

· GH ·

CRANES & COMPONENTS

OPEN WINCH

For process cranes and high capacities



**STANDARD
OPEN WINCH
LARGE RANGE
FROM 6.3T TO 400T**

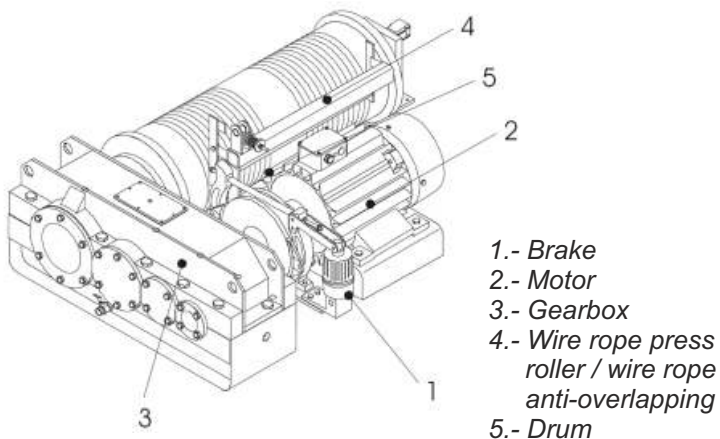


These type of crabs are produced on demand to address special needs such process cranes with special features of capacity, safety, speed or other requirements.

It is called Open Winch due to all the elements are manufactured with independent and different sub-assemblies for easy maintenance.



WHY AN OPEN WINCH?



OPEN WINCH ADVANTAGES:

- In general, open winches allow higher lifting capacities, higher speeds and higher FEM working groups.
- Possibility of working with motors of 1,500 rpm., 1,000 rpm. , and 750 rpm. , Bigger motor sizing.
- Commercial motors usage to adequate customer standards. One motor instead with less failure possibility instead of two hoist with two motors for the same lifting capacity.
- Direct shaft from motor to gearbox to drum with flexible and intermediate assemblies, absorbing the shocks at the time of lifting.
- True vertical lift, with stable hook at the lifting time.
- Easy access to the components for easy maintenance.
- External brake for easy access and maintenance
- Wire rope press roller/ Wire rope anti-overlapping and
The anti-overlapping device target is to avoid the wire rope come out from the drum hole.

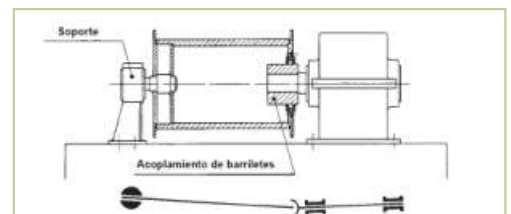


Figure 1
Example of open winch with single drum without connections in the drum.

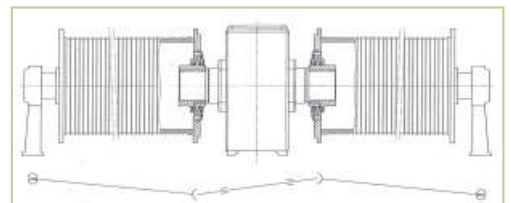


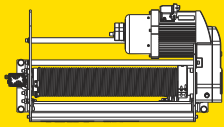
Figure 2
Example of open winch with double drum without connections in the drum.

The inaccuracies in assembly, as well as the deformation of the structures and wear of parts in operation, cause huge additional forces, especially in the gearbox output shaft. These forces will cause bending forces that finally may cause fatigue fractures and damages of bearings and gears.

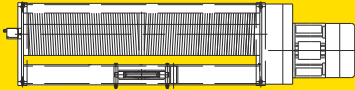
The barrel coupling installed between the gearbox and the drum makes the union statically determined, and therefore avoids the occurrence of high bending moments.

