

DECK MACHINERY

MARINE HOOK



Capstans:

Capstans are used for safe and efficient hauling in of the mooring lines with the use of a messenger line and can be supplied integral mounted at the mooring hook unit or as Freestanding type. The capstans can have several features such as braking device, motor-starter, footswitch, reversible, rotation, etc.



Freestanding Capstan



Integral Capstan

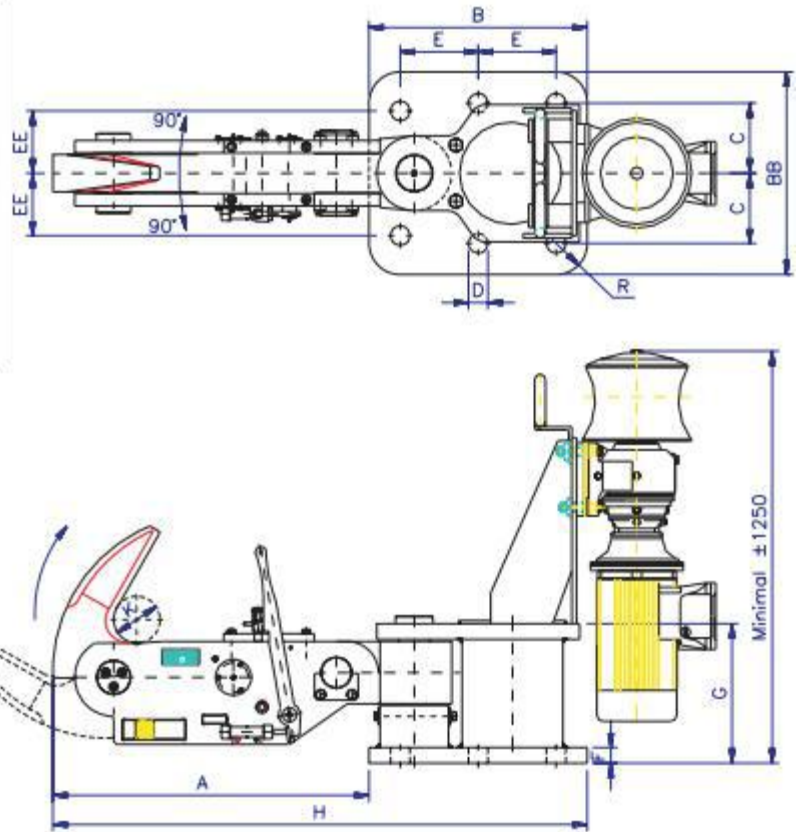


Special Insulated Capstan

Besides the standard capstan, Mampaey also supplies the Special Insulated Capstans mounted into a pipe-construction for operation at -32 degrees Celsius.



SINGLE HOOK ASSEMBLY



EXPLANATION:

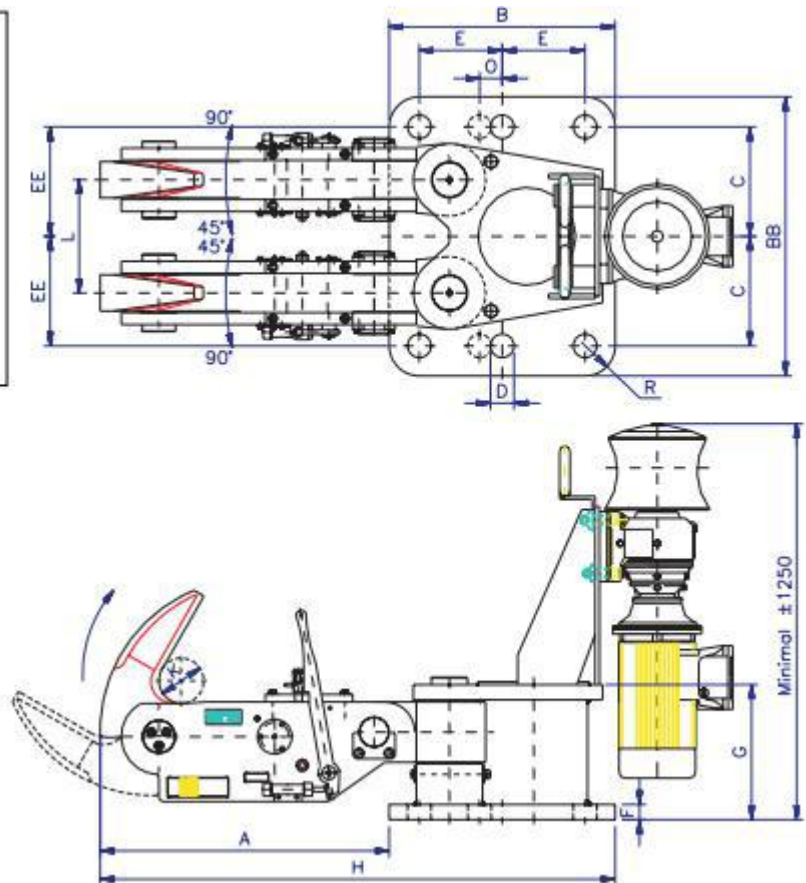
- Cap. = Capacity Mounting Base in kN
 Wt. = Weight in kilograms, excl. Capstan
 X. = Number and size of HD Bolts
 S.W.L. = Working Load in kN

Dimensions in millimeters

S.W.L.	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	R	X
400	400	304	668	600	600	225	54	225	225	35	370	1268	96	75	4xM48
600	600	512	873	650	650	235	54	235	200	45	407	1523	130	90	6xM48
750	750	587	923	650	650	225	62	225	200	45	417	1573	130	100	6xM56
1000	1000	792	1014	700	650	225	62	250	200	50	447	1714	150	100	6xM56
1250	1250	887	1085	700	650	225	70	250	200	55	479	1785	150	100	6xM64
1500	1500	1253	1255	700	650	225	78	250	195	55	499	1955	150	100	6xM72

Above details for information only

DOUBLE HOOK ASSEMBLY



EXPLANATION:

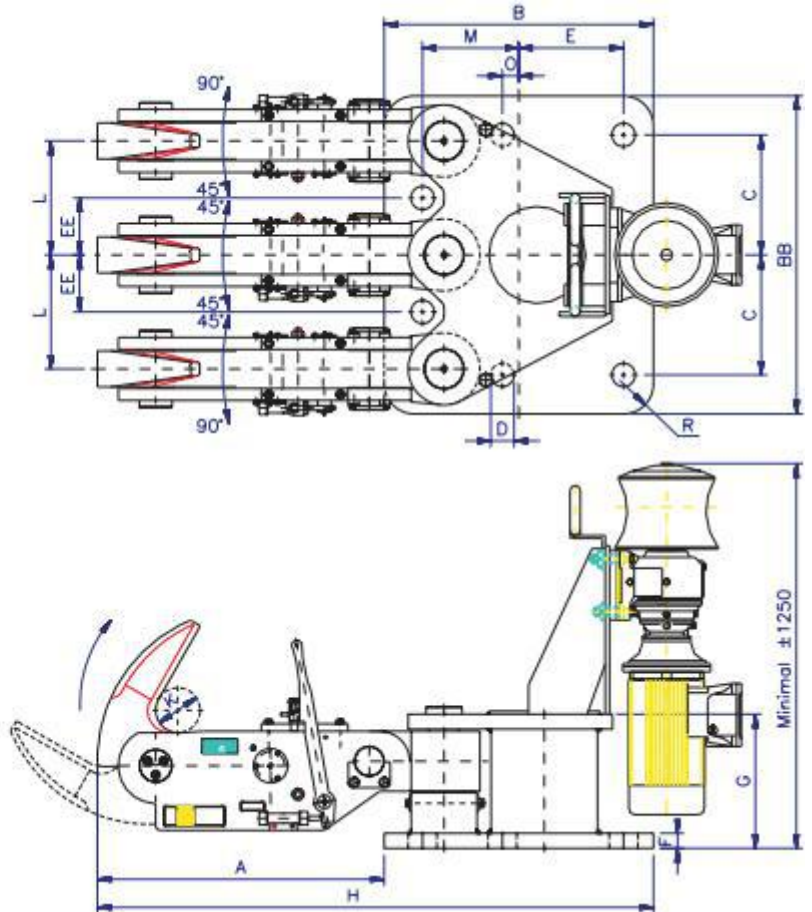
- Cap. = Capacity Mounting Base in kN
 Wt. = Weight in kilograms, excl. Capstan
 X. = Number and size of HD Bolts
 S.W.L. = Working Load in kN

Dimensions in millimeters

S.W.L	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	R	X
400	800	491	583	650	700	260	54	235	260	35	370	1233	96	90	6xM48
600	1200	878	788	750	780	290	62	275	290	45	407	1536	130	100	6xM56
750	1500	1049	888	750	850	325	70	275	325	45	417	1638	130	100	6xM64
1000	2000	1439	959	750	925	363	78	275	363	50	447	1709	150	100	6xM72
1250	2500	1602	1030	750	925	363	86	275	363	55	479	1780	150	100	6xM80
1500	3000	2332	1210	750	1000	400	86	275	400	55	499	1960	150	100	7xM80

Above detail for information only

TRIPLE HOOK ASSEMBLY



EXPLANATION:

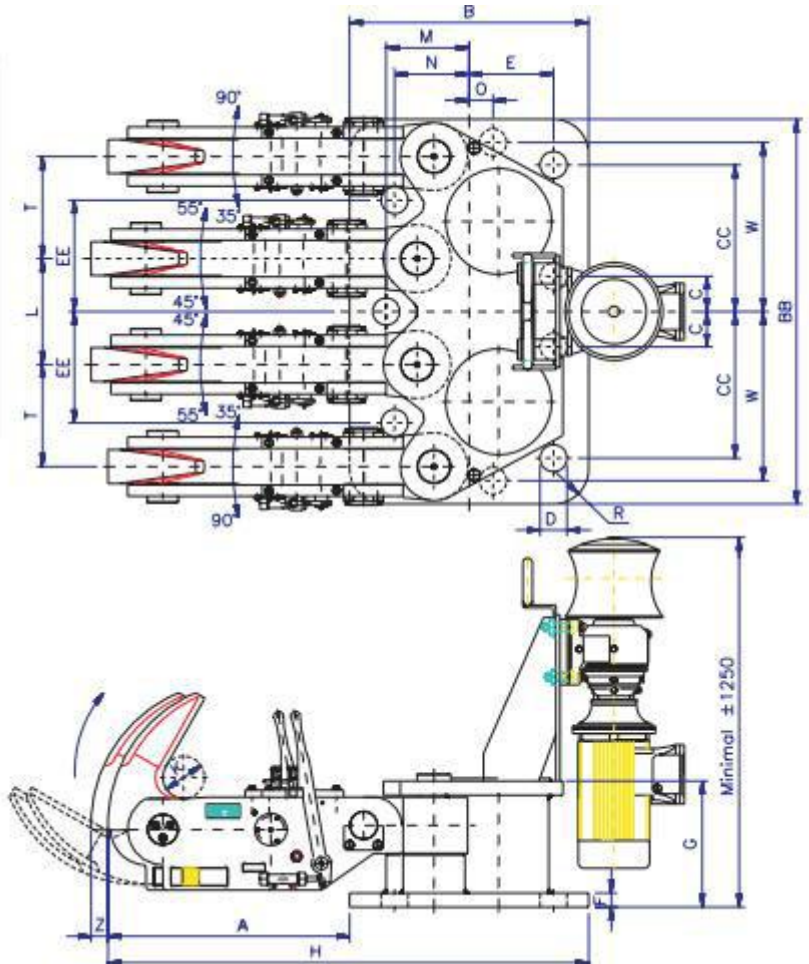
- Cap. = Capacity Mounting Base in kN
- Wt. = Weight in kilograms, excl. Capstan
- X. = Number and size of HD Bolts
- S.W.L. = Working Load in kN

