

Technical Data Sheet

ToothLock® Low Profile Clamp

292



ToothLock®



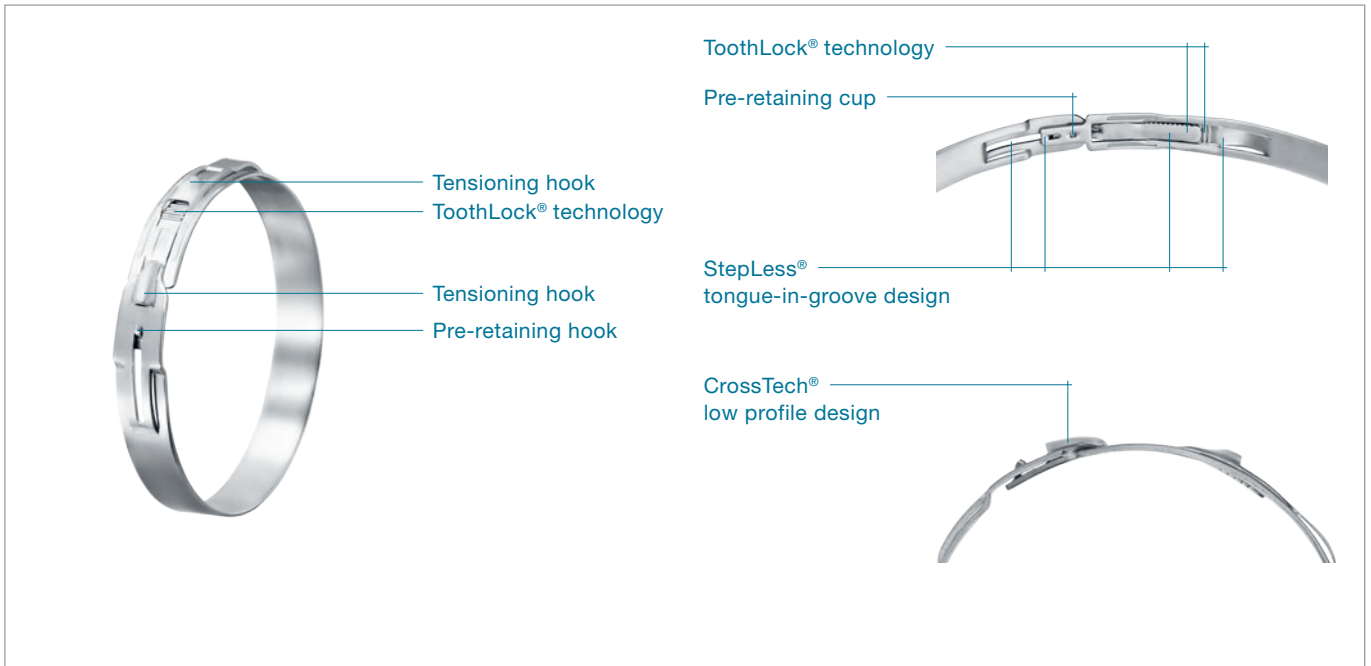
CrossTech®



StepLess®



Connecting Technology



ToothLock® technology: very high and permanent compression, superior radial load performance, highly pressure and expansion resistant

CrossTech®: ultra low profile design, very low imbalance on rotating parts

StepLess®: uniform compression, powerful all-round seal, withstands thermal stress, shock- and vibration-resistant

Burr-free strip edges: reduced risk of damage to parts being clamped

Pre-retaining cup: visual clamp closure verification

Assembly-friendly and reliable: extended diameter range, time-saving and process reliable assembly

ToothLock® Low Profile Clamp 292



ToothLock®



CrossTech®



StepLess®

Target applications

Drive shafts (CVJ boots made from TPE)

Other applications upon verification by Oetiker

Material

Stainless Steel, material no. 1.4301/UNS S30400

Corrosion resistance according to DIN EN ISO 9227

≥ 1000 hours

| Size range | width x thickness |
|-----------------|-------------------|
| 57.5 – 120.5 mm | 10.0 x 1.0 mm |

Sizes

Diameter graduation 0.5 mm

Some sizes are only available if an appropriate minimum quantity is ordered.

ToothLock®

Interlocked with its teeth, the distinctive ToothLock® feature offers extremely high and permanent compression rates and outstanding expansion resistance – strong enough for the toughest connections. It also resists shock and vibration and helps the clamp

to withstand thermal stress. The ToothLock® is designed as a self-locking mechanism that provides superior performance. With its multiple tooth-locking positions, it compensates for component tolerances.

