

Block Tech Guide

Choosing the right hardware is essential for achieving optimal performance and reliability on the water. At Allen Brothers, we offer a wide range of products designed to suit different sailing applications – but to select the correct item, it's important to understand the materials and technologies behind them. This guide explains the key components used in our products, such as bearings, sheave materials, and load-handling mechanisms. By understanding how each element functions, you'll be better equipped to choose the most suitable solution for your specific needs.



Bearing Materials

The choice of bearing material is essential for balancing strength, weight, and friction performance:

Stainless Steel: Strong, hard-wearing, and corrosion-resistant. Also the heaviest option.

Torlon®: Exceptionally strong and stiff, with high-temperature resistance and low weight. Used in high-load applications where performance and weight-saving are critical.

Delrin®: Lightweight, low-friction, and wear-resistant. Ideal for light-load, high-speed applications.

Ceramic: Offers lower friction than stainless steel, enabling faster sheave rotation. However, it is more brittle and not as strong.

PEEK: Lightweight, strong, self-lubricating, and has a low coefficient of friction. Suitable for high-performance use.

Sheave Materials

The sheave material plays a key role in how a block performs under load:

Acetal: Lightweight and durable. Commonly used for low and medium load applications.

Stainless Steel: Highly corrosion-resistant and extremely strong. Ideal for high static loads but heavier than plastic options.

Titanium: Offers the highest strength-to-weight ratio and excellent corrosion resistance.

Aluminium: Lightweight and strong. We use hard-anodised aluminium with a PTFE coating for improved surface smoothness and reduced friction, particularly in our High Roller range.



Bearing and Sheave Technology

We engineer our block ranges using tailored combinations of bearings and materials to suit specific performance needs.

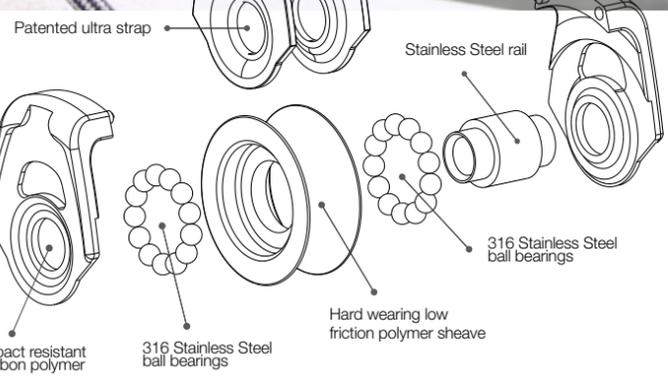
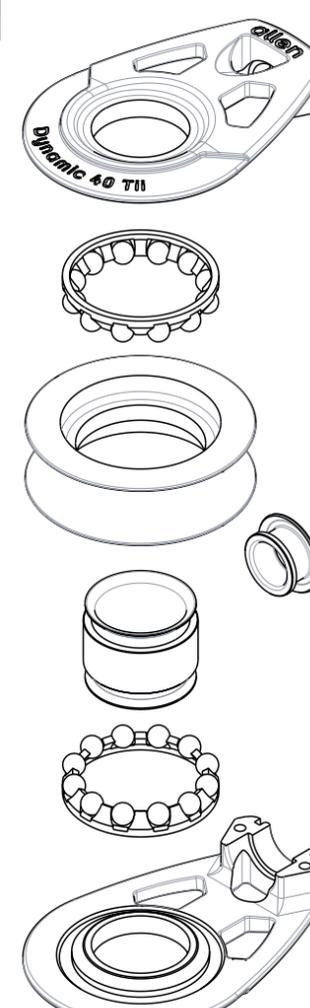
Dynamic: Nylon sheave with twin rows of stainless-steel ball bearings on a steel rail. Low friction and long-lasting performance. 30–60mm blocks include caged bearings.

High Load: Adds a stainless-steel sheave to the Dynamic system for reduced friction and higher static load capacity.

XHL: Stainless-steel balls and sheave with a plain bearing washer. Transitions to plain bearing under high loads to prevent deformation.

TiiTAN: XHL tech upgraded with ceramic balls and a titanium sheave for minimal weight and friction.

High Roller: Aluminium sheave on caged PEEK roller bearings. Smooth performance under very high loads.



