



## Applications

Blocks are used in lifting systems, to change load direction or to drag a load. Together with the wire rope, blocks are the connection between the load to be lifted and the 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. Standard blocks are suited for head loads ranging from 0.4 up to 20 tons.

Other types of blocks can be offered upon special request.

## Design

There are different types of blocks with their specific designs to suit a particular purpose. Some types are equipped with bronze bushes while other types have ball bearings depending on frequency of use and line speed. Snatch blocks allow the wire rope to be attached easily by opening up the block instead of threading the wire rope through the block.

All types carry the following markings:

- Working Load Limit;
- manufacturer's identification symbol (UBS);
- traceability code;
- CE.

## Finish

Blocks can be either painted, electro-galvanized or self coloured.

## Certification

All blocks can be supplied with test certificates upon request.

## Instructions for use

The basic objective of any lifting operation is to move the load to the desired location and land it safely, efficiently and without damage to the load, the equipment used and/or the surrounding area.

The following point must be observed:

- Do not attempt any lifting operation unless you have been trained in the use of the equipment concerned;

Blocks should be inspected before use to ensure that:

- all markings are legible;
- blocks are free from nicks, gouges and cracks;
- the sheaves are functional and rotate easily;
- a block with the correct Working Load Limit has been selected with respect to the load being moved and the wire rope being used;
- the block is never side-loaded but strictly used for straight or in-line pull;
- the Working Load Limit applies to static loads only, shock loading must be taken into account when selecting a block;
- always make sure that the hook, eye or shackle of the block is supporting the load correctly;
- blocks may not be heat treated as this may affect their Working Load Limit;
- never repair or reshape a block by welding, heating or bending as this may affect the Working Load Limit.

It is required that the products are regularly inspected and that the inspection should take place 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. with a consequence of deformation and alteration of the material structure.

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

## Loads on blocks

All working load limits of our blocks are the maximum loads on 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, 1000 kg on the lead line results in a load of 2000 kg 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

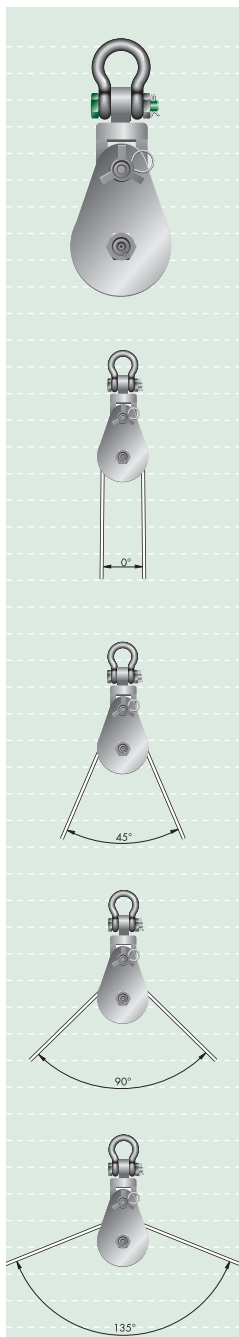
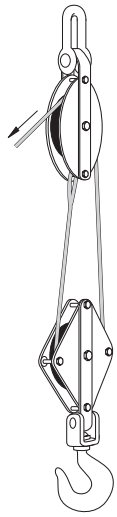
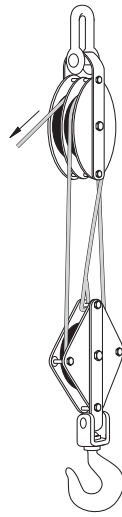


Figure 1

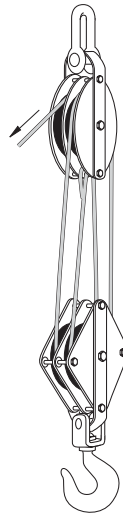
## Lifting with multiple line parts



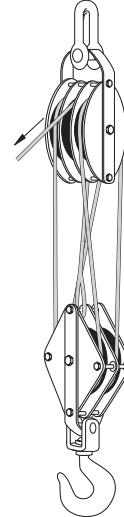
2 parts of line



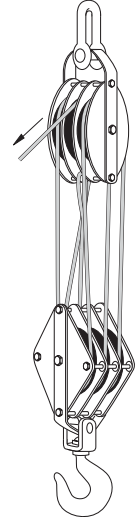
3 parts of line



4 parts of line



5 parts of line



6 parts of line

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 tons

P = single line pull in tons

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:

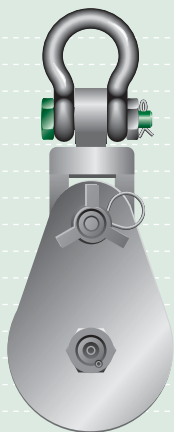
L = 16 tons

P = 3 tons

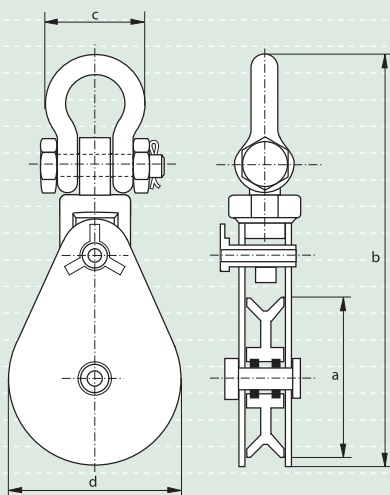
How many parts of line are needed?

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

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 tons load with a line pull of 3 tons.



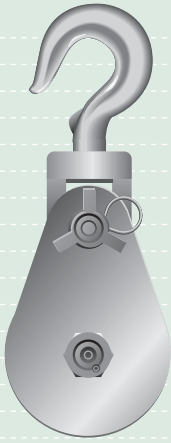
P-6951



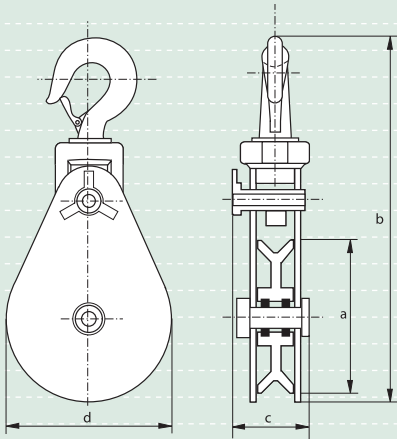
## Green Pin® Snatch blocks type 601S, with Green Pin Shackle

- **Material** : carbon steel, fitted with conical roller bearings
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	diameter outside sheave		length	width	width outside		weight per pce
		a	b			c	d	
tons	mm	mm	mm	mm	mm	mm	mm	kg
2	7-9	75	293	79	82	3.8		
4	10-12	115	363	107	120	6.1		
4	12-14	152	417	107	160	9.5		
8	20-22	152	477	124	160	14.6		
12	20-22	152	555	154	160	25		
15	24-26	152	585	170	160	30		
4	10-12	203	478	107	210	12		
8	20-22	203	526	124	210	16		
12	20-22	203	580	154	210	32		
15	24-26	203	646	170	210	35		
8	20-22	254	582	124	260	18		
12	20-22	254	680	154	260	39		
15	24-26	254	705	170	260	43		
8	20-22	305	612	124	310	27		
12	20-22	305	745	154	310	53		
15	24-26	305	771	170	310	55		
8	20-22	357	662	124	360	31		
12	20-22	357	770	154	360	60		
15	24-26	357	798	170	360	63		
8	20-22	406	712	124	410	35		
12	20-22	406	820	154	410	67		
15	24-26	406	848	170	410	70		
8	20-22	457	762	124	460	42		
12	20-22	457	878	154	460	75		
15	24-26	457	898	170	460	78		



P-6952



## Snatch blocks type 601H, with hook

- **Material** : carbon steel, fitted with conical roller bearings
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

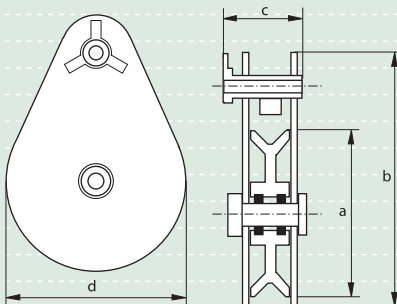
working load limit	diameter wire rope	diameter outside sheave		length	thickness	width outside	weight per pce
		a	b				
tons	mm	mm	mm	mm	mm	mm	kg
2	7 - 9	75	292	57	82	4	
4	10 - 12	115	343	83	120	6.1	
4	12 - 14	152	384	83	160	13.8	
8	20 - 22	152	445	108	160	12.5	
12	20 - 22	152	572	127	160	23	
15	24 - 26	152	587	127	160	23	
4	10 - 12	203	435	83	210	8	
8	20 - 22	203	495	108	210	15	
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	

