PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

PRODUCT DESCRIPTION

KonstruX fully threaded screws maximise a joint's load-bearing capacity with a high thread-extraction resistance in both components. If partially threaded screws are used, the joint's load-bearing capacity is limited by the considerably lower head pull-through resistance in the attached part.

KonstruX fully threaded screws are a cost-saving alternative to traditional connections or timber joints such as joist hangers and beams.

ADVANTAGES

- Reduced screwing torque
- High extraction resistance

CERTIFICATION

- European Technical Assessment ETA 11/0024

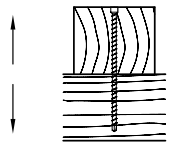
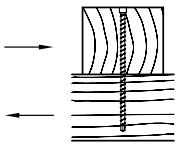
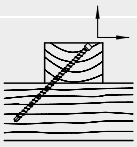
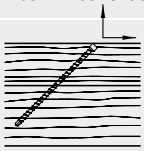
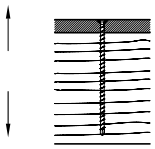
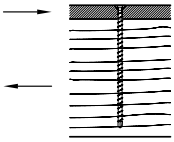
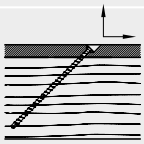
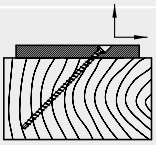
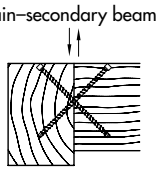
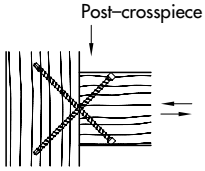
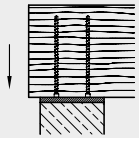
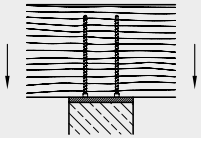
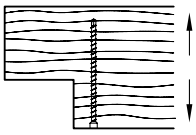
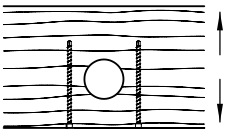
ETA
Europ. Techn. Bewertung
European Technical Assessment
ETA-11/0024

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

TECHNICAL INFORMATION

Example applications		Countersunk head		
		Ø 6,5 [mm]	Ø 8,0 [mm]	Ø 10,0 [mm]
Timber–timber tensile loading 	Timber–timber shearing 	✓	✓	✓
Timber–timber under tension at 45° 	Timber–timber under tension at 45° 	✓	✓	✓
Steel–timber tensile loading 	Steel–timber shearing 	✓	✓	✓
Timber–timber under tension at 45° 	Timber–timber under tension at 45° 	✓	✓	✓
Main–secondary beam connection 	Post–crosspiece conne 	✓	✓	-
Support reinforcement 	Support reinforcement 	✓	✓	✓
Transverse-shear reinforcement at notch 	Transverse-shear reinforcement at hole 	✓	✓	✓

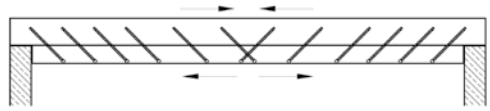
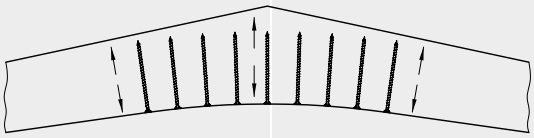
The table continues on the next page.

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

TECHNICAL INFORMATION

Example applications	Countersunk head		
	Ø 6,5 [mm]	Ø 8,0 [mm]	Ø 10,0 [mm]
Joist doubling 	✓	✓	✓
Transverse-shear reinforcement of building trusses 	-	✓	✓

