

ELECTRIC
HOISTS



Electric Hoist

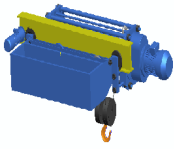
POWER BUILD LIMITED

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Engineering Excellence - a sure advantage



ELECTRIC
HOISTS



Power Build Electric Hoists

The entire range of PBL Electric Hoist has been designed in accordance with the latest rules for the manufacture of material handling equipment and to meet the continuously increasing demands of hoist efficiency.

The construction of these hoists is based on International Standards and also on the "Rules for the Design of Serial Lifting Equipment" issued by the Federation of European Hoist Manufacturers – FEM.

PBL's long experience in manufacturing power transmission drives and similar products under foreign collaboration and technical know how, is your guarantee for a high standard of quality and reliability of design.

Modern manufacturing facilities and techniques allow efficient series manufacture and interchangeability of parts.

1. **Hoist Motor** is a fan – cooled, brake motor, as per IS 325 suitable for 40% duty cycle, S4 duty and 150 starts / hour. Type of motor enclosure is IP 55. Motor is protected by fuse and overload relays in control circuit from failure caused by excessive starts,

heavy-duty cycle or abnormal voltage drop, etc. The motors are with class F insulation.

2. **Limit Switches** wired in the control circuit are adjustable and limits highest and lowest position of hook.

3. **Flange Plates** are graded cast iron castings with very high wear-resistance property and are accurately machined, fitted with caged roller bearing.

4. **Hoist Barrel** with smooth machine cut grooves is made from seamless tube with high tensile strength. The pressed -in internal gear ring is heat treated to approx. 90-100 kg/mm² tensile strength.

5. **Rope guide** of very high wear resistant property, manufactured from Polyurethane, prevents slack rope and retains wire rope in the barrel grooves. For special applications a cast iron rope guide is provided.

6. **Steel Wire Rope** is flexible and of multistrand construction with guaranteed breaking strength, which gives long

service. Galvanized wire rope is provided as per IS 2266

7. **Gear Box** with helical gears and pinions mounted on ball bearings ensure quiet running. Gears are made from high quality alloy steel and suitably heat-treated to give long, trouble-free service.

8. **Rope Sheaves** of bottom blocks and equalising pulleys are mounted on ball bearings. The load hooks, manufactured in accordance with IS standards, swivel on thrust bearings.

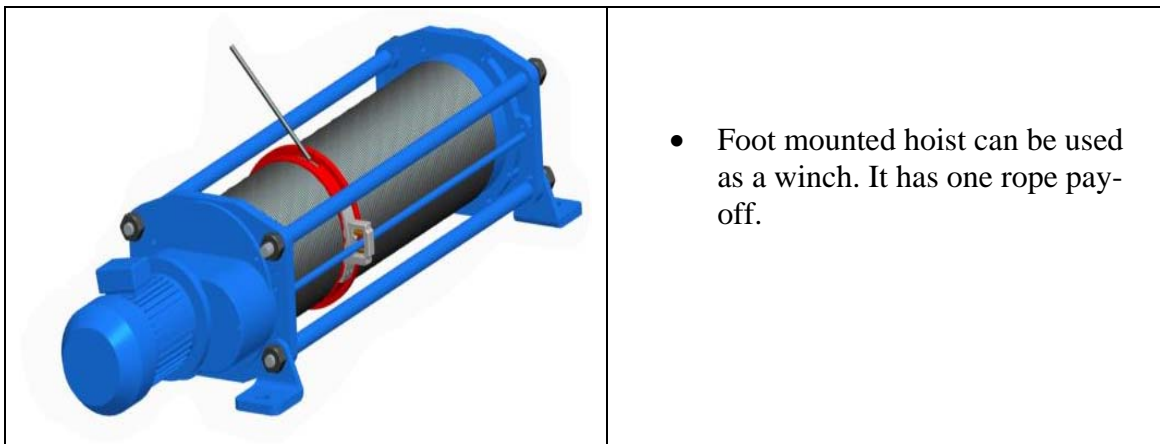
9. **Control** of all motors is by electro-magnetic contactors.

Power Build is manufacturing hoist as per technical know-how from M/s KULI-Germany.

