WASP

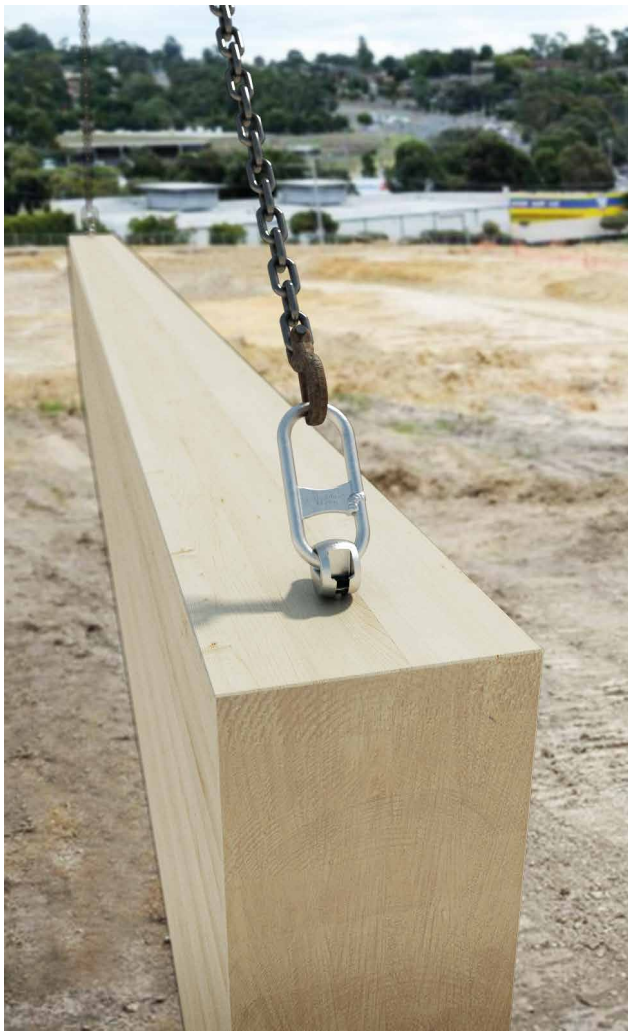
REUSABLE 2006/42/CE

HOOK FOR TIMBER ELEMENTS TRANSPORT

FAST
Fastened with just one screw, it allows significant time savings due to its quick assembly and disassembly.

INGENIOUS
The lifting hook can be used for both axial and lateral loads.

CERTIFIED
Pursuant to the Directive 2006/42/EC on machinery.



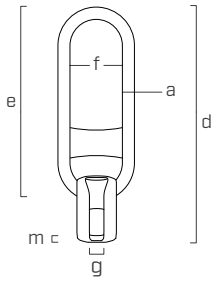
MANUALS

CODES

	suitable screws	pcs
WASP	VGS Ø11 - HBS Ø10	2
WASPL	VGS Ø11 - VGS Ø13 - HBS Ø12	1

DIMENSIONS

	a [mm]	d [mm]	e [mm]	f [mm]	g [mm]	m [mm]
WASP	12	185	157	40	12	6
WASPL	14	205	180	54	13	8



MATERIAL

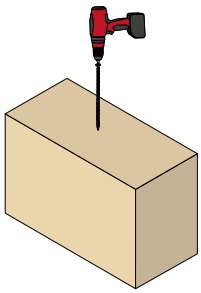
WASP is made of very high strength carbon steel.
WASPL is forged from high-strength steel. Both versions are coated with white electro-galvanising for a long service life.

VERSATILITY

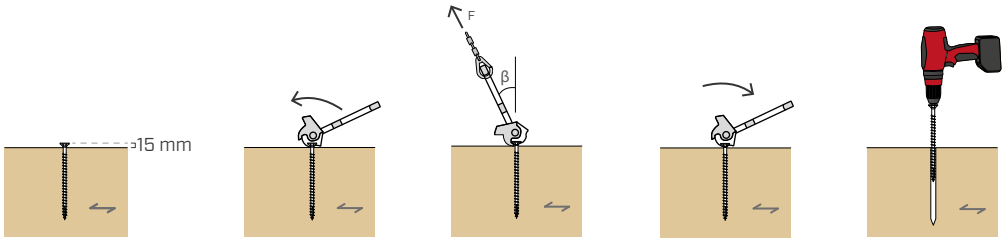
Various installation options with more types of screws for load conditions and different material.

