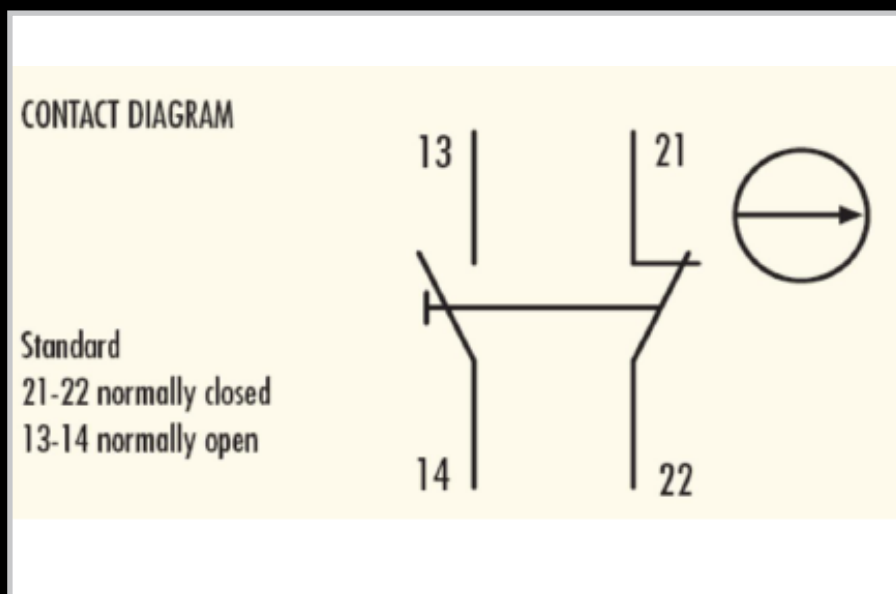
Detailed assembling instructions are supplied with the equipment.

Please feel free to contact our Sales Dept and ask for a copy of the working test film.

## ELECTRIC SIGNAL SWITCH

A "valve open signal" contact may be mounted on request. This is a fast tripping limit switch with switching contact contained inside a watertight casing. This contact is installed so that it acts simultaneous with the visual signal. This switch has the following characteristics:

Voltage	Uninterrupted current (making capacity)	Interrupted current (breaking capacity)
24 VDC to 220 VDC	2 A	100 Ma L/R<40 ms
230 VAC	2 A	2 A cosφ > 0.5



## EXTERNAL SURFACE PROTECTION

External surfaces are protected against weather corrosion. Aluminum alloy components are non-corroding and their surfaces are protected with a double layer of paint offering highlevel protection against all atmospheric agents and resisting temperature variations between -40 °C and +100 °C. The plastic protection cap and stainless steel screws offer further assurance of proper valve operation.

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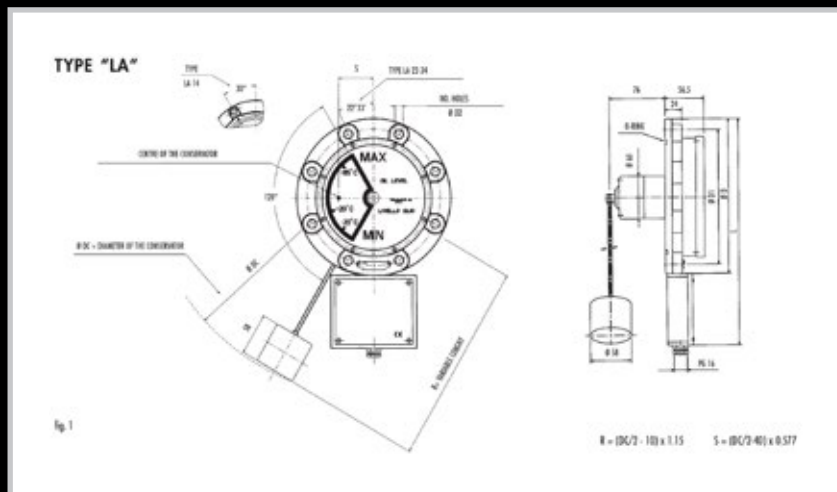
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PART NUMBER	DESCRIPTION	ø D	ø D1	ø D2	NO. OF HOLES	L	O.RING TYPE	WEIGHT (kg)	R STANDARD
021-300	LA140	140	125	7	6	245	O.R. 186 (6362)	1.4	max. 370
021-301	LA220	220	190	11.5	8	325	O.R. 221	2.3	max. 550

