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MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2

167 KVA CSP Overhead Distribution Transformer, Pole Mount, 4160GrdY/2400 Grounded Wye Pri., 277/480V Sec., FR3, Copper, KNAN, Tap Changer - 100 Hz

Product ID: 303894



Image: MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2

Larson Electronics LLC manufactures a wide variety of products, including custom built to spec designs. The pictures displayed for this unit are a general representation of form factor for the product line and may not accurately represent this exact configuration in every detail due to custom builds and changes between similar products in our standard catalog. The specifics for this configuration are listed in the specification table and supporting documentation (CAD files, Dimensional Drawing, Name Plate Diagram, Wiring Diagram, etc.). This means that specific details (receptacles, plugs, wires, connections, mounting brackets, external finishes, etc.) may not be accurately represented in images vs specifications. Please review specifications and do not order based solely on images.

MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 Pole Mount Overhead Transformer

Transformer Type: Overhead Distribution Transformer, Conventional Type
Transformer Configuration: Liquid Filled Pole Mounted
Transformer Polarity Type: Additive
Phase: Single Phase
Capacity: 167 KVA
Primary Voltage: 4160GrdY/2400
Primary Voltage Switch: N/A
Primary Voltage Class: 5 kV Class
Primary Phasor: Grounded Wye
Primary BIL: 60 kV
Secondary Voltage: 277/480V (L-N-L)
Secondary Voltage Class: 1.2 kV Class
Secondary Phasor: Dual Winding Single Phase
Secondary BIL: 30 KV
Frequency: 100 Hz
Temperature Rise: 65°C
Insulation Rating: Class E Insulation - 120°C, 248°F
Forced Air (Fans): None
Cooling Class: KNAN; Self-Cooled
Tap Changer: 5-Position Tap Changer w/ External Operating Handle
Tap Qty: (2) FCAN Above, (2) FCBN Below
Tap %: 2.5%
Tap Changer Switch Location: Side of Tank Body
Impedance: 1.0-4.5% Typical

Ratings

Meets/Exceeds DOE 2016 Efficiency Ratings
Complies with ANSI / IEEE #C57.12.00
Complies with ANSI / IEEE #C57.12.20
Complies with ANSI / IEEE #C57.12.28
Complies with ANSI / IEEE #C57.12.31
Complies with ANSI / IEEE C57.12.70
Complies with ANSI / IEEE C57.12.80
Complies with ASTM D3487
Non-PCB Insulating Fluid
Lifting Lugs Included
Completely Self Protected (CSP) Unit
Primary Lightning Arrestors
Primary Current Limiting Fuses
Under Oil Interrupter Switch
Thermal Magnetic Interrupter
LV Circuit Breaker
Emergency Bypass Switch

Efficiency: 99.10%
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 85°C Reference Temp.
No Load Loss (in watts): +/- 455W
Full Load Loss (in watts): +/- 1,833W

