



 **Wichard**

2012 Catalogue - English version

wichard.com

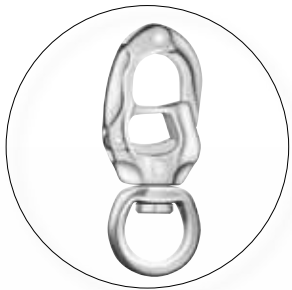


New Products



MXL: SOFT BLOCK (p.34)

- ▶ Ideal for handling heavy loads (mastfoot block, spinnaker tack point, etc.)
- ▶ Unbeatable strength to weight ratio.
- ▶ Easy to install (no ropework, no tools)
- ▶ 3 models available
- ▶ For 8 to 14 mm diameter ropes



SPEEDLINK: A FULL RANGE OF TRIGGER SNAP HOOKS (p.18)

- ▶ Universal eye version for halyards, spinnaker sheets, etc.
- ▶ Webbing eye version for foresail tack points
- ▶ Outstanding working and breaking loads
- ▶ 8 models available



PEFC Promoting sustainable forest management.



Jean-Claude **ibos**
CEO of Wichard

Editorial

We live in complicated but interesting times. Finding information has become ever simpler and emerging countries now have greater access to consumer goods. In this context characterized by hope but also by restrictions, we must adapt to new regulations in order to hold our course.

The world is continuously evolving but there are some values we can rely on and Wichard is one of those. Our goals are consistency in safety, peerless quality, innovation and exportation.

This year, the Wichard Group has adopted the EC machinery directive for some of its lifting products and is in the process of gaining ISO 14001 certification in environmental resources management.

A faithful partner to our national and international customers, we believe that insisting on excellence in production, convenience and service is the key to gaining your confidence.

While these qualities are aimed at servicing the yachting industry, they also benefit other sectors such as automobiles, aeronautics, medicine and defence.

With this new catalogue for 2012, we do hope you enjoy discovering the skills and commitments that make Wichard the company it is today.

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Wichard, a standard in the sailing world



Highlights

Company founded by Henri Wichard	1919
Subcontractor for drop forging	1919-1972
Second factory and installation of an automatic forging line	1972
Development of range of stainless steel and titanium fittings created by Michel Boissonnet and tested by Bernard Moitessier, Eric Tabarly, Alain Colas and Philippe Jeantot; establishment of international distribution network	1973-1988
Company acquired by Jean-Loup Becquevort	1989
Acquisition of Maillard (Saint-Malo) and launch of the first range of blocks	1994
Acquisition of Forginox, a cutlery forge in Thiers	2005
Consolidation of activities at one single location in an industrial zone and installation of a new forging press	2006
Installation of a high speed machining facility for tooling production	2006
Wichard celebrates its 90 years	2009
Company purchased by a group of shareholders and Deck Developpement holding company created	2010

The company has evolved over the years from its origins as a forge in 1919 to the group it is today: establishment of two subsidiaries and a distribution network, as well as the acquisition of Profurl (specialised in sail furlers).

The global leader in marine fittings and top ranking player for industrial customers, the group has remained true to its original speciality and ethic.

⇒ Commitment

Working at Wichard means combining the demands of the business with a passion for the job. Our production teams are united by a "quality first" attitude and their commitment to the company's objectives. Marketing, engineering, sales and after-sales service departments: all the staff in Pornichet share the same passion for sailing. Their expertise stems from their experience.

⇒ Responsibility

Wichard designs, manufactures and markets its products. Even before the production phase, the company designs its own manufacturing tools. All safety products are manufactured in France by our teams using Wichard equipment. Wichard maintains control over its products all along the production chain, with the philosophy: to be a force in the sailing market through the inherent qualities of its products.

⇒ Openness

The company rapidly developed its export and industrial business. Encounters with other markets stimulated Wichard's open-mindedness, curiosity and responsiveness, and fostered its creativeness.



Partners with professional demands

Wichard in figures

- ▶ Over 700 referenced products in the marine catalogue
- ▶ Over 500 industrial clients
- ▶ 2,000 sales outlets in France, 40 distributors worldwide

Wichard has created a network of close relationships within the sailing world. Sharing experience has borne fruit year after year: our products increase in quality and boaters are more comfortable.



Jean-Claude Ibos
CEO of Wichard

- **Developing new concepts hand in hand with professional racers.** Ocean racing techniques change quickly. Racers approached our company early on for our skills in forming stainless steel. Through this long-standing cooperation, Wichard develops new ideas and designs customised parts specifically tailored to their requirements; some of these parts are released in the general sailing market.
- **Improving Wichard's product offer with our customers.** Wichard's products are used on deck by major players. Some of our partners have been loyal for over 30 years. Boatyards, foreign dealers, equipment suppliers, riggers and sailmakers: part of our success is due to them.

▶ *Eric Tabarly's victory in the OSTAR Transatlantic Race set the scene for the expansion of amateur sailing in France in the 1970s: Wichard developed products for sailing and expanded its ranges.*

What makes Wichard stand out in its market?

We are the only company in the world to offer such a broad range of forged deck fittings and to manufacture all our products at the same site (Thiers). Wichard is set apart by the quality and durability of its products. We are the market leader. Our competitors copy our stainless steel deck fittings!

Our staff combines experience and youthfulness, know-how acquired over the years and modern methods. Wichard owes its recognition and its quality image to its 90 years of forging expertise.

How do you view the company's 90 years of experience?

We have a certain tradition, therefore we benefit from a vast breadth of expertise to manufacture every product in our range. Despite the changes in ownership, Wichard has continued to move forward since the day it was founded. With an eye constantly open to trends and developments in sailing, our strength comes from our ability to innovate. Today Wichard is a recognised and an essential player in the sailing world.



MX: halyard shackle - fully forged - for 2:1 purchase for the main-sail halyard or flying sail furlers terminals



Our expertise: between tradition and innovation

By making manoeuvres simpler, "easy sailing" contributes to the growth of amateur sailing and sailing becomes a perfectly safe leisure activity. Since its founding, Wichard has designed, developed and manufactured products with two key objectives: to guarantee the sailor's safety and comfort.

Forged products a guarantee of safety

Why choose a forged product?

Safety provides comfort and performance: forging enables tough parts to be designed by deforming heated metal. Wichard forges its parts by drop forging, using a forge hammer: an operation which involves forming a heated slug under pressure between two dies. This technique makes the structure of the metal homogenous and gives the part strength and elasticity. The parts are then finished and tested prior to being sold.

In a foundry, the structure of the parts produced is random or heterogeneous: gas bubbles can become embedded in the metal, which reduces its strength. A machined product is shaped by removal of material: the structure of the metal is weakened locally.

Forging guarantees the elasticity of the product, its resistance to corrosion and strength, while optimising the size of the parts.

From mastery of forging techniques...

Our skills come from age-old knowledge, but our specialty is no longer a craft industry.

Depending on the part being made, drop forging is either carried out by a specialist technician, for complex deck fittings, or using an automatic drop hammer, for simple parts.

At the same time, our plant can meet numerous demands in terms of product feasibility.

From our staff's experience to training apprentices: our knowledge is passed on within the company.

... to cutting edge technologies

Wichard is a bridge between the traditions of the forge and the performance requirements of modern sailing. Our St. Malo site, specialising in plastics technology, uses composite materials to produce our range of blocks, sticks and deck fittings. Plastics are not only stronger, but also combine good design, comfort and lightness.

With a focus on innovative markets, always attentive to yachtsmen and in touch with great skippers, Wichard is THE standard for marine deck fittings.





In the race for innovation

For nearly 40 years Wichard has been following the development of techniques and regularly designing new products.

