

Quick Release Mooring Systems

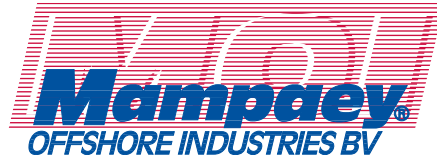
Mampaey Offshore Industries, The Netherlands



Over 100 Years Safe and Reliable Mooring Systems



The Mampaey Headquarters Dordrecht, The Netherlands



In 1904 Mampaey developed the traditional towing hook.

Since then Mampaey have grown to be the Mampaey Offshore Industries B.V. the world leader in Safe Mooring and Towing Systems. Mampaey design and manufacture a complete line of equipment for towing and mooring applications which are in use world-wide.



Gerard and Frank Mampaey

In 1950 the "Quick Release Disc Type Towing Hook" was designed and is still accepted world-wide as the leading standard by shipyards and tugboat operators.

The Mampaey Quick Release Mooring Hooks hooks are specially designed to improve the safety of ship handling operations.

The 1950's saw the introduction of the Mampaey Quick Release Mooring Units and since that time have gained a world wide reputation for strength and reliability.

The Mampaey Quick Release Mooring Hooks are available in sizes to meet all requirements. Remote Release and Load Monitoring can be specified and Powered Capstans can be incorporated into the unit.



Quick Release Mooring Hook

The main features of the Mampaey Quick Release Hooks are:

- Easy and safe release with either a slack or loaded mooring line.
- Free swivelling ensuring perfect alignment and therefore requiring no sliding plates. This makes the Quick Release Hooks the most suitable for use at gas, oil and chemical terminals.
- Locking device to prevent accidental or unauthorised operation.
- Single (one man) action to reset the hook.
- Integral Capstans (optional) for hauling in the mooring line.
- Remote Control Systems (optional) for remote hook release.
- Mooring Load Monitoring Systems (optional) for continuous measurement of mooring loads.



In accordance with latest European standards Mampaey offers fully ATEX certified components throughout their product line range.



Quick Release Mooring Hooks

Mampaey Quick Release Mooring Hooks have been specifically designed for safe manual and optional remote release of mooring lines whilst under full load conditions.

This requires only a minimal effort and only a single action is required to reset the hook back to its working position. The mooring hooks are available as standard with a capacity of 40, 60, 75, 100, 125, 150 and 200 metric tons and can be supplied as single, double, triple, sextuple or quadruple hook assembly.

The mooring units can be mounted onto concrete or steel deck structures and are designed to operate through 180 degrees horizontally and 45 degrees vertically.

They can be supplied with integral capstans and/or various other features such as remote control- and mooring load monitoring systems.



The Mampaey Mooring Hooks can be provided with several optional features, such as:

- Anti Rope Slip Devices (Keepers)
- Electrical Insulation
- Integral Capstans Remote Control System
- Mooring Load Monitoring System
- Coal Dust Covers
- Special coatings and/or hook designs for extreme aggressive atmospheres.
- Special Customized Features

Advantages of Mampaey Mooring Hooks:

- Mampaey Mooring Hooks are manufactured from heavy steel plates, casting not forgings are used.
- All Mampaey mooring hooks can be manually released at 100% of the safe working load with a minimum effort (max. 10 - 20 kgf.)
- All Mampaey mooring hooks are tested individually at 150% of the safe working load.
- Single Movement (One Man) Action to reset the hook.
- Mampaey mooring hooks are painted as standard with ISO approved coating.
- Hooks are Free-swiveling ensuring fully spark free-operation.
- Hooks can be fully disassembled with standard hand tools.
- All moving parts are provided with grease nipples

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 Integrally 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



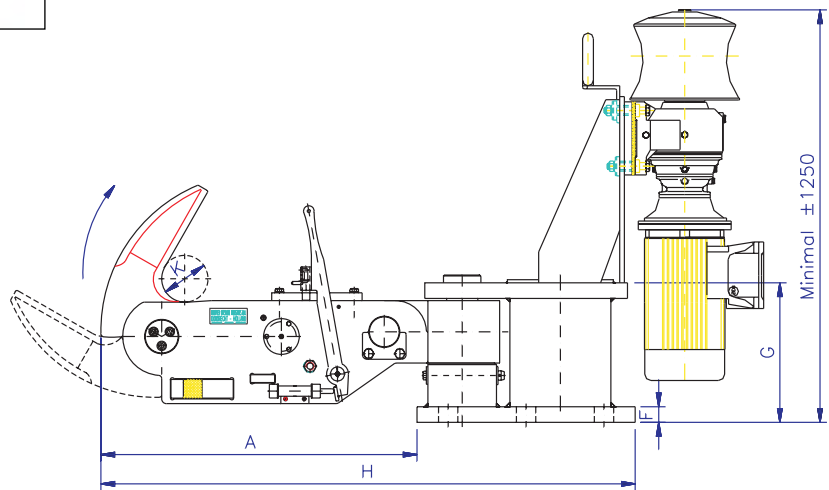
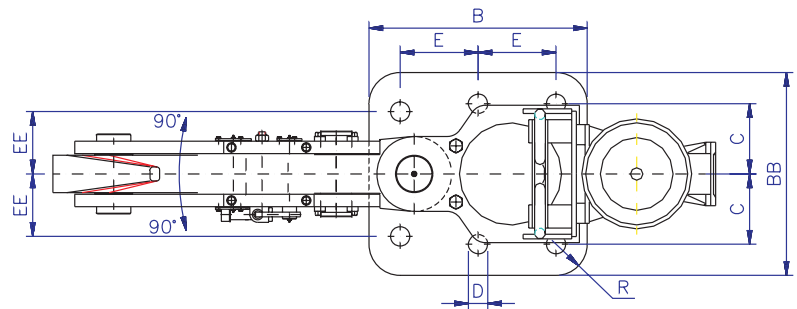
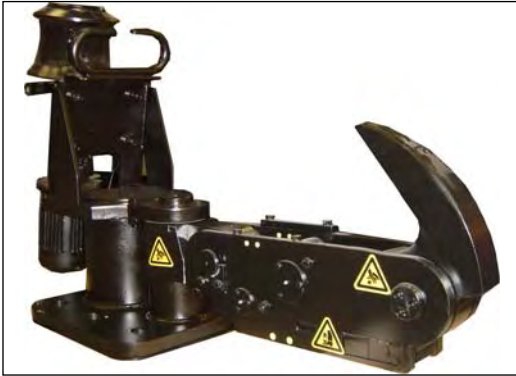
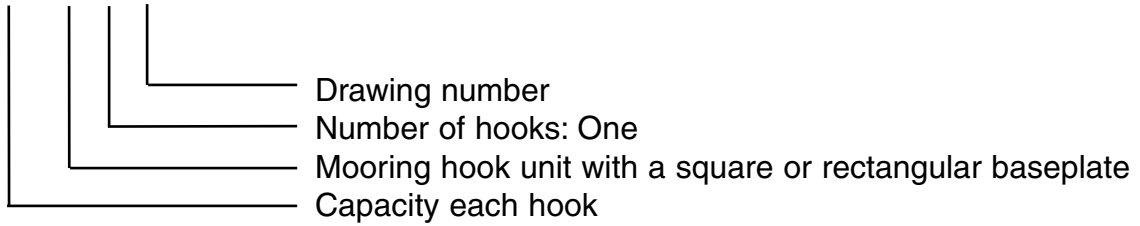
Special Insulated Capstan