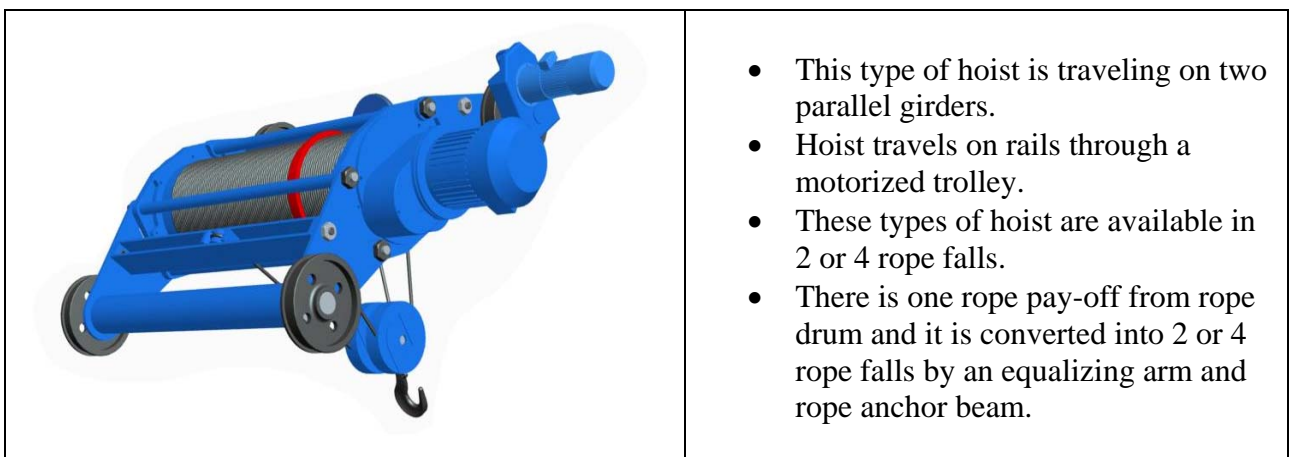
Manufacturing range of Power Build make hoist.

1. Foot mounted hoist
2. Mono rail trolley drive hoist
3. Hoist with double girder crab
4. Flexible trolley drive hoist to travel on curved beam
5. Twin Hoist

