



# Snap-Trap<sup>®</sup>+ Series Tube Clamp Systems

Instrumentation Tubing Solutions



ENGINEERING YOUR SUCCESS.

## Contents

**Page 3** Introduction

**Page 4** What could corrosion cost you?

**Page 6** Features and benefits

**Page 8** How to order - clamps and keys

**Page 10** Parker cable trays

**Page 11** Brackets

**Page 12** Accessories

**Page 13** Assembly instructions

**Page 14** Disassembly instructions

**Page 15** SBEx - Small Bore Expert Training

### **WARNING**

**FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

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Parker Process Control Technology



# Introduction

## Snap-Trap<sup>®</sup>+ Series Tube Clamp Systems

Snap-Trap<sup>®</sup>+ is an innovative clamp, designed to radically simplify the installation and maintenance of instrumentation tubing. It is an ideal solution for customers who are looking at corrosion resistant alloys to extend field operation for instrumentation equipment. The tube clamp perfectly complements Parker's corrosion resistant alloy offering in two ferrule A-LOK<sup>®</sup> tube fittings and instrumentation grade tube.

Its unique one-piece design, primarily manufactured from 6Mo, allows quick and easy fitting to cable trays, brackets and angle iron alike. The Snap-Trap<sup>®</sup>+ will fit slotted cable trays from various manufacturers with dimensions as indicated on pages 8-9.

Snap-Trap<sup>®</sup>+ fully complies with the Norwegian offshore standards "NORSOK". Section 7.3 of the NORSOK standard Z-CR-010 which covers the installation of instrumentation tubing states that: Tubing clamps shall be made of non-corrosive material, stainless steel AISI 316 or flame retardant plastic.



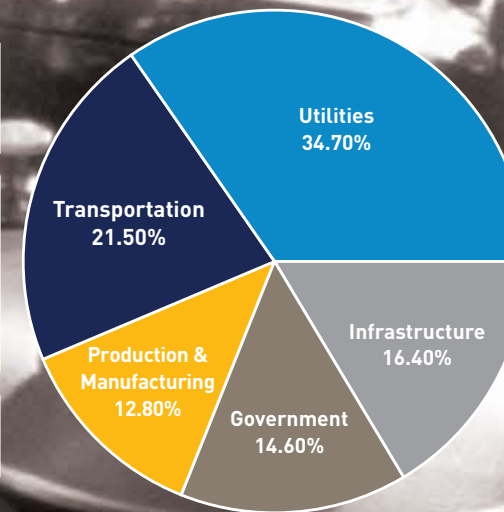


# WHAT COULD CORROSION COST YOU?

- Hazardous Materials Transportation
- Ships & Aircrafts
- Railroad & Vehicles

- Chemical, Petrochemical & Pharmaceutical
- Food Processing
- Pulp & Paper
- Oil & Gas Exploration
- Petroleum Refining

- Defence
- Nuclear Waste Storage



- Drinking Water & Sewerage
- Gas Distribution
- Electrical Utilities

- Gas & Liquid Transmission
- Airports
- Waterways & Ports

According to a US report, corrosion costs industry **\$276 billion every year**. Understanding how to control it is paramount to running a safe, productive and cost-effective operation.

## What is corrosion?

Corrosion is the deterioration of a substance or its properties because of a reaction with its environment. There are various kinds of corrosion, including uniform, galvanic, crevice, pitting, intergranular, and stress. Of these, crevice and pitting are among the most prevalent and problematic – particularly for marine-based industries.



### Crevice corrosion

This is an electrochemical oxidation-reduction process, which occurs within localised volumes of stagnant solution trapped in pockets, corners or beneath a shield (seal, deposit of sand, gasket or fastener, for instance). It is considered much more dangerous than uniform corrosion as its rate can be up to 100 times higher.

