



## Applications

Blocks are used in lifting systems, to change load direction or to drag a load. Blocks and the wire ropes they contain make a connection between a load and a lifting device.

## Range

Van Beest offers a wide range of blocks, from single sheave snatch blocks to multiple-sheave malleable iron blocks for use with wire- or fibre rope. Blocks are available for head loads ranging from 0.4 tons up to 15 tons.

Other types of blocks can be offered upon special request.

## Design

There are different types of blocks with specific designs to suit particular purposes. Some types are equipped with bronze bushes, other types are fitted with conical roller bearings. Which type to use depends on the frequency of use and the line speed.

Snatch blocks can be opened up to fit the wire rope easily. There is no need to thread the wire rope through the block.

All types are generally marked as follows:

- Working Load Limit                     ■ e.g. 8 t
- manufacturer's symbol                 ■ e.g. GP
- wire rope diameter in mm and inches ■ e.g. 20-22mm  $\frac{3}{4}$ - $\frac{7}{8}$  inch
- serial number                               ■ e.g. 1234567
- CE conformity code                       ■ CE

## Finish

Blocks can be either painted or hot dipped galvanized.

## Certification

Specific details of certificate availability can be found on each product page. Please verify your certification requirements with Van Beest at time of order.

## Instructions for use

Blocks should be inspected before use to ensure that:

- all markings are legible;
- a block with the correct WLL has been selected;
- the WLL applies to static loads only, the possible occurrence of shock loading must be taken into account when selecting a block;
- the block may never be side loaded but may only be used for in-line use;
- always make sure that the hook, eye or shackle of the block is supporting the load correctly;
- the pin, nut, cotter pin, or any other locking system cannot vibrate out of position;
- the sheaves are functional and rotate easily;
- blocks are free from nicks, gouges and cracks;
- blocks may not be heat treated as this may affect their WLL;
- never modify, repair or reshape a block by machining, welding, heating or bending as this may affect the WLL.

Blocks must be regularly inspected in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. which may lead to deformation and alteration of the material structure.

Inspection should take place at least every six months and more frequently when the blocks are used in severe operating conditions.

## Loads on blocks

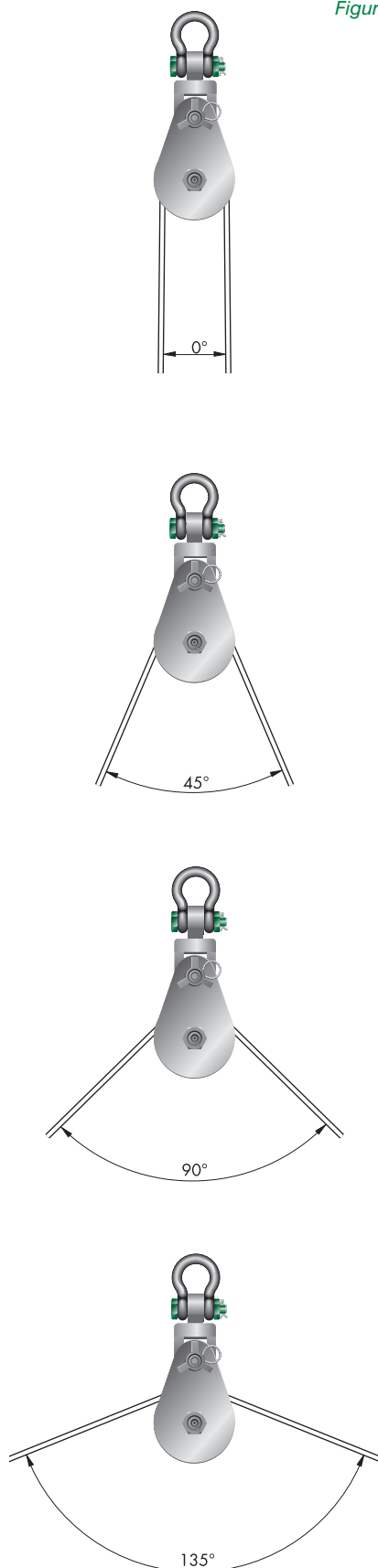
The WLLs of our blocks are the maximum loads to be applied to the blocks and their connecting fittings.

The load on a sheave or block varies with the angle between the lead and load line. See figure 1. When the two lines are parallel, 1 t on the lead line results in a load of 2 t on the fitting. As the working angle between the lines increases, the load on the fitting is reduced by the angle factor as per table 1. All loads shown ignore frictional losses in the lifting system.

