

THAI
CRANE KITS

THAI CRANE KITS CO., LTD.

TCK

TCK

5 S.W.L.
TONS

SAFETY

Wire Rope **HOISTS**

“TCK Lifts the Quality for You”



ISO 9001 : 2015



TCK WIRE ROPE HOISTS AND WIRE ROPE WINCHES

"TCK" electric wire rope hoists and wire rope winches are the result of decade of research and development work at Thai Crane Kits company.

Our electric wire rope hoists impress with their lifting force with load capacities of between 2 tons and 200 tons.

Can be lifted height over a hook path of up to 40 meters. Depending on your application and specific needs, you can choose from a wide variety of models : from standard wire rope hoists in the lower load capacity range to special wire rope hoist designs with additional system components in the upper load capacity range.



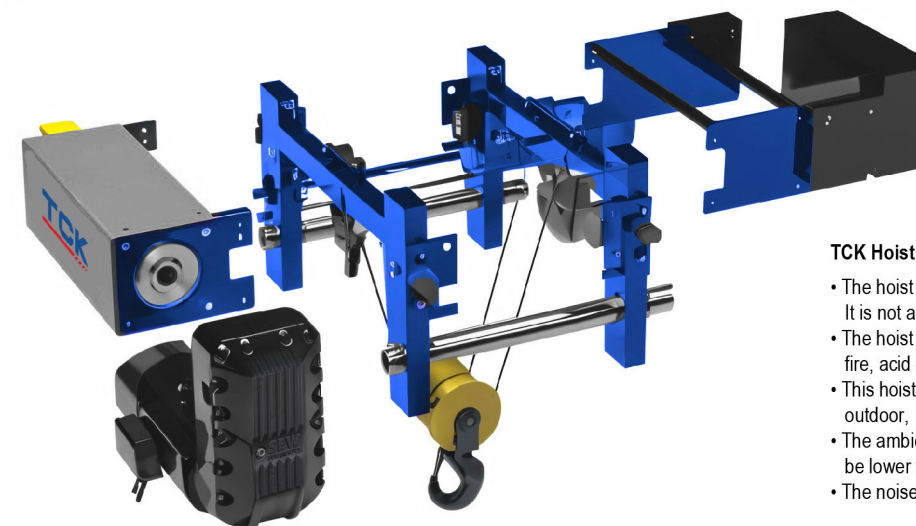
"TCK" wire rope hoists feature high handling rates, cost-effective operation and maximum safety.

They can be used as basic hoist units for integration into plant and machinery, as components for a crane set or as lifting solutions with electric controls that are optimized for crane applications. With our large portfolio of wire rope hoists and wire rope winches, we offer the best possible solution for your specific needs: cost-effective lifting equipment for loads up to 200 tons.

All wire rope hoists have the same task: lifting a load with the appropriate lifting force. In combination with a trolley, the hoist can finally also move the load with an electric trolley and variable frequency inverter drive, the load can be very conveniently and smooth moved on the electric wire rope hoist by the operator. This facilitates many work processes.

You can combination of wire rope hoist and crane is optimized for your needs.

The wire rope hoist or wire rope winch are lifting force create an enormously efficient and reliable combination when used with the crane and end carriages. The electric variable frequency inverter drive combined with our dynamic braking system ensures outstanding safety and reliability. That is innovative strength from "Thai Crane Kits".



TCK Hoist Designed Target :

- The hoist is designed to be used only for lifting and transferring objects only. It is not allowed to lifting humans.
- The hoist is not intended for use in locations where there is a risk of explosion, fire, acid or other corrosive gases.
- This hoist is designed for indoor use only. If it is to be used in an open area or outdoor, it should be covered with a roof to prevent a rainwater and moisture.
- The ambient temperature shall be -10 ~ +40 °C and the relative humidity shall be lower than 90% .
- The noise generated by a hoist in the premises must not exceed 70 dB.

The safety and effectiveness of TCK wire rope hoists and wire rope winches operation depend on the classification of working groups according to the following International Standards below :

- According to International Organization for Standardization ISO 4301 Cranes - Classification.
- According to European standard EN 13001 Crane safety – General design – Crane standard.
- According to European standard EN 14492 Cranes. Power driven winches and hoists.
- According to European Materials Handling Federation FEM 9.511 Rules for the design of series lifting equipment: Classification of mechanisms.



Hoist's Geared Motor

- Hoist's Geared Motors G..7 Series from "SEW-EURODRIVE".
- Compact design, smooth operation, high torque and low noise.
- Three-in-one system integrated by pole-changing professional hoisting motor. Different gear ratio makes more options for different lifting speed.
- Low energy consumption motor.
- High performance and stable brake with electromagnetic disk.
- IP 55 (IP 56, IP 66 is optional).
- Class F insulation 155 °C.
- Overheating protection cut-off by thermostat in the coil of stator.
- Induction motor flange mounting standard IEC 60034.
- Parallel helical geared with a splined solid shaft mounting direct drives to standard DIN 5480.
- Gears permanently immersed in oil for safety and reliability year after year.
- The gear train can be inspected by removable the cover.
- 380V. 3Ph. 50Hz. Power Supply.



Rope Drum

- Made of seamless tube, CNC machined with precision of concentricity.
- Advanced processing methods ensure concentricity of the reels.
- The depth of rope groove standard ISO EN 13001
- High-strength lock plates are fastened on drum to hold the wire rope ensuring the safety of lifting.



Wire Rope

- Top brand wire rope, adopt high-performance and high-strength wire rope with zinc surfacing-plating, effectively prevent corrosion.
- High breaking force and good flexibility.
- The wire rope protected more than 5 times of its diameter.
- Galvanized steel rope 2160 N/mm² international standard ISO 4309.

Rope Guider

- Use special high-strength Nylon which light weight, good wear resistance.
- Prevent wire rope from skipping and losing to off-groove, and safety first.



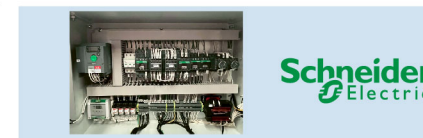
Hook Block

- Forge high-strength 42CrMo alloy steel class T hook, with Safety Latch to Continuous 360-degrees Hook design.
- The Single Hook standard DIN 15401.
- The Rope Sheave is ergonomically designed more than 20:1 ratio to the wire rope.



Pendant Switch Control

- NXAC series Pendant Switch.
- 2 step (6) two speeds Buttons.
- Emergency stop.
- ABS Material.
- Copper-based conductive electrical contacts.
- IP 65.
- Double wire cable length.
- Plug for connecting the control.



Control Panel

- Schneider Electric brand for the electrical equipment and inverter for long service life.
- Heavy duty Plug & Socket design for easy connecting cables and maintenance.
- Electrical control panel enclosure with an IP 55 rated standard IEC 60529.
- Electrical control panel safety label warning hazard standard W012.
- Multiple protection devices to make sure the safety.
 - Overvoltage Protection device.
 - Undervoltage Protection device.
 - Overcurrent Protection device.
 - Unbalance Protection device.
- Main Circuit Breaker, Main Magnetic Control, completed.
- 220V /48V. Transformer to power control.



