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**SPECS &
INFORMATION**

Technical Data Sheet

Stepless® Low Profile Clamps

Product Group 168



Connecting Technology



Reusability: can be repeatedly opened and re-installed

360° Stepless®: uniform 360° compression or uniform surface pressure

Low installed height: minimum space requirement, low imbalance on rotating parts

Load retaining hooks: visual indication that clamp is correctly installed

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

Stepless® Low Profile Clamps Product Group 168

Material

PG 168 Stainless steel material No. 1.4301 or UNS S30400
Alternative materials available on request.

Corrosion resistance according to DIN EN ISO 9227

PG 168 ≥ 1000 h

Series

Nominal diameter	width x thickness
10.5 – 19.0 mm	9.0 x 0.5 mm
19.5 – 110.0 mm	7.0 x 0.6 mm
25.0 – 110.0 mm	9.0 x 0.6 mm
60.0 – 120.5 mm	10.0 x 0.6 mm

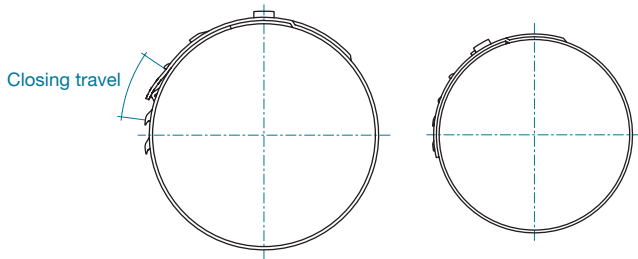
Some sizes are only available if an appropriate minimum quantity is ordered.

Stepless® Low Profile Clamps are produced in several nominal widths and thicknesses. The dimensions of the material used for the standard range are determined taking into account the required radial force, the nature of the application and the need to maintain sealing and/or retaining properties under the specified conditions and environmental exposure. When selecting the clamp diameter, the dimensions of the mating components on which the clamp is to be installed must be accurately established to enable effective clamping performance. The durometer hardness of the soft material and the desired compression are important factors when calculating the appropriate clamp diameter.

Tensioning hook and tunnel

The tensioning hook and tunnel have been developed to withstand a maximum closing force of 2000 N. With the use of an Oetiker installation tool, the clamp is reduced in diameter until the interlock position is achieved. The diameter reduction of the clamp is proportional to the closing travel. The theoretical maximum reduction in diameter is given by the formula:

$$\text{Max. diameter reduction} = \frac{\text{closing travel}}{\pi}$$



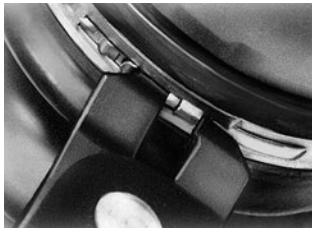
Assembly Recommendations

Using a hand tool, or a pneumatic tool specifically designed for high volume production, locate the jaw tips in the tensioning hook and tunnel.

Activating the pneumatic tool, or closing the hand tool, simultaneously draws the two features together, reducing the inside diameter of the clamp. To maintain this reduced diameter, the apertures are depressed over the load retaining hooks and the applied load exerted by the tool is released, so that the hooks engage in the appropriate apertures.

The Stepless® Low Profile Clamp provides a constant, accurate, inside diameter after installation, but, unlike Stepless® Ear Clamps PG 167, will not compensate for variations in component tolerance or accommodate the effects of thermal expansion.

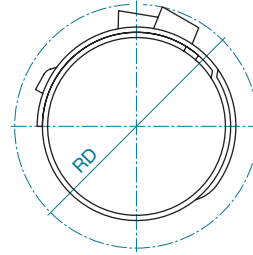
The sealing pressure beneath the clamp is dependent on the compression factor established when determining the appropriate clamp diameter and the resistance to thermal “set” of the soft material.



Complete process monitoring, including 100% documentation is available using the Electronically Controlled pneumatic power tool Oetiker ELK.

Rotation diameter

The rotation diameter (RD) of an assembled clamp can be critical design information for applications that rotate in close proximity to adjacent components. The following list gives rotation diameters for various band sizes and product designs:



- RD for 905RWW = inside diameter +7.2 mm
- RD for 706R = inside diameter +6.0 mm
- RD for 906R = inside diameter +6.0 mm
- RD for 1006R = inside diameter +6.3 mm

Reuseability

Oetiker Stepless® Low Profile Clamps are reusable. They can be repeatedly opened and reinstalled – for example in the automotive industry at maintenance and service intervals. They can be installed both axially and radially.

Note on ordering

In contrast to ear clamps, Stepless® Low Profile Clamps are identified with the nominal closed diameter, e.g. 195 for a closed and installed diameter of 19.5 mm.

Material dimensions	Manual pincer*	Recommended pneumatic pincer**
9 x 0.5 mm	14100030	HO 3000
7 x 0.6 mm	14100030	HO 3000
9 x 0.6 mm	14100030	HO 3000
10 x 0.6 mm	14100030	HO 3000

* 14100030 Manual pincer for Stepless® Low Profile Clamps 7 mm, 9mm and 10 mm wide