Bearing Types

Ball Bearings: Super low friction, low to medium load capacity. Ball bearings offer the lowest possible friction thanks to minimal contact between the sheave, bearing, and axle. This allows the sheave to spin freely with very little energy input, making them ideal for high-speed performance under light to moderate loads.

Roller Bearings: Low friction, high load capacity. Roller bearings have a cylindrical shape and combine many of the benefits of both ball and plain bearings. Although they roll more slowly than ball bearings due to a larger contact area, they are better suited for higher load conditions without deforming.



Plain Bearings: Moderate friction, very high load capacity. Plain bearings contain no rolling elements. While they generate more friction, they offer excellent load resistance and require minimal maintenance. Ideal for applications where load handling is more critical than speed.

Caged vs Non-Caged Bearings

Caged ball bearings offer several advantages over non-caged configurations, including reduced friction, improved durability, better load distribution, and smoother operation at high speeds.

20mm & 30mm Block Range

Allen's 20mm and 30mm block ranges are among the most widely recognised and trusted small-line pulley systems available. Designed for versatility, the range includes an extensive selection of body styles and accessories to suit a wide array of applications—not just in sailing, windsurfing, and kitesurfing, but also across many non-marine uses. Most body types are offered with a choice of plain bearing, dynamic bearing, or high-load sheave configurations, enabling you to fine-tune your selection based on performance demands, application requirements, and budget.



"You can't go wrong with the A2020. Its reliable, smooth and by far my favourite 20mm block."
Stuart Bithell - 49er Gold Medalist.



A2020
A2020P
A2020HL



A2030
A2030P
A2030HL



A2020Tii
A2020PTii
A2020TiiHL

A2030Tii
A2030TiiHL



A2020WEB

NEW

Webbing Attachment

A specially designed body to suit attachment via a 10mm wide webbing strap. Ideal for sewing to sails, canvas or harness lines for a strong and streamlined attachment.



A2020XHL



A9030

Available in 6 colours

Go to page 16 for more info

Sheave and Bearing Options

With a choice of four sheave and bearing configurations, you can optimise your system to suit your exact needs. See page 6 and 7 for more information.

KEY FOR LOAD RATING TABLE

Maximum Working Load (MWL)
 If exceeded the block may not perform as designed.

Breaking Load
 The load at which a major block failure is likely to occur.



Plain Bearing Blocks (P)

Recycled acetal sheave. Grey sheave to differentiate from the dynamic range. Good static loading capabilities at a low weight and cost.



Dynamic Blocks

Acetal sheave with stainless steel ball bearings running on a stainless steel rail. Best for fast running systems.



High Load Blocks (HL)

Stainless steel sheave, bearings and rail. Even less friction compared to dynamic block and great for high static loads.



XHL Blocks (XHL)

Steel sheave with XHL bearing tech and aluminium body. Great frictionless performance at low loads and able to withstand extreme static loads.

Part	Description	Bearing Type	Sheave Type	Length mm	Max Line Dia. mm	Breaking Load kg	MWL kg	Weight g
20mm								
A2020	Single	Ball Bearing	Acetal	37	6	540	115	10
A2020HL	Single (HL)	Ball Bearing	Stainless Steel	37	6	540	250	17.5
A2020P	Single (P)	Plain	Acetal	37	6	540	-	10
A2020Ti3	Single Ti3-On	Ball Bearing	Acetal	29	6	540	115	8
A2020Ti3HL	Single Ti3-On (HL)	Ball Bearing	Stainless Steel	29	6	540	250	14
A2020PTi3	Single Ti3-On (P)	Plain	Acetal	29	6	540	-	7
A2020Tii	Single Tii-On	Ball Bearing	Acetal	29	6	540	115	8
A2020TiiHL	Single Tii-On (HL)	Ball Bearing	Stainless Steel	29	6	540	115	8
A2020PTii	Single Tii-On (P)	Plain	Acetal	29	6	540	-	7
A2020WEB	Single Web	Ball Bearing	Acetal	30.2	5	250	115	9.5
A2020XHL	Single XHL (XHL)	XHL / Ball Bearing	Stainless Steel	29	6	900	400	11.5
30mm								
A2030	Single	Ball Bearing	Acetal	49	8	750	140	26
A2030HL	Single (HL)	Ball Bearing	Stainless Steel	49	8	800	300	39
A2030P	Single (P)	Plain	Acetal	49	8	750	-	23
A2030Tii	Single Tii-On	Ball Bearing	Acetal	41.5	8	750	140	16
A2030TiiHL	Single Tii-On (HL)	Ball Bearing	Stainless Steel	41.5	8	800	300	37
A2030XHL	Single XHL (XHL)	XHL / Ball Bearing	Stainless Steel	43	8	1250	500	41
A9030	TiiTAN Block	TiiTAN / Ball Bearing	Titanium	40	8	1250	500	29

For easy SKU identification look out for the letter in brackets after the description.