CrossTech®

The innovative CrossTech® feature is highly space-efficient and provides an ultra low profile design for a very low imbalance on rotating parts.

Tensioning Hooks

The tensioning hooks are the features used to close the ToothLock® Low Profile Clamp. An Oetiker assembly tool engages both tensioning hooks, and reduces the clamp diameter until the pre-defined closing force is reached.

Clamp Selection

ToothLock® Low Profile Clamp sizes are determined using the largest and smallest diameter in the working range. Ideally the compressed diameter of the parts being clamped should be in the middle of the working range.

The data in this Data Sheet are intended for reference, not as design specifications.

Order information 292

| Item No. | Ref. No. | Delivery-Ø (mm) | Working range (mm) Min.-Ø* Max.-Ø | Item No. | Ref. No. | Delivery-Ø (mm) | Working range (mm) Min.-Ø* Max.-Ø |
|----------|------------|--------------------|--------------------------------------|----------|------------|--------------------|--------------------------------------|
| 29200000 | 0575-1010R | 61.7 | 57.5 – 60 | 29200124 | 0885-1010R | 92.7 | 88.5 – 91 |
| 29200002 | 0580-1010R | 62.2 | 58 – 60.5 | 29200126 | 0890-1010R | 93.2 | 89 – 91.5 |
| 29200004 | 0585-1010R | 62.7 | 58.5 – 61 | 29200128 | 0895-1010R | 93.7 | 89.5 – 92 |
| 29200006 | 0590-1010R | 63.2 | 59 – 61.5 | 29200130 | 0900-1010R | 94.2 | 90 – 92.5 |
| 29200008 | 0595-1010R | 63.7 | 59.5 – 62 | 29200132 | 0905-1010R | 94.7 | 90.5 – 93 |
| 29200010 | 0600-1010R | 64.2 | 60 – 62.5 | 29200134 | 0910-1010R | 95.2 | 91 – 93.5 |
| 29200012 | 0605-1010R | 64.7 | 60.5 – 63 | 29200136 | 0915-1010R | 95.7 | 91.5 – 94 |
| 29200014 | 0610-1010R | 65.2 | 61 – 63.5 | 29200138 | 0920-1010R | 96.2 | 92 – 94.5 |
| 29200016 | 0615-1010R | 65.7 | 61.5 – 64 | 29200140 | 0925-1010R | 96.7 | 92.5 – 95 |
| 29200018 | 0620-1010R | 66.2 | 62 – 64.5 | 29200142 | 0930-1010R | 97.2 | 93 – 95.5 |
| 29200020 | 0625-1010R | 66.7 | 62.5 – 65 | 29200144 | 0935-1010R | 97.7 | 93.5 – 96 |
| 29200022 | 0630-1010R | 67.2 | 63 – 65.5 | 29200146 | 0940-1010R | 98.2 | 94 – 96.5 |
| 29200024 | 0635-1010R | 67.7 | 63.5 – 66 | 29200148 | 0945-1010R | 98.7 | 94.5 – 97 |
| 29200026 | 0640-1010R | 68.2 | 64 – 66.5 | 29200150 | 0950-1010R | 99.2 | 95 – 97.5 |
| 29200028 | 0645-1010R | 68.7 | 64.5 – 67 | 29200152 | 0955-1010R | 99.7 | 95.5 – 98 |
| 29200030 | 0650-1010R | 69.2 | 65 – 67.5 | 29200154 | 0960-1010R | 100.2 | 96 – 98.5 |
| 29200032 | 0655-1010R | 69.7 | 65.5 – 68 | 29200156 | 0965-1010R | 100.7 | 96.5 – 99 |
| 29200034 | 0660-1010R | 70.2 | 66 – 68.5 | 29200158 | 0970-1010R | 101.2 | 97 – 99.5 |
| 29200036 | 0665-1010R | 70.7 | 66.5 – 69 | 29200160 | 0975-1010R | 101.7 | 97.5 – 100 |
| 29200038 | 0670-1010R | 71.2 | 67 – 69.5 | 29200162 | 0980-1010R | 102.2 | 98 – 100.5 |
| 29200040 | 0675-1010R | 71.7 | 67.5 – 70 | 29200164 | 0985-1010R | 102.7 | 98.5 – 101 |
| 29200042 | 0680-1010R | 72.2 | 68 – 70.5 | 29200166 | 0990-1010R | 103.2 | 99 – 101.5 |
| 29200044 | 0685-1010R | 72.7 | 68.5 – 71 | 29200168 | 0995-1010R | 103.7 | 99.5 – 102 |
| 29200046 | 0690-1010R | 73.2 | 69 – 71.5 | 29200170 | 1000-1010R | 104.2 | 100 – 102.5 |
| 29200048 | 0695-1010R | 73.7 | 69.5 – 72 | 29200172 | 1005-1010R | 104.7 | 100.5 – 103 |
