

# ELECTRIC CHAIN HOIST



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# ELECTRIC CHAIN HOIST

## DMK SERIES, THE MOST RELIABLE AND SAFE WAY TO LIFT LOADS UP TO 4.000 kg

The DMK series electric chain hoists meet the needs of the international market which requires products featuring guaranteed quality, a wide range of uses, long-term reliability, safety guarantees during all operating phases and excellent value for money. DMK hoists are known for the quality of their components, high technology used to machine mechanical parts, finishing and surface treatments, constant and controlled quality system certified EN ISO 9001 which covers all company activities, and makes it possible for DONATI SOLLEVAMENTI to offer a product in line with the latest international standards.

The special water-repellent paintwork, applied with a completely enclosed electrostatic process, guarantees durability and constant top performance, including in particularly hostile environments. DMK series electric chain hoists are part of the lifting products range manufactured by DONATI SOLLEVAMENTI, a leading company in this field in Italy and part of the Terex Group, one of the biggest company's in the lifting sector on a worldwide level.



 **TEREX**® | DONATI

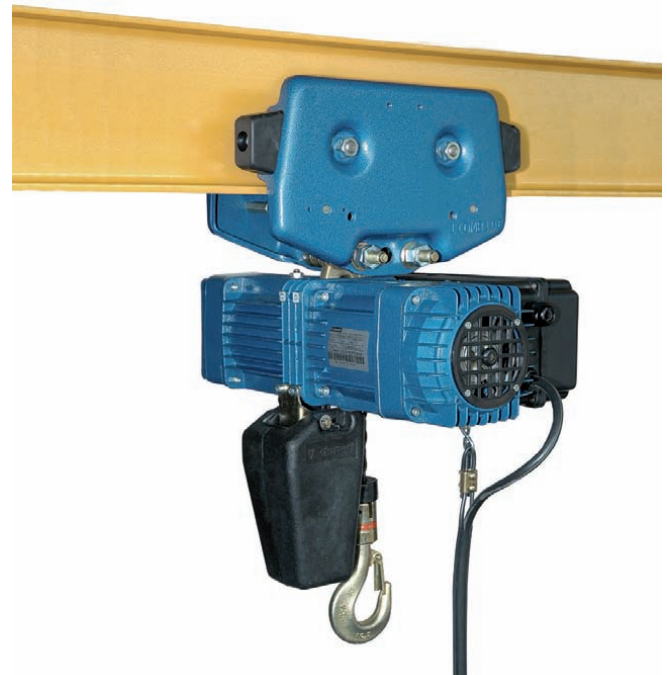
# AND TROLLEYS

## POWERFUL AND SAFE TROLLEYS AT YOUR SERVICE

The electric chain hoist is a machine generally used to lift un-guided loads, using a hook or handling accessories adequate for the purpose. When the hoist is combined with an electric or manual trolley, which run on a beam, it ensures combined lifting and horizontal movement of the load.

The electric chain hoist and trolleys can be mounted overhead and fitted with monorails or act as the lifting unit for other machines where they have been incorporated, including: jib crane, bridge crane, etc.

The electric chain hoist, positioned overhead or on the ground, can also be used in various fixed position configurations.



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**DMK series electric chain hoists and electric trolleys are manufactured based on a modular component design, assembled together based on commercial needs and make it possible to quickly and inexpensively create many standardised and special executions. Standard versions are always available at our warehouse.**

**Thanks to the extreme compactness of the basic components, i.e. the motor and gearbox, they are assembled together in a coaxial line, in order to ensure the maximum use of the hook run and minimum encumbrance of the hoist.**

**The construction uses the most advanced technologies based on high industrialisation production processes and makes it possible to create completely reliable and technically innovative machines through economies of scale. The high quality level is guaranteed and controlled by the company quality system certified according to the standard EN ISO9001: 2008.**

## THE DMK SERIES ELECTRIC CHAIN HOIST RANGE IS CREATED IN:

- ▶ **4 basic sizes:** for loads from 100 to 4,000 kg, in FEM (ISO) service units 1Bm (M3) - 1Am (M4) - 2m (M5).
- ▶ **One lifting speed** created with 1 polarity motor:
  - ▶ 4 or 6,3; 8; 16 m/min. for 1 chain fall hoists
  - ▶ 3,2 or 4m/min. for 2 chain fall hoists

- ▶ **Two lifting speeds** created with pole changing motor:
  - ▶ 4/1,2 or 6,3/2.1; 8/2,5 m/min. for 1 chain fall hoists
  - ▶ 2,5/0,8 or 3,2/1 m/min. for 2 chain fall hoists
- ▶ **Standard hook run:** up to 12 m
  - ▶ over 12 m upon request



**FIXED EXECUTION:** eyebolt suspension or hook suspension (upon request).



**TROLLEY EXECUTION:**  
**HAND-PUSHED:** horizontal movement by manually pushing the load.  
**CHAIN:** horizontal movement by chain controlled by the operator who controls the trolley wheels.  
**ELECTRIC:** movement is motorised (one or two speeds) and controlled directly from the hoist push button panel.



**LOW HEADROOM EXECUTION:** to use the maximum hook run, the hoist is fitted with a chain return system mounted on the trolley (electric or hand-push) with compact dimensions.



**CLIMBING EXECUTION:** the climbing execution makes it possible to reach the installation point with just the hook and chain, without having to lift the entire weight of the hoist. It is particularly suitable for the entertainment industry, or when frequent hoist assembly/disassembly operations are required at a greater height.

## PROTECTION AND INSULATION OF ELECTRICAL PARTS

- ▶ Self-braking In the lifting and travelling motors; IP55 protection – “F” insulation class
- ▶ DMK 2-3-4 brake: IP23
- ▶ Limit switch: IP65 minimum protection – 500 V maximum insulation voltage
- ▶ Cables: IEC 20/22 II 450/750 V maximum insulation voltage
- ▶ Non-standard protections and insulations are available upon request.

## ELECTRICAL POWER SUPPLY

- ▶ Standard DMK electric chain hoists are designed to be powered with AC current with the following voltage:
  - three phase of 400 V - 50Hz. according to IEC 38-1
  - single phase of 230 V +/- 5% - 50 Hz. (for DMK 1-2-3 hoists at one speed and capacity up to 800 kg)
- ▶ Non-standard voltages and frequencies are available upon request.

## NOMINAL USE CONDITIONS IN THE STANDARD EXECUTION:

- ▶ Operating temperature: minimum -10°C; maximum +40°C
- ▶ Maximum relative humidity: 80%
- ▶ Maximum altitude 1000 m above sea level
- ▶ The machine must be installed indoors, in a well-ventilated place, free from corrosive fumes (acid fumes, saline mist, etc.)