20 & 30mm

20 & 30mm

20 & 30MM BLOCKS

20 & 30MM BLOCKS



Part	Description	Bearing Type	Sheave Type	Length mm	Max Line Dia. mm	Shackle Pin Diameter mm	Breaking Load kg	MWL kg	Weight g	Fixing Hole Centres mm
20mm										
A2026	Single Cheek	Ball Bearing	Acetal	37	6	-	540	115	10	-
A2026HL	Single Cheek (HL)	Ball Bearing	Stainless Steel	45	6	--	350	350	21.3	-
A2026P	Single Cheek (P)	Plain	Acetal	37	6	-	540	115	10	-
A2026M	Composite Cheek	Ball Bearing	Acetal	33	6	-	540	115	12	18
A2026MHL	Composite Cheek (HL)	Ball Bearing	Stainless Steel	34	6	-	350	250	18	18
A2020F	Single Fixed Fork Head	Ball Bearing	Acetal	39	6	4	350	115	15	-
A2021F	Single Articulating Fork Head	Ball Bearing	Acetal	48	6	4	350	115	15.2	-
30mm										
A2036	Cheek Block	Ball Bearing	Acetal	58.7	8	-	500	140	35	-
A2036HL	Cheek Block (HL)	Ball Bearing	Stainless Steel	58.7	8	-	500	140	35	-
A2036P	Cheek Block (P)	Plain	Acetal	58.7	8	-	500	-	32	-
A2036M	Composite Cheek Block	Ball Bearing	Acetal	50	8	-	400	140	24	30
A2036MHL	Composite Cheek Block (HL)	Ball Bearing	Stainless Steel	50	8	-	400	300	37	30
A2030F	Single Fork Head	Ball Bearing	Acetal	56	8	5	450	140	31	-
A2030HLF	Single Fork Head (HL)	Ball Bearing	Stainless Steel	56	8	5	750	300	43	-
A2030PF	Single Fork Head (P)	Plain	Acetal	56	8	5	600	-	28	-
A2031F	Single Fork Head	Ball Bearing	Acetal	59	8	4	450	140	36	-
A2031XHL-873	ILCA Vang Block (XHL)	XHL / Ball Bearing	Stainless Steel	48	8	-	1000	500	55	-
A9031-873	TiiTAN ILCA Vang Block	TiiTAN / Ball Bearing	Titanium	48	8	5	1000	500	43	-
A2030F-873	Fork Head With SA.873	Ball Bearing	Acetal	77	8	5	450	140	40	-
A2030HLF-873	Fork Head With SA.873 (HL)	Ball Bearing	Stainless Steel	77	8	5	750	300	52	-
A2030PF-873	Fork Head With SA.873 (P)	Plain	Acetal	77	8	5	600	-	37	-