Dimensions in millimeters

S.W.L.	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	L	M	O	R	X
400	1200	707	598	700	800	310	62	260	145	35	370	1296	96	290	275	90	6xM56	
600	1800	1268	863	800	900	335	70	310	162	45	407	1663	130	325	310	65	100	6xM64
750	2250	1540	893	850	1000	375	78	325	175	45	417	1743	130	350	325	60	100	6xM72
1000	3000	2144	959	900	1060	400	78	350	190	50	447	1859	150	380	322	55	100	7xM72
1250	3750	2450	1030	900	1060	400	86	350	190	55	479	1930	150	380	322	55	100	7xM80
1500	4500	3586	1235	1020	1200	475	96	385	212	55	499	2255	150	425	385	115	125	7xM90

Above detail for information only

QUADRUPLE HOOK ASSEMBLY



EXPLANATION:

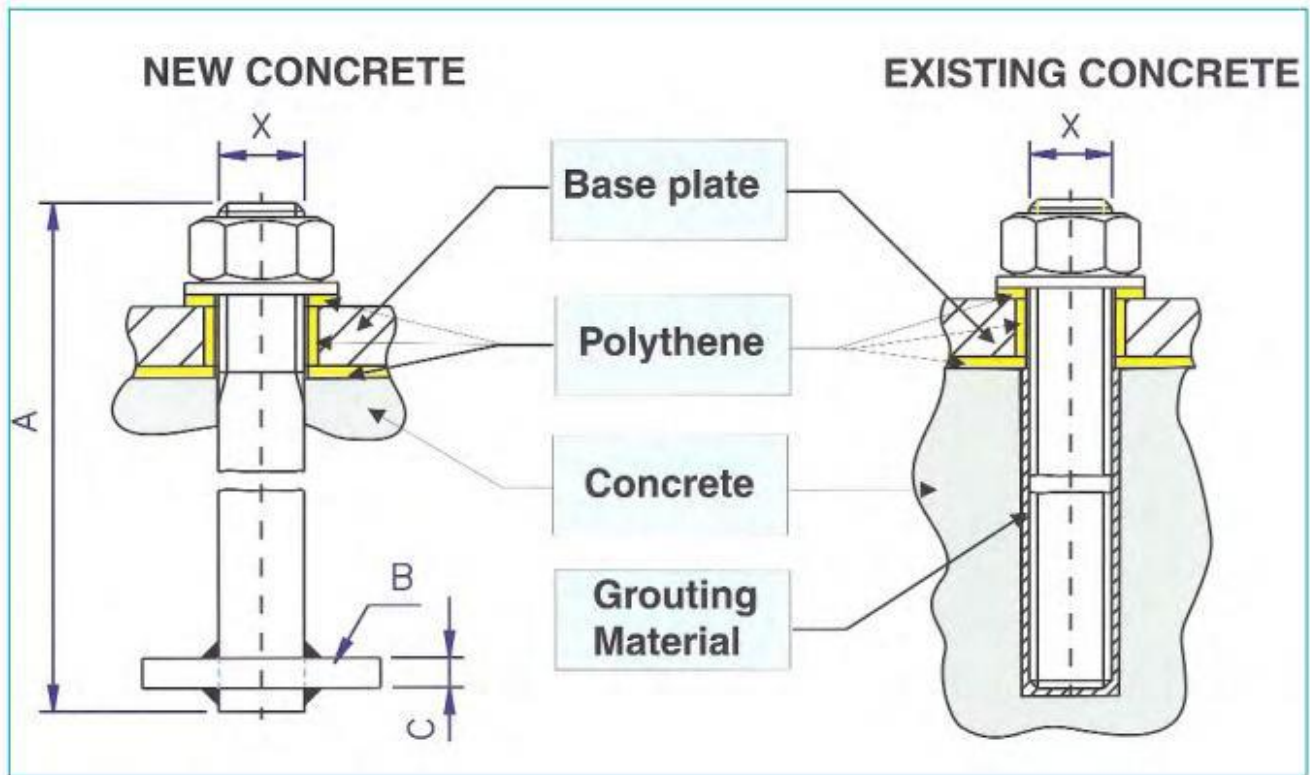
- Cap. = Capacity Mounting Base in kN
 Wt. = Weight in kilograms, excl. Capstan
 X. = Number and size of HD Bolts
 S.W.L. = Working Load in kN

Dimensions in millimeters

S.W.L.	Cap.	Wt.	A	B	BB	C	CC	D	E	EE	F	G	H	K	L	M	N	R	T	Z	X
400	1600	938	578	650	1120	100	470	70	235	300	35	370	1228	96	300	235	235	90	300	40	7xM64
600	2400	1670	778	750	1185	115	445	78	275	330	45	407	1528	130	325	255	230	100	320	56	7xM72
750	3000	2032	823	800	1300	150	505	86	290	355	45	417	1623	130	350	280	265	100	340	50	7xM80
1000	4000	2807	859	850	1365	125	520	96	300	395	50	447	1709	150	376	295	265	125	362	60	7xM90
1250	5000	3199	930	850	1365	125	520	96	300	395	55	479	1780	150	376	295	265	125	362	60	7xM90
1500	6000	4698	1118	925	1570	170	605	86	325	435	55	499	2043	150	426	325	280	135	415	60	9xM80

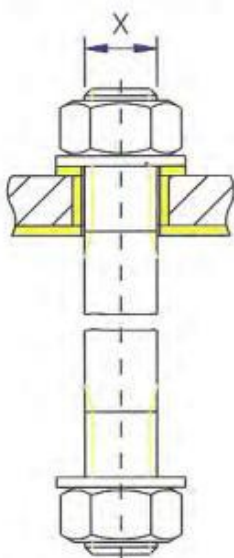
Above details for information only

HOLDING DOWN BOLTS



Anchor bolt for new and existing concrete

STEELDECK



Anchor bolt for steel deck

Explanation:

X = Size of HD Bolt

* = Size thread according to ISO Standard DIN 13

Dimensions in millimeters

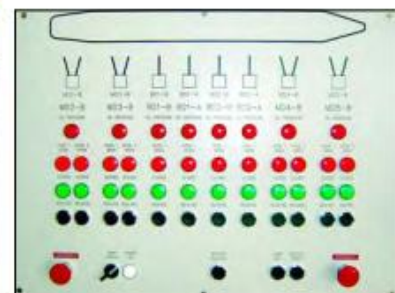
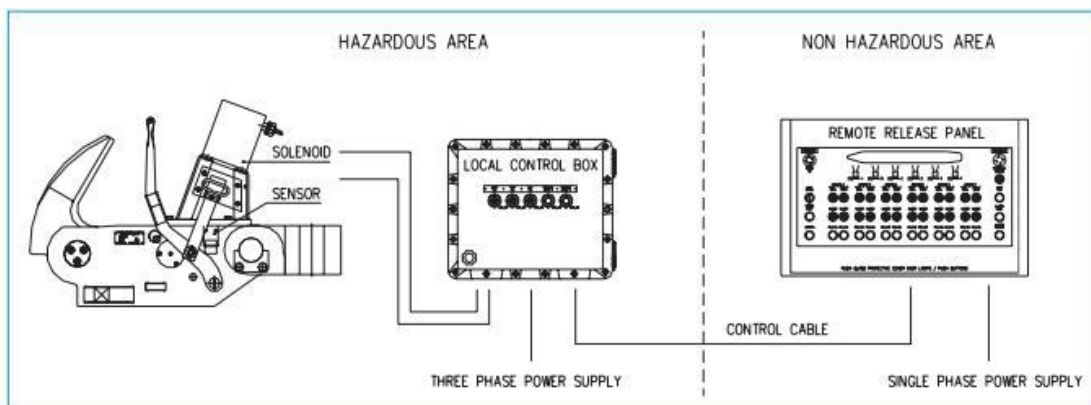
X	A	B	C
M48	950	□ 200 x 180	25
M56	950	□ 200 x 180	25
M64	950	□ 200 x 180	25
M72	950	□ 200 x 180	25
M80	950	□ 200 x 180	25
M90	950	□ 200 x 180	25

Note: For deck structure other than the examples shown, HDB Dimension are available on request.

Remote Control Systems

Besides the local manual release, the mooring hook can be also equipped with a remote control system to operate the hooks from distance such as the jetty the control room. The operation can be effected from a remote control panel with pushbuttons or a computer monitor (when also a mooring load monitoring system is required) to allow individual hook release and simultaneous emergency release. Several feature such as sensors for indication of hook status, local release pushbuttons (besides the manual release), telemetry system, etc. can be provided.

Standard available are the electric-electric remote control and electric-hydraulic remote control, however also electric-pneumatic remote control and other systems are available.



Electric-Hydraulic Remote Control

The release mechanism will be operated by a hydraulic cylinder mounted at the hook. Hydraulic pressure will be provided from a hydraulic power-pack mounted at the mooring unit.



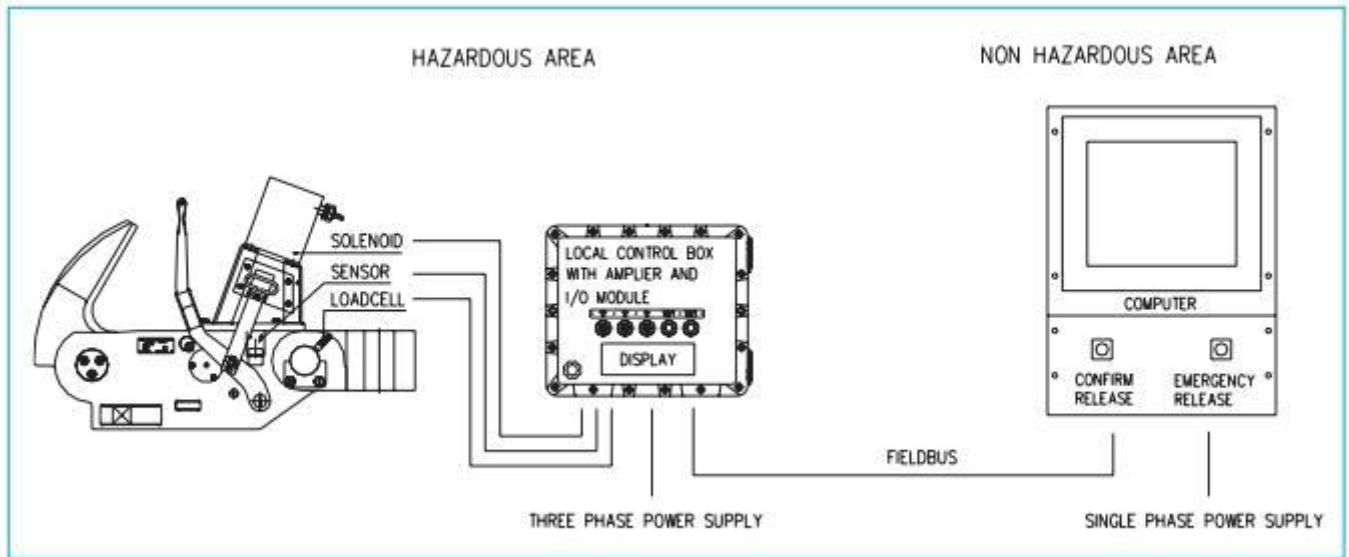
Mooring Load Monitoring Systems

The quick release mooring hook can also be incorporated with a mooring load monitoring system. After vessel is moored, valuable information such as loads, alarm, etc will be provided against preset data.

The mooring load is measured by the integrated load cell, giving the proportional load in the mooring line through an amplifier-module to the computer in the control room. This computer and optional hand-held pager system will provide real time visual indication of the mooring situation and enable safe mooring line tensioning. With the use of I/O modules, also the remote control

signal cable of the M.L.M Hook computer.

The mooring load monitoring system can also be incorporated with the Fountom Berthing Approach System and Fountom Environmental Monitoring System All data can be display on one computer by using only one program.