Primary Connection Type: Live Bushing Lug
Primary Termination: Porcelain High Voltage Bushing side wall mounted
Primary Bushing Rating: 15 kV Class, 95 kV BIL, 250A, Porcelain Bushings
Primary Connection Qty: (2)
Primary Lightning Arrestors: (2) Externally Mounted Lightning Arrestors, Included
Primary Lightning Mounting Provision: Mounting Provisions for Installing Lightning Arrestor on H1 & H2 Primary Terminals
Primary Lightning Arrestors Voltage Rating: 5.1 kVrms
Primary Lightning Arrestors MCOV Rating: 6 kV Class
Primary Over Current Protection (OCP): Lightning Arrestors, Weak Link Fuses
Primary Over Current Protection Method: External Arrestors, Oil-Immersed Fuses
Secondary Connection Type: Live Bushing Lug
Secondary Connections: NEMA 4-hole spade
Secondary Connection Qty: (3)
Secondary Neutral Connection: Secondary X2 Neutral Grounded to Tank via 1/2”-13 UNC Tapped Hole, 7/16” Deep Bung & Copper Ground Strap
Secondary Over Current Protection (OCP): Magnetic Circuit Breaker w/ Thermal and Current Protection & Emergency Bypass Switch
Terminals: Tin Plated Primary and Secondary - Accepts Copper or Aluminum Connections
Grounding Provisions: (1) Lug w/ Grounding Strap, Tank Grounding Lug
Transformer Protection: Secondary Circuit Breaker w/ External Operating Handle
Load Break Switch: N/A
Efficiency Standard(s): Meets DOE 2016 Standards, Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: FR-3 Oil
Fluid Capacity*: 33.73 Gallons
Fluid Weight*: 417 LBS
Liquid Level Indicator: Internal In-Tank Oil Level Line
Temperature Indicator: N/A
Pressure/Vacuum Indicator: N/A
Pressure Relief Device: Automatic Action, Combination Fault Indicator & Pressure Relif Device, (comparable to IFD Corporation part number IFD-ORCA-10PSI-aA), Resettable, Installed on Tank Body
Fault Indicator: Combination Fault Indicator & Pressure Relief Device
Oil Level Marking: Internal
Fill Valve: N/A (Tank Filled via Removable Lid)
Drain Valve: 1/2" NPT Port w/ Removable Bolt
Winding Material: Copper
Ambient Temperature Rating: 40°C
Sound Level: 55 dBA
Elevation Level: N/A
Core Material: Grain Oriented Steel
Tank Material: Coated Steel
Housing Material: Coated Steel w/ Corrosion Resistant Cover Band, Removable Top Cover
Hardware Material: Stainless Steel Hardware
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: ANSI 70 Light Grey
Mounting: Double Hanger Bracket
Mounting: Pole Mount via Hangar Brackets
Lifting Lugs: Included
Dimensions*: 39.4"-W x 35.6"-D x 45.3"-H
Tank Diameter*: 24" OD
Dry Weight*: 750 Lbs
Total Weight (Liquid Filled)*: 1542 lbs
*Please note that numbers are approximate and subject to change

Total Load Loss (in watts): +/- 2,288W

Note: Losses offered are typical only, not guaranteed

Special Orders - Special Requirements
Contact us for special requirements
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Fax: 1-903-765-7664
E-mail: sales@larsonelectronics.com

The MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 Completely Self Protected (CSP) Overhead Distribution Pole Mounted Transformer from Larson Electronics offers

powerful, reliable and efficient power distribution in outdoor and public locations. The low operating costs, low heat emissions and low cost of ownership makes this transformer ideal for a wide range of applications and businesses. This power distribution system is designed for overhead, pole mount installations and use.

PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO POWER DISTRIBUTION PANELS, TRANSFORMERS, OR SUBSTATIONS

Transformer Features: With a transformer rating of 167 kVA, the industrial transformer features a primary voltage of 4160GrdY/2400 Grounded Wye and a secondary voltage of single-phase 277/480V (L-L-N). This transformer connects to a three phase electrical grid system to provide single phase low voltage power for indoor distribution. This pole mount transformer features porcelain high-voltage, dual bushings on the primary side and three bushings on the secondary side. Equipped with Copper windings and a grain oriented steel core, this overhead distribution transformer consists of one coil and two core loops. Tin plated terminals on the primary and secondary side accepts copper or aluminum connections.

Completely Self Protected Features: This CSP transformer provides protection from voltage spikes, over-current scenarios, low oil conditions, and overheating conditions. Before the primary bushings on the input voltage side, this transformer is equipped with surge arresters to prevent damage to the transformer from lightning strikes and over-voltage situations that could damage the internal components. On the inside of the tank before the transformer coil are oil-immersed current sensing weak link fuses to protect the transformer coil from an over-current situation from the primary side. Within the tank is an interrupter switch with an oil-level float to detect low oil situations, and automatically disconnects the transformer coil from the grid if the oil level is too low, which could result in overheating the transformer. On the secondary side, a magnetic temperature sensor monitors internal temperature and will disconnect the transformer from secondary loads when temperatures reach the overheating point. A low voltage circuit breaker is equipped on the secondary side to protect this transformer from an overload situation from the secondary output current. An emergency overload switch is provided for utilities to bypass the secondary protection in emergency situations. This CSP transformer is completely self-protected from all major points of external sources that could damage the transformer while under normal operation.

The MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 is air cooled and does not have fans or mounting provision for fans. This unit features a 65°C temperature rise for reduced heat waste, increased reliability and longer life. The combination of low temperature rise and high efficiency makes this unit suitable for use in electrical rooms, air conditioned spaces in buildings, underground vaults and similar locations, in addition to outdoor areas.