Part	Description	Bearing Type	Sheave Type	Length mm	Max Line Dia. mm	Shackle / Fixing Hole Dia. mm	Breaking Load kg	MWL kg	Weight g	Fixing Hole Centres mm
20mm										
A2020LZ	Stand-Up Fixed	Ball Bearing	Acetal	43	6	-	540	115	15.4	27
A2020PLZ	Stand-Up Fixed (P)	Plain	Acetal	43	6	-	540	14.3	20	27
A2020-4035	Single With P-Clip	Ball Bearing	Acetal	60	6	5	540	115	15	-
A2020P-4035	Single With P-Clip (P)	Plain	Acetal	62.4	6	5	540	-	13.9	-
A2020-4036	Single With Lacing Eye	Ball Bearing	Acetal	52	6	5	540	115	15	16
A2020-4036	Single With Lacing Eye	Ball Bearing	Stainless Steel	52	6	5	540	250	21.1	16
A2020P-4036	Single With Lacing Eye (P)	Plain	Acetal	52	6	5	540	-	13.9	16
A2021	Single Multi Function	Ball Bearing	Acetal	35	6	4	350	115	11.5	-
A2021HL	Single Multi Function (HL)	Ball Bearing	Stainless Steel	35	6	4	350	250	19	-
A2021P	Single Multi Function (P)	Plain	Acetal	35	6	4	350	-	10.4	-
A2020SHK	Single With Swivel Hook	Ball Bearing	Acetal	58	6	-	350	115	19	-
A2020HLSHK	Single With Swivel Hook (HL)	Ball Bearing	Stainless Steel	58	6	-	350	250	24.4	-
A2020PSHK	Single With Swivel Hook (P)	Plain	Acetal	58	6	-	350	-	17.9	-
A2021HK	Single With Fixed Hook	Ball Bearing	Acetal	65	6	-	165	115	17.5	-
A2021PHK	Single With Fixed Hook (P)	Plain	Acetal	65.5	6	-	165	-	16.4	-
A2020SC	Single With Swivel	Ball Bearing	Acetal	54.82	6	4	350	115	15.4	-
A2020PSC	Single With Swivel (P)	Plain	Acetal	54.82	6	4	350	-	18	-
30mm										
A2030LZ	Stand-Up Fixed	Ball Bearing	Acetal	59	8	-	500	140	30.2	34
A2030PLZ	Stand-Up Fixed (P)	Plain	Acetal	59	8	-	500	-	27.2	34
A2031	Single Multi Function	Ball Bearing	Acetal	47	8	4	750	140	28	-
A2031	Single Multi Function (P)	Plain	Acetal	47	8	4	750	-	25	-
A2030SHK	Single With Swivel Hook	Ball Bearing	Acetal	70.4	8	-	450	140	35	-
A2030PSHK	Single With Swivel Hook (P)	Plain	Acetal	70.4	8	-	450	-	30.2	-
A2030SC	Single With Swivel	Ball Bearing	Acetal	67.97	8	4	450	140	36	-
A2030PSC	Single With Swivel (P)	Plain	Acetal	67.97	8	4	450	-	33	-



KEY FOR LOAD RATING TABLE

Maximum Working Load (MWL)
If exceeded the block may not perform as designed.

Breaking Load
The load at which a major block failure is likely to occur.

Part	Description	Bearing Type	Sheave type	Length mm	Max Line Dia. mm	Shackle Pin Dia. / Fixing Hole Centres mm	Breaking Load kg	MWL kg	Weight g
20mm									
A2021SC	Shackle Swivel Head	Ball Bearing	Acetal	52	6	4	350	115	15.4
A2028	Back To Back	Ball Bearing	Acetal	52	6	-	540	115	21.3
A2028HL	Back To Back High Load	Ball Bearing	Stainless Steel	52	6	-	540	300	10
A2029	Linked Singles	Ball Bearing	Acetal	70	6	-	540	115	21.8
A2020-30	Linked 20 and 30 Singles	Ball Bearing	Acetal	80	6/8	-	540	115	36.8
A2124	Upstand Block	Ball Bearing	Acetal	31	5	22	550	115	20.6
A4710	Lightweight Stand Up Single	Ball Bearing	Acetal	37	6	26	350	105	19
30mm									
A2031SC	Single Swivel Fork	Ball Bearing	Acetal	63	8	4	450	140	37
A2038	Back To Back	Ball Bearing	Acetal	78	8	-	750	140	49
A2038HL	Back To Back High Load	Ball Bearing	Stainless Steel	78	8	-	750	600	76
A2039	Linked A2030 Blocks	Ball Bearing	Acetal	94	8	-	750	140	52
A2039FIDDLE	Single With Fiddle	Ball Bearing	Acetal	85	8	4	600	140	47
A2039BF	Single With Fiddle & Becket	Ball Bearing	Acetal	99.8	6	4	600	140	50
A2039-CAM	Single With Fiddle, Becket & Cleat	Ball Bearing	Acetal	89.31	6	4	600	140	86.2
A2039-CAM-LDC	Single With Fiddle, Becket, Cleat & Hook	Ball Bearing	Acetal	100	6	-	600	140	86
A2134	Upstand Block	Ball Bearing	Acetal	39	6	28.60	600	115	34.6



