Electric Wire Rope Hoists "MH" and "MHM" Types

balkancarpodem

WIRE ROPE ELECTRIC HOISTS

Lifting capacity from 250 kg up to 32 000 kg.

More than 1 800 000 wire rope electric hoists of the well known "T" series have been sold by Balkancarpodem in over 40 countries of the world.

The great experience of Balkancarpodem in the field of the materials handling equipment industry has been used in the up dating of this electric hoist series.

The new "MH" and “MHM” series finds wide application in different fields of economy and corresponds to FEM standards.

NEW "MH" AND “MHM” TYPE

The "MH" and “MHM” series is designed on the basis of the modular principle. The various capacities, lifting heights and lifting speeds ensure wide application of the "MH" and “MHM” hoists.
Easy and cost effective.

The wire rope electric hoists of the "MH" and “MHM” series are certified by TÜV and conform to the following norms:

- EG - European requirements for machines 98/37/EG of 22.06.98
- EG - European requirements for low voltage 73/23/EWG of 19.02.73
- Harmonized norm EN 292 - Protection of machines

Selection

SELECTION CRITERIA

To choose the right hoists the following criteria should be taken account:
1. What will be the maximum loading capacity?
2. What will be the maximum lifting height?
3. What hoisting speed is to be employed?
4. Will an auxiliary reduced lifting speed be required?
5. What will the operational conditions be?
6. What will the travelling speed be, if required?
7. How do you need to operate the hoists?

The type of the hoists is to be defined in accordance with the load spectrum, the average operating time per day in hours, the loading capacity and the reeving.

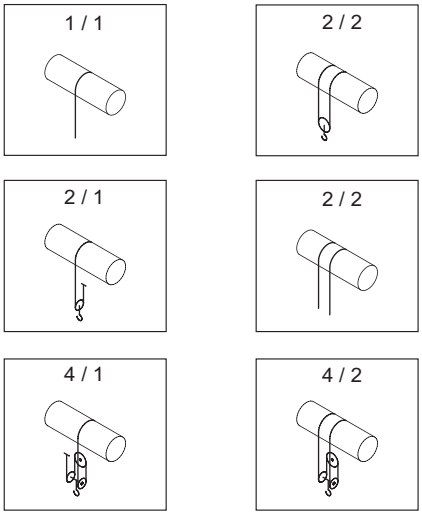
SELECTION EXAMPLE

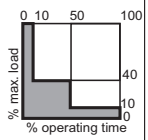
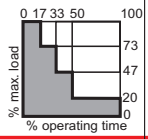
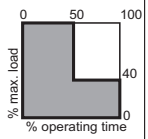
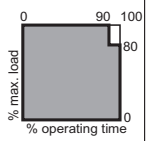
Loading capacity		**- 4000 kg**
Average lifting path of the hook	**(H)**	**- 5 m**
Hoisting speed	**(V)**	**- 4 m/min**
Reeving		**- 4/1**
Load spectrum		**- "medium"**
Cycles per hour	**(N)**	**- 15**
Average operating time per day	**(T)**	**- 6 hours**

The average operating time per day of the hoist is to be calculated in the in the following manner:

$$Tm = \frac{2 \times H \times N \times T}{60 \times V} = \frac{2 \times 5 \times 15 \times 6}{60 \times 4} = 3.75 \text{ hours}$$

For the "medium" load spectrum and average operating time per day of 3.75 hours the group "2m" is shown in table "LOAD SPECTRUM-CLASS OF OPERATING TIME".
For loading capacity of 4000 kg and 4/1 reeving the type of the hoist **"MHM 4-10"** or **"MH 6-10"** is shown in table 1 - "TYPE SELECTION".



