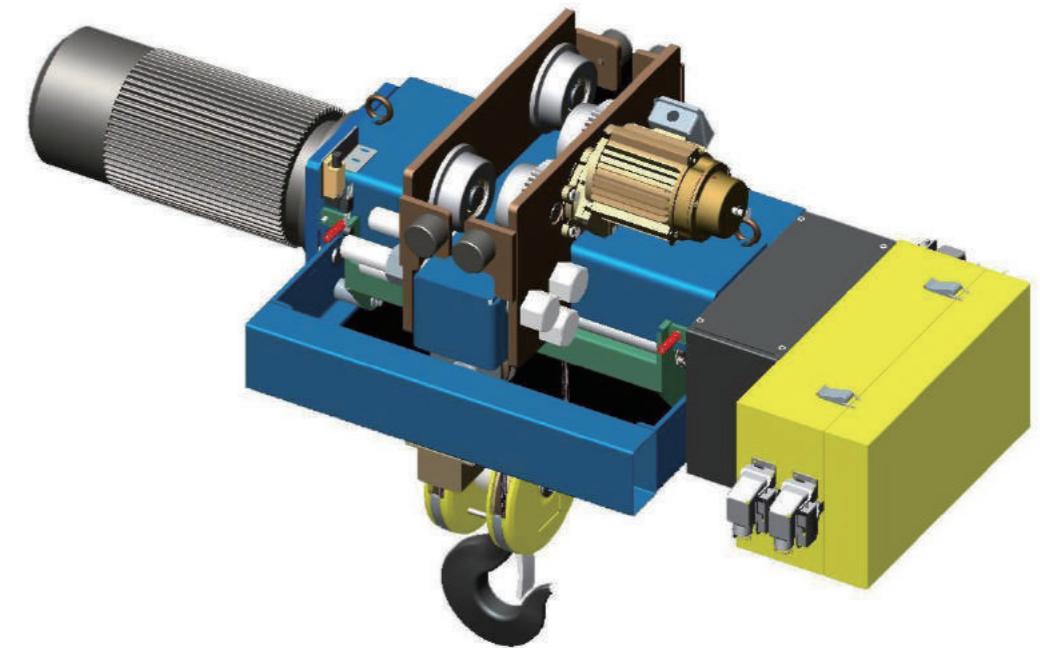


PROFESSIONAL • PROMPT • SERVICING



**Safe**  
**Stable**  
**Smooth**

## ELECTRIC WIRE ROPE HOIST

**Established: August, 1978**

**Core Business:**

We are specialised in design, manufacture, installation, and maintenance of all kinds of hoists and cranes, including:

- (1) Electric wire rope hoist (Japanese and European standard)
- (2) Electric chain hoist
- (3) Mono-/Dual-girder overhead crane, jib crane, wall jib crane, gantry crane etc.
- (4) Fixtures for manufacturing end-carriage and trolley