Insulation Fluid: The MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 features FR-3 oil insulation fluid. Internal marking is available for proper oil level monitoring. We offer transformers with mineral oil fluid, if needed.

Biodegradable Fluid: Biodegradable cooling fluid (vegetable oil) has a higher heat capacity compared to mineral oil, making the liquid safer to use and more reliable during operations. Vegetable oil has a higher flash point and fire point than mineral oil, hydrocarbon oil, silicone oil and synthetic ester. This cooling fluid is also non-toxic and can tolerate higher breakdown

voltages than mineral oil. When operating at high temperatures, biodegradable cooling liquid sustains up to 120% loan conditions, which helps preserve the transformer's lifespan and performance.

Gauges: There are no gauges on this transformer. We can add liquid level, temperature and pressure/vacuum gauges at an additional cost. Standard liquid level, temperature and pressure/vacuum gauges are analog, manual reading types.

Pressure Relief Device: An automatic pressure relief device is included with this transformer.

Rapid Rise Relay: There are no rapid rise relays on the unit. This safety component is designed for protection when a rapid increase in tank pressure occurs. The relay is suitable for detecting sudden pressure fluctuations above predetermined safe limits.

Surge arresters: This system is equipped with lightning arresters. Mounting provisions for installing customer provided lightning arrestor on the H1 and H2 primary terminal are included for installing arresters in-field. Two arresters are included with purchase.

Valves: The MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 is not equipped with fill or dtrain valves. The transformer can be filled via removing the top lid. A drain port w/ bolt plug is equipped.

Protection Fuses: This transformer does not contain fuses or circuit breakers. For units without protection fuses, up stream protection is provided. We recommend provisions for protection fuses when possible, as blown fuses may require more frequent oil changes.

Mount: The heavy-duty enclosure makes the unit suitable for and outdoor applications. Equipped with hangar brackets and lifting lugs, this overhead power distribution system can be mounted on poles.

Benefits: The MT-UCSP-R7-1P-GNF-167KVA-SLR-BB-A3-BF-CZ-B-M2 heavy-duty transformer offers many benefits to consumers. This transformer provides owners with significant energy savings, as well as offering environmental benefits. Higher efficiency not only extends the life of the transformer, but also turns into cost savings for owners in the form of lower energy bills and decreased cost of ownership.

We offer completely self protected (CSP) pole mount overhead transformers at an additional cost.

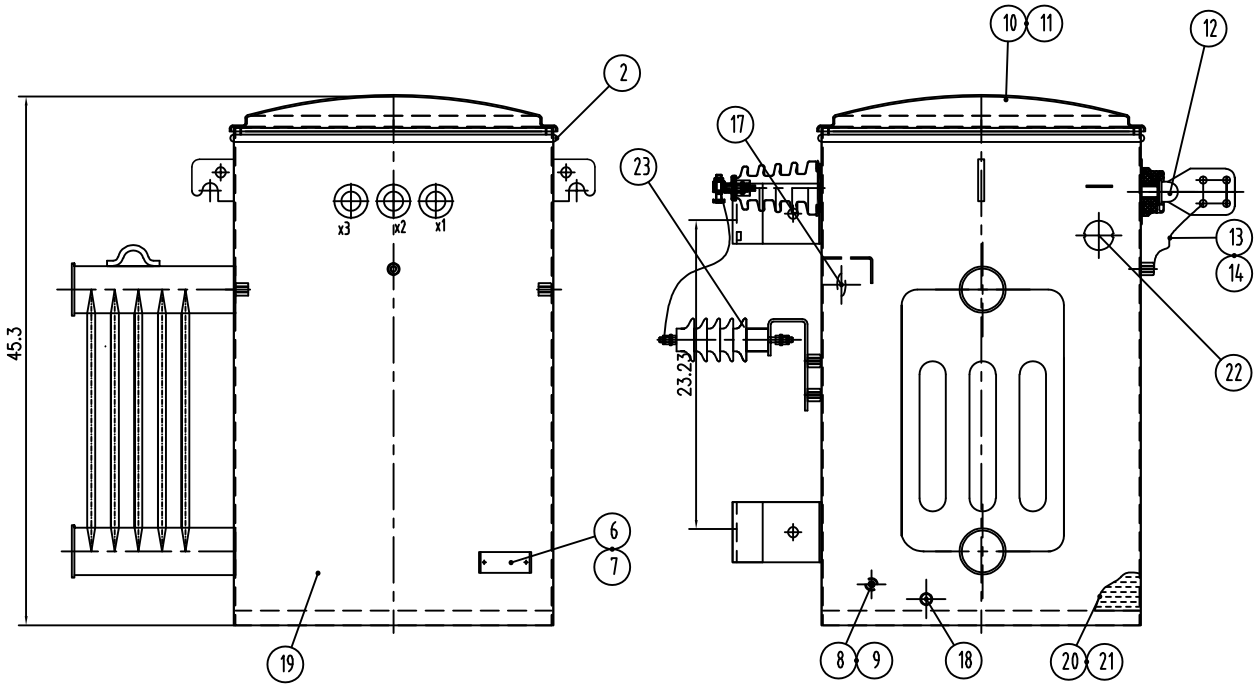
Applications: General purposes, industrial sites, electrical rooms, public locations, manufacturing facilities, steel plants, offshore, commercial, military, processing plants, electric power distribution, utilities, public locations and more.