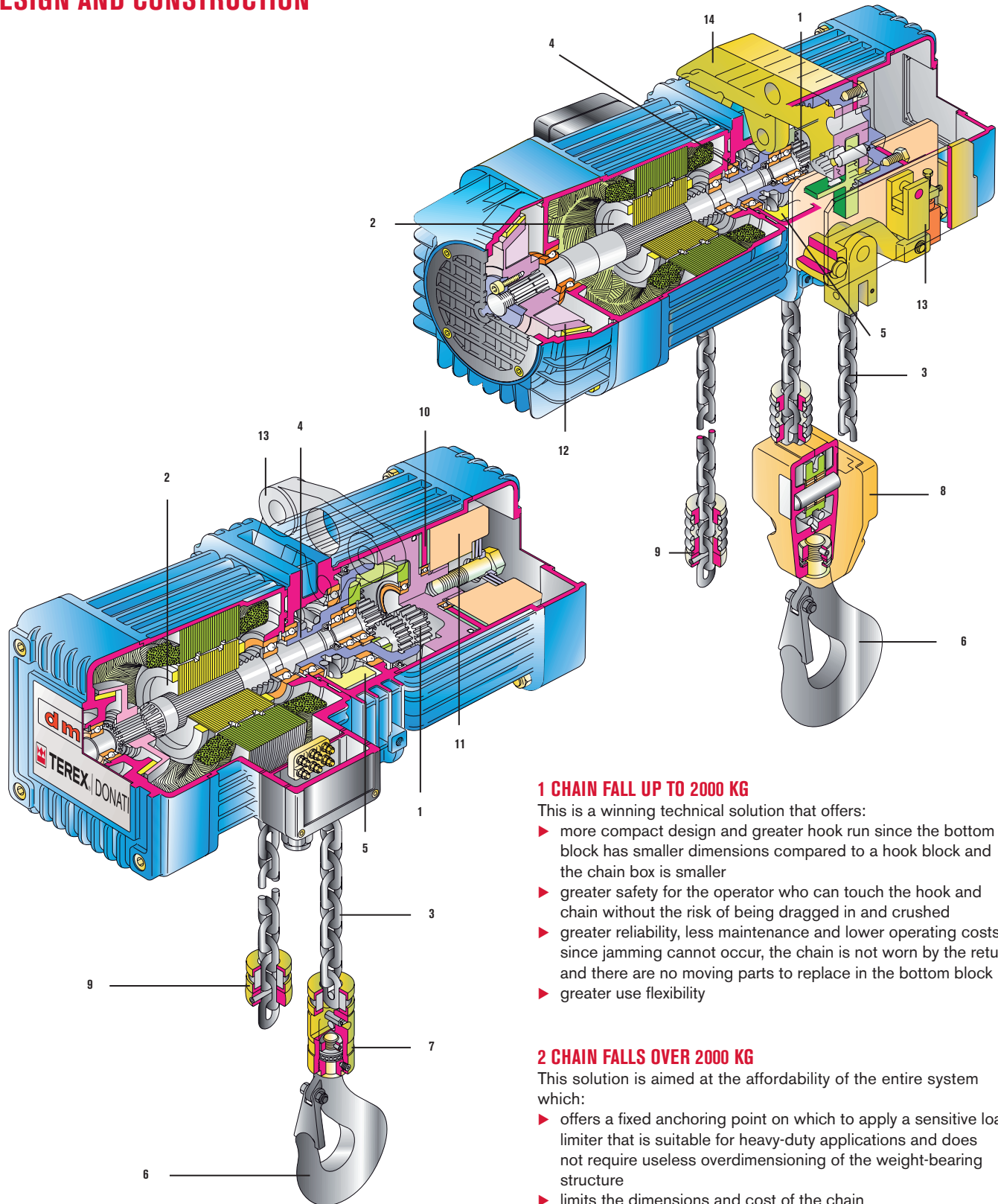
## NOISE LEVEL

- ▶ The sound pressure level emitted by the hoist when fully loaded is always less than 85 dB (A). The incidence of environmental characteristics such as the transmission of sound through metallic structures, reflection caused by combined machines and walls, is not included in the indicated level.

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# THE HOIST IN DETAIL

## DESIGN AND CONSTRUCTION



### 1 CHAIN FALL UP TO 2000 KG

This is a winning technical solution that offers:

- ▶ more compact design and greater hook run since the bottom block has smaller dimensions compared to a hook block and the chain box is smaller
- ▶ greater safety for the operator who can touch the hook and chain without the risk of being dragged in and crushed
- ▶ greater reliability, less maintenance and lower operating costs since jamming cannot occur, the chain is not worn by the return and there are no moving parts to replace in the bottom block
- ▶ greater use flexibility

### 2 CHAIN FALLS OVER 2000 KG

This solution is aimed at the affordability of the entire system which:

- ▶ offers a fixed anchoring point on which to apply a sensitive load limiter that is suitable for heavy-duty applications and does not require useless overdimensioning of the weight-bearing structure
- ▶ limits the dimensions and cost of the chain

## 1. GEARBOX

Epicyclic reduction gear with thermally treated, high resistance steel wheels, supported on ball bearings and lubricated in oil bath. The frame is a radiating fin structure in aluminium alloy to improve heat dissipation.

## 2. SELF-BRAKING ELECTRIC MOTOR

The axial movement of the conical brake allows fast, reliable mechanical braking over time [RES. 4.1.2.6. c - Annex I Machinery Directive]. The brake lining is asbestos free. Asynchronous three phase with single polarity for one speed hoists, with pole changing version for two speed hoists.

## 3. CHAIN

The chain is gauged and made of high-strength steel rod with excellent dynamic stability, ultimate tensile strength of 80 kg/mm<sup>2</sup> and ultimate elongation no higher than 10%. The applicable safety coefficient is always greater than 5 [RES. 4.1.2.4. - Annex I Machinery Directive]. The heat and galvanising treatments applied to the chain provide high resistance to wear, aging and corrosion.

## 4. LOAD SPROCKET

The load sprocket is heat treated and has five pockets mechanically machined on high precision automatic machinery. The sprocket drives the chain, ensuring perfect chain movement.

## 5. CHAIN GUIDE (INSERTER/EXTRACTOR)

The chain guide is used to insert and extract the chain links both in and out of the pockets, both when lifting and lowering [RES. 4.1.2.4. Annex I Machinery Directive].

## 6. LOAD HOOK

The hook is made from high strength steel and is equipped with a safety device (spring catch) to prevent the load from unhooking [RES. 4.1.2.6. e - Annex 1 Machinery Directive] and rotates on a thrust bearing.

## 7. BOTTOM BLOCK (ONE CHAIN FALL HOISTS)

This connects the chain to the turning hook. It is made of steel and is equipped with a heat-treated large cross-section pin to lock the chain.

## 8. HOOK BLOCK (TWO CHAIN FALL HOISTS)

Made of cast aluminium, completely closed, it is fitted with a high-resistance steel transmission reel that is thermally treated and has pockets for housing the chain.

## 9. CHAIN STOPS

The stops are installed on the free descending and ascending sections of the chain on one fall hoists. They act as limit switches for hoist travel [RES. 4.1.2.6.a - Annex I Machinery Directive]; they are made of forged steel and are fitted with a shock-absorbing insert.

## CHAIN BOX

The chain box is used to hold the descending section of the chain. It is available in different sizes based on the hook travel. It is made of shock-resistant plastic and is equipped with suspensions to allow free movement.

## 10. CLUTCH DEVICE (ONE CHAIN FALL HOISTS)

This is an emergency device, an up and down limit switch. It also acts as an overload protection [RES. 4.2.1.4. Annex I Machinery Directive]. The clutch discs are asbestos free and are preloaded with a Belleville washer system.

## 11. BALANCER (ONE CHAIN FALL HOISTS)

The balancer is connected to the clutch device and ensures hoist balancing. It absorbs the heat generated during clutch movement.

## 12. DMK 2-3-4 BRAKE

The brake shoe installed on sizes 2-3 and 4 is made with a fan which ensures cooling of the brake and the motor. The high degree of inclination of the braking surface allows perfect unlocking of the brake even in the most difficult working conditions. Brake adjustment is easily performed since it can be done from the outside using the adjusting ring.

## 13. OVERLOAD DEVICE (TWO CHAIN FALL HOISTS)

Electromechanical with a microswitch for one intervention threshold [RES. 4.2.1.4 - Annex I Machinery Directive]. The overload device does not allow the hoist to be loaded with an overload exceeding 20% of its maximum capacity, by blocking the lifting control circuit.

## LIFTING LIMIT SWITCHES

Standard equipment for 2 chain fall hoists and available upon request for 1 chain fall hoists. They limit the hook's ascent and descent runs [RES. 4.1.2.6 a) Annex I Machinery Directive]. They are composed of two precision microswitches which function according to the "slow positive opening" principle and work on the auxiliary circuit of the lifting motor control device.

## 14. SUSPENSION

It is produced with an eyebolt fitting; it can be made with a hook execution upon request or even a 90° eyebolt version for longitudinal hoist.

## ELECTRICAL CONTROLS

When the hoist is supplied with electrical control, the movements can be activated, alternatively, by:

- ▶ **low voltage controls at AC 48V - 50Hz**, including: the transformer for the low voltage power supply of the control circuits, the general line contactor, the contactors for the control of the hoist and electric trolley motors, transformer protection fuses and terminal block for connections of the auxiliary and power circuits. The components are contained in a sealed box with IP 55 protection, made of shockproof thermoplastic material. The equipment is installed on the motor side of the hoist.
- ▶ **direct control**, direct control, with mains voltage, solely available for the control of the electric hoist, for raise and lower functions. It is composed by a pushbutton panel that interrupts and directly switches the power line.

In both options, the controls are activated by the hanging pushbutton panel, with ergonomic shape, made of self-extinguishing, shockproof, waterproof, thermoplastic material, with IP 65 protection. The emergency stop function [RES. 1.2.4 - Annex I Machinery Directive], is produced with a mushroom-head button which, using an intentional release action, puts the control circuit in forward position [RES. 1.2.3 Annex I Machinery Directive]. The hanging push button panel is connected to the hoist by a multipolar electrical cable supported by tear proof metallic parts.