HOISTING

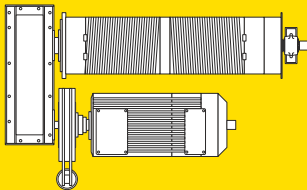
1E - GHA,GHB11, GHD13 hoists



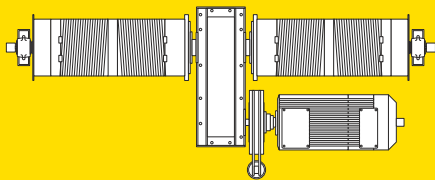
2E - GHE, GHF, GHG Hoists



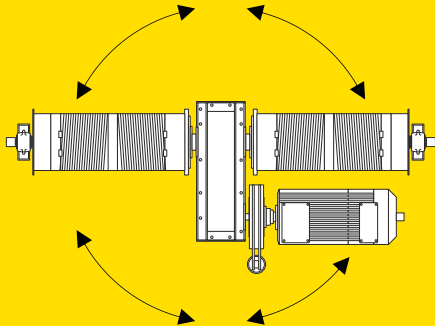
3E - Single open winch



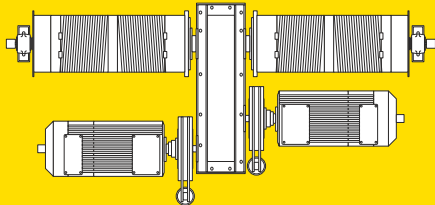
4E - Double open winch with double drum



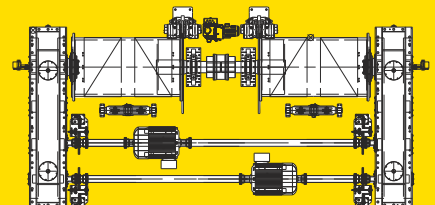
5E - Double rotating open winch with double drum

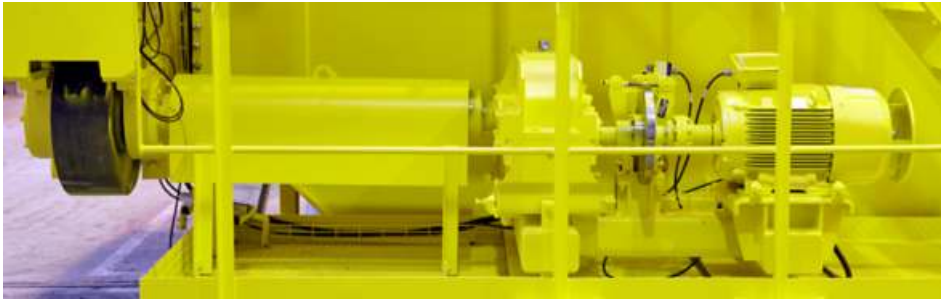


6E - Open winch with double planetary gearbox double drum and safety brake drum

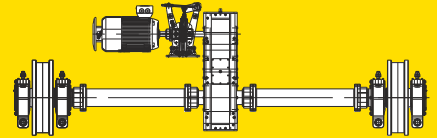


7E - Redundant security,
double planetary reduction
drum brake drum safety

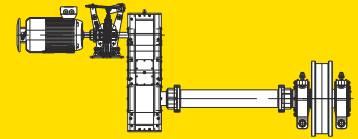




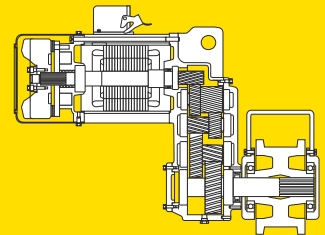
1T - Open winch



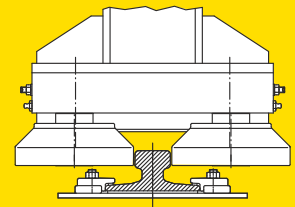
2T - Open winch and cranes



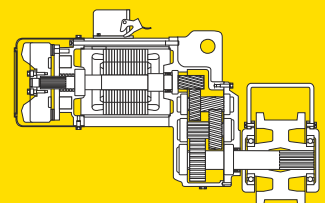
3T - Open winch and cranes



4T - Horizontal roller



5T - Turn



FEM CLASSIFICATION

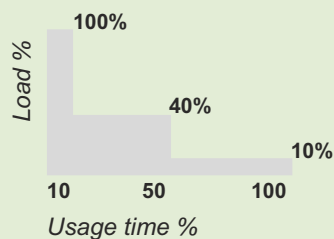
According to the FEM classification, two criteria select the working duty:

- Load spectrum (K)
- Daily Usage average time (Tm)

