



ELECTRIC WIRE ROPE HOIST



A New Conception Future Technology

For nearly 40 years, GH have been manufacturing hoists and other lifting equipment.

During this time, we have made more than 40,000 installations, from which we have gained valuable experience.

In this time we have placed new installations in 37 different countries. With over 25,000 m² of covered factories, modern design technology, combined with sophisticated production methods, have led to GH being considered as one of the principle European manufacturers in the lifting sector.

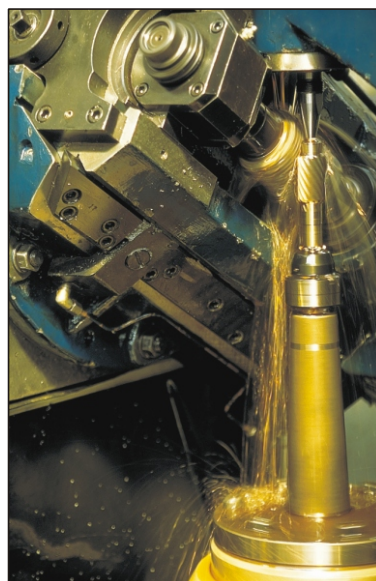
The new range of GH hoists have been designed with the following principles; reliability, security, durability, price and easy maintenance. The design is rectangular, modern, compact with perfect dimensional balance.

The functional arrangement of the different elements are standardised on a modular construction, permitting the easy interchangeability of groups combining different lifting speeds, heights and duty factors, according to the requirements and working conditions of each application.

The construction of the GH electric wire rope hoist, is based on the rules and regulations of lifting devices according to the FEDERATION EUROPEENNE DE LA MANUTENTION (FEM) and the standards I.E.C.

Many years of experience and constant updating of our mechanisms, has enabled us to introduce our new range of hoists and standard crane components, which are represented in this technical catalogue.

Good documentation is the base which allows us to choose the best and profitable handling solutions.



