

EXCEL® Lifting Points

Applications

EXCEL® lifting points are screwed into or welded on a load, machine or any other object which cannot be lifted by hand or by fork lift truck.

Range

Van Beest offers a wide range of lifting points in alloy steel: fixed, articulated, pivoting and/or rotating.

Design

EXCEL® lifting points are made of grade 8 alloy steel, apart from the forged welding base of the PAS, which is made of welding quality steel.

Compared to the DIN 580 and 582 carbon steel lifting eyes, the alloy steel lifting eyes offer a higher Working Load value for an equivalent size. ADA articulated lifting eyes can be loaded in all directions, providing full safety when used under different angles.

EXCEL® grade 8 components are generally marked as follows:

- | | |
|--|-------------------------------------|
| - Working Load Limit | ■ e.g. 1.5 t |
| - manufacturer's identification symbol | ■ EXCEL |
| - thread diameter in mm or inch | ■ e.g. M16 or $\frac{5}{8}$ "-11UNC |
| - traceability code | ■ e.g. HA |
| - steel grade | ■ 8 (only on AL, EL, ADA and PAS) |
| - item code | ■ EL, AL, ADA or OL |
| - origin | ■ FRANCE |
| - CE conformity code | ■ CE |

Finish

EXCEL® grade 8 lifting points are powder coated in red. All the lifting points are supplied with a protective cover over the thread.

Do not remove the cover until use.

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

Lifting points should be inspected before use to ensure that:

- all markings are legible;
- lifting points with the correct WLL have been selected;
- lifting points and the other components are of the same steel grade;
- lifting points should never be side loaded;
- always make sure that the lifting point is supporting the load correctly;
- lifting points should be seated well down in the hook;
- lifting points should be well fixed in the load (same thread, well positioned);
- lifting points are not distorted or unduly worn;
- lifting points are free from nicks, gouges, cracks and corrosion;
- lifting points may not be heat treated as this may affect their WLL;
- never modify, repair or reshape a lifting point by machining, welding, heating or bending as this may affect the WLL.

The WLL of the lifting points must be derated when used above 200°C. Please refer to the paragraph on temperature at the beginning of this chapter.

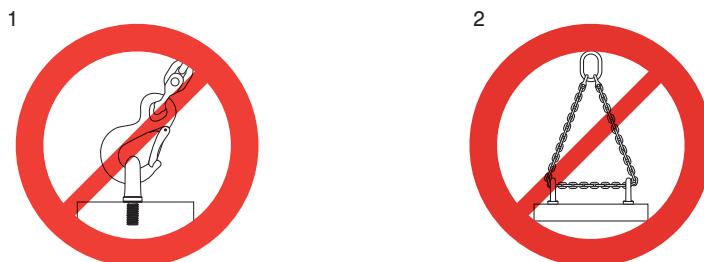
Assembly

The thread length should be adapted to the material of the load. For hard materials, the thread length must not be smaller than 1.5 times the diameter (e.g. M20, minimum length 30 mm). For soft materials like aluminium or brass, a length of 3 times the diameter is needed. For soft materials, consider using a longer length and through-hole mounting with a nut and washer on the other side. The nut on the bolt should at least be class 8, but class 10 or 12 is recommended.

The bolt thread and the tapped hole in the load must be compatible and both in a good state. The tapping should be at least 20 % deeper than the thread length.

The surface should be flat and perpendicular to the thread enable full contact with the lifting point.

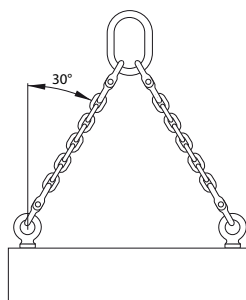
The material to which the lifting point is attached should be strong enough to withstand lifting forces without any deformation. The lifting points must perfectly fit on the material of the load to be lifted. Full contact between the lifting point and the surface is required.



1) The lifting points should match the size of the hook, so that they can be correctly positioned into the hook.

2) Never use a sling as a loop between two lifting points.