WASP INSTALLATION

PERPENDICULAR INSTALLATION



1.



1a. 1b. 1c. 1d. 1e.

1. Insertion of the screw into the timber element to be lifted.

1a. The screw head must protrude approx. 15 mm.

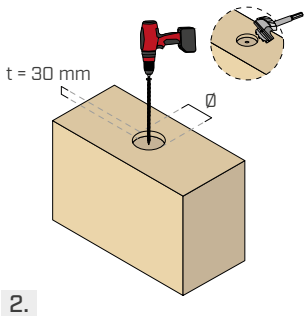
1b. Hook positioning.

1c. Lifting of the structure (perpendicular or inclined force).

1d. Hook removal (unhooking).

1e. For safety reasons, insert or completely remove the screw from the timber element after use.

INSTALLATION WITH MILLING



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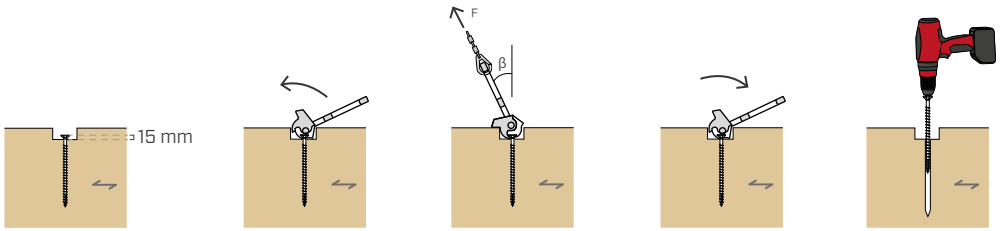


2a. 2b. 2c. 2d. 2e.

2. Make the milling cut, WASP-Ø55 mm and WASPL-Ø65 mm, to accommodate the hook. Insertion of the screw into the timber element to be lifted.

2a. The screw head must protrude approx. 15 mm from the bottom of the milling cut.

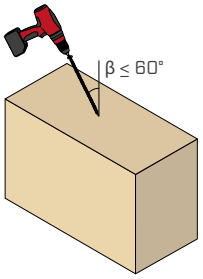
2b. Hook positioning.

2c. Lifting of the structure (perpendicular or inclined force).

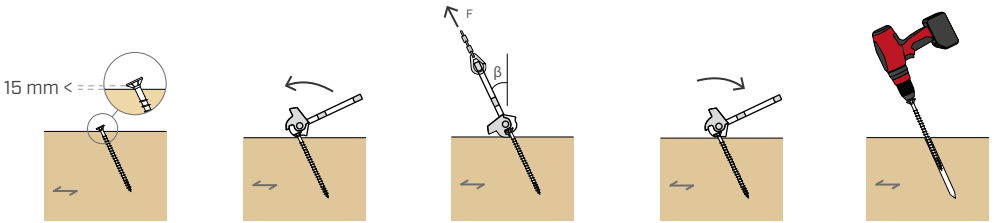
2d. Hook removal (unhooking).

2e. After use, the screw can remain in place. Optional insert or completely remove the screw from the timber element.

INCLINED INSTALLATION



3.



3a. 3b. 3c. 3d. 3e.

3. Check the lifting angle β and insert the screw at the same angle.

3a. The screw head must protrude approx. 15 mm.

3b. Hook positioning.

3c. Structure lifting (lifting chain always in line with transport hook and screw inclination).

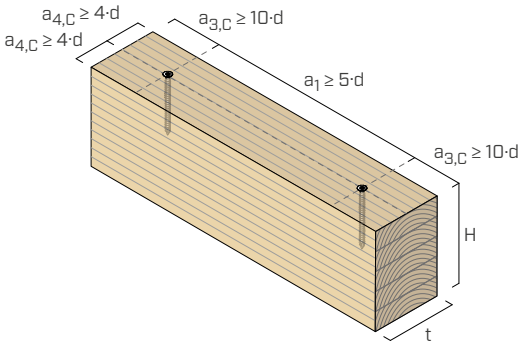
3d. Hook removal (unhooking).

3e. For safety reasons, insert or completely remove the screw from the timber element after use.