Load Spectrum (Duty operation mode) DEFINITION			Class of Operating Time average operating time per day Tm in hours		
LIGHT	Mechanisms, usually subject to very small loads and in exceptional cases only to maximum loads		2 - 4	4 - 8	8 - 16
MEDIUM	Mechanisms, usually subject to small loads but rather often to maximum loads		1 - 2	2 - 4	4 - 8
HEAVY	Mechanisms, usually subject to medium loads but frequently maximum loads		0.5 - 1	1 - 2	2 - 4
VERY HEAVY	Mechanisms, usually subject to maximum or almost maximum loads		0.25 - 0.5	0.5 - 1	1 - 2
GROUP - DIN 15 020 / FEM 9.511			1 Am	2 m	3 m
GROUP - ISO 4301			M4	M5	M6

Type Selection

CAPACITY, kg			SERIES	SIZE		
REEVING						
1 / 1 2 / 2	2 / 1 4 / 2	4 / 1				
400	800	1600	MH 3 MHM 4 MHM 5	–	–	MH 3-04 MHM 4-04 MHM 5-04
500	1000	2000		–	MH 3-05 MHM 4-05 MHM 5-05	–
800	1600	3200	MH 3 MHM 4 MH 6	MH 3-08	–	MHM 4-08 MH 6-08
1000	2000	4000		–	MHM 4-10 MH 6-10	–
1250	2500	5000	MHM 5 MH 6	–	–	MHM 5-12 MH 6-12
1600	3200	6300		–	MHM 5-16 MH 6-16	–
2000	4000	8000	MH 6 MH 7	–	–	MH 6-20 MH 7-20
2500	5000	10000		–	MH 6-25 MH 7-25	–
3200	6300	12500	MH 7	–	MH 7-32	–
4000	8000	16000		MH 7-40	–	–
5000	10000	20000		–	MH 7-50	–
6300	12500	25000		MH 7-63	–	–

Type selection

Table 1

Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min	
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2
					Lifting height H, m									
400	MH 3-04	3m	M6	1/1	12	19	26	40,5	54,5	–	–	–	16 16/4	24 24/4
	MHM 4-04				–	–	–	–	72,5	–	–	–		
	MHM 5-04				–	–	–	–	81	102	–	–		
	MH 3-04			2/2	–	–	11	20,5	29,5	–	–	–		
	MHM 4-04				–	–	15	–	–	–	–	–		
	MHM 5-04				–	–	–	31,5	–	–	–	–		
500	MH 3-05	2m	M5	1/1	12	19	26	40,5	54,5	–	–	–	16 16/4	24 24/4
	MHM 4-05				–	–	–	–	72,5	–	–	–		
	MHM 5-05				–	–	–	–	81	102	–	–		
	MH 3-05			2/2	–	–	11	20,5	29,5	–	–	–		
	MHM 4-05				–	–	15	–	–	–	–	–		
	MHM 5-05				–	–	–	31,5	–	–	–	–		
800	MH 3-08	1Am	M4	1/1	12	19	26	40,5	54,5	–	–	–	16 16/4	– 24 24/4
	MHM 4-08	3m	M6		10	17	24	37	50,5	–	–	–		
	MH 6-08				–	–	–	–	67	76	91,5	–		
	MH 3-08	1Am	M4	2/2	–	–	11	20,5	29,5	–	–	–		– 24 24/4
	MHM 4-08	3m	M6		–	–	10	19,5	29	–	–	–		
	MH 6-08				–	–	–	–	39,5	46,5	56,5	–		
	MH 3-04	3m	M6	2/1	6	9,5	13	20	27	–	–	–	8 8/2	12 12/2
	MHM 4-04				–	–	–	–	36	–	–	–		
	MHM 5-04				–	–	–	–	40,5	51	–	–		
	MH 3-04			4/2	–	–	–	10	14,5	–	–	–		
	MHM 4-04				–	–	7,5	–	–	–	–	–		
	MHM 5-04				–	–	–	15,5	–	–	–	–		
1000	MHM 4-10	2m	M5	1/1	10	17	24	37	50,5	–	–	–	16 16/4	24 24/4
	MH 6-10				–	–	–	–	67	76	91,5	–		
	MHM 4-10			2/2	–	–	10	19,5	29	–	–	–		
	MH 6-10				–	–	–	–	39,5	46,5	56,5	–		
	MH 3-05			2/1	6	9,5	13	20	27	–	–	–	8 8/2	12 12/2
	MHM 4-05				–	–	–	–	36	–	–	–		
	MHM 5-05				–	–	–	–	40,5	51	–	–		
	MH 3-05			4/2	–	–	–	10	14,5	–	–	–		
	MHM 4-05				–	–	7,5	–	–	–	–	–		
	MHM 5-05				–	–	–	15,5	–	–	–	–		
1250	MHM 5-12	3m	M6	1/1	10 (12)	16 (20)	22,5 (27)	34,5 (42)	46,5 (56,5)	59 (71)	–	–	16 16/4	24 24/4
	MH 6-12				–	–	–	–	55,5 (67)	63 (76)	75,5 (91,5)	–		
	MHM 5-12			2/2	–	–	7	14,5	22	29	–	–		
	MH 6-12				–	–	–	–	25,5	30,5	37,5	–		

