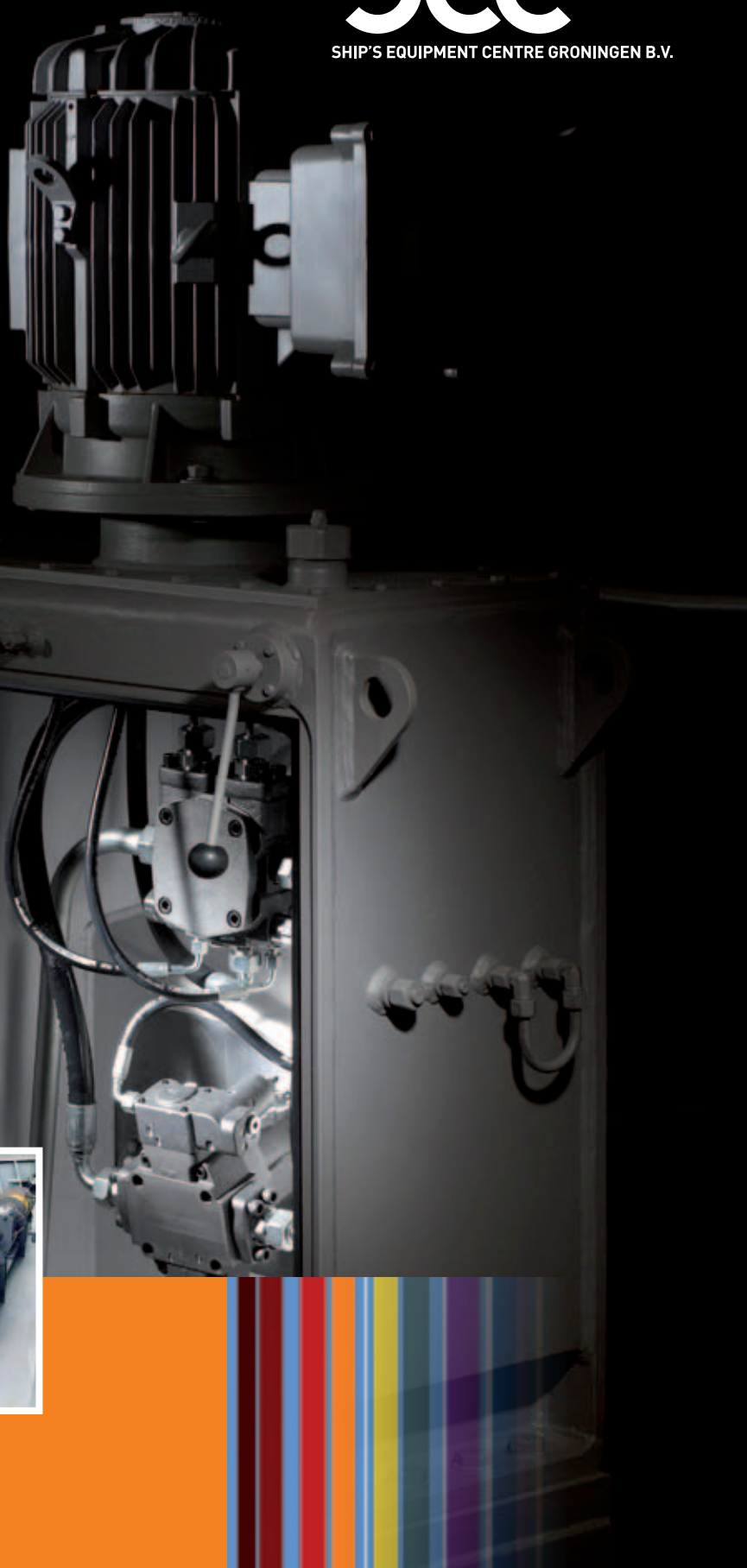


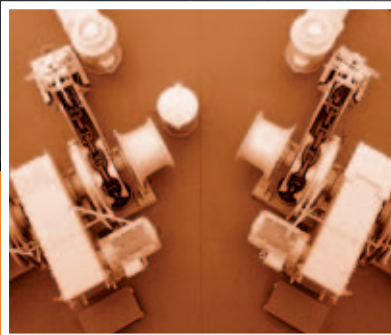
# Catalogue

**SEC**  
SHIP'S EQUIPMENT CENTRE GRONINGEN B.V.





sec



# CONTENT

<b>Winches</b>	<b>5</b>
<b>Chain Stoppers</b>	<b>13</b>
<b>Pool® Anchors</b>	<b>14</b>
<b>Mooring Equipment</b>	<b>19</b>
<b>Service/Spare parts</b>	<b>22</b>
<b>Equipment Table</b>	<b>23</b>



SHIP'S EQUIPMENT CENTRE GRONINGEN B.V.

# SHIP'S EQUIPMENT CENTRE GRONINGEN B.V.

**Founded in 1890 as Ten Horn Winches, Ship's Equipment Centre Groningen B.V. (SEC) designs, engineers and manufactures deck equipment of the highest quality. Thanks to close cooperation with leading yards, shipowners and navies, our products comply with the very latest maritime industry requirements.**

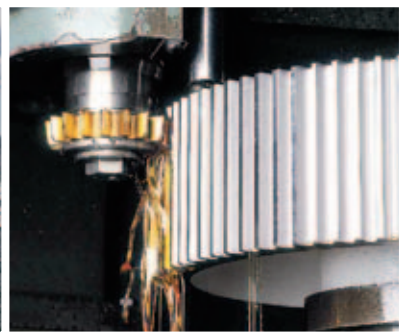
Low on maintenance and high on sustainability, SEC's TEN HORN winches are available with three drive systems: electric, conventional hydraulic and electric-hydraulic. From anchor and mooring winches to sophisticated towing winches and special purpose winches, all products are built to classification and to your specific requirements. Our compact and turnkey electric-hydraulic winches are unique in the market as the hydraulic power pack is fully integrated in the gearbox. With no piping and post-installation flushing required, you will enjoy major savings in installation time as well as hydraulic oil costs.