| 29200050 | 0700-1010R | 74.2 | 70 – 72.5 | 29200174 | 1010-1010R | 105.2 | 101 – 103.5 |
| 29200052 | 0705-1010R | 74.7 | 70.5 – 73 | 29200176 | 1015-1010R | 105.7 | 101.5 – 104 |
| 29200054 | 0710-1010R | 75.2 | 71 – 73.5 | 29200178 | 1020-1010R | 106.2 | 102 – 104.5 |
| 29200056 | 0715-1010R | 75.7 | 71.5 – 74 | 29200180 | 1025-1010R | 106.7 | 102.5 – 105 |
| 29200058 | 0720-1010R | 76.2 | 72 – 74.5 | 29200182 | 1030-1010R | 107.2 | 103 – 105.5 |
| 29200060 | 0725-1010R | 76.7 | 72.5 – 75 | 29200184 | 1035-1010R | 107.7 | 103.5 – 106 |
| 29200062 | 0730-1010R | 77.2 | 73 – 75.5 | 29200186 | 1040-1010R | 108.2 | 104 – 106.5 |
| 29200064 | 0735-1010R | 77.7 | 73.5 – 76 | 29200188 | 1045-1010R | 108.7 | 104.5 – 107 |
| 29200066 | 0740-1010R | 78.2 | 74 – 76.5 | 29200190 | 1050-1010R | 109.2 | 105 – 107.5 |
| 29200068 | 0745-1010R | 78.7 | 74.5 – 77 | 29200192 | 1055-1010R | 109.7 | 105.5 – 108 |
| 29200070 | 0750-1010R | 79.2 | 75 – 77.5 | 29200194 | 1060-1010R | 110.2 | 106 – 108.5 |
| 29200072 | 0755-1010R | 79.7 | 75.5 – 78 | 29200196 | 1065-1010R | 110.7 | 106.5 – 109 |
| 29200074 | 0760-1010R | 80.2 | 76 – 78.5 | 29200198 | 1070-1010R | 111.2 | 107 – 109.5 |
| 29200076 | 0765-1010R | 80.7 | 76.5 – 79 | 29200200 | 1075-1010R | 111.7 | 107.5 – 110 |
| 29200078 | 0770-1010R | 81.2 | 77 – 79.5 | 29200202 | 1080-1010R | 112.2 | 108 – 110.5 |
| 29200080 | 0775-1010R | 81.7 | 77.5 – 80 | 29200204 | 1085-1010R | 112.7 | 108.5 – 111 |
| 29200082 | 0780-1010R | 82.2 | 78 – 80.5 | 29200206 | 1090-1010R | 113.2 | 109 – 111.5 |
| 29200084 | 0785-1010R | 82.7 | 78.5 – 81 | 29200208 | 1095-1010R | 113.7 | 109.5 – 112 |
| 29200086 | 0790-1010R | 83.2 | 79 – 81.5 | 29200210 | 1100-1010R | 114.2 | 110 – 112.5 |
| 29200088 | 0795-1010R | 83.7 | 79.5 – 82 | 29200212 | 1105-1010R | 114.7 | 110.5 – 113 |
| 29200090 | 0800-1010R | 84.2 | 80 – 82.5 | 29200214 | 1110-1010R | 115.2 | 111 – 113.5 |
| 29200092 | 0805-1010R | 84.7 | 80.5 – 83 | 29200216 | 1115-1010R | 115.7 | 111.5 – 114 |
| 29200094 | 0810-1010R | 85.2 | 81 – 83.5 | 29200218 | 1120-1010R | 116.2 | 112 – 114.5 |
| 29200096 | 0815-1010R | 85.7 | 81.5 – 84 | 29200220 | 1125-1010R | 116.7 | 112.5 – 115 |
| 29200098 | 0820-1010R | 86.2 | 82 – 84.5 | 29200222 | 1130-1010R | 117.2 | 113 – 115.5 |
| 29200100 | 0825-1010R | 86.7 | 82.5 – 85 | 29200224 | 1135-1010R | 117.7 | 113.5 – 116 |
| 29200102 | 0830-1010R | 87.2 | 83 – 85.5 | 29200226 | 1140-1010R | 118.2 | 114 – 116.5 |
| 29200104 | 0835-1010R | 87.7 | 83.5 – 86 | 29200228 | 1145-1010R | 118.7 | 114.5 – 117 |
| 29200106 | 0840-1010R | 88.2 | 84 – 86.5 | 29200230 | 1150-1010R | 119.2 | 115 – 117.5 |
| 29200108 | 0845-1010R | 88.7 | 84.5 – 87 | 29200232 | 1155-1010R | 119.7 | 115.5 – 118 |
| 29200110 | 0850-1010R | 89.2 | 85 – 87.5 | 29200234 | 1160-1010R | 120.2 | 116 – 118.5 |
| 29200112 | 0855-1010R | 89.7 | 85.5 – 88 | 29200236 | 1165-1010R | 120.7 | 116.5 – 119 |
| 29200114 | 0860-1010R | 90.2 | 86 – 88.5 | 29200238 | 1170-1010R | 121.2 | 117 – 119.5 |
| 29200116 | 0865-1010R | 90.7 | 86.5 – 89 | 29200240 | 1175-1010R | 121.7 | 117.5 – 120 |
| 29200118 | 0870-1010R | 91.2 | 87 – 89.5 | 29200242 | 1180-1010R | 122.2 | 118 – 120.5 |
| 29200120 | 0875-1010R | 91.7 | 87.5 – 90 | | | | |
| 29200122 | 0880-1010R | 92.2 | 88 – 90.5 | | | | |