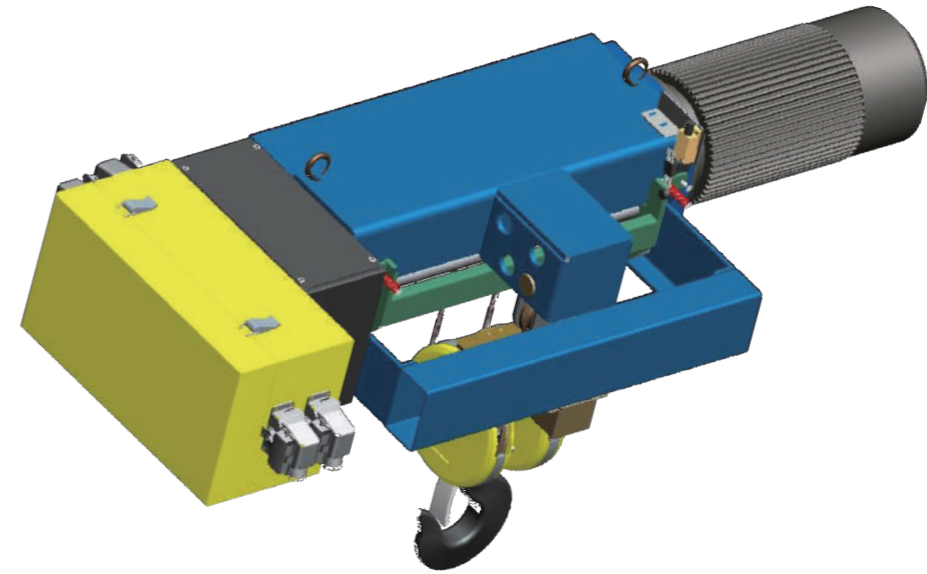
**Policies on Quality Assurance:**

FiTOP and its affiliated companies strive for company's growth and contribution to society by timely provision of products that excel in quality in the market, thereby gaining customer satisfaction and trust. Based on ISO requirements, we carry out quality control in all processes of product planning, development, production, sales/service, disposal, and 100% FDC before shipment. Our quality control inspectors make sure that products meet the international standards of quality and safety.

We have been certified by SAI ISO 9001: 2008 and Taiwan Excellence Award for quality assurance and have obtained a highest glorification from customers.



**Features**



- Low head room design: maximised its lifting height and use of space
- 2/4 falls: keep the hook-set positioned at the central, prevents wire ropes leap to other grooves
- Can be used with mono- or dual-girder trolley
- Motor and gear-box on the same side: shorter rotation shaft, higher efficiency, hard to break and bend
- Hoisting motor: greater starting torsion, more efficient and reliable
- Planetary gearing: decreases the lateral thrust, hard to damage the bearing and leak lube, decreases the cost of maintenance
- Gear box: precise, durable, low noise, and small-sized
- Wire rope guide: structurally ensured the wire rope to be correctly aligned on drum, prevents over-lapping; when wire ropes occasionally leap into other grooves, a security device would disconnect with the power, extends the life-span of wire rope
- Electricals: aviation plug, fine and reliable
- Functions and quality: stable, safe, smooth, and more price competitive

## 1-1. Percentage of Duty Cycle (% ED)

1-1-1 Duty cycle (percentage of duty cycle) under normal loading conditions, it operates and rests intermittently.

The percentage of duty cycle can be calculated as the following formula :

$$\% \text{ ED} = \frac{\text{Operating time}}{(\text{Operating time} + \text{Resting time})} \times 100$$

※ The maximum duty cycle described in the formula above is 10 minutes; the minimum figures for the “% ED” are given in [Table 1](#)

1-1-2 The number of cycles per hour (S), please refer to [Table 1](#)

1-1-3 The number of starts per hour (N), please refer to [Table 1](#)

The formula for calculating the number of cycles within safety, including lifting and declining, is as follows:

$$S = 0.3 \times \frac{\text{ED} \times V}{H}$$

- S= The number of cycles per hour (Cycle/h), its cycle shall meet the value in [Table 1](#)
- ED= Percentage of duty cycle
- V= Lifting speed per minute in metre (M. /min.)
- H= Averaged lifting height in metre (M.)

※ The formula above applies on the following assumptions: the lifting height (H) cannot exceed an averaged figure; the averaged figure is obtained from the first formula, i.e. the “% ED”

$$H \leq \frac{\text{ED} \times V}{20}$$

The allowable number of start: Assume that an averaged number of start for each duty cycle is not more than six (6) times. [Chart 1](#) shows an ordinary cycle which comprised of: lifting→ rest→ declining→ rest

## 1-2. Short-term Duty (SD)

In special loading circumstances (long hook path, for instance), the period of operation shall not exceed the limit of temperature of the hoisting motor. In such cases, the intermittent duty could be replaced by the short-term duty.

The minimum values for the period of operation are shown in [Table 1](#): when the temperature of motor has decreased to an allowable range, the motor would accordingly match with its grade of hoist and requirement of safety, thus the motor could continue to operate under its limit. During such period of operation, its number of start shall not be more than ten (10) times, so that the motor can be free from burning out and extend its life-span.

## 1-3. Mixed Duty

Under the mixed-duty conditions, its operating- and resting- time is intermittent. The temperature of motor allowed during the period of operation shall not exceed its limit.