SEC is the manufacturer of the innovative POOL® anchors. Available in the range of 8 kg to 26.000 kg, they are the world's leading brand in High Holding Power and Super High Holding Power anchors.

Weight savings of 25 percent compared to conventional anchors can easily work out to extra cargo on board. They are also balanced anchors that do not swing against the hull and are exceptionally easy to handle.

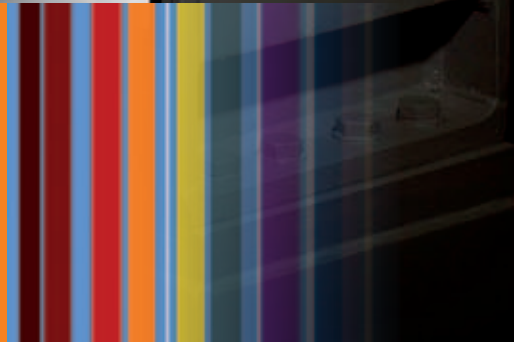
POOL® anchors also offer major savings in time when dropping and raising.

To complete your deck equipment package, SEC supplies ISO- and DIN-compliant bollards, chocks, fairleads and warping rollers for every type of vessel. Most items are available directly from stock, making us a valued partner for repair yards. The ability to give advice on mooring arrangements during the design stage of your vessel adds further value.