MINIMUM DISTANCES

SCREW | TIMBER BEAM

PERPENDICULAR - WITH MILLING



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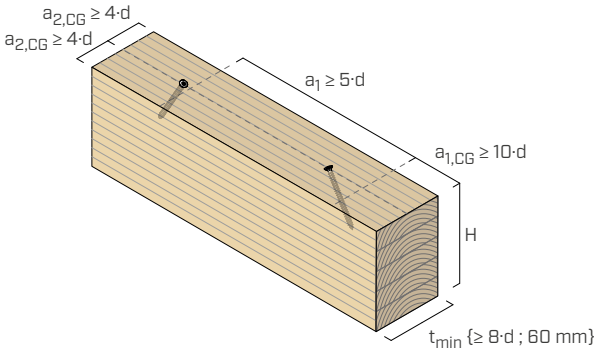
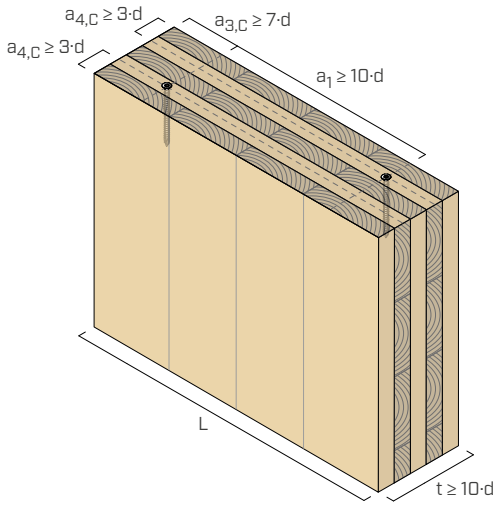


SCREW | CLT WALL

PERPENDICULAR - WITH MILLING



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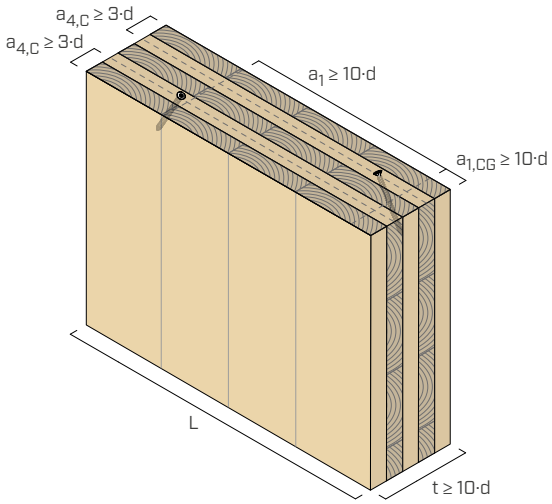
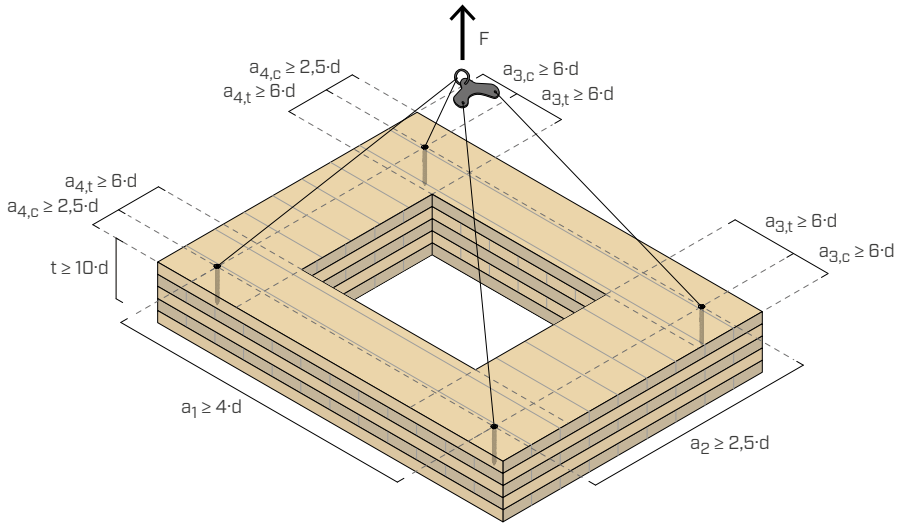