KonstruX ST, Countersunk head							
Geometric properties					Mechanical properties		
Nominal Ø [mm]	Root Øi [mm]	Head Øh [mm]	Head high hh [mm]	Tip type	$f_{tens,k}$ [kN]	$f_{ax,k}$ [MPa]	$M_{y,k}$ [Nm]
5,2	3,6	6,4	5,0	Drill	13,0	15,5	10,0
6,5	4,5	8,0	5,5	Drill	17,0	15,5	15,0
8	5,2	10	6,5	Drill	25,0	12,5	25,0
10	5,9	13	6,5	Drill	33,0	11,5	40,0

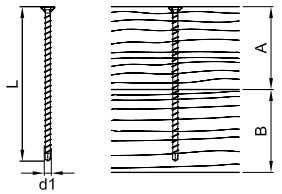
E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

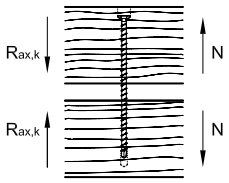
PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

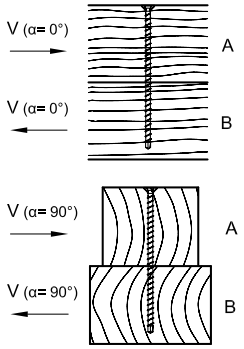
KONSTRUX ST WITH COUNTERSUNK HEAD AND NEW DRILL POINT 5,2 AND 8,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Extraction resistance	Shearing





Characteristic value of the joint's loadbearing capacit $R_{ax,k}$ acc. to ETA-11/0024



Characteristic value of the joint's loadbearing capacity R_k acc. to ETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
				α= 0°	α= 90°
5,2 x 80	40	60	2,58	2,26	2,26
5,2 x 100	60	60	3,44	2,48	2,48
5,2 x 120	60	80	4,30	2,69	2,69
5,2 x 140	80	80	5,16	2,91	2,91
5,2 x 160	80	100	6,03	3,12	3,12
6,5 x 80	40	60	3,22	3,46	2,64
6,5 x 100	60	60	4,30	3,82	3,28
6,5 x 120	60	80	4,75	3,93	3,47
6,5 x 140	80	80	4,75	3,93	3,47
8,0 x 95	40	60	3,08	4,61	3,57
8,0 x 125	60	80	4,61	5,05	4,37
8,0 x 155	80	80	7,11	5,67	4,99
8,0 x 195	100	100	9,01	6,15	5,46
8,0 x 220	120	120	9,48	6,27	5,58
8,0 x 245	120	140	11,38	6,74	6,06
8,0 x 270	140	140	12,33	6,98	6,29
8,0 x 295	140	160	13,28	7,21	6,42
8,0 x 330	160	180	15,17	7,69	6,42
8,0 x 375	180	200	17,07	7,79	6,42
8,0 x 400	200	220	18,97	7,79	6,42
8,0 x 430	220	220	19,92	7,79	6,42
8,0 x 480	240	260	22,76	7,79	6,42
8,0 x 545	260	300	25,00	7,79	6,42

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

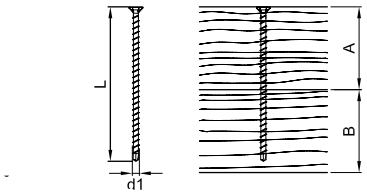
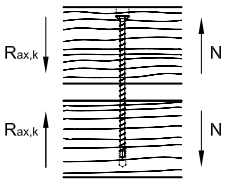
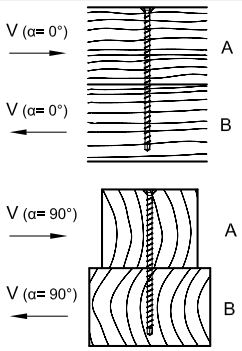
Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values. b) estimated with an efficient quantity of pairs of screws: n0,9. Please note: These are planning aids. Projects must only be calculated by authorised persons.