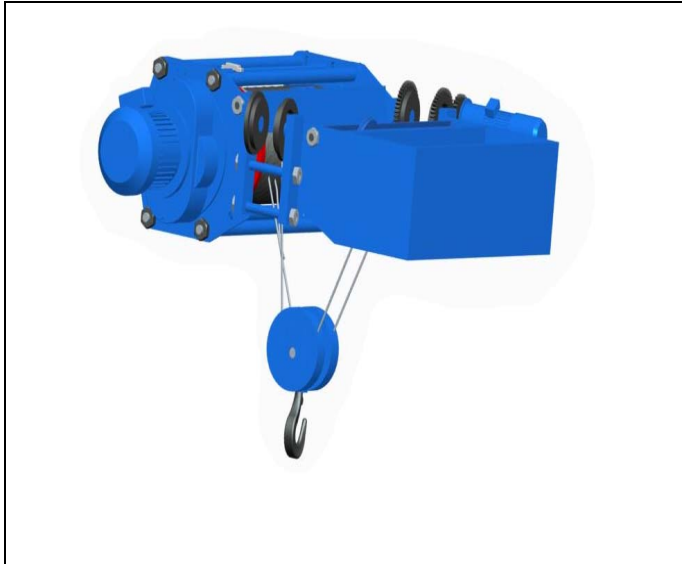
1) Foot mounted hoist



2) Hoist with double girder crab



3) Monorail trolley drive



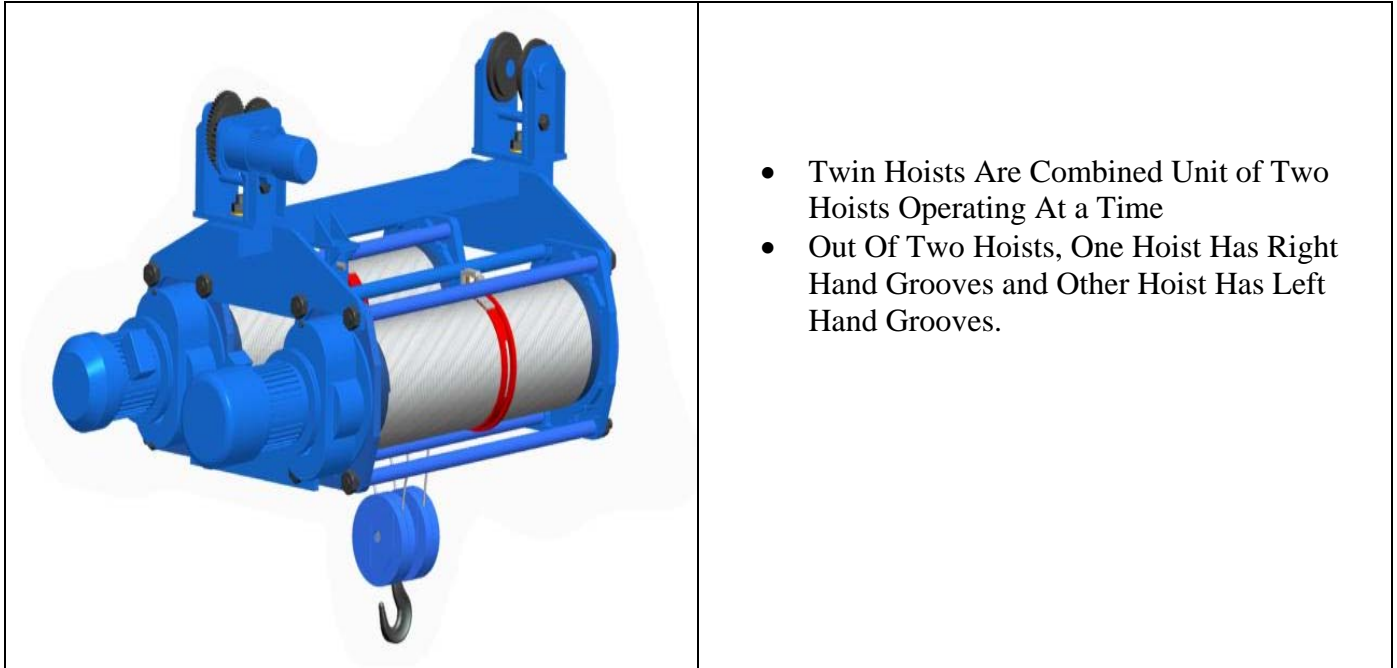
- Monorail trolley drive hoist travels on I-beam.
- Travel of hoist on beam is by motorized trolley.
- In this type of hoist on one side of beam there is a counter weight box.
- The weight is to be filled in counter weight box to balance the weight of hoist.
- These types of hoist are available in 2 or 4 rope falls. There is one rope pay-off from rope drum and it is converted into 2 or 4 rope falls by an equalizing arm and rope anchor beam.

4) Flexible trolley drive hoist



- Flexible trolley drive hoists are mainly used on I-beam, which has curved path.
- Hoist is mounted on I-beam. Hoist travels on beam through a motorized trolley.
- These types of hoists are available in 2 or 4 rope falls. There is one rope pay-off from rope drum and it is converted into 2 or 4 rope falls by an equalizing arm and rope anchor beam.

5) Twin Hoist



For foot-mounted hoist working as a winch, only hoist with control panel and pendant push buttons are provided.

For monorail trolley drive, double girder crab and flexible trolley drive hoists, hoists are supplied with hook, control panel and pendant push button to operate hoist from operating floor.



ELECTRIC HOISTS



How to select your Electric Hoist

Information required for selection of the most economical and suitable hoists:

1. Load capacity in Tones
2. Duty Class: Light, Medium, Heavy
3. Height of lift: Total/ Average
4. Load cycles per hour
5. Working hours per day
6. Lifting speed in meter per minute

In order to facilitate the selection of hoist bearing in mind the need for a long service life, it is necessary to classify the Hoists in to groups as in Table 1(Below).

These classification consider the average running time (hours/day) and the duty class, both clearly defined in the "Rules for the Design of Serial Lifting Equipment" of FEM and in the new German standards DIN 15020 being the basic for the design of our hoists.

Average running time - hrs/day: This only considers the effective lifting and lowering time. The average running time is estimated or calculated as follows:

Average running time - hrs/day:

$$= \frac{2 * \text{average height of lift/m} * \text{load cycles/hr} * \text{working hrs/day}}{60 * \text{lifting speed (m/min)}}$$

Duty Class: Generally, the duty classification is estimated.

Class Duty

Light - Occasional loads of rated capacity. Majority of loads less than 50% of rated capacity.

Medium - Majority of loads in the vicinity of 50% of rated capacity – average duty class

Heavy - Majority of loads greater than 50% of rated capacity.

Table 1

		Average running time – hours per day						
		Up to 0.5	0.5 to 1.0	1.0 to 2.0	2.0 to 4.0	4.0 to 8.0	8.0 to 16.0	Over 16.0
Duty Class	light	1	1	1	2	3	4	*
	medium	1	1	2	3	4	*	*
	heavy	1	2	3	4	*	*	*

Having determined the group classification from table 1, the hoist can be selected from Table 2 taking into consideration the lifting speed and the height of lift.

Please consult us for special service condition or for classification of hoists as * marked.