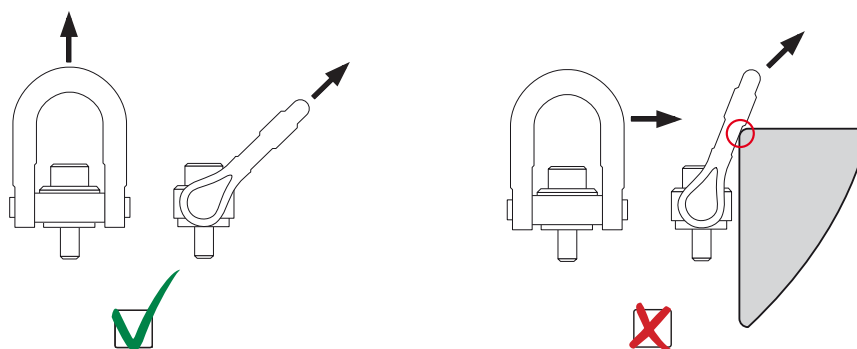
Consider the center of gravity of the load to position the lifting points (symmetric to the center). The tapping must be positioned at a distance of at least 3 times the diameter of the bolt from the edge of the load.



For the AL, EL and OL lifting points, the application angle may be up to 30° from the vertical. Above 30°, the WLL decreases significantly. We recommend the use of pivoting and rotating hoist rings (ADA) when the angle is above 30°.

Fasten these lifting points by hand and without the use of any tools or leverage. The lifting point has to be tightened just so deep that the lower edge connects to the surface of the load.

For the ADA pivoting and rotating hoist rings, tighten the threaded bolt to recommended torque (see product table). Periodically check the torque because the bolts may come loose during use. Check if the hoist ring can pivot and rotate freely in all directions.



INFO

The maximum work load per hoist ring depends on the angle of inclination and should be calculated using the following formula :

$$WLL = \frac{W}{N \cdot \cos \beta}$$

W = load weight in kg

N = number of legs or hoist rings

β = angle of inclination to the vertical of the leg

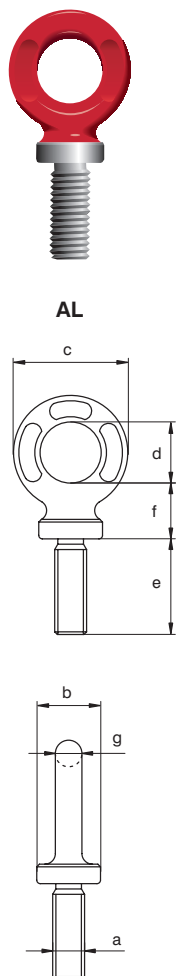
For welding instructions for transport rings type PAS we refer to instruction PI-03-01 in the FAQ section on our website.

Inspection

It is required that the products are regularly inspected in accordance with the safety standards given in the country of use. This is necessary 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 by a competent person should take place at least every six months and more frequently when the components are used in severe operating conditions.

EXCEL® Eye bolt, grade 8

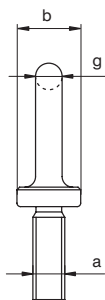
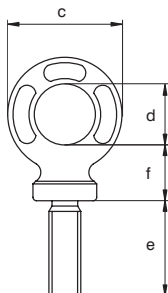
- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI b CE



working load limit	diameter thread	diameter base	diameter eye outside	diameter eye inside	length	thickness base	diameter	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	kg
0.2	M 6 x 1.00	20	34	20	20	17	7	0.05
0.4	M 8 x 1.25	20	34	20	24	17	7	0.07
0.7	M10 x 1.50	20	38	22	30	19	8	0.08
1	M12 x 1.75	25	47	26	36	23	10	0.14
1.2	M14 x 2.00	30	57	29	40	28	14	0.25
1.5	M16 x 2.00	36	65	35	55	30	14	0.39
2	M18 x 2.50	36	65	35	54	30	14	0.38
2.5	M20 x 2.50	40	73	39	59	34	16	0.58
3	M22 x 2.50	42	82	44	64	38	19	1.01
4	M24 x 3.00	55	95	54	84	40	20	1.12
5	M27 x 3.00	55	95	54	84	40	20	1.18
6	M30 x 3.50	60	108	59	100	49	24	1.84
7	M33 x 3.50	60	108	59	100	49	24	2.01
8	M36 x 4.00	65	118	67	118	45	25	2.44
9	M39 x 4.00	65	118	67	118	45	25	2.62
10	M42 x 4.50	70	139	79	135	56	31	5.41
15	M45 x 4.50	70	139	79	135	56	31	4.16
18	M48 x 5.00	95	181	97	150	68	43	8.22
20	M52 x 5.00	95	181	97	150	68	43	8.55
25	M56 x 5.50	95	181	97	150	68	43	8.85
30	M60 x 5.50	95	181	97	150	68	43	9.16
36	M64 x 6.00	95	181	97	150	68	43	9.55