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

KONSTRUX ST WITH COUNTERSUNK HEAD AND NEW DRILL POINT 10,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Extraction resistance	Shearing
		
	Characteristic value of the joint's loadbearing capacit $R_{ax,k}$ acc. to ETA-11/0024	Characteristic value of the joint's loadbearing capacity R_k acc. to ETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
				α= 0°	α= 90°
10,0 x 125	60	80	6,92	7,18	6,18
10,0 x 155	80	80	8,65	7,61	6,61
10,0 x 195	100	100	10,96	8,19	7,19
10,0 x 220	120	120	11,53	8,33	7,33
10,0 x 245	120	140	13,84	8,91	7,91
10,0 x 270	140	140	14,99	9,20	8,20
10,0 x 300	160	160	16,15	9,48	8,48
10,0 x 330	160	180	18,46	10,06	8,90
10,0 x 360	180	200	20,76	10,64	8,90
10,0 x 400	200	220	23,07	10,89	8,90
10,0 x 450	220	240	25,38	10,89	8,90
10,0 x 500	240	280	27,68	10,89	8,90
10,0 x 550	260	300	29,99	10,89	8,90
10,0 x 600	300	320	33,00	10,89	8,90
10,0 x 650	320	340	33,00	10,89	8,90
10,0 x 700	340	360	33,00	10,89	8,90
10,0 x 750	360	400	33,00	10,89	8,90
10,0 x 800	400	420	33,00	10,89	8,90
10,0 x 900	440	480	33,00	10,89	8,90
10,0 x 1000	480	540	33,00	10,89	8,90

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

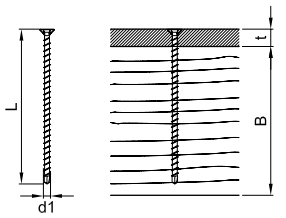
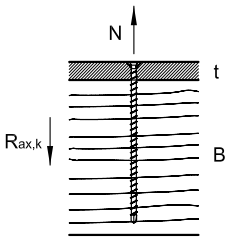
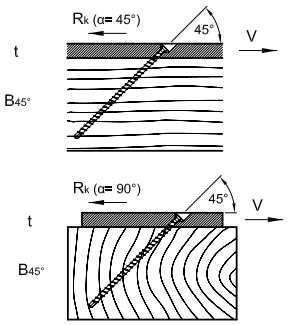
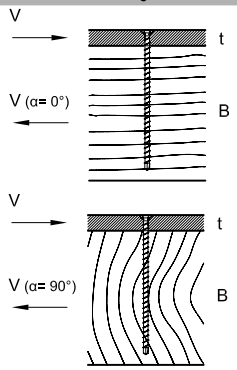
Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
Please note: These are planning aids. Projects must only be calculated by authorised persons.

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team
www.eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

KONSTRUX ST WITH COUNTERSUNK HEAD AND NEW DRILL POINT 5,2 BIS 8,0 MM: STEEL/TIMBER JOINTS

Dimensions	Extraction resistance		Shearing
			
	Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. to ETA-11/0024	Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. R_k to ETA-11/0024	Characteristic value of the joint's loadbearing capacity R_k acc. to ETA-11/0024

d1 x L [mm]	t [mm]	B [mm]	$B_{45°}$ [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
					α= 45°	α= 0°	α= 90°
5,2 x 80	10	80	60	6,02	4,25	3,79	3,79
5,2 x 100	10	100	80	7,75	5,48	4,22	4,22
5,2 x 120	10	120	80	9,47	6,69	4,57	4,57
5,2 x 140	10	140	100	11,19	7,91	4,57	4,57
5,2 x 160	10	160	120	12,91	9,13	4,57	4,57
6,5 x 80	15	80	60	5,14	3,29	4,17	3,52
6,5 x 100	15	100	80	6,73	4,41	4,17	3,52
6,5 x 120	15	120	80	8,31	5,53	4,17	3,52
6,5 x 140	15	140	100	9,89	6,65	4,17	3,52
8,0 x 95	15	100	80	7,59	4,95	6,18	5,22
8,0 x 125	15	120	100	10,43	6,96	6,18	5,22
8,0 x 155	15	160	120	13,28	8,97	6,18	5,22
8,0 x 195	15	200	140	17,07	11,65	6,18	5,22
8,0 x 220	15	220	160	19,44	13,33	6,18	5,22
8,0 x 245	15	240	180	21,81	15,01	6,18	5,22
8,0 x 270	15	280	200	24,18	16,68	6,18	5,22
8,0 x 295	15	300	220	25,00	17,68	6,18	5,22
8,0 x 330	15	340	240	25,00	17,68	6,18	5,22
8,0 x 375	15	380	280	25,00	17,68	6,18	5,22
8,0 x 400	15	400	280	25,00	17,68	6,18	5,22
8,0 x 430	15	440	300	25,00	17,68	6,18	5,22
8,0 x 480	15	480	340	25,00	17,68	6,18	5,22
8,0 x 545	15	560	400	25,00	17,68	6,18	5,22

