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Ball-Ended Thrust Screws • headless, round ball

EH 22720.



Product Description

Ball-ended thrust screws, headless with a fully spherical ball, are used for positioning, clamping, tensioning, supporting and applying pressure to components. They are particularly suitable for applications requiring point force transmission or space-saving integration into the assembly. Versions with a thermoplastic ball are specifically designed for brittle and pressure-sensitive components.
The headless design allows a variable screw penetration depth and space-saving integration into the assembly.
The fully spherical ball provides point contact with the component and transmits the force via a small contact area. Its spherical locating surface also allows it to be used on inclined or non-parallel surfaces.
The thermoplastic ball provides gentle force application and reduces the risk of pressure marks or damage to sensitive components.
This product group offers the following features and advantages:

- Compact headless design
- Variable screw penetration depth to suit the installation situation
- Fully spherical ball for targeted point force transmission
- Suitable for inclined or non-parallel locating surfaces
- Ball in hardened steel, hardened stainless steel or thermoplastic
- Thermoplastic ball for brittle and pressure-sensitive components
- Adjustment with a hexagon key
- Versions in steel or stainless steel

Material

Ball

- Ball-bearing steel, hardened
- Stainless steel, hardened
- Thermoplastic POM, white

Screw

- Heat-treated steel, 1200 ±100 N/mm^2
- Stainless steel 1.4305

More information

Notes

Ball not secured against rotating.
Customized design on request.

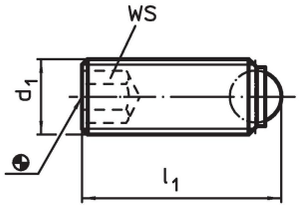
References

Thread lock on request.

Further products

- Ball-Ended Thrust Screws, headless, with fine-pitch thread
- Ball-Ended Thrust Screws, headless, round ball and hexalobular socket

Drawing



Order information

Dimensions			WS	Load capacity for static load[1] max.	min.	max.		Art. No.
d_1	l_1	Ball diameter						
[mm]			[mm]	[kN]	[°C]		[g]	
round ball, Heat-treated steel								
M 3	**5.0**	1.5	1.5	2.5	–	250	0.1	22720.0032
M 3	**7.5**	1.5	1.5	2.5	–	250	0.2	22720.0033
M 3	**10.0**	1.5	1.5	2.5	–	250	0.3	22720.0034
M 4	**6.0**	2.5	2.0	3.5	–	250	0.3	22720.0042
M 4	**8.0**	2.5	2.0	3.5	–	250	0.4	22720.0043
M 4	**10.0**	2.5	2.0	3.5	–	250	0.6	22720.0044
M 4	**12.0**	2.5	2.0	3.5	–	250	0.7	22720.0045
M 4	**16.0**	2.5	2.0	3.5	–	250	1.0	22720.0046
M 5	**8.0**	3.0	2.5	4.5	–	250	0.7	22720.0052

[1] Statements on load capacity are not valid for the stainless steel type (except the type fitted with thermoplastic balls).