Typical System Mooring Load Monitoring System



Computer



Mooring Hook with Load Cell

QUICK RELEASE DISCS TYPE TOWING HOOK

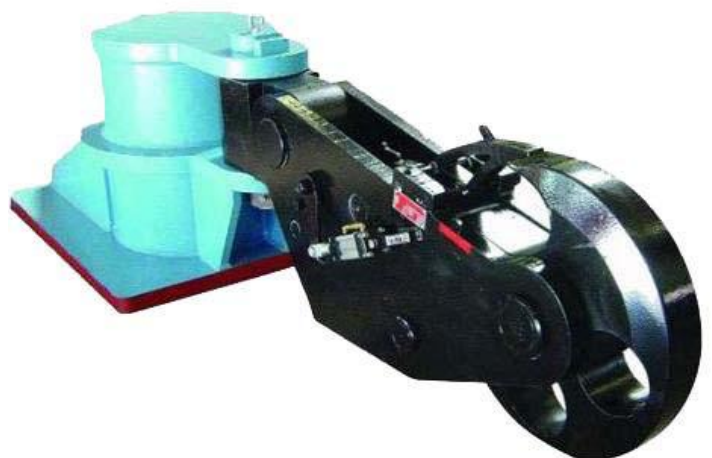
The Fountom Quick Release Disc Type Towing Hooks are specifically designed for towing with steel and nylon/polypropylene ropes. The disc will rotate freely until all rotation energy is dissipated. The Quick Release Disc Type Towing Hook is available, as standard, from 5 up to 100 M. Tonnes Safe Working Load. Higher loads are available upon request.

All our towing hooks can be supplied with various options such as

- Small fairlead for guiding manual release wire to bridge/wheelhouse.
- Mounting foundation for mounting the towing hook onto the ship's deck. The foundation can be welded or bolted onto the ship's deck, and/or horizontal brackets.
- Electric-Pneumatic Remote Control system.
- Electric-Hydraulic Remote Control system.
- Spring shock-absorber construction.
- Radial arm construction and fixed radial construction.
- Load Monitoring System for continuous measurement of towing loads.
- Anti-slip-rope device("keeper")

Overview of Contents

- Disc Type Hook
- Harbour Type Towing Hook
- Electric-Pneumatic Remote Control
- Electric-Hydraulic Remote Control
- Load Monitoring System
- Special Constructions
- Standard and Optional Items



Advantages of using the Fountom Towing Hook

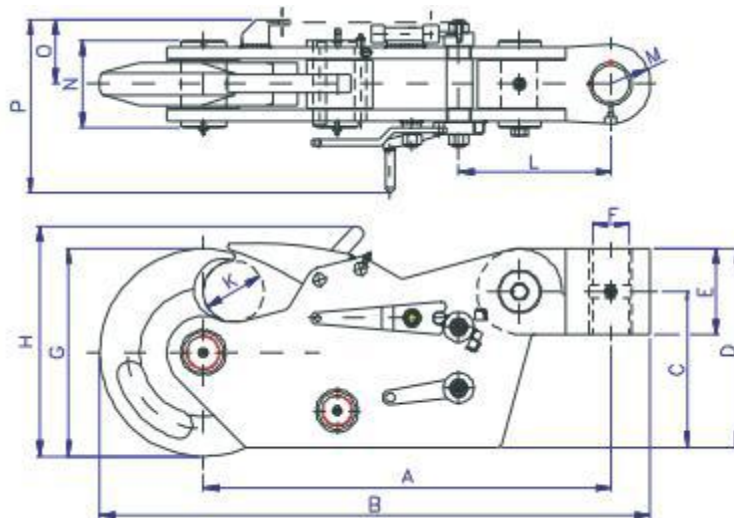
- Safe handing and releasing with only a minimal manual effort of approx. 15 kg at full S.W.L.
- Long economic life of over 25 years.
- Minimum maintenance.
- Spare Parts are not required for hooks without remote control.
- The Fountom disc, free-rotating, type towing hooks are specially designed for towing with nylon and / or other p.p. ropes as well as steel/wire ropes.
- The disc rotating system avoids high release impact on the hook and foundation.
- The F-4.00]oUntom towing hooks are free-swivelling so sliding/gliding plates are not require.



QUICK RELEASE DISC TYPE TOWING HOOK

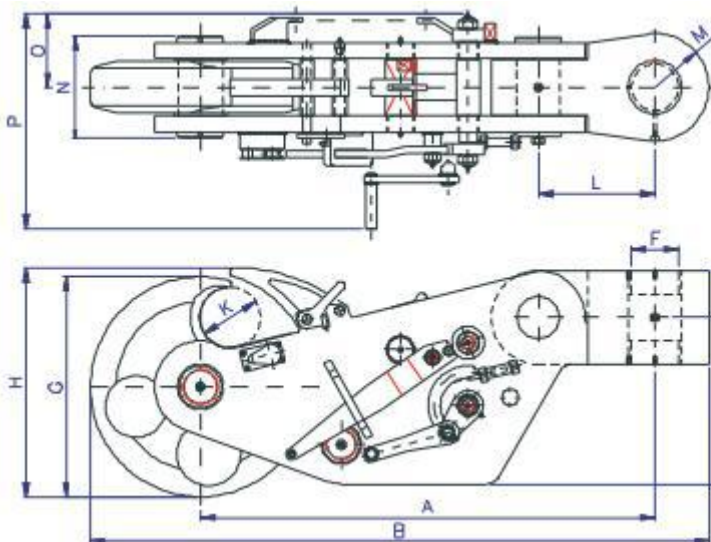
The Quick Release Disc Type Towing Hook are specifically designed for towing with nylon and / or other p.p. ropes as well as steel / wire rope.

