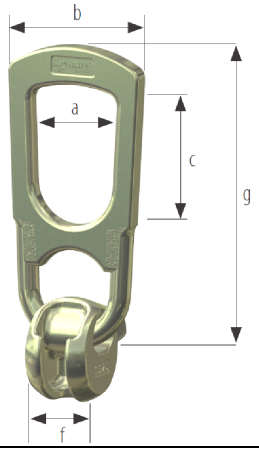
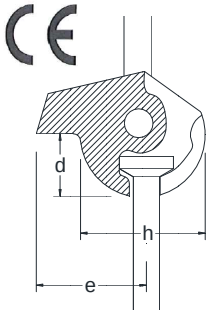
ANCHORAGE FOR TIMBER ELEMENTS TRANSPORT

Anchorage for transport and lifting of timber elements (beams, wall, ceilings, prefabricated members, ect.). The hook is round-headed and it is provided with a blocking-system to ensure the stability during transportation. The anchorage is made of galvanized cast steel and belongs to loading class 1000-1300 kg. **The maximal admissible load capacity is 13kN**. The load bearing capacity of the tranporting system depends furthermore on the system of fixation, the tipology of installation and on the characteristics of the lifted members.

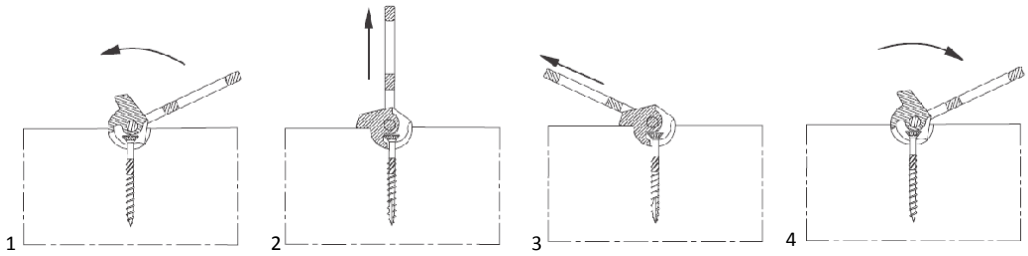


Code	Load group [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	h [mm]
ATRE0315	1000 - 1300	47,5	75,0	71,0	30,0	45,0	33,0	164,5	55,0



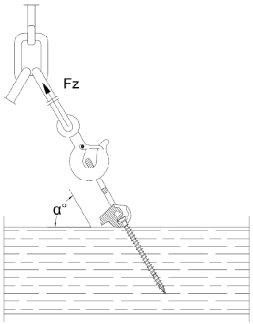
Instructions of use

- ***Installation:***

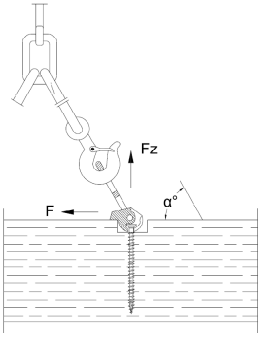


The anchorage must be fixed to the ligneous member by a screw; after insertion of the screw, the anchorage is handly fixed by moving its jaws and it is hooked to the head of the screw (1). It's important that during carrying of all members, the bearing point of the hook has the same direction of the lifting force device. (2,3); to unhook the anchorage it's sufficient to rotate the hook in the opposite way (4). The german standards for safety at work BGR 500 prescribes that angle α between slinging inclination and carried element plane can not be less than 30°. In the calculations an angle between 30° and 90° is considered.

Installations:

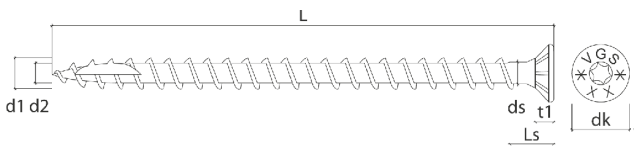


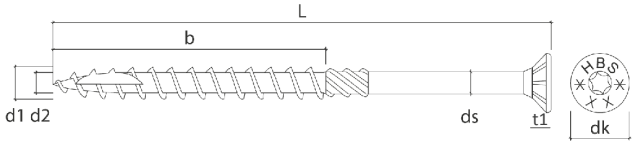
1. Insertion of screw inclined to the grain, in the direction of lifting system.



2. Insertion of screw perpendicular to the grain through a milling cut which allows the hook to be embedded

- ***Fastening system*** *with full threaded screws VGS Ø 11 or partial threaded screws HBS Ø 10*

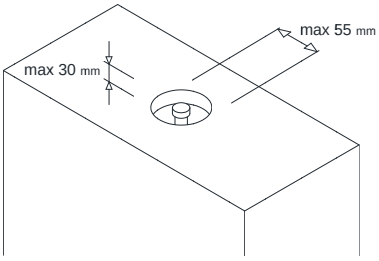




	$f_{ax,k}$ (*) [Mpa]	d_1 (mm)	TX	d_2 (mm)	d_k (mm)	d_s (mm)	T_1
VGS Ø 11	11,7	11,00	50	6,60	19,30	7,7	8,20
HBS Ø 10	11,7	10,00	40	6,40	18,25	7,00	13,0

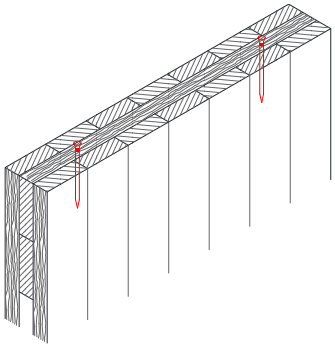
(*)The characteristical withdrawal strenghts according to the document Rothoblaas *ETA-11/0030*.