### Table 1

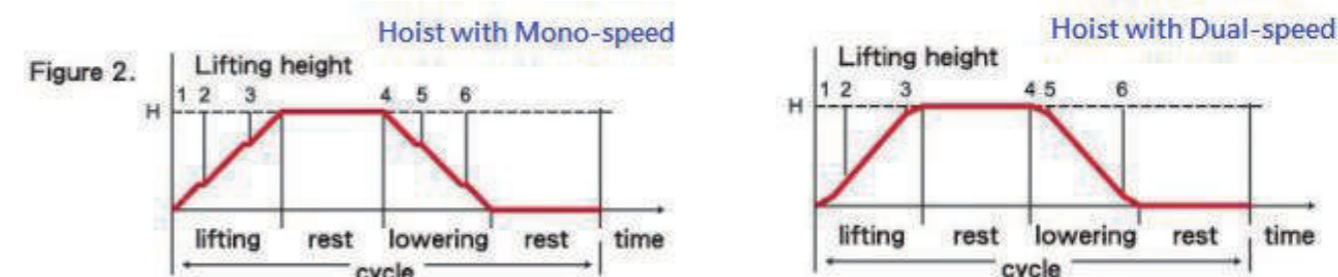
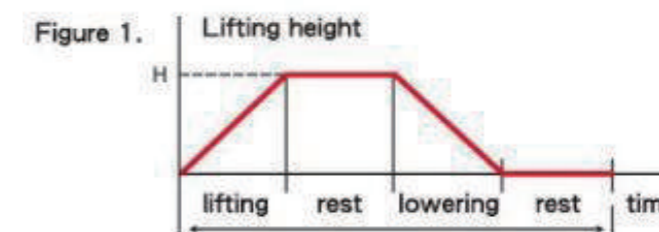
Grade		Intermittent service			Short-term service
FEM	ISO	Cycle/h (S)	Starts/h (N)	% of Duty cycle (% ED)	Length of operation period in minutes (SD)
1Dm	M1	15	90	15	7.5
1Cm	M2	20	120	20	7.5
1Bm	M3	25	150	25	15
1Am	M4	30	180	30	15
2m	M5	40	240	40	30
3m	M6	50	300	50	30
4m	M7	60	360	60	60
5m	M8	60	360	60	>60

※ [Table 1](#) applies to the lifting motors with mono-speed only. With an equal number of starts, half of the “% ED” figures should be obtained for creep lifting motors (individual motor). When lifting motors with dual-speed are concerned, the ratios in [Table 2](#) shall take into account:

### Table 2

	High speed	Low speed
Frequency of starts	1/3	2/3
Period of operation	2/3	1/3

### Chart 1





## Pendant

- ◆ **Water- and dust-proof**
- ◆ **Durable:** integrally formed plastic housing, highly insulated
- ◆ **Safe:** emergency stop, a safety switch for the well-being of operators

## Control Panel

- ◆ **Easy to repair:** clear instructions for parts and cable repairing, arranged by FITOP engineering team
- ◆ **Reliable:**
  - (1) electro-magnetic contactor with machinery locker and varistor, extends its life-span
  - (2) aviation plug: fine and reliable
- ◆ **Conforms with international standard:** CE electricity 73 / 23 / EEC, IP 54

## Drum

- ◆ **Solid:** precisely constructed from high-tension, seamless steel tube fabricated by FITOP, making a smooth groove surface, well protects the wire rope
- ◆ **Meets international standard:**
  - (1) ISO 4308
  - (2) EFEM9.661/86

## Gear box

- ◆ **Long life-span:** FITOP state-of-the-art designed and manufactured planetary design; small-sized; runs smoothly without affecting by radical force which extends the life-span of bearings and gears
- ◆ **Precise:** the material is made of a processed alloy steel by heat treatment, making its hardness HRC 50°C at least
- ◆ **Low noise & free to maintain:** hidden design; noise level 65 dB under no-loading conditions; all oil-bath sealed design, apply with grease; no leaking concern; free to replace.

## Brake

- ◆ **Safe:** automatically brakes in occasion of power failure; the brake releases when the motor starts operation
- ◆ **Enables inching adjustment:** can manually lower the material lifted in occasions of power failure without using hand tools etc.
- ◆ **Highly durable brake lining:** can be used up to one million times under normal conditions
- ◆ **DC electro-magnetic disk brake**

## Hoisting Motor

- ◆ **4P or 2/12P selective**
- ◆ **Insulation: F-graded**
- ◆ **Intermittent rating:**
  - 40% ED for mono-speed
  - 30% ED for dual-speed
- ◆ **Great operation efficiency:** FITOP-designed three-phase squirrel-cage induction motor; starting torsion up to 250%
- ◆ **Great heat dissipation & high-voltage-proof:** aluminium alloy box, high torque, slow temperature rise; installed with cooling fan and over-heat protector; efficiently dissipates heat for the motor thus prevents burning; sustains above 1500V; small-sized, low current, great output, sustains long hour service