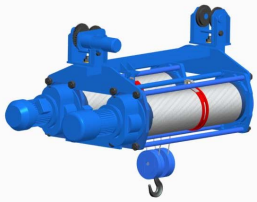


**ELECTRIC
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Table 2 - Selection Of Hoist

Lifting capacity (kg) in Accordance with Group Classification				No. of Falls of Rope	Hoist Type	Lifting Speed m/min.	Hoist Motor kw	Height of Lift m				
1	2	3	4					-	V	W	X	V X
400	320	250	200	1	16 N	32	3	24	48	~	~	~
630	500	400	320	1	25 N	22	3	24	48	~	~	~
800	630	500	400	2	16 N	16	3	12	24	~	~	~
800	630	500	400	1	32 N	30	5.5	22	44	~	~	~
1250	1000	800	630	2	25 N	11	3	12	24	~	~	~
1250	1000	800	630	1	50 N	20	5.5	22	44	~	~	~
1600	1250	1000	800	4	16 N	8	3	6	12	~	~	~
1600	1250	1000	800	2	32 N	15	5.5	11	22	~	~	~
~	1250	1000	800	1	50 S	24	7.5	17	34	52	70	88
~	1600	1250	1000	1	63 N	20	7.5	17	34	52	70	88
2500	2000	1600	1250	4	25 N	5.5	3	6	12	~	~	~
2500	2000	1600	1250	2	50 N	10	5.5	11	22	~	~	~
~	2000	1600	1250	1	80 N	16	7.5	17	34	52	70	88
2500	~	~	~	1	100 N	12	7.5	17	34	52	~	~
3200	2500	2000	1600	4	32 N	7.5	5.5	5.5	11	~	~	~
~	2500	2000	1600	2	50 S	12	7.5	8.5	17	26	35	44
~	2500	2000	1600	1	100 S	24	15	15	30	46	64	80
3200	~	~	~	1	125 N	20	15	15	30	46	64	80
~	3200	2500	2000	2	63 N	10	7.5	8.5	17	26	35	44
4000	3200	2500	2000	1	160 N	16	15	14	28	42	~	~
5000	4000	3200	2500	4	50 N	5	5.5	5.5	11	~	~	~
~	4000	3200	2500	2	80 N	8	7.5	8.5	17	26	~	~
5000	~	~	~	2	100 N	6	7.5	8.5	17	26	~	~
5000	4000	3200	2500	1	200 N	12	15	14	28	42	~	~
~	5000	4000	3200	4	50 S	6	7.5	~	8.5	13	17	22
~	5000	4000	3200	2	100 S	12	15	7.5	15	23	32	40
6300	~	~	~	2	125 N	10	15	7.5	15	23	32	40
~	6300	5000	4000	4	63 N	5	7.5	~	8.5	13	~	~
8000	6300	5000	4000	2	160 N	8	15	7	14	21	~	~
~	8000	6300	5000	4	80 N	4	7.5	~	8.5	13	~	~
10000	~	~	~	4	100 N	3	7.5	~	8.5	13	~	~
10000	8000	6300	5000	2	200 N	6	15	7	14	21	~	~
~	10000	8000	6300	4	100 S	6	15	~	7.5	11.5	16	20
12500	~	~	~	4	125 N	5	15	~	7.5	11.5	16	20
16000	12500	10000	8000	4	160 N	4	15	~	7	11	~	~
20000	16000	12500	10000	4	200 N	3	15	~	7	11	~	~



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Following details are required along with enquiry of hoist.

- (1) Type of Hoist: : (i) Monorail Trolley Type (For traveling on straight beam)
(ii) Flexible Trolley Type (For traveling on curved beam)
(iii) Double Girder Type (For traveling on two girders)
(iv) Foot Mounted Type
- (2) Lifting capacity : _____ kg
- (3) Height of Lift : _____ m
- (4) Lifting Speed : _____ m/min
- (5) Group : _____
- (6) Cross Travel Speed : _____ m/min
- (7) I Beam Size: ISMB : _____, Flange Width: _____ mm
- (8) Festooning Arrangement Required : Yes / No
- (9) Mounting of control panel : On hoist / On Floor
- (10) Additional requirement if any.

Standard Specifications and scope of supply along with hoist

- Hoists will be supplied along with control panel, pendent push buttons, wire rope, hook block, limit switch for over hoisting and over lowering.
- Motor Specifications : 3 Phase Squirrel cage induction motor, S4 duty, 40% CDF, 150 starts/hr. with brake.

Optional

- Festooning arrangement is optional.
- Cross travel limit switch is optional.

Exclusions

- Erection and commissioning of hoist is not in PBL scope.
- Main girder is not in PBL scope of supply.



ELECTRIC HOISTS



MARKETING & SERVICING COMPANY



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