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9. Please note: These are planning aids. Projects must only be calculated by authorised persons.

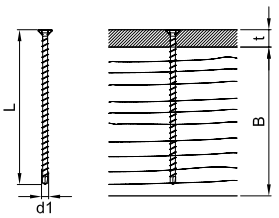
E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

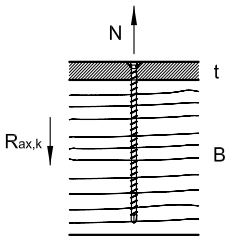
PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

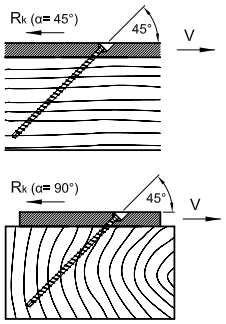
KONSTRUX ST WITH COUNTERSUNK HEAD AND NEW DRILL POINT 10,0 MM: STEEL/TIMBER JOINTS

Dimensions	Extraction resistance		Shearing

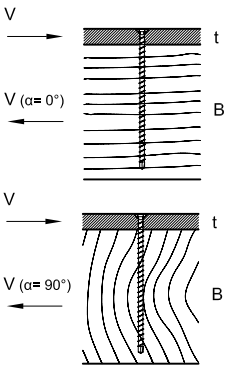




Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. to ETA-11/0024



Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. R_k to ETA-11/0024



Characteristic value of the joint's loadbearing capacity R_k acc. to ETA-11/0024

d1 x L [mm]	t [mm]	B [mm]	$B_{45°}$ [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
					α= 45°	α= 0°	α= 90°
10,0 x 125	15	120	100	12,69	8,46	8,72	7,30
10,0 x 155	15	160	120	16,15	10,91	8,72	7,30
10,0 x 195	15	200	140	20,76	14,17	8,72	7,30
10,0 x 220	15	220	160	23,65	16,21	8,72	7,30
10,0 x 245	15	240	180	26,53	18,25	8,72	7,30
10,0 x 270	15	280	200	29,41	20,29	8,72	7,30
10,0 x 300	15	300	220	32,87	22,74	8,72	7,30
10,0 x 330	15	340	240	33,00	23,33	8,72	7,30
10,0 x 360	15	360	260	33,00	23,33	8,72	7,30
10,0 x 400	15	400	280	33,00	23,33	8,72	7,30
10,0 x 450	15	460	320	33,00	23,33	8,72	7,30
10,0 x 500	15	500	360	33,00	23,33	8,72	7,30
10,0 x 550	15	560	400	33,00	23,33	8,72	7,30
10,0 x 600	15	600	420	33,00	23,33	8,72	7,30
10,0 x 650	15	660	480	33,00	23,33	8,72	7,30
10,0 x 700	15	720	520	33,00	23,33	8,72	7,30
10,0 x 750	15	660	560	33,00	23,33	8,72	7,30
10,0 x 800	15	800	600	33,00	23,33	8,72	7,30
10,0 x 900	15	920	640	33,00	23,33	8,72	7,30
10,0 x 1000	15	1000	720	33,00	23,33	8,72	7,30

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
Please note: These are planning aids. Projects must only be calculated by authorised persons.

