



Snap-Trap[®]+ Series Tube Clamp Systems

Instrumentation Tubing Solutions



ENGINEERING YOUR SUCCESS.

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WARNING

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Parker Process Control Technology



Introduction

Snap-Trap[®]+ Series Tube Clamp Systems

Snap-Trap[®]+ 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[®] 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[®]+ will fit slotted cable trays from various manufacturers with dimensions as indicated on pages 8-9.

Snap-Trap[®]+ 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.

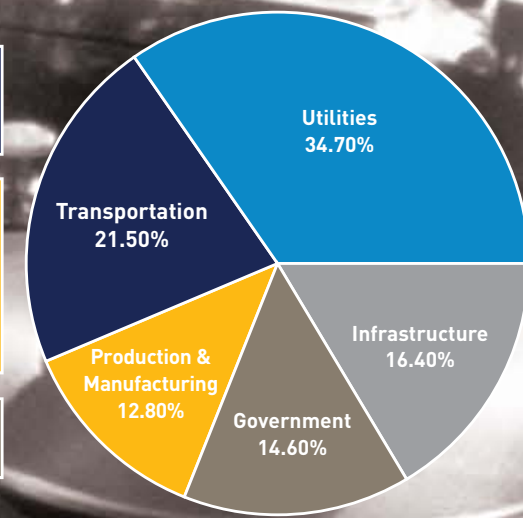


WHAT COULD CORROSION COST YOU?

- 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 H₂S can also promote it. Stainless steels are particularly sensitive to pitting corrosion in seawater environments.



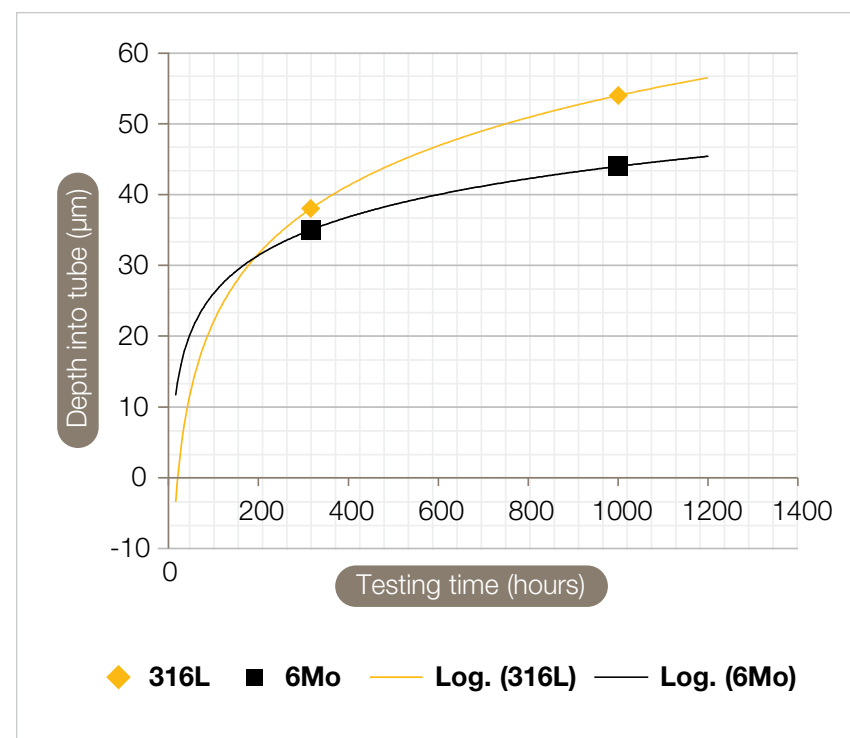
Costs derived from corrosion

- 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[®]+ 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[®]+ 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[®]+ 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**