## LEVEL GAUGES WITH MAGNETIC JOINT

The level with a magnetic joint are composed of a sturdy watertight body of aluminium alloy painted against corrosion.

The movement of the float rod and the gauge disk takes place by means of magnetic coupling through an angle of 120°. In this way, for every variation in the level of the liquid there is a corresponding rotation of the magnet with consequent variation of the indication on the dial of the gauge. The gauge disk is coloured white and red.

The system is closed with a screen-printed polycarbonate disk with reference marks corresponding to the levels that the oil should reach at the following temperatures in degrees Centigrade: -20° C, + 20° C, +85° C.

Note: Special dials may be on request.

## READING THE INDICATIONS OF THE VARIOUS LIQUID LEVELS

- Minimum level: when the dial shows all red.
  - Maximum level: when the dial shows all white.
  - Intermediate indications between MAX and MIN: the dial shows part white and part red.
- Remember that the amount of red shown indicates, in portion, the part of the conservator left without liquid.

## FLOAT MOVEMENT

This may be in the radial direction of the conservator (type "LA").

## FLOAT ROD

This is completely threaded. If the length is not specified (distance R in drawing), the standard size indicated on the table is supplied. The rolling float arm is an aluminium tube.

## ELECTRIC INDICATION

These level gauges are fitted with microswitches for indicating the minimum and maximum oil level.

## ELECTRIC CHARACTERISTICS

- Power supply: 24 to 220 V a.c. or d.c.
- Interruption power: 3 A 125/250 V a.c (resistive)  
0,5 A V d.c for inductive load L/R = 40 ms  
0,25 A 250 V d.c for inductive load L/R = 40 ms



## INDICATING INTERVENTION

The electric microswitches intervene with an advance angle  $\leq 5^\circ$  with respect to the indications of the minimum or maximum oil level in the conservator. When there is a double contact on MIN and/or MAX, the second contact intervenes about  $5^\circ$  after the first contact. After installation of the gauges it is possible to check the correct operation of the microswitches and, in general, good operation of all the internal parts of the gauge by proceeding as follows:

- Remove the cap situated in the center of the dial on the front of the level gauge, unscrewing it in an anticlockwise direction.
- Insert a screwdriver in the slot provided and turn the gauge disk until the electric circuit connected to it switches on or off.
- Close the cap again, being particularly careful to position the O-ring (O.R.) correctly under the cap and to screw the cap on quite firmly.

## REMARKS

External nuts and bolts made of stainless steel.

External painting in grey RAL 7001

Degree of protection: IP 55

Working temperature.

All the level gauges are suitable for working with:

- Oil temperatures between:  $-25^\circ\text{C}$  and  $+120^\circ\text{C}$
- Environment temperature between:  $-25^\circ\text{C}$  and  $+60^\circ\text{C}$