Part	Description	Bearing Type	Sheave type	Length mm	Max Line Dia. mm	Shackle / Fixing Hole Dia. mm	Breaking Load kg	MWL kg	Weight g	Fixing Hole Centres mm
20mm										
A2022	Double	Ball Bearing	Acetal	48	6	-	600	225	31.6	-
A2022HL	Double (HL)	Ball Bearing	Stainless Steel	48	6	-	600	325	42	-
A2022P	Double (P)	Plain	Acetal	47.6	6	-	500	-	29.4	-
A2022A	Articulating Double	Ball Bearing	Acetal	48	6	-	600	225	29.1	-
A2022AHL	Articulating Double (HL)	Ball Bearing	Stainless Steel	48	6	-	600	250	29.1	-
A2022Tii	Tii-On Double	Ball Bearing	Acetal	29	6	-	600	225	15.6	-
A2022TiiHL	Tii-On Double (HL)	Ball Bearing	Stainless Steel	29	6	-	600	250	25	-
A2022F	Double Fork Block	Ball Bearing	Acetal	51	6	5	600	225	15.5	-
A2023	Double With Becket	Ball Bearing	Acetal	59	6	-	600	225	33.5	-
A2022LZ	Double Stand Up Fixed	Ball Bearing	Acetal	53	6	-	600	225	34	28
A2022XHL	Double (XHL)	XHL / Ball Bearing	Stainless Steel	29	6	-	900	600	30	-
A2023XHL	Double With Becket (XHL)	XHL / Ball Bearing	Stainless Steel	38	6	-	900	600	33	-
30mm										
A2032	Double	Ball Bearing	Acetal	63	8	-	1250	280	72	-
A2032HL	Double (HL)	Ball Bearing	Stainless Steel	63	8	-	1250	450	87	-
A2032P	Double (P)	Plain	Acetal	64	8	-	1250	66	30	-
A2032A	Articulating Double	Ball Bearing	Acetal	63	8	-	1250	280	61.6	-
A2032Tii	Double Tii-On	Ball Bearing	Acetal	41.5	8	-	1100	280	48	-
A2032TiiHL	Double Tii-On (HL)	Ball Bearing	Stainless Steel	41.5	8	-	1100	300	60	-
A2033	Double With Becket	Ball Bearing	Acetal	76	8	-	1250	280	77	-



Articulating

The blocks can articulate freely from one another, allowing each to align perfectly with the rope angle.

INFO



To see our full range of sheave boxes go to page 70.

Part	Description	Bearing Type	Sheave type	Length mm	Max Line Diameter mm	Shackle Pin Diameter mm	Breaking Load kg	MWL kg	Weight g
20mm									
A2022SC	Double With Swivel	Ball Bearing	Acetal	56	6	4	350	225	15.4
A2022SHK	Double With Swivel Hook	Ball Bearing	Acetal	67.68	6	-	250	225	21.3
A2023HK	Double With Becket & Hook	Ball Bearing	Acetal	110	6	-	600	225	10
A2126M	Double Composite Cheek	Ball Bearing	Acetal	33	6	-	540	225	21.8
A2024	Triple	Ball Bearing	Acetal	50	6	-	650	320	47.9
A2024HL	Triple (HL)	Ball Bearing	Stainless Steel	50	6	-	650	400	63
A2024P	Triple (P)	Plain	Acetal	50	6	-	650	-	44.6
A2024A	Articulating Triple	Ball Bearing	Acetal	50	6	-	650	320	42.9
A2024AHL	Articulating Triple (HL)	Ball Bearing	Stainless Steel	50	6	-	650	400	63
A2024F	Triple With Fork	Ball Bearing	Acetal	51	6	5	650	320	48
A2025	Triple With Becket	Ball Bearing	Acetal	66	6	-	650	320	52.9
A2025P	Triple With Becket (P)	Plain	Acetal	66	6	-	650	-	49.6
30mm									
A2136M	Double Composite Cheek	Ball Bearing	Acetal	50	8	-	400	280	36.6
A2136MHL	Double Composite Cheek (HL)	Ball Bearing	Stainless Steel	50	8	-	400	300	57.6
A2034	Triple	Ball Bearing	Acetal	63	8	-	1750	490	103
A2034HL	Triple (HL)	Ball Bearing	Stainless Steel	63	8	-	1750	650	132
A2034P	Triple (P)	Plain	Acetal	63	8	-	1750	-	94
A2034A	Articulating Triple	Ball Bearing	Acetal	63	8	-	1750	490	82.2
A2035	Triple With Becket	Ball Bearing	Acetal	83	8	-	1750	420	114
A2035P	Triple With Becket (P)	Plain	Acetal	83	8	-	1750	-	105