## Limit Switch

- ◆ **Easy to maintain:** precise; easy to adjust
- ◆ **Out from danger:** able to detects when wire ropes occasionally leap into other grooves, would turn on the switch and disconnect the power as FITOP designed

## Wire Rope

- ◆ **High-tension steel:**
  - (1) reinforced wire rope from Japan; tensile strength:  $1170N/mm^2 \sim 2160N/mm^2$
  - (2) factor of safety: above 5 times, endures bending

## Wire Rope Guide

- ◆ **Drum-typed strut:** rotates with the movement of wire rope, ensures wire rope to be aligned on the drum as FITOP designed; **extends the life-span of wire ropes**; the limit design for bearing and press-lever-shaft **ensures that pressing lever not off the track due to external pressure**

## Emergency Limit Switch

- ◆ **Protected:** uniquely designed by FITOP, automatically disconnects the power when the hook comes to the highest and lowest points; precise, easy to maintain and adjust

## Hook Set

- ◆ **Strong:** high-pressure die casting, abrasion-resistance
- ◆ **Protective:**
  - (1) hook wheel and cover designed by FITOP avoids foreign bodies to be drawn into the hook set
  - (2) safety tab ensures safe operations

## Balance Sheave

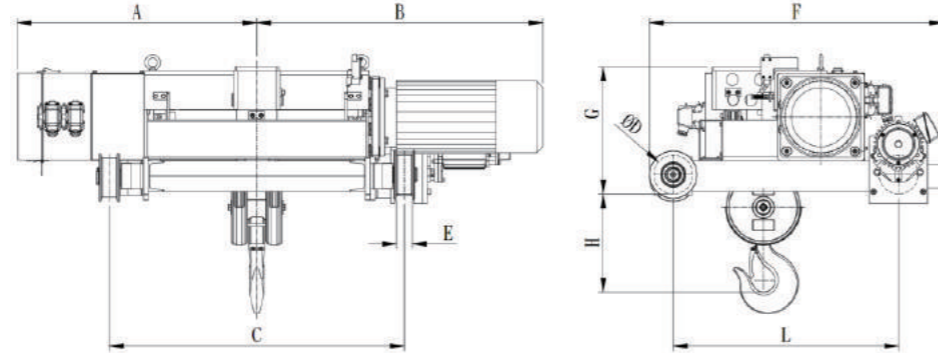
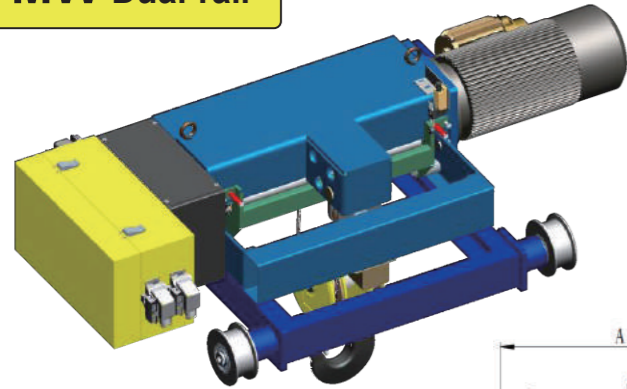
- ◆ **Strong:** FITOP design enables swinging freely; turning, supports by bearing; closed-cover design, prevents the wire rope slips off from the alignment
- ◆ **Shaft-typed overload detector (optional):** prevents over-loading by a shaft installed