**DMT TROLLEYS** used to horizontally move the load. They are manufactured in three difference versions: **SM** type, hand-pushed; **CM** type, mechanically-operated chain and **EM** type, electrically-operated. They move on the lower flange of the beam and can be adjusted based on the flange width. They are made of pressed steel plate (GR 2) and in pantographed sheet (GR3, 4 and 5) have anti-derail brackets [RES. 4.1.2.2. Annex I Machinery Directive] and shock-absorbing buffers. The trolleys are equipped with pressed steel machined wheels rotating on permanently lubricated ball bearings.

**Gear motor with self-braking motor:** provides motion to the trolley toothed wheels in the electric version, EM type [RES. 4.1.2.6. c - Annex I Machinery Directive].

**Limit switch:** these switches limit horizontal travel of the electric trolley on the beam [RES. 4.1.2.6. a - Annex I Machinery Directive].

**Towing arm:** the towing arm, which connects the trolley to the power supply, is available for all types of trolleys of the DMT series. It can be easily adjusted in all directions and is an essential part for towing the power cable without tearing the conductors.

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# STANDARDS AND CERTIFICATIONS

## DESIGN AND CONSTRUCTION

DMK electric chain hoists and their trolleys are designed and manufactured according to the “Essential Safety Requirements” of Annex I of the Machinery Directive 2006/42/EC and are placed on the market equipped with CE Mark and EC Declaration of Conformity - Annex II A.

In addition DMK electric chain hoists and their trolleys are in compliance with the following Directives:

- ▶ LOW VOLTAGE DIRECTIVE 2006/95/EC
- ▶ ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC

DMK series electric chain hoists and their trolleys are also available with CSA homologation, upon request.

### REFERENCE NORMATIVE FRAMEWORK

The design and construction of DMK series electric chain hoists and their trolleys comply with the following technical standards and rules:

- ▶ EN ISO 1210:2010 “Fundamental concepts, general design principles”
- ▶ EN ISO 13849-1:2008 “Safety-related parts of control systems (where required)”
- ▶ EN 12077-2:2008 “Limiting and indicating devices”
- ▶ EN 60204-32:2009 “Safety of the electrical equipment of lifting machines”
- EN 60529:1997 “IP enclosure (IP Codes)”
- ISO 4301-1:1988 “Classification of lifting equipment”
- DIN 15401 “Choice of lifting hooks
- FEM 1.001/98 “Rules for the design of lifting equipment”
- FEM 9.511/86 “Mechanisms classification”
- FEM 9.671/88 “Quality of chains”
- FEM 9.683/95 “Choice of lifting and traverse motors”
- FEM 9.755/93 “Periods of safe work”
- FEM 9.941/95 “Control symbols”



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# CRITERIA OF USE AND OPERATING LIMITS

It is necessary to check the parameters which characterise the operating limits of the DMK electric chain hoists to be able to have a complete correspondence between the DMK electric chain hoists and the service they were designed for. These operating limits include the actual lifting capacity, state of stress and average duration of daily operation.

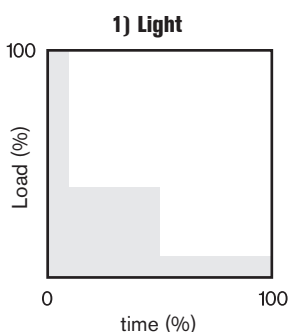
## ▶ ACTUAL LIFTING CAPACITY

This is determined by the heaviest load to be lifted

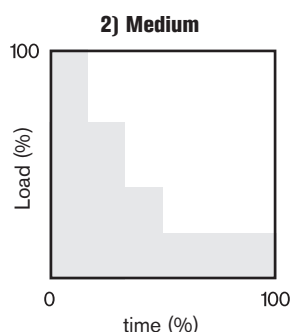
**! The nominal lifting capacity of the hoist must be  $\geq$  the actual lifting capacity. Lifting capacity = kg**

## ▶ THE STATE OF STRESS

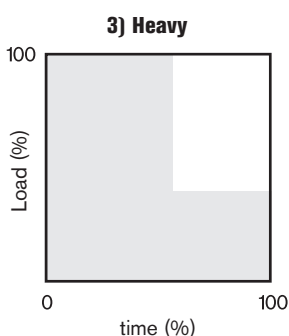
The state of stress is evaluated considering the actual entity of the loads to be lifted and it is ascribable to one of four spectrums of load shown below which determine the type of service.



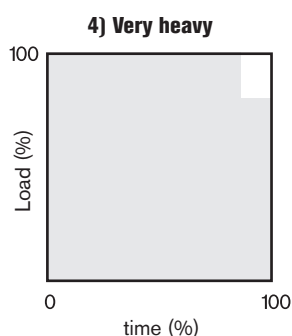
Hoists which rarely lift maximum loads but mainly reduced loads



Hoists which lift approximately the same number of maximum, medium and reduced loads.



Hoists which frequently lift the maximum load but normally medium loads.

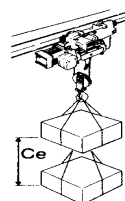


Hoists which regularly lift loads approximately equal to the maximum load.

## ▶ AVERAGE DURATION OF DAILY OPERATION

For **LIFTING** operations the average duration of operation is calculated as follows:

$$T_m \text{ (hours)} = (\text{AHR} \times \text{C/h} \times \text{Rt}) / (30 \times \text{S})$$

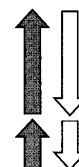
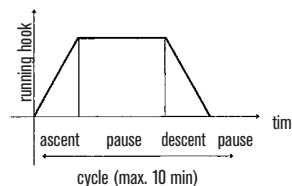


Actual hook run  
**AHR = m**

It is the average of the actual runs of the load

Running time  
**RT = hours**

Hoist running time in a whole day.



Cycles in an hour  
**C/h = N°**

It is the number of complete ascents and descents carried out in an hour.

Lifting speed  
**S = m/min**

It is the distance covered by the load in a minute.

| Operating limits of DMK hoists in relation to the service groups of the mechanisms, according to FEM 9.511/86 (ISO 4301-1:1988) |   |           |          |               |                       |                       |                       |
|---|---|-----------|----------|---------------|-----------------------|-----------------------|-----------------------|
| Group FEM (ISO)   | Average duration of daily operation - T <sub>m</sub> = Hours; with load |           |          |               | Intermittence ratio % | N° of starts per hour | N° of cycles per hour |
|   | 1) Light  | 2) Medium | 3) Heavy | 4) Very heavy |                       |                       |                       |
| 1 Bm (M 3)  | 2   | 1         | 0.5      | 0.25          | RI = 25%              | A/h = 150             | C/h = 25              |
| 1 Am (M 4)  | 4   | 2         | 1        | 0.5           | RI = 30%              | A/h = 180             | C/h = 30              |
| 2 m (M 5)   | 8   | 4         | 2        | 1             | RI = 40%              | A/h = 240             | C/h = 40              |

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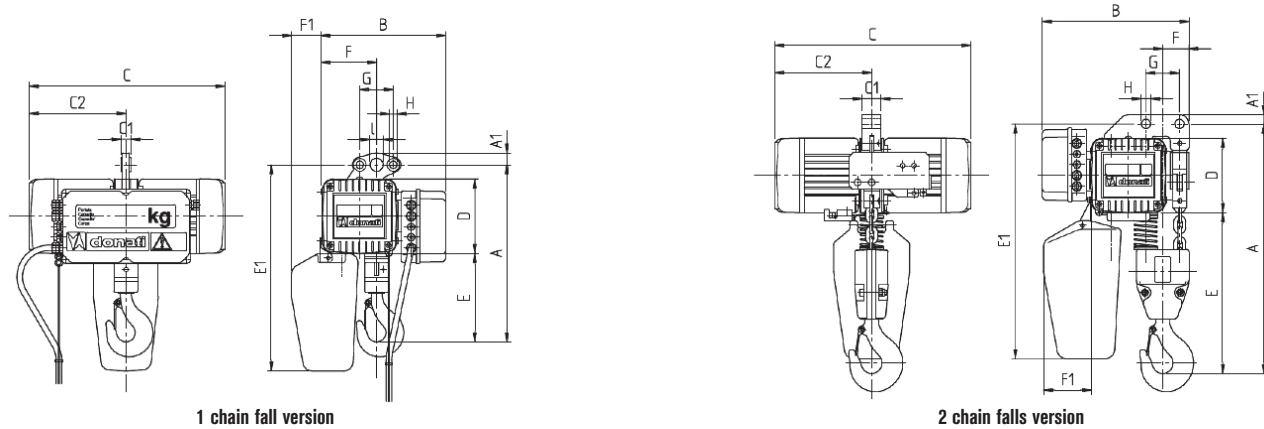
# TECHNICAL SPECIFICATIONS AND DATA FOR DMK CHAIN HOISTS WITH DMT TROLLEYS