### Pitting corrosion

Pitting is characterised by a localised attack in the form of deep and narrow holes that can penetrate inwards extremely rapidly while the rest of the surface remains intact. It is most aggressive in solutions containing chloride, bromide or hypochlorite ions. The presence of sulphides and H<sub>2</sub>S can also promote it. Stainless steels are particularly sensitive to pitting corrosion in seawater environments.



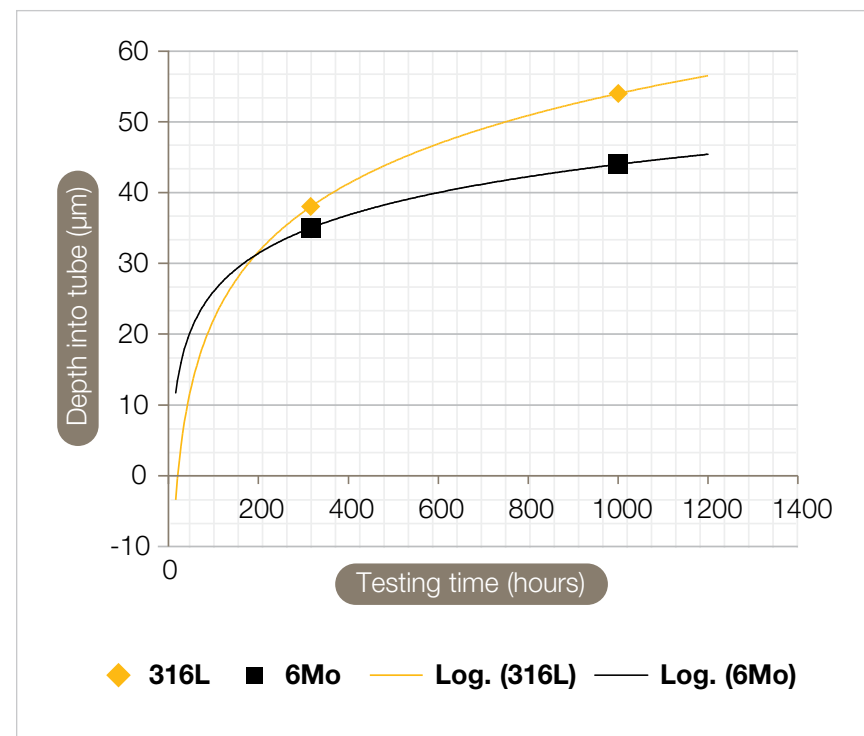
## Costs derived from corrosion

- Replacing damaged equipment
- Overdesign
- Preventive maintenance
- Shutdown
- Contamination
- Decreased efficiency
- Failure of adjacent equipment
- Human lives

## Corrosion control

Certain measures, such as avoiding stagnant areas, installing draining systems or using cathodic protection, can help avoid both crevice and pitting corrosion. Perhaps more critical is choosing the best possible components for the given application and environment.

**Parker 6Mo Snap-Trap®+ tube clamps** have minimal tube contact points, making them a much better solution for avoiding crevice corrosion compared to traditional clamps, particularly in marine environments. And **Parker 6Mo tubing** is more resilient to uniform and pitting corrosion, with every batch tested as per the ASTM G48 standard. Together with Parker's 6Mo fittings, they give you far greater confidence in your long-term corrosion control.



## Tested, trusted

- An independent testing house performed a salt spray test of Parker tubing and clamps of different sizes and material combinations
- The test was performed according to ASTM B-117 / ISO 9227 which is testing in salt fog containing 5% NaCl and has a temperature of 35°C
- The testing time was 312 hours (13 days). This corresponds to about 5 years of vibration on an offshore platform. A second test lasting 1000 hours was also conducted as a comparison
- The 6Mo and 316L clamps and tube were attached to a common canal of AISI 316 and exposed to vibrations during the whole testing period
- The results clearly show no ill effects on the 6Mo tube from the clamp regardless of time spent under vibration

# Features and Benefits

Snap-Trap<sup>®</sup>+ series is a clamp which radically simplifies the installation and maintenance of instrumentation tubing.