## Snatch blocks type 601T

- **Material** : carbon steel, fitted with conical roller bearings
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting



P-6953



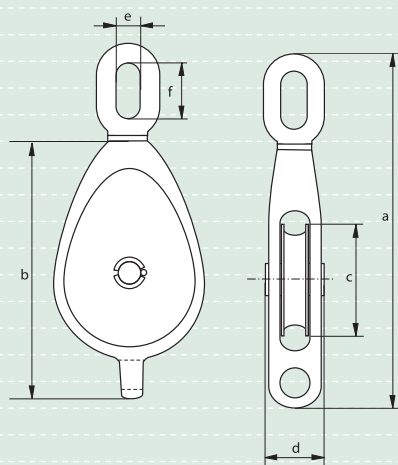
working load limit	diameter wire rope	diameter outside sheave		length	thickness	width outside	weight per pce
		a	b				
tons	mm	mm	mm	mm	mm	mm	kg
4	10 - 12	115	213	83	120	4	
8	20 - 22	152	305	108	160	9	
8	20 - 22	203	357	108	210	12	
8	20 - 22	254	406	108	260	16	

## Galvanized malleable iron blocks with eye, one sheave, for use with wire or fibre rope

- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting



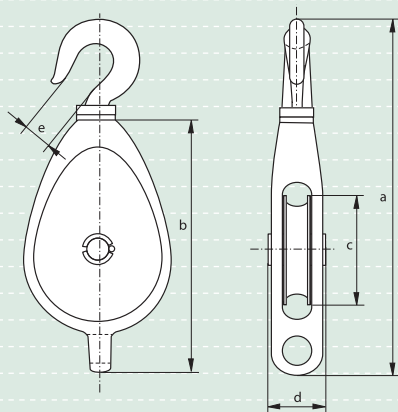
G-6917



working load limit	diameter rope	length		diameter		thickness	width inside	length inside	weight per pce
		a	b	c	d				
tons	mm	mm	mm	mm	mm	mm	mm	mm	kg
0.4	12	164	118	45	39	14	25	0.7	
0.8	16	232	158	62	45	18	37	1.4	
1	18	270	178	82	49	24	52	1.8	
2	24	340	233	98	60	30	59	3.7	
2.2	28	350	246	111	64	30	59	4.9	
2.6	30	390	280	136	68	30	59	7.2	
3	32	420	314	159	75	44	70	10.8	
3.6	34	460	350	174	75	44	70	12.6	



G-6918

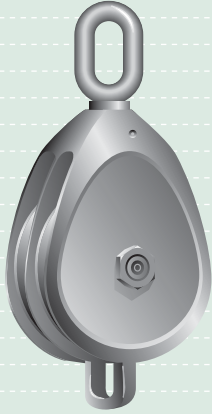


## Galvanized malleable iron blocks with hook, one sheave, for use with wire or fibre rope

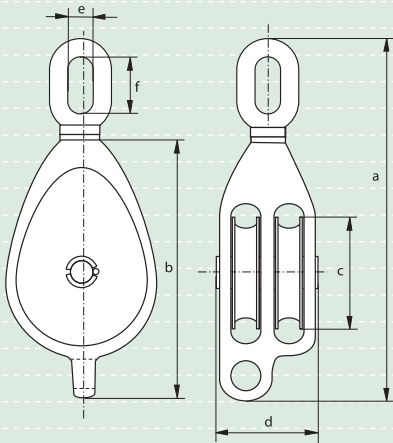
- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter rope	length		diameter		thickness	width inside	weight per pce
		a	b	c	d			
tons	mm	mm	mm	mm	mm	mm	mm	kg
0.4	12	203	118	45	39	24	0.9	
0.8	16	262	158	62	45	28	1.5	
1	18	278	173	82	49	28	2	
2	24	346	233	98	60	30	3.8	
2.2	28	388	246	111	64	30	5.1	
2.4	30	415	280	136	68	30	7.7	
3	32	450	314	159	75	48	11.4	
3.6	34	492	350	174	75	48	13.5	