## Spiral Limit Switch

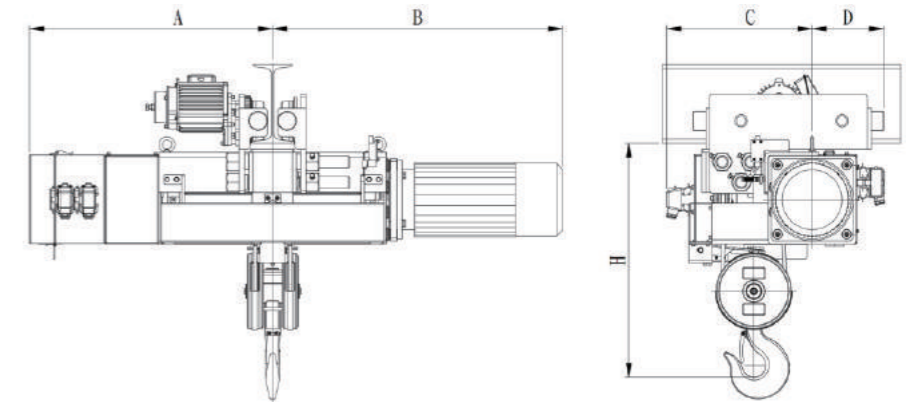
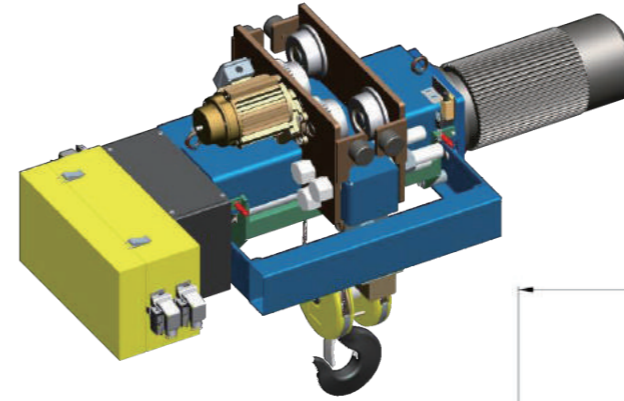
- ◆ **Avoid twining:** its spiral, linear limit design by FITOP which prevents rope to twin with the emergency limit switch
- ◆ **Accurate:** a complete set of limit switch, enables setting its upper and lower limit at the same time; easy to adjust and maintain; highly reliable
- ◆ **Free from danger:** automatically disconnects the power when the hook comes to the highest and lowest points



## MW Dual-rail



## MV Mono-rail



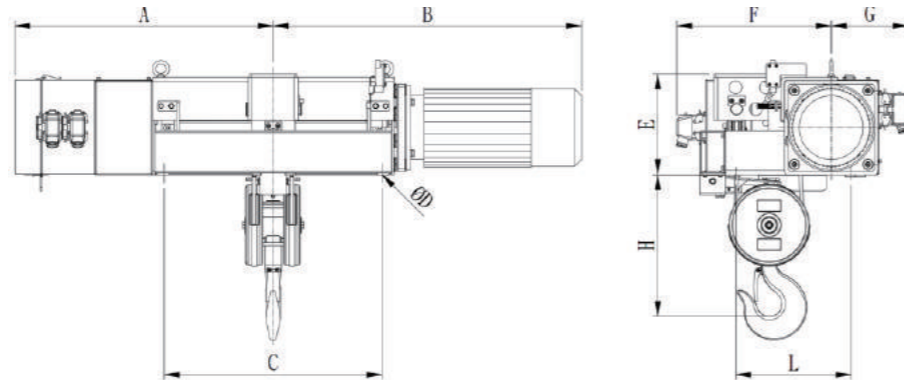
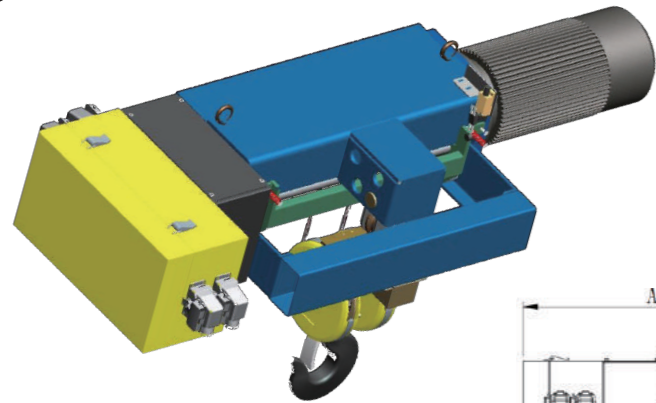
Model no.	Loading capacity (ton)	Wire rope		Lifting speed (M. /min)			Lifting motor (KW)		Lifting motor (HP)		Traversing speed (M. /min)		Lifting height (M.)	Dimensions (mm)									
		Spec.	mm	Speed	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz		60Hz	50Hz	A	B	C	D	E	F	G	H
MW01BA	01	6×Fi (29) 1770N/mm <sup>2</sup>	φ5	Mono (4P)	6.5	5.4	1.5	1.1	2	1.5	25.1 (4P)	20.9 (4P)	06	705	835	840	100	50	850	375	150	650	
MW01BB				Dual (2/12P)	6.5/1.1	5.4/0.9	1.5/0.3	1.1/0.2	2/0.3	1.5/0.3	25/8.3 (4/12P)	21/7 (4/12P)	09	805	935	1040	100	50	850	375	150	650	
MW01BC													12	905	1035	1240	100	50	850	375	150	650	