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

MHC.000.401.000 = Mooring Unit with Capstan

MHX.000.401.000 = Mooring Unit without Capstan



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

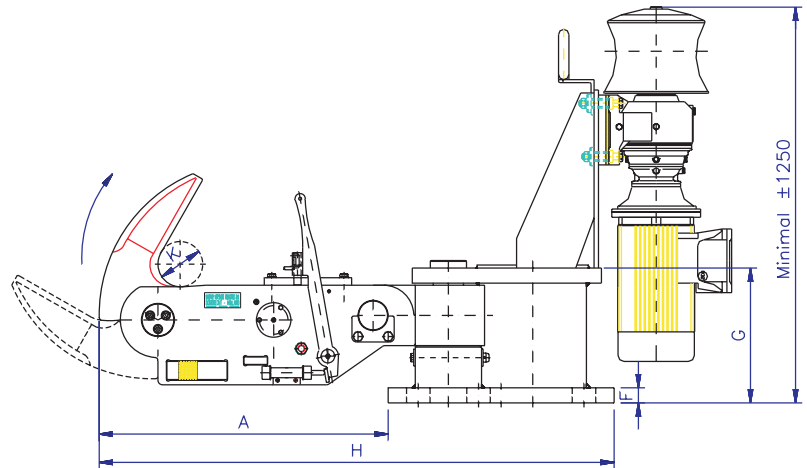
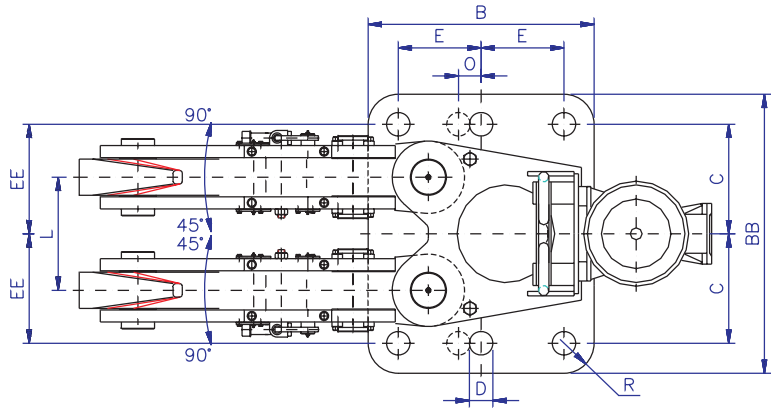
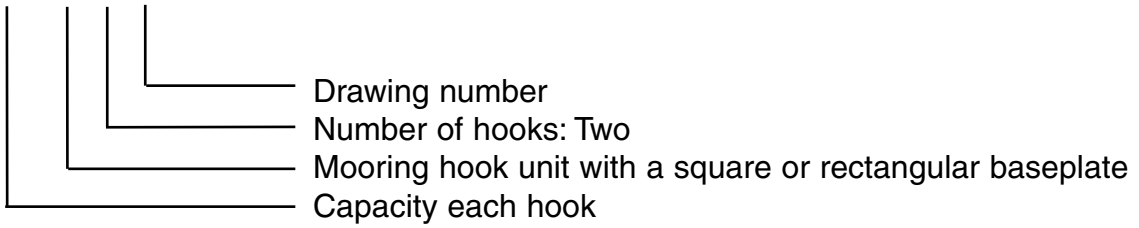
Type	S.W.L.	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	R	X
040.401	400	400	304	668	600	600	225	54	225	225	35	370	1268	96	75	4xM48
060.401	600	600	512	873	650	650	235	54	235	200	45	407	1523	130	90	6xM48
075.401	750	750	587	923	650	650	225	62	225	200	45	417	1573	130	100	6xM56
100.401	1000	1000	792	1014	700	650	225	62	250	200	50	447	1714	150	100	6xM56
125.401	1250	1250	887	1085	700	650	225	70	250	200	55	479	1785	150	100	6xM64
150.401	1500	1500	1253	1255	700	650	225	78	250	195	55	499	1955	150	100	6xM72