## INDICATIONS FOR ASSEMBLY

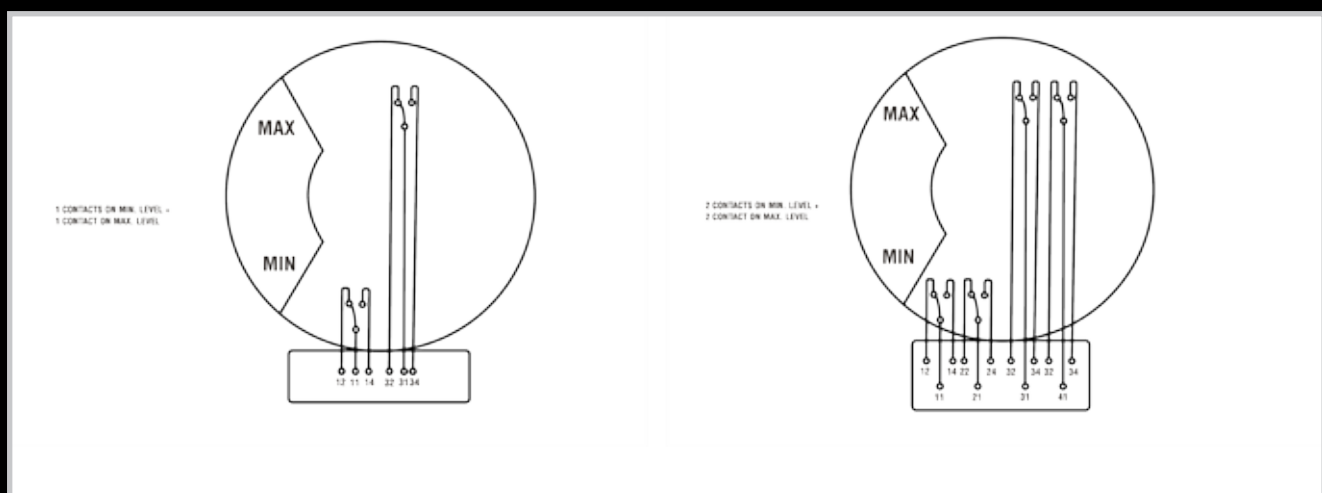
The level gauges which have float movement in the radial direction of the container (type "LA") must be fitted offset with respect to the horizontal axis of the conservator (distance "S" in fig. 1) so as to have an exact indication of the minimum and maximum oil level. It is good practice to check operation of the gauge after having fitted it on the conservator.

For further and more detailed information, see the technical information card supplied.

## TESTS AND INSPECTIONS

The level gauges are subjected to insulation test towards earth as follows: 2.5 kV AC 50 Hz for 72 seconds.

The bodies of the level gauges, after having passed the dimensional inspection and without their internal parts, are tested for watertightness so as to eliminate those that have leaks. Final testing is carried out when the level gauge is completely assembled. The sensitivity of all the signaling movements and the accuracy of their assembly are scrupulously checked.



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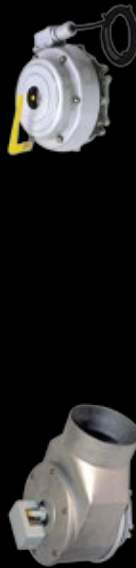
**AKM 44612/44622/44617/44618**  
 Direct mount thermometers  
 Control and alarm with switches and optional SCADA output

**092 Flow Indicators**  
 Control alarms and other auxillary equipment



**Oil Flow Indicators**

**XPRD Extra Protection Relief Device** LPRD/208/213/216 Large Pressure Relief Devices  
 Confidence with the global standard in pressure relief devices