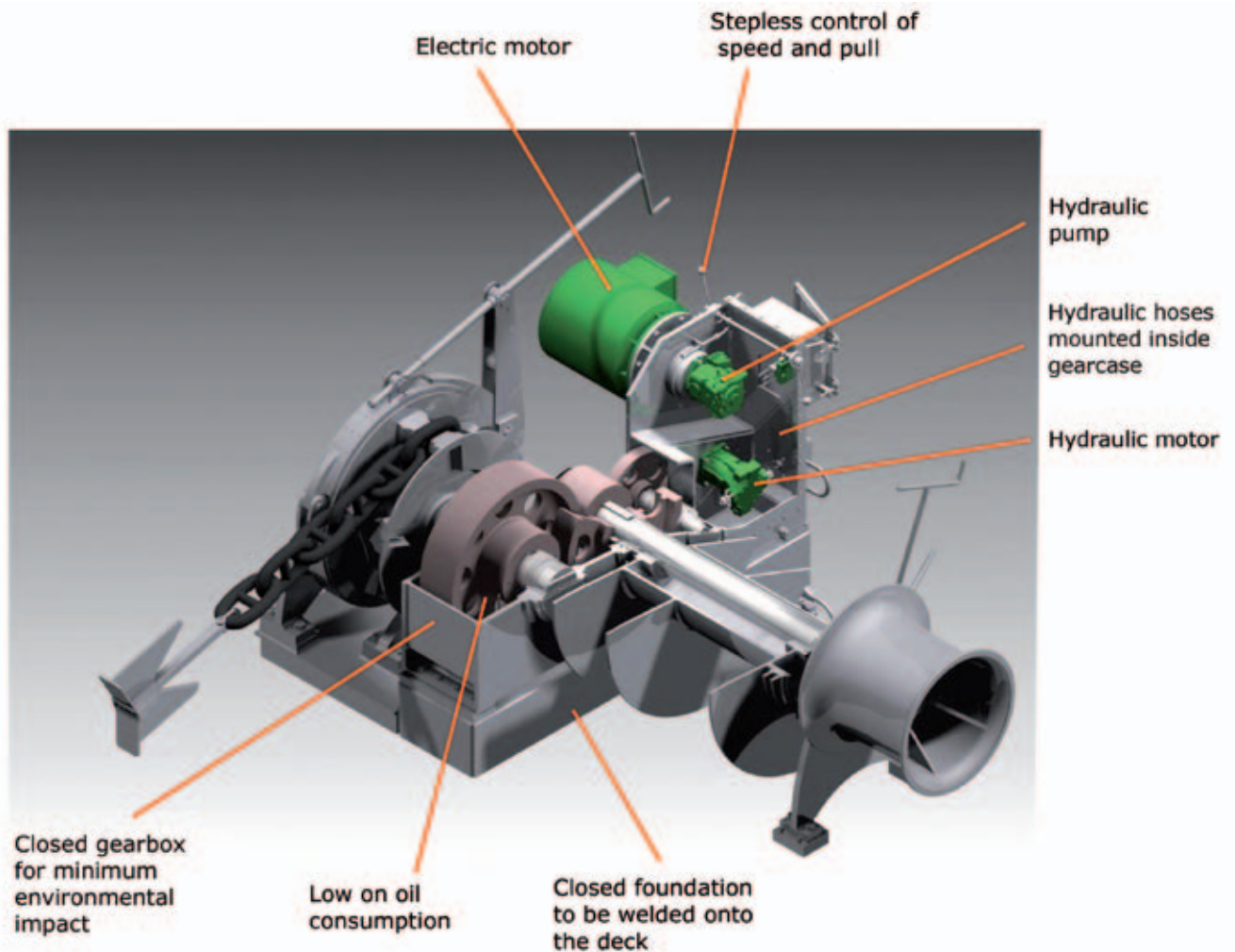




# WINCHES



# ELECTRIC-HYDRAULIC CONCEPT

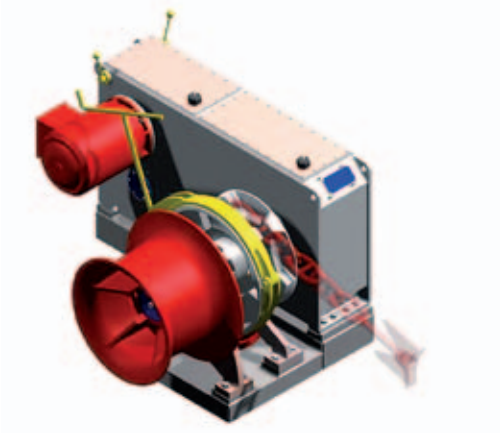


The electric-hydraulic winch combines the advantages of the electric and the hydraulic winches into one compact design. The main shaft is driven by a variable hydro-motor, which enables stepless control of speed and pull of the chainwheel or drum. The incorporated pump is powered by an electric motor mounted on the winch connected by a flange. Therefore, hydraulic piping from below deck to the winch is no longer necessary. The winch is standard delivered including foundation. Consequently, installation is very simple. The winch can easily be welded to the deck. After connection to

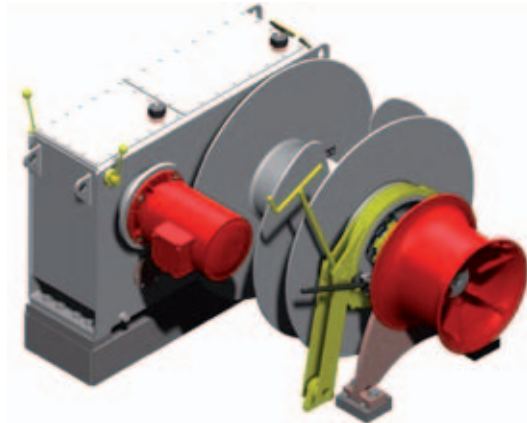
the electrical main system the winch is ready for use. SEC has approval of all major classification societies for this type of winch. Adjustments to the length of the winch or the height of the foundation can be made by SEC design department. Self-tensioning and remote control are options that can easily be applied to this winch. All hydraulic components are incorporated in a separate hydraulic tank that is fully integrated in the totally closed gearbox. This gives the advantage that environmental influences will have no effect on the operational system.

# ELECTRIC HYDRAULIC WINCH

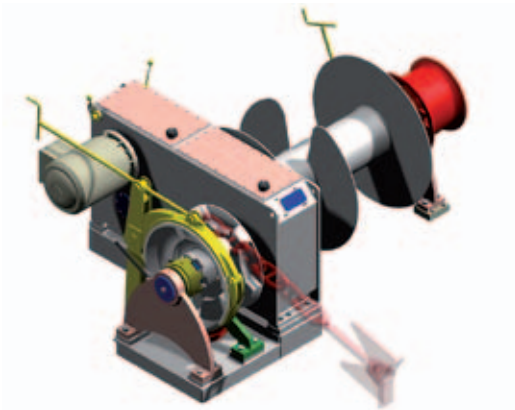
## ANCHOR WINCH



## MOORING WINCH



## ANCHOR MOORING WINCH



- Combined advantages of both electric and hydraulic winch.
- Time saving installation procedure.
- Stepless control of speed and pull.
- Low maintenance.
- Closed gearbox.
- Medium pressure.
- High quality components.
- No external hydraulic piping necessary.

## OPTIONAL FEATURES

### Remote control

Remote control of the winches is specially developed to ease the control and monitoring for the operators. Also (radio) remote control is available.



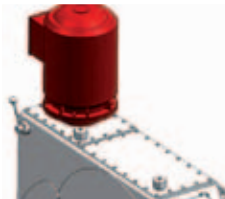
### Warping head

Additional feature for anchor winches to have the possibility for easy mooring without the storing possibility.



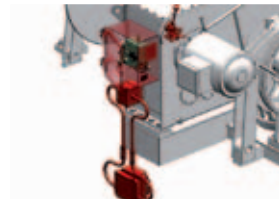
### E-motor on top/bottom

In some cases it is necessary to save space by mounting the electric motor on the top of the gearcase or on the bottom.



### Selftensioning

Used for mooring winches to prevent slacking of the mooring lines.