SERVICE CLASS

Approximate method

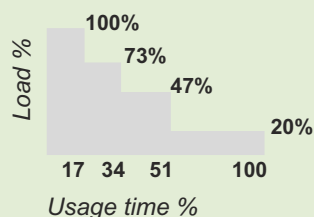
LIGHT-L1



Occasionally full load usage

Normally low load usage

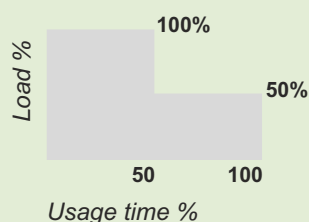
MEDIUM - L2



Occasionally full load usage

Normally medium load usage

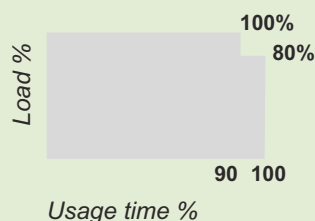
HIGH - L3



Usually at full load

Usually at medium load

VERY HIGH - L4



Almost always at full load usage

Load spectrum		k	Tm			
L1	Light	$k < 0,5$	4-8	8-16	>16	
L2	Medium	$0,5 < k < 0,63$	2-4	4-8	8-16	>16
L3	High	$0,63 < k < 0,8$	1-2	2-4	4-8	8-16
L4	Very high	$0,8 < k < 1$	0,5-1	1-2	2-4	4-8
		FEM	2m	3m	4m	5m
		ISO	M5	M6	M7	M8
		CMAA	C	D	E	F
		GOST	3M	4M	5M	6M

High load capacity	10 t	C
Medium high elevation	6 m	Lh
Hoisting speed	5 m/min	V
Cycle No./Hours	12	Ch
Working hours/day	8 hours	Hd
State solicitation	Medium	

$$T_m = \frac{2 \times L_h \times C_h \times H_d}{60 \times V}$$

$$T_m = \frac{2 \times 6 \times 12 \times 8}{60 \times 5} = 2,56 [\text{hours}]$$

For a medium load spectrum the is a time fo2.56 hours per day and the board shows a **M5** group.

Load spectrum (k) can be determined exactly as follows

$$k = \sqrt[3]{\left(\frac{C_1}{C}\right)^3 \cdot \left(\frac{T_1}{T_m}\right) \dots \left(\frac{C_n}{C}\right)^3 \cdot \left(\frac{T_n}{T_m}\right)}$$

Where (Each cycle)

Ci Partial load

Ti Special cargo usage time

SELECTION TIME

■ Mechanism selection group according to the capacity board



Falls	GHF			GHG			GHI			GHJ				GHK			
Load (TN)	4/2	8/2	12/2	4/2	8/2	12/2	4/2	8/2	12/2	4/2	8/2	12/2	16/2	4/2	8/2	12/2	16/2
6,3	M8																
8	M8																
10	M8																
12,5	M7	M8		M8													
16	M6	M8		M8													
20	M5	M8		M7			M8										
25		M7	M8	M6	M8		M8										
32		M6	M8	M5	M8		M7			M8							
40		M5	M7	M4	M7	M8	M6	M8		M8							
50			M6		M6	M8	M5	M8		M7				M8			
63			M5		M5	M7		M7	M8	M6	M8			M7			
80					M4	M6		M6	M8	M5	M8			M6			
100						M5		M5	M7		M7	M8		M5	M8		
125									M6		M6	M8		M4	M7		
160									M5		M5	M7	M8		M6	M8	
200												M6	M7		M5	M7	M8
250												M5	M6		M4	M6	M7
320													M5			M5	M6
400																M4	M5

Coding proposal:

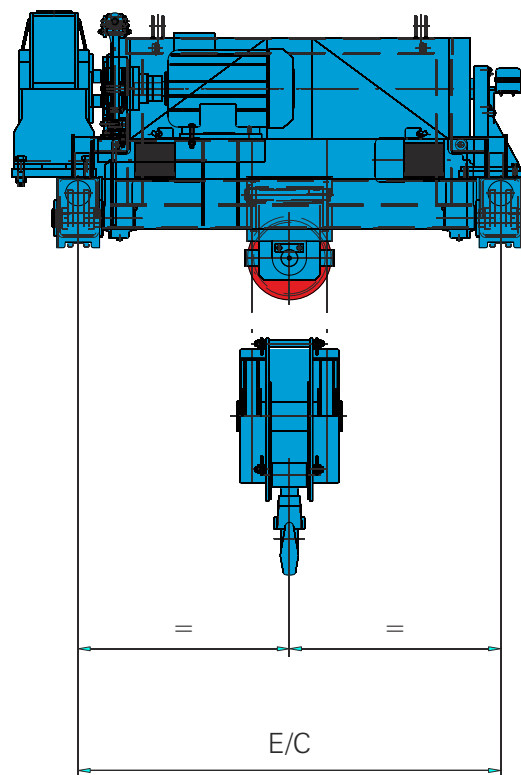
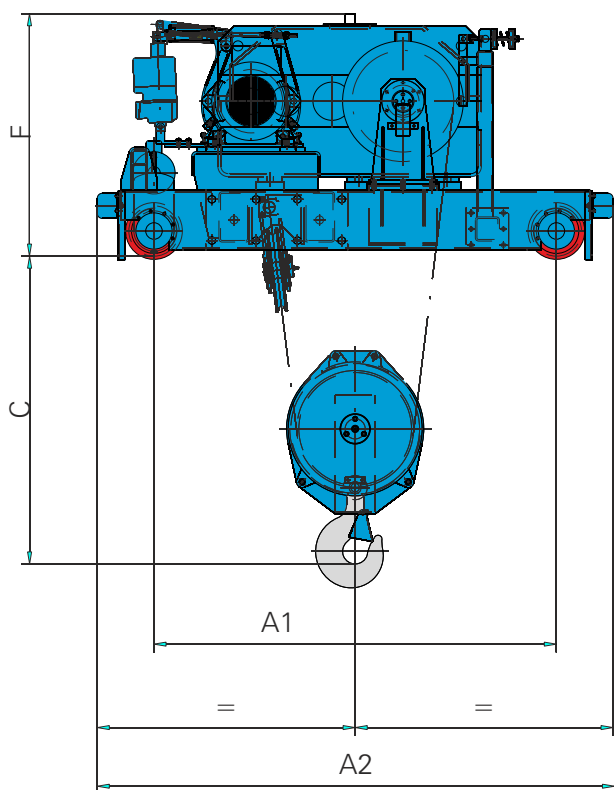
025M8I042B3R08
25 tn capacity
FEM M8 group

Gearbox type
42 4/2 wire rope falls
B motor flange (motor flange=B motor fix=P)

3R stage gearboxes
8 m/min speed

SELECTION TIME

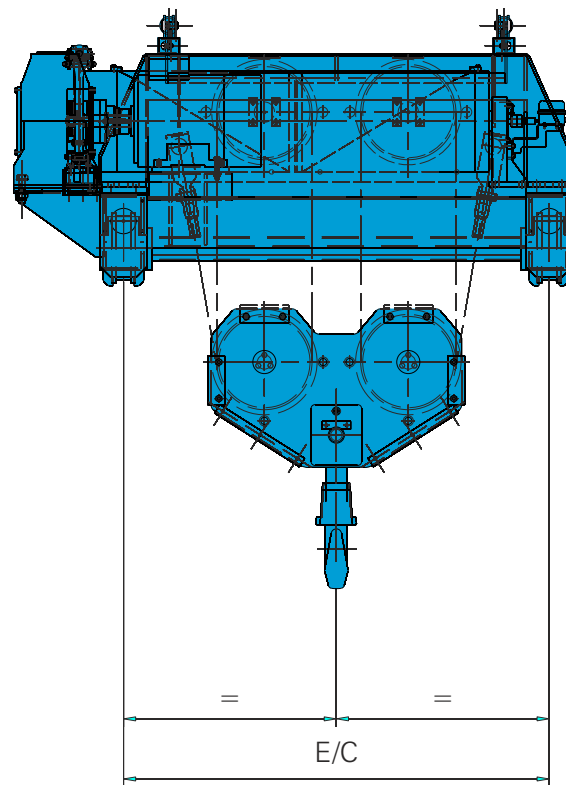
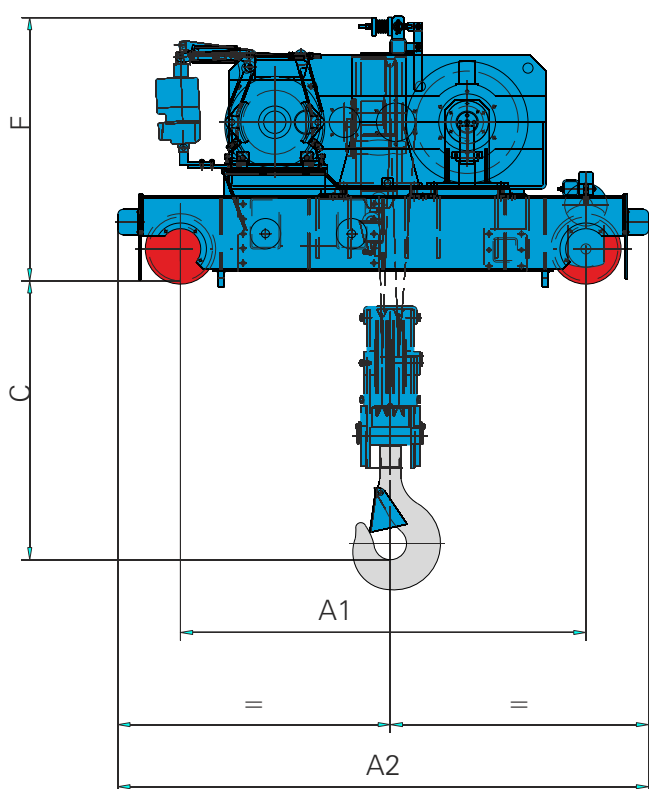
■ Selection board for open winch selection with 4/2 falls