FOOT MOUNTED

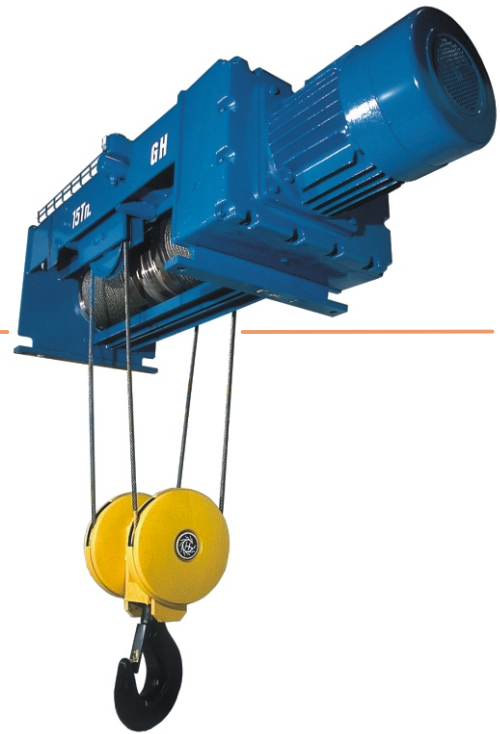


FIG. 1

LOW HEADROOM

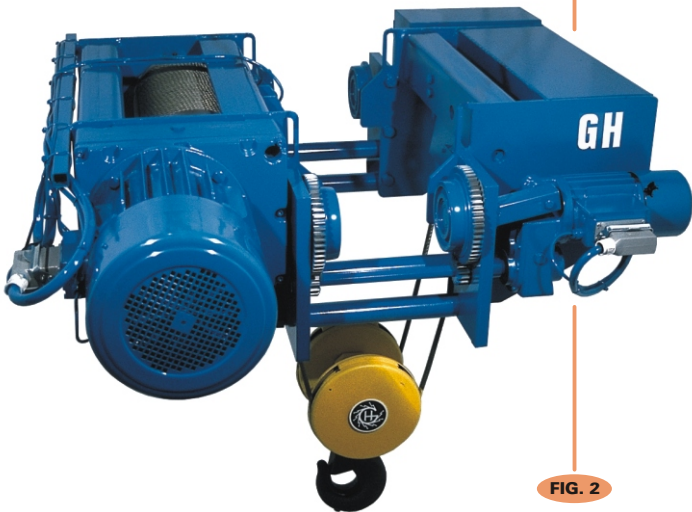
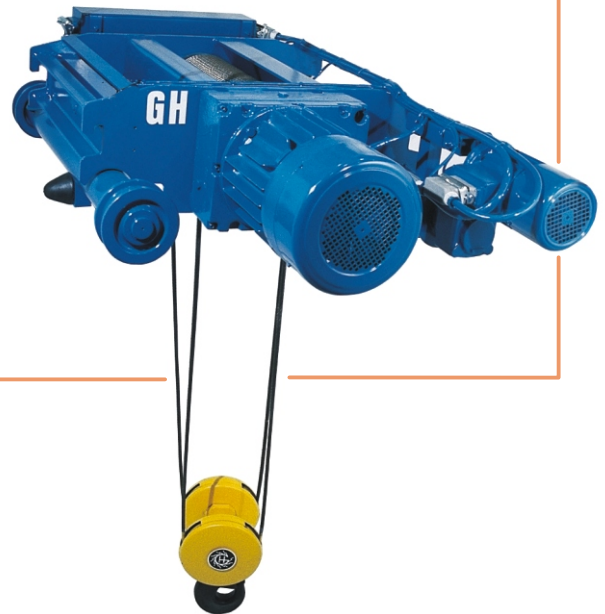


FIG. 2

FIG. 3



STANDARD DOUBLE GIRDER CRAB



FIG. 4

**DOUBLE GIRDER CRAB
WITH END CARRIAGE**

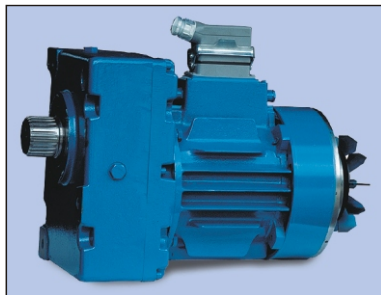
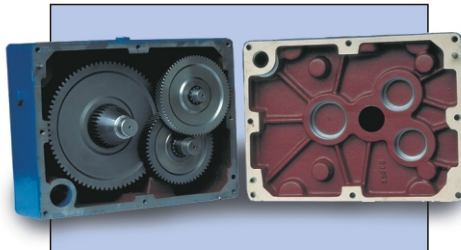
GEARBOX

Robust and compact, situated on the exterior, allowing ease of access.

The helical teeth in all the gears are cut with great precision, in cemented steel, assuring silent running, great reliability and long life.

The drive from the motor to the gearbox is direct, avoiding coupling devices which have a tendency to fail.

All of the gears are lubricated by an oil bath in the interior of a closed casing, machining of the gear locations is made by high precision machine tools.