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Dimensions			WS	Load capacity for static load[1] max.	temperature min.	temperature max.		Art. No.
d_1	l_1	Ball diameter						
[mm]			[mm]	[kN]	[°C]		[g]	
M 5	**10.0**	3.0	2.5	4.5	–	250	0.9	22720.0053
M 5	**12.0**	3.0	2.5	4.5	–	250	1.1	22720.0054
M 5	**16.0**	3.0	2.5	4.5	–	250	1.6	22720.0055
M 5	**20.0**	3.0	2.5	4.5	–	250	2.0	22720.0056
M 5	**25.0**	3.0	2.5	4.5	–	250	2.6	22720.0058
M 6	**10.8**	4.0	3.0	9.0	–	250	1.3	22720.0062
M 6	**12.8**	4.0	3.0	9.0	–	250	1.7	22720.0063
M 6	**16.8**	4.0	3.0	9.0	–	250	2.3	22720.0064
M 6	**20.8**	4.0	3.0	9.0	–	250	3.0	22720.0065
M 6	**25.8**	4.0	3.0	9.0	–	250	3.8	22720.0066
M 8	**11.2**	5.5	4.0	15.0	–	250	2.5	22720.0081
M 8	**13.2**	5.5	4.0	15.0	–	250	2.8	22720.0082
M 8	**17.2**	5.5	4.0	15.0	–	250	4.0	22720.0083
M 8	**21.2**	5.5	4.0	15.0	–	250	5.2	22720.0084
M 8	**26.2**	5.5	4.0	15.0	–	250	6.8	22720.0085
M 8	**31.2**	5.5	4.0	15.0	–	250	8.3	22720.0086
M10	**13.7**	7.0	5.0	20.0	–	250	4.8	22720.0101
M10	**17.7**	7.0	5.0	20.0	–	250	6.1	22720.0102
M10	**21.7**	7.0	5.0	20.0	–	250	8.2	22720.0103
M10	**26.7**	7.0	5.0	20.0	–	250	10.0	22720.0104
M10	**31.7**	7.0	5.0	20.0	–	250	13.0	22720.0105
M10	**36.7**	7.0	5.0	20.0	–	250	15.0	22720.0106
M10	**41.7**	7.0	5.0	20.0	–	250	18.0	22720.0108
M12	**18.0**	8.5	6.0	30.0	–	250	9.1	22720.0121
M12	**22.0**	8.5	6.0	30.0	–	250	11.0	22720.0122
M12	**27.0**	8.5	6.0	30.0	–	250	14.0	22720.0123
M12	**32.0**	8.5	6.0	30.0	–	250	18.0	22720.0124
M12	**42.0**	8.5	6.0	30.0	–	250	25.0	22720.0126
M12	**52.0**	8.5	6.0	30.0	–	250	32.0	22720.0128
M16	**23.3**	12.0	8.0	60.0	–	250	22.0	22720.0161
M16	**28.3**	12.0	8.0	60.0	–	250	27.0	22720.0162
M16	**38.3**	12.0	8.0	60.0	–	250	41.0	22720.0164
M16	**53.3**	12.0	8.0	60.0	–	250	61.0	22720.0166
M20	**34.2**	15.0	10.0	90.0	–	250	52.0	22720.0202
M20	**44.2**	15.0	10.0	90.0	–	250	73.0	22720.0204
M20	**54.2**	15.0	10.0	90.0	–	250	94.0	22720.0205
M20	**64.2**	15.0	10.0	90.0	–	250	114.0	22720.0206
M24	**39.7**	18.0	12.0	120.0	–	250	89.0	22720.0242
M24	**54.7**	18.0	12.0	120.0	–	250	134.0	22720.0244
M24	**84.7**	18.0	12.0	120.0	–	250	224.0	22720.0246
round ball, Stainless steel								
M 3	**5.0**	1.5	1.5	2.5	–	250	0.2	22720.0747
M 3	**7.5**	1.5	1.5	2.5	–	250	0.2	22720.0748
M 3	**10.0**	1.5	1.5	2.5	–	250	0.4	22720.0749
M 4	**6.0**	2.5	2.0	3.5	–	250	0.3	22720.0750
M 4	**8.0**	2.5	2.0	3.5	–	250	0.4	22720.0752
M 4	**10.0**	2.5	2.0	3.5	–	250	0.6	22720.0754
M 4	**12.0**	2.5	2.0	3.5	–	250	0.7	22720.0756
M 4	**16.0**	2.5	2.0	3.5	–	250	1.0	22720.0758
M 5	**8.0**	3.0	2.5	4.5	–	250	0.7	22720.0760
M 5	**10.0**	3.0	2.5	4.5	–	250	0.9	22720.0761
M 5	**12.0**	3.0	2.5	4.5	–	250	1.1	22720.0762
M 5	**16.0**	3.0	2.5	4.5	–	250	1.6	22720.0763
M 5	**20.0**	3.0	2.5	4.5	–	250	2.1	22720.0764
M 5	**25.0**	3.0	2.5	4.5	–	250	2.7	22720.0765
M 6	**10.8**	4.0	3.0	9.0	–	250	1.3	22720.0770
M 6	**12.8**	4.0	3.0	9.0	–	250	1.7	22720.0772
M 6	**16.8**	4.0	3.0	9.0	–	250	2.3	22720.0774
M 6	**20.8**	4.0	3.0	9.0	–	250	3.0	22720.0775
M 6	**25.8**	4.0	3.0	9.0	–	250	3.8	22720.0776

[1] Statements on load capacity are not valid for the stainless steel type (except the type fitted with thermoplastic balls).

