

HCL Fasteners Ltd Pneumatic Tool Catalogue



HCL Fasteners Ltd
The 'MAXI' Air Tool Range**2**

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Introduction

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Herbie Clip Air Tooling

Herbie Clip tooling is based on two design principals piston and calliper. The following pages illustrate the various variants.

Designed for use in volume production the tools are robust and virtually maintenance free. The tools are designed to cope with the wide Herbie Clip size range by using interchangeable heads.

Smart Band Air Tooling

The Smart Band Tooling is a piston pawl based design, which grips the band and pulls back against the head.

The force required can be adjusted and set using a regulator

Air Regulation

Closure force can be accurately set by adjusting the airline pressure, and an internal restrictor prevents over-rapid closure, thus ensuring that the clip is fastened correctly every time.

Safety Standard

Manufactured to the highest standard the tools comply with the CE safety criteria.

Standard Maxi Piston Airtool

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The robust design is ideal for industrial applications. The tool is made out of a combination of anodised Aluminium and Stainless Steel

The standard Maxi Piston air tool works on a pressure of up to 6 bar and can cope with Herbie Clip Sizes A to 105. The tool is used by introducing the front head slot from the side of the clip. The slot then sits over the head and the trigger is pressed. The clip is then closed. By releasing the trigger the piston returns and the tool can be removed

Three different head options are provided with each tool and each head suits a certain Herbie Clip Size range as outlined in Appendix 2

Tightening force is outlined in Appendix 1

Gun Grip Piston Air Tool With Ergonomical Handle



This tool has a number of advantages over the standard piston air tool including:

- 40% lighter
- Ergonomical handle and trigger
- Gun grip
- A choice of two airline inputs

The tool is made out of a combination of anodised Aluminium and Stainless Steel and can cope with harsh environments.

Three different head options are provided with each tool and each head suits a certain Herbie Clip Size range as outlined in Appendix 2

Tightening force is outlined in Appendix 1

**Straight Grip Piston Air Tool With
Ergonomical Handle**

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This tool has the same advantages as the Gun Grip Piston Air Tool With Ergonomical Handle. The difference is that it has a straight handle instead of a gun grip.

**Straight Grip Piston Air Tool With
Ergonomical Handle - Thin Nosed
Option**

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This Head is designed for quick and easy location and consistent fitting.
The thin design means that the head can be located on the clip in confined spaces.

Suitable for Herbie Clip size A to M

Straight Grip Piston Air Tool With Ergonomical Handle - Large Head Curved Option



This Head is designed for quick and easy location and consistent fitting.

It is suitable for Herbie Clip sizes where the head width is:

- a maximum of 54mm upon tightening and
- a minimum of 14mm when tightened

Standard Calliper Air Tool

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The standard Maxi Piston air tool works on a pressure of up to 6 bar and can cope with Herbie Clip Sizes A to 105. The tool is used by introducing the front calliper jaws over the top of the clip. The trigger is then pressed and the jaws squeeze close and tighten the clip. By releasing the trigger the calliper jaws return and the tool can be removed

The standard design is very robust in design and is ideal for industrial applications where tools tend to get abused. The tool is made out of a combination of anodised Aluminium and Stainless Steel and can cope with harsh environments

Two different head options are provided with each tool and each head suits a certain Herbie Clip Size range as outlined in Appendix 2

Tightening force is outlined in Appendix 1

Gun Grip Twin Direction Calliper Air Tool With Ergonomical Handle



This tool has a number of advantages over the standard calliper air tool including:

- 30% lighter
- Ergonomical handle and trigger
- Gun grip
- A choice of two airline inputs
- Ability to fasten the Herbie clip from the front and top of the head

Because the jaws are longer to allow two different directions of introduction to the clip, a higher pressure is required. The tool has therefore been designed to work at up to 10bar

The tool is made out of a combination of anodised Aluminium and Stainless Steel and can cope with harsh environments.

Tightening force is outlined in Appendix 1

Gun Grip Calliper Air Tool With Ergonomical Handle

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This tool has a number of advantages over the standard calliper air tool including:

- 30% lighter
- Ergonomical handle and trigger
- Gun grip
- A choice of two airline inputs
- Snug fit over the top of clip allows easy engagement

There are three head options small, medium and large which allow the tool to be used over virtually the whole range. Refer to HCL for more information

The tool is made out of a combination of anodised Aluminium and Stainless Steel and can cope with harsh environments.

Tightening force is outlined in Appendix 1

Smart Band Air Tool With Ergonomical Handle



This lightweight air tool has been designed to fasten HCL's continuous banding products Smart Band.

It is shown here assembled in the 7 & 4mm mode with the 10mm cylinder option next to it.