Table 1 - cont'd

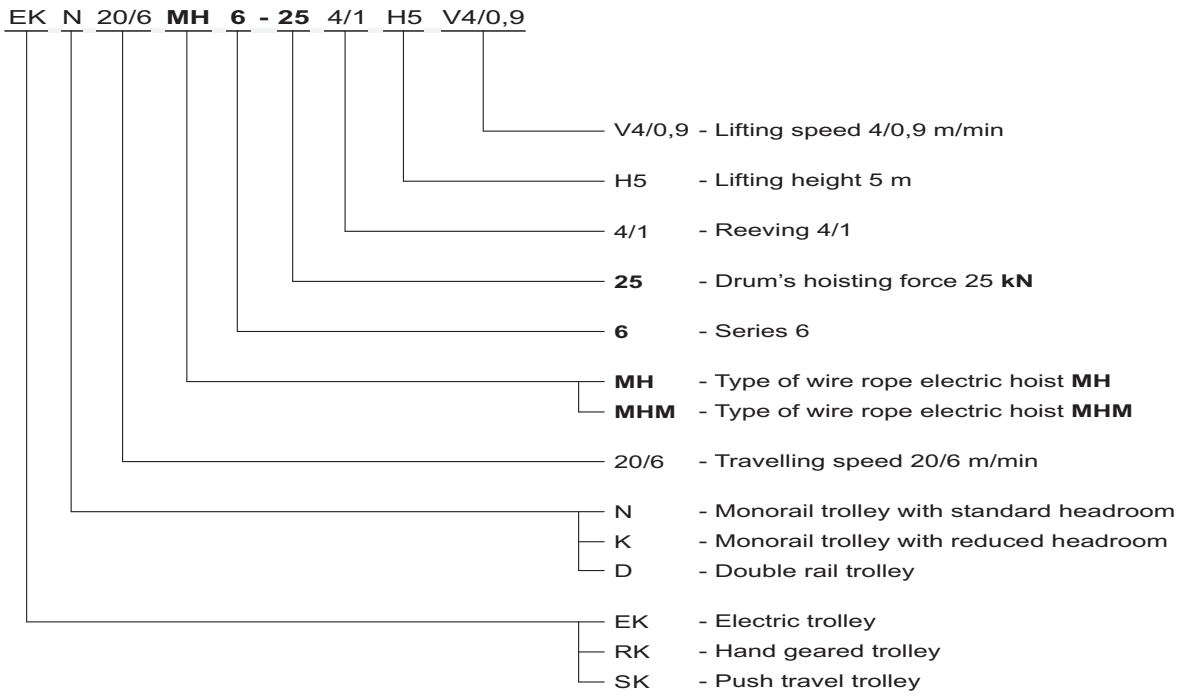
Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min	
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2
					Lifting height H, m									
1600	MHM 5-16	2m	M5	1/1	10 (12)	16 (20)	22,5 (27)	34,5 (42)	46,5 (56,5)	59 (71)	–	–	16 16/4	24 24/4
	MH 6-16				–	–	–	–	55,5 (67)	63 (76)	75,5 (91,5)	–		
	MHM 5-16			2/2	–	–	7	14,5	22	29	–	–		
	MH 6-16				–	–	–	–	25,5	30,5	37,5	–		
	MH 3-08	1Am	M4	2/1	6	9,5	13	20	27	–	–	–	8 8/2	–
	MHM 4-08	3m	M6		5	8,5	12	18,5	25	–	–	–		12 12/2
	MH 6-08				–	–	–	–	33,5	38	45,5	–		
	MH 3-08	1Am	M4	4/2	–	–	–	10	14,5	–	–	–	8 8/2	–
	MHM 4-08	3m	M6		–	–	–	9,5	14,5	–	–	–		12 12/2
	MH 6-08				–	–	–	–	19,5	23	28	–		
	MH 3-04	3m	M6	4/1	–	–	6,5	10	13,5	–	–	–	4 4/1	6 6/1
	MHM 4-04				–	–	–	–	18	–	–	–		
	MHM 5-04				–	–	–	–	20	25,5	–	–		
2000	MH 6-20	3m	M6	1/1	–	14,5 (17)	20,5 (24)	33 (38)	45 (52,5)	51 (59,5)	61 (71)	–	16 16/4	24 24/4
	MH 7-20				–	–	–	–	–	66,5 (76,5)	80 (92)	–	16/4	24/4
	MH 6-20			2/2	–	–	–	11,5	19	22,5	29	–	16 16/4	24 24/4
	MH 7-20				–	–	–	–	–	31	39,5	–	16/4	24/4
	MHM 4-10	2m	M5	2/1	5	8,5	12	18,5	25	–	–	–	8 8/2	12 12/2