Trolley's Geared Motor

- Trolley's Geared Motors RF Series from "SEW-EURODRIVE".
- Compact design, smooth operation, high torque and low noise level.
- 4 Poles motor by Inverter, Variable Frequency Drive (VFD).
- The geared motor operation mechanism enables the trolley to carry a load for smooth movement.



Hoist and Transverse Electromagnetic Brakes

- Brake BE Series from "SEW-EURODRIVE".
- DC disk brakes, Safety factor of 2.
- Health and safety compliant, Asbestos-free brake lining materials.
- Low maintenance.



Hoist's Up-Down Lifting Limit Switch

- Rotational limit switch for hook up & down.
- Ratio : 1/50, 1/75, 1/100, 1/15, 1/200, 1/300
- IP 65.



(Option) Trolley's Lift-Right Transverse Limit Switch

- CSM04 : 2 Forward Steps. 2 Reverse Steps.
- IP 65.



Overload Protection Sensor (Pin Type)

- Measures the total load of the lifting mechanism.
- Sends a signal to Data Logger.
- Protects the electric hoist from lifting overload.
- Protects the operator from danger.

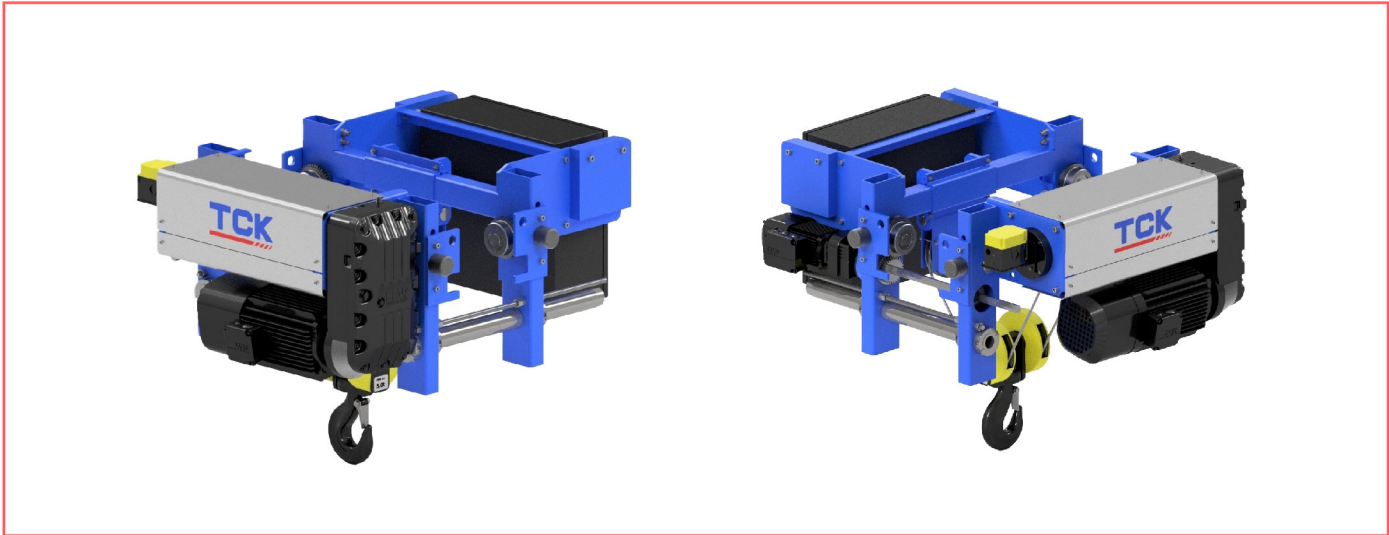


(Option) Load Display

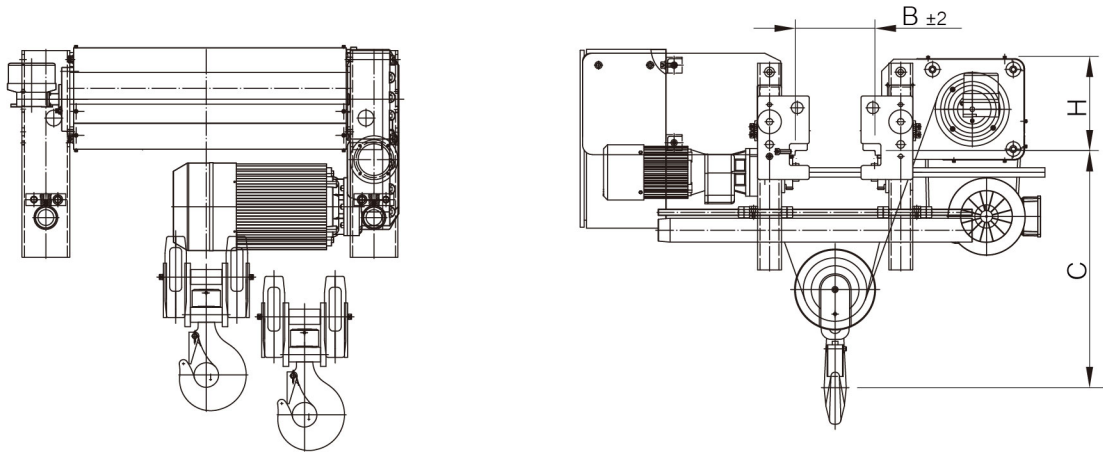
- Size 5" or 8", Red LED.
- IP 54.
- Input AC 220V.
- Output 12V /5V.

