YUANTAI CRANE

Specification for Wire Rope Type Electrical Hoist

- Compact structure, light weight, safe and reliable.
- High universality, interchangeability and lifting capacity.
- Convenient ,easy maintenance and operation ,stable lifting.
- It is the most widely used and popular light lifting equipment.

Henan Yuantai Crane Machinery Import&Export Co.,Ltd.

Part 1 Introduction

Features

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1.2 High universality, interchangeability and lifting capacity.
1.3 Convenient ,easy maintenance and operation ,stable lifting.
1.4 It is the most widely used and popular light lifting equipment.

Product category

Our company mainly manufactures electric hoists with lifting capacity of 0.25~63t, lifting height of 1~100m, working class of M3~M4, also can design and manufacture according to requirements.

Application

Traveling electric hoists can be installed on various kinds of cranes or suspended on I-beam to do some straight or curve motions.Fixed electric hoists can be installed on fixed support to do some vertical motions.Widely used in industrial and mining, rail way, port, warehouse sites.

Working conditions

It is applicable in the temperature of -25℃～+40℃, Humidity≤85%, Altitude below 1000m, Power is 3-phase 380v 50HZ(also can be customized according to customer's requirements)

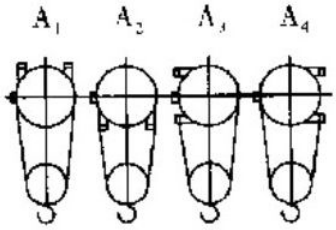
Classification

Single speed CD1, Double speed Md1,Explosion-proof, Metallurgic, Low headroom hoists etc.

Structure Layout

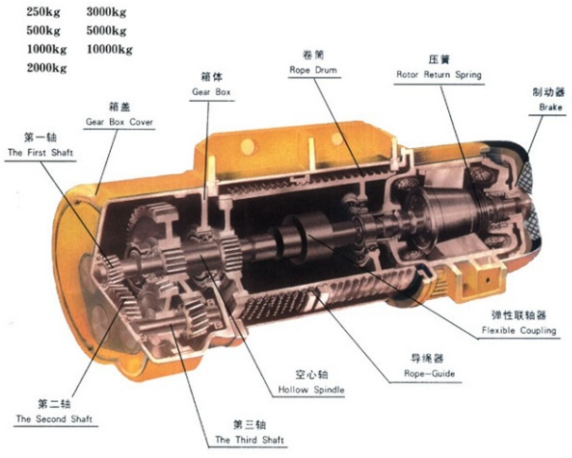
Stationary type and operation type both included.

As shown on the right: A1、A2、A3、A4 separately fixed on the up, down, left and right side. A2 always used on the trolley of double beam crane with hoist. It is usually operation type without special explanation, traveling along with beams.



Main Structure and Features

Electric hoist is composed of lifting mechanism, traveling mechanism (except fixed type) and electric parts as shown below:



(1) Lifting Mechanism

Lifting motor drive winding drum rotating through coupling and hollow spindle of reducer, in order to make wire rope of drum drive the hook up and down.

Lifting Motor

1.Tapered rotor three-phase asynchronous braking motors
2.High starting torque, effective braking, compact structure
3.Stable operation, small volume and light weight
4.Safety in use, convenient maintain
5.B or F class insulation, IP44, IP54 protection

CD1 type hoist fitted with ZD type single speed motor, MD1 type hoist fitted with ZDS type double speed motor, its ratio of usual speed and low speed is 10:1.

Reducer

1.Three-level dead axle helical gear rotating body, long service life
2.Gear and the axle made by alloy steel after heat treatment, high intensity
3.Box and cover made from superior cast iron, fully covered
4.Great speed ratio, high accuracy
5.Compact structure, silent operation, high efficiency
6.Machinery oils
7.Easily assemble and disassemble

Rope Drum

1. Made of seamless steel tube, light weight, transmit the dynamic force by splines.
2. Coil casing made from superior cast iron, high intensity
3. The drum is the central part of the hoist. It connect with travelling mechanism above through balance beam, with reducer and motor both sides, and with wire rope and hook below. Installed limited guide bar equipment to the up front of the outer cover.

Hook

1..Forge with special steel; thrust ball bearing connect with casing through hook and beam to make the hook operate freely.
2.No more than 5t :single pulley hook; More than 10t: double pulley hook.
3.High security, safety buckle, mousing hook

(2) Travelling Mechanism

- Consist of electric trolley, travelling reducer, travelling motor, driven trolley, etc. The mechanism do reciprocating motion through main engine driven by side plate and drum.
- The wheel tread is straight when used with box type girder or H beam.
- The wheel tread is circular arc when used with I-beam.
- Its travelling speed is 20m/min, but 30m/min is possible; if 1~5t capacity with 12m or higher lilfting height, a driven trolley is necessary.