	MH 6-10				–	–	–	–	33,5	38	45,5	–		
	MHM 4-10			4/2	–	–	–	9,5	14,5	–	–	–		
	MH 6-10				–	–	–	–	19,5	23	28	–		
	MH 3-05			4/1	–	–	6,5	10	13,5	–	–	–	4 4/1	6 6/1
	MHM 4-05				–	–	–	–	18	–	–	–		
	MHM 5-05				–	–	–	–	20	25,5	–	–		
2500	MH 6-25	2m	M5	1/1	–	14.5 (17)	20,5 (24)	33 (38)	45 (52,5)	51 (59,5)	61 (71)	–	16 16/4	24 24/4
	MH 7-25				–	–	–	–	–	66,5 (76,5)	80 (92)	–		
	MH 6-25			2/2	–	–	–	11,5	19	22,5	29	–		
	MH 7-25				–	–	–	–	–	31	39,5	–		
	MHM 5-12	3m	M6	2/1	5 (6)	8 (10)	11 (13,5)	17 (21)	23 (28)	29,5 (35,5)	–	–	8 8/2	12 12/2
	MH 6-12				–	–	–	–	27,5 (33)	31,5 (38)	37,5 (45,5)	–		
	MHM 5-12			4/2	–	–	–	7	11	14,5	–	–		
	MH 6-12				–	–	–	–	12,5	15	18,5	–		
3200	MH 7-32	2m	M5	1/1	–	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	–	16 16/4	–
				2/2	–	-	-	10	16,5	24	30,5	–		
	MHM 5-16			2/1	5 (6)	8 (10)	11 (13,5)	17 (21)	23 (28)	29,5 (35,5)	–	–	8 8/2	12 12/2
	MH 6-16				–	–	–	–	27,5 (33)	31,5 (38)	37,5 (45,5)	–		
	MHM 5-16			4/2	–	–	–	7	11	14,5	–	–		
	MH 6-16				–	–	–	–	12,5	15	18,5	–		
	MH 3-08	1Am	M4	4/1	–	–	6,5	10	13,5	–	–	–	4 4/1	–
	MHM 4-08	3m	M6		–	–	6	9	12,5	–	–	–		6 6/1
	MH 6-08				–	–	–	–	16,5	19	22,5	–		

