

Technical parameters of circuit breaker lifting vehicle

Serial Number	Parameter Name	Unnamed: 3	Unit	Technical Parameters
1	Winch	Model	Set	HDT1 Heavy - duty Lifting, Traction, Self - locking Hand - operated Winch with Brake. The outer shell shall be made of high - quality carbon steel, specially heat - treated. It is light in weight, good - looking and durable. The winch can be operated continuously with 360 - degree rotation. Dimensions: length 443, width 266, height 214. It adopts two - way self - locking brake, and the load will always stay at the required position when the handle is released (the load remains in the required position whenever the handle is released).
2		Gear Ratio	Set	Heavy - duty Lifting, Traction, Self - locking Hand - operated Winch with Brake. Test load: 12.25kN, gear speed ratio: 12.19:1, minimum hand - pulling force: 120N. The internal gear model is GTS450, which shall be precisely quenched and wear - resistant.
3		Wire Rope Diameter		The diameter of the steel rope shall not be less than 8mm. It is made of solid stainless - steel galvanized steel rope with high strength bearing capacity and high tensile strength. Anti - rotation steel rope is adopted.
4		Maximum Load - bearing Capacity		The lifting weight of the winch shall not be less than 1t.
5	Body	Material		Made of national standard Q235 hot - formed carbon structural steel with good toughness and castability. The density of Q235 steel is 7.85 g/cm ³ , and the tensile strength should be approximately 375 - 460MPa (3750 - 4600kgf/cm ²).
6	Body	Welding Process		Before welding, select the groove form for the welded parts according to the process requirements. Open the groove and remove rust, oil and other harmful substances from the groove, the butt surface of the welded parts and the surrounding area to avoid welding defects. At the same time, ensure that the surface of the welding rod is clean and free of dirt. When the ambient temperature is lower than 0°C or the welded parts are thick, pre - heat at 100 - 150°C generally. In actual production, according to different processing requirements of the workpieces, manual arc welding, CO₂ gas - shielded welding, submerged arc welding and other welding methods can be selected. During the welding process, the welding speed should be appropriate to ensure full penetration, good fusion and no burn - through. For thicker welded parts, multi - layer welding is required. In multi - layer welding, a smaller welding current is usually used for the first layer, generally with a 3.2mm diameter electrode, and the maximum thickness of the weld layer should not exceed 5mm. The top layer should ensure that the width and height of the weld meet the requirements. When selecting CO₂ gas - shielded welding, ER49 - 1 (H08Mn2SiA) and ER50 - 6 welding wires are usually used. The purity of the CO₂ gas for welding should be relatively high, generally not less than 99.5%. For high - quality joint welding, the purity of CO₂ gas should not be less than 99.8% and the dew point should be lower than - 40°C. During tack welding, determine the length and spacing of the welds according to the thickness of the plate. For thin plates, the tack welds should be thin and short, with a length of 3 - 50mm and a spacing of 30 - 150mm; for medium - thick plates, the length of the tack welds is 15 - 50mm and the weld spacing is 100 - 150mm. When welding with CO₂ gas - shielded welding, thin - wire, short - circuit transfer method can be used for welding thin plates; thick - wire, spray - drop transfer method can be used for welding medium and thick plates. In terms of welding position, all - position welding, flat welding, horizontal fillet welding and welding in other spatial positions can be carried out. During welding, select the correct process parameters to ensure the welding quality of the workpieces. To reduce spatter, select appropriate welding current, arc voltage and torch angle. Generally, the welding current is in the low - current range during short - circuit transfer and in the high - current range during fine - particle transfer. According to the actual situation, automatic submerged arc welding can be used. Its characteristics are that the mechanical device automatically controls wire feeding and arc movement. It has a high degree of automation, high production efficiency, beautiful weld formation, stable chemical composition and high weld quality. During submerged arc welding, according to the national standards GB/T14957 - 1944 "Melting Welding Wires" and GB/T4241 - 1984 "Stainless Steel Wire Rods for Welding", HJ431 flux is often selected, matched with H08A and H08MnA welding wires. The assembly of the welded parts must ensure uniform gap and levelness. Tack welding generally uses shielded metal arc welding with E4303 electrodes, electrode diameter 4mm. The length of the weld is generally 30mm and the spacing is 100 - 300mm. Ensure full penetration, good fusion and no welding defects.

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7	Body	Bending Process		GB/T 1184 Geometric Tolerances - Unspecified Tolerance Values GB/T 1804 General Tolerances - Unspecified Tolerances for Linear and Angular Dimensions 0ZD.919.012 Anti - Bump and Scratch Specification for Purchased and Outsourced Products QJ/ZDS 2201 - A Sheet Metal Development Design Process Specification
8	Body	Surface Treatment (Grinding, Powder Coating)		Before grinding, check whether the workpiece to be ground has been inspected and approved for release by the quality inspector. Before grinding, ensure that the surface of the workpiece is free of other debris. If cracks or defects are found on the plate, re - weld it before grinding. After the welding of the vehicle body is completed, grind off the excess welding points and slag, and level the raised parts. Carry out grinding of welding spatter, grinding of surface bumps and scratches, grinding of weld reinforcement and grinding of machining allowance. After grinding, conduct self - inspection. The ground area should have no obvious grinding marks and depressions, and no welding spatter around. Powder coating process: degreasing, cleaning, rust removal, surface conditioning, phosphating, drying (dry the workpiece to be painted after phosphating and cleaning), spraying, drying, inspection of the quality of the sprayed film. After spraying, check the color, gloss and surface condition of the coating. The color and gloss should meet the standard requirements visually, and the gloss should be measured with a photometer. Check that the paint surface should be free of adhering sand or dust, and the color should be uniform, without wrinkles, bubbles, cracks, rubbery substances, sagging, spots, pinholes, bleeding or shrinkage holes.
9	Body	Maximum Lifting Height		The maximum lifting height of the transfer vehicle is 0 - 2000mm.
10	Body	Maximum Lifting Weight		The maximum lifting weight of the transfer vehicle is 800kg.
11	Internal U - shaped Pulley	Coefficient of Friction Resistance		The dynamic friction coefficient is 0.05 - 0.1.
12		Material		Made of 304 stainless steel pulleys with double bearings. It is smooth, labor - saving, has strong load - bearing capacity, is corrosion - resistant, wear - resistant, smooth and quiet. The deep - groove design prevents the rope from slipping easily.
13		Maximum Bearing Pressure		The maximum bearing pressure of a single pulley is 1000N (the total number of pulleys used in the transfer vehicle is 8).
14		Anti - slip Fixing Device		It has a fixed pulley bracket.
15	Factory Commissioning	Touch - up Painting at Bumped Areas		Touch - up painting is done at bumped areas.
16		Maximum Weight Test		The maximum test weight is 900kg.
17		Overall Lubrication		Anti - wear, anti - freezing and anti - oxidation lubricating oil is used.
18		Affixing Instruction Signs at Important Positions		Instruction signs are affixed at important positions.
19	Safe Operating Environment	On - site Temperature		- 25°C to 45°C
20		On - site Humidity		≤95%
21		Site Flatness		The site should be flat.