When the company was taken over in 2002, the management team made innovation one of the key focus areas of its development. In Pornichet, an engineering department 100% devoted to marine applications designs new products in collaboration with the marketing, sales and after sales service departments. This method has been proven time and again to design efficient parts by taking every aspect of the final product into account:

- ▶ identifying and analysing the requirement: drafting of initial specifications
- ▶ translating the requirement into technical terms, then prioritising the product's functions: approval of the specifications by the departments involved
- ▶ seeking the best technical solutions with the aim of bringing a new approach to product design (e.g.: the Gyb'Easy boom brake, naturally more functional and easier to produce)
- ▶ using information technology to control risks (e.g.: using 3D software to visualise constraints the product will undergo to optimise its shape)
- ▶ manufacturing prototypes and assessing their performance: tests on machines and at sea
- ▶ moving to the mass production after approval by the departments involved.

Creation and innovation make headlines

We protect every new idea or concept and register one to four patents each year: our 90 patents represent real wealth for the company. As a responsible manufacturer, Wichard monitors the materials used and applies quality control procedures. From idea to final product, this is a means of optimally controlling our parts design. We regularly receive awards:



1 2008, Pitmann Innovation Award:
Gyb'Easy boom brake

1 2007, Dame Award:
Gyb'Easy boom brake
Special mention for "Deck equipment"

2 1998, Dame Award:
Double-safety carabiner
1st prize for "Deck equipment"

3 1994, Dame Award:
Harness tether
1st prize for "Clothing and protection"



Pierre Leboucher - Vincent Garos - 470
En route for the 2012 Olympics

Pierre Leboucher and Vincent Garos have represented France for many years in the international 470 class. 2011 has been another exceptional year for these two sportsmen:

- ▶ 1st: French Olympic Week - Hyères 2011
- ▶ 1st: Sail For Gold Regatta 2011 - Weymouth
- ▶ 1st: Test Event Weymouth - Olympic Games

In the last two years they have won the three trials organised on the Olympic sailing venue. They will know by the end of 2011 if they have been selected to represent France in the coming Olympics.

All of us at Wichard are proud to be supporting Pierre and Vincent in their preparations.

As dinghy sailing specialists, what do you expect from your fittings?

It's extremely important for us to have a reliable boat and not break equipment during races. Like in all equipment-focused sports, the crew has to be very vigilant. We have to check everything on a daily basis, after a day on the water. Wichard equipment has never let us down since we started using it in 2005. For us, fitting out our 470 with Wichard products gives us peace of mind in terms of strength and quality. Wichard equipment complies perfectly with our technical requirements. We also appreciate the quality of our human relationship with the whole team.



MXL: see page 34





Blocks

I A COMPLETE RANGE OF BLOCKS:

Our blocks, wholly designed and manufactured in our factories, feature high-performance materials and are subjected to rigorous manufacturing and quality assurance processes. For whatever type of block, ball bearing, plain bearing, the shape of the sheave suits all modern ropes. They are also very easy to install due to the various types of fastening options.

I WICHARD OFFERS A COMPREHENSIVE RANGE OF BLOCKS INCLUDING:

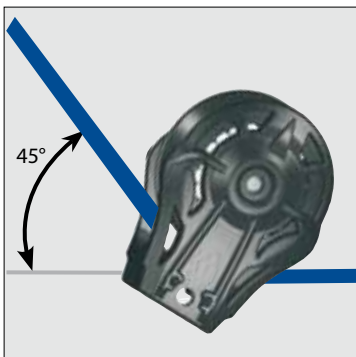
- ▶ Soft blocks
- ▶ Ball bearing blocks
- ▶ Ratchet blocks
- ▶ Snatch blocks
- ▶ Plain bearing blocks
- ▶ Stainless steel blocks
- ▶ Deck accessories
- ▶ Roller blocks



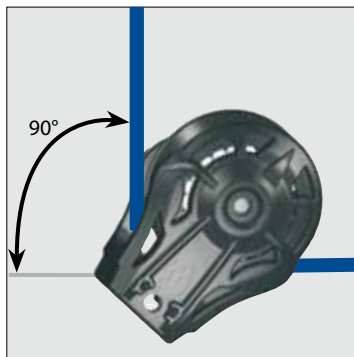
Selection guide – blocks



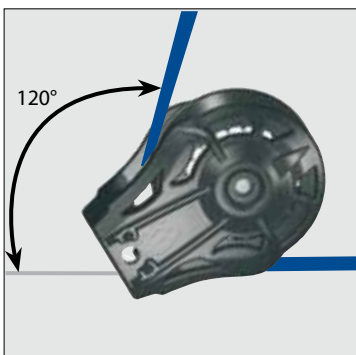
	Plain bearing blocks	Ball bearing blocks	Roller blocks	MXL: Soft blocks
LOAD TYPES				
Dynamic operation and light load				
Static operation and heavy load				
Dynamic operation and heavy load				
EXAMPLES OF USE				
Mainsail sheet		✓	✓	
Mainsail travelers		✓	✓	
Spinnaker sheets		✓	✓	
Mastfoot block	✓			✓
Masthead block	✓			
Boom vang	✓			✓
Downhaul	✓			✓
Backstay	✓		✓	
Mainsail foot	✓			✓
Reefing point	✓			✓
Cunningham	✓			✓
Barberhauler		✓		✓
Inhailer				✓
Spinnaker tack point		✓	✓	✓



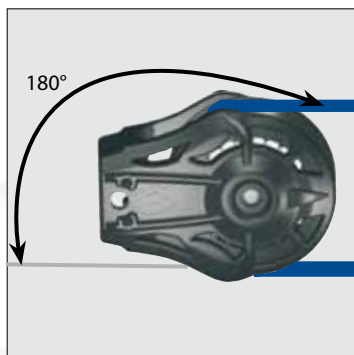
For a 45° angle: The load factor will be 75%. A load of 100 Kg on the line will represent a load of 75 Kg on the block



For a 90° angle: The load factor will be 140%. A load of 100 Kg on the line will represent a load of 140 Kg on the block.



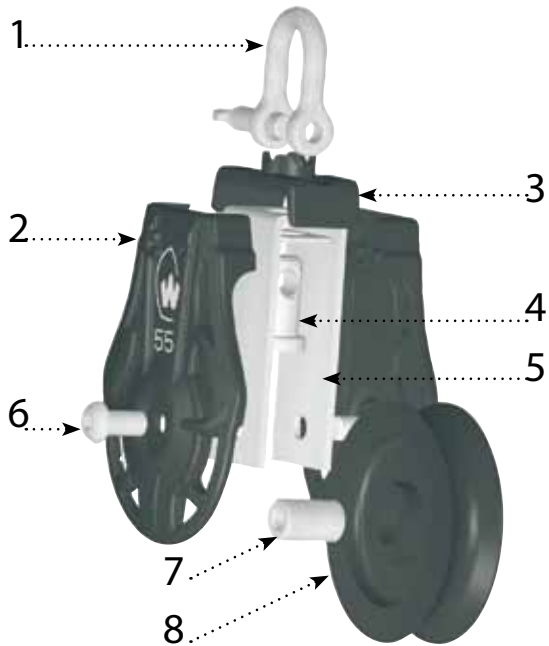
For a 120° angle: The load factor will be 180%. A load of 100 Kg on the line will represent a load of 180 Kg on the block.



