Data sheet eye bolts and wing screws — DIN 580, DIN 444, DIN 316, screw eyes

Four families with an eye or wings instead of a head. Only the forged eye bolt DIN 580 (steel C15E, marked) is lifting equipment; the values below are the working load limit (WLL) in kg per eye bolt for axial pull and at 45°. Cast eye bolts, DIN 444 eye bolts, screw eyes and unmarked stainless eyes are fasteners, not lifting equipment.

Working load limit DIN 580 (forged, C15E)

size	axial (kg)	45° (kg)	eye inside d1	eye outside d2	thread length l
M6	70	35	20	36	12
M8	140	70	20	36	13
M10	230	115	25	45	17
M12	340	170	30	54	20.5
M16	700	350	35	63	27
M20	1200	600	40	72	30
M24	1800	900	50	90	36
M30	3200	1600	65	108	45
M36	4600	2300	75	126	54
M42	6300	3150	85	144	63
M48	8600	4300	100	166	68
M56	11500	5750	110	184	84
M64	16000	8000	120	206	96

Rules of use DIN 580

- Screw the eye bolt fully in until the eye sits flat on the surface; the eye must lie in the plane of the pull.
- Angled pull: only in the plane of the eye, up to 45°; pull across the eye is not allowed.
- Two eye bolts with a spread angle: use the 45° value per eye.
- Check for deformation, cracks and wear before every use; discard damaged eyes.
- The WLL applies from −20 °C to +200 °C.

The other families

DIN 444 eye bolt	steel or stainless with closed eye and metric thread (form B partial / full thread). For hinged and adjustable joints, tie rods, chains and cables under static load; fit with a DIN 934 nut and washer. Not lifting equipment.
DIN 316 wing screw	American form (AM) with cast or pressed wings; tightened by hand without tools. For covers, lids, cover plates, clamps and adjustable parts that are loosened and tightened often; not for load-bearing or vibrating joints.
metric screw eye	closed or open eye with metric thread and a nut at the back (open eye: hook-like, for chains and springs). For hanging light loads, guiding cables and cords, closures. Not lifting equipment.

Material choice

zinc plated steel	indoors and under cover; rusts in permanent moisture
plain steel C15E (DIN 580)	normalised forging steel for lifting; rusts, so indoors or oiled
stainless A2 (AISI 304)	outdoors, damp rooms; WLL only as marked
stainless A4 (AISI 316)	coast, pools, marine, food industry
malleable iron (DIN 316)	malleable cast iron for wing screws; zinc plated finish