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Dimensions			WS	Load capacity for static load[1] max.				Art. No.
d_1	l_1	Ball diameter			min.	max.		
[mm]			[mm]	[kN]	[°C]		[g]	
M 8	**11.2**	5.5	4.0	15.0	–	250	2.5	**22720.0780**
M 8	**13.2**	5.5	4.0	15.0	–	250	2.9	**22720.0782**
M 8	**17.2**	5.5	4.0	15.0	–	250	4.1	**22720.0783**
M 8	**21.2**	5.5	4.0	15.0	–	250	5.3	**22720.0784**
M 8	**26.2**	5.5	4.0	15.0	–	250	6.9	**22720.0785**
M 8	**31.2**	5.5	4.0	15.0	–	250	8.4	**22720.0786**
M10	**13.7**	7.0	5.0	20.0	–	250	4.8	**22720.0790**
M10	**17.7**	7.0	5.0	20.0	–	250	6.0	**22720.0792**
M10	**21.7**	7.0	5.0	20.0	–	250	7.9	**22720.0793**
M10	**26.7**	7.0	5.0	20.0	–	250	11.0	**22720.0794**
M10	**31.7**	7.0	5.0	20.0	–	250	13.0	**22720.0795**
M10	**36.7**	7.0	5.0	20.0	–	250	15.0	**22720.0796**
M10	**41.7**	7.0	5.0	20.0	–	250	18.0	**22720.0798**
M12	**18.0**	8.5	6.0	30.0	–	250	9.3	**22720.0800**
M12	**22.0**	8.5	6.0	30.0	–	250	11.0	**22720.0802**
M12	**27.0**	8.5	6.0	30.0	–	250	14.0	**22720.0803**
M12	**32.0**	8.5	6.0	30.0	–	250	18.0	**22720.0804**
M12	**42.0**	8.5	6.0	30.0	–	250	25.0	**22720.0806**
M12	**52.0**	8.5	6.0	30.0	–	250	33.0	**22720.0808**
M16	**23.3**	12.0	8.0	60.0	–	250	22.0	**22720.0810**
M16	**28.3**	12.0	8.0	60.0	–	250	27.0	**22720.0812**
M16	**38.3**	12.0	8.0	60.0	–	250	42.0	**22720.0814**
M16	**53.3**	12.0	8.0	60.0	–	250	60.0	**22720.0816**
round ball from thermoplastic, Stainless steel								
M 4	**6.0**	2.5	2.0	0.3	-30	80	0.3	**22720.0252**
M 4	**8.0**	2.5	2.0	0.3	-30	80	0.4	**22720.0253**
M 4	**10.0**	2.5	2.0	0.3	-30	80	0.5	**22720.0254**
M 4	**12.0**	2.5	2.0	0.3	-30	80	0.7	**22720.0255**
M 4	**16.0**	2.5	2.0	0.3	-30	80	1.0	**22720.0256**
M 5	**8.0**	3.0	2.5	0.5	-30	80	0.6	**22720.0262**
M 5	**10.0**	3.0	2.5	0.5	-30	80	0.8	**22720.0263**
M 5	**12.0**	3.0	2.5	0.5	-30	80	1.0	**22720.0264**
M 5	**16.0**	3.0	2.5	0.5	-30	80	1.5	**22720.0265**
M 5	**20.0**	3.0	2.5	0.5	-30	80	1.9	**22720.0266**
M 5	**25.0**	3.0	2.5	0.5	-30	80	2.4	**22720.0267**
M 6	**10.8**	4.0	3.0	0.9	-30	80	1.1	**22720.0272**
M 6	**12.8**	4.0	3.0	0.9	-30	80	1.5	**22720.0273**
M 6	**16.8**	4.0	3.0	0.9	-30	80	2.2	**22720.0274**
M 6	**20.8**	4.0	3.0	0.9	-30	80	2.8	**22720.0275**
M 6	**25.8**	4.0	3.0	0.9	-30	80	3.6	**22720.0276**
M 8	**11.2**	5.5	4.0	1.5	-30	80	1.9	**22720.0281**
M 8	**13.2**	5.5	4.0	1.5	-30	80	2.5	**22720.0282**
M 8	**17.2**	5.5	4.0	1.5	-30	80	3.4	**22720.0283**
M 8	**21.2**	5.5	4.0	1.5	-30	80	4.7	**22720.0284**
M 8	**26.2**	5.5	4.0	1.5	-30	80	6.1	**22720.0285**
M 8	**31.2**	5.5	4.0	1.5	-30	80	7.9	**22720.0286**
M10	**13.7**	7.0	5.0	2.0	-30	80	3.7	**22720.0291**
M10	**17.7**	7.0	5.0	2.0	-30	80	4.9	**22720.0292**
M10	**21.7**	7.0	5.0	2.0	-30	80	6.8	**22720.0293**
M10	**26.7**	7.0	5.0	2.0	-30	80	9.3	**22720.0294**
M10	**31.7**	7.0	5.0	2.0	-30	80	12.0	**22720.0295**
M10	**36.7**	7.0	5.0	2.0	-30	80	14.0	**22720.0296**
M10	**41.7**	7.0	5.0	2.0	-30	80	17.0	**22720.0297**
M12	**18.0**	8.5	6.0	3.0	-30	80	7.0	**22720.0301**
M12	**22.0**	8.5	6.0	3.0	-30	80	8.9	**22720.0302**
M12	**27.0**	8.5	6.0	3.0	-30	80	13.0	**22720.0303**
M12	**32.0**	8.5	6.0	3.0	-30	80	16.0	**22720.0304**
M12	**42.0**	8.5	6.0	3.0	-30	80	23.0	**22720.0306**
M12	**52.0**	8.5	6.0	3.0	-30	80	30.0	**22720.0308**