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16



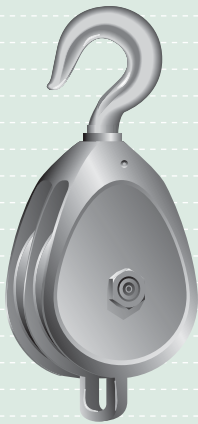
G-6922



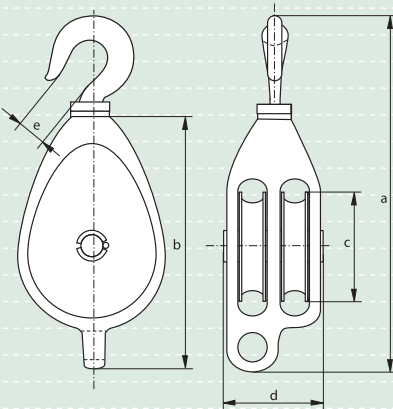
## Galvanized malleable iron blocks with eye, two sheaves, for use with wire or fibre rope

- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter rope	length	length	diameter	thickness	width inside	length inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	f mm	kg
0.4	12	164	118	45	62	14	25	1.2
0.9	16	232	158	62	70	18	37	2.1
1.1	18	270	175	82	74	24	52	3.1
2	24	340	233	98	102	30	59	6.0
2.3	28	350	246	111	112	30	59	7.4
2.6	30	390	280	136	119	30	59	9.0
3	32	420	314	159	130	44	70	16.2
3.6	34	460	350	174	130	44	70	18.3



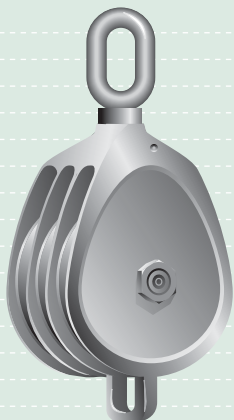
G-6923



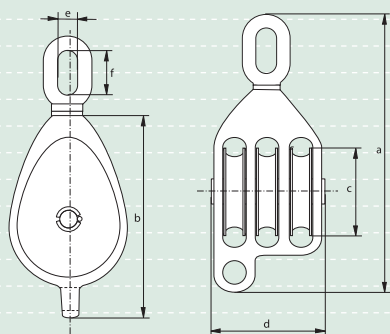
## Galvanized malleable iron blocks with hook, two sheaves, for use with wire or fibre rope

- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter rope	length	length	diameter	thickness	width inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	kg
0.4	12	203	118	45	62	24	1.3
0.9	16	262	158	62	70	28	2.3
1.1	18	278	175	82	74	28	3.3
2	24	346	233	98	102	30	6.2
2.3	28	388	246	111	112	30	7.6
2.6	30	415	280	136	119	30	11.3
3.6	34	492	350	174	130	48	16.8
3	32	450	314	159	130	48	19.3



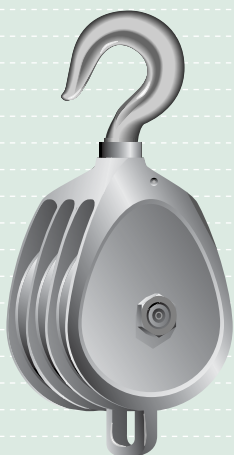
G-6927



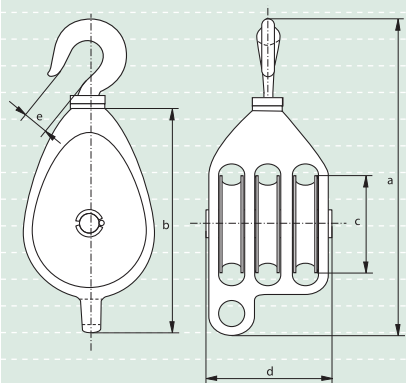
## Galvanized malleable iron blocks with eye, three sheaves, for use with wire or fibre rope

- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter rope	length	length	diameter	thickness	width inside	length inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	f mm	kg
0.4	12	170	120	45	83	14	25	1.5
0.8	16	229	154	62	90	18	37	2.6
1	18	287	190	82	103	24	52	4.1
2	24	342	235	98	133	30	59	7.8
2.6	28	392	284	136	155	30	59	14.5
3.6	30	485	350	174	166	44	70	25