## Features/Benefits:

- **Simple and quick to assemble**
- **Complies fully to NORSOK standard Z-CR-010**
- **Compact clamp in 6Mo (with super duplex spring metal locking arm)**
- **No loose parts**
- **Snap-Trap<sup>®</sup>+ tubing clamp is erected without using traditional tools (No slippage of spanners on nut or bolt hexagons)**
- **No bolts to be fastened to the ladder/tray etc**
- **No additional spare parts need to be ordered**
- **Snap-Trap<sup>®</sup>+ tubing clamp is available in a variety of sizes covering both metric and imperial tubing**
- **Minimal contact points reduces the risk of crevice corrosion**
- **Significant reduction in installation time < 2 minutes**

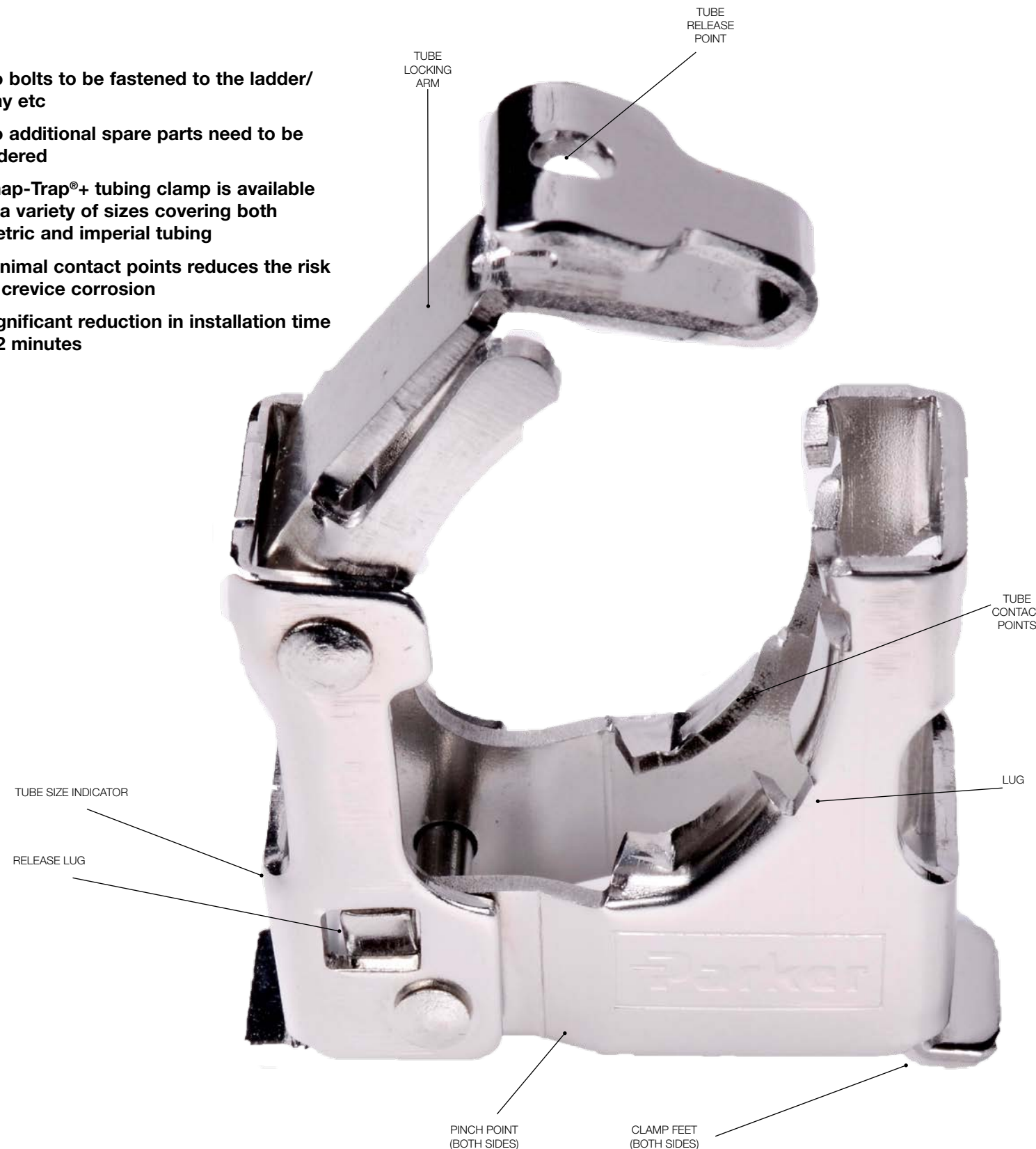
The arm grips tubes by means of a ratchet-style mechanism - there are no nuts or bolts to tighten. A tube can be clamped in a second - and the flexibility of this 'snap' action allows Snap-Trap<sup>®</sup>+ to accommodate two sizes of tube per clamp. The action locks tubing securely; steel would have to shear before it could break free. A tool is available for ensuring the ratchet closes to the optimum tightness.