** With appropriate pincer head

Order information

Item No.	Ref. No.	Ø upon delivery (mm)	Ø nominal, closed (mm)	Item No.	Ref. No.	Ø upon delivery (mm)	Ø nominal, closed (mm)
Band width 9 mm, thickness 0.5 mm (905RWV)				Band width 7 mm, thickness 0.6 mm (706R)			
16800561	0105-905RWV	13.3	10.5	16800312	0765-706R	80.9	76.5
16800562	0110-905RWV	13.8	11	16800313	0770-706R	81.4	77
16800563	0115-905RWV	14.3	11.5	16800314	0775-706R	81.9	77.5
16800564	0120-905RWV	14.8	12	16800315	0780-706R	82.4	78
16800565	0125-905RWV	15.3	12.5	16800316	0785-706R	82.9	78.5
16800566	0130-905RWV	15.8	13	16800317	0790-706R	83.4	79
16800567	0135-905RWV	16.3	13.5	16800318	0795-706R	83.9	79.5
16800568	0140-905RWV	16.8	14	16800319	0800-706R	84.4	80
16800569	0145-905RWV	17.3	14.5	16800320	0805-706R	84.9	80.5
16800570	0150-905RWV	17.8	15	16800321	0810-706R	85.4	81
16800571	0155-905RWV	18.3	15.5	16800322	0815-706R	85.9	81.5
16800572	0160-905RWV	18.8	16	16800323	0820-706R	86.4	82
16800573	0165-905RWV	19.3	16.5	16800324	0825-706R	86.9	82.5
16800574	0170-905RWV	19.8	17	16800325	0830-706R	87.4	83
16802321	0175-905RWV	20.3	17.5	16800326	0835-706R	87.9	83.5
16800575	0180-905RWV	20.8	18	16800327	0840-706R	88.4	84
16803070	0185-905RWV	21.3	18.5	16800328	0845-706R	88.9	84.5
16800576	0190-905RWV	21.8	19	16800329	0850-706R	89.4	85
Band width 7 mm, thickness 0.6 mm (706R)				16800330	0855-706R	89.9	85.5
16800278	0600-706R	64.4	60	16800331	0860-706R	90.4	86
16800279	0605-706R	64.9	60.5	16800332	0865-706R	90.9	86.5
16800281	0610-706R	65.4	61	16800333	0870-706R	91.4	87
16800282	0615-706R	65.9	61.5	16800334	0875-706R	91.9	87.5
16800283	0620-706R	66.4	62	16800335	0880-706R	92.4	88
16800284	0625-706R	66.9	62.5	16800336	0885-706R	92.9	88.5
16800285	0630-706R	67.4	63	16800337	0890-706R	93.4	89
16800286	0635-706R	67.9	63.5	16800338	0895-706R	93.9	89.5
16800287	0640-706R	68.4	64	16800339	0900-706R	94.4	90
16800288	0645-706R	68.9	64.5	16800340	0905-706R	94.9	90.5
16800289	0650-706R	69.4	65	16800341	0910-706R	95.4	91
16800290	0655-706R	69.9	65.5	16800342	0915-706R	95.9	91.5
16800291	0660-706R	70.4	66	16800343	0920-706R	96.4	92
16800292	0665-706R	70.9	66.5	16800344	0925-706R	96.9	92.5
16800293	0670-706R	71.4	67	16800345	0930-706R	97.4	93
16800294	0675-706R	71.9	67.5	16800346	0935-706R	97.9	93.5
16800295	0680-706R	72.4	68	16800347	0940-706R	98.4	94
16800296	0685-706R	72.9	68.5	16800348	0945-706R	98.9	94.5
16800297	0690-706R	73.4	69	16800349	0950-706R	99.4	95
16800298	0695-706R	73.9	69.5	16800350	0955-706R	99.9	95.5
16800299	0700-706R	74.4	70	16800351	0960-706R	100.4	96
16800300	0705-706R	74.9	70.5	16800352	0965-706R	100.9	96.5
16800301	0710-706R	75.4	71	16800353	0970-706R	101.4	97
16800302	0715-706R	75.9	71.5	16800354	0975-706R	101.9	97.5
16800303	0720-706R	76.4	72	16800355	0980-706R	102.4	98
16800304	0725-706R	76.9	72.5	16800356	0985-706R	102.9	98.5
16800305	0730-706R	77.4	73	16800357	0990-706R	103.4	99
16800306	0735-706R	77.9	73.5	16800358	0995-706R	103.9	99.5
16800307	0740-706R	78.4	74	16800359	1000-706R	104.4	100
16800308	0745-706R	78.9	74.5	16800360	1005-706R	104.9	100.5
16800309	0750-706R	79.4	75	16800361	1010-706R	105.4	101
16800310	0755-706R	79.9	75.5	16800362	1015-706R	105.9	101.5
16800311	0760-706R	80.4	76	16800363	1020-706R	106.4	102
				16800364	1025-706R	106.9	102.5
				16800365	1030-706R	107.4	103

Order information

Item No.	Ref. No.	Ø upon delivery (mm)	Ø nominal, closed (mm)
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Band width 7 mm, thickness 0.6 mm (706R)

16800366	1035-706R	107.9	103.5
16800367	1040-706R	108.4	104
16800368	1045-706R	108.9	104.5
16800369	1050-706R	109.4	105
16800370	1055-706R	109.9	105.5
16800371	1060-706R	110.4	106
16800372	1065-706R	110.9	106.5
16800373	1070-706R	111.4	107
16800374	1075-706R	111.9	107.5
16800375	1080-706R	112.4	108
16800376	1085-706R	112.9	108.5
16800377	1090-706R	113.4	109
16800378	1095-706R	113.9	109.5
16800379	1100-706R	114.4	110

Band width 7 mm, thickness 0.6 mm (706R)

In the diameter range 19.5 mm to 59.5 mm, these clamps are available in 0.5 mm steps on request.

Band width 9 mm, thickness 0.6 mm (906R)

In the diameter range 25 mm to 110 mm, these clamps are available in 0.5 mm steps on request.

Band width 10 mm, thickness 0.6 mm (1006R)

In the diameter range 60 mm to 120.5 mm, these clamps are available in 0.5 mm steps on request.



info@iq-parts.nl
Harsweg 34A
2461 EZ Ter Aar
T +31 252 624 126
The Netherlands