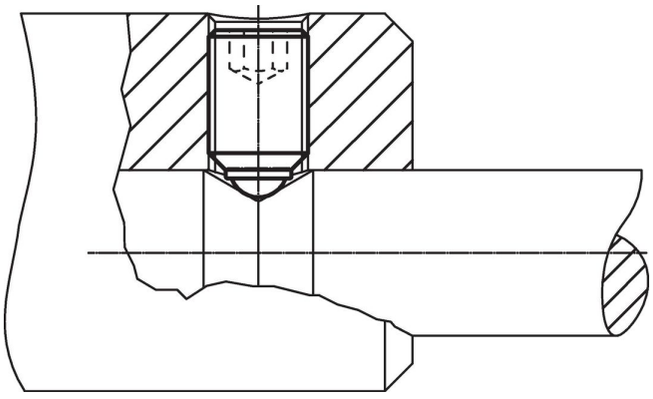
[1] Statements on load capacity are not valid for the stainless steel type (except the type fitted with thermoplastic balls).

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Dimensions			WS	Load capacity for static load[1] max.	min.	max.		Art. No.
d_1	l_1	Ball diameter						
[mm]			[mm]	[kN]	[°C]		[g]	
round ball from thermoplastic, Heat-treated steel								
M 4	**6.0**	2.5	2.0	0.3	-30	80	0.2	22720.0342
M 4	**8.0**	2.5	2.0	0.3	-30	80	0.4	22720.0343
M 4	**10.0**	2.5	2.0	0.3	-30	80	0.5	22720.0344
M 4	**12.0**	2.5	2.0	0.3	-30	80	0.6	22720.0345
M 4	**16.0**	2.5	2.0	0.3	-30	80	0.9	22720.0346
M 5	**8.0**	3.0	2.5	0.5	-30	80	0.8	22720.0352
M 5	**10.0**	3.0	2.5	0.5	-30	80	0.8	22720.0353
M 5	**12.0**	3.0	2.5	0.5	-30	80	1.0	22720.0354
M 5	**16.0**	3.0	2.5	0.5	-30	80	1.5	22720.0355
M 5	**20.0**	3.0	2.5	0.5	-30	80	1.9	22720.0356
M 5	**25.0**	3.0	2.5	0.5	-30	80	2.5	22720.0358
M 6	**10.8**	4.0	3.0	0.9	-30	80	1.1	22720.0362
M 6	**12.8**	4.0	3.0	0.9	-30	80	1.4	22720.0363
M 6	**16.8**	4.0	3.0	0.9	-30	80	2.1	22720.0364
M 6	**20.8**	4.0	3.0	0.9	-30	80	2.8	22720.0365
M 6	**25.8**	4.0	3.0	0.9	-30	80	3.7	22720.0366
M 8	**11.2**	5.5	4.0	1.5	-30	80	1.9	22720.0381
M 8	**13.2**	5.5	4.0	1.5	-30	80	2.3	22720.0382
M 8	**17.2**	5.5	4.0	1.5	-30	80	3.6	22720.0383
M 8	**21.2**	5.5	4.0	1.5	-30	80	4.6	22720.0384
M 8	**26.2**	5.5	4.0	1.5	-30	80	6.3	22720.0385
M 8	**31.2**	5.5	4.0	1.5	-30	80	7.7	22720.0386
M10	**13.7**	7.0	5.0	2.0	-30	80	3.6	22720.0401
M10	**17.7**	7.0	5.0	2.0	-30	80	4.9	22720.0402
M10	**21.7**	7.0	5.0	2.0	-30	80	6.8	22720.0403
M10	**26.7**	7.0	5.0	2.0	-30	80	9.2	22720.0404
M10	**31.7**	7.0	5.0	2.0	-30	80	12.0	22720.0405
M10	**36.7**	7.0	5.0	2.0	-30	80	14.0	22720.0406
M10	**41.7**	7.0	5.0	2.0	-30	80	17.0	22720.0408
M12	**18.0**	8.5	6.0	3.0	-30	80	7.0	22720.0421
M12	**22.0**	8.5	6.0	3.0	-30	80	8.9	22720.0422
M12	**27.0**	8.5	6.0	3.0	-30	80	12.0	22720.0423
M12	**32.0**	8.5	6.0	3.0	-30	80	16.0	22720.0424
M12	**42.0**	8.5	6.0	3.0	-30	80	23.0	22720.0426
M12	**52.0**	8.5	6.0	3.0	-30	80	30.0	22720.0428

[1] Statements on load capacity are not valid for the stainless steel type (except the type fitted with thermoplastic balls).

Application example



Compliance

For detailed compliance information please select the desired article number.