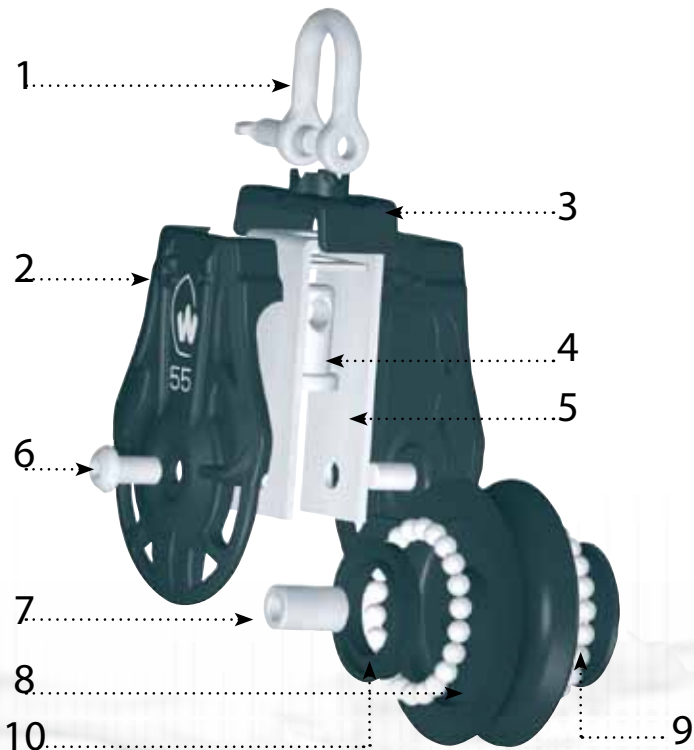
For a 180° angle: The load factor will be 200%. A load of 100 Kg on the line will represent a load of 200 Kg on the block.

Deflection angle	Load factor
180°	200 %
160°	197 %
140°	187 %
120°	180 %
100°	153 %
90°	140 %
80°	129 %
60°	100 %
45°	75 %
20°	35 %
0°	0 %

EXPLODED VIEW: Plain bearing blocks



EXPLODED VIEW Ball bearing blocks



Why choose a Wichard block?

A wide range to fit all deck layouts:

Wichard blocks are not only available in many sizes (for 4 mm to 14 mm diameter ropes), they also feature a large selection of fastenings (shackle, ring, snap hook, etc.) to integrate perfectly every style of deck gear plan.

Strength and reliability:

The design of Wichard blocks, and the use of carefully-selected materials in their manufacture, ensure you enjoy a strong, reliable and long-lasting product.



benefits

Components: plain and ball bearing blocks

- 1: Forged stainless-steel Wichard shackle Large choice of fastenings available: ring, snap hook, etc.
- 2: Protective cheeks increase sheave lifespan
- 3: Universal head that can be locked in position
- 4: Swivel for rotating and changing fastenings
- 5: Stainless steel load straps
- 6: Stainless-steel pin
- 7: Stainless-steel bush ensures rotation under heavy loads
- 8: Composite sheave

- On ball bearing blocks only**
- 9: Captive Delrin® ball bearings
 - 10: Bearing cap

Wichard roller blocks

Wichard roller bearing blocks are designed to be simple, reliable and long-lasting. They are ideal for dynamic running rigging that is subject to heavy loads (mainsail tackle, mastfoot block, etc.).

They are available in 2 versions: the standard version with Delrin® rollers and the HD version (Torlon® rollers, forged HD shackle). Both versions available in several sizes, for 4 mm to 30 mm diameter ropes.

For more technical information, please contact us.



benefits

Components: roller bearing blocks

- 1: Forged stainless-steel shackle (HR s-steel for HR models).
- 2: Stainless-steel swivel head
- 3: 316L stainless-steel bolt
- 4: Aluminium cheeks (hard coat anodization)
- 5: Delrin® roller bearings (Torlon® for HR models).
- 6: Centring bush for lateral loads
- 7: Stainless-steel circlip
- 8: Hard anodized aluminium sheave (+ Teflon for HR models).
- 9: Hard anodized aluminium hollow pin (+ Teflon for HR models).

ROLLER BLOCKS



«Wichard roller bearing blocks are nothing less than efficient! We are currently using them on our trips in the Southern Ocean and, whether fitted to sheets or halyards, they perform exactly as they should.»

Stephen Witkins, skipper of the high-latitude yacht X-plore





IMXL Soft Block

When used in conjunction with heavy loads (mastfoot block, spinnaker tack point), normal friction blocks are heavy and take up space. Following on from our success with the MX halyard shackle, Wichard is proud to present the MXL: a new soft block solution for ropes. Accessible to all, the MXL is strong, reliable, light and fits anywhere.

▶ **EASY FITTING:**

MXL requires no knowledge of ropework and no tools for fitting.

▶ **STRENGTH, RELIABILITY, AND LIGHT WEIGHT:**

MXL offers an unbeatable strength to weight ratio. For example, MXL is up to 3 times stronger than a standard block and yet weighs 2 or 3 times less.

▶ **FLEXIBILITY**

Two fastening methods mean MXL can be installed anywhere whatever the alignment of the anchoring point. MXL easily integrates any deck gear plan.

▶ **RELIABLE AND MAINTENANCE-FREE**

An all-in-one design with no moving parts (no sheave), MXL enjoys greater reliability and a longer lifespan. MXL requires no maintenance.

▶ **SNATCH BLOCK CAPABILITY**

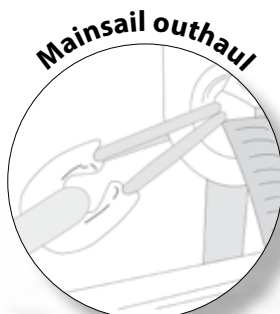
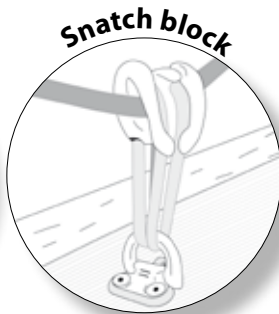
In certain cases the MXL can be used like a snatch block by attaching it rapidly to an anchor point (padeyes, etc.).



Benefits

- ▶ 3 models available for 8 mm to 14 mm diameter ropes
- ▶ 2 fastening systems
- ▶ Remarkably strong and light
- ▶ Compact
- ▶ Delivered with 1 Dyneema loop optimized for this type of application
- ▶ Materials: hard anodized aluminium for greater lifespan

N°	Part #	max rope size Ø mm	nominal loop Ø mm	W.L. Kg	B.L. Kg	Weight Kg
MXL6: for max rope size 8 mm						
1	20603	8	3	1000	2000	0,020
MXL8: for max rope size 10 mm						
2	20804	10	4	1400	2800	0,04
MXL10: for max rope size 14 mm						
3	21005	14	5	2400	4800	0,082



Ball bearing blocks

SHEAVE DIA 18 & 25 - PATENTED



Benefits

- ▶ For dinghies and small boats
- ▶ Large range
- ▶ Available in single, double and triple models
- ▶ Delrin® ball bearings
- ▶ POM sheave
- ▶ Wide choice of fastenings
- ▶ Load bearing stainless steel shaft
- ▶ For following rope diameters: 4, 6 and 8 mm

SHEAVE DIA 18

rope size 4 to 6 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
2	70113	Fixed eye	35	18	14	240	400	0.011
3	70114	Fixed eye with becket	45	18	14	240	500	0.015
5	70120	Cheek block	36	18	14	240	500	0.010
Double blocks								
7	70213	Fixed eye	45	18	28	320	700	0.041
8	70214	Fixed eye with becket	55	18	28	320	700	0.044
Triple blocks								
9	70313	Fixed eye	45	18	42	480	900	0.055
10	70314	Fixed eye with becket	55	18	42	480	900	0.057

