

# Reliable Connections Made by Oetiker



## Oetiker Product Guide

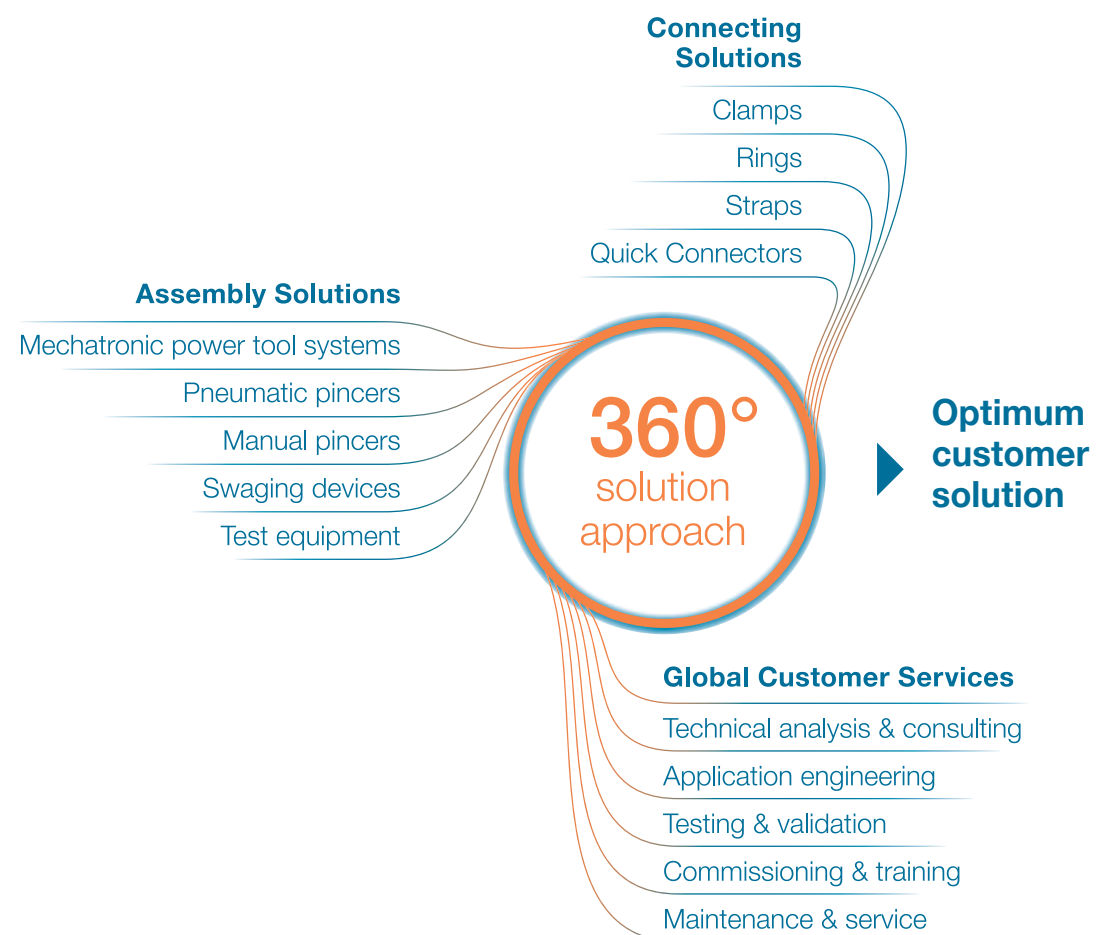


Reliable Connections

# 360° solution approach

## 100% connected

Oetiker provides customers with the peace of mind that their mission-critical components are reliably connected. We are a global leader in high-end connecting solutions for the vehicle industry and for high-value applications in industrial segments. Our expertise in high-quality clamps, rings, straps and quick-connectors ranges from powertrain and drivetrain applications to medical applications. We offer engineering, prototyping and testing support to quickly create comprehensive solutions for overcoming clamping and connecting challenges. With 1800+ employees in more than 25 countries and over 75 years of experience, we are the trusted, global, long-term partner for the world's leading OEMs.



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## EAR CLAMPS



### DualHook Adjustable Ear Clamps 259

Stainless steel  
24.5 – 120.2 mm

Specially designed for use with applications where high performance and universal features are demanded. Optimized interlock design with three dual hooks provides extra high force. Waved band edge with dimples enhances band strength and avoids risk of breakage.



### ToothLock® Ear Clamps 293

Stainless steel  
40.0 – 120.5 mm

Provides extended diameter range, 360° uniform seal and ease of installation. Highly pressure and expansion resistant.

