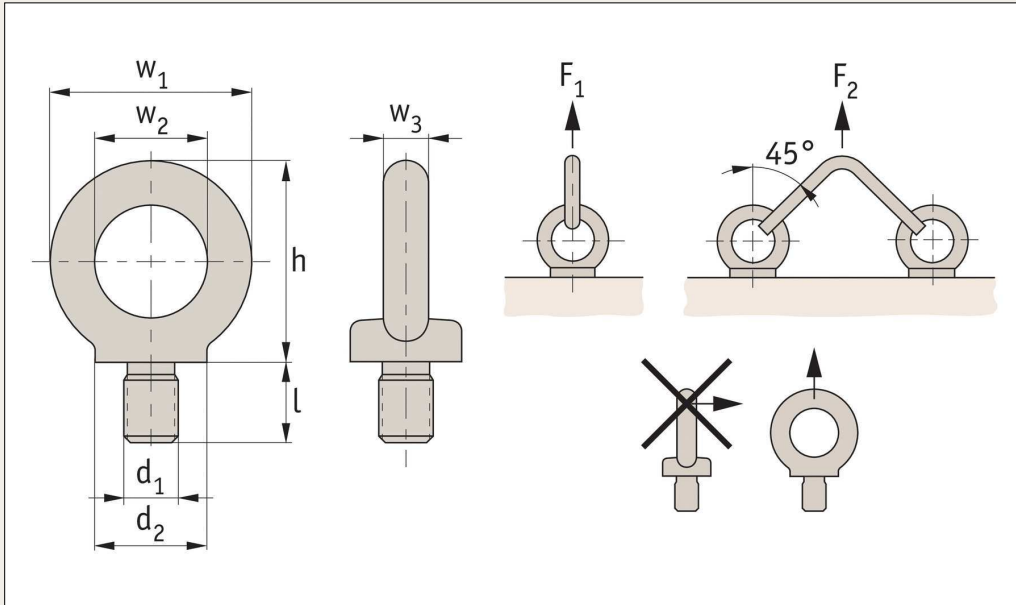


Steel Male Lifting Eye Bolts

metric sizes

Lifting Bolts & Shackles



P4040

Material

Forged steel (C15E) annealed and zinc plated. Contact face machined. CE marked.
Hot dipped galvanised versions (for more demanding applications and limited outside use) also available on request, suffix changes to -GV.

Technical notes

To DIN 580.
When using lifting eye bolts it is critical to ensure that the face is in

firm contact with the mating surface. These lifting bolts are generally installed and remain on a piece of equipment for the purpose of transporting them. They are not for repeated lifting use - if this is required our swivelling lifting bolt range should be used.

Tips

Maximum load values are only applicable when the thread is fully screwed in, and the material it is being used in is as least as strong as

the that of the bolt.
Temperature range -20°C to +200°C.
 F_1 and F_2 values given are for steel and cast iron components.

Important notes

Not to be used at lift angles of greater than 45° or with swivelling loads.

Please refer to the safety documentation before using this part.

Supplied with certificate and operating instructions.

Order No.	Thread	d ₁	l	h	w ₁	d ₂	w ₂	w ₃	F _{1 max.} Kg	F _{2 max.} Kg	Δ [±] Kg
P4040.060-ZP	Coarse	M 6	13,0	36	36	20	20	8	70	50	0,05
P4040.080-ZP	Coarse	M 8	13,0	36	36	20	20	8	140	100	0,06
P4040.100-ZP	Coarse	M10	17,0	45	45	25	25	10	230	170	0,11
P4040.120-ZP	Coarse	M12	20,5	53	54	30	30	12	340	240	0,18
P4040.140-ZP	Coarse	M14	27,0	62	63	35	35	14	340	240	0,18
P4040.160-ZP	Coarse	M16	27,0	62	63	35	35	14	700	500	0,28
P4040.180-ZP	Coarse	M18	30,0	71	72	40	40	14	700	500	0,43
P4040.200-ZP	Coarse	M20	30,0	71	72	40	40	16	1200	830	0,45
P4040.220-ZP	Coarse	M22	30,0	71	72	40	40	16	1200	830	0,45
P4040.240-ZP	Coarse	M24	36,0	90	90	50	50	20	1800	1270	0,74
P4040.270-ZP	Coarse	M27	45,0	109	108	65	60	24	1800	1270	0,93
P4040.300-ZP	Coarse	M30	45,0	109	108	65	60	24	3200	2300	1,66
P4040.330-ZP	Coarse	M33	54,0	128	126	75	70	28	3600	3600	2,60
P4040.360-ZP	Coarse	M36	54,0	128	126	75	70	28	4600	3300	2,65
P4040.390-ZP	Coarse	M39	63,0	147	144	85	80	32	5100	3700	3,87
P4040.420-ZP	Coarse	M42	63,0	147	144	85	80	32	6300	4500	4,03
P4040.450-ZP	Coarse	M45	68,0	168	166	100	90	38	7000	5000	6,15
P4040.480-ZP	Coarse	M48	68,0	168	166	100	90	38	8600	6100	6,38
P4040.560-ZP	Coarse	M56	78,0	187	184	110	100	42	11500	8200	8,80
P4040.640-ZP	Coarse	M64	90,0	208	206	120	110	48	16000	11000	12,4
P4040.720-ZP	Coarse	M72 x 6	100,0	260	260	150	140	60	20000	14000	23,3
P4040.800-ZP	Coarse	M80 x 6	112,0	298	296	170	160	68	28000	20000	34,2
P4040.999-ZP	Coarse	M100 x 6	130,0	330	330	190	180	75	40000	29000	49,1