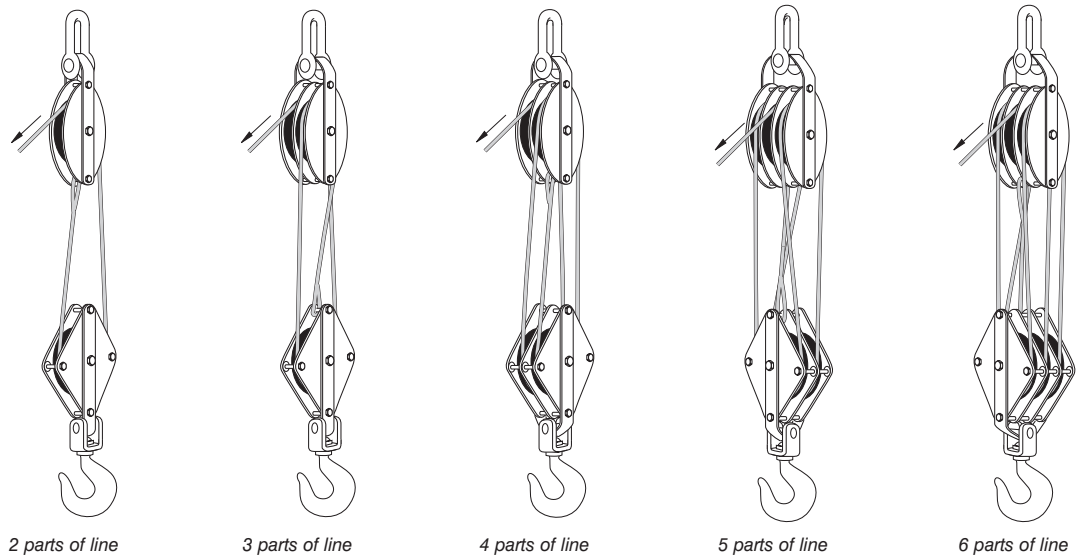
working angle	angle factor
0°	2
10°	1.99
20°	1.97
30°	1.93
40°	1.87
45°	1.84
50°	1.81
60°	1.73
70°	1.64
80°	1.53
90°	1.41
100°	1.29
110°	1.15
120°	1
130°	0.84
135°	0.76
140°	0.68
150°	0.52
160°	0.35
170°	0.17
180°	0

Table 1

Figure 1



**Lifting with multiple line parts**



Method of reeving tackle blocks will vary with the application. With heavy lifting systems where blocks with multiple sheaves are needed the number of blocks has to be determined. This is done for a given load that needs to be lifted, by calculating the number of parts of line as follows:

L = load to be lifted in t  
 P = single line pull in t  
 R = ratio

$$R = \frac{L}{P}$$

number of parts of line	bronze bushed sheaves	roller bearing sheaves
1	0.96	0.98
2	1.87	1.98
3	2.75	2.88
4	3.59	3.81
5	4.39	4.71
6	5.16	5.60
7	5.90	6.47
8	6.60	7.32
9	7.27	8.16
10	7.91	8.98
11	8.52	9.79
12	9.11	10.6

Table 2

Example:  
 L = 16 t  
 P = 3 t  
 How many parts of line are needed?

$$R = \frac{L}{P} = \frac{16}{3} = 5.3$$

Refer to ratio 5.3 in table 2 or the next larger number nearest to it, and then check the column under the header "number of parts of line"  
 For blocks with roller bearing sheaves this results in 6 parts of line that should be used to lift a 16 t load with a line pull of 3 t.





14

15

16

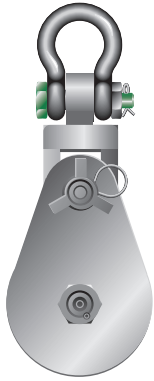
17

18

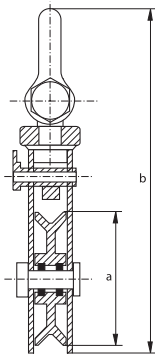
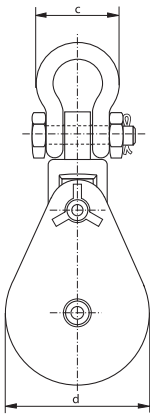
19