Snap-Trap<sup>®</sup>+ delivers immediate savings, minimizing purchasing overheads and cutting assembly labour costs by as much as 80%! Savings multiply throughout the life-cycle of Snap-Trap<sup>®</sup>+



Snap-Trap<sup>®</sup>+ mounts directly on popular field ladders and trays. A hinge allows the feet to move together before locking the clamp in place. Repositionable in seconds. Repairs, refurbishment or routine maintenance may be accomplished much quicker.



## Parker Innovation

Our company philosophy Smarter, Faster, Safer, Cleaner really comes down to our belief that we can make the world a better, safer place through engineering excellence. Whether you want to reduce energy usage, reduce pollution and leakages, or increase your environmental standards, Parker is working on a unique solution that can help you achieve your goals.

### Smarter:

Designed by an offshore contractor; Snap-Trap<sup>®</sup>+ is a field proven solution with over one million installed worldwide.

### Faster:

Using Snap-Trap<sup>®</sup>+ means quicker installation, compared to traditional style clamps on the market, meaning less downtime

### Safer:

Choosing smarter solutions like Snap-Trap<sup>®</sup>+, Parker grade tube and instrumentation fittings as well as selecting the correct materials for the application means a much safer operating environment.

### Cleaner:

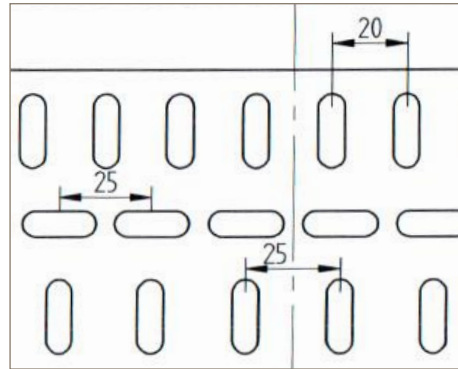
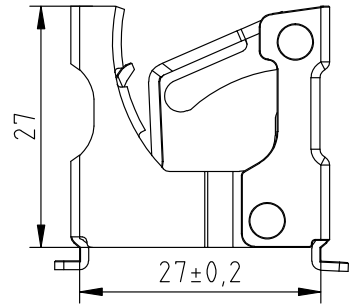
Corrosion between tubing and the support system is avoided



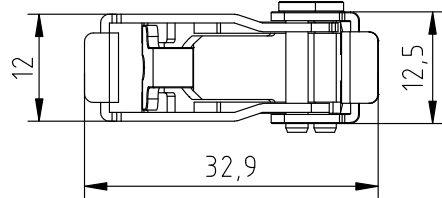
# How to Order - Clamps and Keys

## For 20mm centre slot dimension of cable trays

This Snap-Trap®+ series tubing clamp fits Parker cable trays. It is available in 4 sizes which covers both metric and imperial tubing. Assembly is performed using the Parker Snap-Trap®+ key (TC-01-KEY).