MODEL : WH2-SLV

Single Girder Low Headroom Wire Rope Hoist



• Dimension



• Standard Specification

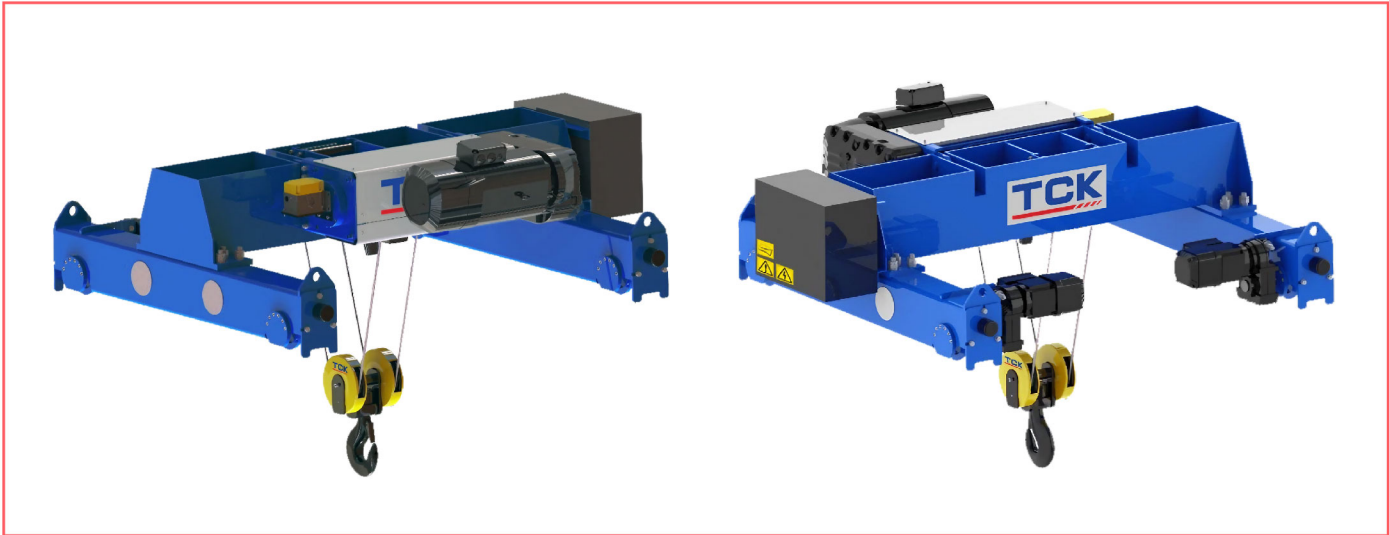
Capacity (Tons)	Hoist					Trolley		Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Traversing Speed (m/min)	Traversing Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Girder Width B (mm)
1.6	12/18/24/30/36	30%/15%	2m/M5	10.6/1.8	3.6/0.55	5~20	0.37~0.64	Ø 6.2	2/1	237	750	150~300
2	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	3.6/0.55	5~20	0.37~0.64	Ø 6.2	4/1	237	556	150~300
3.2	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	3.6/0.55	5~20	0.37~0.64	Ø 6.2	4/1	237	556	150~300
5	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	6.1/0.9	5~20	0.37~0.64	Ø 8	4/1	255	596	200~350
10	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	11/1.8	5~20	0.55~0.95	Ø 11	4/1	317.5	750	200~410
16	6/9/12/15/18	30%/15%	2m/M5	4/0.7	17/2.8	5~20	0.37~0.64x2	Ø 15	4/1	TBC	920	250~450
20	6/9/12/15/18	30%/15%	1Am/M4	3.5/0.6	17/2.8	5~20	0.55~0.95x2	Ø 15	4/1	TBC	920	250~450

- *** Standard Features :
- Wire Rope Hoist's Up-Down lifting 2 speeds by the gearbox with 12/2 poles changing motor Class F 155 °C.
 - Trolley's Left-Right traversing 2 speeds by the gearbox with 4 poles motor control by Inverter (VFD) Class F 155 °C.
 - Galvanized steel rope 2160 N/mm² ISO 4309.
 - Wire Rope Hoist's Up-Down lifting limit switch (IP 65).
 - Overload protection, Overvoltage protection, Undervoltage protection, Overcurrent protection, Overheating protection cut-off by thermostat in the coil of stator.
 - NXAC series, Pedant switch for 2 steps (6) 2 speeds push buttons + Emergency-Stop (IP 65), double wire cable length with heavy duty plug and socket.
 - Control panel (IP 55) : Main circuit breaker, Main magnetic contactor control, Magnetic contactor and Timer all of Schneider Electric Brand, Transformer and Braking Resistor all complete set.
 - 380V, 3Ph, 50Hz, AC power supply for the motors and 48V, AC power control for the electric equipment.

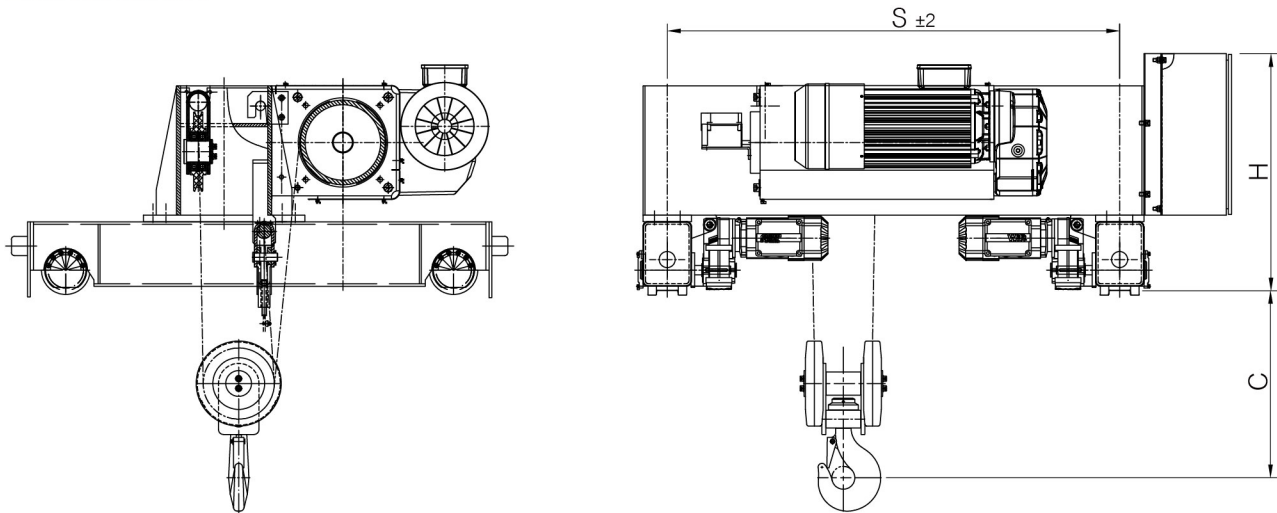
- *** Options :
- Trolley's Left-Right traversing limit switch for 2 forward steps and 2 reverse steps (IP 65).
 - Load Displayer: Size 5", 8", Red LED, input AC 220V, and output DC 12V/5V.

MODEL : WH2-DLV

Double Girder Low Headroom Wire Rope Hoist



• Dimension



• Standard Specification

Capacity (Tons)	Hoist					Trolley		Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Traversing Speed (m/min)	Traversing Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Rail Gauge S (mm)
5	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	6.1/0.9	5~20	0.25x2	Ø 8	4/1	735	425	1400-2000
10	6/9/12/15/18	30%/15%	2m/M5	5.3/0.8	11/1.8	5~20	0.25~0.43x2	Ø 11	4/1	735	580	1400-2000
16	6/9/12/15/18	30%/15%	2m/M5	4/0.7	17/2.8	5~20	0.37~0.64x2	Ø 15	4/1	820	920	1400-2100
20	6/9/12/15/18	30%/15%	2m/M5	5.3/0.6	17/2.8	5~20	0.55~0.95x2	Ø 11	8/2	820	800	1800-2800
25	6/9/12/15/18	30%/15%	2m/M5	3/0.75	22/5.5	5~20	1.1~1.9x2	Ø 11	8/2	900	800	1800-3800
32	6/9/12/15/18	30%/15%	1Am/M4	2.7/0.7	22/5.5	5~20	1.1~1.9x2	Ø 11	12/2	900	800	1800-3800
40	6/9/12/15/18	30%/15%	2m/M5	2.6/0.7	22/5.5	5~20	1.1~1.9x2	Ø 11	16/2	1065	1000	1800-3800
50	6/9/12/15/18	30%/15%	1Am/M4	2/0.5	22/5.5	5~20	1.5~2.6x2	Ø 11	16/2	1125	950	1800-3800

- *** Standard Features :
- Wire Rope Hoist's Up-Down lifting 2 speeds by the gearbox with 8/2, 12/2 poles changing motor Class F 155 °C.
 - Trolley's Left-Right traversing 2 speeds by the gearbox with 4 poles motor control by Inverter (VFD) Class F 155 °C.
 - Galvanized steel rope 2160 N/mm² ISO 4309.
 - Wire Rope Hoist's Up-Down lifting limit switch (IP 65).
 - Overload protection, Overvoltage protection, Undervoltage protection, Overcurrent protection, Overheating protection cut-off by thermostat in the coil of stator.
 - NXAC series, Pedant switch for 2 steps (6) 2 speeds push buttons + Emergency-Stop (IP 65), double wire cable length with heavy duty plug and socket.
 - Control panel (IP 55) : Main circuit breaker, Main magnetic contactor control, Magnetic contactor and Timer all of Schneider Electric Brand, Transformer and Braking Resistor all complete set.
 - 380V, 3Ph, 50Hz, AC power supply for the motors and 48V, AC power control for the electric equipment.

