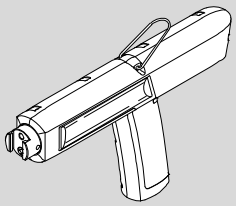
Clip fix tool AGTC



Festo SE & Co. KG
Postfach
73726 Esslingen
Germany
+49 711 347-0
www.festo.com

Operating instructions 8048926
1510b
[8048928]

Original: de

Clip fix tool AGTC ..... English

1 Symbols used

Identification of dangers and notes on how to avoid them:

Warning
Dangers which can lead to death or serious injuries.

Caution
Dangers which can lead to slight injuries or to serious material damage.

Other symbols:

Note
Material damage or loss of function

Recommendation or tip

Information on environmentally-friendly use

Text designation:
- Activities which can be carried out in any sequence.

1. Activities which should be carried out in the specified sequence.

– General lists

2 Safety and requirements for product use

2.1 Safety instructions

- To ensure safe and reliable handling of the clip fix tool, please observe all of the specifications, safety precautions and warnings included in the operating instructions.
  The warnings are placed before the relevant instructions.

Warning

Danger of injury through squeezing, compressed air and noise!
- **Never** point the clip fix tool at yourself or another person.
- Wear ear protection.
- Wear impact resistant safety goggles if necessary.
- Wear anti-vibration gloves if necessary.
- Do **not** carry or hang the clip fix tool by the tubing.

- Only use correctly prepared compressed air as the operating medium (➔ 11 Technical data).

2.2 Intended use

The clip fix tool is designed to mount clips and rivets in the automotive and consumer goods sectors.
- Only use the clip fix tool within the defined limits.

2.3 Foreseeable misuse

The clip fix tool must **not** be used:
– for setting nails, screws or similar parts
– in potentially explosive areas
– in the manufacture of foodstuffs, cosmetics or pharmaceuticals
– on construction sites
– outdoors or in areas that are exposed to moisture
– on scaffolding or ladders

2.4 General requirements

- Make sure these operating instructions are available to personnel responsible for commissioning and installation.
- Always store these operating instructions together with the clip fix tool.
- Take the following into consideration for the place of use:
  – Applicable legal regulations
  – Standards and regulations
  – Regulations of the testing organisations and insurers
  – National specifications

2.5 Technical prerequisites

- Observe the specified connection and ambient conditions of the clip fix tool (➔ 11 Technical data).
  The clip fix tool can only be operated in compliance with the relevant safety regulations if the limit values are observed.
- Only use the clip fix tool:
  – In perfect technical condition
  – In original condition, without unauthorised modifications

2.6 Qualification of personnel

Commissioning, conversion and maintenance work may only be performed by qualified personnel who are familiar with:
– Function and handling of fastener driving tools
– Installation and operation of pneumatic devices
– Applicable regulations for accident prevention and operational reliability
– Clip fix tool documentation

Operation is permitted only by instructed personnel.

2.7 Approvals

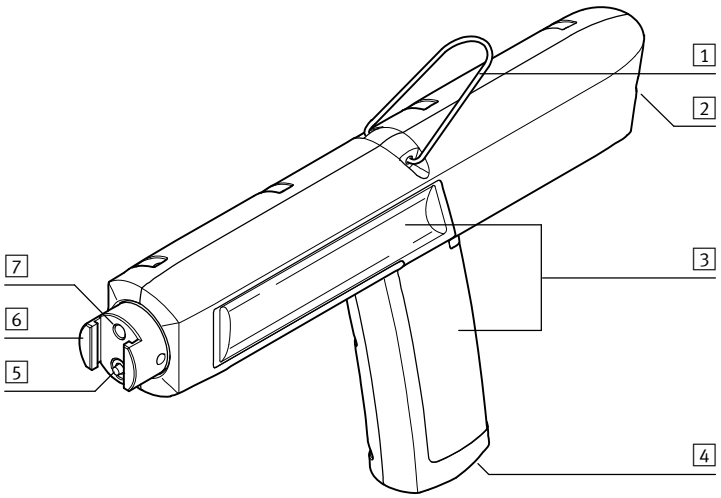
The clip fix tool is a machine in accordance with Machinery Directive 2006/42/EC.
The applied standards are specified in the declaration of conformity.