MW02BA	02	6×Fi (29) 1770N/mm <sup>2</sup>	φ6	Mono (4P)	6.5	5.4	3	2.3	4	3	25.1 (4P)	20.9 (4P)	06	705	835	840	100	50	850	375	150	650	
MW02BB				Dual (2/12P)	6.5/1.1	5.4/0.9	3/0.5	2.3/0.6	4/0.7	3/0.5	25/8.3 (4/12P)	21/7 (4/12P)	09	805	935	1040	100	50	850	375	150	650	
MW02BC													12	905	1035	1240	100	50	850	375	150	650	
MW02BA	03	6×Fi (29) 1960N/mm <sup>2</sup>	φ7	Mono (4P)	6.5	5.4	4.5	3.8	6	5	26.6 (4P)	22.1 (4P)	06	710	800	840	125	50	870	390	230	650	
MW03BB				Dual (2/12P)	6.5/1.1	5.4/0.9	4.5/0.8	3.8/0.6	6/1	5/0.8	27/9 (4/12P)	22/7.5 (4/12P)	09	810	900	1040	125	50	870	390	230	650	
MW03BC													12	910	1000	1240	125	50	870	390	230	650	
MW05BA	05	6×Fi (29) 1960N/mm <sup>2</sup>	φ10	Mono (4P)	4.3	3.6	4.5	3.8	6	5	26.6 (4P)	22.1 (4P)	06	770	920	950	125	50	945	410	360	725	
MW05BB				Dual (2/12P)	6/1	5/0.8	6.4/1.1	4.5/0.8	8.5/1.4	6/1	27/9 (4/12P)	22/7.5 (4/12P)	09	870	1020	1150	125	50	945	410	360	725	
MW05BC													12	970	1120	1350	125	50	945	410	360	725	
MW10BA	10	IWRC6× Fi (29) 2160N/mm <sup>2</sup>	φ12	Mono (4P)	4.3	3.6	9	7.5	12	10	26.8 (4P)	22.3 (4P)	06	795	1085	1050	160	61	1115	520	410	850	
MW10BB				Dual (2/12P)	6/1	5/0.8	12.8/2.1	9/1.5	17/2.8	12/2	27/9 (4/12P)	22/7.5 (4/12P)	09	895	1185	1250	160	61	1115	520	410	850	
MW10BC													12	995	1285	1450	160	61	1115	520	410	850	