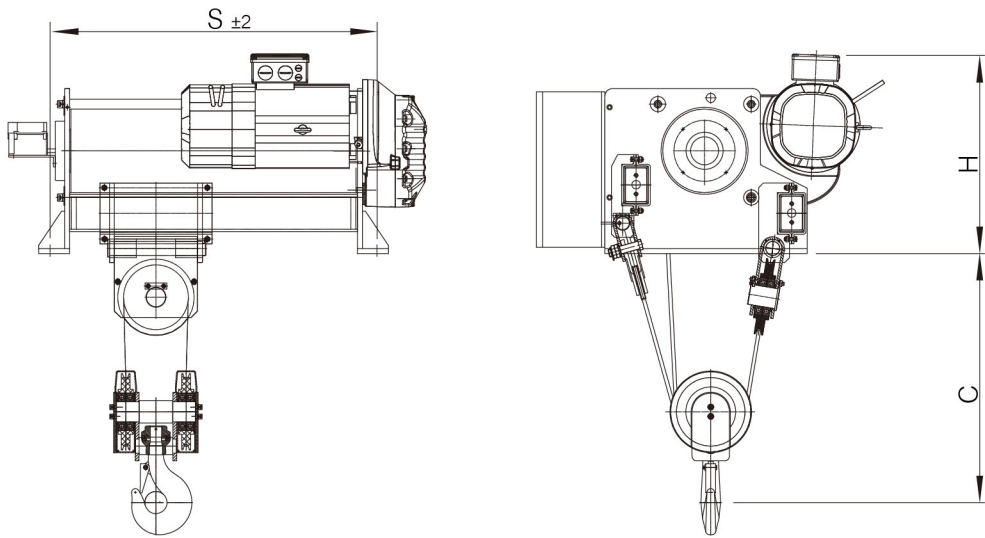
- *** Options :
- Trolley's Left-Right traversing limit switch for 2 forward steps and 2 reverse steps (IP 65).
 - Load Displayer: Size 5", 8", Red LED, input AC 220V, and output DC 12V/5V.

MODEL : WH2-FL0

Fixed Girder Low Headroom Wire Rope Hoist



• Dimension



• Standard Specification

Capacity (Tons)	Hoist					Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Base Mounted S (mm)
5	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	6.1/0.9	Ø 8	4/1	570	640	1400-2000
10	6/9/12/15/18	30%/15%	2m/M5	5.3/0.8	11/1.8	Ø 11	4/1	570	800	1400-2000
16	6/9/12/15/18	30%/15%	2m/M5	4/0.7	17/2.8	Ø 15	4/1	620	1180	1400-2100
20	6/9/12/15/18	30%/15%	2m/M5	5.3/0.6	17/2.8	Ø 11	8/2	620	1060	1800-2800
25	6/9/12/15/18	30%/15%	2m/M5	3/0.75	22/5.5	Ø 11	8/2	650	1130	1800-3800
32	6/9/12/15/18	30%/15%	1Am/M4	2.7/0.7	22/5.5	Ø 11	12/2	650	1130	1800-3800
40	6/9/12/15/18	30%/15%	2m/M5	2.6/0.7	22/5.5	Ø 11	16/2	750	1400	1800-3800
50	6/9/12/15/18	30%/15%	1Am/M4	2/0.5	22/5.5	Ø 11	16/2	800	1420	1800-3800

*** Standard Features :

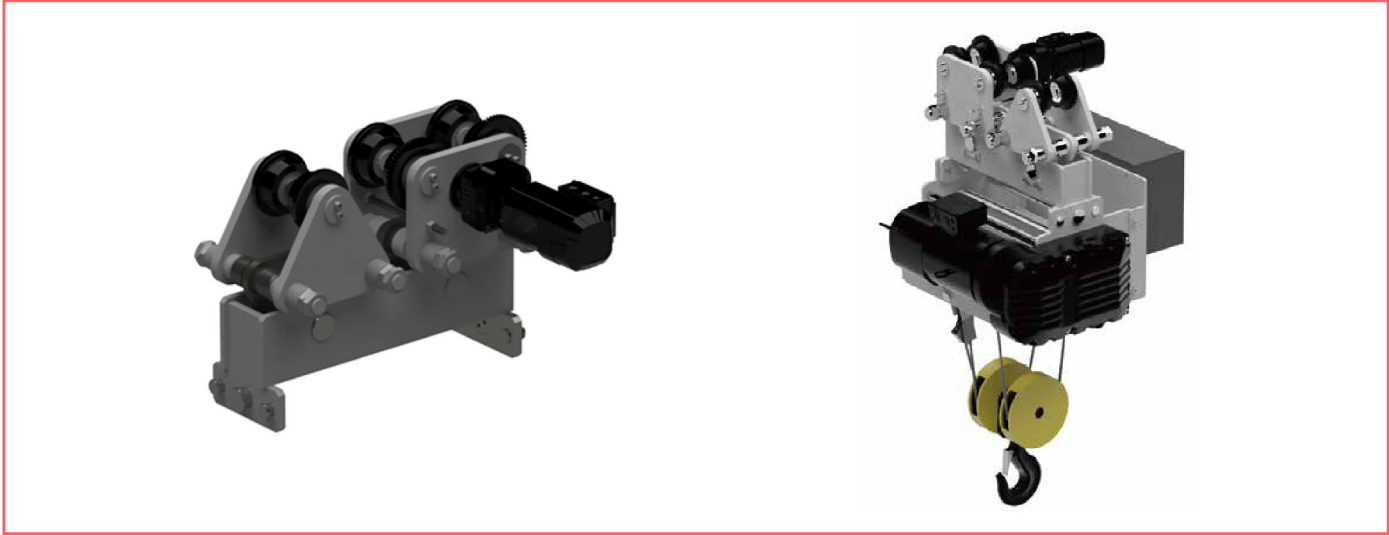
- Wire Rope Hoist's Up-Down lifting 2 speeds by the gearbox with 8/2, 12/2 poles changing motor Class F 155 °C.
- Galvanized steel rope 2160 N/mm² ISO 4309.
- Wire Rope Hoist's Up-Down lifting limit switch (IP 65).
- Overload protection, Overvoltage protection, Undervoltage protection, Overcurrent protection, Overheating protection cut-off by thermostat in the coil of stator.
- NXAC series, Pedant switch for 2 steps (4) 2 speeds push buttons + Emergency-Stop (IP 65), double wire cable length with heavy duty plug and socket.
- Control panel (IP 55) : Main circuit breaker, Main magnetic contactor control, Magnetic contactor and Timer all of Schneider Electric Brand, Transformer and Braking Resistor all complete set.
- 380V. 3Ph. 50Hz. AC power supply for the motors and 48V. AC power control for the electric equipment.