Enhanced clearance for easy assembly.



### StepLess® Ear Clamps 123 & 193 – the next generation 117 & 167

123 High strength steel  
193 Stainless steel  
18.0 – 120.5 mm

117 Galvanized or zinc plated steel  
167 Stainless steel  
6.5 – 120.5 mm

Provides a 360° leak-free seal. Lightweight, strong, tamper-proof design. Ideal for many materials. Fast & simple installation. Some product groups available in Oval design.



### 2-Ear Clamps 101 & 151

101 Zinc plated steel  
151 Stainless steel

4.1 – 46.0 mm

Extended clamping range and robust design for industrial air or fluid line applications.



### 1-Ear Clamps 153 & 154 (with insert)

153 & 154 Stainless steel

153 3.3 – 30.7 mm  
154 2.9 – 30.0 mm

Compact one-piece design for robust, secure connections. 154 includes a pre-shaped insert for effective and powerful all-around seal.

Also available in miniature sizes.



### 1-Ear Clamps with mechanical interlock 105 & 155

105 Galvanized or zinc plated steel  
155 Stainless steel

10.5 – 116.0 mm

Economical sealing solution for low pressure applications. Fast and simple installation.

## EAR CLAMPS



### Adjustable Clamps 113 & 163, 109, 159 (flat)

163 & 159 Stainless steel  
113 & 109 Zinc plated steel

25.0 – 132.0 mm

Multi-purpose clamps can be adjusted to several diameters. Fast and easy radial or axial installation.

Some product groups available in flat design.



### 1-Ear Clamps with Stud 103

Galvanized steel band  
20.6 – 50.0 mm

Easily adjustable clamp positioning. Space saving with ear position available in 180° or 45° for easy assembly. Strong, high strength low alloy material with high retention properties provides good corrosion resistance.

Secure and reliable fixation of airbag inflators within Occupant Safety Systems.



### 1-Ear Clamps SV 153

18 SR™, high oxidation resistance

40.0 – 150.0 mm

Offers excellent heat and oxidation resistance. Axial and radial assembly for easy installation.



### Color Coded ID clamps

Color Coded ID Clamps are made of pre-coated epoxy steel, which has a color stripe on the band surface for final visual inspection in the assembly line to differentiate driveshafts built in the car. Currently available for StepLess® Ear Clamps 117 & 167.

## LOW PROFILE CLAMPS



### Reusable Low Profile Clamps 268

Stainless steel  
22.5 – 41.0 mm

Can be repeatedly opened and re-installed. Low assembled height for simplified implementation under the hood, reducing the risk of damage to neighboring parts. Minimum band width provides optimized packaging in tight spaces. Uniform 360° sealing.



### ToothLock® Low Profile Clamps 292

Stainless steel  
57.5 – 120.5 mm

Combines optimum compression performance, ultra low profile design, 360° uniform seal.

Extended diameter range.



### StepLess® Low Profile Clamps 192

Stainless steel  
19.5 – 120.5 mm

Low profile design includes tolerance compensation elements to allow for variations in component tolerances.

Includes 360° leak-proof seal.



### StepLess® Low Profile Clamps 168

Stainless steel  
10.5 – 120.5 mm

Low installed height for space-restricted areas. The StepLess® design provides a 360° leak-proof seal.

Reusable.

Also available with tolerance compensation.



### Clamps ER 194

Stainless steel  
4.8 – 25.0 mm

Lightweight miniature clamp is a safe connection for low pressure applications.

## WORM DRIVE & UNIVERSAL CLAMPS



### Worm Drive Clamps 126 & 177

126 Stainless steel and zinc-plated  
177 Stainless steel

8.0 – 160.0 mm

Large clamping range. Suitable for numerous applications. Complies with DIN 3017.

Also available in SAE J1508 Type F.

Reusable.



### StepLess® Screw Clamps 178

Stainless steel  
24.0 – 255.0 mm

Can be adjusted to several diameters and features a 360° leak-proof seal. Also available in Self-Tensioning. Clamps are reusable.

Popular for silicone and EPDM hose materials.

Reusable.



### Universal Clamps 174

Stainless steel

For details about sizes see [oetiker.com](http://oetiker.com).

Perforated band for various diameters and widths. Ratchet or screw lock available.

Reusable.



### Worm Drive Clamps 180

Stainless steel  
30.0 – 500.0 mm

Toggle lock with intermediate position for fast and simple installation and high tightening torque. Visual overload protection protects against excessive tightening. Hexagon socket screw SW5 for fast and safe installation. Alternative wing screw design provides the installation tool integrated in the clamp.