G-6928

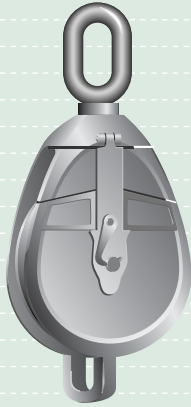


## Galvanized malleable iron blocks with hook, three sheaves, for use with wire or fibre rope

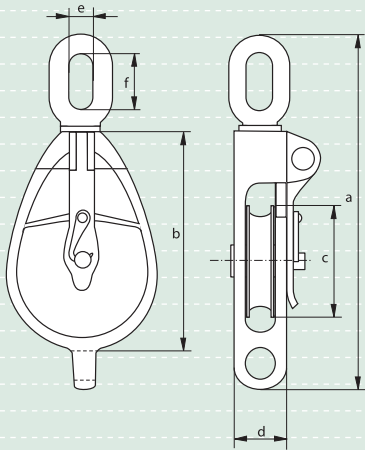
- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : hot dipped galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter rope	length	length	diameter	thickness	width inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	kg
0.4	12	205	120	45	83	24	1.6
0.8	16	259	154	62	90	28	2.7
1	18	294	190	82	103	28	4.3
2	24	348	235	98	133	30	8.1
2.6	28	397	284	136	155	30	14.7
3.6	30	510	350	174	166	48	26.2

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16



E-6943



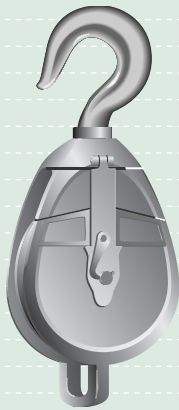
## Galvanized malleable iron snatch blocks with eye, one sheave, for use with fibre rope

- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : electro-galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

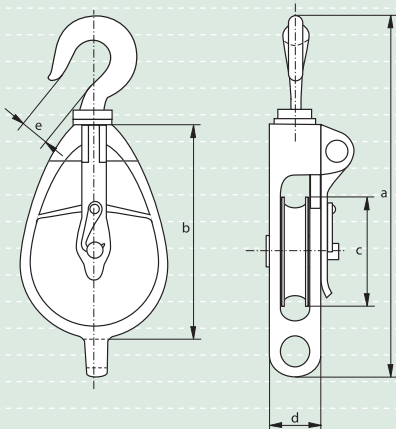
working load limit	diameter rope	length	length	diameter	thickness	width inside	length inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	f mm	kg
0.8	16	219	102	54	38	19	35	1.5
1	18	276	127	63	38	25	51	1.8
1.6	20	302	152	82	38	25	51	3.5
2.2	24	378	203	127	51	32	57	6

## Galvanized malleable iron snatch blocks with hook, one sheave, for use with fibre rope

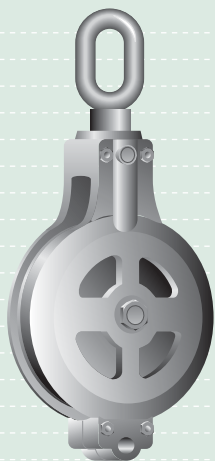
- **Material** : galvanized malleable iron
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : electro-galvanized
- **Certification** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting



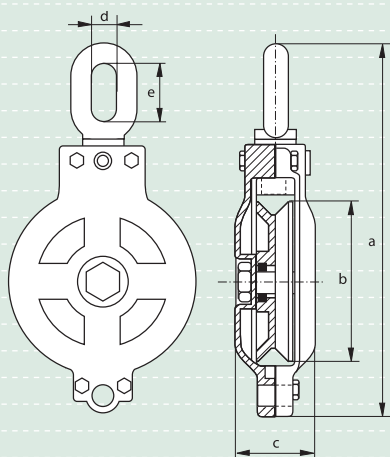
E-6944



working load limit	diameter rope	length	length	diameter	thickness	width inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	kg
0.8	16	238	102	54	38	27	1.5
1	18	295	127	63	38	27	1.8
1.6	20	321	152	82	38	29	3.5
2.2	24	391	203	127	51	36	6



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** : test certificates can be supplied upon request
- **Note** : Working Load Limit is on the headfitting

working load limit	diameter wire rope	length	diameter	thickness	width inside	length inside	weight per pce
tons	mm	a mm	b mm	c mm	d mm	e mm	kg
4	10-13	437	156	82	35	75	11
6	20-22	512	200	104	35	75	20
6	20-22	610	260	124	40	85	27
10	20-22	750	305	165	54	125	40
10	24-26	840	355	165	54	125	55
20	32-35	1040	406	180	73	170	100
32	26-28	1018	430	192	73	170	125
40	26-28	1095	460	210	73	170	150