SCREW | CLT FLOOR

PERPENDICULAR - WITH MILLING - INCLINED

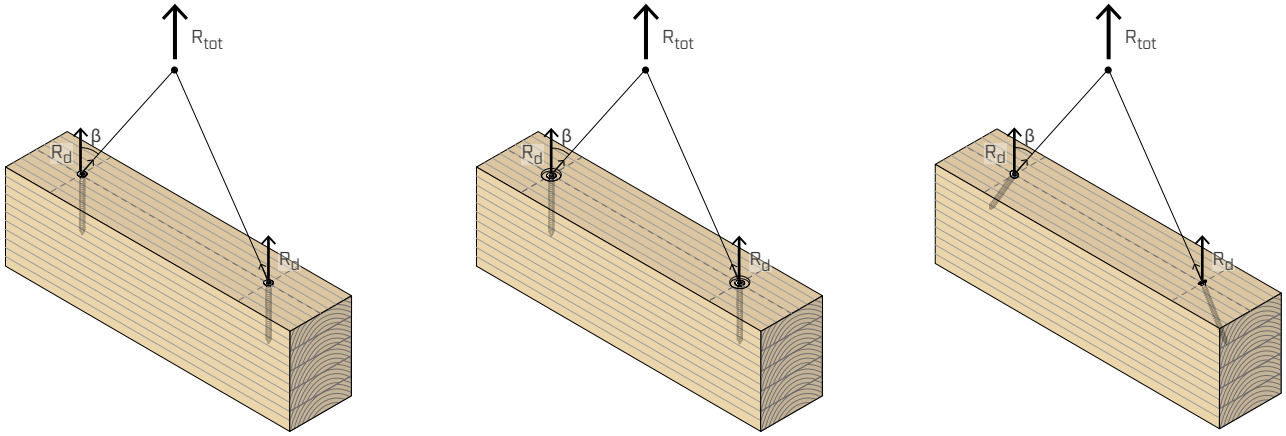


NOTES:

- The minimum distances are in accordance with ETA-11/0030 and are valid if no other information is specified in the timber data sheet.
- The minimum distance always refers to the barycentre of the threaded part of the timber.
- The minimum distances for CLT apply unless otherwise specified by the timber manufacturer.

LOAD VALUES | HOOK WITH VGS Ø11 AND VGS Ø13

HORIZONTAL BEAM | STATICALLY DEFINED SYSTEM



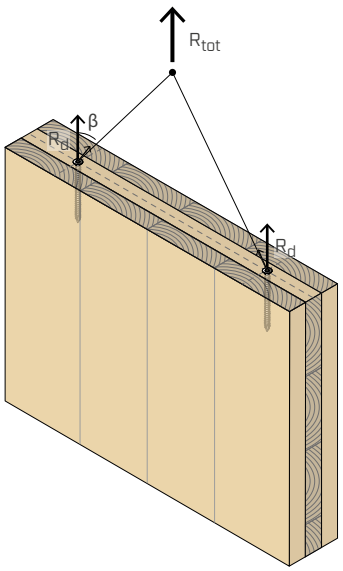
LOAD CAPACITY PER STOPPING POINT

WASP | WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø11 x 80	0	367	367	367
	15	308	354	310
	30	215	318	227
	45	141	260	163
Ø11 x 100	0	500	500	500
	15	422	477	424
	30	294	413	309
	45	193	324	223
Ø11 x 125	0	667	667	667
	15	561	626	564
	30	392	526	411
	45	257	398	297
Ø11 x 150	0	834	834	834
	15	702	774	706
	30	490	634	516
	45	322	467	371
Ø11 x 175	0	1000	1000	1000
	15	843	921	847
	30	588	739	618
	45	386	536	425
Ø11 x 200	0	1167	1167	1167
	15	983	1066	987
	30	686	842	696
	45	451	604	469
Ø11 x 225	0	1300 | 1334	1300 | 1334	1300 | 1334
	15	1109	1204	1109
	30	761	931	768
	45	497	654	511
Ø11 x 250	0	1300	1300	1300
	15	1231	1300	1231
	30	832	1011	839
	45	539	701	552
Ø11 x 275	0	1300 | 1600	1300 | 1600	1300 | 1600
	15	1300 | 1349	1300 | 1468	1300 | 1353
	30	901	1091	910
	45	579	746	595