Table 1 - cont'd

Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min	
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2
					Lifting height, m									
4000	MH 7-40	1Am	M4	1/1	–	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	–	16 16/4	–
				2/2	–	–	–	10	16,5	24	30,5	–		
	MH 6-20	3m	M6	2/1	–	7 (8,5)	10 (12)	16,5 (19)	22,5 (26)	25,5 (29,5)	30,5 (35,5)	–	8 8/2	12 12/2
	MH 7-20				–	–	–	–	–	33 (38)	40 (46)	–		
	MH 6-20			4/2	–	–	–	–	9,5	11	14,5	–		
	MH 7-20				–	–	–	–	–	15,5	19,5	–		
	MHM 4-10	2m	M5	4/1	–	–	6	9	12,5	–	–	–	4 4/1	6 6/1
	MH 6-10				–	–	–	–	16,5	19	22,5	–		
5000	MH 7-50	2m	M5	1/1	–	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	–	12,5 12,5/3,2	–
				2/2	–	–	–	10	16,5	24	30,5	–		
	MH 6-25	2m	M5	2/1	–	7 (8,5)	10 (12)	16,5 (19)	22,5 (26)	25,5 (29,5)	30,5 (35,5)	–	8 8/2	12 12/2
	MH 7-25				–	–	–	–	–	33 (38)	40 (46)	–		
	MH 6-25			4/2	–	–	–	–	9,5	11	14,5	–		
	MH 7-25				–	–	–	–	–	15,5	19,5	–		
	MHM 5-12	3m	M6	4/1	–	–	5,5 (6,5)	8,5 (10,5)	11,5 (14)	14,5 (17,5)	–	–	4 4/1	6 6/1
	MH 6-12				–	–	–	–	13,5 (16,5)	15,5 (19)	18,5 (22,5)	–		
6300	MH 7-63	1Am	M4	1/1	–	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	–	10,5 10,5/2,6	–
	MH 7-32	2m	M5	2/1	–	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	–	8 8/2	
				4/2	–	–	–	5	8	12	15	–		
	MHM 5-16			4/1	–	–	5,5 (6,5)	8,5 (10,5)	11,5 (14)	14,5 (17,5)	–	–	4 4/1	6 6/1
	MH 6-16				–	–	–	–	13,5 (16,5)	15,5 (19)	18,5 (22,5)	–		
8000	MH 7-40	1Am	M4	2/1	–	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	–	8 8/2	–
				4/2	–	–	–	5	8	12	15	–		
	MH 6-20	3m	M6	4/1	–	–	5 (6)	8 (9,5)	11 (13)	12,5 (14,5)	15 (17,5)	–	4 4/1	6 6/1
	MH 7-20				–	–	–	–	–	16,5 (19)	20 (23)	–		
10000	MH 7-50	2m	M5	2/1	–	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	–	6,3 6,3/1,6	–
				4/2	–	–	–	5	8	12	15	–	6,3 6,3/1,6	–
	MH 6-25			4/1	–	–	5 (6)	8 (9,5)	11 (13)	12,5 (14,5)	15 (17,5)	–	4 4/1	6 6/1
	MH 7-25				–	–	–	–	–	16,5 (19)	20 (23)	–		
12500	MH 7-63	1Am	M4	2/1	–	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	–	5,2 5,2/1,3	–
	MH 7-32	2m	M5	4/1	–	–	–	8 (9,5)	11 (13)	14 (16,5)	17 (19,5)	–	4 4/1	–
16000	MH 7-40	1Am	M4	4/1	–	–	–	8 (9,5)	11 (13)	14 (16,5)	17 (19,5)	–	4 4/1	–
20000	MH 7-50	2m	M5	4/1	–	–	–	8	11	14	17	19,5	3,2 3,2/0,8	–
25000	MH 7-63	1Am	M4	4/1	–	–	–	8	11	14	17	19,5	2,6 2,6/0,65	–
32000	MH 7-80	1Bm	M3	4/1	–	–	–	6,5	9	11,5	14	16	2,2 2,2/0,5	–

[1)] The data given in brackets are to be considered for wire ropes with high strength and smaller diameter.

Type designation



Please give the following data when placing order:

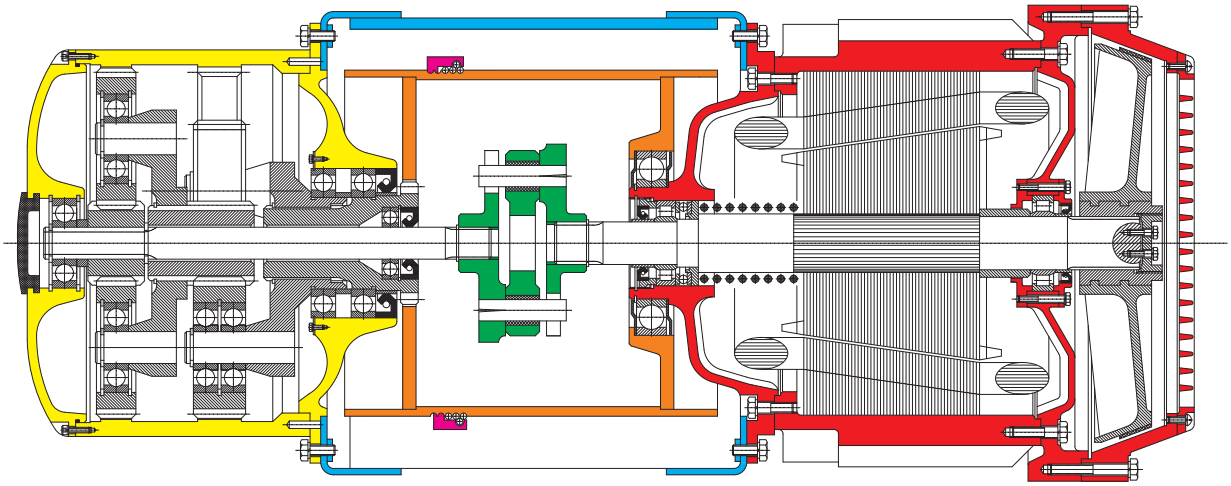
1. Power circuit	- voltage	-		V		
	- frequency	-		Hz		
2. Control circuit	- voltage	-		V		
	- frequency	-		Hz		
3. Required	- load limiter	-	yes	or	no	
	- emergency stop	-	yes	or	no	
	- thermal protection	-	yes	or	no	
	- latch-key	-	yes	or	no	
4. Climatic modification	- normal N-II	-	yes	or	no	
	- tropical T-II	-	yes	or	no	
	- marine execution	-	yes	or	no	
5. Monorail trolley	- travelling speed	-		m/min		
	- rail width - b	-		mm		
	- runway radius	-		m		
6. Double rail trolley	- travelling speed	-		m/min		
	- rail distance	-		mm		
	- rail - b x h	-	x	mm x mm		