*** Options :

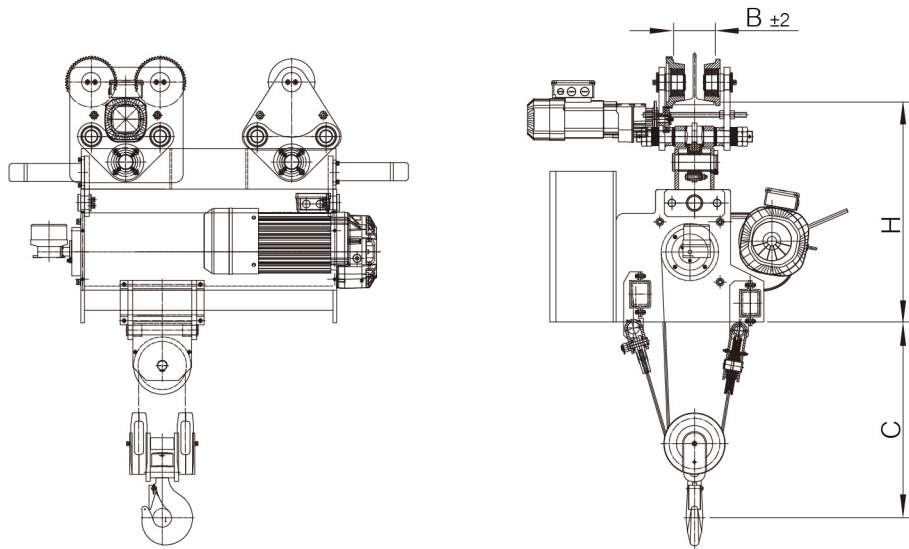
- Load Displayer : Size 5", 8", Red LED, input AC 220V. and output DC 12V/5V.

MODEL : WH2-SSV

Single Girder Standard Headroom Wire Rope Hoist



• Dimension



• Standard Specification

Capacity (Tons)	Hoist					Trolley		Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Traversing Speed (m/min)	Traversing Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Girder Width B (mm)
1.6	12/18/24/30/36	30%/15%	2m/M5	10.6/1.8	3.6/0.55	5~20	0.37~0.64	Ø 6.2	2/1	237	820	150~300
2	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	3.6/0.55	5~20	0.37~0.64	Ø 6.2	4/1	237	620	150~300
3.2	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	3.6/0.55	5~20	0.37~0.64	Ø 6.2	4/1	237	620	150~300
5	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	6.1/0.9	5~20	0.37~0.64	Ø 8	4/1	255	650	200~350
10	6/9/12/15/18	30%/15%	2m/M5	5.3/0.9	11/1.8	5~20	0.55~0.95	Ø 11	4/1	317.5	800	200~410
16	6/9/12/15/18	30%/15%	2m/M5	4/0.7	17/2.8	5~20	0.37~0.64x2	Ø 15	4/1	TBC	1000	250~450
20	6/9/12/15/18	30%/15%	1Am/M4	3.5/0.6	17/2.8	5~20	0.55~0.95x2	Ø 15	4/1	TBC	1000	250~450

*** Standard Features :

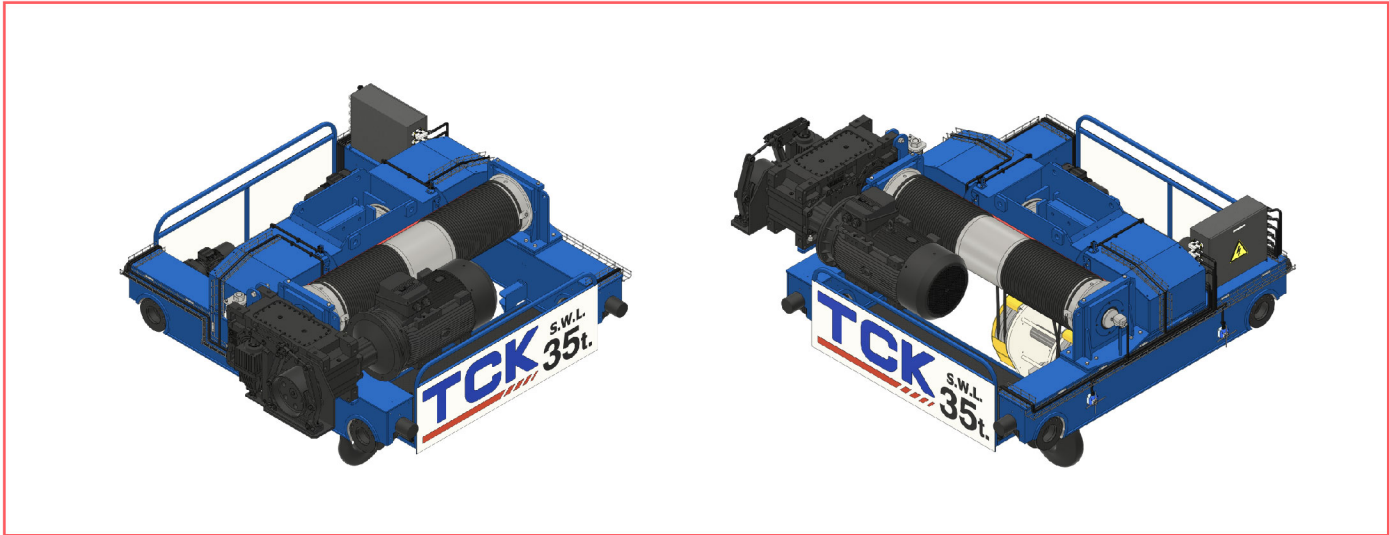
- Wire Rope Hoist's Up-Down lifting 2 speeds by the gearbox with 12/2 poles changing motor Class F 155 °C.
- Trolley's Left-Right traversing 2 speeds by the gearbox with 4 poles motor control by Inverter (VFD) Class F 155 °C.
- Galvanized steel rope 2160 N/mm² ISO 4309.
- Wire Rope Hoist's Up-Down lifting limit switch (IP 65).
- Overload protection, Overvoltage protection, Undervoltage protection, Overcurrent protection, Overheating protection cut-off by thermostat in the coil of stator.
- NXAC series, Pedant switch for 2 steps (6) 2 speeds push buttons + Emergency-Stop (IP 65), double wire cable length with heavy duty plug and socket.
- Control panel (IP 55) : Main circuit breaker, Main magnetic contactor control, Magnetic contactor and Timer all of Schneider Electric Brand, Transformer and Braking Resistor all complete set.
- 380V. 3Ph. 50Hz. AC power supply for the motors and 48V. AC power control for the electric equipment.