20





P-6951



## Green Pin® Snatch blocks type 601S, with Green Pin® Shackle

mm inch

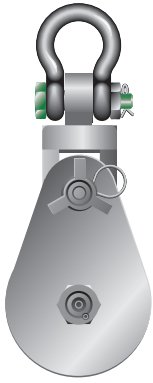
- **Material** : carbon steel, fitted with conical roller bearings, except for blocks with WLL 2 t and 4 t, these are equipped with bronze bushes
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 MTC<sup>b</sup> CE
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	diameter outside sheave	length	width	width outside	weight each
		a	b	c	d	
t	inch	inch	inch	inch	inch	lbs
2	9/32 - 3/8	3	11 9/16	3	3 1/4	8.60
4	3/8 - 1/2	4 1/2	14 9/32	4	4 23/32	14.11
4	1/2 - 9/16	6	16 7/16	4	6 9/32	18.52
8	9/16 - 5/8	6	18 25/32	4 5/8	6 9/32	31.5
12	9/16 - 5/8	6	21 7/8	5 25/32	6 9/32	44.1
8	3/4 - 7/8	6	18 25/32	4 5/8	6 9/32	31.1
12	3/4 - 7/8	6	21 7/8	5 25/32	6 9/32	44.1
15	1	6	23 1/32	6 7/8	6 9/32	52.9
4	3/8 - 1/2	8	18 13/16	4	8 9/32	24.3
12	9/16 - 5/8	8	22 13/16	5 25/32	8 9/32	59.5
8	3/4 - 7/8	8	20 23/32	4 5/8	8 9/32	39.7
12	3/4 - 7/8	8	22 13/16	5 25/32	8 9/32	61.7
15	1	8	25 7/16	6 7/8	8 9/32	66.1
8	9/16 - 5/8	10	22 29/32	4 5/8	10 1/4	57.3
8	3/4 - 7/8	10	22 29/32	4 5/8	10 1/4	57.3
12	3/4 - 7/8	10	26 3/4	5 25/32	10 1/4	77.2
15	1	10	27 3/4	6 7/8	10 1/4	92.6
8	3/4 - 7/8	12	24 3/32	4 5/8	12 3/16	68.3
12	3/4 - 7/8	12	29 5/16	5 25/32	12 3/16	116.8
15	1	12	30 5/16	6 7/8	12 3/16	121.3
8	3/4 - 7/8	14	26 1/32	4 5/8	14 5/32	68.3
12	3/4 - 7/8	14	30 9/32	5 25/32	14 5/32	132.3
15	1	14	31 3/8	6 7/8	14 5/32	138.9
8	3/4 - 7/8	16	27	4 5/8	16 5/32	77.2
12	3/4 - 7/8	16	32 9/32	5 25/32	16 5/32	147.7
15	1	16	33 3/8	6 7/8	16 5/32	154.3
8	3/4 - 7/8	18	29 31/32	4 5/8	18 1/8	92.6
12	3/4 - 7/8	18	34 9/16	5 25/32	18 1/8	165.3
15	1	18	35 1/32	6 7/8	18 1/8	172.0

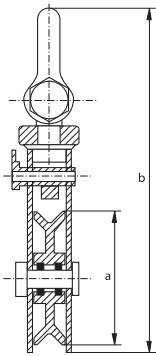
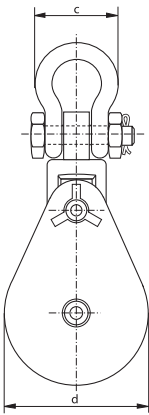
# Green Pin® Snatch blocks

## type 601S, with Green Pin® Shackle

mm inch



P-6951

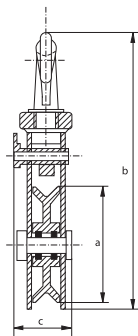
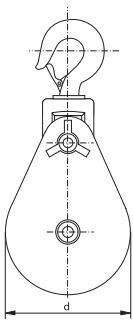


- **Material** : carbon steel, fitted with conical roller bearings, except for blocks with WLL 2 t and 4 t, these are equipped with bronze bushes
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 MTC<sup>b</sup> CE
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	diameter outside sheave	length	width	width outside	weight each
		a	b	c	d	
t	mm	mm	mm	mm	mm	kg
2	7 - 9	75	293	75	82	3.9
4	10 - 12	115	363	102	120	6.4
4	12 - 14	152	417	102	160	8.4
8	14 - 16	152	477	118	160	14.3
12	14 - 16	152	555	147	160	20
8	20 - 22	152	477	118	160	14.1
12	20 - 22	152	555	147	160	20
15	24 - 26	152	585	175	160	24
4	10 - 12	203	478	102	210	11
12	14 - 16	203	580	147	210	27
8	20 - 22	203	526	118	210	18
12	20 - 22	203	580	147	210	28
15	24 - 26	203	646	175	210	30
8	14 - 16	254	582	118	260	26
8	20 - 22	254	582	118	260	26
12	20 - 22	254	680	147	260	35
15	24 - 26	254	705	175	260	42
8	20 - 22	305	612	118	310	31
12	20 - 22	305	745	147	310	53
15	24 - 26	305	771	175	310	55
8	20 - 22	357	662	118	360	31
12	20 - 22	357	770	147	360	60
15	24 - 26	357	798	175	360	63
8	20 - 22	406	712	118	410	35
12	20 - 22	406	820	147	410	67
15	24 - 26	406	848	175	410	70
8	20 - 22	457	762	118	460	42
12	20 - 22	457	878	147	460	75
15	24 - 26	457	898	175	460	78