**Pressure Relief Valves**

**900/910 Rapid Pressure Rise Relays**  
 Protection and detection of dangerous sudden pressure changes



**Rapid Pressure Rise Relays**

**OTIWTI™ Remote mount thermometer (AKM)**  
 The next generation thermometer from the global leader



**Thermometers**

**T/Guard Link Optical Hot Spot Module**



**CAB-699 Fiber Optic Temperature Probe**



**509 DW Intelligent Transformer Monitor with Direct Winding**



**CON-159 Optical Feedthrough**



**T/Guard 408 and 408XT Fiber Optic Temperature Monitoring System**



**COV-121/PLT-201/PLT-202 Junction Box For Tank Wall Plate**



**KIT-057 Portable Fiber Optic Thermometer**  
 Compact fiber optic temperature measurement

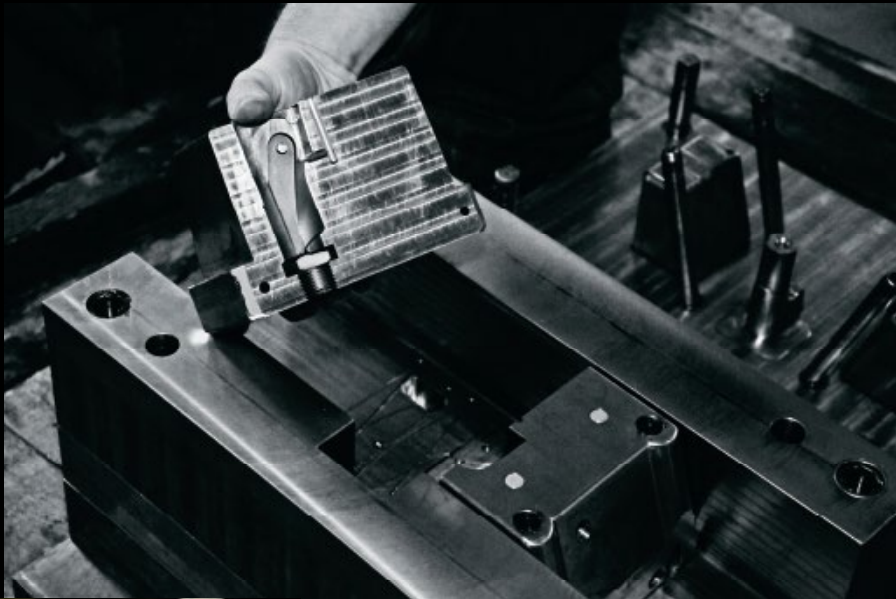


**Neoptix Fibre Monitoring**

**Serveron Dissolved Gas Analysers**

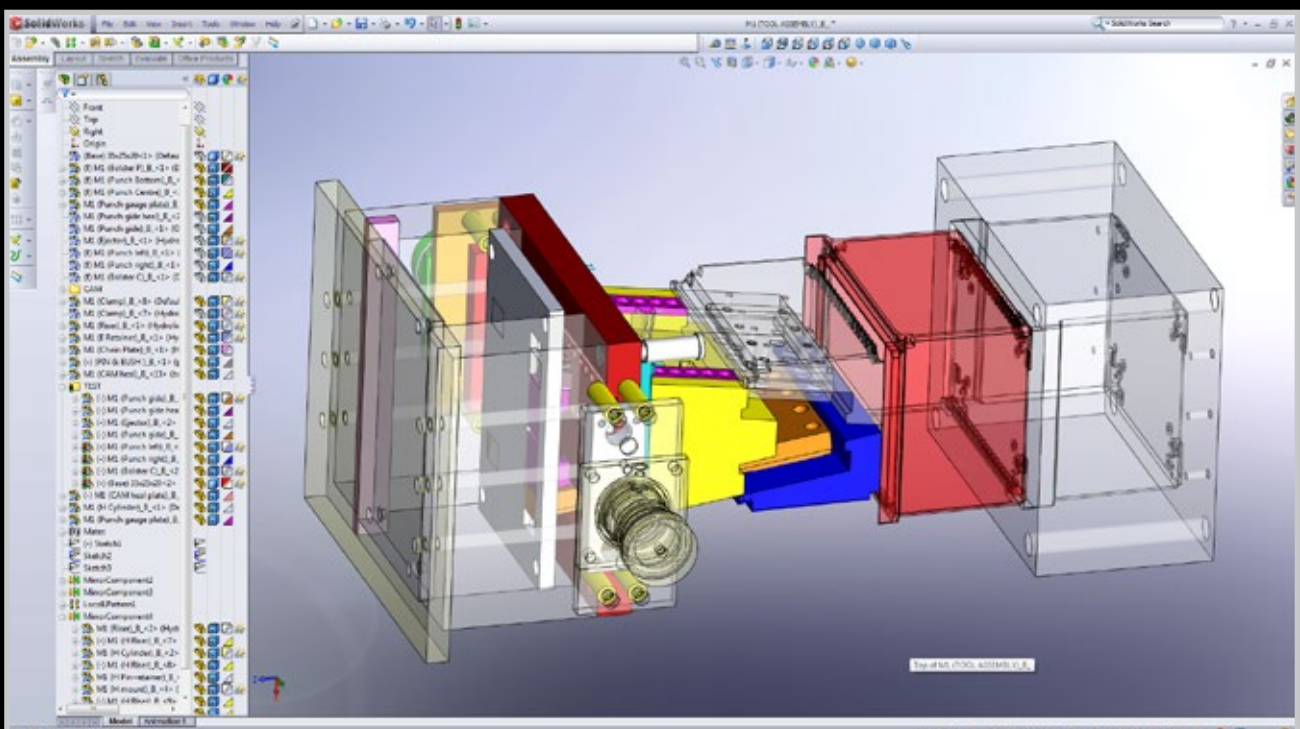


## Tool Making

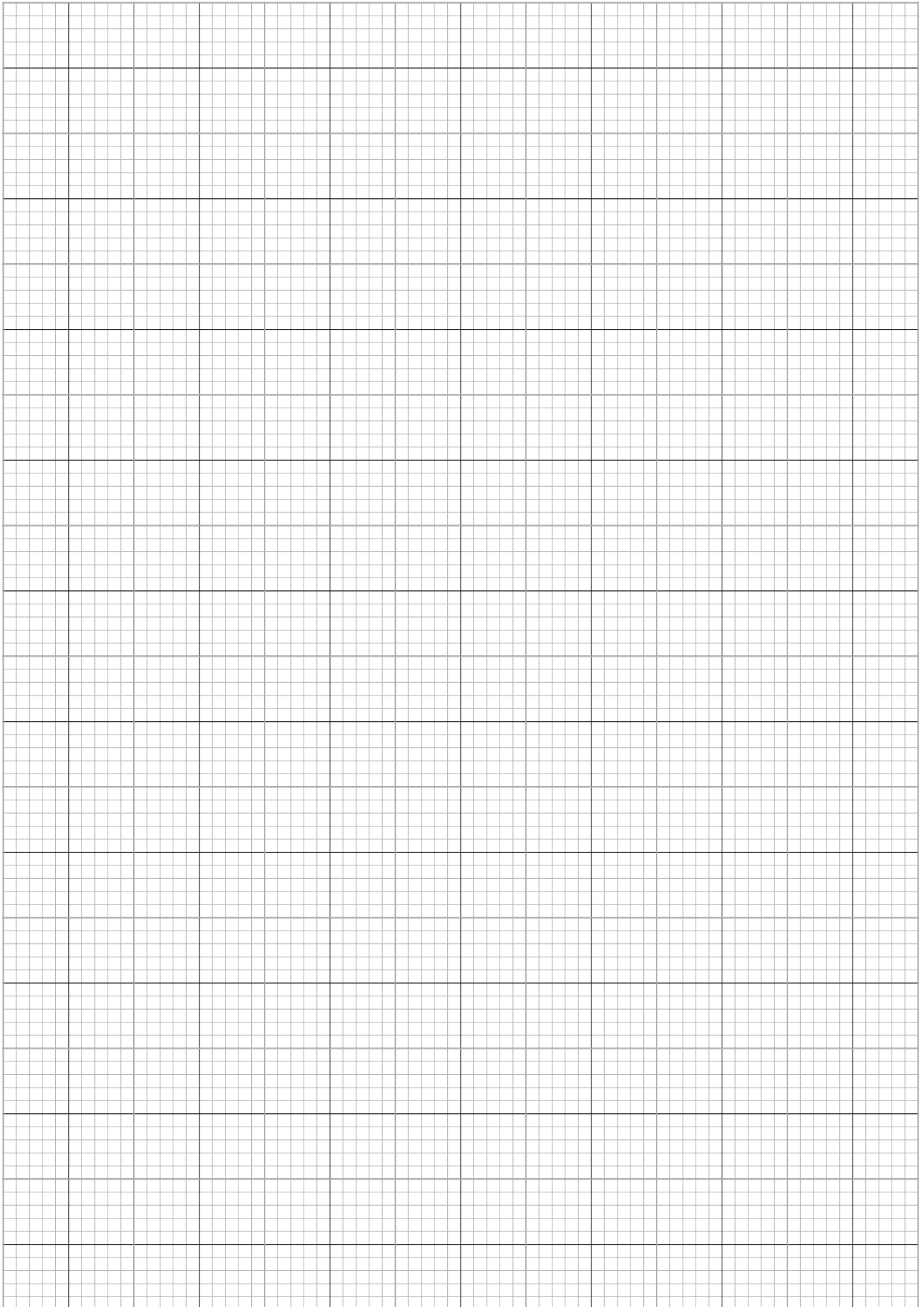


Allbro has an amazing toolmaking capability

## 3D Design Department



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Hinges

Locks

Handles

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Rotary Operating Handles