| Characteristic data for DMK series electric chain hoists and DMT trolleys |           |          |             |                       |         |                          |         |   |     |                    |     |     |      |                          |      |      |              |            |                               |
|---|-----------|----------|-------------|-----------------------|---------|--------------------------|---------|---|-----|--------------------|-----|-----|------|--------------------------|------|------|--------------|------------|-------------------------------|
| Capacity (kg)   | FEM group | DMK type | Chain falls | Lifting speed (m/min) |         | Lifting motor power (kW) |         | DMT trolley type for hoist<br>S= manual-push trolley C= manual gear operated trolley E=electric trolley |     |                    |     |     |      | Trolley motor power (kW) |      |      |              | Chain type | Chain weight per meter (Kg/m) |
|   |           |          |             | 1 Speed               | 2 Speed | 1 Speed                  | 2 Speed | S   | C   | E<br>Speed (m/min) |     |     |      | Speed (m/min)            |      |      |              |            |                               |
|   |           |          |             |                       |         |                          |         |   |     | 11                 | 14  | 22  | 7/22 | 11                       | 14   | 22   | 7/22         |            |                               |
| 125   | 2m        | 154C     | 1           | 8                     | /       | 0.2                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 4X12       | 0.38                          |
|   | 2m        | 132D     | 1           | 8                     | 2.5     | 0.2                      | 0.06    | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 4X12       | 0.38                          |
|   | 2m        | 232C     | 1           | 16                    | /       | 0.4                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 5X15       | 0.58                          |
| 250   | 2m        | 134C     | 1           | 4                     | /       | 0.2                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 4X12       | 0.38                          |
|   | 2m        | 112D     | 1           | 4                     | 1.2     | 0.2                      | 0.06    | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 4X12       | 0.38                          |
|   | 2m        | 234C     | 1           | 8                     | /       | 0.4                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 5X15       | 0.58                          |
|   | 2m        | 234D     | 1           | 8                     | 2.5     | 0.4                      | 0.12    | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 5X15       | 0.58                          |
|   | 2m        | 332C     | 1           | 16                    | /       | 0.8                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 7X21       | 1.16                          |
| 500   | 2m        | 214C     | 1           | 4                     | /       | 0.4                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 5X15       | 0.58                          |
|   | 2m        | 214D     | 1           | 4                     | 1.2     | 0.4                      | 0.12    | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 5X15       | 0.58                          |
|   | 2m        | 334C     | 1           | 8                     | /       | 0.8                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 7X21       | 1.16                          |
|   | 2m        | 334D     | 1           | 8                     | 2.5     | 0.8                      | 0.24    | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 7X21       | 1.16                          |
|   | 2m        | 432C     | 1           | 16                    | /       | 1.6                      | /       | SM2   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 1000  | 2m        | 314C     | 1           | 4                     | /       | 0.8                      | /       | SM3   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 7X21       | 1.16                          |
|   | 2m        | 314D     | 1           | 4                     | 1.2     | 0.8                      | 0.24    | SM3   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 7X21       | 1.16                          |
|   | 2m        | 434C     | 1           | 8                     | /       | 1.6                      | /       | SM3   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 434D     | 1           | 8                     | 2.5     | 1.6                      | 0.5     | SM3   | CM3 | EM3                | EM3 | EM3 | EM3  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 1600  | 2m        | 424L     | 1           | 6.3                   | /       | 2.5                      | /       | SM4   | CM4 | EM4                | EM4 | EM4 | EM4  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 424D     | 1           | 6.3                   | 2.1     | 2                        | 0.65    | SM4   | CM4 | EM4                | EM4 | EM4 | EM4  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 2000  | 2m        | 414C     | 1           | 4                     | /       | 1.6                      | /       | SM4   | CM4 | EM4                | EM4 | EM4 | EM4  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 414D     | 1           | 4                     | 1.2     | 1.6                      | 0.5     | SM4   | CM4 | EM4                | EM4 | EM4 | EM4  | 0.12                     | 0.18 | 0.25 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 2500  | 2m        | 434L.I   | 2           | 4                     | /       | 2                        | /       | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 424D.I   | 2           | 3.2                   | 1       | 1.6                      | 0.5     | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 3200  | 1Am       | 434L.J   | 2           | 4                     | /       | 2.5                      | /       | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 1Am       | 424D.J   | 2           | 3.2                   | 1       | 2                        | 0.65    | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 424L.J   | 2           | 3.2                   | /       | 2                        | /       | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 2m        | 454D.J   | 2           | 2.5                   | 0.8     | 1.6                      | 0.5     | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
| 4000  | 1Am       | 424L.K   | 2           | 3.2                   | /       | 2.5                      | /       | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |
|   | 1Am       | 454D.K   | 2           | 2.5                   | 0.8     | 2                        | 0.65    | SM5   | CM5 | EM5                | EM5 | EM5 | EM5  | 0.17                     | 0.25 | 0.37 | 0.08<br>0.25 | 10X28      | 2.42                          |

## SINGLE-PHASE VERSION

| Capacity (kg) | FEM group | DMK type | Chain falls | Lifting speed (m/min) |         | Lifting motor power (kW) |         | DMT trolley type for hoist<br>S= manual-push trolley C= manual gear operated trolley |     | Chain type | Chain weight per meter (Kg/m) |
|---------------|-----------|----------|-------------|-----------------------|---------|--------------------------|---------|--|-----|------------|-------------------------------|
|               |           |          |             | 1 Speed               | 2 Speed | 1 Speed                  | 2 Speed | S  | C   |            |                               |
| 100           | 1Bm       | 132M     | 1           | 8                     | /       | 0.2                      | /       | SM2  | CM3 | 4X12       | 0.38                          |
| 200           | 1Bm       | 112M     | 1           | 4                     | /       | 0.2                      | /       | SM2  | CM3 | 4X12       | 0.38                          |
|               | 1Bm       | 234M     | 1           | 8                     | /       | 0.4                      | /       | SM2  | CM3 | 5X15       | 0.58                          |
| 400           | 1Bm       | 214M     | 1           | 4                     | /       | 0.4                      | /       | SM2  | CM3 | 5X15       | 0.58                          |
|               | 1Bm       | 334M     | 1           | 8                     | /       | 0.8                      | /       | SM2  | CM3 | 7X21       | 1.16                          |
| 800           | 1Bm       | 314M     | 1           | 4                     | /       | 0.8                      | /       | SM3  | CM3 | 7X21       | 1.16                          |

# DMK ELECTRIC CHAIN HOISTS – OVERALL DIMENSIONS WEIGHTS – FIXED EXECUTION



1 chain fall version

2 chain falls version

| Size | Chain falls | DMK type | *Hoist weight (kg) | Overall dimensions (mm) |    |     |     |    |     |     |     |     |    |    |    |  |
|------|-------------|----------|--------------------|-------------------------|----|-----|-----|----|-----|-----|-----|-----|----|----|----|--|
|      |             |          |                    | **A                     | A1 | B   | C   | C1 | C2  | D   | **E | F   | G  | H  | I  |  |
| 1    | 1           | 154C     | 23                 | 285                     | 23 | 253 | 355 | 19 | 177 | 120 | 138 | 80  | 70 | 14 | 27 |  |
|      | 1           | 132D/M   | 23                 | 285                     | 23 | 253 | 355 | 19 | 177 | 120 | 138 | 80  | 70 | 14 | 27 |  |
|      | 1           | 134C     | 23                 | 285                     | 23 | 253 | 355 | 19 | 177 | 120 | 138 | 80  | 70 | 14 | 27 |  |
|      | 1           | 112D/M   | 23                 | 285                     | 23 | 253 | 355 | 19 | 177 | 120 | 138 | 80  | 70 | 14 | 27 |  |
| 2    | 1           | 232C     | 33                 | 320                     | 23 | 268 | 438 | 19 | 237 | 135 | 160 | 92  | 70 | 14 | 27 |  |
|      | 1           | 234C/M   | 33                 | 320                     | 23 | 268 | 438 | 19 | 237 | 135 | 160 | 92  | 70 | 14 | 27 |  |
|      | 1           | 234D     | 33                 | 320                     | 23 | 268 | 438 | 19 | 237 | 135 | 160 | 92  | 70 | 14 | 27 |  |
|      | 1           | 214C/M   | 33                 | 320                     | 23 | 268 | 438 | 19 | 237 | 135 | 160 | 92  | 70 | 14 | 27 |  |
| 3    | 1           | 332C     | 50                 | 392                     | 28 | 293 | 514 | 25 | 274 | 160 | 202 | 114 | 70 | 14 | 30 |  |
|      | 1           | 334C/M   | 50                 | 392                     | 28 | 293 | 514 | 25 | 274 | 160 | 202 | 114 | 70 | 14 | 30 |  |
|      | 1           | 334D     | 50                 | 392                     | 28 | 293 | 514 | 25 | 274 | 160 | 202 | 114 | 70 | 14 | 30 |  |
|      | 1           | 314C/M   | 50                 | 392                     | 28 | 293 | 514 | 25 | 274 | 160 | 202 | 114 | 70 | 14 | 30 |  |
|      | 1           | 314D     | 50                 | 392                     | 28 | 293 | 514 | 25 | 274 | 160 | 202 | 114 | 70 | 14 | 30 |  |
| 4    | 1           | 432C     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 1           | 434C     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 1           | 434D     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 1           | 424L     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 1           | 414C     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 1           | 414D     | 80                 | 483                     | 32 | 332 | 583 | 27 | 317 | 200 | 245 | 146 | 90 | 20 | 35 |  |
|      | 2           | 434L.I   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 424D.I   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 434L.J   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 424D.J   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 424L.J   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 454D.J   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 424L.K   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |
|      | 2           | 454D.K   | 105                | 670                     | 25 | 395 | 583 | 50 | 317 | 200 | 432 | 71  | 90 | 25 | /  |  |