LIFTING MOTOR

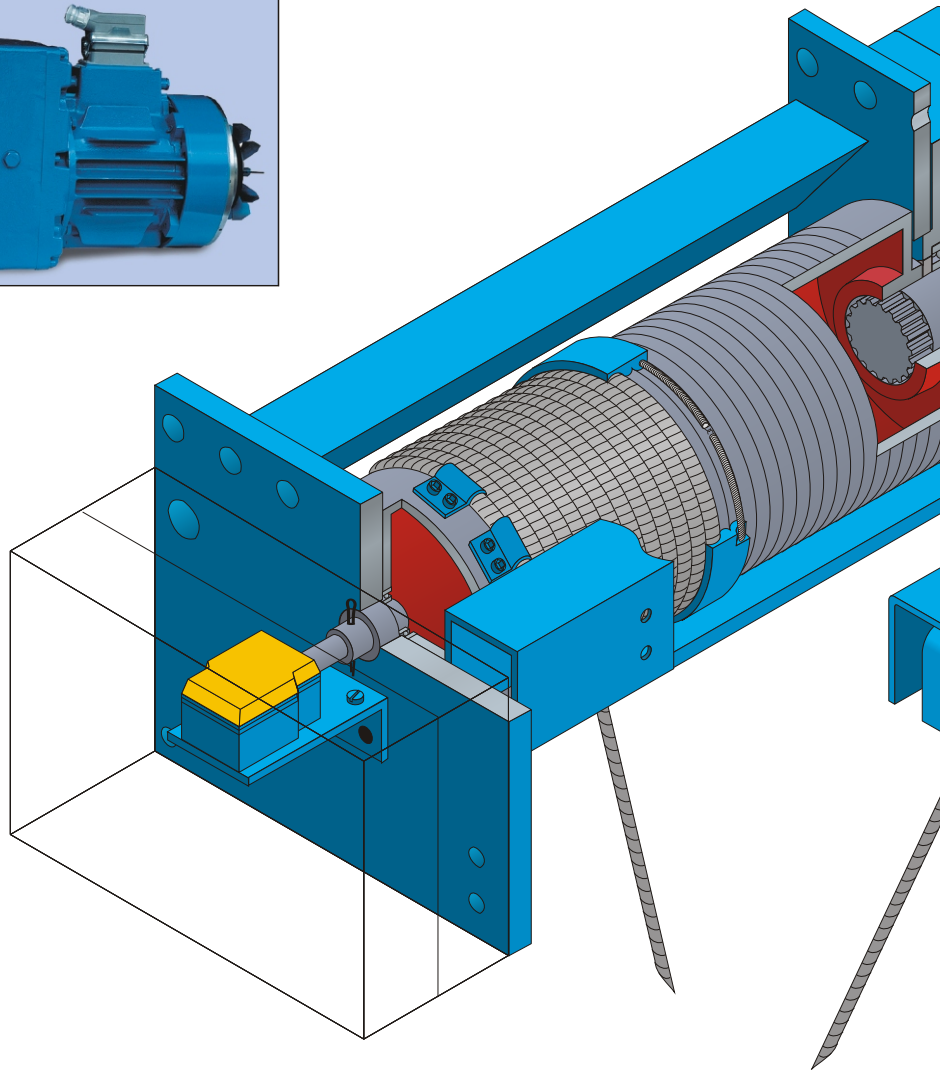
The hoist has a cylindrical short circuit motor with an incorporated electromagnetic brake.

The motor and brake have been designed for continuous service with high duty factors and cycles.

The brakes are electromagnetic disc, with asbestos free flat faced linings. They offer great reliability and automatic braking in the event of power failure. The friction linings are long lasting and the brake is easy to regulate.

Protection IP-55 to DIN 40050.

The standard version motor has the option of one or two speeds. The second speed has a relation of 1/6. Other relations 1/2, 1/3, 1/4 are available by customer request. Also upon customer request, we can supply inverter control or slip-ring motors.



PUSH BUTTON PENDANT

Is manufactured from high impact polypropylene and provides double insulation. The various motions are controlled by pushbuttons which are colour coded as well as being identified by internationally recognised symbols. Low dead weight and ergonomically styled housing reduces operator's fatigue.