Note

Additional safety measures might be required, depending on the application.
These measures must be established in an application-related risk assessment.

3 Control sections and connections

3.1 Overview



1 Shackle on first mounting option
2 Second mounting option (for shackle)
3 Gripping surfaces
4 Supply port (G¼)
5 Thrust piece with locking pin to secure the clip adapter[1)]
6 Interface for clip adapter[1)] (➔ 3.2)
7 Hole for optional attachment of the clip adapter[1)]

1) The clip adapter is not illustrated and is not included in the scope of delivery.

Fig. 1

3.2 Interface for clip adapter

The interface is intended for mounting the specific clip adapter (➔ 5.1 Clip adapter).

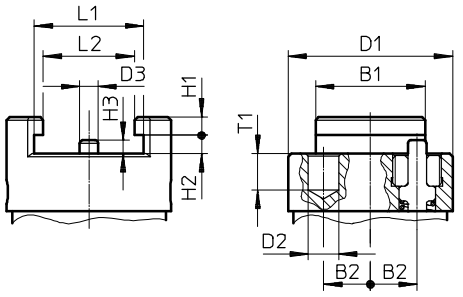


Fig. 2

Interface dimensions [mm]										
B1	**B2** ±0.05	**D1** ∅ –0.2	**D2** ∅ H11	**D3** ∅	**H1**	**H2** H10	**H3**	**L1** H9	**L2**	**T1**
18	7.7	27	5	3	3	3	2.2	18	15	6

Fig. 3

The drill hole [7] (dimension D2: ∅ 5 H11 mm) can be used to additionally secure the clip adapter via a threaded pin (➔ Fig. 1).

4 Function

The clip fix tool is a pneumatic mounting device for clips of various designs.
When the clip adapter and clip are mounted and the clip fix tool is pressed against the intended mounting position (hole or pin), a mounting pulse is triggered in the tool. The clip is set via the mounting pulse.
The level set for the operating pressure determines the intensity of the mounting pulse (➔ 11.1 Intensity of the mounting pulse).
A specific clip adapter is required for mounting different clips (➔ 5.1 Clip adapter).

5 Specifications for clip adapter and clips

Caution

Danger of injury and material damage through the use of incompatible components.
The clip fix tool, clip adapter and clips form a coordinated, safety engineered system.
- When manufacturing and selecting the material for the clip adapter and clips, make sure the stress produced during the driving procedure does not cause any damage.
- Observe the specifications for the clip adapter (➔ 5.1) and clips (➔ 5.2).

5.1 Clip adapter

The clip adapter is not included in the scope of delivery.
A specific clip adapter is required for different clips.
- Producing a clip adapter: Please take the following into account:
  - Clip dimensions
  - Interface dimensions (➔ 3.2 Interface for clip adapter)
  - Sufficient clamping force of the clip when attaching it to the clip adapter (does not fall out on its own accord)
  - Observe the following specifications to reduce the amount of wear on the interface and to ensure an optimum transfer of energy

Clip adapter specifications:
- As light as possible (maximum 50 g)
- Made of plastic (e.g. PA, PBT or POM; optionally glass fibre reinforced)
- Low clearance to the interface with the following tolerances:
  Dimension H2: 3 H10/f9
  Dimension L1: 18 H9/f9

5.2 Clips

Clip specifications:
- as light as possible
- sufficient stability for the mounting pulse (➔ 11.1 Intensity of the mounting pulse)

6 Commissioning

6.1 Installing the clip adapter

Caution

Danger of injury due to the mounting pulse!
When the compressed air supply is connected, a mounting pulse can be triggered by accidentally pressing the interface.
- Disconnect the clip fix tool from the compressed air supply.

1. If another clip adapter is mounted: ➔ 6.4 Removing the clip adapter.
2. Select the appropriate clip adapter [8] for the clip.
3. Hold the clip adapter [8] so that the hole [9] is located at the bottom.

   Press the clip adapter against the locking pin of the thrust piece [5] and slide the clip adapter upwards into the interface slot until the locking pin engages in the hole [9].