- Travelling Motor

1.Use tapered rotor of three-phase asynchronous braking motors
2.Stable starting,safe braking, can be used with reducer
3.B grade or F grade of insulation, closed structure,motor protection grade is IP44 or IP54.

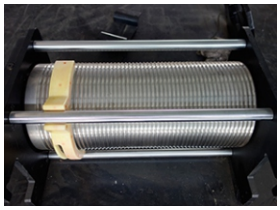
(3) Electrical Device

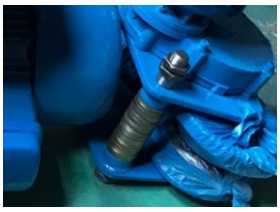
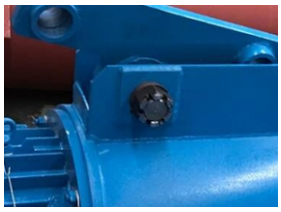
- Control box is rational layout,convenient for maintain
- The Control box protection grade is IP55, and have water proof
- The main power source is optional
- Safe touch line has high electrical conduction and low pressure
- Current collector has high planing speed, to ensure the sustaining power supply
- Consisted with controlling box(0.25t capacity has no it),switch button,stopper and connecting wire
- The switch button power voltage is 380v or 36v, standard product is 360v,operating the switch accords to the direction symbols on it,via the disconnector's connect and disconnect(in controlling wire) to control the hoist's moving.
- Safe and Standard Protecting Function:
  novoltage protection, ground protection,short-circuit protection,thermal protection, over-loading protectgion,limit protection,overcurrent protection,power-off protection

1.Lifting limitor:broken fire limit device during up and down travelling
2.Overloading protection: overload limitor, according to the working conditions on site to preinstall related parameters
3.Top-clashing proof device: heavy punch limitor,sensitive reaction, compact appearance

Part 2 Compared with other brand hoist

Compared Item	Other Brand	Yutantai Brand	Yuantai Advantage
Limited rod			The bending part of the limiting rod is on the upper part, and the lower limit position will not be deformed due to the deformation when the force is applied, so as to avoid the hidden danger such as the topping.
	the position of the limit rod stuck in the push-pull rod is easily deformed and failed.	integrated design	
Rope guider card board			Stamped and formed card has higher strength, stronger impact and higher safety performance.
	Cast iron card board, easy to produce defects such as shrinkage holes, slag inclusions, affecting safety performance.	The card board is stamped and formed by steel plate, and the material is upgraded to Q345B, which greatly prolongs the service life of the wearing parts.	
Limit device installation identification			Properly prompt the user to correctly install and debug the limit device.
	The limit device is an important safety device for the crane, Usually there is no obvious warning sign.	Use the eye-catching warming label.	
Brake ring			Maximize the protection of workers and the environment to prevent environmental pollution.
	The brake ring is made of asbestos, which is harmful to the environment and workers.	The brake ring is made of non-asbestos material.	

Compared Item	Other Brand	Yutantai Brand	Yuantai Advantage
hook			Higher safety performance and easier maintenance and replacement.
	Integral hook shell, it is inconvenient to replace the pulley and pulley shaft.	1 t, 2 T and 3 T splinting type hooks are used.	
Drum			Steel drum design is adopted to avoid casting defects such as shrinkage of cast iron drum, slag inclusion, cracks and even safety accidents after being subjected to force.
	Cast iron drum are prone to casting defects and have lower overall performance than steel reels。	The drum are all upgraded to thick steel reels, effectively improving the reel strength.	
Wire rope			The stock-oiling is evenly distributed, and the oil content is high, avoiding the oil stain falling, and we improved the service life of the steel wire rope.
	The rope is coated with oil, and the surface of the rope has grease accumulation phenomenon, which is easy to damage the rope guide.	our rope dia. and rum dia ratio is increased to 24, rope dia. and pulley dia. ratio is increased to 25. so that the life of the wire rope is extended much lone. And rope is improved by stock oiling process.	