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

INSTRUCTIONS FOR USE

KonstruX fully threaded screws do not require pilot drilling when used in softwood. However, for longer screws and for KonstruX AG 11.3 mm it is recommended to drill a pilot hole of approx. 1/3 the screw length in order to prevent the (long) screws from running too far into the wood.

The pilot-drilling diameters in softwood $d_{0,\,NH}$ are:

- KonstruX ST 5,2 mm, 6,5 mm → rarely required in softwood
- KonstruX ST 8,0 mm → $d_{0,\,NH}$ = 5,0 mm
- KonstruX ST 10,0 mm → $d_{0,\,NH}$ = 6,0 mm

Pilot-drilling is mandatory for use in hardwood. The pilot-drilling diameters in softwood d0,LH are:

- KonstruX ST 5,2 mm → d 0, LH = 3,5 mm
- KonstruX ST 6,5 mm → $d_{0,\,LH}$ = 5,0 mm
- KonstruX ST 8,0 mm → $d_{0,\,LH}$ = 6,0 mm
- KonstruX ST 10,0 mm → $d_{0,\,LH}$ = 8,0 mm

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

PRODUCT TABLE

KonstruX ST, countersunk head			
Art. no.	Dimension [mm]	Drive	PU
Ø 5,2 mm			
904876	5,2 x 80	TX25 ●	100
904878	5,2 x 100	TX25 ●	100
904879	5,2 x 120	TX25 ●	100
904907	5,2 x 140	TX25 ●	100
904908	5,2 x 160	TX25 ●	100
Ø 6,5 mm			
904857	6,5 x 80	TX30 ●	100
904858	6,5 x 100	TX30 ●	100
904859	6,5 x 120	TX30 ●	100
904860	6,5 x 140	TX30 ●	100
Ø 8,0 mm			
904790	8,0 x 95	TX40 ●	50
904791	8,0 x 125	TX40 ●	50
904792	8,0 x 155	TX40 ●	50
904793	8,0 x 195	TX40 ●	50
904794	8,0 x 220	TX40 ●	50
904795	8,0 x 245	TX40 ●	50
904796	8,0 x 270	TX40 ●	50
904797	8,0 x 295	TX40 ●	50
904798	8,0 x 330	TX40 ●	50
904799	8,0 x 375	TX40 ●	50
904800	8,0 x 400	TX40 ●	50
904801	8,0 x 430	TX40 ●	50
904802	8,0 x 480	TX40 ●	50
904803	8,0 x 545	TX40 ●	50

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team

PRODUCT DATA SHEET

KONSTRUX ST, COUNTERSUNK HEAD

PRODUCT TABLE

KonstruX ST, countersunk head			
Art. no.	Dimension [mm]	Drive	PU
Ø 10,0 mm			
904770	10,0 x 125	TX50 •	25
904771	10,0 x 155	TX50 •	25
904772	10,0 x 195	TX50 •	25
904773	10,0 x 220	TX50 •	25
904774	10,0 x 245	TX50 •	25
904775	10,0 x 270	TX50 •	25
904776	10,0 x 300	TX50 •	25
904777	10,0 x 330	TX50 •	25
904778	10,0 x 360	TX50 •	25
904779	10,0 x 400	TX50 •	25
904780	10,0 x 450	TX50 •	25
904781	10,0 x 500	TX50 •	25
904782	10,0 x 550	TX50 •	25
904783	10,0 x 600	TX50 •	25
100090	10,0 x 650	TX50 •	25
100091	10,0 x 700	TX50 •	25
100092	10,0 x 750	TX50 •	25
100093	10,0 x 800	TX50 •	25
100094	10,0 x 900	TX50 •	25
100095	10,0 x 1000	TX50 •	25

If you are not familiar with how this product is used, and particularly with the product's intended use, please contact our Application Technology department (Technik@eurotec.team).

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
Tel. +49 2331 62 45-0 • Fax +49 2331 62 45-200 • E-Mail info@eurotec.team