# ELECTRIC WINCHES WITH FREQUENCY CONTROL

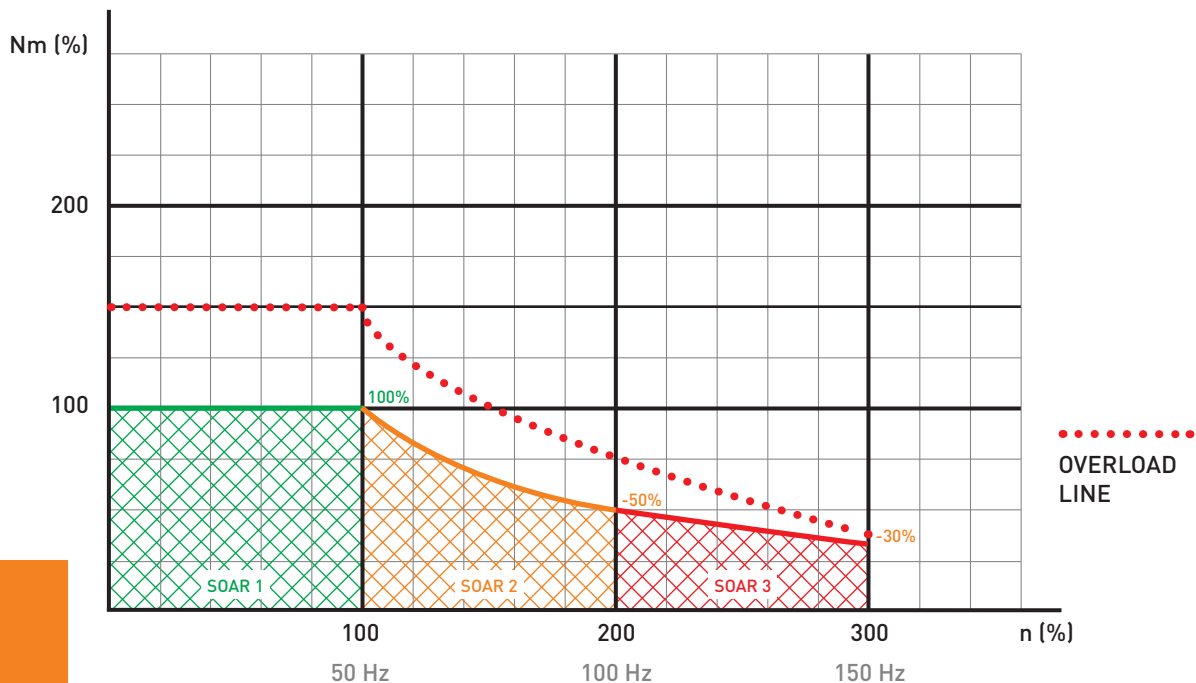
The optional feature for electric winches is the frequency drive. The benefits for frequency drive are plentiful. The generator needed for frequency drive can be smaller because of the low starting current. As energy is only needed during operating it is also more environmental friendly. The auto-mooring system comes without a loadcell or pulse encoder. Installation can be done swift because of less cables used. Older winches without frequency drive can easily be upgraded to be frequency drive controlled while using the existing motors, even auto-

mooring is possible for every winch.

The precise stepless control is made for smooth operation. The systems has an easy monitoring by color graphic display and monitors cable length, cable tension and line- and winch drum speed(options). The winch is protected against peak torque and overloading and reduces wear on ropes and the winch. Also the frequency drive has the possibility for remote shore support.

The conclusion can be that frequency control makes for better performance and lower cost of ownership.

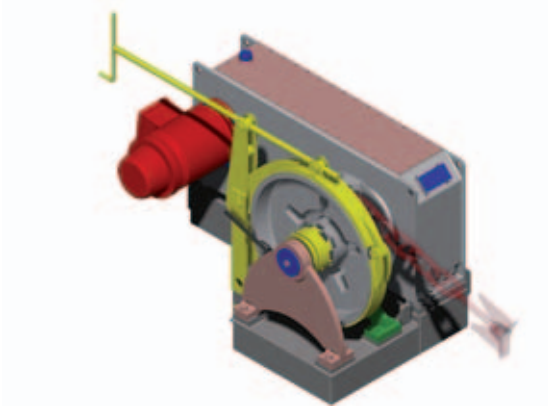
## FREQUENCY TORQUE



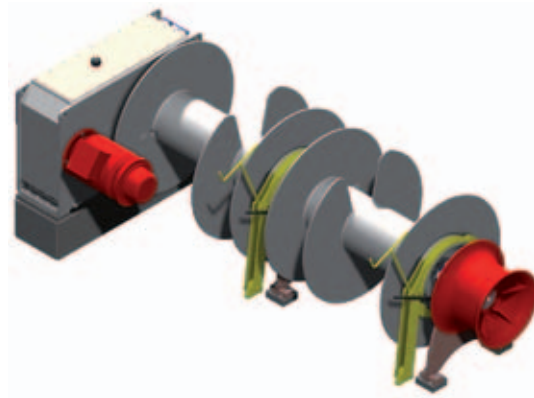


# ELECTRIC WINCH

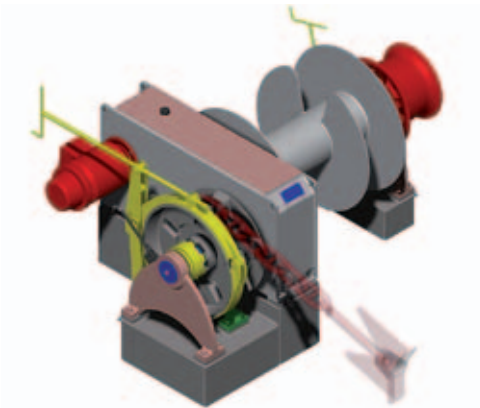
## ANCHOR WINCH



## MOORING WINCH



## ANCHOR MOORING WINCH



- Low noise.
- No hydraulic oil.
- Environmental green technology.
- Less maintenance.
- No hydraulic specialist needed.
- Eliminates hydraulic oil and piping.

## OPTIONAL FEATURES

### Remote control

Remote control of the winches is specially developed to ease the control and monitoring for the operators. Also (radio) remote control is available.



### Warping head

Additional feature for winches to have the possibility for easy mooring without the storing possibility.