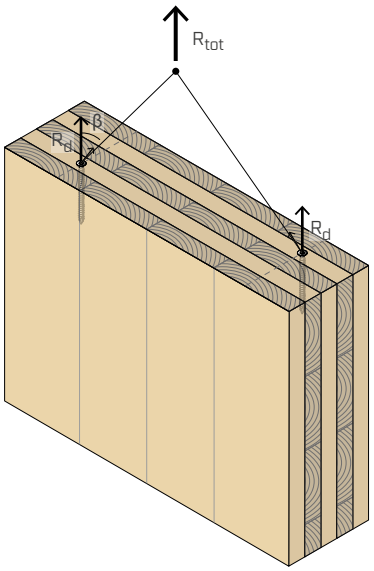
WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø13 x 80	0	434	434	434
	15	364	416	366
	30	253	366	268
	45	167	292	193
Ø13 x 100	0	591	591	591
	15	496	558	500
	30	345	475	365
	45	227	363	263
Ø13 x 150	0	985	985	985
	15	828	906	833
	30	576	729	608
	45	379	528	438
Ø13 x 200	0	1379	1379	1379
	15	1158	1249	1167
	30	807	971	851
	45	530	685	581
Ø13 x 250	0	1600	1600	1600
	15	1476	1576	1476
	30	1016	1192	1024
	45	663	824	682
Ø13 x 300	0	1600	1600	1600
	15	1600	1600	1600
	30	1181	1375	1193
	45	761	930	782

LOAD VALUES | HOOK WITH VGS Ø11 AND VGS Ø13

VERTICAL CLT PANEL[*]



3-LAYER CLT



5-LAYER CLT

LOAD CAPACITY PER STOPPING POINT

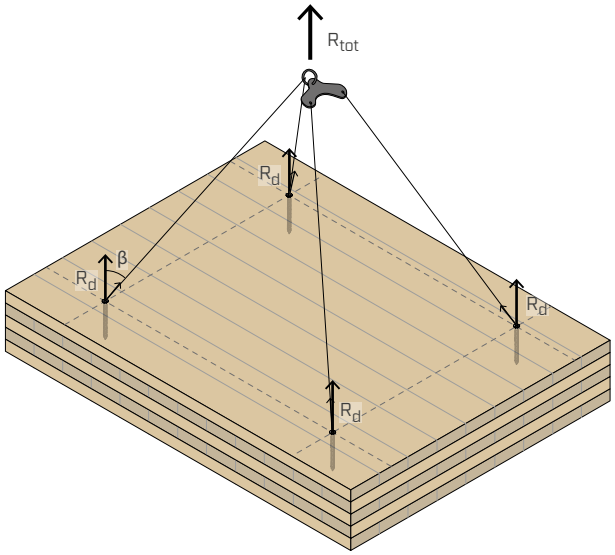
WASP | WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø11 x 80	0	241	241	241
	15	140	234	140
	30	76	216	76
	45	45	184	45
Ø11 x 100	0	318	318	318
	15	189	306	189
	30	103	272	103
	45	62	219	62
Ø11 x 125	0	413	413	413
	15	249	390	249
	30	137	332	137
	45	82	255	82
Ø11 x 150	0	504	504	504
	15	309	469	309
	30	170	385	170
	45	102	285	102
Ø11 x 175	0	594	594	594
	15	368	545	368
	30	205	434	205
	45	123	311	123
Ø11 x 200	0	683	683	683
	15	427	617	427
	30	238	478	238
	45	143	337	143
Ø11 x 225	0	770	770	770
	15	486	687	486
	30	272	520	272
	45	164	361	164
Ø11 x 250	0	856	856	856
	15	544	753	544
	30	306	561	306
	45	185	384	185
Ø11 x 275	0	941	941	941
	15	602	820	602
	30	339	600	339
	45	205	406	205

WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø13 x 80	0	275	275	275
	15	158	267	102
	30	85	241	85
	45	50	200	50
Ø13 x 100	0	364	364	364
	15	213	347	102
	30	115	301	115
	45	69	236	69
Ø13 x 150	0	577	577	577
	15	348	528	102
	30	191	421	191
	45	115	304	115
Ø13 x 200	0	780	780	780
	15	482	692	102
	30	267	521	267
	45	160	358	160
Ø13 x 250	0	978	978	978
	15	613	844	102
	30	342	609	342
	45	206	410	206
Ø13 x 300	0	1172	1172	1172
	15	744	990	102
	30	417	693	417
	45	252	458	252

(*) When transporting CLT boards vertically, the screw must always be tightened in a transverse position (perpendicular to the direction of the grain). If the screws cannot be tightened in the centre of the element, e.g. because they would be parallel to the fibres in a longitudinal layer, they must be installed offset in the next inner transverse layer (see illustration "5-layer CLT" above).