DCX5/7 and 8/5



Type	S.W.L.	T.L.	R.L.	Wt.	A	B	C	D	E	F	G	H	K	L	M	N	O	P
DCX 5/7	70	140	70	66	512	712	185	235	100	45	280	291	65	125	60	112	97	260
DCX 8/15	150	300	150	145	670	905	255	325	140	60	340	377	100	250	65	144	106	284

DCX18/25 upto 70/100



EXPLANATION:

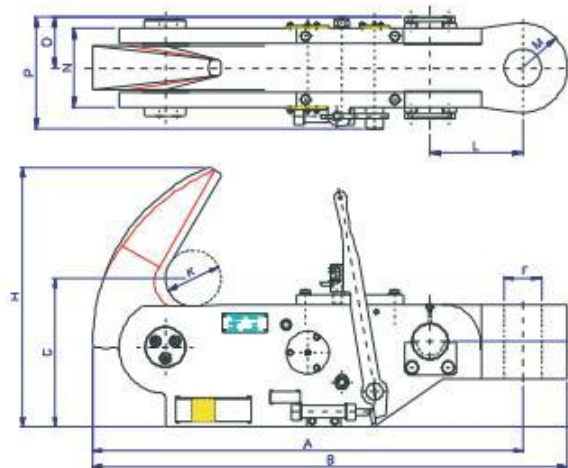
S.W.L.= Safe Working Load in kN
 T.L.= Testload in kN.
 R.L.= Releaseload in kN.
 Wt.= Weight in kilograms

Dimensions in millimeters

Type	S.W.L.	T.L.	R.L.	Wt.	A	B	C	D	E	F	G	H	K	L	M	N	O	P
DCX 18/25	250	500	250	345	923	1238	355	445	180	80	470	491	130	200	81	186	124	427
DCX 30/45	450	900	450	445	973	1323	355	455	200	100	470	490	130	200	115	218	156	462
DCX 50/65	650	1300	650	765	1173	1598	454	464	220	110	600	608	162	250	125	256	173	487
DCX 70/100	1000	1500	1000	1068	1290	1750	492	632	280	135	650	668	176	290	135	288	182	530

QUICK RELEASE HARBOUY TYPE TOWING HOOK

The Quick Release Harbour Type Towing Hooks are specifically designed for towing with steel / wire rope.



EXPLANATION:
 S.W.L.= Safe Working Load in kN
 T.L.= Testload in kN.
 R.L.= Releaseload in kN.
 Wt.= Weight in kilograms

Dimensions in millimeters

Type	S.W.L.	T.L.	R.L.	Wt.	A	B	C	D	E	F	G	H	K	L	M	N	O	P
MXX 015	150	300	150	47	521	571	100	100	150	40	174	316	65	110	50	100	67	150
MXX 030	300	600	300	130	788	868	160	130	225	60	268	461	96	180	80	125	86	207
MXX 060	450	900	450	262	1023	1123	200	160	260	80	350	616	130	210	100	148	100	224
MXX 075	562	1125	562	320	1073	1183	200	180	290	90	350	616	130	250	110	170	110	245
MXX 100	1000	1500	1000	478	1159	1279	230	200	330	100	400	700	150	250	120	212	138	303



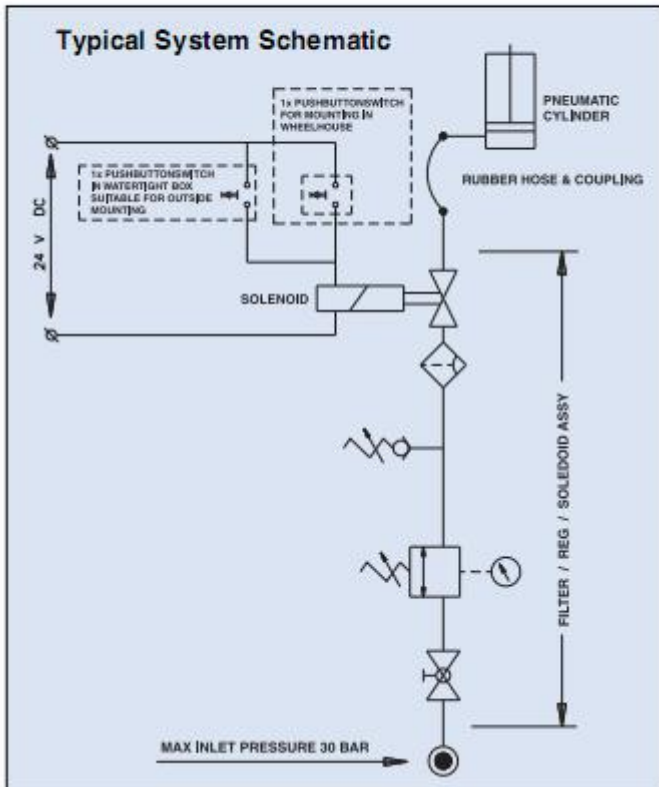
The Electric-Pneumatic Remote Control (EPR) allows for local and remote release of the hook. Operated from push-button(s) on the bridge or watertight push-button(s) on deck

areas the signal activates the solenoid permitting regulated compressed air from the vessels compressed air system to activate the pneumatic release cylinder.



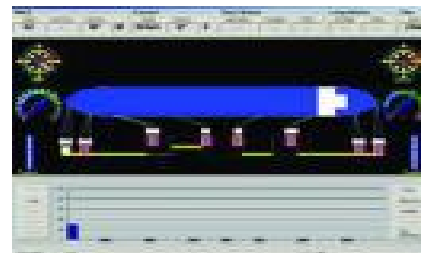
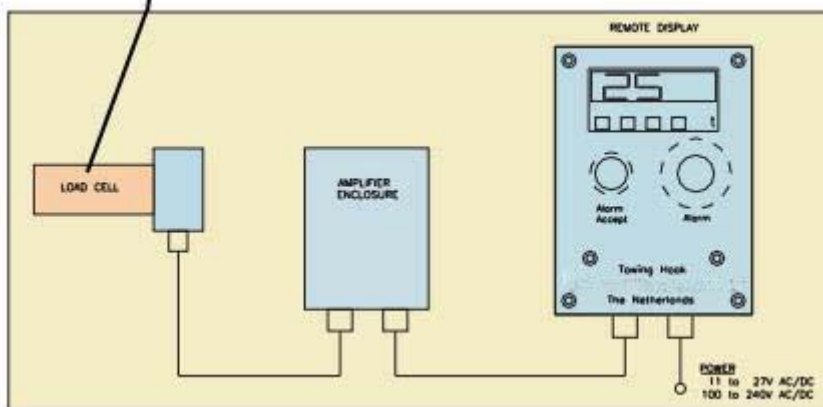
The Electric-Hydraulic Remote Control (EHR) has the same function as the EPR above, but operates a hydraulic release cylinder. Mampaey can offer either a complete hydraulic power pack or components permitting connection to the vessels hydraulic system.