Compared Item	Other Brand	Yutantai Brand	Yuantai Advantage
Secondary limit device			Improve the safety of the operation and prevent to crash.
	There is no secondary limit device, and it is prone to crash when it rises to the upper limit position.	Install the Secondary limiter is more safe.	
Bolt on trolley			The slot nuts ensure that the nut isl not loose during operation to prevent dangerous accidents. Bolts are more durable.
	Usually all bolts on trolley are fixed by double nuts, which is still easy to loose during the operation and a safety accident occurs.	The bolts for 5ton or above, are equipped with slot nuts.	
Overload limiter			Original limiter is smooth operating, long service life
	Not from original manufacturer	from original manufacturer	

Part 3 Yuantai Hoist Feature

Yuantai upgrade hoist's work class from M3 to M4, so that its work life is lengthen one time than before!

Work class	M3(1BM)	M4(1AM)	M5(2m)
Lifting motor load	15%ED	25%ED	25%ED
starting times per hour	＜150	180	240
Designed worklife	＜1600 hours	3200 hours	6300 hours
Application	＜not often use	Often used in low and medium loads	Frequent and medium use

1)The motor adopts conical rotor motor, which integrates driving force and braking force, making the overall structure compact.
2)The hook is made of high strength steel and equipped with locking protection device.
3)With overload, overcurrent, loss of pressure, break equal protection function;

Part 4 Electric Hoist used in Special Fileds

Besides normal type of hoist, we can design and produce many kinds of non-standard electric hoist.
Main Type of Non-Standard Electric Hoist

European Box-Type Broad Gauge Hoist
Explosion-Proof Electric Hoist
Metallurgy Electric Hoist
Marine Electric Hoist
Stone Material Yard Electric Hoist

◆ Hoist for European Box-Type with Broad Gauge

Used on European Style Crane, the hoist travels on the bottom frange plate of the box-type girder, the contact area between the wheel and the track is bigger, the force is more evenly and the hoist can travel more steadily.
Application: Used on European style girder or non-standard gauge track.

◆ Marine Hoist

It can work in the area with ≤95% humidity, oil mist, mould, and long-term transverse or longitudinal inclination work area.

Application:

Engine Room Crane: used for the main engine maintenance of the ship, change important machine parts during trial voyage.

Advantage of Marine Hoist:

Used in the area with oil mist, salt mist, mould, the motor is treated particularly and the insulation class if F.
Power off manual release device, release the heavy materials safely while power is off.
Adopt galvanized wire rope hoist, hook pulley group, electric cabinet, etc.
With function of double limit for upper limit;
With function of weight Limit;
The trolley is rack driven, used to sea, ship vibration, inclined working environment.
With function of overload, overcurrent, decompression, phase loss and dislocation, limit alarm, etc.

◆ Electric Hoist for Stone Materials Yard

Electric Hoist used particularly in stone materials yard, Model CD1/MD type double wire rope hoist, of which hook is fixed on the hoist axle to lift materials without axial deviation, which is a very safe and economical lifting device in stone materials lifting work., mainly used in mine, material yard and stone materials processing industry.

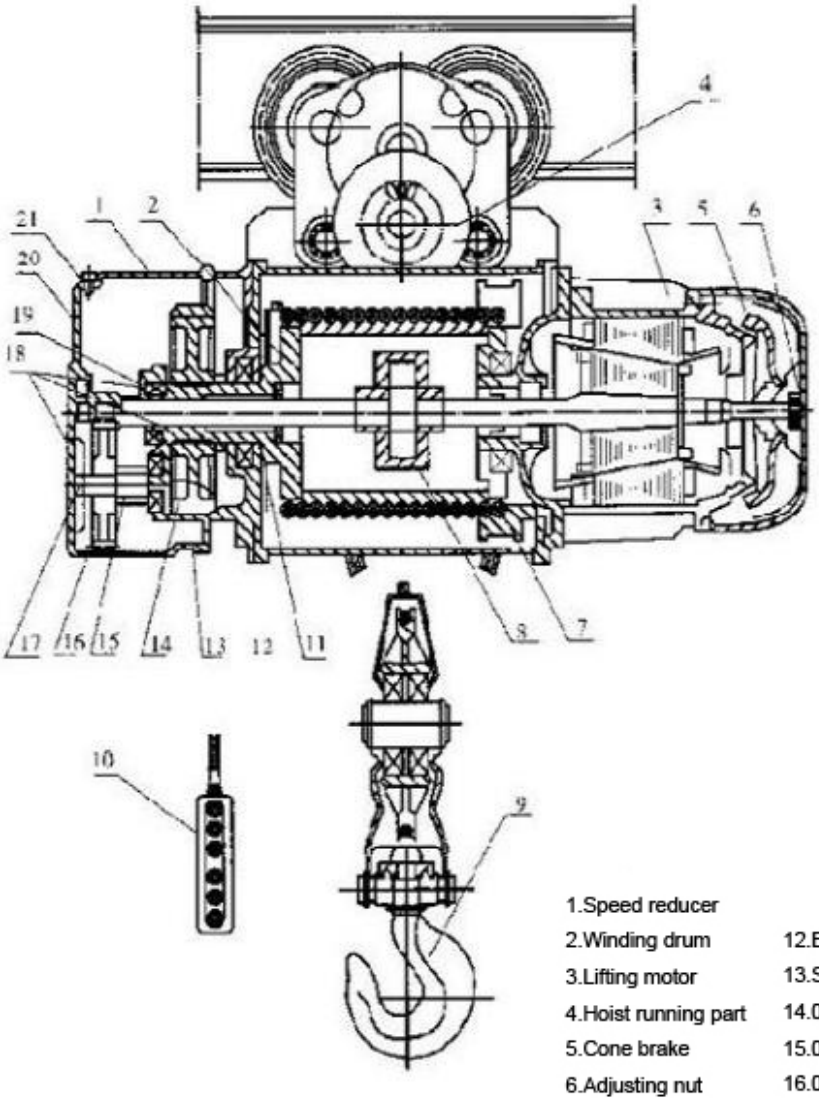
Advantage of Electric Hoist for Stone Materials Yard:

1.Hook center has no axial deviation during lifting process.
2.More type and specification, lifting and traveling speed is widely ranged.
3.Double wire rope structure, the design is more reasonable, the force is more evenly and lifting is more steady.
4.The structure is more tight, the extreme dimension is small, derived from CD1 and MD2 product, the machine parts can be commonly used, and after-sale service is more convenient.

Advantage of the new double wire rope device:

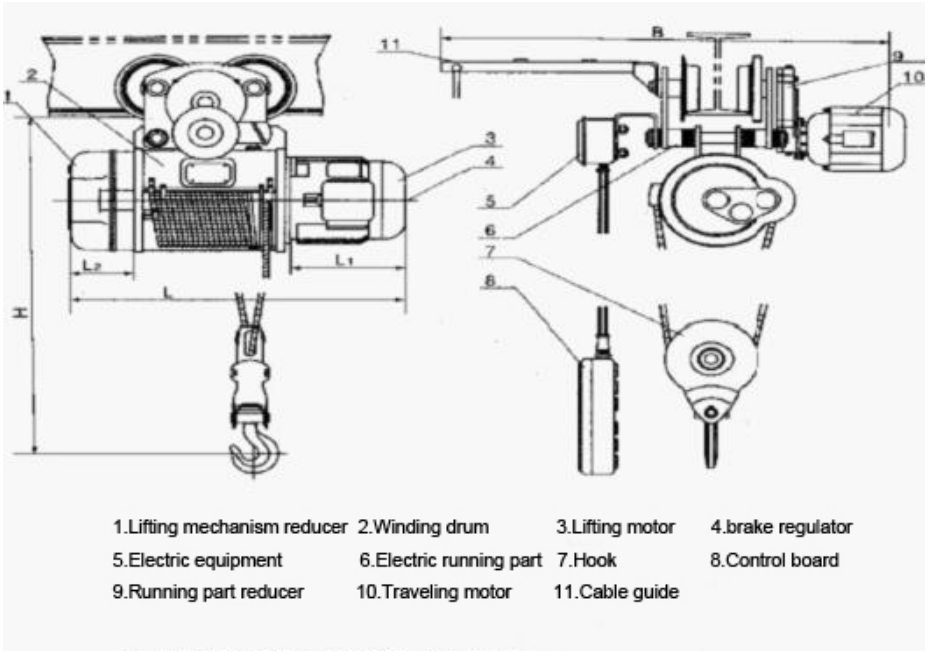
A. The external shell is made from thickened and high-strength nylon, wear-resistance and the practicality is better;
B. The external shell is octangle, more beautiful and durable.
C. With locking device, more safe.