Reusable version available.



### Worm Drive Clamps Mini 180

R 180 Rust-resistant chromium steel and zinc-plated  
R+S 180 Stainless steel

7.0 - 219.0 mm

Compact design for minimal space requirements. Cylindrical screw head allows fast, simple and safe installation. Embossed band strip reduces risk of damage to the part being clamped. Alternative wing screw design provides the installation tool integrated in the clamp.

Reusable version available.



## QUICK CONNECTORS



### Quick Connectors 200, 201, 210

200 & 201 coated carbon steel  
210 6061-T6 aluminum

Imperial and Metric size options.  
For details about sizes see oetiker.com.

Simple, fast and safe connection offering serviceability and tool-free assembly.

Compact one-piece design. Suitable for oil and / or coolant and heating lines to turbochargers, engines and transmissions.



### Quick Connectors Polymeric 220

Body Nylon 66  
Retainer Stainless steel

Polymeric construction with a lightweight and corrosion resistant nylon material. Two piece construction for a customizable interface. Designed for maximum performance, 100% production leak tested. Controlled axial clearance prevents micro leakage. Minimum pressure drop ensures optimum flow. Robust retainer mechanism provides low insertion force. Internal seal for leak prevention at tube interface.



### Assurance Caps

Provides assembler with the means to identify an incomplete connection. By placing the optional assurance cap on the tube, it cannot be slid over the retainer in the event of a partial connection.

Default: up to 85°C (black or grey)  
High temperature: up to 230°C (white)



### Disconnect Tools

Size - 3/8", 1/2", 5/8", 3/4"



### Shipping Plugs

Size - 1/4", 3/8", 1/2", 5/8", 3/4"



### Locking Assurance Caps

For 201 & 210 Quick Connectors

Serves as a device to provide 100% confidence the tube is fully seated into the quick connector and features a durable secondary latch.



### Connection Verification Aids

Provides reliable process monitoring for Oetiker Quick Connectors in a space-efficient system, at vehicle point of assembly.



## MULTI CRIMP RINGS | STRAP CLAMPS | STRAPS | V-CLAMPS



### Multi Crimp Rings 150 & 250

150 Stainless steel (spirally welded)  
5.0 – 50.0 mm

150 Aluminum (3T puzzle lock)  
24.5 – 120.0 mm

250 Stainless steel (cross welded)  
15.0 – 120.5 mm

Highest radial load, low assembled height. Provides consistent uniform circumferential pressure.



### WingGuard® Strap Clamps 270

Band: High strength steel  
Housing: Stainless steel

20.0 – 50.0 mm

The strap provides an extended diameter range to fit various application diameters and irregular shapes. Highly space-efficient and the unique locking mechanism ensures high holding forces



### Powertrain Straps 284

Stainless or painted/coated carbon steels

Customized to meet application requirements. Engineered to reliably fasten EGR and Exhaust Aftertreatment components.



### Tank Straps 283

Stainless or painted/coated carbon steels

Customized to meet application requirements. Engineered to safely hold all shapes of tanks in position.



### V-Clamps 280

Various steel combinations available, based on applications and requirements.

50 – 450 mm

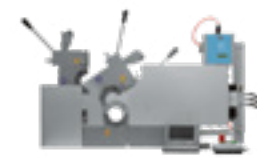
Precise, low-friction fastener that consistently delivers superior clamping force. Self-locking thread retains tightness in high vibration environments. Customizable, designed to maximize joint performance with application specific materials, components and profiles. Easy implementation with several fastener styles available to match your existing tools. Quick-lock latching mechanism provides an effortless swing-action design with no alignment required.



### Pneumatic Pincers

For high-volume assembly of Ear Clamps and Low Profile Clamps.

- Highly efficient
- Process reliable
- Closure verification
- Ergonomic pistol grip (optional)



### Swaging Tools

For high-volume assembly of Multi Crimp Rings.

- Available interlocking swaging segments guarantee uninterrupted 360° compression
- Fully reliable assembly process
- Electronic process data tracking capability



### Cordless Pincers

For assembly of Ear Clamps, Low Profile Clamps, Multi Crimp Rings (MCR)

- Flexible cordless design
- Process reliable
- Closure verification
- Ergonomic design



### Fastener Assembly Stationary Tools

For assembly of WingGuard® Strap Clamps 270

- Fast assembly process
- Easy to maintain
- Safe & reliable closure
- Controlled assembly process