\* Weight of hoist with 3m hook run and 2m push button panel cable

\*\* With application of raise/lower electric limit switches A and E dimensions increase by: DMK1 + 45mm; DMK2 + 40mm; DMK3 + 45mm; DMK4 (1 fall) + 60mm

## CHAIN BOX TYPE (C-D-E-F-G-H-I)

| Size | Chain falls |                  | C   | D   | E   | F   | G   | H   | I   |
|------|-------------|------------------|-----|-----|-----|-----|-----|-----|-----|
| 1    | 1           | Max hook run (m) | 5   | 8   | 13  | 20  | 32  | 70  | 115 |
|      | 1           | E1               | 347 | 372 | 397 | 427 | 467 | 522 | 607 |
|      | 1           | F1               | 47  | 63  | 77  | 100 | 120 | 150 | 200 |
| 2    | 1           | Max hook run (m) | /   | 4   | 7   | 12  | 18  | 30  | 70  |
|      | 1           | E1               | /   | 385 | 410 | 440 | 480 | 535 | 620 |
|      | 1           | F1               | /   | 56  | 70  | 92  | 112 | 142 | 192 |
| 3    | 1           | Max hook run (m) | /   | /   | 3   | 5   | 9   | 16  | 25  |
|      | 1           | E1               | /   | /   | 440 | 470 | 510 | 560 | 650 |
|      | 1           | F1               | /   | /   | 55  | 77  | 97  | 127 | 177 |
| 4    | 1           | Max hook run (m) | /   | /   | /   | /   | 4   | 8   | 13  |
|      | 1           | E1               | /   | /   | /   | /   | 560 | 610 | 700 |
|      | 1           | F1               | /   | /   | /   | /   | 80  | 110 | 160 |
|      | 2           | Max hook run (m) | /   | /   | /   | /   | /   | 3   | 5   |
|      | 2           | E1               | /   | /   | /   | /   | /   | 628 | 718 |
|      | 2           | F1               | /   | /   | /   | /   | /   | 130 | 180 |

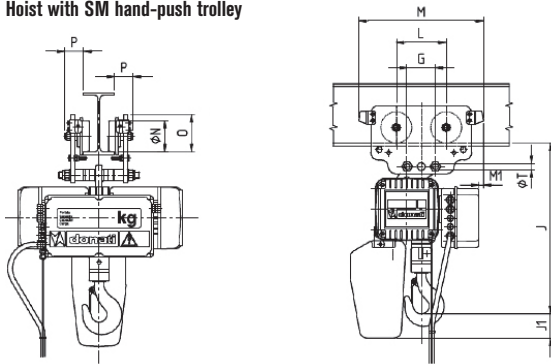
NOTE With application of raise/lower limit switches on 1 chain fall hoists, the maximum capacity of the chain box decreases by 1 m of hook run and the E1 dimension increases by 25 mm.

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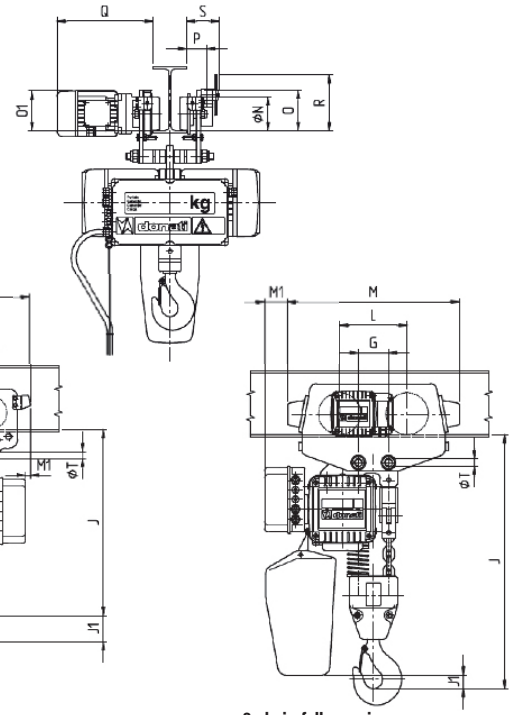
# DMK ELECTRIC CHAIN HOISTS WITH DMT TROLLEYS

## OVERALL DIMENSIONS - WEIGHTS

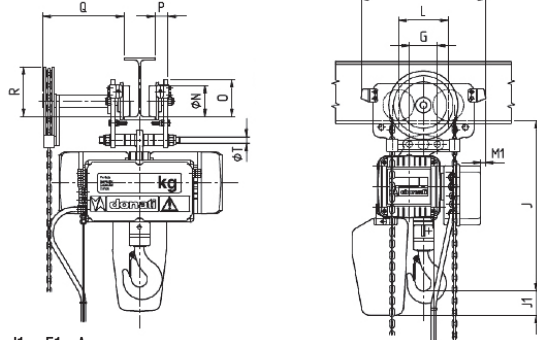
Hoist with SM hand-push trolley



Hoist with EM electric trolley



Hoist with CM manual gear operated trolley



J1 = E1 - A

1 chain fall version

2 chain falls version

| DMK size | Chain falls | DMT trolley type | *Hoist trolley weight (kg) | Overall dimensions (mm) |     |     |     |     |     |           |    |          |     |     |     |
|----------|-------------|------------------|----------------------------|-------------------------|-----|-----|-----|-----|-----|-----------|----|----------|-----|-----|-----|
|          |             |                  |                            | ***J                    | L   | M   | M1  | ØN  | O   | **Ø1      | P  | **Q      | R   | S   | ØT  |
| 1        | 1           | SM2              | 29                         | 340                     | 100 | 236 | 54  | 52  | 72  | /         | 20 | /        | /   | /   | M16 |
|          | 1           | EM3              | 58                         | 355                     | 135 | 362 | -10 | 80  | 98  | 100(108)  | 54 | 260(280) | 165 | 90  | M14 |
|          | 1           | CM3              | 41                         | 355                     | 135 | 362 | -10 | 80  | 98  | /         | 54 | 240      | 108 | /   | M14 |
| 2        | 1           | SM2              | 39                         | 375                     | 100 | 236 | 58  | 52  | 72  | /         | 20 | /        | /   | /   | M16 |
|          | 1           | EM3              | 68                         | 390                     | 135 | 362 | -6  | 80  | 98  | 100(108)  | 54 | 260(280) | 165 | 90  | M14 |
|          | 1           | CM3              | 51                         | 390                     | 135 | 362 | -6  | 80  | 98  | /         | 54 | 240      | 108 | /   | M14 |
| 3        | 1           | SM3              | 62                         | 462                     | 135 | 362 | -3  | 80  | 98  | /         | 54 | /        | /   | /   | M14 |
|          | 1           | EM3              | 85                         | 462                     | 135 | 362 | -3  | 80  | 98  | 100(108)  | 54 | 260(280) | 165 | 90  | M14 |
|          | 1           | CM3              | 68                         | 462                     | 135 | 362 | -3  | 80  | 98  | /         | 54 | 240      | 108 | /   | M14 |
| 4        | 1           | SM4              | 105                        | 560                     | 160 | 402 | -15 | 100 | 120 | /         | 60 | /        | /   | /   | M20 |
|          | 1           | EM4              | 130                        | 560                     | 160 | 402 | -15 | 100 | 120 | 110/(118) | 60 | 266(286) | 165 | 96  | M20 |
|          | 1           | CM4              | 115                        | 560                     | 165 | 402 | -15 | 100 | 120 | /         | 60 | 264      | 160 | /   | M20 |
|          | 2           | SM5              | 160                        | 755                     | 201 | 510 | 70  | 125 | 155 | /         | 55 | /        | /   | /   | M24 |
|          | 2           | EM5              | 190                        | 755                     | 201 | 510 | 70  | 125 | 155 | 130(130)  | 55 | 282(282) | 208 | 110 | M24 |
|          | 2           | CM5              | 170                        | 755                     | 201 | 510 | 70  | 125 | 155 | /         | 55 | 350      | 198 | /   | M24 |

\* Weight referred to 3m hook-run hoist.