SHEAVE DIA 25

rope size 6 to 8 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	71105	Swivel head	64	25	18	200	500	0.027
2	71113	Fixed eye	49	25	18	320	600	0.019
3	71114	Fixed eye with becket	62	25	18	320	600	0.024
4	71353	Opposite flat	75	25	18	320	600	0.037
5	71120	Cheek block	52	25	18	320	600	0.021
6	71121	Upright block	39	32	42	320	600	0.032
Double blocks								
7	71213	Fixed eye	64	25	34	400	800	0.059
8	71214	Fixed eye with becket	78	25	34	400	800	0.062
Triple blocks								
9	71313	Fixed eye	60	25	51	480	1000	0.081
10	71314	Fixed eye with becket	74	25	51	480	1000	0.087

WL: working load - BL: breaking load



1



2



3



4



5



6



7



8



9



10

Ball bearing blocks

SHEAVE DIA 35



Benefits

- ▶ Large range
- ▶ Universal head allows wide choice of fastenings
- ▶ Modern design
- ▶ 2 lateral Delrin® ball races
- ▶ Sheave protected by cheeks
- ▶ Load bearing stainless steel shaft
- ▶ Adjustable cam cleats
- ▶ For following rope diameters: 8, 9, 10, 12 and 14 mm

SHEAVE DIA 35

rope size 8 mm, forged shackle 5 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	72105	Swivel head	84	37	23	320	900	0.073
2	72106	Swivel head with becket	101	37	23	320	900	0.081
3	72108	Swivel head with becket and cam	101	64	45	200	900	0.120
4	72117	Fixed head with clevis	72	37	23	320	500	0.053
5	72113	Fixed eye	65	37	23	320	900	0.053
6	72120	Cheek block - 5 mm dia bolts	52	37	20	320	900	0.047
7	72121	Upright block	42	46	40	320	900	0.056
8	72131	Swivel snap hook	102	37	23	200	400	0.079

Double blocks								
10	72205	Swivel head	84	37	40	480	900	0.122
11	72206	Swivel head with becket	101	37	40	480	900	0.131

Triple blocks								
13	72305	Swivel head	84	37	58	560	1000	0.152
14	72306	Swivel head with becket	101	37	58	560	1000	0.160
15	72308	Swivel head with becket and cam	101	66	60	200	1000	0.211

Fiddle blocks								
16	72405	Swivel head	107	37	23	320	900	0.089
18	72408	Swivel head with becket and cam	124	64	45	200	900	0.141

WL: working load - BL: breaking load

Ball bearing blocks

SHEAVE DIA 45



SHEAVE DIA 45

rope size 10 mm, forged shackle 5 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	73105	Swivel head	97	49	26	400	900	0.109
2	73106	Swivel head with becket	117	49	26	400	900	0.124
3	73108	Swivel head with becket and cam	117	86	61	280	900	0.215
4	73117	Fixed head with clevis	87	49	26	400	900	0.093
5	73113	Fixed eye	78	49	26	400	900	0.087
9	73118	Webbing D ring	93	49	26	400	900	0.112
6	73120	Cheek block - 6 mm dia bolts	65	49	23	400	900	0.077
Double blocks								
10	73205	Swivel head	97	49	46	480	1000	0.188
11	73206	Swivel head with becket	117	49	46	480	1000	0.203
12	73207	Swivel head with snap shackle	110	49	46	480	1000	0.212
Triple blocks								
13	73305	Swivel head	97	49	67	560	1000	0.247
14	73306	Swivel head with becket	117	49	67	560	1000	0.261
15	73308	Swivel head with becket and cam	117	87	72	360	1000	0.381
Fiddle blocks								
16	73405	Swivel head	130	49	26	560	1000	0.151
17	73406	Swivel head with becket	150	49	26	560	1000	0.160
19	73407	Swivel head with cam	130	86	61	360	1000	0.244
18	73408	Swivel head with becket and cam	150	86	61	360	1000	0.253
20	73435	Swivelling snap shackle	143	49	26	560	1000	0.175
21	73438	Swivel snap shackle with becket and cam	163	86	61	360	1000	0.277

WL: working load - BL: breaking load



13



14



15



16



17



18



19



20



21

Ball bearing blocks

SHEAVE DIA 55



Benefits

- ▶ Large range
- ▶ Universal head allows wide choice of fastenings
- ▶ Modern design
- ▶ 2 lateral Delrin® ball races
- ▶ Sheave protected by cheeks
- ▶ Load bearing stainless steel shaft
- ▶ Adjustable cam cleats
- ▶ For following rope diameters: 8, 9, 10, 12 and 14 mm

SHEAVE DIA 55

rope size 12 mm, forged shackle 6 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	74105	Swivel head	119	63	29	720	1500	0.183
2	74106	Swivel head with becket	144	63	29	720	1500	0.204
3	74108	Swivel head with becket and cam	144	95	61	480	1500	0.306
7	74109	Swivel with clevis	113	63	29	640	1000	0.163
8	74110	Swivel with clevis and becket	138	63	29	640	1000	0.189
5	74113	Fixed eye	98	63	29	720	1500	0.142
4	74117	Fixed head with clevis	107	63	29	720	1200	0.160
10	74118	Webbing D ring	110	63	29	720	1500	0.170
9	74130	Swivel snap shackle	126	63	29	720	1500	0.188
6	74120	Cheek block - bolts 6 mm dia	81	63	26	720	1500	0.127

Double blocks								
11	74205	Swivel head	119	63	52	800	1500	0.320
12	74206	Swivel head with becket	144	63	52	800	1500	0.342

Triple blocks								
13	74305	Swivel head	119	63	75	880	1500	0.415
14	74306	Swivel head with becket	144	63	75	880	1500	0.434
15	74308	Swivel head with becket and cam	144	97	81	480	1500	0.555

Fiddle blocks								
16	74405	Swivel head	160	63	29	800	1500	0.252
17	74406	Swivel head with becket	186	63	29	800	1500	0.275
18	74408	Swivel head with becket and cam	186	95	61	480	1500	0.379
19	74435	Swivel snap shackle	167	63	29	800	1500	0.258
20	74438	Swivel snap shackle with becket and cam	193	95	61	480	1500	0.385

WL: working load - BL: breaking load

Ball bearing blocks

SHEAVE DIA 70



SHEAVE DIA 70

rope size 14 mm, forged shackle 8 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	75105	Swivel head	153	80	39	1200	2700	0.372
2	75106	Swivel head with becket	183	80	39	1200	2700	0.421
3	75108	Swivel head with becket and cam	183	120	80	480	2700	0.604
7	75109	Swivel with clevis	137	80	39	800	1500	0.362
4	75117	Fixed head with clevis	132	80	39	1200	2000	0.325
9	75130	Swivel snap shackle	162	80	39	1200	2700	0.400
6	75120	Cheek block - bolts 8 mm dia	103	80	34	1200	2700	0.299
Double blocks								
11	75205	Swivel head	153	80	68	1440	2700	0.658
12	75206	Swivel head with becket	183	80	68	1440	2700	0.719
Triple blocks								
13	75305	Swivel head	153	80	97	1600	2700	0.900
14	75306	Swivel head with becket	183	80	97	1600	2700	0.946
15	75308	Swivel head with becket and cam	183	123	101	480	2700	1.144
Fiddle blocks								
16	75405	Swivel head	204	80	39	1440	2700	0.523
17	75406	Swivel head with becket	236	80	39	1440	2700	0.575
18	75408	Swivel head with becket and cam	236	120	80	480	2700	0.753
19	75435	Swivelling snap shackle	213	80	39	1440	2700	0.575
20	75438	Swivel snap shackle with becket and cam	245	120	80	480	2700	0.795

WL: working load - BL: breaking load

Ratchet blocks



1



2



3

In addition to the advantages offered by its ball-bearing blocks, Wichard also offers ratchet blocks with the same styling, featuring its patented ratchet system. Several versions of this ratchet block are offered to cover most applications. It is fitted with a high-precision machined sheave made of hardened anodized aluminium, which is mounted on Delrin® ball-bearings. The ratchet is engaged and released by an ergonomically-profiled slide button.