*** Options :

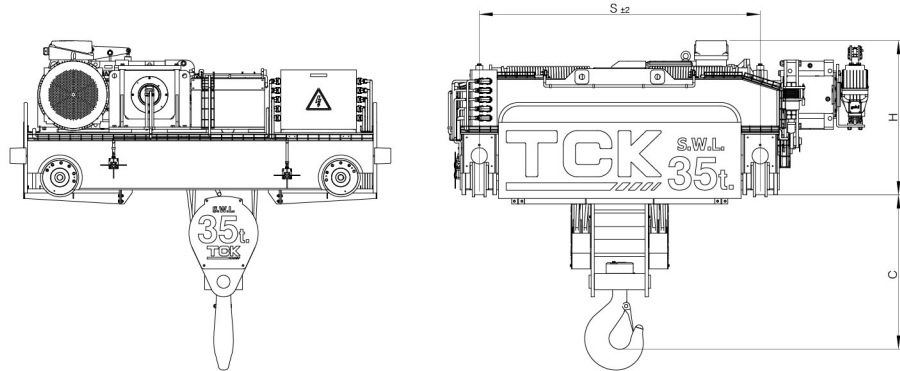
- Trolley's Left-Right traversing limit switch for 2 forward steps and 2 reverse steps (IP 65).
- Load Displayer : Size 5", 8", Red LED, input AC 220V. and output DC 12V/5V.

MODEL : WIV-DSV

Double Girder Standard Headroom Open Winch



● Dimension



● Standard Specification

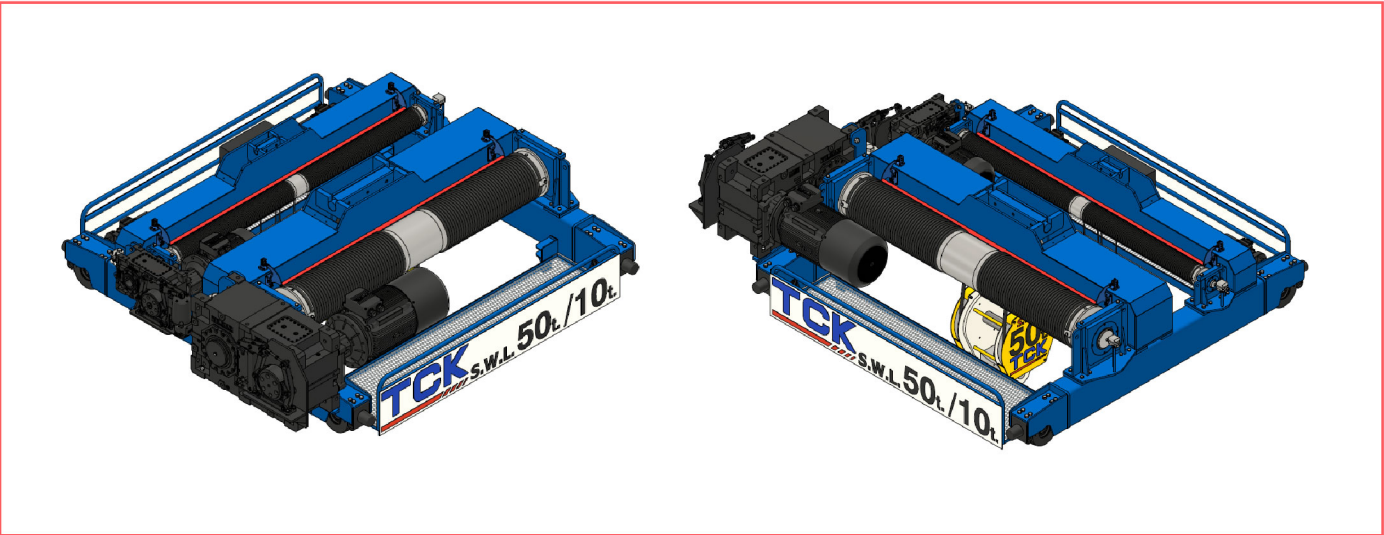
Capacity (Tons)	Hoist					Trolley		Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Traversing Speed (m/min)	Traversing Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Rail Gauge S (mm)
5	6/9/12/15/18/24/30	>60%	5m/M8	1~12	11	5~20	0.55x2	Ø 11	4/2	750	500	1400-4000
10	6/9/12/15/18/24/30	60%	4m/M7	0.8~8	18.5	5~20	0.75x2	Ø 13	4/2	800	700	1400-4000
16	6/9/12/15/18/24/30	60%	4m/M7	0.6~6	22	5~20	1.1x2	Ø 15	4/2	900	1000	1400-4000
20	6/9/12/15/18/24/30	60%	4m/M7	0.4~4	30	5~20	1.5x2	Ø 15	8/2	1000	1200	2000-4000
25	6/9/12/15/18/24/30	50%	3m/M6	0.4~4	37	5~20	1.5x2	Ø 15	8/2	1000	1200	2000-4000
32	6/9/12/15/18/24/30	60%	4m/M7	0.3~3	45	5~20	2.2x2	Ø 22	8/2	1200	1400	2400-4500
40	6/9/12/15/18/24/30	50%	3m/M6	0.3~3	45	5~20	2.2x2	Ø 22	8/2	1200	1400	2400-4500
50	6/9/12/15/18/24/30	50%	3m/M6	0.3~3	45	5~20	3.0x2	Ø 22	12/2	1200	1600	2400-4500
75	6/9/12/15/18/24/30	40%	2m/M5	0.3~3	75	5~20	3.0x4	Ø 24	12/2	1400	1600	3000-5000
100	6/9/12/15/18/24/30	40%	2m/M5	0.2~2	90	5~20	4.0x4	Ø 24	16/2	1600	1600	3000-5000
125	6/9/12/15/18/24/30	30%	1Am/M4	0.2~2	90	5~20	4.0x4	Ø 24	16/2	1600	1800	3000-5000
150	6/9/12/15/18/24/30	40%	2m/M5	0.1~1.5	110	5~20	5.5x4	Ø 24	24/2	1800	2000	3000-5000
175	6/9/12/15/18/24/30	30%	1Am/M4	0.1~1	132	5~20	7.5x4	Ø 24	32/2	2000	2200	3000-5000
200	6/9/12/15/18/24/30	30%	1Am/M4	0.1~1	160	5~20	11.0x4	Ø 24	32/2	2100	2400	3000-5000

*** Standard Features :
• Open Winch's Up-Down lifting 2 speeds by the gearbox with 4 or 6 poles motor control by Inverter (VFD) Class F 155 °C.
• Trolley's Left-Right traversing 2 speeds by the gearbox with 4 poles motor control by Inverter (VFD) Class F 155 °C.
• Galvanized steel rope 2160 N/mm² ISO 4309.
• Open Winch's Up-Down lifting limit switch (IP 65).
• Overload protection, Overvoltage protection, Undervoltage protection, Overcurrent protection, Overheating protection cut-off by thermostat in the coil of stator.
• NXAC series, Pedant switch for 2 steps (6) 2 speeds push buttons + Emergency-Stop (IP 65), double wire cable length with heavy duty plug and socket.
• Control panel (IP 55) : Main circuit breaker, Main magnetic contactor control, Magnetic contactor and Timer all of Schneider Electric Brand, Transformer and Braking Resistor all complete set.
• 380V, 3Ph, 50Hz, AC power supply for the motors and 48V, AC power control for the electric equipment.