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Typical property	Standard	Units	SMC 1 - 20	SMC 2 - 20	BMC/DMC
Density	ISO 1183	g/ccm	1.8	1.8	1.8
Fibre content	EN ISO 1172	mass-%	20	30	18
Fibre type	-	-	Glass	Glass	Glass
Recycling code	VDA 260	-	UP-GS20	UP-GS30	UP-GS20
Recyclability	-	-	Yes	Yes	Yes
Young's modulus 1)	EN ISO 527-4	GPa	9	10.5	13
Tensile strenght 1)	EN ISO 527-4	MPa	55	70	31
Tensile rupture strain 1)	EN ISO 527-4	%	1.4	1.4	0.4
Compression strength 1)	EN ISO 14126	MPa	160	160	160
Poisson's ratio 1)	EN ISO 527-4	-	0.3	0.3	0.3
Flex modulus 1)	EN ISO 14125	GPa	105	10.5	9.5
Flexural strength 1)	EN ISO 14125	MPa	150	165	90
Impact strength 1)	EN ISO 179	KJ/m <sup>2</sup>	60	70	30
CTE 1)	ISO 11359-2	10 <sup>-6</sup> m/mK	18	18	18
Continuous service temperature	Similar to IEC 216	°C	150	150	150
Short term service temperature	-	°C	210	210	210
Heat distortion temperature	EN ISO 75-2	°C	200	200	200
Specific heat capacity	-	J/gK	1.1	1.1	1.1
Volume resistivity	IEC 60093	Ohm*cm	10 <sup>12</sup>	10 <sup>12</sup>	10 <sup>7</sup>
Surface resistivity	IEC 60093	Ohm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>9</sup>
Comparative tracking index	IEC 60112	CTI	600	600	600
Dielectric strength	IEC 60243-1	kV/mm	25	25	25