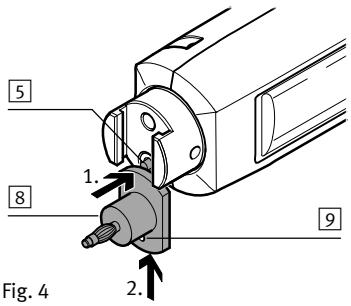


Fig. 4

4. Check the mounting position of the clip adapter:
   - Locking pin engaged in the hole [9] of the clip adapter.
   - Clip adapter sits flush in the interface.

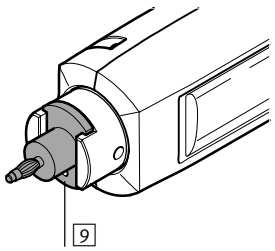


Fig. 5

6.2 Attaching the shackle for the clip fix tool

Caution

Danger of injury due to the mounting pulse!
When the compressed air supply is connected, a mounting pulse can be triggered by accidentally pressing the interface.
- Disconnect the clip fix tool from the compressed air supply.

- Attach the shackle to one of the two mounting options (➔ Fig. 1).

6.3 Connecting and adjusting the compressed air supply

Caution

Danger of tripping over the tubing!
- Recommendation: Compressed air supply from above with spiral tubing.
- Select a sufficient tube length so that there is adequate freedom of movement during the mounting procedure.

Caution

Danger of injury when connecting the clip fix tool to oxygen or fuel gas lines.
- Only use compressed air that corresponds to the technical data as the operating medium.
  The use of other operating media is not permissible

Caution

Risk of injury from the pneumatic tubing whipping around.
If the pneumatic tubing is under pressure when dismounted, it may execute uncontrolled movements, causing injury to persons.
- Use quick-action coupling in accordance with ISO 4414:2010-11 on the supply port of the pressure valve.
- Use tube with kink protection and, if necessary, tube clip.

1. Screw a fitting into the supply port (G¼) [4] of the clip fix tool.
   Observe the assembly torque (➔ 11 Technical data).
   Fitting (➔ www.festo.com/catalogue).
2. Connect the clip fix tool with tubing and quick coupling plug to the supply port with pressure regulating valve.
   Maximum operating pressure 6 bar (➔ 11 Technical data).

Note

The clip fix tool must not be attached directly to a coupling socket or quick coupling plug with non-return valve.

3. Set the appropriate operating pressure for mounting the clip on the pressure regulating valve (maximum 6 bar).

Note

The level set for the operating pressure determines the intensity of the mounting pulse (➔ 11.1 Intensity of the mounting pulse).
If the operating pressure is set incorrectly, it will result in the following effects.
If the operating pressure is too high:
- Risk of damage to the clip and mounting surface
- Increased noise generation

If the operating pressure is too low:
- The clip will not be completely mounted

- Determine the appropriate operating pressure for the clip and mounting situation and optimise it by conducting trial mounting procedures.

The clip fix tool is ready for operation.

6.4 Removing the clip adapter

Caution

Danger of injury due to the mounting pulse!
When the compressed air supply is connected, a mounting pulse can be triggered by accidentally pressing the interface.
- Disconnect the clip fix tool from the compressed air supply.

- Using a pin [10] (∅2.5 mm), depress the locking pin and slide the clip adapter [8] upwards from the interface slot.
  The pin [10] is not included in the scope of delivery.

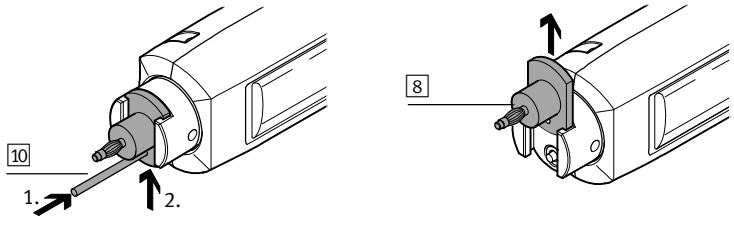


Fig. 6

7 Operation

Note

- Before use, check the tubing line for firm seating.
- In the event of an emergency, stop the clip fix tool by disconnecting the compressed air quick coupling.

Requirements:
– Clip is suitable for the intended mounting position (hole or bolt).
– The corresponding clip adapter is mounted for the clip (➔ 6.1 Installing the clip adapter).
– Compressed air is connected and the operating pressure is set accordingly for the clip (➔ 6.3 Connecting and adjusting the compressed air supply).