This block can be mounted on a 30101 swivel base with a 32571 adaptor.

Snatch blocks



1



2



Benefits

- ▶ Different models available
- ▶ Anodised aluminium sheave
- ▶ Delrin® ball bearings
- ▶ Engagement and release by the slide button

SHEAVE DIA 55

rope size 12 mm, forged shackle 6 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	84101	Swivel head	125	59	36	720	1500	0.184
2	84103	Swivel head with becket and cam	147	105	36	480	1500	0.329
Triple blocks								
3	84303	Swivel head with becket and cam	147	105	80	480	1500	0.576

SNATCH BLOCKS

Fitted to a pad eye or toe rail Wichard snatch blocks are highly useful for taking up a rope that is already reeved. The elastomer moulded cheeks make them shock and scratch-resistant. Each one is fitted with a snap shackle which allows them to move freely in any position. With its forged high-resistance stainless steel arm, the closing system is very strong. It can be opened very easily by pulling on the central plunger pin, as you would do with a normal snap shackle.

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Snatch blocks								
1	34500	Max. 12 mm diam. rope	145	59	43	720	1300	0.254
1	35500	Max. 18 mm diam. rope	155	59	49	1200	2500	0.414

MXL: Soft Block

- ▶ Can be used like a snatch block: clap it on to a line under load, a short sheet, replace a broken block
- ▶ 2 fastening methods with Dyneema® loop supplied as standard
- ▶ Excellent weight/strength ratio
- ▶ Easy to install (no ropework, no tools)

Learn more on page 34

Plain bearing blocks

SHEAVE DIA 12, 18 & 25

Wichard plain bearing blocks are ideal for short travel high load applications such as cruising yacht boom vang systems. They have self lubricating Acetal sheaves that run smoothly on a stainless steel reinforced bushing. Series 35-70 mm shackle head models have multi positional heads, and all cam cleats are fitted with adjustable height cam cleats. Their appearance and configuration is similar to the range of ball bearing blocks to maintain your design and aesthetics yacht continuity.



Benefits

- ▶ For dinghies and catamaran applications
- ▶ Large range
- ▶ Available in single, double and triple models
- ▶ POM sheave
- ▶ Wide choice of fastenings
- ▶ Load bearing stainless steel shaft
- ▶ For following rope diameters: 4, 6 and 8 mm

SHEAVE DIA 12 (stainless steel sheave)

mini block - rope size 4 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
1	60600	Fixed eye	33	16	11	120	300	0.011

SHEAVE DIA 18

rope size 4 to 6 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
3	60113	Fixed eye	35	18	14	240	500	0.011
4	60114	Fixed eye with becket	45	18	14	240	500	0.015
6	60120	Cheek block	36	18	14	240	500	0.010

Double blocks

8	60213	Fixed eye	45	18	28	320	700	0.041
9	60214	Fixed eye with becket	55	18	28	320	700	0.044

Triple blocks

10	60313	Fixed eye	45	18	42	480	900	0.055
11	60314	Fixed eye with becket	55	18	42	480	900	0.057

SHEAVE DIA 25

rope size 6 to 8 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
2	61105	Swivel head	64	25	18	200	500	0.027
3	61113	Fixed eye	49	25	18	320	600	0.019
4	61114	Fixed eye with becket	62	25	18	320	600	0.024
5	61353	Opposite in line	75	25	18	320	600	0.037
6	61120	Cheek block	52	25	18	320	600	0.021
7	61121	Upright lead block	39	32	42	320	600	0.032

Double blocks

8	61213	Fixed eye	64	25	34	400	800	0.059
9	61214	Fixed eye with becket	78	25	34	400	800	0.062

Triple blocks

10	61313	Fixed eye	60	25	51	480	1000	0.081
11	61314	Fixed eye with becket	74	25	51	480	1000	0.087

WL: working load - BL: breaking load



Plain bearing blocks

SHEAVE DIA 35



1



2



3



4



5



6



7



8



9



10



11



12



13



Benefits

- ▶ Large range
- ▶ Universal head allows wide choice of fastenings
- ▶ High resistance under high loads
- ▶ Modern design
- ▶ Sheave protected by cheeks
- ▶ Load bearing stainless steel shaft
- ▶ Adjustable cam cleats
- ▶ For following rope diameters: 8, 9, 10, 12 and 14 mm

SHEAVE DIA 35

rope size 8 to 9 mm, forged shackle 5 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	62105	Swivel head	84	37	23	320	900	0.071
2	62106	Swivel head with becket	101	37	23	320	900	0.079
3	62108	Swivel head with becket and cam	101	64	45	200	900	0.118
4	62117	Fixed head with clevis	72	37	23	320	500	0.055
5	62113	Fixed eye	65	37	23	320	900	0.051
6	62120	Cheek block - bolts 5 mm dia	52	37	20	320	900	0.044
9	62121	Upright block	42	46	40	320	900	0.053
10	62122	Reefing block	60	58	40	320	900	0.103
7	62131	Swivel snap hook	102	37	23	200	400	0.076

Double blocks								
11	62205	Swivel head	84	37	40	480	900	0.119
12	62206	Swivel head with becket	101	37	40	480	900	0.128

Triple blocks								
14	62305	Swivel head	84	37	58	560	1000	0.149
15	62306	Swivel head with becket	101	37	58	560	1000	0.157
16	62308	Swivel head with becket and cam	101	66	60	200	1000	0.208

Fiddle blocks								
17	62405	Swivel head	107	37	23	320	900	0.086
19	62408	Swivel head with becket and cam	124	64	45	200	900	0.138

WL: working load - BL: breaking load

Plain bearing blocks

SHEAVE DIA 45



SHEAVE DIA 45

rope size 10 mm, forged shackle 5 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	63105	Swivel head	97	49	26	400	900	0.105
2	63106	Swivel head with becket	117	49	26	400	900	0.120
3	63108	Swivel head with becket and cam	117	86	61	280	900	0.211
4	63117	Fixed head with clevis	87	49	26	400	700	0.089
5	63113	Fixed eye	78	49	26	400	900	0.083
8	63118	Webbing D ring	93	49	26	400	900	0.108
6	63120	Cheek block - bolts 6 mm dia	65	49	23	400	900	0.073

Double blocks								
11	63205	Swivel head	97	49	46	480	1000	0.184
12	63206	Swivel head with becket	117	49	46	480	1000	0.199
13	63207	Swivel snap shackle	110	49	46	480	1000	0.208

Triple blocks								
14	63305	Swivel head	97	49	67	560	1000	0.243
15	63306	Swivel head with becket	117	49	67	560	1000	0.257
16	63308	Swivel head with becket and cam	117	87	72	360	1000	0.357

Fiddle blocks								
17	63405	Swivel head	130	49	26	560	1000	0.147
18	63406	Swivel head with becket	150	49	26	560	1000	0.156
20	63407	Swivel head with cam	130	86	61	360	1000	0.240
19	63408	Swivel head with becket and cam	150	86	61	360	1000	0.249
21	63435	Swivel snap shackle	143	49	26	560	1000	0.171
22	63438	Swivel snap shackle with becket and cam	163	86	61	360	1000	0.273