Model	Capacity	Classification		Height			Speed					Dimensions				E/c			Weight														
Falls	t	FEM	ISO	H1	H2	H3	V1	V2	V3	V4	V5	F	C	A1	A2	H1	H2	H3	H1	H2	H3												
GHF 4/2	6,3	5 m	M8	10	15	20	6	8	12	16	20	1075	1005	1900	2465	1500	1800	2000	2600	2700	3000												
	8	5 m	M8																														
	10	5 m	M8										940																				
	12,5	4 m	M7																														
	16	3 m	M6																														
	20	2 m	M5																														
GHG 4/2	12,5	5 m	M8	10	15	20	6	8	12	16	20	1220	1270	1900	2465	1800	2000	2240	4700	4800	5100												
	16	5 m	M8																			1220											
	20	4 m	M7										1355																		1085		2525
	25	3 m	M6																														
	32	2 m	M5																														
	40	1 Am	M4																														
GHI 4/2	20	5 m	M8	10	15	20	6	8	12	16	20	1450	1630	2200	2825	2000	2240	2600	11200	11600	12500												
	25	5 m	M8										1550																				
	32	4 m	M7										1480																				
	40	3 m	M6										1420																				
	50	2 m	M5																														
GHJ 4/2	32	5 m	M8	10	15	20	6	8	12	16	20	1625	1745	2400	3205	2000	2240	2500	15900	16100	17200												
	40	5 m	M8										1645																				
	50	4 m	M7										1555																				
	63	3 m	M6										1475																				
	80	2 m	M5																														
GHK 4/2	50	5m	M8	10	15	20	6	8	12	16	20	2150	2055	3500	4532	2550	2800	3050	22000	24000	26000												
	63	4m	M7										1955																				
	80	3m	M6										1855																				
	100	2m	M5										1755																				
	125	1Am	M4										1655																				

SELECTION TIME

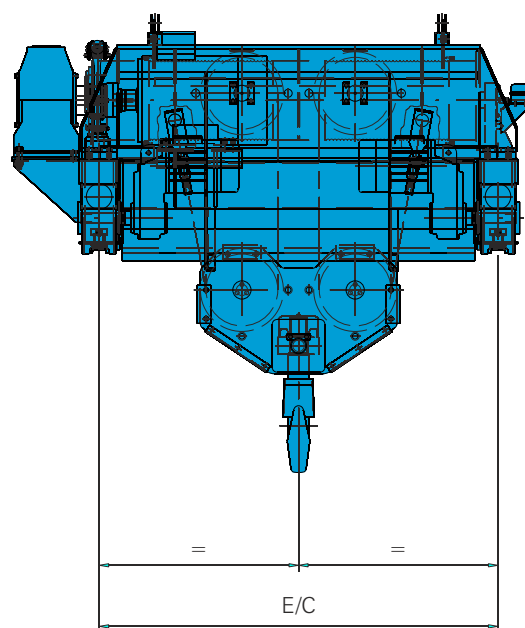
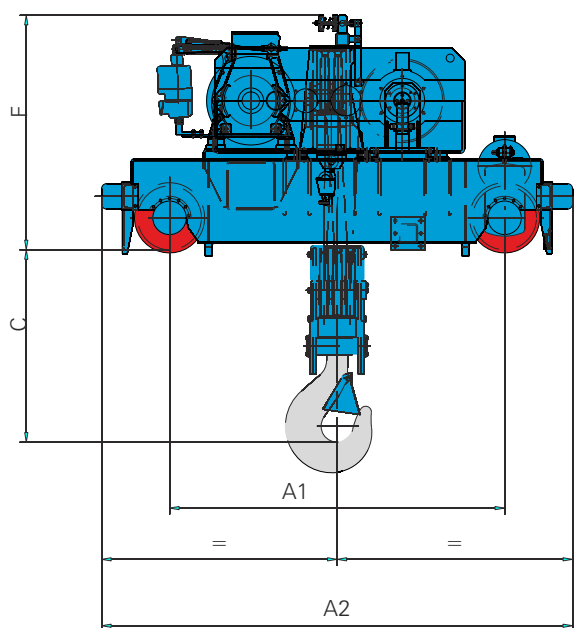
■ Selection board for open winch selection with 8/2 falls