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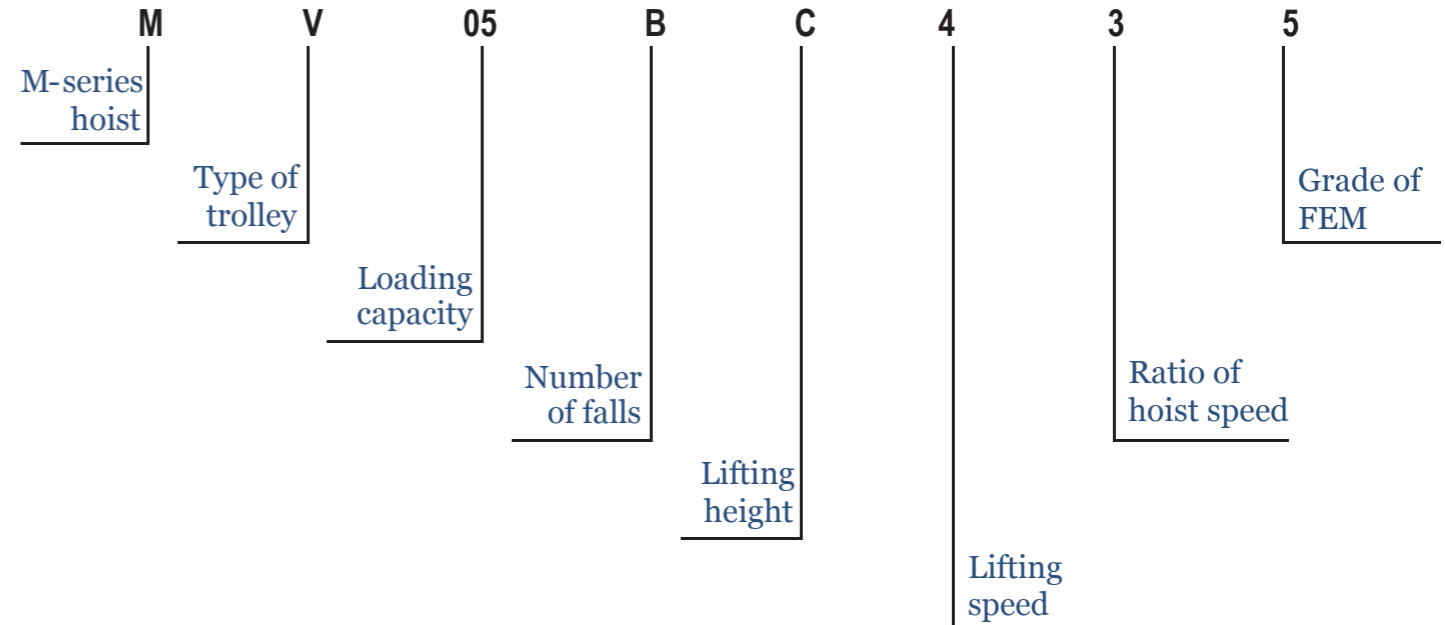
Model no.	Loading capacity (Ton)	Wire rope		Lifting speed (M. /min.)			Lifting motor (KW)		Lifting motor (HP)		Traversing speed (M. /min.)		Beam width (mm)	Lifting height (M.)	Dimensions (mm)				
		Spec.	mm	Speed	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz			60Hz	50Hz	A	B	C
MV01BA	01	6×Fi (29) 1770N/mm <sup>2</sup>	φ5	Mono (4P)	6.5	5.4	1.5	1.1	2	1.5	25.1 (4P)	20.9 (4P)	125~200	06	705	650	505	185	480
MV01BB				Dual (2/12P)	6.5/1.1	5.4/0.9	1.5/0.3	1.1/0.2	2/0.3	1.5/0.3	25/8.3 (4/12P)	21/7 (4/12P)	~400	09	805	750	505	185	480
MV01BC													~600	12	905	850	505	185	480
MV02BA	02	6×Fi (29) 1770N/mm <sup>2</sup>	φ6	Mono (4P)	6.4	5.3	3	2.3	4	3	25.1 (4P)	20.9 (4P)	125~200	06	705	650	505	185	480
MV02BB				Dual (2/12P)	6.4/1.1	5.3/0.9	3/0.5	2.3/0.6	4/0.7	3/0.5	25/8.3 (4/12P)	21/7 (4/12P)	~400	09	805	750	505	185	480
MV02BC													~600	12	905	850	505	185	480
MV03BA	03	6×Fi (29) 1960N/mm <sup>2</sup>	φ7	Mono (4P)	6.4	5.4	4.5	3.8	6	5	25.3 (4P)	21.1 (4P)	125~250	06	710	735	470	225	650
MV03BB				Dual (2/12P)	6.7/1.1	5.6/0.9	4.5/0.8	3.8/0.6	6/1	5/0.8	27/9 (4/12P)	22/7.5 (4/12P)	450	09	810	835	470	225	650
MV03BC													650	12	910	935	470	225	650
MV05BA	05	6×Fi (29) 1960N/mm <sup>2</sup>	φ10	Mono (4P)	4.3	3.5	4.5	3.8	6	5	27.2 (4P)	22.7 (4P)	125~250	06	770	920	460	230	780
MV05BB				Dual (2/12P)	5.9/1	4.9/0.8	6.4/1.1	4.5/0.8	8.5/1.4	6/1	27/9 (4/12P)	22/7.5 (4/12P)	~450	09	870	1020	460	230	780
MV05BC													~650	12	970	1120	460	230	780
MV10BA	10	IWRC6× Fi (29) 2160N/mm <sup>2</sup>	φ12	Mono (4P)	4.3	3.6	9	7.5	12	10	27.3 (4P)	22.7 (4P)	150~250	06	795	1085	505	280	950
MV10BB				Dual (2/12P)	5.9/1	4.9/0.8	12.8/2.1	9/1.5	17/2.8	12/2	27/9 (4/12P)	22/7.5 (4/12P)	~450	09	895	1185	505	280	950
MV10BC													~650	12	995	1285	505	280	950