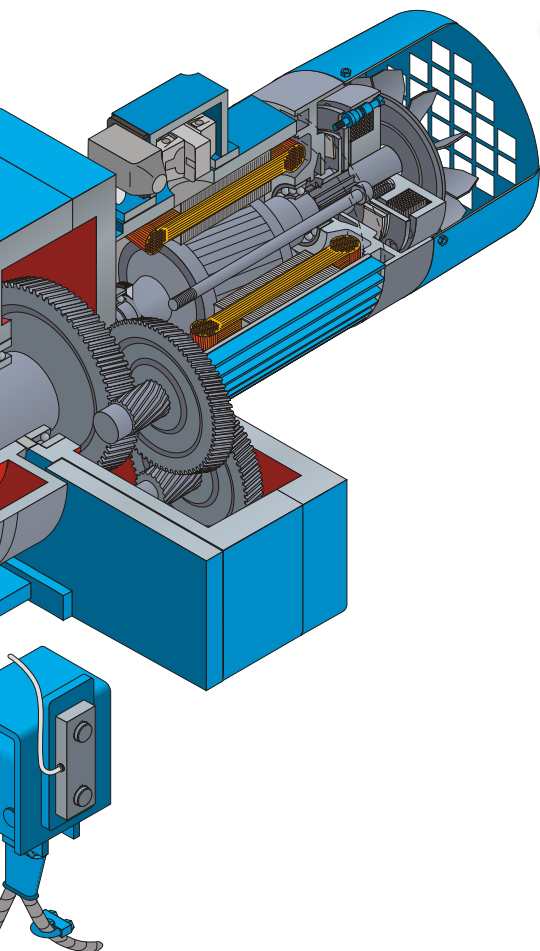
WHEELS

Dependant on the hoist model, the wheel material can be GG 60 for monorail hoists and GGG 70 (nodular cast iron with graphite structure) for birrail crabs. As shown, drive is via a direct splined axle.



ELECTRICAL CABINET

A white metallic box located on the hoist frame, allowing easy access to the electrical control components.



BOTTOM HOOK BLOCK

The sheaves are designed according to FEM 9661. The machining of the groove is made according to DIN 15061. The cross pin and nut are machined according to DIN 15412 & 15413.

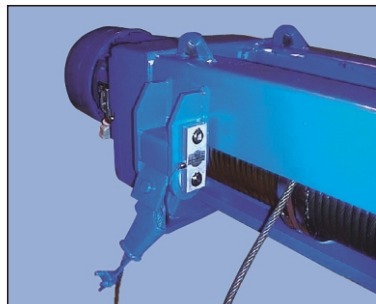
The hooks are selected according to DIN 154000 and machined to DIN 15401 & 15402, depending on whether they are single or double.



▶ TRAVELLING GEARED MOTORS

Are specially designed for crane application. Low torque high inertia drives, provide gradual acceleration and smooth deceleration without excessive swing.

The drive to the wheel is via a direct splined shaft.



▶ OVERLOAD LIMIT DEVICE

All of our hoists are fitted with an electro-mechanical load cell as standard (electronic control).

This load cell consists mainly of 2 parts:

- A electronic cell pin
- Load cell unit (to be installed in the electric panel).

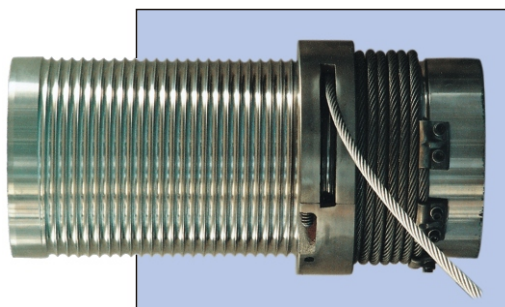


▶ SECURITY LIMIT SWITCH

All of our hoists are fitted with a security limit switch in lifting, preventing a possible failure of the main limit switch.

▶ LIMIT SWITCH

Is located in the drum axle. It limits hook movement in the up and down motions.



▶ DRUM & CABLE GUIDE

The drum is designed and manufactured according to FEM 966 standard.

Constructed from a seamless steel tube with grooves machined according to DIN 15061. The groove is machined dependant on the wire rope exits i.e. 1 or 2 exits.

The drum is fitted to the hoist frame using high quality, self lubricating, commercial bearings. The drive from the gearbox to the drum is via a direct splined shaft.

The rope guide is manufactured from GGG 70 nodular cast iron with self lubricating graphite, which also gives particular resistance to wear.

The rope guide is formed by two pieces, which can easily be assembled without special tools.



DUTY CLASS DETERMINATION FOR HOISTS, ACCORDING TO EUROPEAN MECHANICAL HANDLING FEDERATION

According to FEM classification, two fundamental criteria must be taken into account: the type of duty, and the time of operation (according to average daily operating time for the hoisting movement of the equipment).