Model	Capacity	Classification		Height			Speed					Dimensions				E/c			Weight		
Falls	t	FEM	ISO	H1	H2	H3	V1	V2	V3	V4	V5	F	C	A1	A2	H1	H2	H3	H1	H2	H3
GHF 8/2	12,5	5 m	M8	10	15	20	3	4	6	8	10	1165		2000	2565	1800	2400	3000	3400	3700	4300
	16	5 m	M8										1065								
	20	5 m	M8																		
	25	4 m	M7																		
	32	3 m	M6																		
	40	2 m	M5										1020								
GHG 8/2	25	5 m	M8	10	15	20	3	4	6	8		1355		2000	2625	2000	2500	3000	5900	6200	6500
	32	5 m	M8										1255								
	40	4 m	M7																		
	50	3 m	M6										1210								
	63	2 m	M5																		
	80	1 Am	M4										1450								
GHI 8/2	40	5 m	M8	10	15	20	3	4	6	8		1545		2400	3205	2240	2500	3150	13400	14000	14600
	50	5 m	M8										1555								
	63	4 m	M7										1495								
	80	3 m	M6										1455								
	100	2 m	M5										1415								
GHJ 8/2	63	5 m	M8	10	15	20	3	4	6			1680		2600	3600	2240	2800	3500	18700	19800	20800
	80	5 m	M8										2150								
	100	4 m	M7										2080								
	125	3 m	M6										2040								
	160	2 m	M5										1960								
GHK 8/2	100	5m	M8	10	15	20	3	4	6			2250		3500	4532	2800	3300	3800	24000	26000	28000
	125	4m	M7										1860								
	160	3m	M6										1760								
	200	2m	M5										1660								
	250	1Am	M4										1560								

SELECTION TIME

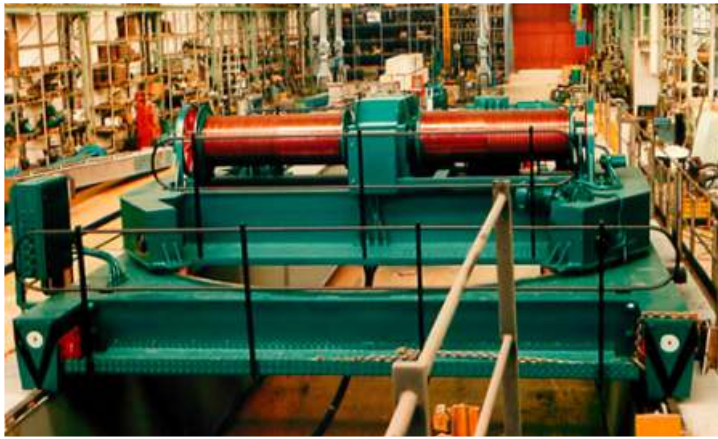
■ Selection board for open winch selection with 12/2 and 16/2 falls