\*\* Dimensions for 2 speed trolleys in brackets.

\*\*\* SM3/EM3/CM3: for width > 220 mm up to 400 mm dimension J increases by 70 mm

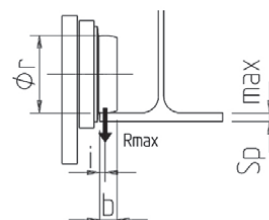
\*\*\* SM4/EM4/CM4: for width > 220 mm up to 400 mm dimension J increases by 60 mm

\*\*\* SM5/EM5/CM5: for width > 220 mm up to 400 mm dimension J increases by 75 mm

Note When the hoist is equipped with raise/lower limit switches, dimension J increases as much as dimensions A and E, page 11 and note regarding the chain box

## MAXIMUM REACTIONS OF DMT TROLLEY WHEELS ON BEAM FLANGE

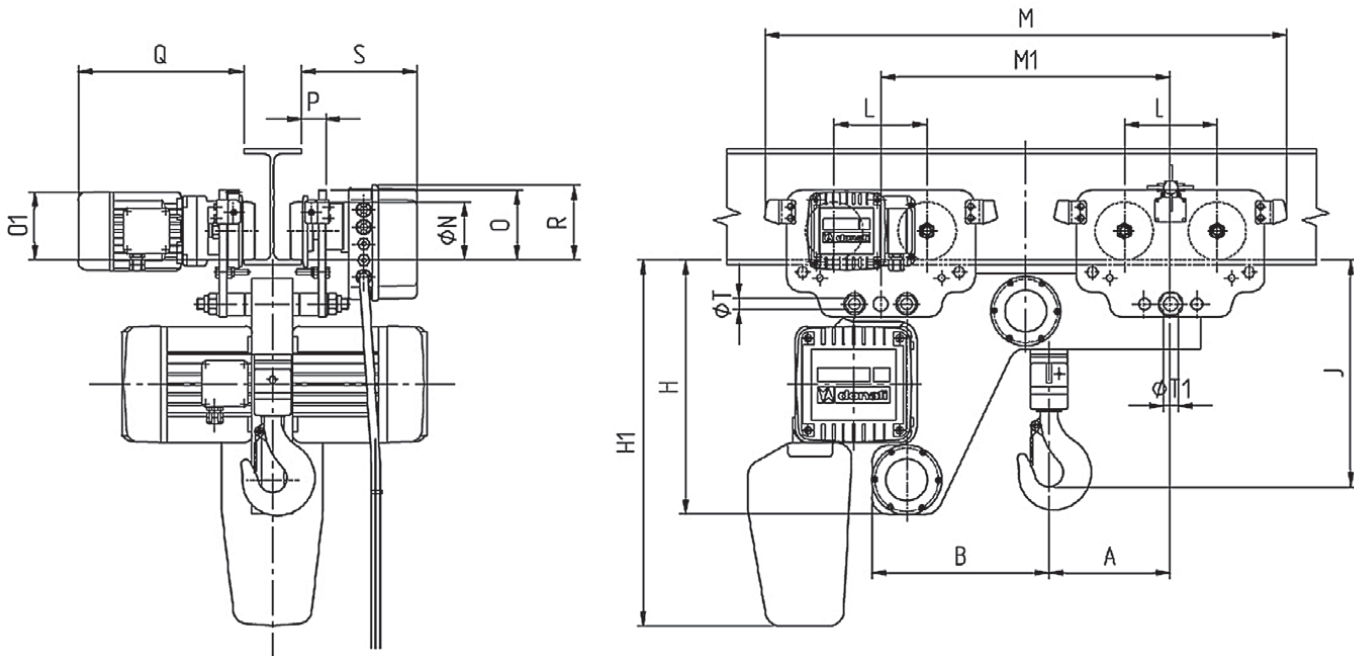
| DMK size | Max capacity (kg) | DMT trolley type | Overall dimensions (mm) |    |    |      |    | *R max (kg)   Sp max |
|----------|-------------------|------------------|-------------------------|----|----|------|----|----------------------|
|          |                   |                  | Ø r                     | i  | b  |      |    |                      |
| 1        | 250               | SM2              | 52                      | 5  | 15 | 80   | 17 |                      |
|          |                   | EM3/CM3          | 80                      | 7  | 16 | 87   | 22 |                      |
| 2        | 500               | SM2              | 52                      | 5  | 15 | 154  | 17 |                      |
|          |                   | EM3/CM3          | 80                      | 7  | 16 | 161  | 22 |                      |
| 3        | 1000              | SM3              | 80                      | 7  | 16 | 309  | 22 |                      |
|          |                   | EM3/CM3          |                         |    |    |      |    |                      |
| 4        | 2000              | SM4              | 100                     | 9  | 19 | 608  | 24 |                      |
|          |                   | EM4/CM4          |                         |    |    |      |    |                      |
|          | 4000              | SM5              | 125                     | 14 | 29 | 1193 | 20 |                      |
|          |                   | EM5/CM5          |                         |    |    |      |    |                      |



\* Max R calculated with a dynamic coefficient of 1.15 and no "M" increasing coefficient

# DMK ELECTRIC CHAIN HOISTS LOW HEAD ROOM EXECUTION

OVERALL DIMENSIONS - WEIGHTS



| DMK size | Max capacity (kg) | DMT trolley type | *Hoist trolley weight (kg) | Overall dimensions (mm) |     |     |       |     |     |     |     |     |     |           |    |           |     |     |     |     |
|----------|-------------------|------------------|----------------------------|-------------------------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----------|----|-----------|-----|-----|-----|-----|
|          |                   |                  |                            | A                       | B   | H   | ***H1 | J   | L   | M   | M1  | ΦN  | O   | **O1      | P  | **Q       | R   | S   | ΦT  | ΦT1 |
| 1        | 250               | SM3+SM3          | 60                         | 170                     | 228 | 295 | 417   | 240 | 135 | 742 | 380 | 80  | 98  | /         | 54 | /         | 108 | /   | M14 | M16 |
|          |                   | SM3+EM3          | 75                         | 170                     | 228 | 295 | 417   | 240 | 135 | 742 | 380 | 80  | 98  | 100/(108) | 54 | 260/(280) | 108 | 196 | M14 | M16 |
| 2        | 500               | SM3+SM3          | 67                         | 176                     | 240 | 315 | 455   | 265 | 135 | 762 | 400 | 80  | 98  | /         | 54 | /         | 108 | /   | M14 | M16 |
|          |                   | SM3+EM3          | 80                         | 176                     | 240 | 315 | 455   | 265 | 135 | 762 | 400 | 80  | 98  | 100/(108) | 54 | 260/(280) | 108 | 196 | M14 | M16 |
| 3        | 1000              | SM3+SM3          | 100                        | 190                     | 275 | 365 | 510   | 327 | 135 | 812 | 450 | 80  | 98  | /         | 54 | /         | 108 | /   | M14 | M16 |
|          |                   | SM3+EM3          | 115                        | 190                     | 275 | 365 | 510   | 327 | 135 | 812 | 450 | 80  | 98  | 100/(108) | 54 | 260/(280) | 108 | 196 | M14 | M16 |
| 4        | 2000              | SM4+SM4          | 155                        | 205                     | 310 | 440 | 637   | 400 | 160 | 902 | 500 | 100 | 120 | /         | 60 | /         | 118 | /   | M20 | M24 |
|          |                   | SM4+EM4          | 170                        | 205                     | 310 | 440 | 637   | 400 | 160 | 902 | 500 | 100 | 120 | 110/(118) | 60 | 266/(286) | 118 | 202 | M20 | M24 |
|          | 4000              | UPON REQUEST     | /                          | /                       | /   | /   | /     | /   | /   | /   | /   | /   | /   | /         | /  | /         | /   | /   | /   | /   |
|          |                   | UPON REQUEST     | /                          | /                       | /   | /   | /     | /   | /   | /   | /   | /   | /   | /         | /  | /         | /   | /   | /   | /   |

\* Weight referred to 3m hook-run hoist.