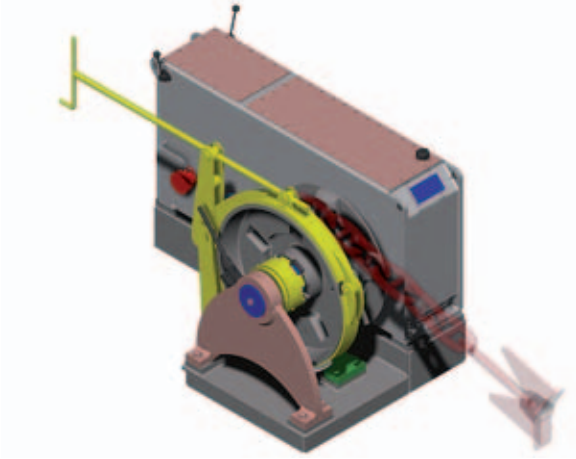
### 2 or 3 speed

Available in 2 or 3 speed.

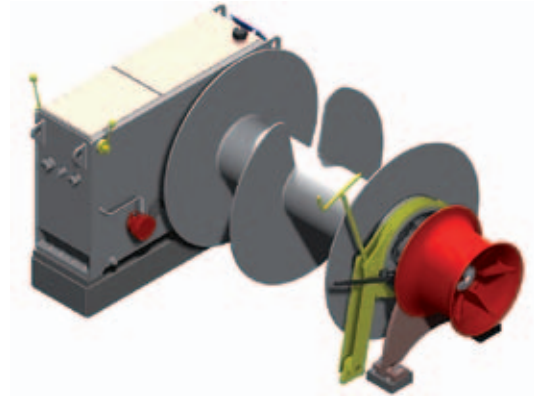


# HYDRAULIC WINCH

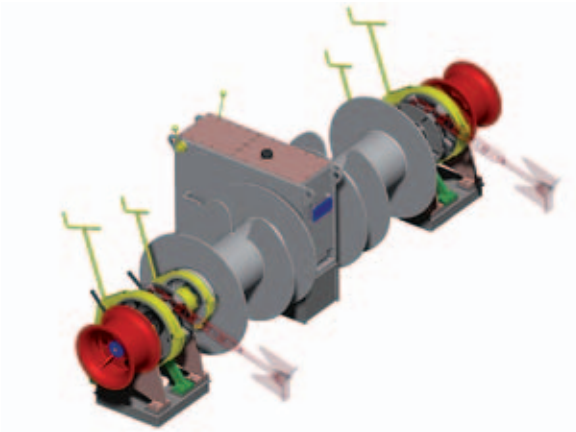
## ANCHOR WINCH



## MOORING WINCH



## ANCHOR MOORING WINCH



- Stepless speed control.
- Compact Construction.
- Only one hydraulic drive required.
- Operation either mechanical or electrical.
- Supply of oil to be realized by a combined existing power pack already on board.

## OPTIONAL FEATURES

### Warping head

Additional feature for winches to have the possibility for easy mooring without the storing possibility.



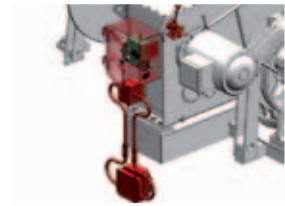
### Separate powerpack

All components in one block and winch specific manufactured. The powerpack can also be made suitable for other hydraulic systems aboard ship.



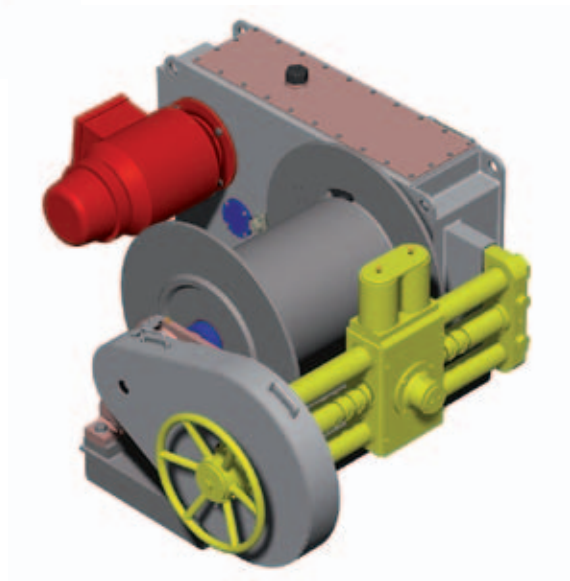
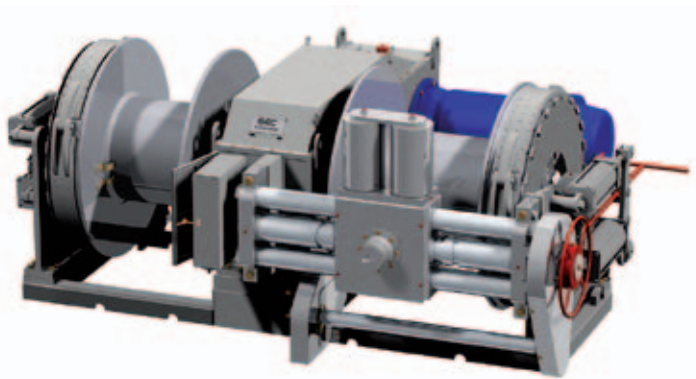
### Selftensioning

Only used for mooring winches to prevent slacking of the mooring lines. When tides are differing or when quick loading/unloading is demanded.



# TOWING WINCH

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Next to the production of the “standard” anchor and mooring winches Ship’s Equipment Centre Groningen is also able to produce client specific winches. Tugger winches as well as towing winches have been produced in the past and are in full development at present. Our engineering department is a reliable partner in the design and engineering process of the deck machinery of a vessel. Our engineers are available to answer the most practical questions concerning space, weight or strength limitations of the required winches.