Dielectric constant	IEC 60250	-	4.5	4.5	4.5
Dissipation factor	IEC 60250	-	0.01	0.01	0.01
Oxygen index	EN ISO 4589-2	%	22	22	22
Flammability	UL 94	level thickness	V0/3.2mm	V0/3.2mm	V0/3.2mm
Flammability	ISO 3795	Class/thickness	NBR/3.2mm	NBR/3.2mm	NBR/3.2mm
Fire / smoke	EN 45545	Hazard level	-	-	-
Glow bar	IEC 60707	level	BH2-95	BH2-95	BH2-95
Glow wire	IEC 60965-2-1	°C	960	960	960
Water absorption	ISO 62	% after 24h	< 0.3	< 0.3	< 0.3

## Notes:

All materials supplied for SMC/BMC are in accordance with: ROHS, SMC/BMC materials do not contain heavy metals, asbestos, halogens or other toxic materials. All values in this table are representative mean values taken from compression moulded flat panels. Properties may vary due to modifications of products, moulding conditions or environmental influence. Properties given are accurate to the best of our current know-how and experience. All reinforcement glass fibres used are textile glass fibres of a diameter greater than 14 microns and cannot be inhaled or otherwise ingested. **Textile fibres are not hazardous fibres.** SMC and BMC are recyclable materials.

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