These clamps fit cable trays with centre slot dimensions of 20mm.



Snap-Trap®+ Tube clamps

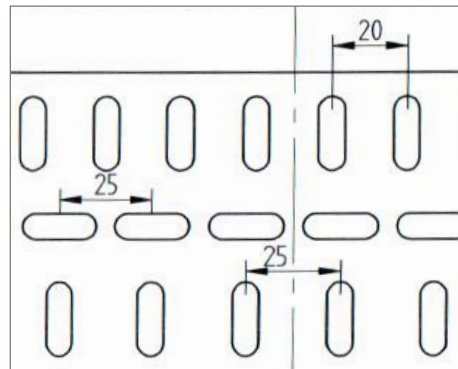
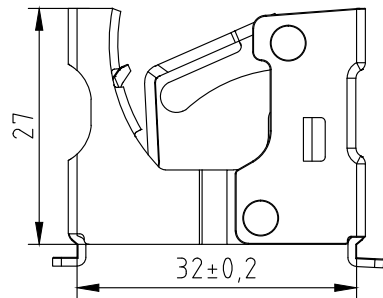


Snap-Trap®+ Assembly Key (TC-01-KEY)

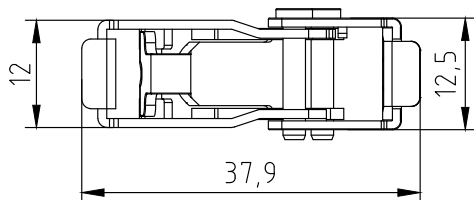
Tube O.D.	Cable Tray Centre Slot Dimensions	Clamp Material	Tube Clamp Part Number	Assembly Key Part Number
6mm - 10mm	20mm	6Mo body and pins Super duplex spring metal locking arm	ST-TC0610M	TC-01-KEY
8mm - 12mm			ST-TC0812M	
1/4" - 3/8"			ST-TC0406T	
5/16" - 1/2"			ST-TC0508T	
6mm - 10mm	25mm	6Mo body and pins Super duplex spring metal locking arm	ST-TC0610M-25	TC-03-KEY
8mm - 12mm			ST-TC0812M-25	
1/4" - 3/8"			ST-TC0406T-25	
5/16" - 1/2"			ST-TC0508T-25	

## For 25mm centre slot dimension of cable trays

This Snap-Trap®+ series tubing clamp fits both Parker and most commercially available cable trays. It is available in 4 sizes which covers both metric and imperial tubing. Assembly is performed using the Parker Snap-Trap®+ key (TC-03-KEY).



These clamps fit cable trays with centre slot dimensions of 25mm.



Snap-Trap®+ Tube clamps



Snap-Trap®+ Assembly Key (TC-03-KEY)

# Parker Cable Trays

## How to order

Cable Tray Length	Cable Tray Width	Cable Tray Height	Cable Tray Part Number
3m	50mm	20mm	KB 50/20
	100mm		KB 100/20
	150mm		KB 150/20
	200mm		KB 200/20
	300mm		KB 300/20
	400mm		KB 400/20
	500mm		KB 500/20
	600mm		KB 600/20
3m	50mm	40mm	KB 50/40
	100mm		KB 100/40
	150mm		KB 150/40
	200mm		KB 200/40
	300mm		KB 300/40
	400mm		KB 400/40

## Parker cable trays with return flange

### How to order

Cable Tray Length	Cable Tray Width	Cable Tray Height	Cable Tray Part Number
3m	50mm	40mm	KBR 50
	100mm		KBR 100
	150mm		KBR 150
	200mm		KBR 200
	300mm		KBR 300
	400mm		KBR 400



# Brackets

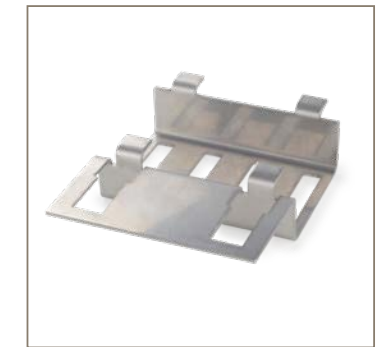
Parker's Snap-Trap®+ tubing clamps can also be mounted with the aid of brackets.