# CAPSTAN

## MOORING CAPSTAN



- Light weight, compact shape.
- E-motor mounted below deck.
- Disc brake mounted on the E-motor.
- Standard 30 kN till 150 kN but larger on request possible.
- Capstans can be delivered according DIN 84154.
- Also available with hydraulic drive.

## ANCHOR CAPSTAN



- 16 – 24 mm chain diameter is standard range.
- Smaller or larger chain diameter on request.
- Gypsywheel clutchable.
- Fixed warping head.
- Equipped with a bandbrake.
- Pullingforce and warpinghead diameter depends on chaindiameter.
- Also available hydraulic drive.

## OPTIONAL FEATURES

### Seperate powerpack / hydraulic driven

All components in one block and winch specific manufactured.  
The powerpack can also be made suitable for other hydraulic systems aboard ship.



# CHAIN STOPPERS/HAWSER ROLLERS

## RK 12,5 - 84



The RK chain stopper is a so-called fall over type of chain stopper. The advantage of this chain stopper is the semi-automatic securing of the chain in the chain stopper during unforeseen slipping of the chain.

This RK-type can also easily be mounted by bolting down the bottom plate to the deck. According to classification society rules all RK chain stoppers have a holding force of 80% of chain breaking strength.

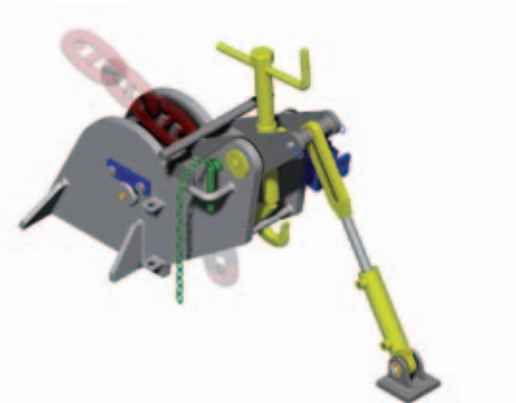
## RKR 16 - 84



The RKR chain stopper is the top model in the chain stopper range. Pulling the spindle on the stopper enables tight securing of the anchor in the anchor pocket or against the vessel's hull.

According to classification society rules all RKR chain stoppers have a holding force of 80% of the chain breaking strength. It is possible to mount the chain stopper at an angle in order to adjust the flow of the chain towards the hawserpipe.

## RKR WITH REMOTE



- Same as standard RKR chain stopper but with a remote control which can be operated from the bridge.
- In both electric and hydraulic available.

## HAWSER ROLLER B-34 TILL B-69



- Light construction.
- Big crank handle for manual operation.
- Footbrake option.
- Made out of steel with a 2 layer primer as a standard.
- Galvanising the hawser roller is optional possible.

# POOL<sup>®</sup> ANCHOR

**The original SEC POOL<sup>®</sup> anchors are the outcome of centuries of ship's anchor development. The High Holding Power (HHP) and Super High Holding Power (SHHP) ship's anchors have been developed because of the need for more reliability and less weight. The leading types of these anchors are the POOL<sup>®</sup> anchors.**

The predicate HHP allows a weight reduction of 25% compared to a conventional anchor for the same equipment number. This has the advantage that the vessel has to carry less weight during its lifetime and is more save, as the remaining holding power is at least 1,5 times the holding power of a conventional anchor.

## **Quick and safe heaving**

The original SEC POOL<sup>®</sup> anchors have big crownplates, which prevent the anchor from digging in too deep. This results in a relatively low breakout-force. This results in quick and safe heaving, fewer losses due to stuck anchors and less damage to the anchors.

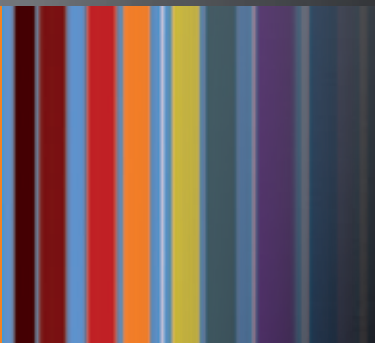
## **Standard or fully balanced**

The original SEC POOL<sup>®</sup> anchors are recognised by all major classification societies and have an excellent reputation among shipowners and shipyards all over the world. The POOL<sup>®</sup> anchors are available in the range from 8 kg up to 26,000 kg. The anchors can be made standard or fully balanced and optional with a 10% shortened shank. To complete your query SEC is able to deliver superbox swivels, anchor end connections and the anchor pocket design. In 2010 SEC introduced the TWM anchor. The TWM anchor comes forth from years of testing and listening to our clients on how to improve the anchors. The TWM anchor will have less to endure from wear and tear and better spread of the forces put on the anchor.





**POOL<sup>®</sup> ANCHOR**



# POOL® ANCHORS

## TWM ANCHOR



- TWM anchors have the predicate HHP which allows a weight reduction of 25%.
- Welded from high tensile steel plate material.
- The new placed side skirts reinforce the flukes and take away the strain on the welds.
- The new formed anchorhouse makes the shaft have a double lay up.
- The stopperplate welded between the 2-side plates improves the contact to the ships hull.
- 10% shortened shank possible.

## TW ANCHOR



- TW anchors have the predicate HHP which allows a weight reduction of 25%.
- Welded from high tensile steel plate material.
- TW anchors have large flat flukes and crownplates that prevent the anchor from digging in too deep.
- The extreme points and the inner edges of the flukes are sharpened to enable them to dig in easily and quick.
- Low force in transverse direction is necessary to lift the anchor.
- 10% shortened shank possible.