Above details for information only

DOUBLE HOOK ASSEMBLY

MHC.000.402.000 = Mooring Unit with Capstan

MHX.000.402.000 = Mooring Unit without Capstan



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

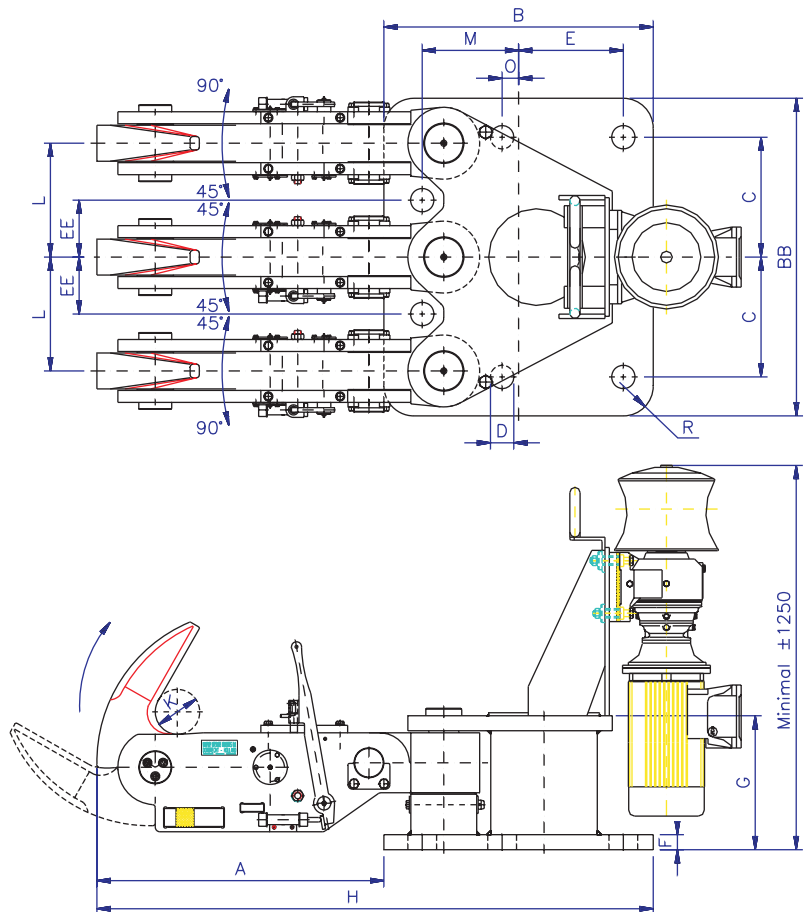
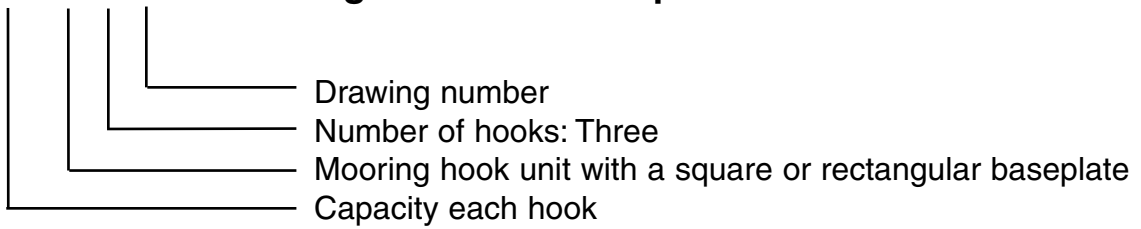
Type	S.W.L	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	R	X
040.402	400	800	491	583	650	700	260	54	235	260	35	370	1233	96	90	6xM48
060.402	600	1200	878	788	750	780	290	62	275	290	45	407	1536	130	100	6xM56
075.402	750	1500	1049	888	750	850	325	70	275	325	45	417	1638	130	100	6xM64
100.402	1000	2000	1439	959	750	925	363	78	275	363	50	447	1709	150	100	6xM72
125.402	1250	2500	1602	1030	750	925	363	86	275	363	55	479	1780	150	100	6xM80
150.402	1500	3000	2332	1210	750	1000	400	86	275	400	55	499	1960	150	100	7xM80

Above details for information only

TRIPLE HOOK ASSEMBLY

MHC.000.403.000 = Mooring Unit with Capstan

MHX.000.403.000 = Mooring Unit without Capstan



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

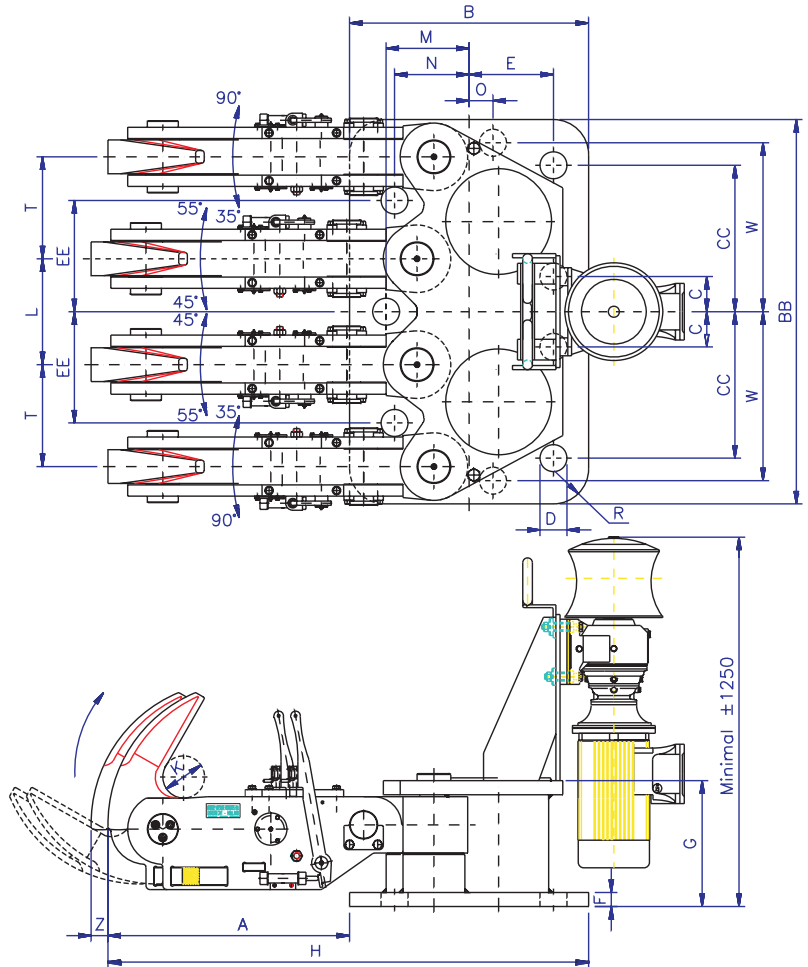
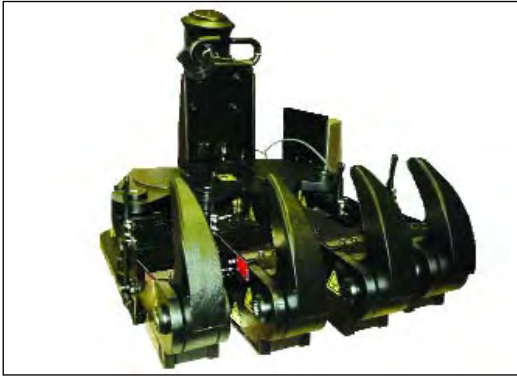
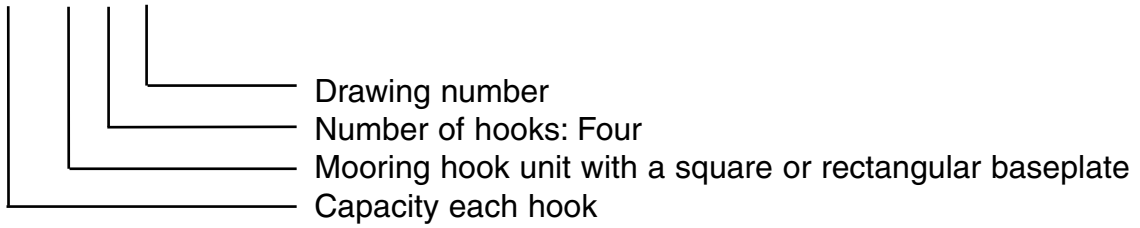
Type	MHC	S.W.L.	Cap.	Wt.	A	B	BB	C	D	E	EE	F	G	H	K	L	M	O	R	X
040.403	400	1200	707	598	700	800	310	62	260	145	35	370	1296	96	290	275		90	6xM56	
060.403	600	1800	1268	863	800	900	335	70	310	162	45	407	1663	130	325	310	65	100	6xM64	
075.403	750	2250	1540	893	850	1000	375	78	325	175	45	417	1743	130	350	325	60	100	6xM72	
100.403	1000	3000	2144	959	900	1060	400	78	350	190	50	447	1859	150	380	322	55	100	7xM72	
125.403	1250	3750	2450	1030	900	1060	400	86	350	190	55	479	1930	150	380	322	55	100	7xM80	
150.403	1500	4500	3586	1235	1020	1200	475	96	385	212	55	499	2255	150	425	385	115	125	7xM90	