Part 5 Drawing



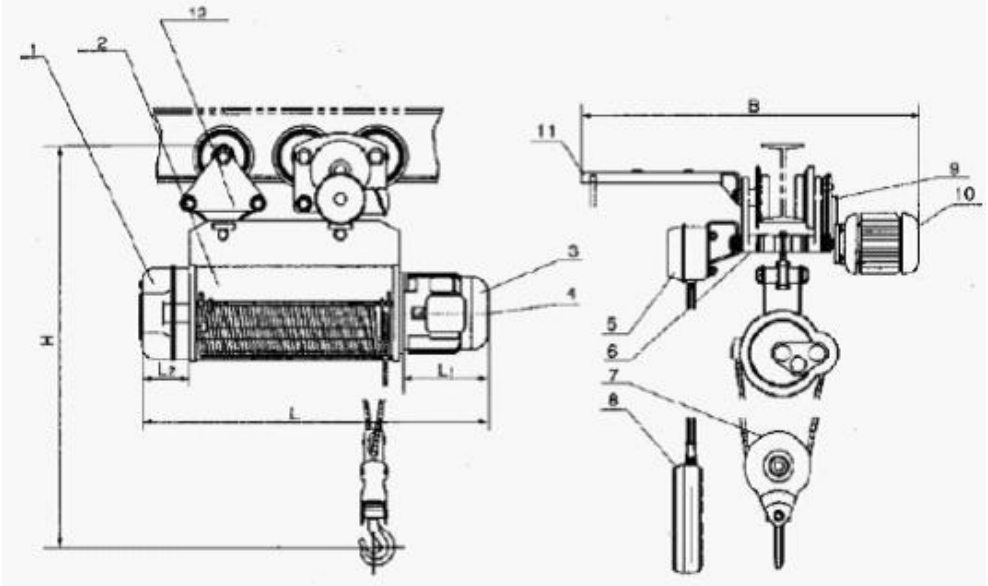
1.Speed reducer	
2.Winding drum	12.Box body
3.Lifting motor	13.Seal ring
4.Hoist running part	14.09 gear
5.Cone brake	15.06 gear shaft
6.Adjusting nut	16.05 gear
7.Rope guide	17.04gear shaft
8.Coupling	18.Ball bearing
9.Hook	19.needle roller bearing
10.Control board	20.Box cover
11.Hollow spindle	21.Vent plug

Cd1 type 0.5t-5t, lifting height 6m-9m electric hoist outline drawing



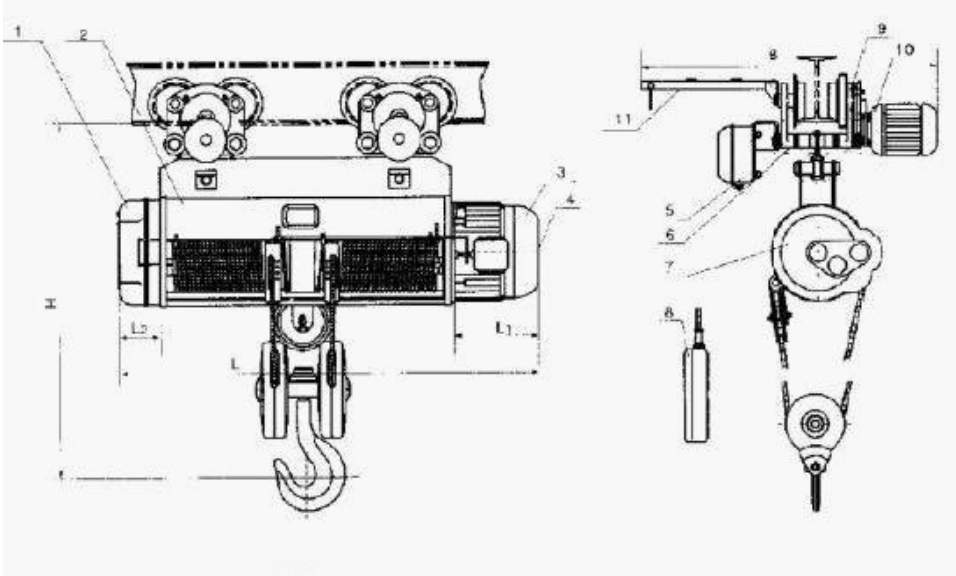
1.Lifting mechanism reducer 2.Winding drum 3.Lifting motor 4.brake regulator
5.Electric equipment 6.Electric running part 7.Hook 8.Control board
9.Running part reducer 10.Traveling motor 11.Cable guide