Small Bracket



Double Bracket



Side Rail Ladder Bracket

## How to order

Description	Cable Tray Centre Slot Dimensions	Bracket Dimensions	Part Number
Small Bracket	20mm	75mm x 40mm	ST-MC-S
Double Bracket		75mm x 75mm	ST-MC-D
Side Rail Ladder Bracket		75mm x 53mm	ST-TUB
Small Bracket	25mm	80mm x 45mm	ST-MC-S-25
Double Bracket		80mm x 80mm	ST-MC-D-25
Side Rail Ladder Bracket		80mm x 58mm	ST-TUB-25

## Weld and Tray Rail Brackets



Weld Rail



Tray Rail



Splice Plate

## How to order

Description	Size	Part Number	Length "L" (mm)
Weld rail	44 x 27mm with 13mm return	ST-WR-0	57
Weld rail	44 x 27mm with 13mm return	ST-WR-1	217
Weld rail	44 x 27mm with 13mm return	ST-WR-2	297
Weld rail	44 x 27mm with 13mm return	ST-WR-3	3000
Tray rail	44 x 13mm with 13mm return	ST-TR-0	97
Tray rail	44 x 13mm with 13mm return	ST-TR-1	137
Tray rail	44 x 13mm with 13mm return	ST-TR-2	197
Tray rail	44 x 13mm with 13mm return	ST-TR-3	817
Splice plate	45 x 20mm x 200mm long	SP-SM/20	20
Splice plate	45 x 40mm x 200mm long	SP-SM/40	40

# Accessories



Locking Bolt



Pan Head Screw



Hexagon Head Set Screw



Plain Nut



Flange Nut



Flat Washer



Lock Washer

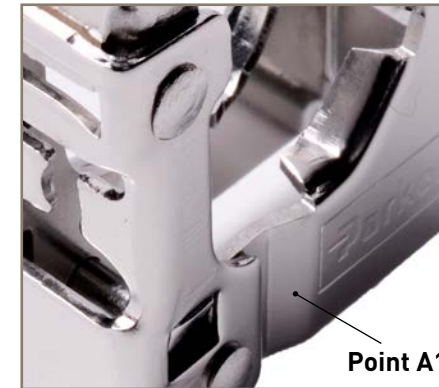


Star Washer

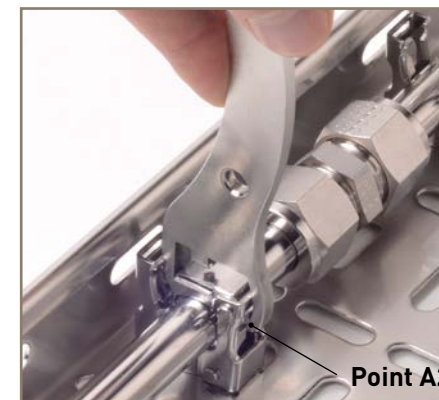
## How to order

Description	Size	Part Number
Locking bolt	M6 x 16mm long	M6LBX16-316
Locking bolt	M6 x 20 mm long	M6LBX20-316
Pan head screw	M6 x 16mm long	M6PHSX16-316
Pan head screw	M6 x 20mm long	M6PHSX20-316
Pan head screw	M6 x 25mm long	M6PHSX25-316
Pan head screw	M6 x 30mm long	M6PHSX30-316
Hexagon head set screw	M6 x 16mm long	M6HHSSX16-316
Hexagon head set screw	M6 x 20mm long	M6HHSSX20-316
Hexagon head set screw	M6 x 25mm long	M6HHSSX25-316
Plain nut	M6	M6PLNUT-316
Flange nut	M6	M6FLNUT-316
Flat washer	M6	M6FLWASHER-316
Lock washer	M6	M6LKWASHER-316
Star washer	M6	M6STWASHER-316