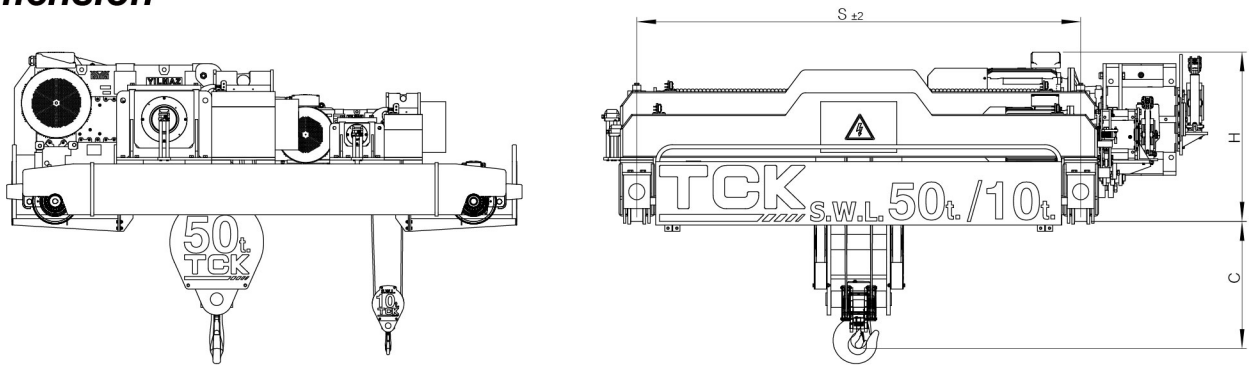
*** Options :
• Trolley's Left-Right traversing limit switch for 2 forward steps and 2 reverse steps (IP 65).
• Load Displayer: Size 5", 8", Red LED, input AC 220V, and output DC 12V/5V.

MODEL : W2V-DSV

Double Girder Standard Headroom Double Open Winches



● Dimension



● Standard Specification

Capacity (Tons)	Hoist					Trolley		Wire Rope		Dimensions		
	Lifting Height (meters)	Duty Rating % ED	Hoist Class (FEM/ISO)	Lifting Speed (m/min)	Lifting Power (kW)	Traversing Speed (m/min)	Traversing Power (kW)	Diameter (mm)	Number of Falls	Wheel to Top H (mm)	Hook Path C (mm)	Rail Gauge S (mm)
5/5	6/9/12/15/18/24/30	>60%/>60%	M8/M8	1~12/1~12	11/11	5~20	0.75x2	Ø11, Ø11	4/2, 4/2	750	500	1400-4000
10/5	6/9/12/15/18/24/30	60%/>60%	M7/M8	0.8~8/1~12	18.5/11	5~20	1.1x2	Ø13, Ø11	4/2, 4/2	800	700	1400-4000
10/10	6/9/12/15/18/24/30	60%/60%	M7/M7	0.8~8/0.8~8	18.5/18.5	5~20	1.1x2	Ø13, Ø13	4/2, 4/2	800	700	1400-4000
20/5	6/9/12/15/18/24/30	60%/>60%	M7/M8	0.4~4/1~12	30/11	5~20	1.5x2	Ø15, Ø11	8/2, 4/2	1000	1200	2000-4000
20/10	6/9/12/15/18/24/30	60%/60%	M7/M7	0.4~4/0.8~8	30/18.5	5~20	1.5x2	Ø15, Ø13	8/2, 4/2	1000	1200	2000-4000
20/20	6/9/12/15/18/24/30	60%/60%	M7/M7	0.4~4/0.4~4	30/30	5~20	1.5x2	Ø15, Ø15	8/2, 8/2	1000	1200	2000-4000
25/5	6/9/12/15/18/24/30	50%/>60%	M6/M8	0.4~4/1~12	37/11	5~20	2.2x2	Ø15, Ø11	8/2, 4/2	1000	1200	2000-4000
25/10	6/9/12/15/18/24/30	50%/60%	M6/M7	0.4~4/0.8~8	37/18.5	5~20	2.2x2	Ø15, Ø13	8/2, 4/2	1000	1200	2000-4000
25/25	6/9/12/15/18/24/30	50%/50%	M6/M6	0.4~4/0.4~4	37/37	5~20	2.2x2	Ø15, Ø15	8/2, 8/2	1000	1200	2000-4000
32/5	6/9/12/15/18/24/30	60%/>60%	M7/M8	0.3~3/1~12	45/11	5~20	2.2x2	Ø22, Ø11	8/2, 4/2	1200	1400	2400-4500
32/10	6/9/12/15/18/24/30	60%/60%	M7/M7	0.3~3/0.8~8	45/18.5	5~20	2.2x2	Ø22, Ø13	8/2, 4/2	1200	1400	2400-4500
32/32	6/9/12/15/18/24/30	60%/60%	M7/M7	0.3~3/0.3~3	45/45	5~20	2.2x2	Ø22, Ø22	8/2, 8/2	1200	1400	2400-4500
40/5	6/9/12/15/18/24/30	50%/>60%	M6/M8	0.3~3/1~12	45/11	5~20	3.0x2	Ø22, Ø11	8/2, 4/2	1200	1400	2400-4500
40/10	6/9/12/15/18/24/30	50%/60%	M6/M7	0.3~3/0.8~8	45/18.5	5~20	3.0x2	Ø22, Ø13	8/2, 4/2	1200	1400	2400-4500
40/20	6/9/12/15/18/24/30	50%/60%	M6/M7	0.3~3/0.4~4	45/30	5~20	3.0x2	Ø22, Ø15	8/2, 8/2	1200	1400	2400-4500
40/40	6/9/12/15/18/24/30	50%/50%	M6/M6	0.3~3/0.3~3	45/45	5~20	3.0x2	Ø22, Ø22	8/2, 8/2	1200	1400	2400-4500
50/5	6/9/12/15/18/24/30	50%/>60%	M6/M8	0.3~3/1~12	45/11	5~20	3.0x4	Ø22, Ø11	12/2, 4/2	1200	1600	2400-4500
50/10	6/9/12/15/18/24/30	50%/60%	M6/M7	0.3~3/0.8~8	45/18.5	5~20	3.0x4	Ø22, Ø13	12/2, 4/2	1200	1600	2400-4500
50/20	6/9/12/15/18/24/30	50%/60%	M6/M7	0.3~3/0.4~4	45/30	5~20	3.0x4	Ø22, Ø15	12/2, 8/2	1200	1600	2400-4500
50/50	6/9/12/15/18/24/30	50%/50%	M6/M6	0.3~3/0.3~3	45/45	5~20	3.0x4	Ø22, Ø22	12/2, 12/2	1200	1600	2400-4500