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Steel Male Lifting Eye Bolts

metric sizes

Lifting Bolts &
Shackles

Order No.	Thread	d ₁	l	h	w ₁	d ₂	w ₂	w ₃	F _{1 max.} Kg	F _{2 max.} Kg	δ± Kg
P4040.120-015-ZP	Fine	M12 x 1,5	20,5	53	54	30	30	12	340	240	0,18
P4040.160-015-ZP	Fine	M16 x 1,5	27,0	62	63	35	35	14	700	500	0,28
P4040.200-020-ZP	Fine	M20 x 2,0	30,0	71	72	40	40	16	1200	830	0,45
P4040.240-020-ZP	Fine	M24 x 2,0	36,0	90	90	50	50	20	1800	1270	0,74
P4040.300-020-ZP	Fine	M30 x 2,0	45,0	109	108	65	60	24	3600	2600	1,66
P4040.360-030-ZP	Fine	M36 x 3,0	54,0	128	126	75	70	28	5100	3700	2,58
P4040.420-030-ZP	Fine	M42 x 3,0	63,0	147	144	85	80	32	7000	5000	3,95
P4040.480-030-ZP	Fine	M48 x 3,0	68,0	168	166	100	90	38	8600	6100	6,38
P4040.560-040-ZP	Fine	M56 x 4,0	78,0	187	184	110	100	42	11500	8300	8,48

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Lifting Bolts Safety Guide



Lifting Bolts Safety Overview

Standard Lifting Bolts

Standard lifting bolts (to DIN 580 and DIN 582) (P4040 - P4048)

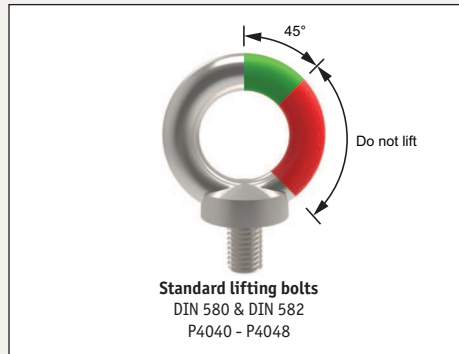
These are CE marked and are available with male or female threads in either steel or stainless steel (A4 AISI 316). They are meant only for use at a maximum angle of 45° from the thread. They are not meant for loads that might swivel.

These are supplied with a generic Declaration of Conformity (DOC) stating that the parts have been manufactured to the relevant DIN standard and therefore suitable for lifting.

Assembly instructions

The lifting bolts are generally intended for permanent mounting to components such as motors, switchgear cabinets and gears, and for transporting these items of equipment

1. They must be used by qualified personnel trained to current European Standards on the place of use. Lifting bolts must be permanently marked with a raised manufacturer's mark, material ID (e.g. C15E, A2 or A4), load-bearing capacity in axial direction (WLL in Kg), and with the CE symbol. Refer to the relevant table to determine the effect of lifting angles on the load capacity.
2. Check the fixing points to ensure correct bolt seating, check for; corrosion, wear and tear, deformation etc. at regular intervals and before each use.
3. The fixing point should be selected carefully such that the resultant forces are absorbed by the base material without any deformation. Screw-in depth for steel with a tensile strength of $R_m > 340 \text{ N/mm}^2$, e.g. S235JR (1.0037); or GG 25 (0.6025 – without cavities or shrinkage): 1.5 x thread diameter (=L). For screw-in material with lower strength, use fixing points with greater screw-in length. Minimum screw-in depths recommended by the Liability Insurance Association: 2 x thread diameter in aluminum alloys 2.5 x thread diameter in light metal with low strength For light metals, non-ferrous metals and grey cast iron, select the thread such that the load-bearing capacity of the thread corresponds with the requirements involving the base material. For through-holes, a nut (0.8 x d) should be fully and firmly bolted from the opposite side. If the thread length of the screw is sufficient, the use of an additional washer is recommended.
4. Select the location of fixing points carefully to ensure that any rotational effects or load shifts are avoided. Arrange the fixing point for a single strand sling perpendicularly above the center of the load. Arrange the fixing points for a twin strand sling on both sides and above the load center. Caution: Avoid turning or rotating movements during the lift! Position the lifting bolt such that no shear tension acts on the bolt. Any introduced force must act in the direction of the eye bolt plane.