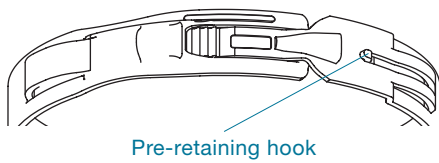
* Min.-Ø = Nominal-Ø diameter marked on clamp

Assembly

Closing position – visual clamp closure indicators

As supplied

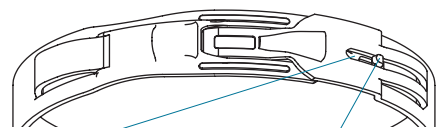
The pre-retaining hook is engaged in the supplied condition. Teeth are visible.



Pre-retaining hook

Minimum closure (largest diameter in working range)

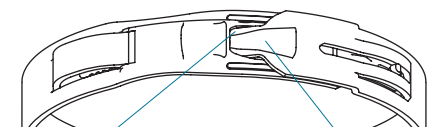
The pre-retaining cup becomes visible and the teeth are no longer visible.



Pre-retaining cup Pre-retaining hook

Maximum closure (smallest diameter in working range and nominal diameter)

The tensioning hook is almost in contact with the housing.



Housing Tensioning hook

Working range

The working range of the ToothLock® Low Profile Clamp is only functional between the minimum and the maximum closure amounting to a 2.5 mm diameter range. The as shipped diameter is 4.2 mm larger than the minimum diameter, thus offering a large overall diameter range.

Assembly Recommendations

This clamp can be installed using a manual clamping tool with torque wrench or with the Electronically Controlled Pneumatic Pincer – ELK 02 – for high volume installations as well as for process reliable installations. By using the ELK 02 complete process monitoring is available, including 100% data recording.

Assembly Instructions

Pincer jaws (cutaway)



Tensioning hooks

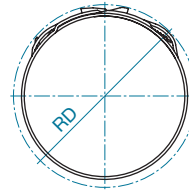
To close a clamp, the pincer jaws must be engaged with both tensioning hooks. By operating either the ELK 02 or closing the

manual pincer, the simultaneous movement of the two tensioning hooks reduces the diameter of the ToothLock® Low Profile Clamp.

Rotation diameter

The rotation diameter (RD) of an assembled clamp can be a critical design parameter for applications that rotate in close proximity to adjacent components.

$$RD = \text{closed inside diameter} + 8.7 \text{ mm}$$



Assembly Tools

Manual

| | |
|-------------------|-------------------|
| Clamping tool 292 | Item No. 14100378 |
| Torque wrench | Item No. 14100098 |



Clamping Tool with Torque Wrench

Force-monitored: Electronically controlled

| | |
|---------------------------------|-------------------|
| HO 5000 ELT w/o pincer head | Item No. 13900339 |
| HO 5000 EL w/o pincer head | Item No. 13900234 |
| Pincer head HO-10.5-32.3-77° EL | Item No. 13900847 |
| Replacement-jaw kit | Item No. 13900848 |
| Calibration set | Item No. 13900942 |



Installation data

| Material dimension | Size range | Maximum closing force |
|--------------------|-----------------|-----------------------|
| 10 x 1.0 mm | 57.5 – 120.5 mm | 3900 N |

Important note

The closing force is intended as a guide, which may vary depending on the type and tolerances of parts being clamped. To ensure optimum clamp selection, we recommend conducting functional tests with several assemblies.

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