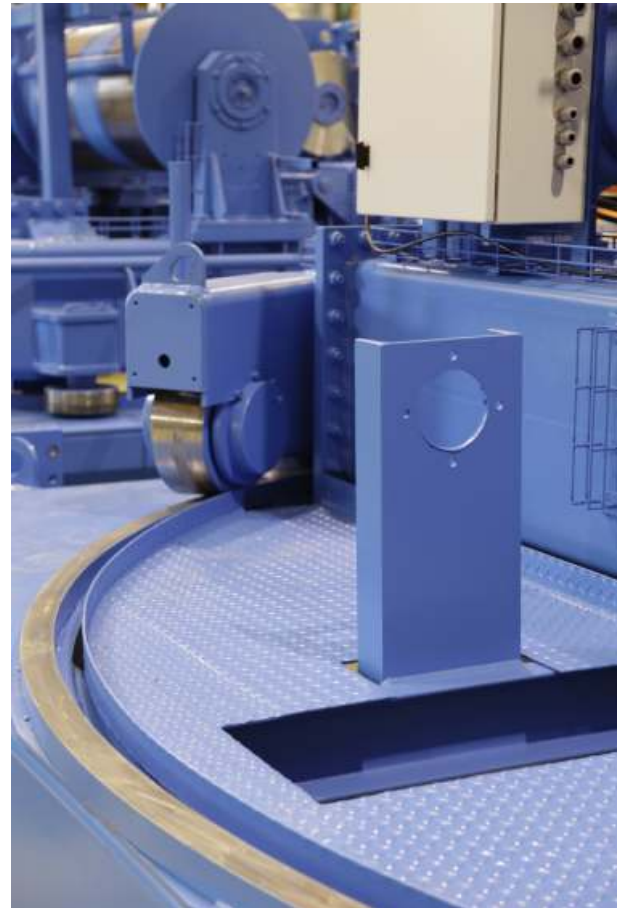
Model	Capacity	Classification		Height			Speed					Dimensions				E/c			Weight																				
Falls	t	FEM	ISO	H1	H2	H3	V1	V2	V3	V4	V5	F	C	A1	A2	H1	H2	H3	H1	H2	H3																		
GHF	25	5 m	M8	10	15	20	2	2,7	4	5,4	8	1350	1100	2000	2625	2500	3150	4000	4100	5500	5900																		
	32	5 m	M8																																				
	40	4 m	M7									1300	1060																										
	50	3 m	M6																																				
	63	2 m	M5																																				
GHG	40	5 m	M8	10	15	20	2	2,7	4	5,4		1450	1290	2000	2805	2500	3150	4000	7700	9000	10500																		
	50	5 m	M8																																				
	63	4 m	M7										1225																										
	80	3 m	M6																																				
	100	2 m	M5																																				
GHI	63	5 m	M8	10	15	20	2	2,7	4	5,4		1545	1875	2400	3205	2600	3500	4200	14900	16500	17300																		
	80	5 m	M8																																				
	100	4 m	M7									1600	1760		3400																								
	125	3 m	M6										1720																										
	160	2 m	M5																																				
GHJ	100	5 m	M8	10	15	20	1	2	2,5	4		1745	2375	2600	3740	2800	3500	4200	21600	23800	25000																		
	125	5 m	M8										2305									2265																	
	160	4 m	M7																																				
	200	3 m	M6																												2185								
	250	2 m	M5																																				
GHK	160	5m	M8	10	15	20	1	2	2,5	4		2350	1885	3500	4532	3300	4050	4800	26000	29000	31000																		
	200	4m	M7										1785																										
	250	3m	M6																																				
	320	2m	M5										1585																										
	400	1Am	M4																																				

Model	Capacity	Classification		Height			Speed					Dimensions				E/c			Weight		
Falls	t	FEM	ISO	H1	H2	H3	V1	V2	V3	V4	V5	F	C	A1	A2	H1	H2	H3	H1	H2	H3
GHJ 16/2	160	5m	M8	10	15	20	1,5	2	2,5	3		2450	2270	3500	4532	3300	4050	4800	26000	29000	31000
	200	4m	M8					2170													
	250	3m	M7																		
	320	2m	M6																		
GHK 16/2	200	5m	M8	10	15	20	1,5	2	2,5	3		2450	2270	3500	4532	3300	4050	4800	26000	29000	31000
	250	4m	M8					2170													
	320	3m	M7																		
	400	2m	M6																		

ROTATING OPEN WINCH



Interesting option to manipulate long products, paper reels, liquid metal or metal scrap crab





BEASAIN



ALSASUA



BAKAIKOA

**CENTRAL OFFICES
TECHNICAL OFFICE**

**CENTRAL OFFICES
MACHINING WORKSHOP**

**CENTRAL OFFICES
MACHINING WORKSHOP**



BRAZIL

SAO PAULO
GH DO BRASIL IND. E COM. LTDA.
Tif.: +55 11 4409 0066
www.ghdobrasil.com.br
ghdobrasil@ghdobrasil.com.br



CHINA

SHANGHAI
LIFTING EQUIPMENT CO., LTD.
Tif.: +86 6299 7681
www.ghsa.com/ch
ghchina@ghsa.com



FRANCE

COUÉRON
GH FRANCE, SA
Tif.: +33 (0) 240 86 12 12
www.ghfrance.fr
ghfrance@ghsa.com