ELECTRIC-PNEUMATIC REMOTE CONTROL

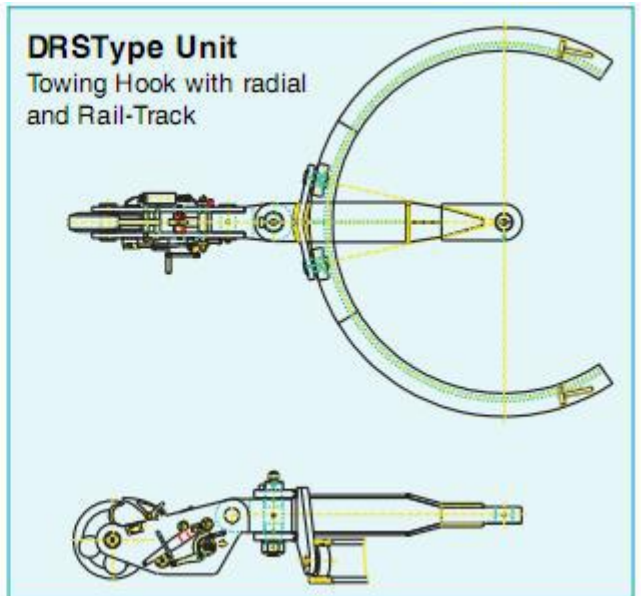
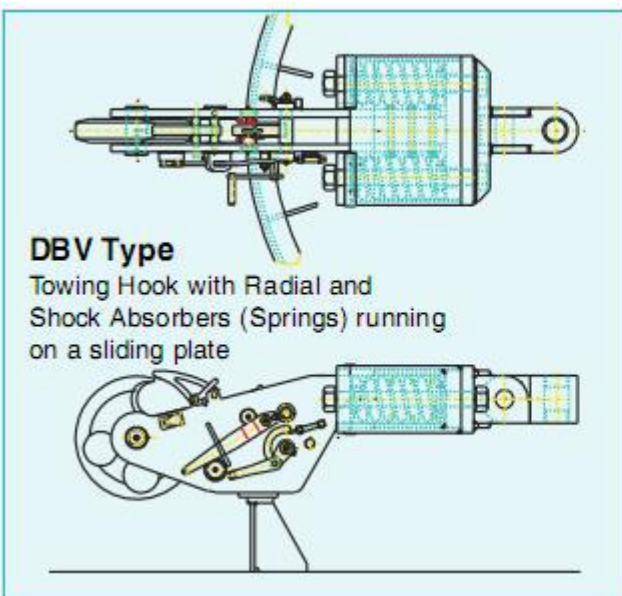
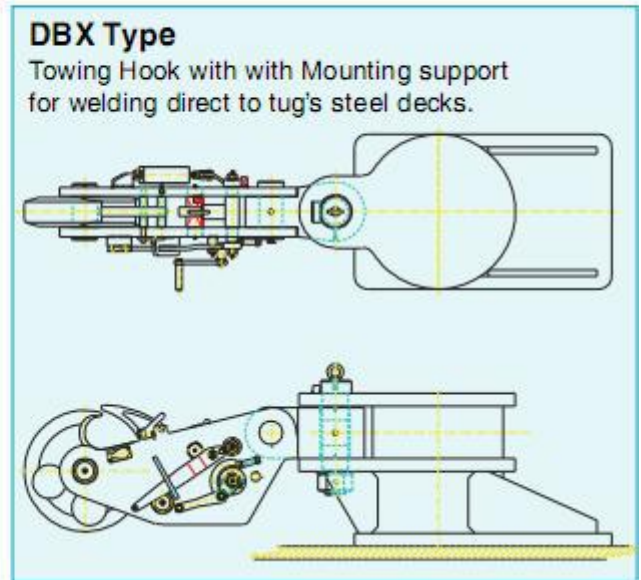
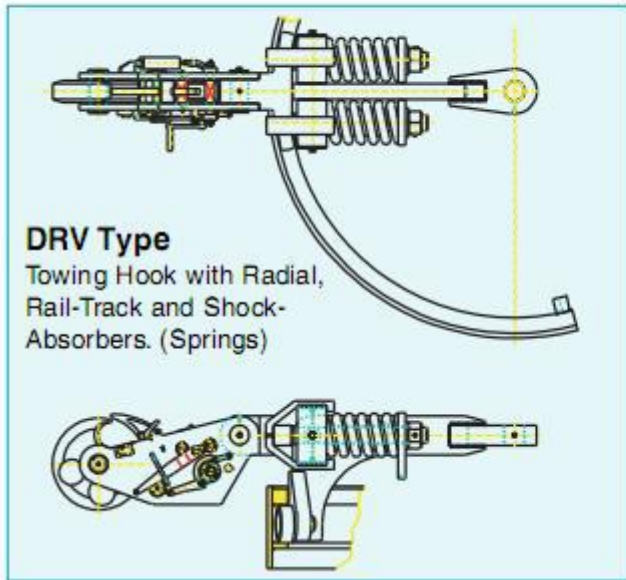