Cd1 type 0.5t-5t, lifting height 12m-30m electric hoist outline drawing



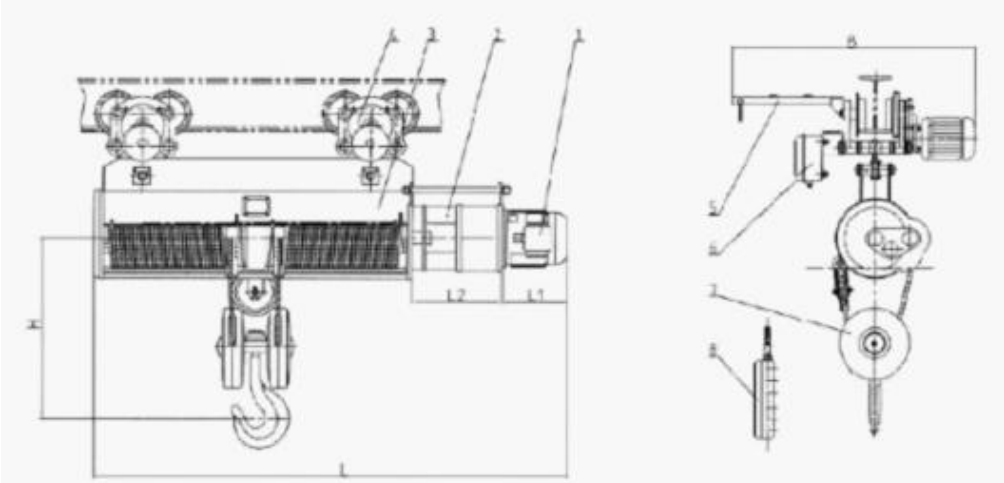
1.Lifting mechanism reducer 2.Winding drum 3.Lifting motor 4.Brake regulator
5.Electric equipment 6.Electric running part 7.Hook 8.Control board
9.Running part reducer 10.Running motor 11.Cable guide 12.Following car

Cd1 type10t, lifting height 9m-30m electric hoist outline drawing



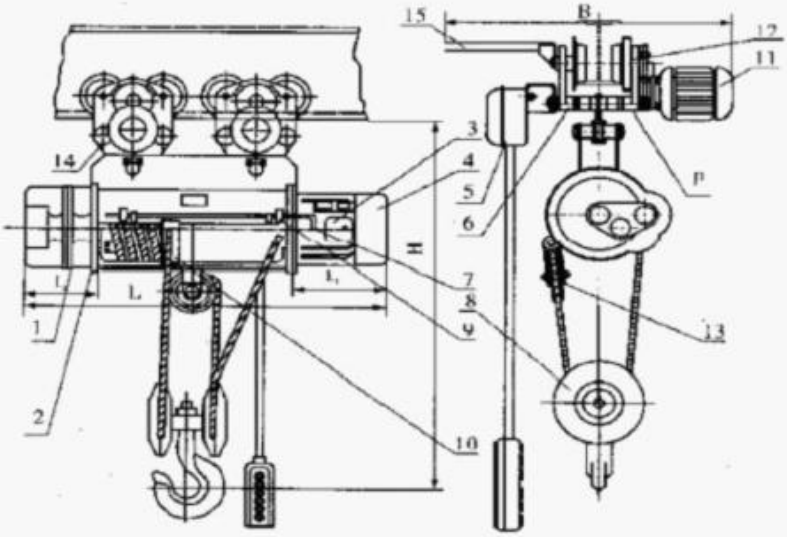
1.Lifting mechanism reducer 2.Winding drum 3.Lifting motor 4.Brake regulator
5.Electric equipment 6.Electric running part 7.Hook 8.Control board
9.Running part reducer 10.Running motor 11.Cable guide

Cd1 type 10t, lifting height 35m-100m electric hoist outline drawing



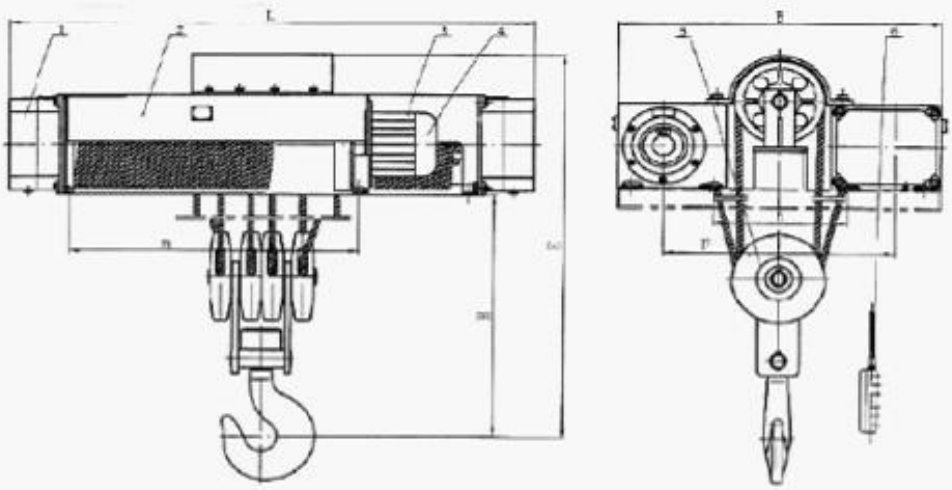
1.Lifting motor 2.Lifting mechanism reducer 3.Winding drum 4.Electric running part
5.Cable guide 6.Electric equipment 7.Hook 8.Control board