To reduce physical exertion during the mounting procedure:
- Make sure the workplace and position is as ergonomic as possible.
- When mounting, make sure your adopt a secure position.

7.1 Attaching and mounting the clip

Caution

Danger of injury due to accelerated clips!
The mounting pulse can be accidentally triggered when attaching the clip to the clip fix tool. The mounting pulse is triggered at an actuating force of approx. 50 N.
- Only exert slight pressure when attaching the clip to the clip fix tool.

1. Attach the clip to the clip adapter in accordance with the mounting direction.
2. Press the clip fix tool with attached clip vertically onto the mounting position (fixed workpiece) and apply actuating force.
   The mounting pulse is triggered and the clip is set.
   If the clip is not set correctly: ➔ 8 Trouble-shooting.

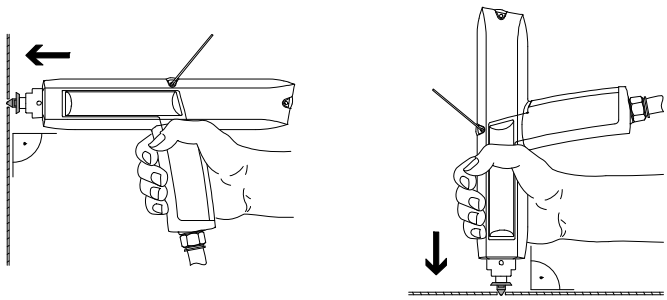


Fig. 7 Perpendicular to the mounting surface and gripping positions

8 Trouble-shooting

Malfunction	Possible cause	Remedy
Clip or mounting surface damaged	Operating pressure too high	Reduce operating pressure.
	Clip adapter damaged	Replace clip adapter.
	Clip fix tool not applied vertically to the mounting surface	Apply clip fix tool vertically to the mounting surface.
Clip not seated correctly	Operating pressure too low	Increase operating pressure (max. 6 bar).
	Clip fix tool not applied vertically to the mounting surface	Apply clip fix tool vertically to the mounting surface.

Fig. 8

9 Maintenance and care

The clip fix tool is lubricated for life.

Caution

Danger of injury due to the mounting pulse!
When the compressed air supply is connected, a mounting pulse can be triggered by accidentally pressing the interface.
- Disconnect the clip fix tool from the compressed air supply.

9.1 Checking the thrust piece

Test interval:
Every time the clip adapter is changed.

1. Remove the clip adapter (➔ 6.4).
2. Check the spring-loaded locking pin in the thrust piece [5] for free movement and damage by using a pin [10].

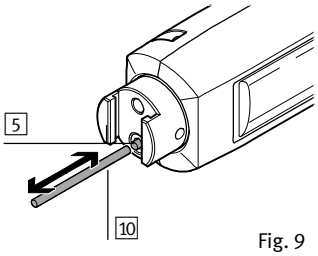


Fig. 9

3. In the event of damage or sluggish behaviour: ➔ 9.2 Replacing the thrust piece.

9.2 Replacing the thrust piece

Caution

Danger of injury due to the mounting pulse!
When the compressed air supply is connected, a mounting pulse can be triggered by accidentally pressing the interface.
- Disconnect the clip fix tool from the compressed air supply.

Prerequisite:
– Clip adapter is removed (➔ 6.4 Removing the clip adapter).

1. Using an Allen key (spanner size 3 mm), press the locking pin in the screwed insert of the thrust piece [5] inwards against the spring force.
   When doing this, press the Allen key into the internal hexagon socket of the screwed insert and unscrew the insert.

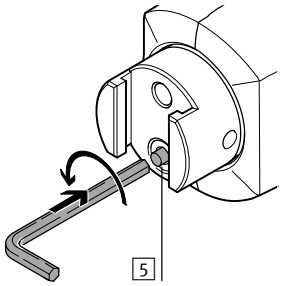


Fig. 10

2. Remove the locking pin and spring from the thrust piece.

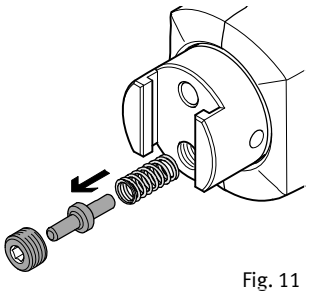


Fig. 11

The thrust piece can be ordered as a spare part at (➔ www.festo.com/spareparts).