# Assembly Instructions



Point A1



Point A2



Point A3

## To open Snap-Trap®+

- Open clamp fully by simply squeezing the clamp at point A1 by hand
- Insert clamp feet into the slots on the bracket or trays
- Once feet are in position, simply snap the two clamp sides together
- Instructions can also be viewed on [YouTube.com/ParkerSupport](https://www.youtube.com/ParkerSupport)

## To assemble Snap-Trap®+

- Position tubing into the clamp and hook the assembly key at the back of the clamp
- Apply pressure until the clamp top plate engages behind the lugs on the lug side of the clamp. Ensure that the top plate is located firmly against the tubing
- The top plate is designed to cater for any tolerance variants within the tube

## Additional notes

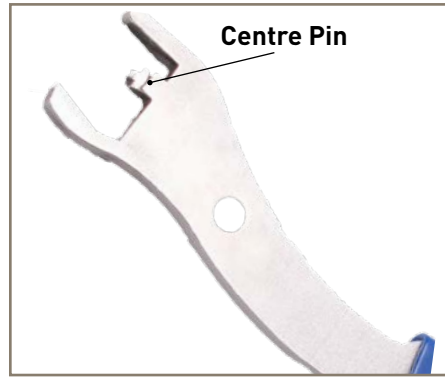
- When mounting clamps in any tubing run, ensure all of the clamps are mounted with their hinges facing the same way. This will ensure there is no twist transmitted to the tubing run.

**Time savings:** on a witness trial against competitive systems, 3 tube runs requiring 6 Snap-Trap®+ fittings were completed in less than 2 minutes - compared with over 5 and 11 minutes - a remarkable gain in productivity.

	Clamp A	Clamp B	Snap-Trap®+
# parts for one tube size	12	7	1
# parts for range of tubing	29	12	2
Typical assembly time for 6 clamps	11m 35s	5m 17s	1m 55s

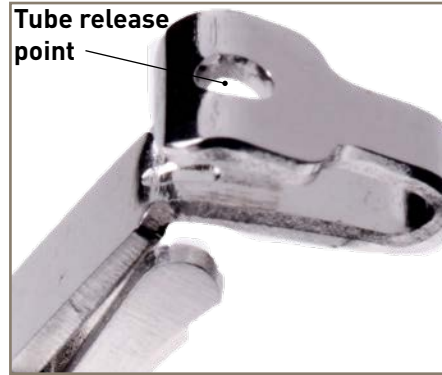


# Disassembly Instructions



## To disassemble Snap-Trap®+

- Using the assembly key, insert centre pin into the tube release point on the arm
- Apply pressure to ease the top plate away from the tube and the clamp lugs



## To stack mount the Snap-Trap®+ tube clamp

Snap-Trap®+ tubing clamps can be stack mounted on to each other simply by following the same instructions as those for mounting on to brackets or cable trays.



# SBEEx - Small Bore Expert Training

## The Right Tube + The Right Tubing Support + The Right Fitting + A Parker Trained Fitter = A High Integrity Solution

The course has been developed as an upgrade and replacement to our industry leading Safety at Work Programme, providing material that is relevant to your on site engineers.

### Some of the advantages over our existing programme are:

- Greater knowledge of small bore tubing systems
- Increased product familiarity
- Improved selling and presentation ability
- Increased skills and confidence in dealing with small bore systems
- Ability to deliver chargeable training

### The benefits that your trained engineer will get, include:

- Increased understanding of their own systems and installation practices
- Improvements in the safety and integrity of their small bore tubing system
- Overall asset integrity improvement

This will be the only licensed and certified training course that we will allow to be run with our support.