WL: working load - BL: breaking load

Plain bearing blocks

SHEAVE DIA 55



1



2



3



4



5



6



7



8



9



10



11



12



Benefits

- ▶ Large range
- ▶ Universal head allows wide choice of fastenings
- ▶ High resistance under high loads
- ▶ Modern design
- ▶ Sheave protected by cheeks
- ▶ Load bearing stainless steel shaft
- ▶ Adjustable cam cleats
- ▶ For following rope diameters: 8, 9, 10, 12 and 14 mm

SHEAVE DIA 55

rope size 12 mm, forged shackle 6 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	64105	Swivel head	119	63	29	720	1500	0.179
2	64106	Swivel head with becket	144	63	29	720	1500	0.200
3	64108	Swivel head with becket and cam	144	95	61	480	1500	0.302
8	64109	Swivel with clevis	113	63	29	640	1000	0.159
9	64110	Swivel with clevis and becket	138	63	29	640	1000	0.185
4	64117	Fixed head with clevis	107	63	29	720	1200	0.157
5	64113	Fixed eye	98	63	29	720	1500	0.138
6	64118	Webbing D ring	110	63	29	720	1500	0.166
7	64130	Swivelling snap shackle	126	63	29	720	1500	0.184
10	64120	Cheek block - 6 mm dia bolts	81	63	26	720	1500	0.123

Double blocks								
11	64205	Swivel head	119	63	52	800	1500	0.315
12	64206	Swivel head with becket	144	63	52	800	1500	0.337

Triple blocks								
13	64305	Swivel head	119	63	75	880	1500	0.410
14	64306	Swivel head with becket	144	63	75	880	1500	0.429
15	64308	Swivel head with becket and cam	144	97	81	480	1500	0.550

Fiddle blocks								
16	64405	Swivel head	160	63	29	800	1500	0.247
17	64406	Swivel head with becket	186	63	29	800	1500	0.270
18	64408	Swivel head with becket and cam	186	95	61	480	1500	0.374
19	64435	Swivelling snap shackle	167	63	29	800	1500	0.253
20	64438	Swivel snap shackle with becket and cam	193	95	61	480	1500	0.380

WL: working load - BL: breaking load

Plain bearing blocks

SHEAVE DIA 70



SHEAVE DIA 70

rope size 14 mm, forged shackle 8 mm

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Single blocks								
1	65105	Swivel head	153	80	39	1200	2700	0.367
2	65106	Swivel head with becket	183	80	39	1200	2700	0.416
3	65108	Swivel head with becket and cam	183	120	80	480	2700	0.599
8	65109	Swivel with clevis	137	80	39	800	1500	0.357
4	65117	Fixed head with clevis	132	80	39	1200	2000	0.320
7	65130	Swivelling snap shackle	162	80	39	1200	2700	0.395
10	65120	Cheek block - 8 mm dia bolts	103	80	34	1200	2700	0.294
Double blocks								
11	65205	Swivel head	153	80	68	1440	2700	0.653
12	65206	Swivel head with becket	183	80	68	1440	2700	0.714
Triple blocks								
13	65305	Swivel head	153	80	97	1600	2700	0.895
14	65306	Swivel head with becket	183	80	97	1600	2700	0.941
15	65308	Swivel head with becket and cam	183	123	101	480	2700	1.139
Fiddle blocks								
16	65405	Swivel head	204	80	39	1440	2700	0.518
17	65406	Swivel head with becket	236	80	39	1440	2700	0.570
18	65408	Swivel head with becket and cam	236	120	80	480	2700	0.748
19	65435	Swivelling snap shackle	213	80	39	1440	2700	0.570
20	65438	Swivel.snap shackle with becket and cam	245	120	80	480	2700	0.790

WL: working load - BL: breaking load



Stainless steel blocks



Benefits

- ▶ Large range covering all applications
- ▶ Lightness, reliability and good performance
- ▶ Wide choice of fastenings
- ▶ Perfect for dinghies and cruising yachts

N°	Part #	Description	Height mm	Width mm	Thick. mm	W.L. Kg	B.L. Kg	Weight Kg
Sheave dia 18 mm - rope size 6 to 8 mm								
1	30018	Single block	45	21	11	200	500	0.016
2	30118	Single with becket	57	31	11	200	500	0.022
Sheave dia 19 mm - rope size 6 mm								
3	30019	Single with eye	38	19	8	200	500	0.012
Sheave dia 24 mm - rope size 4 to 6 mm								
4	30024	Single with shackle	56	25	15	200	500	0.021
5	31124	Single block	42	25	15	200	500	0.014
6	30124	Single with becket and shackle	70	25	15	200	500	0.026
7	31224	Single with becket	56	25	15	200	500	0.014
8	30224	Single with V cleat, becket and shackle	70	33	15	200	500	0.034
9	30324	Single with V cleat and becket	56	33	15	200	500	0.028
10	30424	Double with shackle	56	25	19	200	500	0.030
11	30524	Double with becket and shackle	70	25	19	200	500	0.037
12	30624	Double with V cleat, becket and shackle	70	33	19	200	500	0.047
13	30724	Triple with shackle	56	25	27	200	500	0.040
14	30824	Triple with becket and shackle	70	25	27	200	500	0.060
15	30924	Triple with V cleat, becket and shackle	70	33	27	200	500	0.060
Sheave dia 25 mm - rope size 8 to 10mm								
16	30025	For 25 mm stanchion	65	53	21	280	400	0.049
17	30125	For 25 mm stanchion, pivoting	95	53	21	280	400	0.070
18	30425	Swivel with clevis	59	25	21	200	300	0.036
Swivel shackle blocks								
19	30225	Flat 25 mm dia sheave	50	50	32	240	600	0.036
	30325	Curved 25 mm dia sheave	50	50	40	240	600	0.036
20	30136	Removable 36 mm dia sheave	36	65	58	800	2000	0.168
Wire block with aluminium sheave								
21	31024	24 mm dia sheave, for 3 mm wire	42	25	11	140	350	0.019
	30036	36 mm dia sheave, for 4 mm wire	66	39	11	200	500	0.050
	30050	50 mm dia sheave, for 5 mm wire	75	50	12	320	800	0.084
	30070	70 mm dia sheave, for 7 mm wire	105	70	17	1200	2500	0.222
22	30071	70 mm dia sheave, for 7 mm wire	150	70	17	1200	2500	0.298
Sheave dia 45 mm - rope size 10 mm								
Mast step blocks sheave dia 45 mm								
23	30045	Single with clevis pin	75	50	24	560	1000	0.076
24	30145	Swivel with clevis	105	50	24	560	1000	0.104
Land-yacht blocks (curved) sheave dia 50 mm								
25	31045	Single	85	50	24	320	800	0.104
26	31145	Single with becket	108	50	24	320	800	0.106



Deck accessories

N°	Part #	Description	Weight Kg
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Swivel base

1	30101	Mainsheet swivel base - ball bearing- rope size 12 mm	0.308
2	30103	Swivel cleat base - rope size 12 mm	0.160
3	30105	Swivel cleat base - rope size 12 mm	0.178

N°	Part #	For rope Ø / mm	Fastener spacing mm	Weight Kg
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Cam cleats

4	30006	8	26	0.017
	30012	12	38	0.044
	30016	16	52	0.068

Stand up springs

5	32530	Stand up spring without collar for sheaves dia 18 & 25 mm
	32540	Stand up spring with collar for sheaves dia 35 & 45 mm
	32550	Stand up spring with collar for sheaves dia 55 & 70 mm