Load Monitoring System

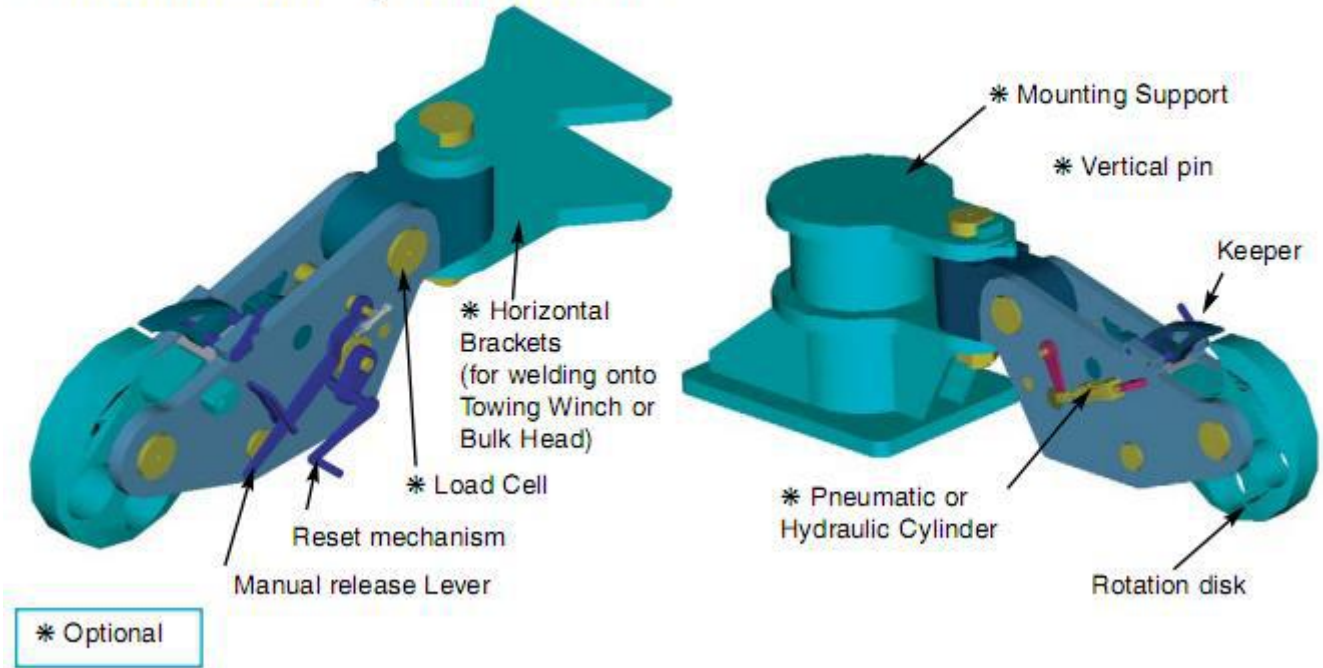
The load monitoring system consists of a load-cell, amplifier and remote display which continuously displays the applied load on the towing hook and gives a high load alarm at an adjustable alarm level.



Special Constructions



Standard and Optional Items

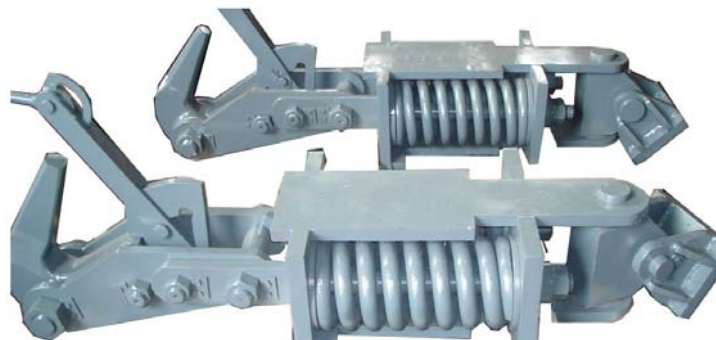


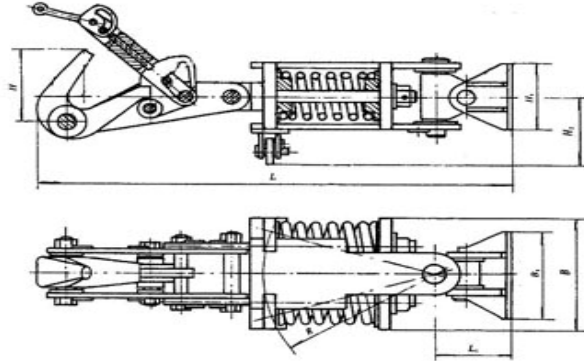
Towing Hook

Feature:

- Can be used for mooring or towing a vessel.
- Fine structure, smooth surface, flexible rotation.
- Material: carbon structure steel, alloy structural steel, spring steel.
- Through tensile test and jiggling-off test

Spring Towing Hook

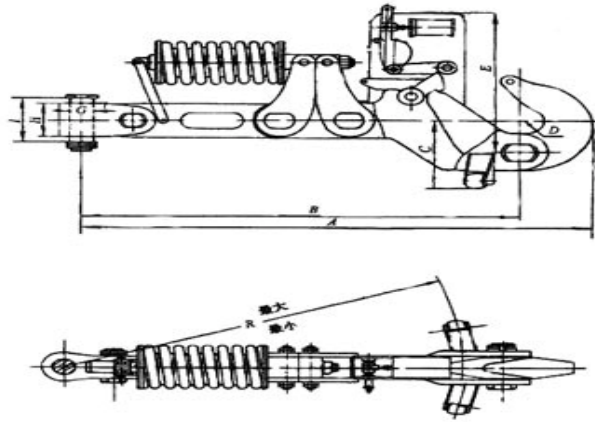




SPRING TOWING HOOK									
Max Load (KN)	L (mm)	L1 (mm)	B (mm)	B1 (mm)	H (mm)	H1 (mm)	H2 (mm)	R (mm)	Weight (kg)
16	822	145	232	150	180	157	157	309	56.5
25	916	142	260	130	190	141	141	345	83.7
40	1180	184	330	208	270	189.5	190	445	177.9
63	1411	196	342	200	284	192	192	563	267.9
100	1710	253	410	260	376	256.5	257	684	558.1
160	1936	270	458	320	400	261	261	741	646.9
220	2448	324	560	310	490	310	310	952	1269.1
320	2128	315	590	342	430	332	332	828	1058.8
400	2259	330	640	320	472	355	355	880	1340.1

Pneumatic Control Towing Hook





PNEUMATIC CONTROL TOWING HOOK												
Max Towing Power(T)	Main Size(mm)					Weight (KG)	Connection Size(mm)			Action Radius (mm)		Cylinder Air Pressure kgf/cm ²
	A	B	C	D	E		G	H	I	Max R	Min R	
20	1830	1630	340	R50	614	342	70	150	210	1475	1400	6-8
30	2015	1780	384	R70	805	595	85	170	240	1805	1690	
40	1935	1655	404	R75	830	697	90	190	260	1590	1490	
60	2270	1906	485	R90	940	1234	110	240	340	1845	1740	