Test Equipment



Calibrator Oetiker CAL 01



Calibrator Oetiker CAL 02



Closing Force Gauges SKM 00, -01, -02

Tube Cutters



Pro Spec Hand Tube Cutter  
HTC 500 | 504



Hand Tubing Cutter  
HTC 500 | 408



Radial Hand Tubing Cutter for PEX Pipe  
HTC 500 | 418

Disassembly Tools



Hand Clamp Cutter for Ear Clamps

Hand Installation Pincers



Hand Installation Pincers  
for Ear Clamps



Hand Installation Pincers  
for Ear Clamps requiring  
closing force  $\geq 2000$  N



Hand Installation Pincers  
for StepLess® Low Profile  
Clamps 168



Hand Installation Pincers  
for StepLess® Low Profile  
Clamps 168 & 194



Hand Installation Pincers  
for StepLess® Low Profile  
Clamps 192



Hand Installation Pincers  
for ToothLock® Clamps

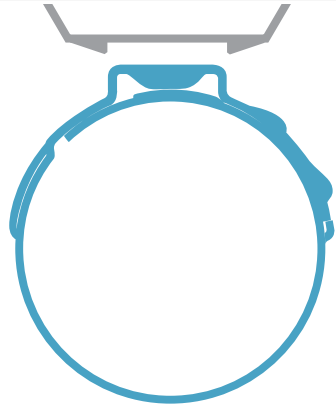


Hand Installation Pincers  
for Multi Crimp Rings

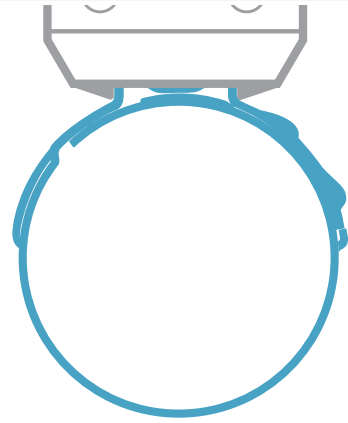


Manual Closing Tools  
for Screw Clamps and  
Worm Drive Clamps

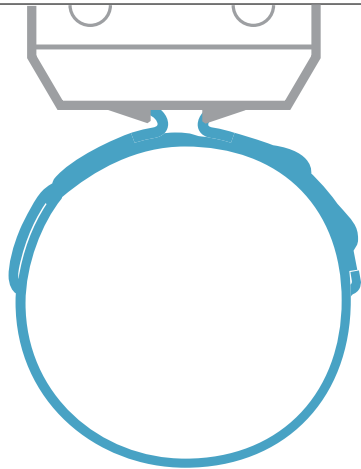
## SIMPLE AND EASY INSTALLATION



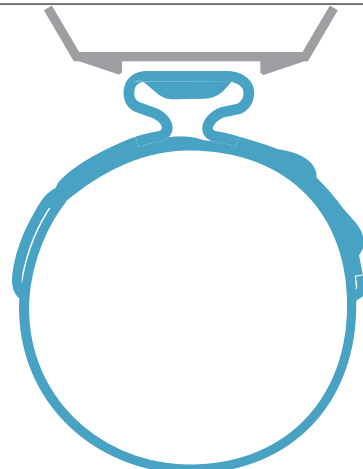
1. Position clamp on the application



2. Align the jaw tips of the pincer with the ear of the clamp



3. Squeeze the ear



4. Clamp is closed

Clamp & Ring

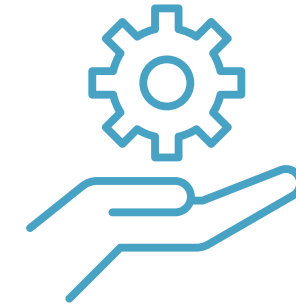


Assembly Video

## SIX STAGES TO THE OPTIMUM CUSTOMER SOLUTION



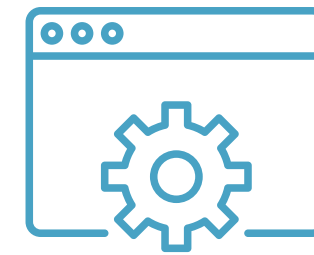
**1** **Analysis**  
of customer parts  
and requirements



**2** **Selection**  
of optimum connecting  
and assembly solution



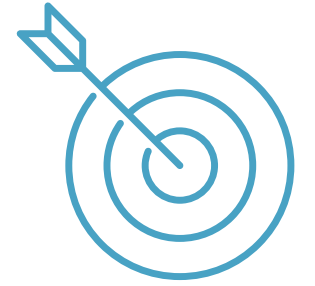
**3** **Series of tests**  
in accordance to  
requirements



**4** **Test results**  
and recommendations



**5** **Validation and  
commissioning**  
at the customer site



**6** **Reliable  
Assembly**