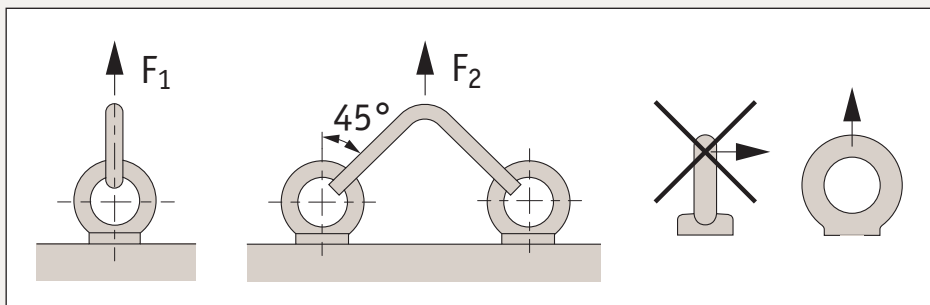


5. The attachment surface must be flat. Maximum spot-facing of the thread hole = nominal diameter of the thread. Blind holes must be drilled to a sufficient depth to ensure that the contact surface of the eye bolt is fully seated.
6. Shock loads, tugs or vibrations may cause inadvertent loosening. Consider using a liquid thread lock agent such as Loctite making sure to observe the manufacturer's recommendations. Always secure bolts which remain permanently at the fixing point, e.g. by glueing.
7. The end attachment must be freely moveable in the lifting bolt. When slinging and removing the end attachments (sling chain, round sling, wire rope), make sure that no pinch, shear, catch or impact points occur. Avoid damage to the end attachments caused by sharp-edged loads.
8. Temperature suitability: these lifting bolts may be used without restricting or impairing the load-bearing capacity within the temperature range from -20°C to $+200^\circ\text{C}$.
9. The seating surface of the bolts must not be allowed to make contact with corrosive chemicals, acids or their vapours.
10. After initial installation and at intervals depending on use, however at least once every year, the continued suitability of the fixing point must be checked and inspected by an expert. This should also be done after any damage or other unusual incidents.

If there is any doubt with regard to safe use, the fixing point and/or the lifting equipment must not be used for safety reasons.

No person should operate under a suspended load and operators should not be distracted or put in danger in the handling area.

Failure to observe these instructions may result in personal injury and material damage!



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	P4040		P4043		P4041		P4044		*	P4046		P4048	
	F ₁ Max. Kg	F ₂ Max. Kg	F ₁ Max. Kg	F ₂ Max. Kg	F ₁ Max. Kg	F ₂ Max. Kg	F ₁ Max. Kg	F ₂ Max. Kg		F ₁ Max. Kg	F ₂ Max. Kg	F ₁ Max. Kg	F ₂ Max. Kg
M6	70	50	70	50	70	50	70	50	1/4"	70	50	69	50
M8	140	100	140	100	140	100	140	100	5/16"	140	95	140	95
M10	230	170	230	170	230	170	230	170	3/8"	230	170	230	170
M12	340	240	340	240	340	240	340	240	1/2"	340	240	340	240
M14	340	240	340	240	340	240	340	2400	5/8"	700	500	700	500
M16	700	500	700	500	700	500	700	500	3/4"	1200	830	1200	830
M18	700	500	700	500	700	500	700	500	7/8"	1500	1050	1500	1050
M20	1200	860	1200	860	1200	860	1200	860	1"	1800	1270	1800	1270
M22	1200	830	1200	830	1200	830	1200	830	1-1/8"	2500	1650	2500	1650
M24	1800	1290	1800	1290	1800	1290	1800	1290	1-1/4"	4300	3200	4300	3200
M27	1800	1270	1800	1270	1800	1270	1800	1270	1-1/2"	6100	4300	6100	4300
M30	3200	2300	3200	2300	3200	2300	3200	2300	1-3/4"	8000	5500	8000	5500
M33	3600	3600	3600	3600	3600	3600	3600	3600	2"	9000	7300	9000	7300
M36	4600	3300	4600	3300	4600	3300	4600	3300	2-1/4"	11500	8300	11500	8300
M39	5100	3700	5100	3700	5100	3700	5100	3700	2-1/2"	16000	11000	16000	11000
M42	6300	4500	6300	4500	6300	4500	6300	4500	*For UNC, BSPP & BSW threads.				
M45	7000	5000	7000	5000	7000	5000	7000	5000					
M48	8600	6100	8600	6100	8600	6100	8600	6100					
M56	11500	8200	-	-	11500	8200	-	-					
M64	16000	11000	-	-	16000	11000	-	-					
M72 x 6	20000	14000	-	-	20000	14000	-	-					
M80 x 6	28000	20000	-	-	28000	20000	-	-					
M100 x 6	40000	29000	-	-	40000	29000	-	-					

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