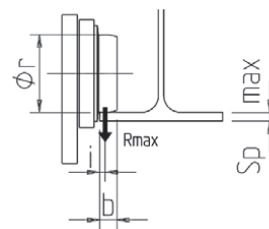
\*\* Dimensions for 2 speed trolleys in brackets

\*\*\* Weight referred to 3m hook-run hoist

With application of an electric raise/lower limit switch dimension H1 increases by 25mm and dimension J increases by: DMK1+45mm; DMK2+40mm; DMK3+45mm; DMK4(1 fall)+60mm

## MAXIMUM REACTIONS OF DMT TROLLEY WHEELS ON BEAM FLANGE FOR DMK LOW HEAD ROOM EXECUTION

| DMK size               | Max capacity (kg) | DMT trolley type       | Overall dimensions (mm) |    |    |     |     | *R max (kg) | Sp max |
|------------------------|-------------------|------------------------|-------------------------|----|----|-----|-----|-------------|--------|
|                        |                   |                        | Φr                      | i  | b  |     |     |             |        |
| 1                      | 250               | SM3+SM3                | 80                      | 7  | 16 |     | 44  | 18          |        |
|                        |                   | SM3+EM3                |                         |    |    | 45  |     |             |        |
| 2                      | 500               | SM3+SM3                | 80                      | 7  | 16 |     | 80  | 18          |        |
|                        |                   | SM3+EM3                |                         |    |    | 82  |     |             |        |
| 3                      | 1000              | SM3+SM3                | 80                      | 7  | 16 |     | 156 | 18          |        |
|                        |                   | SM3+EM3                |                         |    |    | 158 |     |             |        |
| 4                      | 2000              | SM4+SM4                | 100                     | 9  | 19 |     | 307 | 21          |        |
|                        |                   | SM4+EM4                |                         |    |    | 309 |     |             |        |
|                        | 4000              | SM5+SM5 (UPON REQUEST) | 125                     | 14 | 29 |     | /   | /           |        |
| SM5+EM5 (UPON REQUEST) | /                 | /                      |                         |    |    |     |     |             |        |



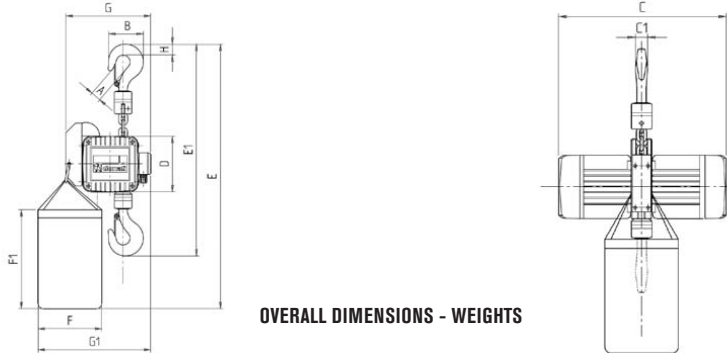
\* Max R calculated with a dynamic coefficient of 1.15 and no "M" increasing coefficient

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## TECHNICAL SPECIFICATIONS AND DATA FOR DMK CHAIN HOIST, CLIMBING EXECUTION

| Capacity (kg) | FEM group | DMK type | Chain falls | Lifting speed (mm) |         | Lifting motor power (kw) |         | * Hoist weight (kg) | Chain type | Chain weight per meter (kg/m) |
|---------------|-----------|----------|-------------|--------------------|---------|--------------------------|---------|---------------------|------------|-------------------------------|
|               |           |          |             | 1 Speed            | 2 Speed | 1 Speed                  | 2 Speed |                     |            |                               |
| 125           | 2m        | 154C     | 1           | 8                  | /       | 0.2                      | /       | 17                  | 4X12       | 0.38                          |
| 250           | 2m        | 134C     | 1           | 4                  | /       | 0.2                      | /       | 17                  | 4X12       | 0.38                          |
|               | 2m        | 234C     | 1           | 8                  | /       | 0.4                      | /       | 24                  | 5x15       | 0.58                          |
| 500           | 2m        | 214C     | 1           | 4                  | /       | 0.4                      | /       | 24                  | 5x15       | 0.58                          |
|               | 2m        | 334C     | 1           | 8                  | /       | 0.8                      | /       | 38                  | 7x21       | 1.16                          |
| 1000          | 2m        | 314C     | 1           | 4                  | /       | 0.8                      | /       | 38                  | 7x21       | 1.16                          |
|               | 2m        | 434C     | 1           | 8                  | /       | 1.6                      | /       | 65                  | 10x28      | 2.42                          |
| 2000          | 2m        | 414C     | 1           | 4                  | /       | 1.6                      | /       | 65                  | 10x28      | 2.42                          |

\* Hoist weight without chain



OVERALL DIMENSIONS - WEIGHTS

| DMK size | Max capacity (kg) | DMK hoist type | Overall dimensions (mm) |     |     |    |     |     |     |     |     |     |     |    |
|----------|-------------------|----------------|-------------------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|
|          |                   |                | A                       | B   | C   | C1 | D   | E   | E1  | F   | F1  | G   | G1  | H  |
| 1        | 125               | 154C           | 24                      | 67  | 355 | 19 | 120 | 710 | 400 | 230 | 360 | 210 | 310 | 19 |
|          | 250               | 134C           | 24                      | 67  | 355 | 19 | 120 | 710 | 400 | 230 | 360 | 210 | 310 | 19 |
| 2        | 250               | 234C           | 28                      | 83  | 438 | 22 | 135 | 740 | 465 | 230 | 360 | 225 | 325 | 24 |
|          | 500               | 214C           | 28                      | 83  | 438 | 22 | 135 | 740 | 465 | 230 | 360 | 225 | 325 | 24 |
| 3        | 500               | 334C           | 34                      | 103 | 514 | 29 | 160 | 800 | 577 | 230 | 360 | 250 | 350 | 31 |
|          | 1000              | 314C           | 34                      | 103 | 514 | 29 | 160 | 800 | 577 | 230 | 360 | 250 | 350 | 31 |
| 4        | 1000              | 434C           | 40                      | 127 | 583 | 38 | 200 | 880 | 716 | 230 | 360 | 307 | 410 | 40 |
|          | 2000              | 414C           | 40                      | 127 | 583 | 38 | 200 | 880 | 716 | 230 | 360 | 307 | 410 | 40 |