Larson Electronics is a manufacturer and as such can build stationary and portable transformer systems to your specifications. Although we carry several models of power distribution transformer systems, we can deliver custom ordered units almost as quickly as our prebuilt units. If this model does not meet your needs, please contact us at 1-800-369-6671 or sales@larsonelectronics.com to discuss your specific requirements.

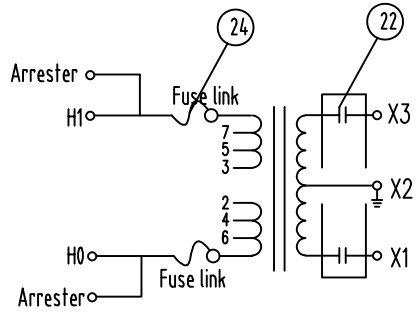
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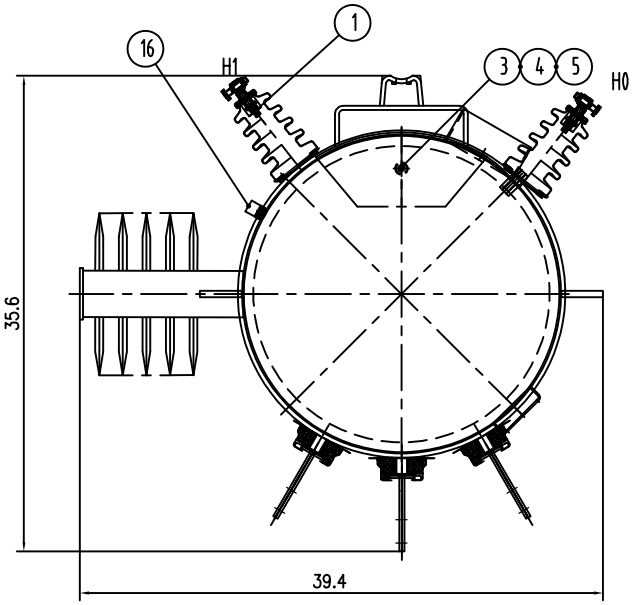
Approx. weight LBS

Untanked	Oil	Total
750	417	1542

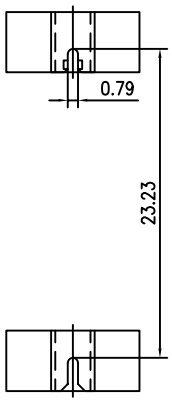


wiring diagram

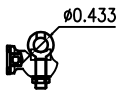




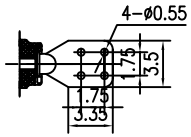
hangar bracket



HV connection



LV connection



NO.	Code	Name	QTY	Material	Unit Weight	Total Weight	Remark
25		Painting	1	ANSI 70 gray			
24		Fuse link	2				
23		Arrester	2				
22		LV Circuit breaker	1				
21		Tank assembly	1				
20		Insulation oil	189	FR3 oil			
19		Tank	1	coated steel			
18		Oil drain valve	1				
17		Tap changer	1				
16		Pressure relief valve	1	combined with fault indicator			
14		Washer 12	1	Stainless steel			
13		Bolt M12×25	1	Stainless steel			
12		LV bushing	3				
11		Sealing gasket	1				
10		Cover	1	coated steel			
9		Washer 12	2	Stainless steel			
8		Bolt M12×30	1	stainless steel			
7		Screw M4X6	2				
6		Nameplate	1				
5		Ground strap	2				INNER TANK
4		Washer 12	2	stainless steel			
3		Bolt M12×20	2	stainless steel			
2		Hold down gear	1				
1		HV bushing	2				with fuse link