3. Installation is performed in reverse order.
   Assembly torque of the screwed insert: 2 Nm.

9.3 Maintenance

Note

Risk of damage to the clip fix tool.
- Make sure no fluid penetrates into the interior of the clip fix tool.

- Keep the gripping surfaces of the clip fix tool dry and free of oil and grease.
- Clean the clip fix tool if required with a soft, damp cloth.
  Use non-abrasive cleaning agents.

10 Repair

- Contact the Festo service department if you have any technical problems.

11 Technical data

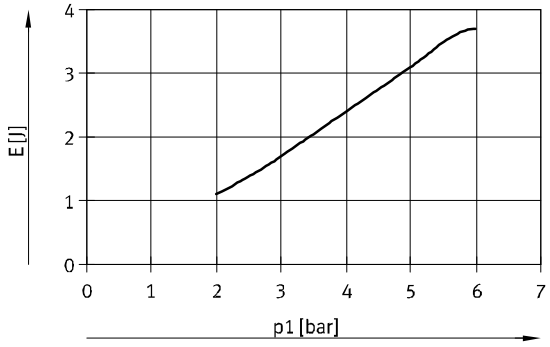
AGTC			
Actuation type			Mechanical/pneumatic
Operating medium[1]			Compressed air to ISO 8573-1:2010-04 [7:4:4]
Operating pressure[2]		[bar]	2 ... 6
Valve function			3/2-way valve
Pneumatic port			
Thread			G¼ (female thread)
Assembly torque for fitting[3]		[Nm]	Max. 15
Actuating force[4] (for triggering the mounting pulse)		[N]	≥ 50 (approx.)
Ambient conditions for operation			Only use in areas that are free of dust/fibre deposits
Ambient temperature		[°C]	+5 ... +40
Storage temperature		[°C]	–10 ... +60
Emissions			
Noise (sound)[5]			
Measured A-weighted sound power level L_{WA}	at 4 bar[6]	[dB(A)]	88
	at 6 bar[6]	[dB(A)]	91
Uncertainty K_{WA}		[dB(A)]	2.5
Measured A-weighted Emission sound pressure level Lp_A	at 4 bar[6]	[dB(A)]	83
	at 6 bar[6]	[dB(A)]	85
Uncertainty K_{pA}		[dB(A)]	2.5
Oscillations (vibrations)[7]			
Vibration value a_{hz} according to EN 12096:1997-07		[m/s²]	< 2.5
Uncertainty K		[m/s²]	0.16
CE marking (see declaration of conformity ➔ www.festo.com)			In accordance with EC Machinery Directive 2006/42/EC
Product weight		[g]	750 (approx.)
Materials			
Housing			PA-GF
Gripping surfaces			TPE
Interface (for clip adapter)			Steel (high-alloy)
Internal parts			Steel (high-alloy), Al
Lubricant			Centoplex 2 EP (Klüber Co.)
Clip adapter[8]			
Max. weight (recommendation)		[g]	50
Material (recommendation)			Plastic (e.g. PA, PBT or POM; optionally glass fibre reinforced)

1) Operation with lubricated compressed air is not possible.
2) Make sure the maximum operating pressure is not exceeded:
   For example, use a pressure regulating valve (pressure reducer) integrated in the compressed air line with a downstream/integrated pressure-relief valve (set to 6 bar in a tamper-proof manner).
3) Observe the nominal assembly torque of the selected fitting to ensure it is seated securely.
4) Dependent on the set operating pressure
5) Determined according to noise measurement standard EN 12549+A1:2008-09 with reference to basic measurement standard ISO 3744:2010-10.
   Specification of emission values according to EN ISO 4871:2009-08.
   Higher values may occur dependent on the application.
   Introduce silencing measures if necessary.
6) Operating pressure
7) Determined to DIN ISO/TS 8662-11:2004-09
8) Not included in scope of delivery

Fig. 12

11.1 Intensity of the mounting pulse

The level set for the operating pressure (p1) determines the intensity of the mounting pulse (E)[1].



1) Tolerance of the resulting mounting pulse (impact energy) ±20 %

Fig. 13

12 Disposal

Dispose of the clip fix tool and packaging in an environmentally-friendly manner in accordance with the applicable provisions.