EXCEL®

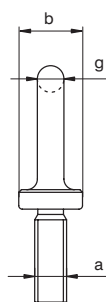
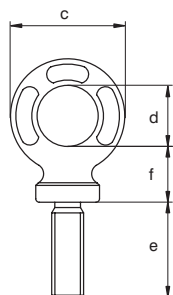
ALDIN



EXCEL® Eye bolt length as DIN580, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI^b CE

working load limit	diameter thread	diameter base	diameter eye outside	diameter eye inside	length	thickness base	diameter	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	kg
0.2	M 6 x 1.00	20	34	20	13	17	7	0.05
0.4	M 8 x 1.25	20	34	20	13	17	7	0.05
0.7	M10 x 1.50	20	38	22	17	19	8	0.08
1	M12 x 1.75	25	47	26	21	23	10	0.13
1.2	M14 x 2.00	30	57	29	27	28	14	0.24
1.5	M16 x 2.00	36	64	35	27	30	14	0.34
2	M18 x 2.50	36	65	35	30	30	14	0.36
2.5	M20 x 2.50	40	73	39	30	34	16	0.52
3	M22 x 2.50	42	82	44	35	38	19	0.74
4	M24 x 3.00	55	95	54	36	40	20	0.99
5	M27 x 3.00	55	95	54	38	40	20	1.03
6	M30 x 3.50	60	108	59	45	49	24	1.66
7	M33 x 3.50	60	108	59	45	49	24	1.66
8	M36 x 4.00	65	118	67	54	45	25	2.01
9	M39 x 4.00	65	118	67	55	45	25	2.08
10	M42 x 4.50	70	139	79	63	56	31	3.37
15	M45 x 4.50	70	139	79	65	56	31	3.47
18	M48 x 5.00	95	181	97	68	68	43	7.17
20	M52 x 5.00	95	181	97	78	68	43	7.53
25	M56 x 5.50	95	181	97	78	68	43	7.52
30	M60 x 5.50	95	181	97	78	68	43	7.78
36	M64 x 6.00	95	181	97	90	68	43	8.42


ALUNC


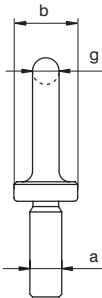
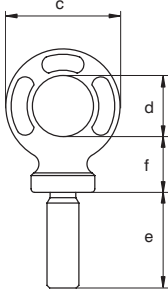
EXCEL® Eye bolt, grade 8, UNC

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI b CE

working load limit	diameter thread	diameter base	diameter eye outside	diameter eye inside	length	thickness base	diameter	weight each
t	a inch	b mm	c mm	d mm	e mm	f mm	g mm	kg
0.2	1/4 - 20UNC	20	34	20	20	17	7	0.05
0.7	3/8 - 16UNC	20	38	22	30	19	8	0.08
1	1/2 - 13UNC	25	47	26	36	23	10	0.14
1.5	5/8 - 11UNC	36	65	35	55	30	14	0.38
2.5	3/4 - 10UNC	40	73	39	59	34	16	0.55
3	7/8 - 9UNC	42	82	44	64	38	19	0.81
4	1 - 8UNC	55	95	54	84	40	20	1.14
5	1 1/8 - 7UNC	55	95	54	84	40	20	1.21
6	1 1/4 - 7UNC	60	108	59	100	49	24	1.91
8	1 1/2 - 6UNC	65	118	67	118	45	25	2.52



ALB



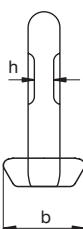
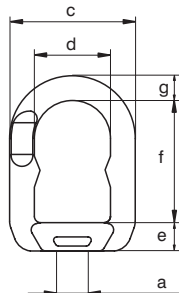
EXCEL® Eye bolt without thread, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI b CE
- **Note** : final WLL of product must be determined after machining