Above details for information only

QUADRUPLE HOOK ASSEMBLY

MHC.000.404.000 = Mooring Unit with Capstan

MHX.000.404.000 = Mooring Unit without Capstan



EXPLANATION:

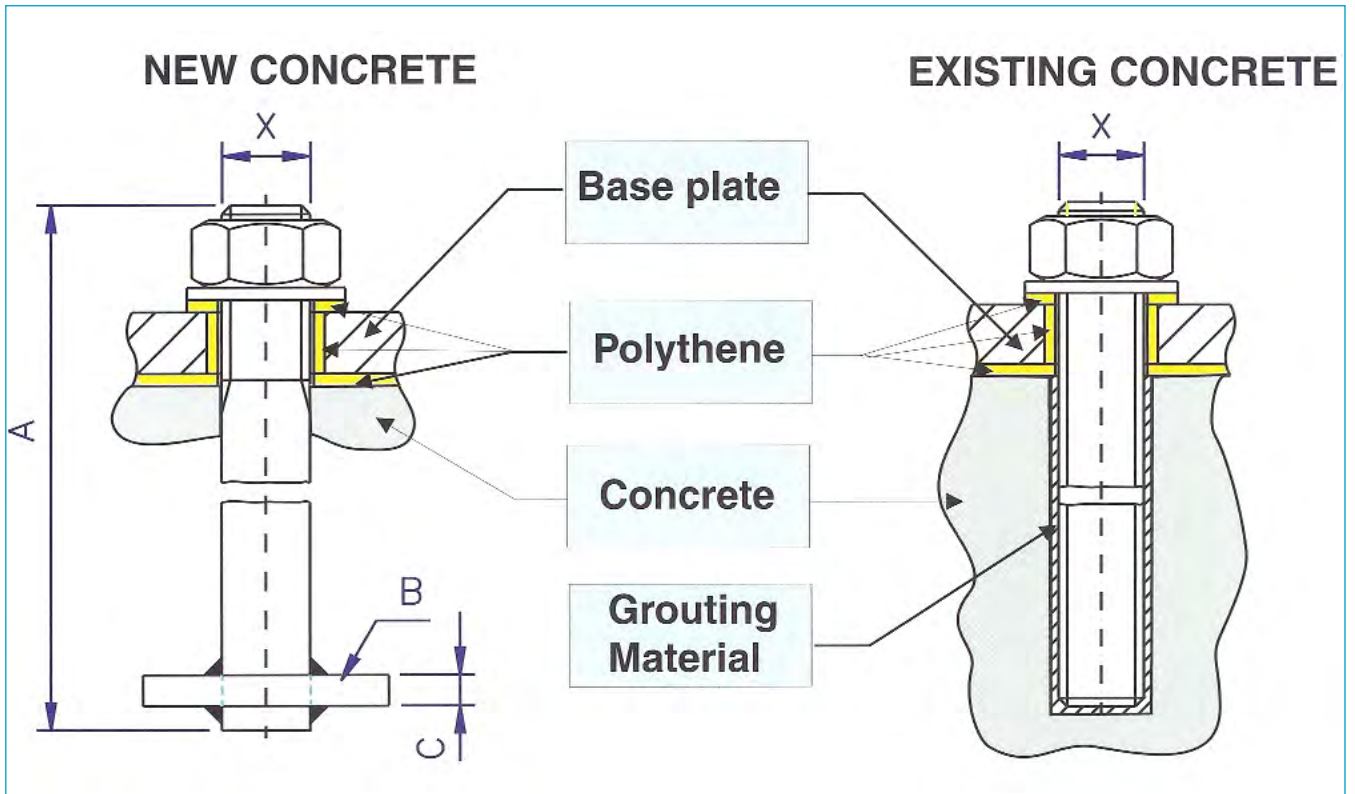
- Cap. = Capacity Mounting Base in kN
Wt. = Weight in kilograms, excl. Capstan
X. = Number and size of HD Bolts
S.W.L. = Working Load in kN