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## MU Fixed-mounted



## Coding



Model no.	Loading capacity (Ton)	Wire rope		Lifting speed (M./min.)			Lifting motor (KW)		Lifting motor (HP)		Lifting Height (M.)	Dimensions (mm)								
		Spec.	mm	Speed	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz		A	B	C	D	E	F	G	H	L
MU01BA	1	6×Fi (29) 1770N/mm <sup>2</sup>	φ5	Mono (4P)	6.5	5.4	1.5	1.1	2	1.5	06	700	650	540	14	270	505	185	250	200
MU01BB				Dual (2/12P)	6.5/1.1	5.4/0.9	1.5/0.3	1.1/0.2	2/0.3	1.5/0.3	09	800	750	740	14	270	505	185	250	200
MU01BC													12	900	850	940	14	270	505	185
MU02BA	2	6×Fi (29) 1770N/mm <sup>2</sup>	φ6	Mono (4P)	6.4	5.3	3	2.3	4	3	06	710	735	540	14	270	505	185	300	280
MU02BB				Dual (2/12P)	6.4/1.1	5.3/0.9	3/0.5	2.3/0.6	4/0.7	3/0.5	09	810	835	740	14	270	505	185	300	280
MU02BC													12	910	935	940	14	270	505	185
MU03BA	3	6×Fi (29) 1960N/mm <sup>2</sup>	φ7	Mono (4P)	6.4	5.4	4.5	3.8	6	5	06	710	735	540	14	270	470	225	350	280
MU03BB				Dual (2/12P)	6.7/1.1	5.6/0.9	4.5/0.8	3.8/0.6	6/1	5/0.8	09	810	835	740	14	270	470	225	350	280
MU03BC													12	910	935	940	14	270	470	225
MU05BA	5	6×Fi (29) 1960N/mm <sup>2</sup>	φ10	Mono (4P)	4.3	3.5	4.5	3.8	6	5	06	770	920	650	18	300	460	230	460	345
MU05BB				Dual (2/12P)	5.9/1	4.9/0.8	6.4/1.1	4.5/0.8	8.5/1.4	6/1	09	870	1020	850	18	300	460	230	460	345
MU05BC													12	970	1120	1050	18	300	460	230
MU10BA	10	IWRC6×Fi (29) 2160N/mm <sup>2</sup>	φ12	Mono (4P)	4.3	3.6	9	7.5	12	10	06	795	1085	680	22	370	505	280	560	460
MU10BB				Dual (2/12P)	5.9/1	4.9/0.8	12.8/2.1	9/1.5	17/2.8	12/2	09	895	1185	880	22	370	505	280	560	460
MU10BC													12	995	1285	1080	22	370	505	280

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Codes for M-series Electric Wire Rope Hoist									
Type of trolley	W: Dual	V: Mono	U: Fixed-mounted	M: Mono, low head room					
No. of falls	A: 1/2 fall	B: 2/4 fall	C: 1/4 fall						
Lifting height	A: 6M	B: 9M	C: 12M						
Lifting speed (M./min.)	1 : 1	2 : 2	3 : 3	4 : 4	5 : 5	6 : 6	A : 10	B : 12	
Ratio of hoist speed	1 : 1:1	6 : 1:6							
Grade of FEM	4 : 1AM 30% ED Dual-speed (1:6)			5 : 2M 40% ED Mono-speed (1:1)					
Rail	1 : 12KG	2 : 22KG	3 : 37KG	4 : 9KG	5 : 15KG	6 : 30KG			
Beam width (mm)	2 : 190	3 : 75	4 : 100	5 : 125	6 : 150	7 : 175	8 : 200	9 : 225	
	A : 250	B : 275	C : 300	D : 325	E : 350	F : 375	G : 400	H : 425	
Trolley speed ratio	1 : 1:1	3 : 1:3	6 : 1:6	A : 1:10					
Wire rope guide	A: Guide rod-typed	B: Drum-typed	E: Drum-typed + Overload protector		F: Guide rod-typed + Overload protector				
Power	A: 220/60	B: 220/50	C: 380/60	D: 380/50	E: 220/380/60	F: 220/380/50	G: 400/60	H: 400/50	
	I: 415/60	J: 415/50	K: 440/60	L: 440/50	M: 208/415/50	N: 220/440/60	O: 480/60	P: 460/60	
	Q: 220/440/50	R: 200/400/50	S: 220/380/50/60	T: 230/440/50	U: 230/50	V: 230/460/60	W: 230/60	X: 20/380/440/60	