diameter	diameter base	diameter eye outside	diameter eye inside	length	thickness base	diameter	weight each
a	b	c	d	e	f	g	kg
mm	mm	mm	mm	mm	mm	mm	
12	22	34	20	20	18	7	0.07
12	22	34	20	24	17	7	0.07
15	24	38	22	30	19	8	0.11
16	28	47	26	36	23	10	0.19
19	34	57	29	40	28	14	0.3
22	40	64	35	51	32	14	0.48
22	41	65	35	54	30	14	0.48
26	45	73	39	59	34	16	0.55
29	47	82	44	64	38	19	0.94
30	58	95	54	80	42	20	1.4
31	61	95	54	84	40	20	1.36
39	66	108	60	94	52	24	2.48
41	67	108	59	100	49	24	2.5
41	71	118	67	117	47	25	3
42	71	118	67	118	46	25	3
51	77	139	79	134	58	32	5
52	77	139	79	135	56	31	5.5
72	102	181	97	150	68	43	11.3



EL



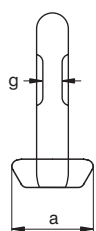
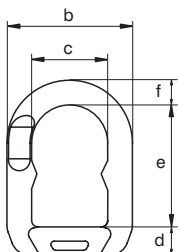
EXCEL® Eye nut, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI^b CE

working load limit	diameter thread	diameter base	width	width inside	thickness base	length inside	diameter	thickness	weight each
t	a	b mm	c mm	d mm	e mm	f mm	g mm	h mm	kg
0.2	M 6 x 1.00	31	51	30	14	44	11	6	0.15
0.4	M 8 x 1.25	31	51	30	14	44	11	6	0.15
0.7	M10 x 1.50	31	51	30	14	44	11	6	0.15
1	M12 x 1.75	39	56	32	15	48	12	6	0.29
1.2	M14 x 2.00	39	56	32	15	48	12	6	0.29
1.5	M16 x 2.00	44	65	37	16	60	14	8	0.38
2	M18 x 2.50	44	65	37	16	60	14	8	0.38
2.5	M20 x 2.50	44	65	37	16	60	14	8	0.38
3	M22 x 2.50	52	79	48	21	75	16	11	0.63
4	M24 x 3.00	52	79	48	21	75	16	11	0.63
5	M27 x 3.00	52	79	48	21	75	16	11	0.63
6	M30 x 3.50	66	96	58	25	88	21	14	1.11
7	M33 x 3.50	66	96	58	25	88	21	14	1.11
8	M36 x 4.00	84	121	73	39	100	25	17	2.22
9	M39 x 4.00	84	121	73	39	100	25	17	2.22
10	M42 x 4.50	84	121	73	39	100	25	17	2.22
15	M45 x 4.50	90	132	82	42	121	25	22	2.73
18	M48 x 5.00	90	132	82	42	121	25	22	2.73



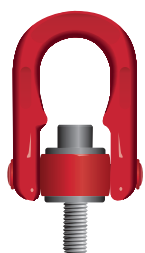
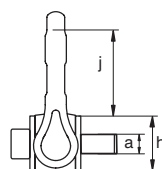
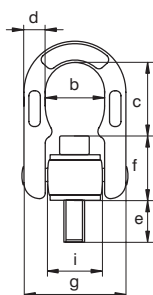
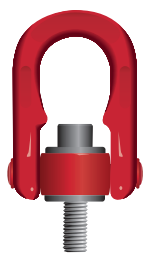
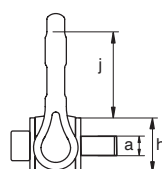
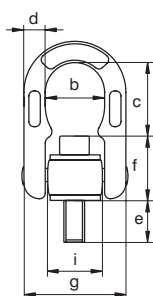
ELB



EXCEL® Eye nut without thread, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 MPI^b CE
- **Note** : final WLL of product must be determined after machining

diameter base	width	width inside	thickness base	length inside	diameter	thickness	weight each
a mm	b mm	c mm	d mm	e mm	f mm	g mm	kg
31	51	30	15	44	11	6	0.16
39	56	32	17	48	12	6	0.24
44	65	37	18	60	14	8	0.42
52	79	48	23	75	16	11	0.72
66	96	58	28	88	21	14	1.22
84	121	73	42	100	25	17	2.56
90	132	82	45	121	25	22	3.27