OPERATIONAL TIME

Criteria to obtain the average operating time in hours per day (tm).

$$t_m = \frac{\begin{matrix} 2 \\ \times \\ \text{average hook travel (m)} \\ \times \\ \text{cycles per hour} \\ \times \\ \text{number of working hours per day} \end{matrix}}{60 \times \text{lifting speed (m/min)}}$$

HOIST PERFORMANCE RATING

Service Classification	Mean Effective Loads	Average Operating Time tmA Day In Hrs
1 Light	<p>($k \leq 0.50$) Load may vary from no load to occasional full rated loads. This service covers hoists used in repair shops, light fabricating industries, service and maintenance work, etc....</p>	<div>≤2</div> <div>2-4</div> <div>4-8</div> <div>8-16</div>
2 Standard	<p>($0.50 < k \leq 0.63$) Loads and utilization are randomly distributed with capacity loads are frequently handled. This service covers the hoists used in general machine shops, fabricating and assembly industries, etc....</p>	<div>≤1</div> <div>1-2</div> <div>2-4</div> <div>4-8</div>
3 Heavy	<p>($0.63 < k \leq 0.80$) In this type of service, loads approaching 50 percent or the rated capacity will be handled constantly. This service covers the hoists which may be used in heavy machine shops, foundries, fabricating plants steel warehouses, etc....</p>	<div>≤0.5</div> <div>0.5-1</div> <div>1-2</div> <div>2-4</div>
4 Severe	<p>($0.80 < k \leq 1$) In this type of service requires hoists capable of handling loads approaching a rated capacity throughout its life. Application may include bulk handling of material with magnets, buckets, or other heavy attachments.</p>	<div>≤0.25</div> <div>0.25-0.5</div> <div>0.5-1</div> <div>1-2</div>
Hoists Class		<div>M3</div> <div>M4</div> <div>M5</div> <div>M6</div>

→ Duty class to F.E.M. standards
→ Corresponding to I.S.O. standards

Average daily operating time in hours				0,5		≤1		≤2		≤4		≤8		≤16	
Class of duty				V0,25	T2	V0,5	T3	V1	T4	V2	T5	V3	T6	V4	T7
type of service	1	L1	Light					1Bm	M3	1Am	M4	2m	M5	3m	M6
	2	L2	Medium			1Bm	M3	1Am	M4	2m	M5	3m	M6		
	3	L3	Heavy	1Bm	M3	1Am	M4	2m	M5	3m	M6				
	4	L4	Very heavy	1Am	M4	2m	M5	3m	M6						

GROUP				1Bm	M3	1Am	M4	2m	M5	3m	M6
Duty factor				25%		30%		40%		50%	
No of starts per hour				150		180		240		300	

PRACTICAL EXAMPLE FOR SELECTION OF A HOIST

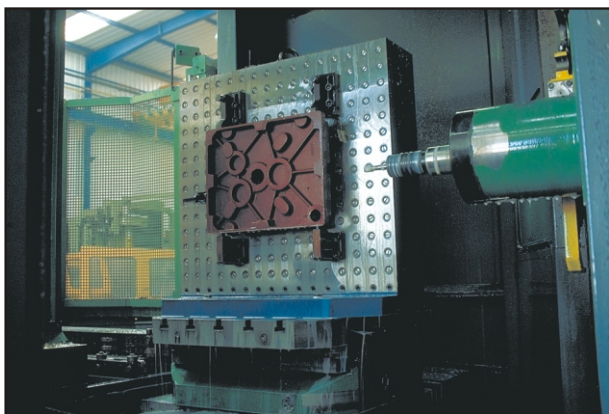
- Capacity 10,000 kgs
- Lifting height 6 metres
- Average hook travel Estimated 4 metres
- Lifting speed 5 m/min
- Number of cycles per hour Estimated 12 cycles
- Number of working hours per day 8 hours
- Duty factor Standard

$$t_m = \frac{2 \times 4 \times 12 \times 8}{60 \times 5} = 2.56 \text{ hours}$$

Consulting the classification chart we arrive to the conclusion that the group is 2 m (M5).

REFERENCE EXPLANATION FOR STANDARD GH ELECTRIC WIRE ROPE HOISTS

GH	B	03	(*)	21	04	H1
						LIFTING HEIGHT H1 H2 H3 H1
						See Characteristic Chart
						04 MAIN LIFTING SPEED
						21 NUMBER OF FALLS: 2 / 1 4 / 1
						F: Foot mounted R: Low headroom B: Birrail crab
						03 LIFTING CAPACITY
						B D E F
						See Characteristic Chart
						B
						MODEL OF HOIST
						GH WIRE ROPE HOIST



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