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## N ANCHOR



- N anchors have the predicate HHP which allows a weight reduction of 25%.
- Welded from high tensile steel plate material.
- Flukes are made out of two shaped plates welded together.
- Large resistance against bending force.
- Very stable anchoring due to wider extreme points than the width of the crownplates.
- Easy stowing.
- 10% shortened shank possible.

## SHHP ANCHOR



- HHP TW anchors have the predicate SHHP which allows a weight reduction of 50%.
- Welded from high tensile steel plate material.
- Optimal performance.
- Suitable for high speed craft.
- Four times the holding power of a conventional anchor.
- 10% shortened shank possible.

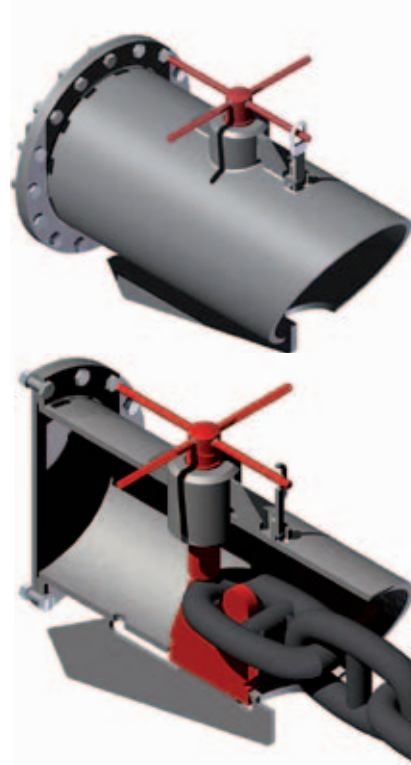
# ANCHOR AND CHAIN ACCESSORIES

## SUPERBOX SWIVEL



The POOL® superbox swivel is the shortest possible approved connection between anchor and chain. Application of the POOL® superbox swivel means a shorter distance between anchorshank and chain stopper. The winches can be placed more to the front of the vessel, which reduces the required deck area. The POOL® superbox swivel can be connected directly to the anchorshank. No crownshackle is required.

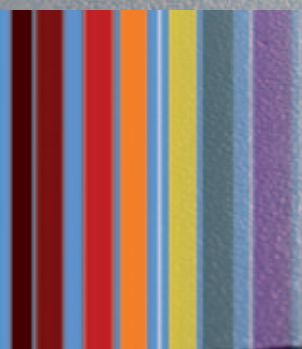
## ANCHOR END CONNECTION



The proper use of the anchor end connection (acc.DIN81860) increases safety onboard during emergency situation. One single person is able to disconnect the chain. The studlink can be manually disconnected by means of a spindle just outside the chainlocker. When there is an enormous tensile force on the anchor chain, for instance during a storm, a narrowed plate breaks out of the end connection, through which anchor and chain are released. The remaining part of the narrowed plate can easily be replaced.



**MOORING  
EQUIPMENT**



# MOORING EQUIPMENT

## CHOCKS

MC-A-03 till MC-A-32



- Designed according to DIN 81915 and approved by various classification societies.
- Designed for welding into the bulwark.
- Type single Panama chock (type MC-8) and double Panama chock (MC-12) comply with Panama Canal regulations.

MC-C-03 till MC-C-32



- Designed according to DIN 81915 and approved by various classification societies.
- Designed for welding on deck.
- Type single Panama chock (type MC-8) and double Panama chock (MC-12) comply with Panama Canal regulations.

## WARPING ROLLER/PEDESTAL

WR-01 till WR-32



- The standard Fairtrans warping rollers are supplied with a polyamide-bronze bearing according to DIN 81906.
- Warping rollers can also be delivered with bronze-Steel bearings or other upon request.

WRP-01-800 till WRP-32-1400



- Warping rollers can also be delivered on a socket (DIN 81907) with optional heights.
- Apart from standard socket, other options are possible according to SEC standard.
- Rollers on a socket can be equipped with a part that prevents the mooring line from dropping, when tension on the line slackens.
- There are two types DIN warping rollers: Form A: cylindrical | Form B: conical.

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## BOLLARDS

### DB-01 till DB-32



- The double bollard is provided with two ridges to prevent the rope from moving.
- A stopper lug is fitted for application of a rope stopper.
- Tubes penetrate the base plate and reinforcement plates have been fitted in the base. Therefore, the foundation construction does not have to penetrate the deck.
- The double bollard can also be delivered in combination with the warping roller.

### CB-0 till CB-32



- Cruciform bollards are designed according to DIN 82603.
- Upon request, custom-made bollards can be designed.

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## FAIRLEADS

### FA-01 till FA-32



- Designed for either one or two ropes.
- Welding into either bulwark or deck.
- Rollers with bronze-steel bearing and grease lubrication.
- Reduction of line damage.
- To suit extreme inboard or outboard angles of mooring line, fairlead can be executed with extra vertical roller.
- For expanding fairlead also additional horizontal roller can be applied.

### FAD-01 till FAD-32



- Designed for two ropes.
- Welding into either bulwark or deck.
- Rollers with bronze-steel bearing and grease lubrication.
- Execution according shipdesign or occurring line angles.
- Rollers with bronze-steel bearing and grease lubrication.
- Basic 7-roller fairlead can be modified by adding one, two, or three additional vertical rollers.
- Also horizontal rollers can be added.