P-6952



## Green Pin® Snatch blocks

### type 601H, with hook

mm inch

- **Material** : carbon steel, fitted with conical roller bearings, except for blocks with WLL 2 t and 4 t, these are equipped with bronze bushes
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 MTC<sup>b</sup> CE
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	diameter outside sheave	length	thickness	width outside	weight each
t	inch	inch	inch	inch	mm	
2	$\frac{9}{32} - \frac{3}{8}$	3	$11 \frac{17}{32}$	$2 \frac{1}{4}$	$3 \frac{1}{4}$	8.82
4	$\frac{3}{8} - \frac{1}{2}$	$4 \frac{1}{2}$	$13 \frac{17}{32}$	$3 \frac{9}{32}$	$4 \frac{23}{32}$	13.45
4	$\frac{1}{2} - \frac{9}{16}$	6	$15 \frac{1}{8}$	$3 \frac{9}{32}$	$6 \frac{9}{32}$	13.23
8	$\frac{3}{4} - \frac{7}{8}$	6	$17 \frac{9}{16}$	$4 \frac{1}{4}$	$6 \frac{9}{32}$	26
12	$\frac{3}{4} - \frac{7}{8}$	6	$22 \frac{17}{32}$	5	$6 \frac{9}{32}$	50.7
15	1	6	$23 \frac{1}{8}$	5	$6 \frac{9}{32}$	50.7
4	$\frac{3}{8} - \frac{15}{32}$	8	$17 \frac{5}{32}$	$3 \frac{9}{32}$	$8 \frac{9}{32}$	17.64
8	$\frac{3}{4} - \frac{7}{8}$	8	$19 \frac{17}{32}$	$4 \frac{1}{4}$	$8 \frac{9}{32}$	37.3
12	$\frac{3}{4} - \frac{7}{8}$	8	$24 \frac{1}{2}$	5	$8 \frac{9}{32}$	55.1
15	1	8	$25 \frac{1}{8}$	5	$8 \frac{9}{32}$	57.3
8	$\frac{3}{4} - \frac{7}{8}$	10	$21 \frac{17}{32}$	$4 \frac{1}{4}$	$10 \frac{1}{4}$	41.9
12	$\frac{3}{4} - \frac{7}{8}$	10	$26 \frac{1}{2}$	5	$10 \frac{1}{4}$	61.7
15	$\frac{15}{16} - 1 \frac{1}{32}$	10	$27 \frac{1}{8}$	5	$10 \frac{1}{4}$	61.7
8	$\frac{3}{4} - \frac{7}{8}$	12	$23 \frac{17}{32}$	$4 \frac{1}{4}$	$12 \frac{3}{16}$	50.7
12	$\frac{3}{4} - \frac{7}{8}$	12	$28 \frac{1}{2}$	5	$12 \frac{3}{16}$	68.3
15	1	12	$29 \frac{1}{8}$	5	$12 \frac{3}{16}$	68.3
8	$\frac{3}{4} - \frac{7}{8}$	14	$25 \frac{17}{32}$	$4 \frac{1}{4}$	$14 \frac{5}{32}$	68.3
12	$\frac{3}{4} - \frac{7}{8}$	14	$30 \frac{1}{2}$	5	$14 \frac{5}{32}$	72.8
15	1	14	$31 \frac{1}{8}$	5	$14 \frac{5}{32}$	72.8
8	$\frac{3}{4} - \frac{7}{8}$	16	$27 \frac{17}{32}$	$4 \frac{1}{4}$	$16 \frac{5}{32}$	79.4
12	$\frac{3}{4} - \frac{7}{8}$	16	$32 \frac{1}{2}$	5	$16 \frac{5}{32}$	79.4
15	1	16	$33 \frac{1}{8}$	5	$16 \frac{5}{32}$	79.4
8	$\frac{3}{4} - \frac{7}{8}$	18	$29 \frac{1}{2}$	$4 \frac{1}{4}$	$18 \frac{1}{8}$	88.2
10	$\frac{3}{4} - \frac{7}{8}$	18	$34 \frac{1}{2}$	5	$18 \frac{1}{8}$	92.6
15	1	18	$35 \frac{1}{8}$	5	$18 \frac{1}{8}$	94.8