EXCEL®**ADA****EXCEL®****ADAUNC****EXCEL® Rotating hoist ring, grade 8**

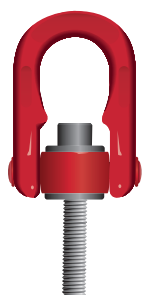
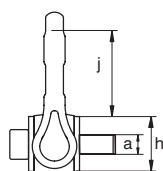
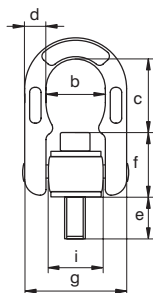
- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Temperature Range** : up to +250°C
- **Certification** : 2.1 2.2 3.1 MPI^b CE
- **Note** : WLL indicated hereunder are given in the worst conditions of use, i.e. 90°

working load limit	diameter thread	width inside	length inside	dia- meter	length	thick- ness base	width outside	dia- meter base	dia- meter base	length inside	Hex Key	Torque value	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	mm	Nm	kg
0.4	M 8 x 1.25	35	41	13	18	35	68	34	38	43	6	6.5	0.43
0.7	M10 x 1.5	35	39	13	18	37	68	34	38	43	8	13	0.44
1	M12 x 1.75	35	36	13	22	39	68	34	38	43	10	22	0.46
1.3	M14 x 2.0	35	35	13	22	42	68	34	38	43	12	35	0.47
1.6	M16 x 2.0	35	42	13	28	43	68	34	38	52	14	55	0.52
2	M18 x 2.5	35	40	13	28	45	68	34	38	52	14	80	0.54
2.5	M20 x 2.5	35	38	13	32	47	68	34	38	52	17	110	0.59
3	M22 x 2.5	53	57	20	33	69	105	49	56	71	17	150	1.88
4	M24 x 3.0	53	55	20	39	71	105	49	56	71	19	190	1.93
5	M27 x 3.0	53	61	20	45	65	105	49	56	71	19	280	1.96
6.3	M30 x 3.5	53	61	20	45	65	105	49	56	71	19	380	2.03
7	M33 x 3.5	71	87	30	54	83	146	68	77	98	19	520	5.28
10	M36 x 4.0	71	87	30	54	84	146	68	77	98	19	600	5.35
10	M39 x 4.0	71	87	30	63	84	146	68	77	98	19	870	5.45
12.5	M42 x 4.5	71	87	30	63	84	146	68	77	98	19	1000	5.56

EXCEL® Rotating hoist ring UNC, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Temperature Range** : up to +250°C
- **Certification** : 2.1 2.2 3.1 MPI^b CE
- **Note** : WLL indicated hereunder are given in the worst conditions of use, i.e. 90°

working load limit	diameter thread	width inside	length inside	dia- meter	length	thick- ness base	width outside	dia- meter base	dia- meter base	length inside	Hex Key	Torque value	weight each
t	a inch	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	mm	Nm	kg
0.4	⁵ / ₁₆ - 18 UNC	35	41	13	18	35	68	34	38	43	6	6.5	0.43
0.6	³ / ₈ - 16 UNC	35	39	13	18	37	68	34	38	43	8	13	0.44
1	¹ / ₂ - 13 UNC	35	36	13	24	39	68	34	38	43	10	22	0.46
1.7	⁵ / ₈ - 11 UNC	35	42	13	31	43	68	34	38	52	13	55	0.54
2.5	³ / ₄ - 10 UNC	35	38	13	31	47	68	34	38	52	16	110	0.55
3.5	⁷ / ₈ - 9 UNC	53	57	20	37	69	105	49	56	71	19	150	1.88
4.5	1 - 8 UNC	53	55	20	43	71	105	49	56	71	19	190	1.93


ADAL


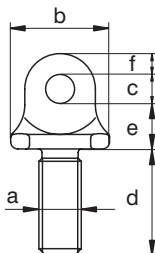
EXCEL® Rotating hoist ring longer length, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 5 x WLL
- **Finish** : painted red
- **Temperature Range** : up to +250°C
- **Certification** : 2.1 2.2 3.1 MPI^b CE
- **Note** : WLL indicated hereunder are given in the worst conditions of use, i.e. 90°