CLASSIFICATION OF MECHANISMS

FEM 9.511	1D _m	1C _m	1B _m	1A _m	2 _m	3 _m	4 _m	5 _m
ISO EN 13001	M1	M2	M3	M4	M5	M6	M7	M8
Hoist mechanisms	Intermittent ratio (R1%)	25	30	40	50	60	>60	
	Max No. of starts per hour (S/h)	150	180	240	300	360	>360	
	Max No. of cycles per hours (C/h)	25	30	40	50	60	>60	
Trolley mechanisms	Intermittent ratio (R1%)	25	30	40	50	60	>60	
	Max No. of starts per hour (S/h)	150	180	240	300	360	>360	
	Max No. of cycles per hours (C/h)	25	30	40	50	60	>60	
Two-Speed Double polarity motor								
Max No. of starts per hour (S/h)	Fast speed	1/3 (33.3% of total starts per hour)						
	Low speed	2/3 (66.7% of total starts per hour)						
Tm = Daily running time (hour)	Fast speed	2/3 (66.7% of average operating time per day)						
	Low speed	1/3 (33.3% of average operating time per day)						
Temporary Use	Operating time at fast speed (min. in hour)	15	18	24	30	36	>36	
	Operating time at low speed (min. in hour)	2.5	3	3.5	4	5	6	
	Maximum number of starts per hour (S/h)	10	10	10	10	10	10	

For applying to the hoist mechanisms are classified into the groups depending on operating conditions

The group into which a mechanism is classified is determined by the following factor :

- Class of operating time
- Load spectrum

Class of operating time

The class of operating time indicates the average period per day during which a mechanism is in operation (see table 1). A mechanism is considered to be in operation when it is in motion.

For mechanisms not regularly used during the year the average operating time per day is determined by the ratio of the annual operating time to 250 working days per year.

The higher classes of operating time apply only in such cases where a mechanism is operated during more than one shift per day.

Table 1

Average operating time per day (hours)

$$\text{Operating time/day (h)} = \frac{2 \times \text{lifting height (m)} \times \text{number of cycles per hour} \times \text{working time/day (h)}}{60 (\text{minutes per hour}) \times \text{lifting speed (m/min)}}$$

Lifting height = The average hook travel under actual operating conditions (meter)

Cycles per hour = The average number of complete ascent/descent operations in an hour

Working time/day = The time during which the hoist is used on a working day (hour)

Lifting speed = The average lifting speed (normally the maximum lifting speed) at which the load cycles are performed. (Meter per minute)

Class of operating time		Average operating time per day	Calculated total operating time
FEM	ISO	(hours)	(hours)
V0.06	T1	≤ 0.12	400
V0.12	T2	≤ 0.25	800
V0.25	T3	≤ 0.5	1 600
V0.5	T4	≤ 1	3 200
V1	T5	≤ 2	6 300
V2	T6	≤ 4	12 000
V3	T7	≤ 8	25 000
V4	T8	≤ 16	50 000
V5	T9	> 16	>50 000

Load spectrum

The load spectrum indicates to what extent a mechanism or part thereof is subject to maximum stress or whether it is subject to smaller load only.

Table 2

For an exact classification into groups the cubic mean value k referred to the safe working load is required. It is calculated by using the following formula :

$$k = \sqrt[3]{(\beta_1 + \gamma)^3 \cdot t_1 + (\beta_2 + \gamma)^3 \cdot t_2 + \dots + \gamma^3 \cdot t_\Delta}$$

Where : β = $\frac{\text{useful or partial load}}{\text{safe working load}}$

γ = $\frac{\text{dead load}}{\text{safe working load}}$

t = $\frac{\text{operating time under useful or partial load and dead load}}{\text{total operating time}}$

t_Δ = $\frac{\text{operating time under dead load only}}{\text{total operating time}}$

Four load spectrum are distinguished which are determined by the definitions given and by the ranges covered by the cubic mean values k as listed in table 2

Load spectrum		Definitions	Cubic mean value
FEM	ISO		
1 (light)	L1	Mechanisms or parts thereof, Usually subject to very small Loads and in exceptional cases Only to maximum loads	$k \leq 0.50$
2 (medium)	L2	Mechanisms or parts thereof, Usually subject to small loads But rather often to maximum load	$0.50 < k \leq 0.63$
3 (heavy)	L3	Mechanisms or parts thereof, Usually subject to medium Loads but frequently to Maximum loads	$0.63 < k \leq 0.80$
4 (very heavy)	L4	Mechanisms or parts thereof, usually subject to maximum or almost maximum loads	$0.80 < k \leq 1.00$

The formular given above for the cubic mean value k excludes the weight of the load carrying means.

This is acceptable if the ratio $\frac{\text{Weight of the load carrying means}}{\text{safe working load}} \leq 0.05$

By applying **The Classes of operating times** and **The Load Spectrum**,

The Mechanisms are classified into 8 groups :

Table 3

Classification of Mechanisms into 8 groups

Load spectrum		Class of operation time									
		V 0.06	V 0.12	V 0.25	V 0.5	V 1	V 2	V 3	V 4	V 5	
		T 0	T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	
Average operating time per day in hours											
FEM	ISO	Cubic mean value	≤ 0.12	≤ 0.25	≤ 0.5	≤ 1	≤ 2	≤ 4	≤ 8	≤ 16	> 16
1 (light)	L1	$k \leq 0.50$			1 D _m	1 C _m	1 B _m	1 A _m	2 _m	3 _m	4 _m
					M1	M2	M3	M4	M5	M6	M7
2 (medium)	L2	$0.50 < k \leq 0.63$		1 D _m	1 C _m	1 B _m	1 A _m	2 _m	3 _m	4 _m	5 _m
				M1	M2	M3	M4	M5	M6	M7	M8
3 (heavy)	L3	$0.63 < k \leq 0.80$	1 D _m	1 C _m	1 B _m	1 A _m	2 _m	3 _m	4 _m	5 _m	
			M1	M2	M3	M4	M5	M6	M7	M8	
4 (very heavy)	L4	$0.80 < k \leq 1.00$	1 C _m	1 B _m	1 A _m	2 _m	3 _m	4 _m	5 _m		
			M2	M3	M4	M5	M6	M7	M8		

The result of the classification of mechanism into groups according to table 3 is that the same life, expressed in years, may be expected for these machines under all load spectrum and average operating times per day. This applies on condition that the life of the individual component depends on the third power of the load.

The average daily operating time with in the classes of operating times are doubled as follows:

1. Within a group by passing into a lower load spectrum (progression 1.25), because $1.25^3 = 2$.
2. Within a load spectrum by passing into a higher group and derating the SWL by the factor of 1.25, because $1.25^3 = 2$.

TCK : REFERENCE

TCK Hoist can be installed with the electric overhead cranes.



"THAI CRANE KITS"



WWW.THAICRANEKITS.CO.TH



Thai Crane Kits Co., Ltd.
1/19 M.1, Phimpha, Bangpakong,
Chachoengsao, 24130 Thailand.



www.thaicranekits.co.th



thaicranekits.info@gmail.com



Tel. 08-9205-3403 Hotline : 08-9205-3400



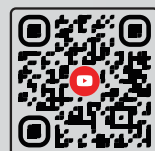
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