Travelling speeds

Trolley	Speed (m/min)						
	one speed				two speeds		
EK N	10	16	20	32	16/4	20/6	32/10
EK K	12	16	20	—	12/3	16/4	20/5
EK D	10	16	20	30	10/4	16/5	20/6

[1] Valid for fixed suspension only, without load limiter.
[2] Standard travelling speed - 20 m/min.

Description of the electric hoist



Hoisting motor
Electric motor with conical rotor and conical stator as well as asbestos free conical brake. Easy axial moving possibility of the rotor. Reliable brake activation from spiral spring impact in case of electric power breakdown. Creep speed of the motor. The wide range combinations of motors and gear units expand the range of available goods and lifting speeds.

Gear unit
Two-stage heliocentric gear unit assembled to opposite side of the motor. High quality materials are used. Suitable hardening and grinding of gear wheels teeth surfaces ensures their long life, noiseless operation and high coefficient of gear unit's efficiency.

Drum
Equipped with helical grooves for the wire rope and efficacious rope guide, which ensures reliable arrangement of the rope in drum's grooves. The front motor flange by means of ball bearing supports one of the drum's diaphragms. The torque from the gear unit to the second drum's diaphragm is transmitted through grooved hollow shaft.

Rope guide
New made construction. No special tools are required for the replacement of the rope guide. Ensures precise rope winding and unwinding. Possibility for rope deviation ± 4°. Actuates the end limit switch in upper and bottom position of the hook.

Block-hook
The block hook and the purchase block are entirely new constructions, corresponding to the modern technical safety requirements. Ensures easy operation with minimum dead weight. Protection against the rope getting out of the rope rolls is also ensured.

Body
The body is completely new construction in box form. Represents a robust welded construction as a flange connection between the motor and gear unit. Wire rope's outlet in all possible radial directions permits the realization of different assembly versions and positions.

Rubber packed coupler
This is flexible coupler as a joint unit between the hoisting motor and gear unit. The coupler works as a shock - absorber and ensures resistance free motor's shaft axial replacement. Sure connection between the motor and the gear unit is warranted.

Trolleys
Three types of trolleys are available: monorail trolley with standard headroom, monorail trolley with reduced headroom and double rail trolley.
The hoist is hanged up or mounted to the trolley in the best position, ensuring optimum load distribution on the travel wheels. The trolley could be also electric, hand geared or push travel. Drive unit the same type as a main unit of the hoist powers the electric trolley. Normal drive unit with electromagnetic brake is available. The traveling speeds are in very wide range. Stage less fitness in accordance with the width of the monorail traveling track is submitted to correct work of the trolleys. In case of double rail trolley the purchaser gives the rail's distance.

Electric equipment
Power circuit voltage and frequency are at purchaser's request. Control voltage to relays and contactors is 24 or 42V, frequency 50 and 60Hz. The most part of electric equipment is assembled in command box, fastened to the body or to other appropriate part. Terminal box of the motor holds end limit switch.