Part	Description	Bearing Type	Sheave type	Length mm	Max Line Diameter mm	Shackle / Fixing Hole Diameter mm	Breaking Load kg	MWL kg	Weight g	Fixing Hole Centres mm
20mm										
A2024-677	Triple With Inverted Cleat	Ball Bearing	Acetal	55	6	-	650	320	86.9	-
A2027NB	Triple With Extended & Inverted Cleat	Ball Bearing	Acetal	75	6	-	650	320	98	-
A2025-677	Triple With Inverted Cleat & Becket	Ball Bearing	Acetal	66	6	-	650	320	86.9	-
A2027	Triple With Extended Cleat & Becket	Ball Bearing	Acetal	75	6	-	650	320	86.9	-
A2121	Single Through Deck	Ball Bearing	Acetal	54	6	-	350	105	10.8	42
A2121HL	Single Through Deck With Steel Sheave	Plain	Stainless Steel	54	6	-	400	-	17.7	42
A2121P	Single Through Deck (P)	Plain	Acetal	54	6	-	400	-	8.7	42
A2122	Double Through Deck	Ball Bearing	Acetal	60	6	-	350	105	19.1	64
A2122HL	Double Through Deck With Steel Sheave	Plain	Stainless Steel	75	6	-	350	-	33.3	63
A2122P	Double Through Deck (P)	Plain	Acetal	75	6	-	350	-	15.5	63
30mm										
A2034-676	Triple With Inverted Cleat	Ball Bearing	Acetal	65	8	-	1750	490	193	-
A2035-676	Triple, Becket And Inverted Cleat	Ball Bearing	Acetal	83	8	-	1750	490	200	-
A2037	Triple With Extended Cleat & Becket	Ball Bearing	Acetal	83	8	-	1750	490	208	-
A2030R2	Two Singles On Ring	Ball Bearing	Acetal	-	8	-	750	140	82.5	-
A2030R3	Three Singles On Ring	Ball Bearing	Acetal	-	8	-	750	140	108.5	-
A2131	Single Through Deck	Ball Bearing	Acetal	47	8	-	500	140	25.6	60
A2131HL	Single Through Deck With Steel Sheave	Plain	Stainless Steel	47	8	-	500	-	46.2	60
A2131P	Single Through Deck(P)	Plain	Acetal	47	8	-	500	-	22	60
A2132	Double Through Deck	Ball Bearing	Acetal	77	8	-	500	140	45	90
A2132HL	Double Through Deck With Steel Sheave	Plain	Stainless Steel	77	8	-	500	-	88	-
A2132P	Double Through Deck (P)	Plain	Acetal	77	8	-	500	-	37.6	-

XHL & TiiTAN

TiiTAN Block

The TiiTAN Block is a further development from our XHL range. Weighing in at only 28 grams makes the TiiTAN the lightest and strongest 30mm ball bearing pulley available on the market.

This is an incredible 30% weight reduction when compared to the 30mm XHL block.



Scan the QR code for more info.



A9030

A9031-873

TiiTAN Features:

- Ceramic ball bearings for reduced friction in salt water.
- Titanium sheave for maximum weight reduction.
- Chamfered rope guide for soft attachment with two lashing holes.
- Upgraded XHL bearing system

XHL & TiiTAN



XHL Blocks

Designed for extreme static loads without compromising low-load efficiency, XHL blocks use a hybrid bearing system: twin stainless steel ball bearings on a steel axle with a plain bearing washer. Under high loads, the block shifts to plain bearing mode to protect components, then reverts to dynamic once the load drops.

Features:

- Twin stainless steel ball bearings
- V-profile stainless steel sheave
- Durable aluminium side cheeks
- Available in six colours: Blue, Black, Silver, Gold, Orange, Purple.



SCAN FOR XHL INFO

XHL and TiiTAN blocks are ideal for vang cascades and halyard turning points where high static loads and smooth low-load performance are essential.