Dimensions in millimeters

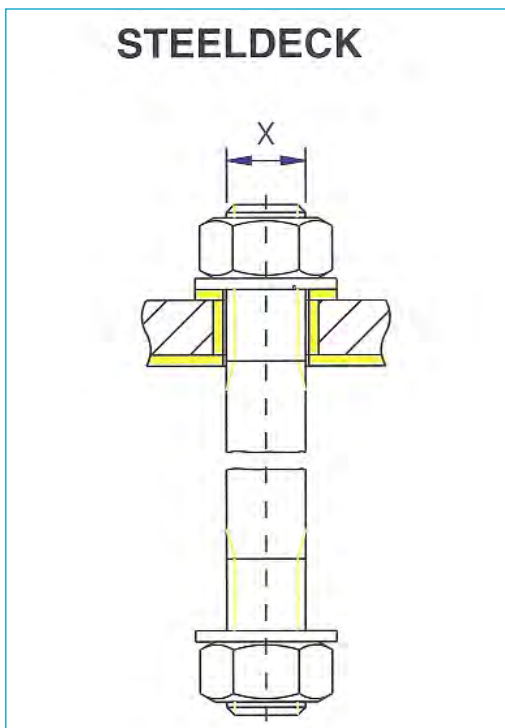
Type	S.W.L.	Cap.	Wt.	A	B	BB	C	CC	D	E	EE	F	G	H	K	L	M	N	R	T	Z	X
040.404	400	1600	938	578	650	1120	100	470	70	235	300	35	370	1228	96	300	235	235	90	300	40	7xM64
060.404	600	2400	1670	778	750	1185	115	445	78	275	330	45	407	1528	130	325	255	230	100	320	56	7xM72
075.404	750	3000	2032	823	800	1300	150	505	86	290	355	45	417	1623	130	350	280	265	100	340	50	7xM80
100.404	1000	4000	2807	859	850	1365	125	520	96	300	395	50	447	1709	150	376	295	265	125	362	60	7xM90
125.404	1250	5000	3199	930	850	1365	125	520	96	300	395	55	479	1780	150	376	295	265	125	362	60	7xM90
150.404	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



Anchorbolt for new and existing concrete



Anchorbolt for steeldeck

Explanation:

X = Size of HD Bolt

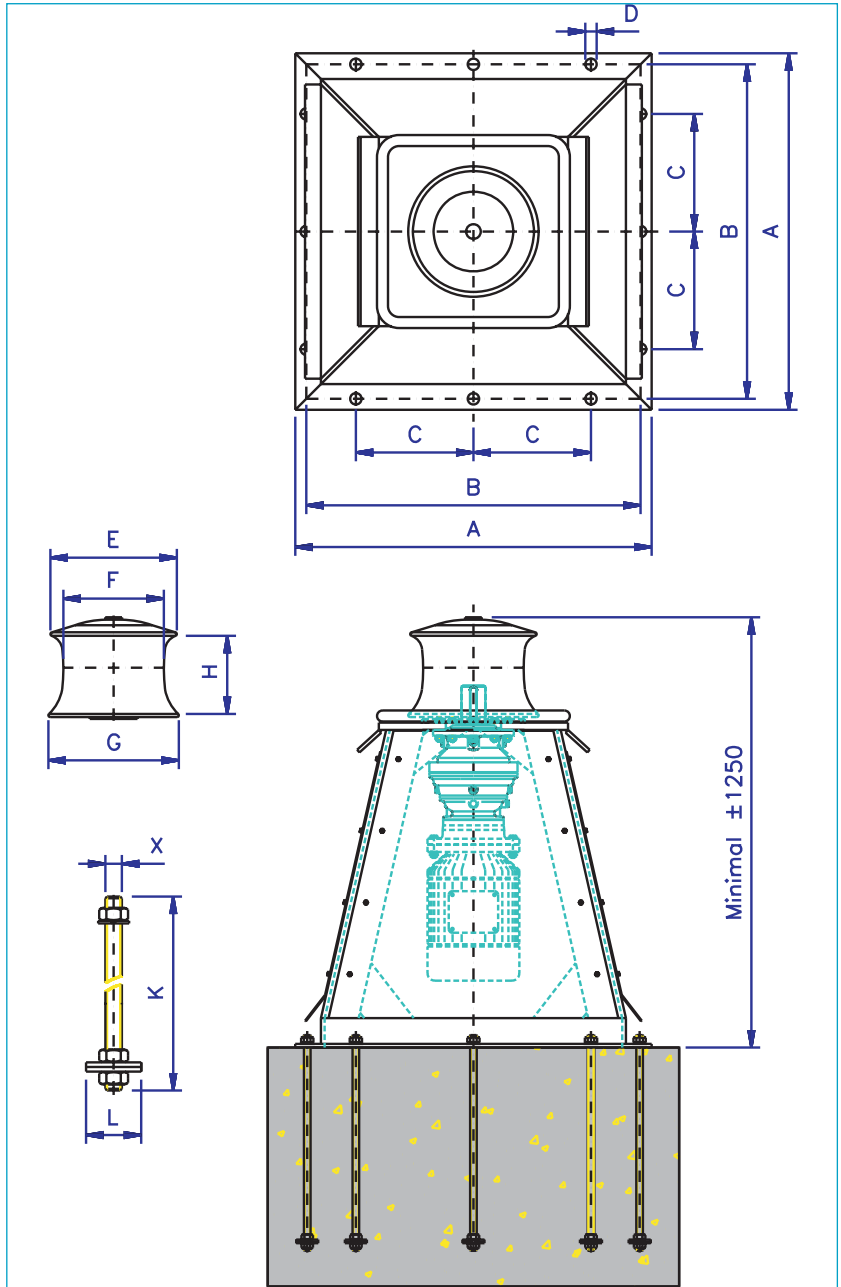
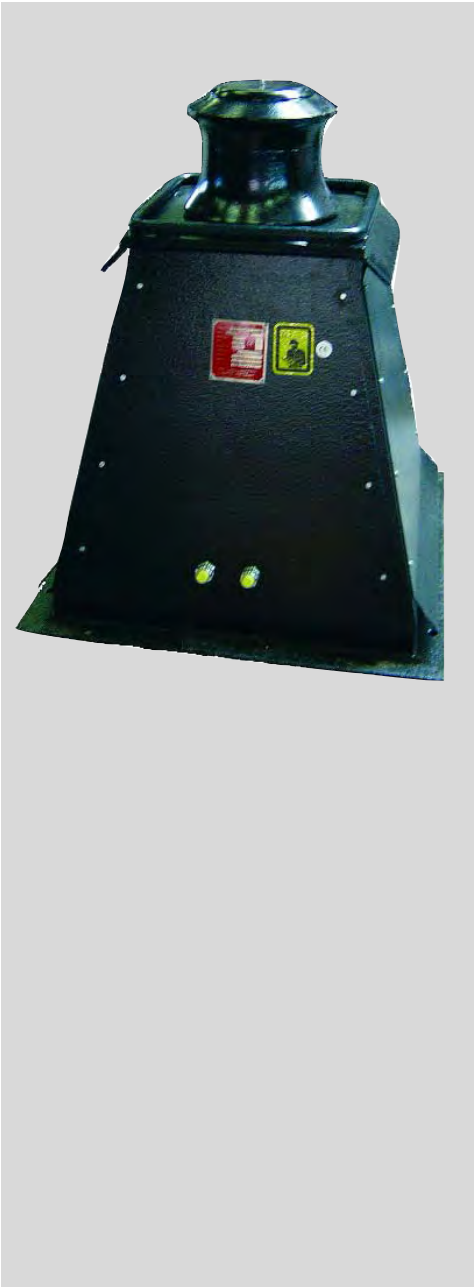
* = Size thread according to ISO Standard DIN 13