N°	Part #	Description	For blocks	Clevis Ø mm	Ø Pin mm	Weight Kg
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Clevis adaptor

6	32570	Swivel, clevis adaptor	Sheave 35&45	8	5	0.024
	32571	Swivel, clevis adaptor	Sheave 55	10	6	0.023

Mast step adaptor

7	32580	Mast step adaptor for Part # 63117 & 73117	0.034
	32581	Mast step adaptor for Part # 64117 & 74117	0.042

N°	Part #	Height mm	Fastener spacing mm	For rope Ø mm	Weight Kg
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Saddles stainless steel

8	30026	11	26	8	0.003
	30038	15	38	12	0.010
	30052	21	52	16	0.016

Saddles POM

9	30126	14,5	26	8	0.002
	30138	19	38	12	0.007
	30152	22,5	52	16	0.009

N°	Part #	Description	Ø Sheave mm	Thickness mm	Ø Pin mm	Ø rope mm
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Plain bearing sheaves

10	60081	Sheave	18	8,5	6	4
	60082	Sheave	25	10,5	6	6
	60083	Sheave	35	11,5	10	8
	60084	Sheave	45	13	10	10
	60085	Sheave	55	15	10	12
	60086	Sheave	70	19	14	14
	60087	Sheave	80	22	17	18

Sheaves with captive balls

11	80083	Captive balls	35	11,5	10	8
	80084	Captive balls	45	13	10	10
	80085	Captive balls	55	15	10	12
	80086	Captive balls	70	19	14	14
	80088	Captive balls	32	15	10	10
	80089	Captive balls	42	19	14	18

Deck organizers: ball bearings sheaves (stacked)

N°	Part #	Sheaves	Ø Sheave mm	Ø Rope mm	Length mm	Width mm	Tickness mm	Fastener mm	Weight Kg
12	81512	2	32	4 to 12	95	35	22	43	0.070
13	81513	3	32	4 to 12	140	35	22	43	0.106
14	81514	4	32	4 to 12	180	35	22	43	0.140
12	81522	2	42	8 to 16	125	45	28	57	0.156
13	81523	3	42	8 to 16	185	45	28	57	0.231
14	81524	4	42	8 to 16	240	45	28	57	0.305

For sport boats or dinghies, swivel bases enable the boat's fittings to be optimised. They are manufactured according to Wichard tradition of quality, and form part of the original equipment on many modern designs. Their dimensions and the adjustable orientation of the cam cleats, mean they can be installed on your boat without any modifications.



Technical information

CE MARKING


Some of our products can be used as lifting accessories and as such bear the CE marking (awarded under the auto-certification scheme in accordance with the Machines Directive 2006/42).

Each product displays the following information



- Working Load Limit (WLL)
- CE marking, product origin, manufacturer's logo
- Materials
- Manufacturing batch serial number



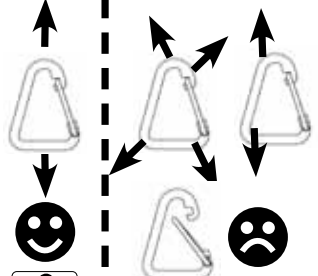
Reading guide for CE labels on Wichard products


Réf: 2345 
INOX STAINLESS STEEL
Made in France

**MOUSQUETON DELTA
DELTA HOOK**
Ø: 8 mm - 5/16 in.

 Industrie Industry	 Nautisme Boating
CMU - WLL (Charge max. utilisation - Working load limit) 240 Kg - 530 Lbs	CT - WL (Charge travail - Working load) 720 Kg - 1590 Lbs

Facteur sécurité: 5
Safety factor: 5
Test coef: 3

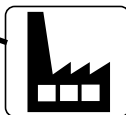


 wichard.com

Products marked and sold in shops come with a notice in the form of a label that indicates the working load limit (WLL) to be applied in an industrial situation (lifting, etc.) and the working load (WL) to be applied in nautical situations.



Working Load (WL): for nautical applications.



Working Load Limit (WLL): for industrial applications only.
The safety factor is 5 times the breaking load.
 $WLL = \text{Breaking load} / 5$

Technical information

WARRANTY

All Wichard products are warranted to be free of defects in materials or workmanship for five (5) years from the date of purchase by the original end-user. Excluded from this warranty are:

- > Any product which has been improperly fitted.
- > Any product which has been improperly used or used in any application for which it was not intended.
- > Any product which has been improperly maintained.
- > Any product modified without a written approval from Wichard.
- > Any damage being a consequence from alteration, from ultraviolet light exposure or from the normal wear of products.

The useful life of any products is determined by its utilisation and an appropriate factor of safety (see page 61). It must be distinctly assessed in each application. Thus no guarantee can be provided for product life, dynamic capacities or any other factor due to the variability in usage.

Wichard's liability is limited to the repair or replacement of the defective goods exclusive of any other repair. Responsibility and costs of handling, transportation and any custom duties and tariffs linked to the warranty claim are in any case borne by Wichard.

CORROSION IN MARINE ENVIRONMENT

All Wichard products are passivated. Corrosion attacks stainless steel and is always visible in the form of black coloured roughness. Although this is dangerous, it is rarely seen in current use, except in cases where martensitic (HR) steel is in total, prolonged immersion. What many people erroneously call corrosion, is really rust, or oxidation. This is due to outside causes. In the marine environment, stainless steel is subject to considerable aggressive forces and is not totally corrosion free. Re-passivation can be accomplished with a passivator such as Wichinox (see page 55) . All stainless steel products demand a minimum of upkeep.

STAINLESS STEEL

Wichard uses top-quality grades of stainless steel in its products (see chart). The first type is a low carbon austenitic steel (316L), which offers good mechanical characteristics. They are non-magnetic steels and most of Wichard products are manufactured in this grade. The second (17.4PH) is martensitic steel (magnetic), which is referred to as high-resistance steel (HR).

<i>Type</i>	<i>Austenitic</i>	<i>Martensitic</i>
Common name	18.12 Mo	17.4 PH
European Standard	X2CrNiMo17-12-2	X5CrNiCuNb 16-4
US AISI Standard	316 L	630
Composition Carbon	< 0,03 %	< 0,07 %
Chromium	18 %	16,5 %
Nickel	12 %	4 %
Molybdenum	3 %	
Copper		4 %

WHY A WICHARD SHACKLE?

A Wichard shackle is manufactured on a very old principal, forging. Wichard has perfected and machined this process down to the smallest detail.

RELIABILITY AND HIGH QUALITY

After the raw metal bars are checked on chemical alloy and quality, the metal is heated to the right temperature to be forged. Then the metal is pressed in its new shape with great force by a hydraulic hammer. Due to this process the metal obtains an organized structure without any weakness. Because of this structure, called fibers, the metal object is not only very strong but also has an "elastic" property. Casted metal objects of the same design are less strong because the structure in the metal is not the same everywhere in the object. Next to this there is the chance that small air bubbles are enclosed during the casting. This causes a capital weakness in the casted object. Even objects machined from a block of metal can have weaknesses. Where the metal is machined into a curve the structure in the metal is broken and becomes a weak point in the object. When the object is overloaded it will break at this point.

PERFORMANCE AND SECURITY

Due to the technique of forging every object of the same design and shape has the same properties with a small tolerance of deviation. By controlling all important factors Wichard can guarantee an accurate breaking load and working load for each individual object. Wichard advises to respect carefully the Working Load (WL) indicated for each of its products. If a Wichard product is overloaded between the safe working load and breaking load the product will deform due to its "elastic" property. This gives the user an extra safety margin and shows when the product is overloaded. Deformed parts have to be replaced immediately preferably by a part in a larger size.