Lifting capacity 16t electric hoist outline drawing



1.Lifting reducer 2.Winding drum 3.Fire stopper 4.Lifting motor
5.Electric control box 6.Electric running part 7.Limited rod 8.Hook
9.Stop block 10.Rope guide 11.running motor 12.Running reducer
13.Wheel balance equipment 14.Beam balance equipment 15.Cable guide

Lifting capacity 50t electric hoist outline drawing



1.Lifting mechanism reducer 2.Winding drum 3.Lifting motor
4.Brake regulator 5.Hook 6. Control board

Part 6 Parameters

CD1 Electric Hoist							
Capacity	t	0.25					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 12-4/0.4kw					
Operation motor	Type	ZDY1 10-4/0.06kw					
Track		10～22b					
Wirerope	Dia.(mm)	3.6					
	Specification	6×19+FC					
Hoisting height	m	6	9	12			
Min curvature radius	m	0.8	0.8	0.8			
Weight（Operation type）	kg	44	45	46			
Weight（Stationary type）	kg	30	31	32			

Capacity	t	0.5					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 21-4/0.8kw					
Operation motor	Type	ZDY1 11-4/0.2kw					
Track		16～28b					
Wirerope	Dia.(mm)	4.8					
	Specification	6×37+FC					
Hoisting height	m	6	9	12			
Min curvature radius	m	1.5	1.5	1.5			
Weight（Operation type）	kg	121	125	130			
Weight（Stationary type）	kg	89	94	99			

Capacity	t	1					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 22-4/1.5kw					
Operation motor	Type	ZDY1 11-4/0.2kw					
Track		16～28b					
Wirerope	Dia.(mm)	7.4					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m	1.5	1.5	2	2	3	4
Weight（Operation type）	kg	137	145	172	188	204	220
Weight（Stationary type）	kg	105	112	120	135	159	165

Capacity	t	2					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 31-4/3kw					
Operation motor	Type	ZDY1 12-4/0.4kw					
Track		20～32c					
Wirerope	Dia.(mm)	11					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m	2.0	2.0	2.5	2.5	3	4
Weight（Operation type）	kg	221	232	285	309	332	353
Weight（Stationary type）	kg	166	179	186	209	229	249

Capacity	t	3					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 32-4/4.5kw					
Operation motor	Type	ZDY1 12-4/0.4kw					
Track		20～32c					
Wirerope	Dia.(mm)	13					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m	2.0	2.0	2.5	2.5	3	4
Weight（Operation type）	kg	281	297	354	390	420	451
Weight（Stationary type）	kg	222	236	250	284	312	340

Capacity	t	5					
Hoisting speed	m/min	8					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 41-4/7.5kw					
Operation motor	Type	ZDY1 21-4/0.8kw					
Track		25～50b					
Wirerope	Dia.(mm)	15					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m	2.5	2.5	3	3	4	4.5
Weight（Operation type）	kg	437	495	597	646	686	726
Weight（Stationary type）	kg	377	400	415	456	493	529

Capacity	t	10					
Hoisting speed	m/min	7					
Travel speed	m/min	20、30					
Lifting motor	Type	ZD1 51-4/13kw					
Operation motor	Type	ZDY1 21-4/0.8kw×2					
Track		32b～50b					
Wirerope	Dia.(mm)	15					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m		3.5	4	6	7.5	9
Weight（Operation type）	kg		1048	1098	1209	1301	1411
Weight（Stationary type）	kg		795	841	943	1035	1127

Capacity	t	16					
Hoisting speed	m/min	3.5					
Travel speed	m/min	18					
Lifting motor	Type	ZD1 51-4/13kw					
Operation motor	Type	ZDY1 21-4/0.8kw×2					
Track		32b～63c					
Wirerope	Dia.(mm)	15					
	Specification	6×37+FC					
Hoisting height	m	6	9	12	18	24	30
Min curvature radius	m		3.5	4	6	8.0	11
Weight（Operation type）	kg		1130	1183	1286	1463	1563
Weight（Stationary type）	kg		850	903	1006	1183	1283