working load limit	diameter thread	width inside	length inside	dia- meter	length	thick- ness base	width outside	dia- meter base	dia- meter base	length inside	Hex Key	Torque value	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	g mm	h mm	i mm	j mm	mm	Nm	kg
0.4	M 8 x 1.25	35	41	13	52	35	68	34	38	43	6	6.5	0.46
0.4	M 8 x 1.25	35	41	13	92	35	68	34	38	43	6	6.5	0.47
0.7	M10 x 1.5	35	39	13	62	37	68	34	38	43	8	13	0.47
0.7	M10 x 1.5	35	39	13	125	37	68	34	38	43	8	13	0.5
1	M12 x 1.75	35	36	13	62	39	68	34	38	43	10	22	0.49
1	M12 x 1.75	35	36	13	125	39	68	34	38	43	10	22	0.53
1.6	M16 x 2.0	35	42	13	92	43	68	34	38	52	14	55	0.6
1.6	M16 x 2.0	35	42	13	172	43	68	34	38	52	14	55	0.71
2.5	M20 x 2.5	35	38	13	112	47	68	34	38	52	17	110	0.75
2.5	M20 x 2.5	35	38	13	172	47	68	34	38	52	17	110	0.87
4	M24 x 3.0	53	55	20	112	71	105	49	56	71	19	190	2.16
4	M24 x 3.0	53	55	20	172	71	105	49	56	71	19	190	2.33
5	M27 x 3.0	53	61	20	90	65	105	49	56	71	19	280	2.2
6.3	M30 x 3.5	53	61	20	90	65	105	49	56	71	19	380	2.27
6.3	M30 x 3.5	53	61	20	240	65	105	49	56	71	19	380	3.05
10	M36 x 4.0	71	87	30	110	84	146	68	77	98	19	600	5.72
12.5	M42 x 4.5	71	87	30	120	84	146	68	77	98	19	1000	6.07

EXCEL®


OL



EXCEL® Small lifting eye, grade 8

- **Material** : alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 MPI^b CE

working load limit	diameter thread	diameter base	diameter eye inside	length	thickness base	width	Can be combined with	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm		kg
0.5	M 8 x 1.25	28	8	30	13	6	XLC05, XLC0, CO5,	0.05
0.9	M10 x 1.50	28	8	30	13	6	CO6, MP5, MP6,	0.05
1.25	M12 x 1.75	28	8	30	13	6	CSC5, CSC6	0.06
1.5	M14 x 2.00	32	9	46	16	10	XLC1, CO7/8, MP7/8, CSC7/8	0.12
1.9	M16 x 2.00	32	9	46	16	10		0.14
2.25	M18 x 2.50	32	9	46	16	10		0.15
3.12	M20 x 2.50	41	13	56	19	11	XLC2, CO10, MP10,	0.25
3.8	M22 x 2.50	41	13	56	19	11	CSC10	0.28
5	M24 x 3.00	54	16	68	28	12	XLC3, CO13, MP13,	0.53
6.25	M27 x 3.00	54	16	68	28	12	CSC13	0.58
8	M30 x 3.50	60	20	92	33	13	XLC4, CO16, MP16, CSC16	0.94
9	M33 x 3.50	60	20	92	33	13		1.03
10	M36 x 4.00	60	20	92	33	13		1.12
12.5	M39 x 4.00	75	24	105	39	19	XLC5, CO18/20,	1.9
15	M42 x 4.50	75	24	105	39	19	MP18/20, CSC18/20	2.02

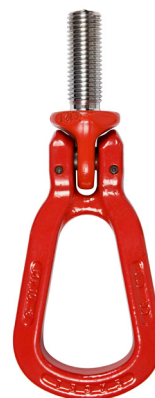
Example combinations with OL:



OL + XLC



OL + CO



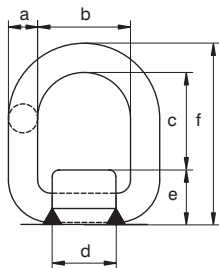
OL + MP



OL + CSC



PAS



Weld-on transport ring

- **Material** : base: mild steel, ring: alloy steel, grade 8, quenched and tempered
- **Safety factor** : MBL equals 4 x WLL
- **Finish** : painted red
- **Certification** : 2.1 2.2 3.1 CE
- **Note** : welding must be done in accordance with DIN 5817 resp. 15429, by a qualified welder according to EN 287-1

working load limit	diameter	width inside	length inside	length base	height base	length	weight each
t	a mm	b mm	c mm	d mm	e mm	f mm	kg
1.2	13	40	42	35	28	83	0.4
3.2	18	45	48	42	33	99	0.77
5.4	22	55	57	49	42	121	1.42
8.2	26	70	67	64	50	143	2.5
12.8	28	85	90	78	55	173	3.7
15.5	34	99	93	90	63	190	5.67

INFO