LOAD VALUES | HOOK WITH VGS Ø11 AND VGS Ø13

HORIZONTAL PANEL | STATICALLY DEFINED SYSTEM

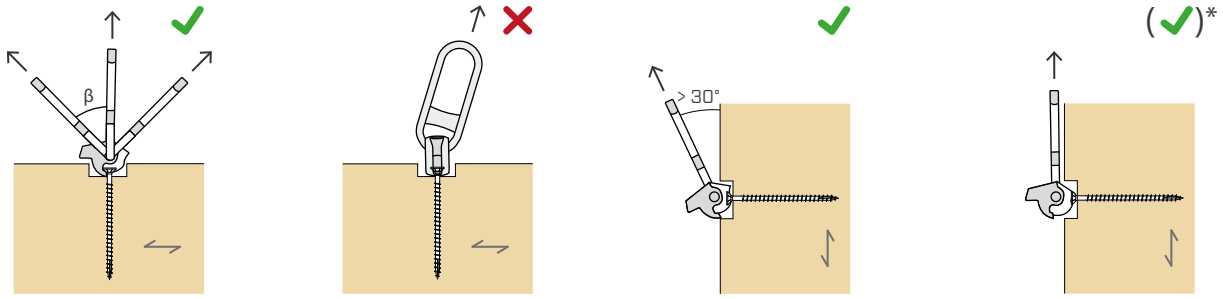


LOAD CAPACITY PER STOPPING POINT

WASP | WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø11 x 80	0	340	340	340
	15	292	331	292
	30	209	304	209
	45	140	257	140
Ø11 x 100	0	464	464	464
	15	398	446	396
	30	285	398	285
	45	191	322	191
Ø11 x 125	0	618	618	618
	15	531	588	531
	30	381	509	381
	45	255	397	255
Ø11 x 150	0	773	773	773
	15	664	729	664
	30	476	615	476
	45	318	469	318
Ø11 x 175	0	927	927	927
	15	797	867	796
	30	571	720	571
	45	382	536	382
Ø11 x 200	0	1082	1082	1082
	15	921	1000	921
	30	651	812	652
	45	433	594	433
Ø11 x 225	0	1236	1236	1236
	15	1035	1129	1036
	30	718	895	719
	45	472	641	472
Ø11 x 250	0	1300 | 1391	1300 | 1391	1300 | 1391
	15	1150	1257	1149
	30	784	974	785
	45	510	686	510
Ø11 x 275	0	1300 | 1545	1300 | 1545	1300 | 1545
	15	1261	1300 | 1379	1263
	30	850	1051	850
	45	549	729	549

WASP L		assembly variant		
screw		perpendicular	perpendicular with milling	inclined
VGS	β	R_d	R_d	R_d
[Ø x L]	[°]	[kg]	[kg]	[kg]
Ø13 x 80	0	402	402	402
	15	345	389	345
	30	246	351	246
	45	164	291	164
Ø13 x 100	0	548	548	548
	15	470	524	470
	30	336	459	336
	45	224	363	224
Ø13 x 150	0	913	913	913
	15	783	853	783
	30	560	708	560
	45	374	529	374
Ø13 x 200	0	1278	1278	1278
	15	1097	1177	1097
	30	785	947	785
	45	523	687	523
Ø13 x 250	0	1600	1600	1600
	15	1378	1482	1379
	30	959	1144	958
	45	629	804	630
Ø13 x 300	0	1600	1600	1600
	15	1600	1600	1600
	30	1113	1321	1113
	45	721	905	721

DIRECTIONS OF APPLICATION ALLOWED

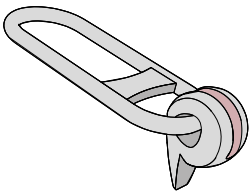


(*) See the "ELEVATION OF CLT ELEMENTS FROM HORIZONTAL TO VERTICAL" test.