Model			CD1 MD1							
Capacity		Tons	0.25	0.5	1	2	3	5	10	16
Hoisting height		M	3,6,9	6,9,12	6,9,12,18,24,30				9,12,18,24,30	
Hoisting speed		M/MIN	8(0.8/8)	8(0.8/8)	8(0.8/8)				7(0.7/7)	3.5 (0.35/3.5)
Travel speed		M/MIN	20	20/30	20/30	20/30	20/30	20/30	20/30	18
Wirerope		Dia.(mm)	3.6	4.8	7.4	11	13	15	15	17.5
		Spec.	6×39	6×37+FC	6×37+FC				6×37+FC	6×37+FC
Hoisting motor	Type	Type	ZD112-4	ZD1 21-4	ZD1 22-4	ZD1 31-4	ZD1 32-4	ZD1 41-4	ZD1 51-4	ZD1 51-4
				ZDS1 0.2/0.8	ZDS1 0.2/1.5	ZDS1 0.4/3.0	ZDS1 0.4/4.5	ZDS1 0.8/7.5	ZDS1 1.5/13	ZDS1 1.5/13
	Power	Power (kW)	0.4	0.8(0.2/0.8)	1.5 (0.2/1.5)	3.0 (0.4/3.0)	4.5 (0.4/4.5)	7.5(0.8/7.5)	13 (1.5/13)	13(1.5/13)
	Rotation speed	Rotation speed(r/min)	1380	1380	1380	1380	1380	1400	1400	1400
	Current	(A)	1.25	2.2 (0.72/2.4)	4.3 (0.72/4.3)	7.6(1.25/7.6)	11(2.4/11)	18 (2.4/18)	30 (5.2/30)	30(5.2/30)
Travel motor	Type	Type	ZDY1 10-4	ZDY1 11-4	ZDY1 11-4	ZDY1 12-4	ZDY1 12-4	ZDY1 21-4	ZDY1 21-4	ZDY1 21-4
	Power	Power (kW)	0.06	0.2	0.2	0.4	0.4	0.8	0.8x2	0.8×2
	Rotation speed	Rotation speed(r/min)	1400	1380	1380	1380	1380	1380	1380	1380
	Current	Current(A)	0.3	0.72	0.72	1.25	1.25	2.4	2.4	2.4
Power			AC 380V,50HZ,3P							

Part 7 Special Service

Timely Supply of Product:

normal hoist 6m-12m, delivery time is 7 days, 18m-40m: 10 days;

Special and non-standard hoist (including the changing of parameter of gear and gear shaft, and special motor): 20 days

Life- long Service:

Life-long time after sale service;

Quality Warranty:

one year, quick-wear part is not in the range of warranty.

Non-standard Customized Product:

design and produce customized product according to different loaded materials, environment and customer's special requirement.

Part 8 Operation Instruction

1) The hoist should be operated by a special-assigned person, all the operation person must be trained and pass the job examination before work.

2) Check the safety performance of the equipment before lifting work, confirm if the machine, wire rope, hook is fixed firmly, if the turning parts are flexible, if the power supply, the ground connection, button, travel switch is in good condition and sensitive, if the limit switch is in good condition, if the left and right track, pulley, drum, brake is installed well. There must be no damage, the motor and reduce should have no abnormity, the wedge should be firmly installed.

3) Don't operate while finding the wire rope is bent, transformed, worn, etc.

4) Don't lift materials before adjusting the stop piece of the limit switch.

5) Make sure the braking glide is adjusted with nominal load.

6) It's not allowed to have person under the lifted materials.

7) It's not allowed to lift person with the materials, never use hoist to load person as an elevator.

8)The hook can not be lifted to the level above the hoist.

9) During use, it's forbidden to work overload or exceed the rated switching times （120 times） and work in unallowed environment.

10) Reduce the traveling speed of the monorail electric hoist while it is in the turning point of the rail or near the end of the rail.

11) Don't hung the heavy material in the air during work. The hook is not allowed to lift materials while it is in the condition of swing.

12) The hoist must be right above the materials before lifting, it's not allowed to lift in the condition that the hook is not vertically above the materials.

13) Limit switch is not allowed to be used as travel switch.

14) Don't lift the materials connected with the ground.

15) Excessive inching operation is not allowed.

16) There must be specially assigned person to check the hoist regularly, take actions timely to cut off the power supply and make a record when there are problems.

17) Make sure there's enough clean lubrication oil without dirt and impurity during use.

18) Use scrub brush or small wood piece to add oil to the wire rope, using hands is not allowed.

19) Cut off the power supply before maintenance and checking, checking and maintenance must be done in the condition of no-load.

20) Don't hung the heavy materials in the air while the hoist is not working, to avoid the permanent deformation of the machine parts, which may lead to personal and property loss.

21) After finishing work, cut off the power supply from the main switch.

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