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 structures other than the examples shown, HDB dimensions are available on request.

FREE STANDING CAPSTANS



Explanation:

X = Number and size of HD Bolts
 Motor Cap. = Motor Capacity in Kilowatt

Dimensions in millimeters

Motor Cap.	A	B	C	D	E	F	G	H	K	L	X
3 kW	970	910	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20
4 kW	970	910	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20
5,5 kW	970	910	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20
7,5 kW	1016	956	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20
11 Kw	1016	956	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20
15 kW	1016	956	320	Ø22	Ø330	Ø270	Ø335	220	600	Ø60	12xM20

Above details for information only

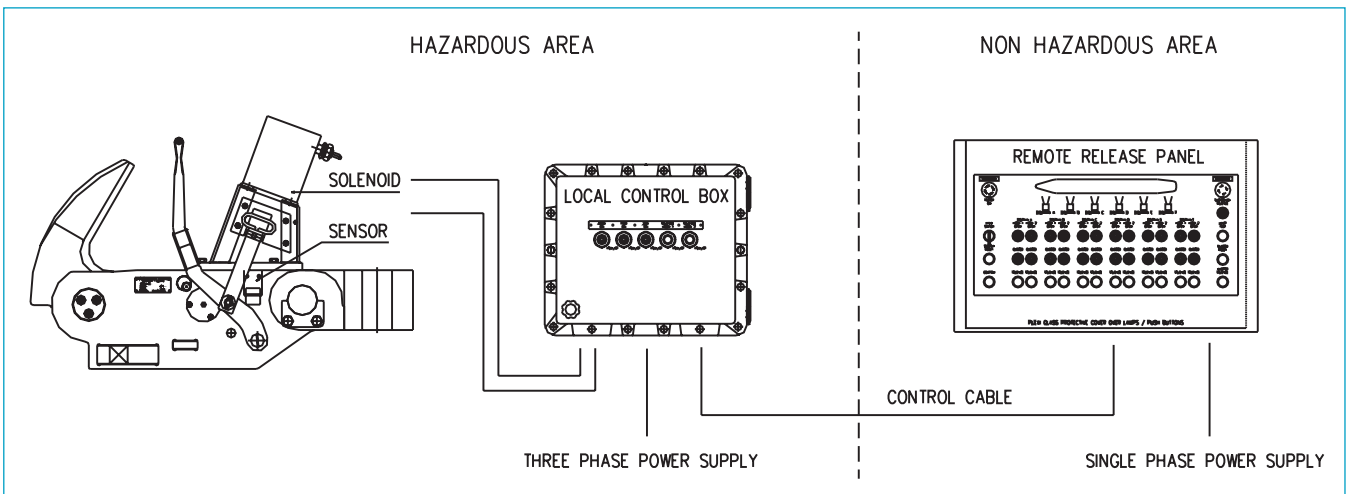
Remote Control Systems

Besides the local manual release, the mooring hooks can also be 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 features such as sensors for indication of hook status, local release

pushbuttons (besides the manual release), telemetry systems, etc. can be provided. Standard available are the electric-electronic remote control and electric-hydraulic remote control, however also electric-pneumatic remote control and other systems are available.

Electric-Electronic Remote Control

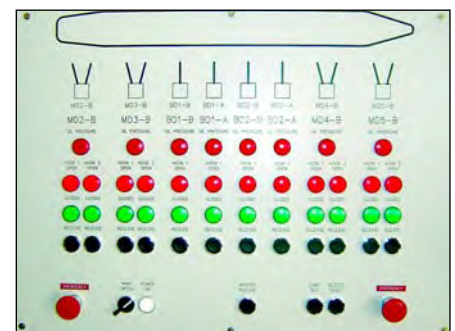
The release mechanism of the mooring hook will be operated by a electric solenoid (magnet) mounted at the hook.