DEFINITIONS

Working Load (WL) indicates the value of static load at which the product will still function without excessive friction or wear or permanent deformation of components.

Breaking Load (BL) indicates the value of static load for which a major failure of one or some structural components or the complete destruction of the product can be expected when new. Plastic components may split, rivets may give way, shackles or any other connection parts break and other metallic components may fracture.

UNITS OF LOAD

Our resistance values are shown in kilogramme-force (symbol: kgf or more usually kg), which is the force due to gravity sustained by a mass of 1 kg situated at the latitude of Paris. This unit of force is obsolete, and is not part of the SI international system of units, which links concepts of mass and weight. The unit of force used in the SI system is the Newton (N).

To pass from the kilogramme-force to the Newton its value must be multiplied by g , the acceleration of gravity, which is 9.80665 m/sec^2 at the latitude of Paris, or 9.80665 N ($\text{N} = \text{kg} \times \text{m} \times \text{s}^{-2}$). In the fields where the kgf appears we should now use the decanewton (or dekanewton), daN: $1 \text{ kgf} = 9.80665 \text{ N} = 0.980665 \text{ daN}$ ($1 \text{ daN} = 1.019716 \text{ kgf}$).

Our test equipment measures loads in daN, but bowing to custom and for reasons of simplicity and safety, we still give values in kgs in our brochures and on our products. Our measured values have simply been converted into kgs.

FACTOR OF SAFETY

Before choosing or specifying a particular product, an appropriate factor of safety should be applied to Breaking Loads (BL) to suit each application.

For many industrial and safety applications, and for some yachting application, a factor of safety greater than two (2) should be used or may be required by law or other regulations. It is the customer's responsibility to ensure that an appropriate factor of safety is used, and it should take into account safety implications, service life, fatigue (as may be caused by wave action, wind stress or repetitive cyclical loading), type of load, exposure to ultraviolet light, corrosion and stress corrosion (such as in high humidity or high chlorine environment). Even more attention is required when specifying blocks as other factors have to be taken into account such as rotary speed, deflection angle of the rope or the number of wire of the tackle (see page 31 of the present document). Note that a "Safe Working Load" is not specified as this is dependent on the factor of safety, which must be determined by the user relative to each application.

IN ANY CASE, NEVER USE THE PRODUCTS OVER THE WORKING LOAD !

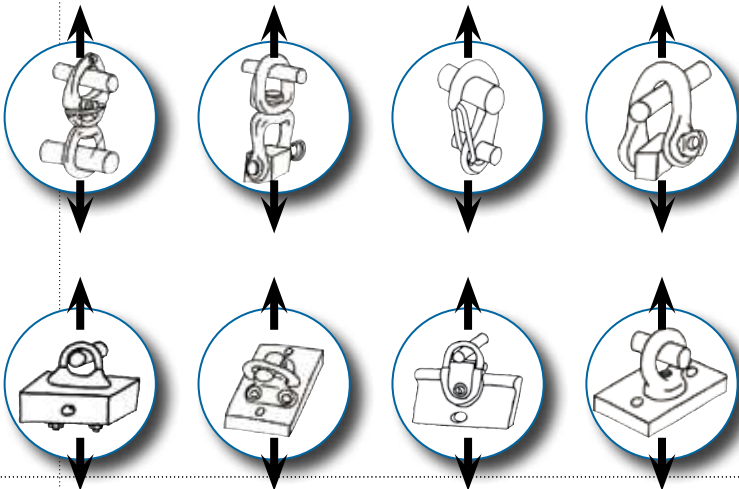
USEFUL LIFE

The useful life of any products is determined by the above factors and must be assessed in each application. Thus no guarantee can be provided for product life, dynamic capacities or any other factor due to the variability in usage. In some jurisdictions government regulations require the replacement of rigging components within certain periods of time, usually after three or five years. You must ascertain whether any such regulations affect you and take appropriate steps if you are affected.

MAINTENANCE AND INSPECTION

All your marine hardware, blocks and equipments must receive regular inspections to prevent any deformation, wear, cracks or corrosion. Even if your products have had little use, ultraviolet light exposure, wave action, humid or saline environment may cause damage that could affect quality or strength of the equipment. If, after inspection, you are in doubt about the integrity of one of some parts, it is the customer's responsibility to replace the defective components or product to ensure his own safety.

While every precaution is taken in the product design and manufacturing processes of our products to minimize the effects of corrosion or stress corrosion, appropriate preventive or corrective treatments must be carried out to the products after installation.



Partnership

For many years, Wichard has been supporting some of the best French sailors, whether on Olympic Sails (470), Figaro 2 or Open 60'.

Thanks to all of you for your commitment and support to Wichard.

Adrien Hardy



Figaro 2

2011 record:

- 14th place: Solitaire du Figaro

2010 record:

- 1st place: Leg 3 - Solitaire du Figaro

2009 record:

- 1st place: 2009 Solidaire du Chocolat (40 ft)

Francis Joyon



80' multihull IDEC

- 2010: 2nd place Route du Rhum

- 2009 singlehanded record: France - Mauritius

- 2008 singlehanded record:

Round the world, non stop, singlehanded
(57 days, 13 hours, 34 minutes and 6 seconds)

- 2007: Cowes to Dinard - Channel crossing

Pierre Leboucher - Vincent Garros



470

2011 record:

- 1st place: French Olympic Week - Hyères
- 1st place: Sail for Gold Regatta - Weymouth
- 1st place: Test Event Weymouth (Olympic Games)

Xplore Expeditions



X-Plore expeditions: sailing high latitudes.

Explore aims to take people in High Latitudes during the austral summer.

The boat is 67 feet long and equipped with Wichard hardware (blocks, Lyf'Safe jacklines) as well as Profurl reefing-furling systems.

More info: www.xplore-expeditions.com



Refer to the distributor list on our website: www.wichard.com

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Antigua	Antigua Slipway Ltd		St John	1	26 84 601 056	antslipway@candw.ag
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Belgium	West Diep Yachting Center	8620	Nieuwpoort	32	58 234 061	info@westdiep.com
Belgium	Wittevrongel Sails & Rigging	8370	Blankenberge	32	50 411 863	info@wittevrongel.be
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Denmark	Columbus Marine	2690	Karlsunde	45	46 19 11 66	columbus@columbus-marine.dk
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Greece	Theodosiadis Kiriakkos	18545	Piraeus	30	21 04 205 890	info@theodosiadis.gr
Greece	Nautilus	17455	Alimos / Athènes	30	21 09 854 238	info@nautilus.gr
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Hungary	Marina Yacht Sport Kft	1078	Budapest	361	3 228 655	bolt@marina.hu
Italy	C-MARINE S.r.l.	19031	Bocca di Magra - SP	39	0187 67 08 28	info@cmarine.it
Japan	Marine Service Kojima	238-0225	Kanagawa	81	4 57 903 581	info@mskojima.co.jp
Malta	Gauci Borda & Co Ltd	GZR03	Gzira	356	2131 3758/3748	info@gauciborda.com
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Netherlands	On Deck BV	2156 MX	Weteringbrug	31	71 331 33 66	allhands@on-deck.nl
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New Caledonia	Boniface ACMA	98863	Nouméa	687	28 28 10	vente@acma.nc
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Sweden	Liros Skandinavia AB	427 23	Billdall	46	31 91 52 00	info@lirosropes.se
Switzerland	Bucher & Walt SA	2072	St Blaise	41	3 27 559 500	info@bucher-walt.ch
Tahiti French Polynesia	Tahiti Sport/Nauti Sport	98713	Papeete	689	50 59 59	tahiti.sport@tahiti-sport.pf
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