Mark	Revise	Revision	Signature	Date
Designed		Standard		
Checked		Examined		
Audited		Approved		
Crafted		Date		

Pole Mount TR

4160GrdY/2400V, 277/480V, 167kVA, 100Hz

pattern mark	mass	scale
		1:7
page		0 page

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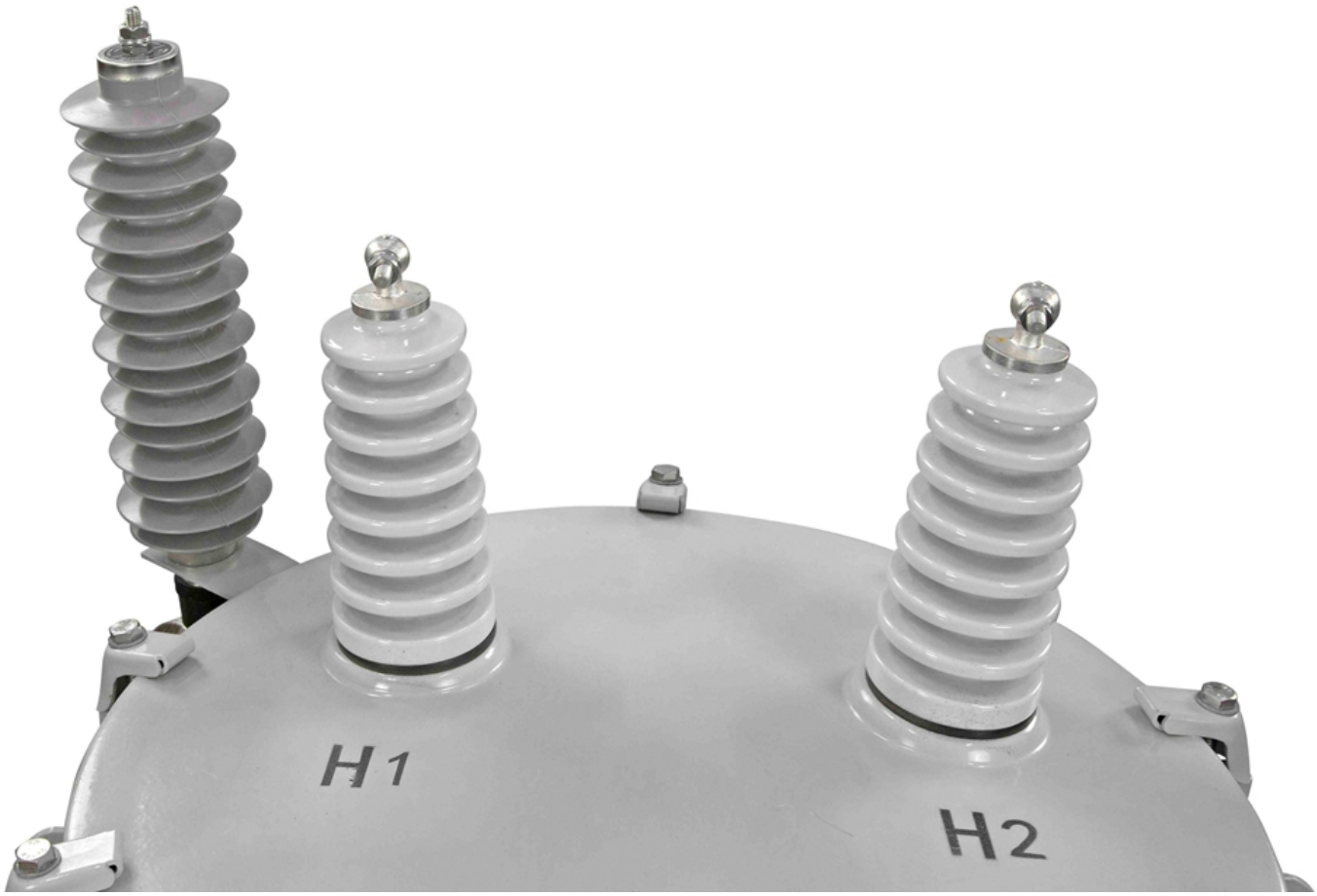
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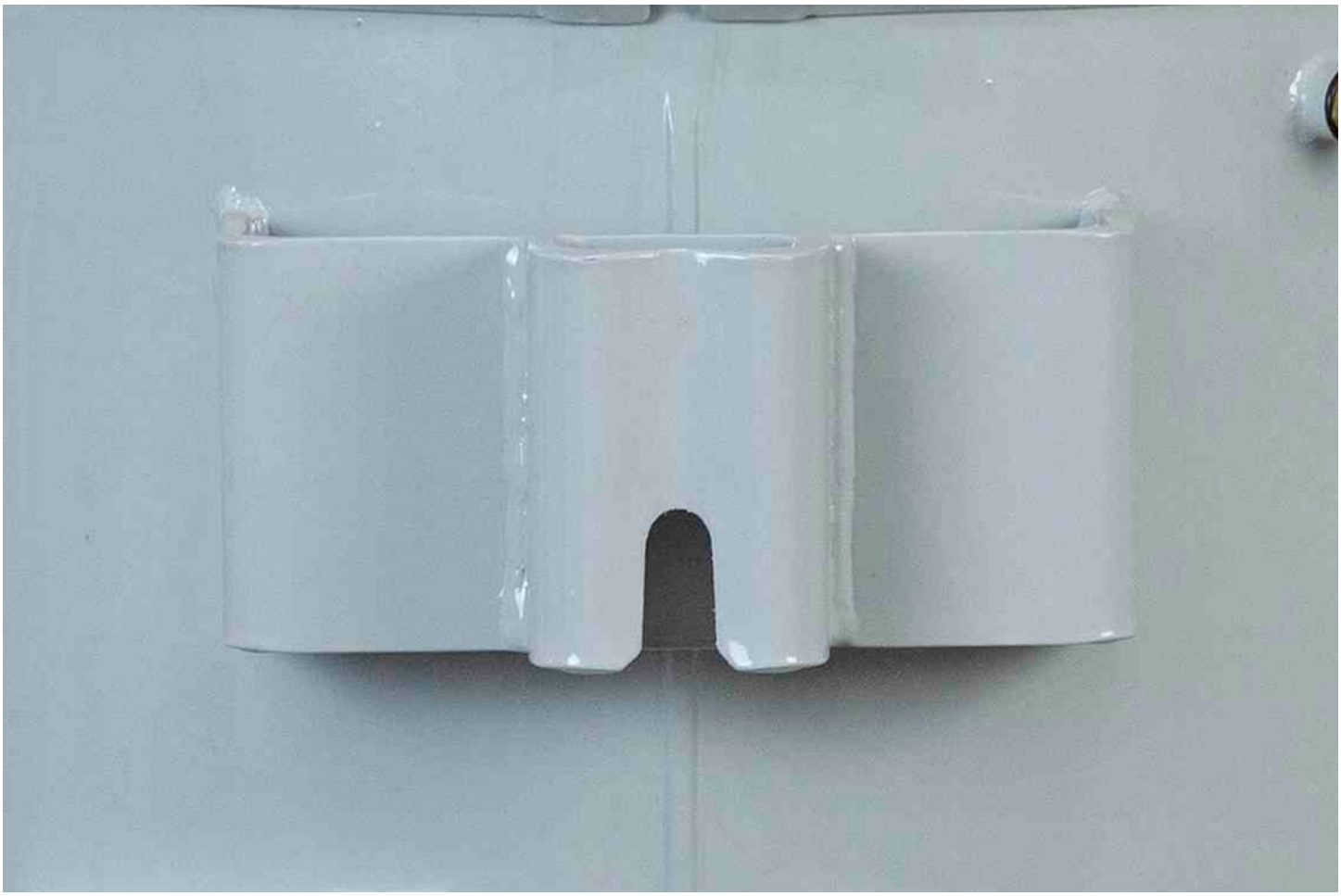
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Frequently Asked Questions (FAQ)

There are no Faqs