Typical System Schematic Remote Control System



Mooring Hooks with Electric Solenoids (magnets)



Remote Control Panel

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 Hook Unit with Hydraulic Remote Control (suitable for -32° C operation)

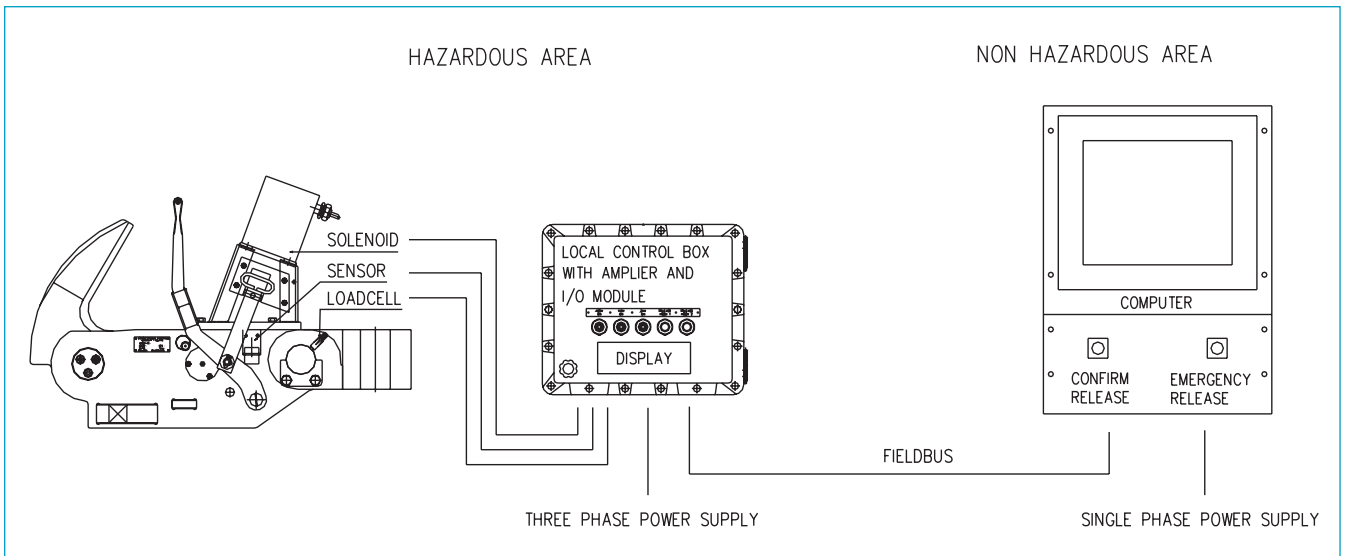
Mooring Load Monitoring Systems

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

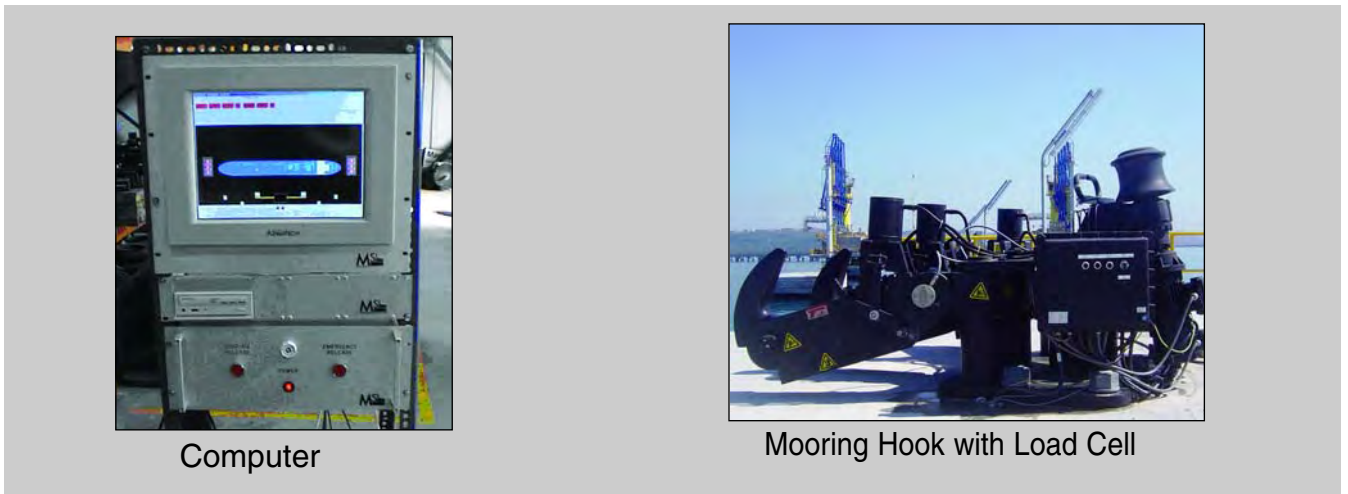
The mooring load is measured by the integrated load cell, giving the proportional load in the mooring line through an amplifier-module to the computer in the control room. This computer and optional hand-held pager system will provide real

time visual indication of the mooring situation and enables safe mooring line tensioning. With the use of I/O modules, also the remote control signals will go through the signal cable of the M.L.M. Hook release can be achieved from the M.L.M. computer.