- ***Geometry****:*

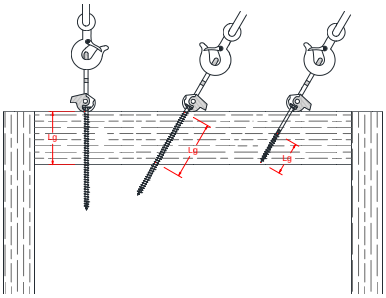


In the case of **millings**, its dimensions must ensure the connection between hook and timber: recommended diameter **55 mm**, recommended profundity **30 mm**.

The distance between the lower edge of the screw's head and the surface of the member must be as short as possible in order to avoid spacings in the anchorage.

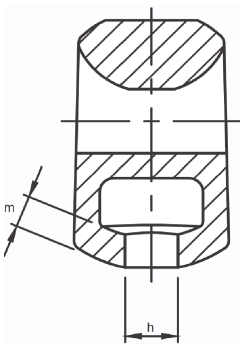


The Inclination of the screw respectively to the timber grain must be always in an angle between 30° and 90°; special attention must be given in the case of laminated vertical panels, where the screws must be fixed in the layer where grain direction is perpendicular to the screw.



The loading capacities are calculated with the full inserted lenght of the screw. In case of partial insertion in the member, the effective inserted lenght (lg) must be considered in the calculation of the effective load capacity.

- ***Maintenance****:*



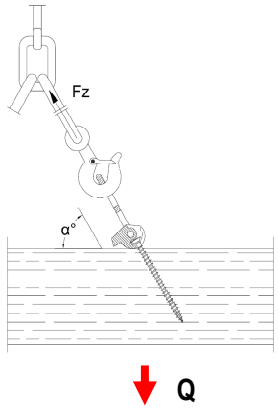
The anchorage must be controlled annually by the responsible engineer for safety on site.

Before anchorage use, mechanical wear and damages must be verified; admissible dimensions: m ≥ 5,5 mm, h ≤ 13 mm. The use of a worn anchorage is not admissible.

Used screws can't be reused for further transports, they must be replaced by new ones to ensure a safe operation.

Load capacity Q (maximal load acting on each anchorage, calculation according to DIN 1052)

INSTALLATION WITH INCLINED SCREWS

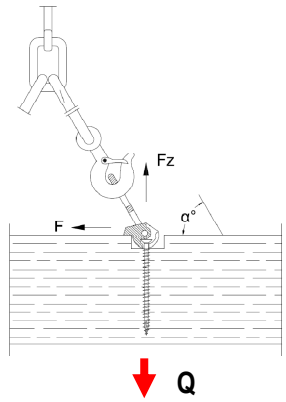


Insertion of screw inclined to the grain, in the direction of lifting system.

	L [mm]	Lg [mm]	*Q = LOADING RESISTANCE* (1) [kN] α=30°	α=45°	α=60°	α=75°	α=90°
HBS Ø 10	80-100	52	1,30	1,84	2,25	2,51	2,60
	120-140	60	1,50	2,12	2,60	2,90	3,00
	160-280	80	2,00	2,83	3,46	3,86	4,00
	300-400	100	2,50	3,54	4,33	4,83	5,00

	L [mm]	Lg [mm]	*Q = LOADING RESISTANCE* (1) [kN] α=30°	α=45°	α=60°	α=75°	α=90°
VGS Ø 11	100	75	2,06	2,92	3,57	3,98	4,13
	150	125	3,44	4,86	5,95	6,64	6,88
	200	175	4,81	6,81	8,34	9,30	9,63
	250	225	6,19	8,75	10,72	11,95	12,38
	300-600	275-575	6,50	9,19	11,26	12,56	13,00

INSTALLATION WITH SCREW INSERTED PERPEDICULAR AND WITH MILLING



Insertion of screw perpendicular to the grain through a milling cut which allows the hook to be embedded.

	L [mm]	Lg [mm]	*Q = LOADING RESISTANCE* (1) [kN] α=30°	α=45°	α=60°	α=75°	α=90°
HBS Ø 10	80-100	52	1,66	2,60	2,60	2,60	2,60
	120-140	60	1,66	2,88	3,00	3,00	3,00
	160-280	80	1,66	2,88	4,00	4,00	4,00
	300-400	100	1,66	2,88	4,99	5,00	5,00

	L [mm]	Lg [mm]	*Q = LOADING RESISTANCE* (1) [kN] α=30°	α=45°	α=60°	α=75°	α=90°
VGS Ø 11	100	75	1,66	2,88	4,13	4,13	4,13
	150	125	1,66	2,88	4,99	6,88	6,88
	200	175	1,66	2,88	4,99	9,63	9,63
	250	225	1,66	2,88	4,99	10,75	12,38
	300	275	1,66	2,88	4,99	10,75	13,00
	350-600	325-575	1,66	2,88	4,99	10,75	13,00

α =angle between the cord direction and the surface of the member

(1) the admissible values of the load capacity are calculated according to DIN 1052:1988.

- For characteristic values according to EN 1995-1-1:2009 the technical department "*rothoengineer*" is available for further information.

Values must be verified by the responsible engineer. We don't take responsibility for misprints or typing errors.