MEXICO

QUERETARO
GRUAS GH MÉXICO SA DE CV
Tif.: +52 44 22 77 54 37
www.ghsa.com.mx
ghmexico@ghsa.com.mx



POLAND

KŁOBUCK
GH CRANES SP. Z O.O.
Tif.: +48 34 359 73 17
www.ghsa.pl
intertech@ghsa.pl



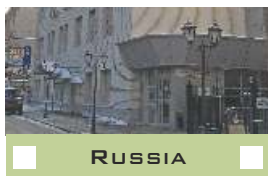
INDIA

PUNE
GH CRANES INDIA
Tif.: +91 020 64730438
www.ghsa.com
ghindia@ghsa.com



PORTUGAL

OPORTO
GH PORTUGAL
Tif.: +351 229821688
www.ghsa.com.pt
geral@ghsa.com



RUSSIA

MOSCOW
GH RUSSIA
Tif.: + 7 (495) 745 69 26
www.ghsa.ru
ghrussia@ghsa.com



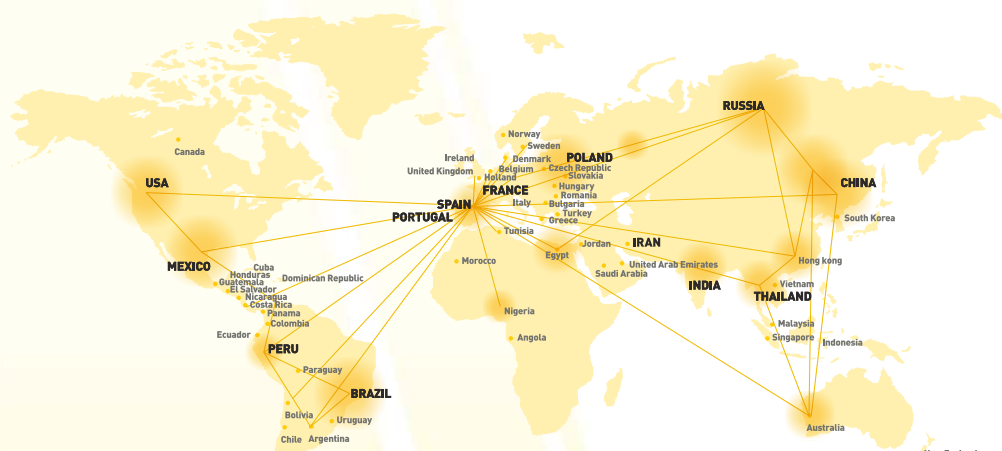
THAILAND

SAMUTPRAKARN
LEE MACHINERY-GH THAILAND
Tif.: +66 (0)8 4660 1365
www.ghsa.com
ghthailand@ghsa.com



USA

ILLINOIS
GH CRANES CORPORATION
Tif.: (815) 277-5328
www.ghcranes.com
ghcranescorp@ghsa.com



Angola
Argentina
Australia
Belgium
Bolivia
Brazil
Bulgaria
Canada
Chile
China
Colombia
Costa Rica
Cuba
Czech Republic
Denmark
Dominican Republic
Ecuador
Egypt
El Salvador
France
Greece

Guatemala
Holland
Honduras
Hong Kong
Hungary
Indonesia
Iran
Ireland
Italy
Jordan
Malaysia
Morocco
Mexico
Nicaragua
Nigeria
Norway
New Zealand
Panama
Paraguay
Peru

Philippines
Poland
Portugal
Romania
Russia
Saudi Arabia
Singapore
Slovakia
South Korea
Sweden
Taiwan
Thailand
Tunisia
Turkey
Uk
United Arab Emirates
Uruguay
Usa
Venezuela
Vietnam

GH is present
in more than 60
different countries,
through its local
representatives
and dealers.

With a staff of over 300 in Spain and
700 worldwide, GH has a weekly
production capacity of:

- 50 standard cranes
- 1 special crane
- 40 hoists/kits
- 2 industrial gantries
- 0.5 straddle carriers/travelifts

GH develops both standard and
tailored products.

- GH -
CRANES & COMPONENTS

TEL.: +34 943 805 660
FAX: +34 943 888 721
E-MAIL: GHSA@GHSA.COM
APDO. 27 - Bº SALBATORE
20200 BEASAIN
(GIPUZKOA) SPAIN

WWW.GHCRANES.COM