## TYPES OF TENSION RODS BASED ON MIN. AND MAX. BEAM DIMENSIONS

| Trolley type | Beam type | Group 1 |         | Group 2 |         | Group 3 |         | Group 4 |         | * Minimum radius of mono rail internal curvature (mm) |
|--------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---|
|              |           | Beam    | Flange  | Beam    | Flange  | Beam    | Flange  | Beam    | Flange  |   |
| SM2          | INP       | 80÷160  | 42÷74   | 180÷280 | 82÷119  | 300÷380 | 125÷149 | 400     | 155     | 1000  |
|              | IPE       | 80÷140  | 46÷73   | 160÷240 | 82÷120  | 270÷300 | 135÷150 | 330÷500 | 160÷200 |   |
|              | HEA       | -       | -       | 100÷120 | 100÷120 | 140     | 140     | 160÷200 | 160÷200 |   |
| SM3          | INP       | 120÷240 | 58÷106  | 260÷450 | 113÷170 | 475÷600 | 178÷215 | -       | -       | 1300  |
|              | IPE       | 120÷220 | 64÷110  | 240÷360 | 120÷170 | 400÷600 | 180÷220 | -       | -       |   |
|              | HEA       | -       | -       | 140÷160 | 140÷160 | 180÷220 | 180÷220 | -       | -       |   |
| SM4          | INP       | 160÷280 | 74÷119  | 300÷475 | 125÷178 | 500÷600 | 185÷215 | -       | -       | 1500  |
|              | IPE       | 160÷240 | 82÷120  | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | HEA       | -       | -       | 160÷180 | 160÷180 | 200÷220 | 200÷220 | -       | -       |   |
| SM5          | INP       | 180÷300 | 82÷125  | 320÷500 | 131÷185 | 550÷600 | 200÷215 | -       | -       | 1900  |
|              | IPE       | 180÷240 | 91÷120  | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | HEA       | -       | -       | 180     | 180     | 200÷240 | 200÷240 | -       | -       |   |
| CM3          | INP       | 140÷240 | 66÷106  | 260÷450 | 113÷170 | 475÷600 | 178÷215 | -       | -       | 1300  |
|              | IPE       | 140÷220 | 73÷110  | 240÷360 | 120÷170 | 400÷600 | 180÷220 | -       | -       |   |
|              | HEA       | -       | -       | 140÷160 | 140÷160 | 180÷220 | 180÷220 | -       | -       |   |
| CM4          | INP       | 180÷280 | 82÷119  | 300÷475 | 125÷178 | 500÷600 | 185÷215 | -       | -       | 1500  |
|              | IPE       | 180÷240 | 91÷120  | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | HEA       | -       | -       | 160÷180 | 160÷180 | 200÷220 | 200÷220 | -       | -       |   |
| CM5          | INP       | 220÷300 | 98÷125  | 320÷500 | 131÷185 | 550÷600 | 200÷215 | -       | -       | 1900  |
|              | IPE       | 220÷240 | 110÷120 | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | HEA       | -       | -       | 180     | 180     | 200÷240 | 200÷240 | -       | -       |   |
| EM3          | INP       | 120÷240 | 58÷106  | 260÷450 | 113÷170 | 475÷600 | 178÷215 | -       | -       | 1300  |
|              | IPE       | 120÷220 | 64÷110  | 240÷360 | 120÷170 | 400÷600 | 180÷220 | -       | -       |   |
|              | HEA       | -       | -       | 140÷160 | 140÷160 | 180÷220 | 180÷220 | -       | -       |   |
| EM4          | INP       | 160÷280 | 74÷119  | 300÷475 | 125÷178 | 500÷600 | 185÷215 | -       | -       | 1500  |
|              | IPE       | 160÷240 | 82÷120  | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | HEA       | -       | -       | 160÷180 | 160÷180 | 200÷220 | 200÷220 | -       | -       |   |
| EM5          | INP       | 180÷300 | 82÷125  | 320÷500 | 131÷185 | 550÷600 | 200÷215 | -       | -       | 1900  |
|              | IPE       | 180÷240 | 91÷120  | 270÷400 | 135÷180 | 450÷600 | 190÷220 | -       | -       |   |
|              | -         | -       | -       | 180     | 180     | 200÷240 | 200÷240 | -       | -       |   |

NOTE: For EM trolleys with electric travel limit switches, check the R dimensions on page 12

\* Electric trolleys suitable to run on a bend with guide roller kit

## SPECIFICATIONS OF MOTORS, FUSES AND POWER CABLES

| Hoist type | Motor type | Poles | Power (kW) | Power factor COS ϕ | 50Hz            |                   |           | Fuses aM<br>400V<br>A | Power cable section<br>400V - (ΔU20V) |      |
|------------|------------|-------|------------|--------------------|-----------------|-------------------|-----------|-----------------------|---------------------------------------|------|
|            |            |       |            |                    | Ia<br>380V<br>A | (In)<br>400V<br>A | 415V<br>A |                       | ϕ mm <sup>2</sup>                     | L =m |
| 134C-154C  | 71C4AS1/1  | 4     | 0.2        | 0.43               | 3.8             | (1.4)             | 4         | 1.5                   | ≤100                                  |      |
| 112D-132D  | 72K1AS1/1  | 2/6   | 0.2/0.06   | 0.6/0.5            | 3.3/1.8         | (0.8/0.8)         | 4         | 1.5                   | ≤100                                  |      |
| 232C       | 80C2AS2/2  | 2     | 0.4        | 0.45               | 6.5             | (2.5)             | 4         | 1.5                   | ≤100                                  |      |
| 214C-234C  | 80C4AS2/2  | 4     | 0.4        | 0.48               | 6.4             | (2.1)             | 4         | 1.5                   | ≤100                                  |      |
| 214D-234D  | 81K5AS2/2  | 4/12  | 0.4/0.12   | 0.6/0.6            | 5.2/3           | (1.6/2)           | 4         | 1.5                   | ≤100                                  |      |
| 332C       | 90C2AS3/2  | 2     | 0.8        | 0.6                | 14.5            | (4.8)             | 6         | 1.5                   | ≤70                                   |      |
| 314C-334C  | 90C4AS3/2  | 4     | 0.8        | 0.46               | 14              | (5.2)             | 6         | 1.5                   | ≤70                                   |      |
| 314D-334D  | 91K5AS3/3  | 4/12  | 0.8/0.24   | 0.6/0.5            | 14.6/4          | (3.1/2.6)         | 6         | 1.5                   | ≤70                                   |      |
| 432C       | 100C2AS4/2 | 2     | 1.6        | 0.7                | 32              | (6.2)             | 10        | 2.5                   | ≤50                                   |      |
| 414C-434C  | 100C4AS4/2 | 4     | 1.6        | 0.6                | 28              | (6.5)             | 10        | 2.5                   | ≤60                                   |      |
| 424L-434L  | 101K4AS4/2 | 4     | 2.5        | 0.7                | 38              | (6.2)             | 10        | 2.5                   | ≤40                                   |      |
| 414D-434D  | 101K5AS4/2 | 4/12  | 1.6/0.5    | 0.62/0.4           | 28/12           | (5.5/6)           | 10        | 2.5                   | ≤60                                   |      |
| 424D-454D  | 101K5AS4/4 | 4/12  | 2/0.65     | 0.72/0.5           | 28/8            | (6.5/5)           | 10        | 2.5                   | ≤60                                   |      |

| Single-phase hoist | Motor type | Poles | Power (kW) | Power factor COS ϕ | 50Hz            |                   | Fuses aM<br>230V<br>A | Power cable section<br>230V - (ΔU20V) |      |
|--------------------|------------|-------|------------|--------------------|-----------------|-------------------|-----------------------|---------------------------------------|------|
|                    |            |       |            |                    | Ia<br>230V<br>A | (In)<br>230V<br>A |                       | ϕ mm <sup>2</sup>                     | L =m |
| 132M-112M          | 72K2AM1/1  | 2     | 0.2        | 0.9                | 9.6             | (3.2)             | 6                     | 1.5                                   | ≤ 60 |
| 234M-214M          | 81K4AM2/1  | 4     | 0.4        | 0.9                | 11.3            | (5.2)             | 10                    | 1.5                                   | ≤ 50 |
| 334M-314M          | 91K4AM3/2  | 4     | 0.8        | 0.9                | 32              | (12)              | 20                    | 2.5                                   | ≤ 30 |

| Trolley type | Motor type | Poles | Power (kW) | Power factor COS ϕ | Ia - (A)<br>400V - 50Hz | In - (A)<br>400V - 50Hz |
|--------------|------------|-------|------------|--------------------|-------------------------|-------------------------|
| EM3-EM4      | 71C4TV1/1  | 4     | 0.25       | 0.43               | 3.8                     | 1.4                     |
| EM3-EM4      | 71C8TS1/1  | 8     | 0.12       | 0.53               | 2.5                     | 1.3                     |
| EM3-EM4      | 72K6TS1/1  | 6     | 0.18       | 0.5                | 3                       | 1.7                     |
| EM3-EM4-EM5  | 81C5AD2/1  | 4/12  | 0.25/0.08  | 0.54/0.7           | 4.5/1.8                 | 1.4/1.2                 |
| EM5          | 80C4TV2/1  | 4     | 0.37       | 0.7                | 4.4                     | 1.7                     |
| EM5          | 80C8TS2/1  | 8     | 0.17       | 0.5                | 2.6                     | 1.6                     |
| EM5          | 80C6TS2/1  | 6     | 0.25       | 0.5                | 3.8                     | 1.2                     |

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**DONATI SOLLEVAMENTI S.r.l.**

Via Quasimodo, 17 - 20025 Legnano (Milano) - Italia  
Tel. +39 0331 14811 - Fax. +39 0331 1481880  
e-mail: [info@donati-europe.com](mailto:info@donati-europe.com), [dvo.info@terex.com](mailto:dvo.info@terex.com)

**Factory:**

Via Archimede, 52 - 20864 Agrate Brianza (MB) - Italia



TMAN03CG00



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