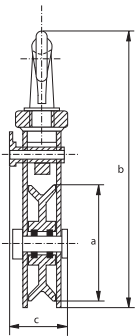
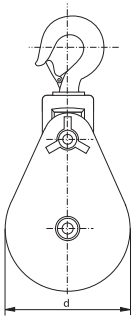
# Green Pin® Snatch blocks

## type 601H, with hook

mm inch



P-6952



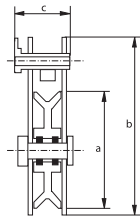
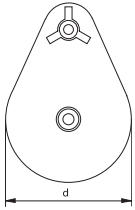
- **Material** : carbon steel, fitted with conical roller bearings, except for blocks with WLL 2 t and 4 t, these are equipped with bronze bushes
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 MTC<sup>b</sup> CE
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	diameter outside sheave	length	thickness	width outside	weight each
		a	b	c	d	
t	mm	mm	mm	mm	mm	kg
2	7 - 9	75	292	57	82	4
4	10 - 12	115	343	83	120	6.1
4	12 - 14	152	384	83	160	6
8	20 - 22	152	445	108	160	11.8
12	20 - 22	152	572	127	160	23
15	24 - 26	152	587	127	160	23
4	10 - 12	203	435	83	210	8
8	20 - 22	203	495	108	210	16.9
12	20 - 22	203	622	127	210	25
15	24 - 26	203	638	127	210	26
8	20 - 22	254	546	108	260	19
12	20 - 22	254	673	127	260	28
15	24 - 26	254	689	127	260	28
8	20 - 22	305	597	108	310	23
12	20 - 22	305	724	127	310	31
15	24 - 26	305	740	127	310	31
8	20 - 22	357	648	108	360	31
12	20 - 22	357	775	127	360	33
15	24 - 26	357	791	127	360	33
8	20 - 22	406	699	108	410	36
12	20 - 22	406	825	127	410	36
15	24 - 26	406	841	127	410	36
8	20 - 22	457	749	108	460	40
10	20 - 22	457	876	127	460	42
15	24 - 26	457	892	127	460	43





P-6953



## Green Pin® Snatch blocks

### type 601T

- **Material** : carbon steel, fitted with conical roller bearings, except for blocks with WLL 4 t, these are equipped with bronze bushes
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 MTC<sup>b</sup> CE
- **Note** : Working Load Limit is on the headfitting

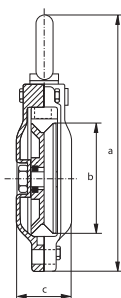
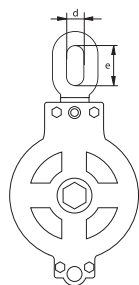
working load limit	diameter wire rope	diameter outside sheave	length	thickness	width outside	weight each
t	mm	a mm	b mm	c mm	d mm	kg
4	10 - 12	115	213	83	120	4
8	20 - 22	152	305	108	160	9
8	20 - 22	203	357	108	210	12
8	20 - 22	254	406	108	260	16

### In inch

working load limit	diameter wire rope	diameter outside sheave	length	thickness	width outside	weight each
t	inch	a inch	b inch	c inch	d inch	lbs
4	$\frac{3}{8} - \frac{1}{2}$	4 $\frac{1}{2}$	8 $\frac{3}{8}$	3 $\frac{9}{32}$	4 $\frac{23}{32}$	8.82
8	$\frac{3}{4} - \frac{7}{8}$	6	12	4 $\frac{1}{4}$	6 $\frac{9}{32}$	19.84
8	$\frac{3}{4} - \frac{7}{8}$	8	14 $\frac{1}{32}$	4 $\frac{1}{4}$	8 $\frac{9}{32}$	26.5
8	$\frac{3}{4} - \frac{7}{8}$	10	15	4 $\frac{1}{4}$	10 $\frac{1}{4}$	35.3



P-6916



## American pattern cargo blocks with eye, one sheave

- **Material** : carbon steel  
sheave with taper roller bearing
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : 2.1 2.2 CE
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	length	diameter	thickness	width inside	length inside	weight each
t	mm	a	b	c	d	e	kg
4	10 - 13	437	156	82	35	75	11
6	20 - 22	512	200	104	35	75	20
6	20 - 22	610	260	130	40	85	27
10	20 - 22	750	305	165	54	125	40
10	20 - 24	840	355	165	54	125	55
20	32 - 35	1040	410	190	73	170	100
32	26 - 28	1018	430	192	73	170	125
40	26 - 28	1095	460	210	73	170	150