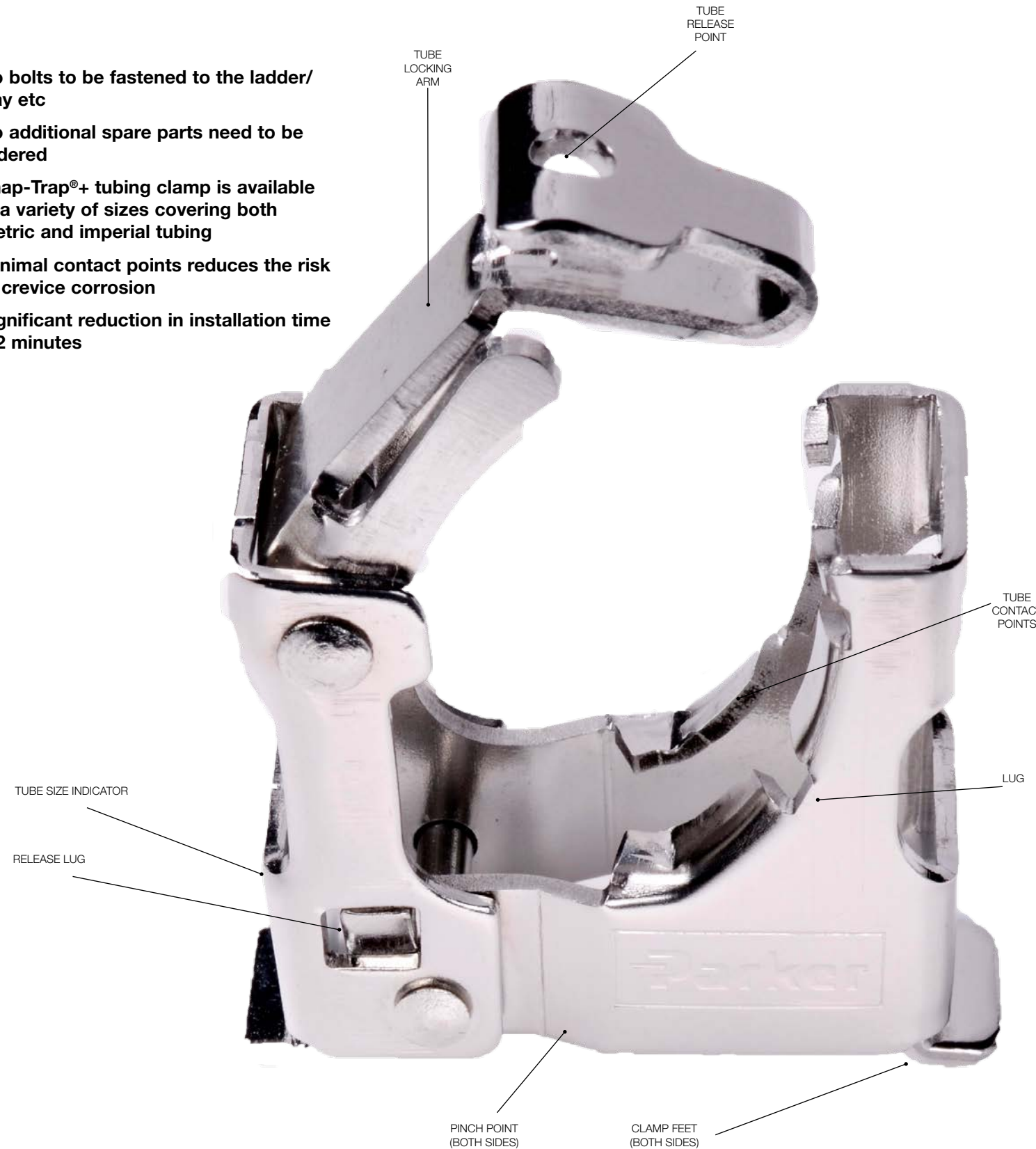
The arm grips tubes by means of a ratchet-style mechanism - there are no nuts or bolts to tighten. A tube can be clamped in a second - and the flexibility of this 'snap' action allows Snap-Trap[®]+ to accommodate two sizes of tube per clamp. The action locks tubing securely; steel would have to shear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



Snap-Trap[®]+ 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[®]+



Snap-Trap[®]+ 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[®]+ is a field proven solution with over one million installed worldwide.

Faster:

Using Snap-Trap[®]+ means quicker installation, compared to traditional style clamps on the market, meaning less downtime

Safer:

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

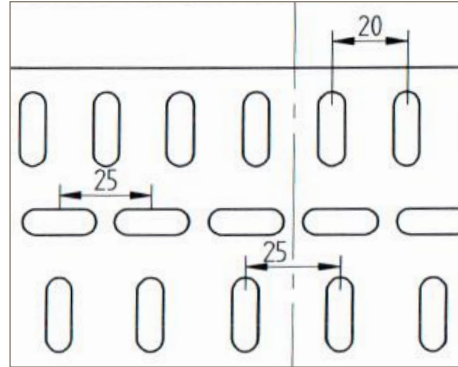
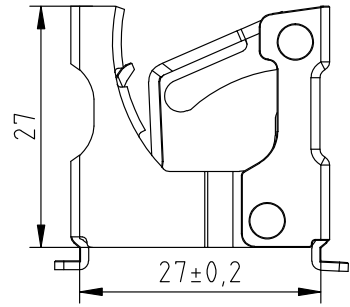
Cleaner:

Corrosion between tubing and the support system is avoided

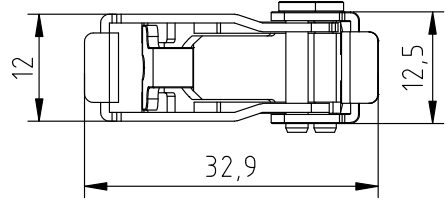
How to Order - Clamps and Keys

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

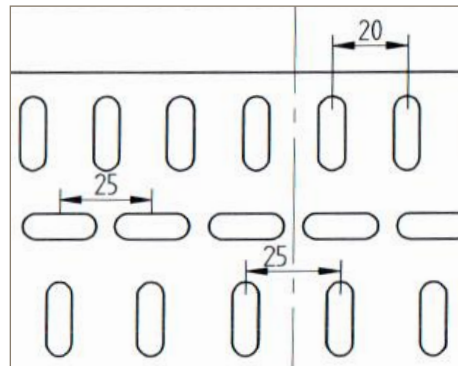
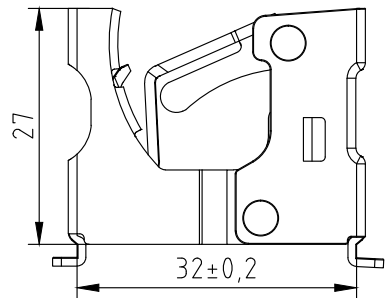


Snap-Trap®+ Assembly Key (TC-01-KEY)

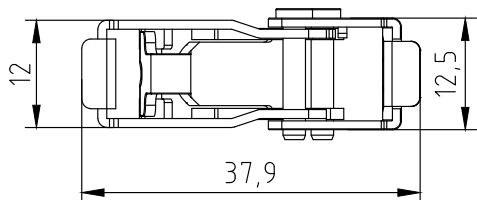
Tube O.D.	Cable Tray Centre Slot Dimensions	Clamp Material	Tube Clamp Part Number	Assembly Key Part Number
6mm - 10mm	20mm	6Mo body and pins Super duplex spring metal locking arm	ST-TC0610M	TC-01-KEY
8mm - 12mm			ST-TC0812M	
1/4" - 3/8"			ST-TC0406T	
5/16" - 1/2"			ST-TC0508T	
6mm - 10mm	25mm	6Mo body 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
	600mm		KB 600/20
3m	50mm	40mm	KB 50/40
	100mm		KB 100/40
	150mm		KB 150/40
	200mm		KB 200/40
	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

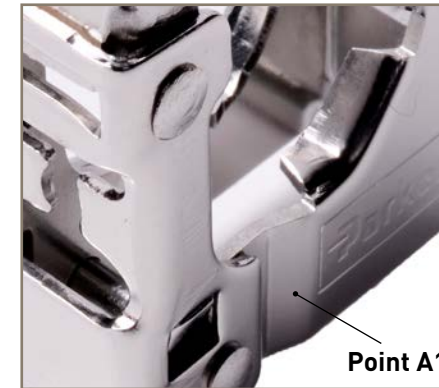


Star Washer

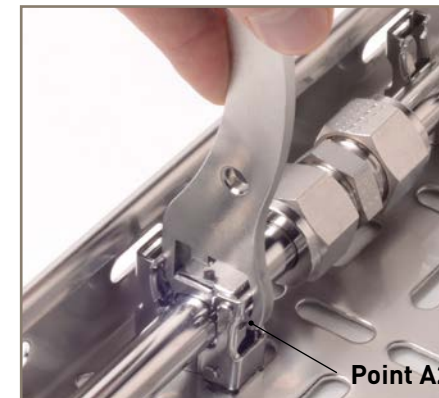
How to order

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

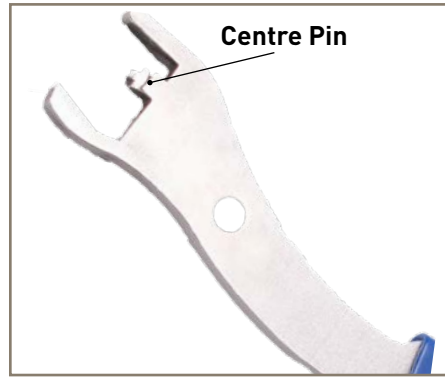
Additional notes

- 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.

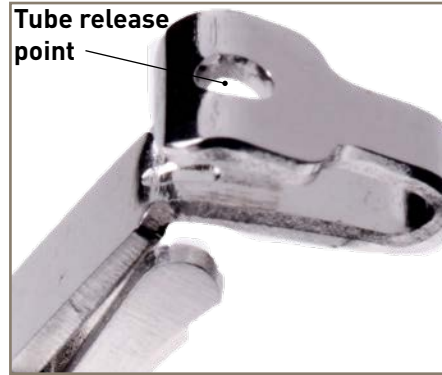
	Clamp A	Clamp B	Snap-Trap®+
# parts for one tube size	12	7	1
# parts for range of tubing	29	12	2
Typical assembly time for 6 clamps	11m 35s	5m 17s	1m 55s

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.



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