# Parker Worldwide

## Europe, Middle East, Africa

**AE – United Arab Emirates,**  
Dubai  
Tel: +971 4 8127100  
parker.me@parker.com

**AT – Austria,** St. Florian  
Tel: +43 (0)7224 66201  
parker.austria@parker.com

**AZ – Azerbaijan,** Baku  
Tel: +994 50 2233 458  
parker.azerbaijan@parker.com

**BE/NL/LU – Benelux,**  
Hendrik Ido Ambacht  
Tel: +31 (0)541 585 000  
parker.nl@parker.com

**BG – Bulgaria,** Sofia  
Tel: +359 2 980 1344  
parker.bulgaria@parker.com

**BY – Belarus,** Minsk  
Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**CH – Switzerland,** Etoy  
Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ – Czech Republic,** Klecany  
Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE – Germany,** Kaarst  
Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK – Denmark,** Ballerup  
Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES – Spain,** Madrid  
Tel: +34 902 330 001  
parker.spain@parker.com

**FI – Finland,** Vantaa  
Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR – France,** Contamine s/Arve  
Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR – Greece,** Piraeus  
Tel: +30 210 933 6450  
parker.greece@parker.com

**HU – Hungary,** Budaörs  
Tel: +36 23 885 470  
parker.hungary@parker.com

**IE – Ireland,** Dublin  
Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IL – Israel**  
Tel: +39 02 45 19 21  
parker.israel@parker.com

**IT – Italy,** Corsico (MI)  
Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ – Kazakhstan,** Almaty  
Tel: +7 7273 561 000  
parker.easteurope@parker.com

**NO – Norway,** Asker  
Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL – Poland,** Warsaw  
Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT – Portugal**  
Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO – Romania,** Bucharest  
Tel: +40 21 252 1382  
parker.romania@parker.com

**RU – Russia,** Moscow  
Tel: +7 495 645-2156  
parker.russia@parker.com

**SE – Sweden,** Borås  
Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK – Slovakia,** Banská Bystrica  
Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL – Slovenia,** Novo Mesto  
Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR – Turkey,** Istanbul  
Tel: +90 216 4997081  
parker.turkey@parker.com

**UA – Ukraine,** Kiev  
Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**UK – United Kingdom,** Warwick  
Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA – South Africa,** Kempton Park  
Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA – Canada,** Milton, Ontario  
Tel: +1 905 693 3000

**US – USA,** Cleveland  
Tel: +1 216 896 3000

## Asia Pacific

**AU – Australia,** Castle Hill  
Tel: +61 (0)2-9634 7777

**CN – China,** Shanghai  
Tel: +86 21 2899 5000

**HK – Hong Kong**  
Tel: +852 2428 8008

**IN – India,** Mumbai  
Tel: +91 22 6513 7081-85

**JP – Japan,** Tokyo  
Tel: +81 (0)3 6408 3901

**KR – South Korea,** Seoul  
Tel: +82 2 559 0400

**MY – Malaysia,** Shah Alam  
Tel: +60 3 7849 0800

**NZ – New Zealand,** Mt Wellington  
Tel: +64 9 574 1744

**SG – Singapore**  
Tel: +65 6887 6300

**TH – Thailand,** Bangkok  
Tel: +662 186 7000

**TW – Taiwan,** Taipei  
Tel: +886 2 2298 8987

## South America

**AR – Argentina,** Buenos Aires  
Tel: +54 3327 44 4129

**BR – Brazil,** Sao Jose dos Campos  
Tel: +55 800 727 5374

**CL – Chile,** Santiago  
Tel: +56 2 623 1216

**MX – Mexico,** Toluca  
Tel: +52 72 2275 4200



Parker Hannifin Manufacturing Ltd  
Instrumentation Products Division Europe  
Riverside Road  
Pottington Business Park  
Barnstaple, Devon, EX31 1NP  
United Kingdom  
Tel.: +44 (0) 1271 313131  
www.parker.com/ipd

**EMEA Product Information Centre**  
**Free phone: 00 800 27 27 5374**  
(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)  
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