Part	Description	Breaking Load kg	MWL kg	Sheave Size mm	Length mm	Maximum Line Dia. mm	Weight g
A9030	TiiTAN Block	1250	500	30	40	8	28
A9031-873	TiiTAN Vang Block With SA.873	1000	500	30	69	8	43
A2020XHL	Extreme High Load Block	900	400	20	29	6	17
A2022XHL	Double Extreme High Load Block	900	600	20	29	6	30
A2023XHL	Double Extreme High Load Block With Becket	900	600	20	38	6	33
A2030XHL	Extreme High Load Block	1250	500	30	43	8	41
A2031XHL-873	Extreme High Load Vang Block With SA.873	1000	500	30	57	8	55
A2040XHL	Extreme High Load Block	1500	650	40	54	8	71

A2020XHL



A2022XHL

A2023XHL

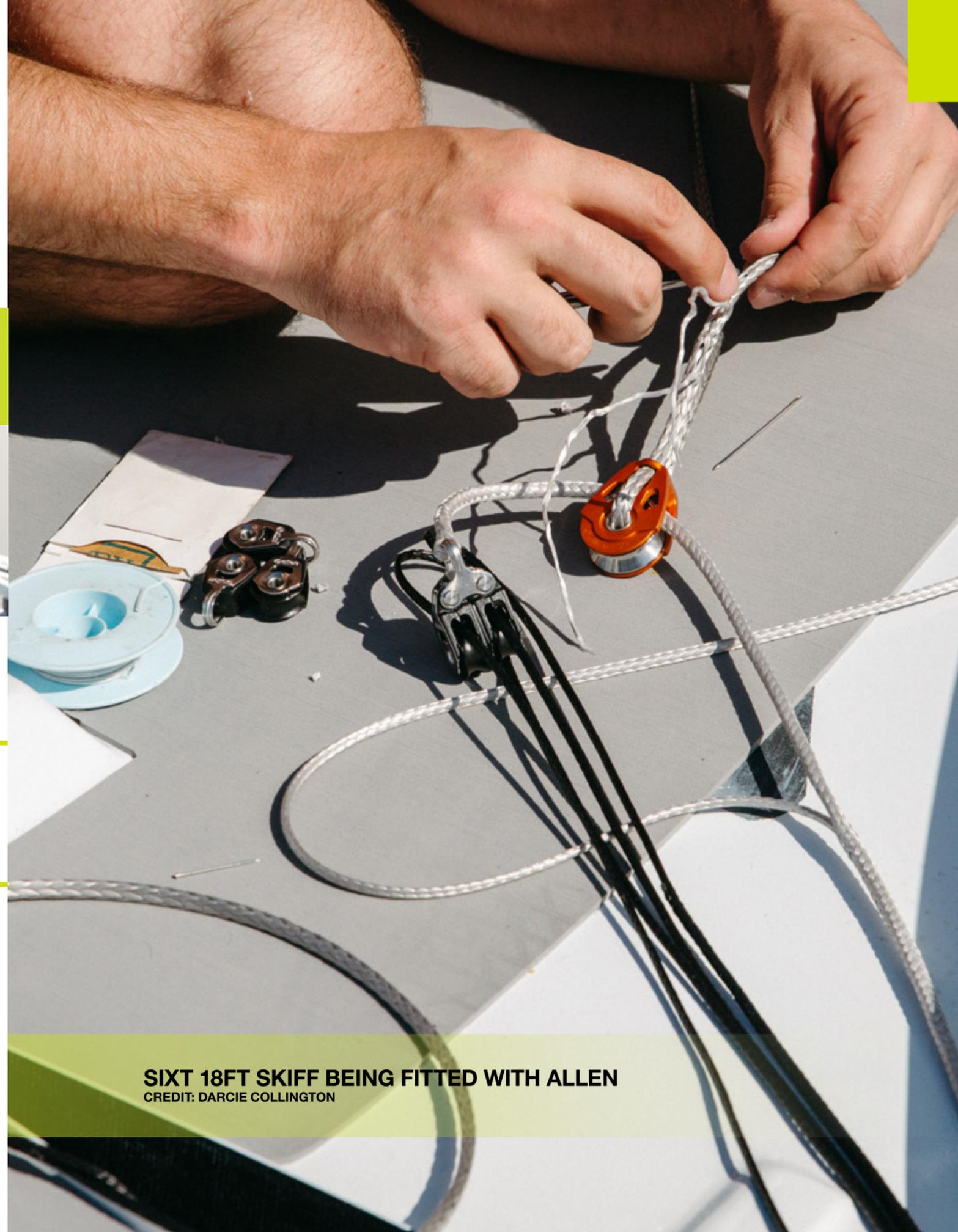


A2030XHL

A2031XHL-873



A2040XHL



SIXT 18FT SKIFF BEING FITTED WITH ALLEN
CREDIT: DARCIE COLLINGTON