# SERVICE/SPARE PARTS

Our SEC Service team is 24/7 available for all World-wide service. When it comes to on-shore support or to sending a dedicated engineer, our team is there for you.

We also provide service on non-SEC equipment. Our long experience can be used to maintain or improve non-SEC equipment to customer requirements.

The main goal of our serviceteam is to have the vessel on route with minimal delay.

For service/spare parts:

+31 (0)50 313 89 69 or [info@sec-groningen.nl](mailto:info@sec-groningen.nl)

# CIG GROUP

Ship's Equipment Centre is part of the Central Industry Group(CIG). CIG is a group of companies providing industrial goods and services to the international shipbuilding market and to complex architectural projects. While operating independently in their own product market combinations, CIG companies also cooperate on various products.



# EQUIPMENT TABLE

EQUIPMENT			ANCHOR CHAIN			BOW ANCHORS		MOORING ROPES		
Number		Letter	U2 MM	U3 MM	Lenght	CONV. MASS KG	HHP MASS KG	PCS	Length	MBL kN
>50	70	A	12,5	---	220	180	135	2	80	35
>70	90	B	14	---	220	240	180	2	100	40
>90	110	C	16	---	247,5	300	225	2	110	40
>110	130	D	17,5	---	247,5	360	270	2	110	45
>130	150	E	17,5	---	275	420	315	2	120	50
>150	175	F	19	---	275	480	360	2	120	55
>175	205	G	20,5	---	302,5	570	430	2	120	60
>205	240	H	22	20,5	302,5	660	495	2	120	65
>240	280	I	24	22	330	780	585	3	120	70
>280	320	J	26	24	357,5	900	675	3	140	80
>320	360	K	28	24	357,5	1020	765	3	140	85
>360	400	L	30	26	385	1140	855	3	140	95
>400	450	M	32	28	385	1290	970	3	140	100
>450	500	N	34	30	412,5	1440	1080	3	140	110
>500	550	O	34	30	412,5	1590	1195	4	160	120
>550	600	P	36	32	440	1740	1305	4	160	130
>600	660	Q	38	34	440	1920	1440	4	160	145
>660	720	R	40	36	440	2100	1575	4	160	160
>720	780	S	42	36	467,5	2280	1710	4	170	170
>780	840	T	44	38	467,5	2460	1845	4	170	185
>840	910	U	46	40	467,5	2640	1980	4	170	200
>910	980	V	48	42	495	2850	2140	4	170	215
>980	1060	W	50	44	495	3060	2295	4	180	230
>1060	1140	X	50	46	495	3300	2475	4	180	250
>1140	1220	Y	52	46	522,5	3540	2655	4	180	270
>1220	1300	Z	54	48	522,5	3780	2835	4	180	285
>1300	1390	A†	56	50	522,5	4050	3040	4	180	305
>1390	1480	B†	58	50	550	4320	3240	4	180	325
>1480	1570	C†	60	52	550	4590	3445	5	190	325
>1570	1670	D†	62	54	550	4890	3670	5	190	325
>1670	1790	E†	64	56	577,5	5250	3940		190	350
>1790	1930	F†	66	58	577,5	5610	4210		190	375
>1930	2080	G†	68	60	577,5	6000	4500		190	400
>2080	2230	H†	70	62	605	6450	4840		200	425
>2230	2380	I†	73	64	605	6900	5175		200	450
>2380	2530	J†	76	66	605	7350	5515		200	480
>2530	2700	K†	78	68	632,5	7800	5850		200	480
>2700	2870	L†	81	70	632,5	8300	6225		200	490
>2870	3040	M†	84	73	632,5	8700	6525		200	500
>3040	3210	N†	84	76	660	9300	6975		200	520
>3210	3400	O†	87	78	660	9900	7425		200	555
>3400	3600	P†	90	78	660	10500	7875		200	590
>3600	3800	Q†	92	81	687,5	11100	8325		200	620
>3800	4000	R†	95	84	687,5	11700	8775		200	650
>4000	4200	S†	97	87	687,5	12300	9225		200	650
>4200	4400	T†	100	87	715	12900	9675		200	660
>4400	4600	U†	102	90	715	13500	10125		200	670
>4600	4800	V†	105	92	715	14100	10575		200	680
>4800	5000	W†	107	95	742,5	14700	11025		200	685
>5000	5200	X†	111	97	742,5	15400	11550		200	685
>5200	5500	Y†	111	97	742,5	16100	12075		200	695
>5500	5800	Z†	114	100	742,5	16900	12675		200	705
>5800	6100	A*	117	102	742,5	17800	13350		200	705
>6100	6500	B*	120	107	742,5	18800	14100		200	715
>6500	6900	C*	124	111	770	20000	15000		200	725
>6900	7400	D*	127	114	770	21500	16125		200	725
>7400	7900	E*	132	117	770	23000	17250		200	725
>7900	8400	F*	137	122	770	24500	18375		200	735
>8400	8900	G*	142	127	770	26000	19500		200	735
>8900	9400	H*	147	132	770	27500	20625		200	735
>9400	10000	I*	152	132	770	29000	21750		200	735
>10000	10700	J*	157	137	770	31000	23250		200	735
>10700	11500	K*	157	142	770	33000	24750		200	735
>11500	12400	L*	162	147	770	35500	26625		200	735
>12400	13400	M*	---	152	770	38500	28875		200	735
>13400	14600	N*	---	157	770	42000	31500		200	735
>14600	16000	O*	---	162	770	46000	34500		200	735

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