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



Typical System Mooring Load Monitoring System



New drawing is coming soon

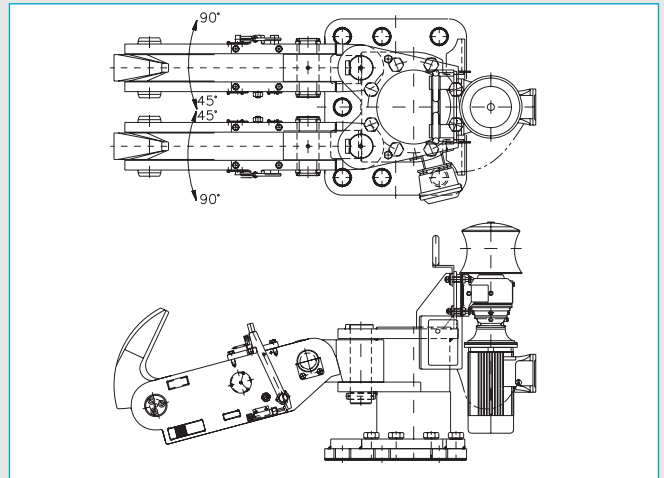
Communication Cable Layout

Special Configurations

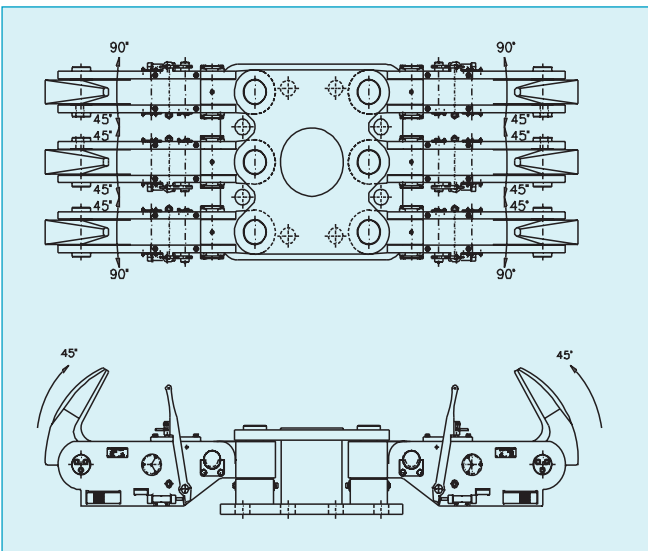
Besides the Mooring Hook Units shown in the previous datasheet, Mampaey also supplies other configurations. Some examples:



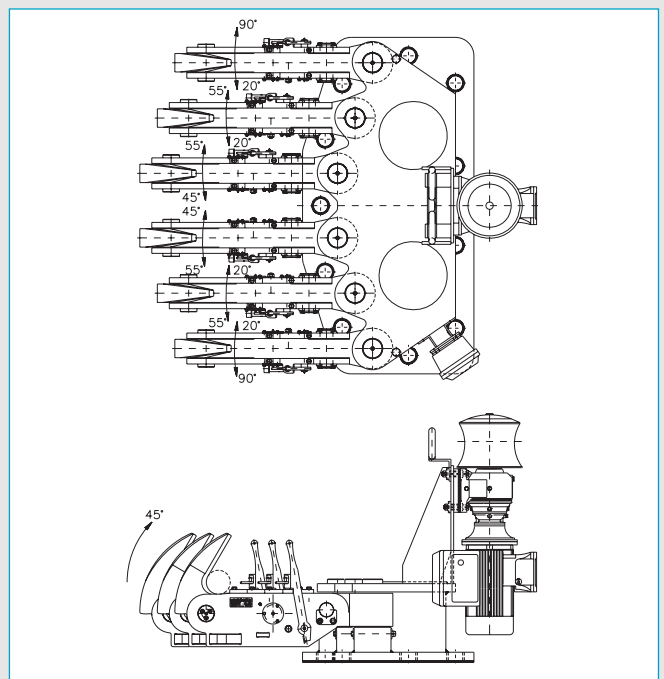
Quadruple Hook Unit Back to Back



Break-off Bolt Construction



Sextuple Hook Unit Back to Back



Sextuple Hook Unit



Quick Release Mooring Pulley

Please contact us for any other required design or hooks with higher capacities.

If you require a proposal from us then please copy this questionnaire, fill in your requirements and send it to us by fax or e-mail

QUESTIONNAIRE : MAMPAEY QUICK RELEASE MOORING HOOKS

1. Project Name / Country ?
2. Number of Mooring Units / Nominal - Maximum Load Each Unit ?
3. Number of Hooks Each Mooring Unit / Nominal - Maximum Load Each Hook ?
4. Deck Structure : Steel or Concrete ?
5. Holding Down Bolts Required : YES / NO
If Yes : New Concrete / Existing Concrete / Steel Deck ?
6. Maximum Vertical Hook Angle from Horizontal Level ?
7. Standard Coating Acceptable : YES / NO
One (1) Layer Epoxy Zinc D.F.T. 40 mu. and One (1) Layer Epoxy (Black) D.F.T. 200 mu., after Shotblasting to SA 2.5.
8. Required Delivery Time for :
 - a) Holding Down Bolts (If Required) ?
 - b) Main Materials ?
9. Area Classification ?
 - a) Hazardous Zone 1 or 2 Area (CENELEC) [Equivalent to Class 1 Div 1 or 2 (NEC)]
 - b) Non-Hazardous Areas (Non-Classified).
10. Integral Capstan Required : YES / NO
 - a) Required Line-Speed ? : 15 / 20 / 25 / 30 / Meters / Minute
 - b) Required Nominal (= Running) Pull ? : 10 / 15 / 20 / 25 / 30 / kN
[Note : Starting Pull = 2 Times Nominal Pull]
 - c) Available Main Power : 380 / 400 / 415 / 440 / 460 / 480 V - 50 / 60 Hz
 - d) Braking System Required : YES / NO
 - d1) Mechanical Braking Device [Backstop Bearing] (Not for Reverse Operation)
 - d2) Electrical Braking Device (Brake Motor) [Suitable for Reverse Operation]
 - e) Local Motor-Starter at Each Mooring Unit Required : YES / NO
 - e1) Non-Reversible Type Starter [for combination with mechanical or electrical brake
 - e2) Reversible Type Starter (for combination with electric brake only)
 - f) Any additional Features for the capstans ?
11. Remote Control System Required : YES / NO
 - a) Electric-Electronic Remote Control or Electric-Hydraulic Remote Control
 - b) Are Sensors (Proximity Switches) Required : YES / NO
 - c) Are Local Electric Release Push-Buttons Required : YES / NO
12. Mooring Load Monitoring System Required : YES / NO
13. Berthing Approach System Required : YES / NO
14. Pressurized Control Room or Indoor Non-Hazardous Area Available : YES / NO
15. Any Further Specific Project Requirements(s) ?



Commissioning and Training.

After being installed and electrically connected equipment can be commissioned and started-up by a Mampaey Engineer. Training for jetty and control room personnel can also be performed either at Mampaey's premises and/or at site

Other Mampaey Products:



Quick Release Towing Hooks



Offshore Hooks (FPSO)



Mooring Buoys with Quick Release Hooks



Berthing Approach System

Specials: Sometimes despite our wide range of standard units a customer has a need for a custom built unit. In this case please feel free to contact one of our highly trained personnel at the address indicated below and we will be pleased to assist you.

Postal address:
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The Netherlands
Tel.: +31 (0)78 617 33 22



Visiting address:
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3316 BP Dordrecht
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Internet: <http://www.mampaey.com>