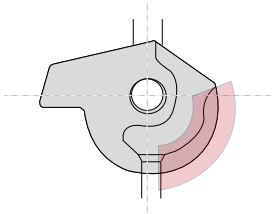
MAINTENANCE

ALWAYS FOLLOW THE INSTRUCTIONS IN THE MANUAL

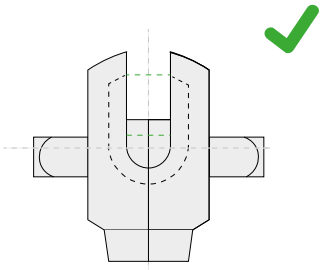
Prior to the inspection, the anchor's round head should be cleaned. Even if, under normal conditions, the lifting anchor does not show signs of wear, it should be checked at least annually by a skilled operator. Damage due to wear must be verified by a skilled operator. Plastic deformations (e.g. irreversible bending or punching) and cracks lead to the replacement of the hook; repairs and, in particular, welding on the hook are inadmissible.



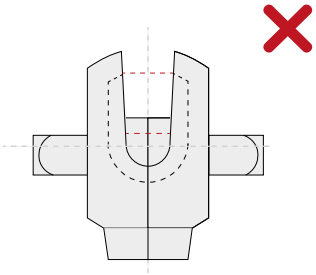
Isometric view of the WASP anchor.
The part of the anchor that must be checked is highlighted in red.



Section view of the WASP anchor round head.
The part of the eyelet subject to checking is highlighted in red.



Bottom view of the WASP anchor round head. The distance between the flanges corresponding to the closure of the eyelet is equal to that of the opening of the eyelet.
Check passed.

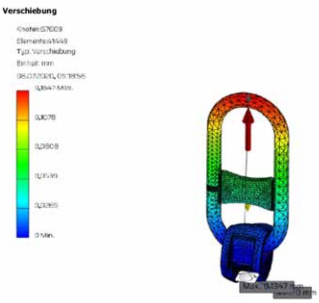


Bottom view of the anchor round head. The distance between the flanges corresponding to the closure of the eyelet is equal to that of the opening of the eyelet.
Check NOT passed.

WANT TO KNOW MORE?

For further technical information on the product, see the manual and further documents at www.rothoblaas.com.

ELEVATION OF CLT ELEMENTS FROM HORIZONTAL TO VERTICAL



Test reports and capacities for elevation of CLT elements are available at www.rothoblaas.com.

NOTES:

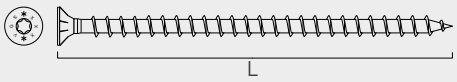
- Approved screws:

	VGS	HBS
	[mm]	[mm]
WASP	Ø11	Ø10
WASPL	Ø11 | Ø13	Ø12

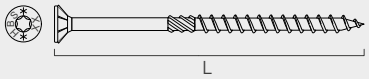
- The choice of fastener length is to be based each time on the dimensions of the wooden element, on the fastener's positioning, on the lift angle, on the weight of the load to be lifted and on the arrangement of the hooks.
- For safety reasons, the screws may only be used once.

ETA-11/0030

VGS



HBS



GENERAL PRINCIPLES:

- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k \cdot k_{mod}}{\varphi_2 \cdot \gamma_G \cdot \gamma_M}$$

The load bearing capacity values have been calculated according to ETA-11/0030, according with EN 1995:2014 standard. The following coefficients have been applied to the design values shown in the tables:

$k_{mod} = 1,0$

$\gamma_M = 1,3$

$\varphi_2 = 1,2$

The coefficients γ_M, γ_G, kmod and φ_2 should be taken according to the current regulations used for the calculation: EN 1995:2014 and EN 1991-3:2010.

- The dynamic factor φ_2 does not include environmental impacts (e.g., wind loads) These factors must be added to the calculated design load.
- For the calculation process a timber characteristic density ρ_k = 350 kg/m^3 has been considered. The values may change for timber species with a different density.
- The lifting hook may only be used by qualified personnel. The user manual (supplied with the product and available at www.rothoblaas.com) must be read and understood before use. The information and instructions contained therein must be followed. If in doubt, contact the Technical Department before use.
- Typical φ_2 coefficient values as a function of the lifting speed and the hoisting class:

DYNAMIC LOAD COEFFICIENT φ_2

hoisting class	**lifting speed** [m/min]		
	20	**50**	**90**
HC1	1,1	1,2	1,3
HC2	1,2	1,4	1,6
HC3	1,3	1,6	1,9
HC4	1,4	1,8	2,2

- For the φ_2 calculation criteria and crane classification according to hoisting class, see EN 1991-3-2010.

HORNET

- The calculated values refer to the load capacity of the screws, and therefore also apply to the HORNET lifting hook, which Rothoblaas has distributed until 2020, unless otherwise indicated. For any questions about HORNET, contact Rothoblaas Technical Department.