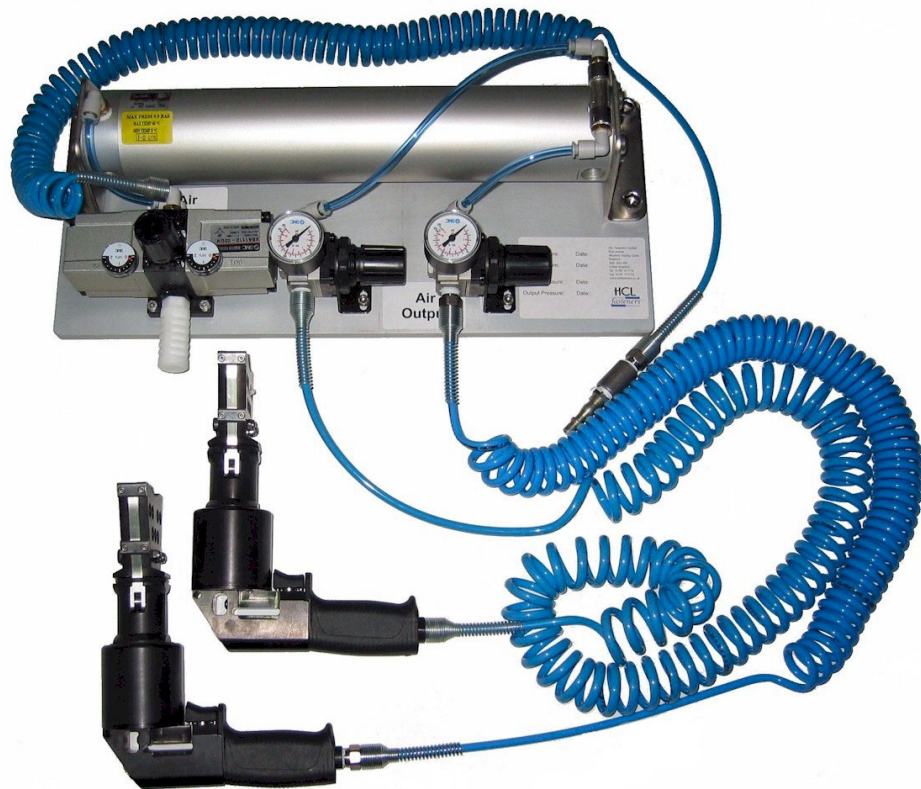
Working at a maximum pressure of 6 bar the tool can provide 500N tightening force in 7 & 4mm mode and 1500 N tightening force in 10mm mode

The tool has a number of features including:

- Light Weight
- Ergonomical handle and trigger
- Gun grip
- A choice of two airline inputs
- Non corrosive materials used in construction

Pressure Booster Unit

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Where the line pressure is low the booster unit is able to increase it by up to double the amount (maximum 10bar/1MPa). The Pressure Booster Unit has the following features:

- Can supply increased pressure to two tools
- Reservoir helps to maintain consistent pressure even if line pressure fluctuates
- Regulator to ensure that the air pressure tools are precisely controlled
- SMC spare parts can be located locally or from HCL
- Booster unit can be ordered with one or two outputs

Regulator and Hose

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HCL recommends using a regulator to ensure accurate repeatability of tightening force.

As long as the factory air pressure remains above the desired operating pressure then the regulator will hold the desired pressure regardless of any air pressure fluctuations

We also recommend using 10 bar polyurethane hose which is lightweight and very flexible. It also has the added bonus of not scratching surfaces e.g. car bodies on an assembly line.

**HCL Fasteners
Personnel**

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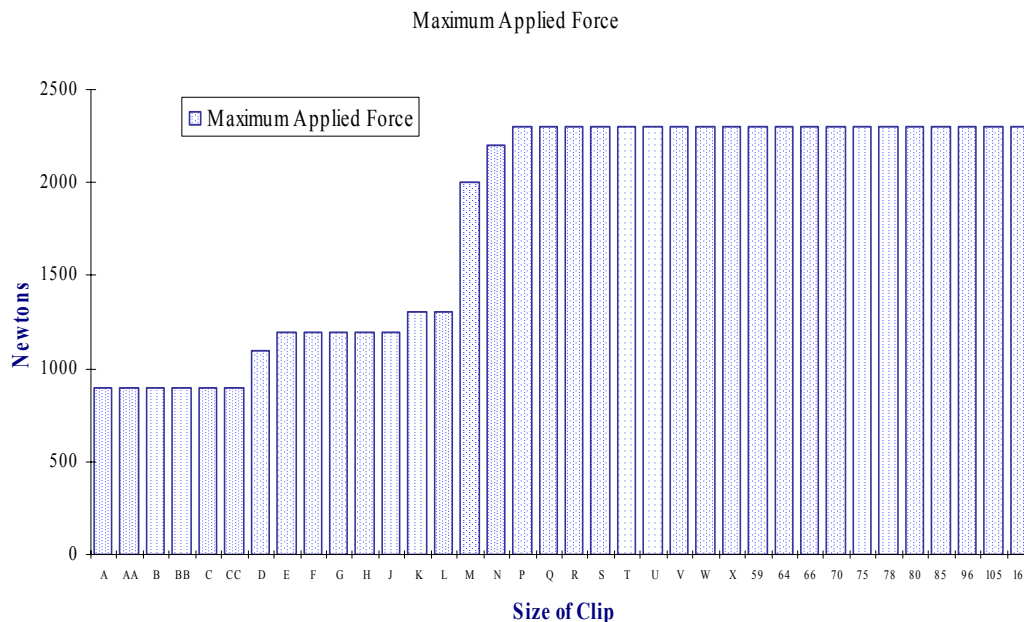
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Appendix 1 Tightening Forces



Graph Explanation

The Herbie Clip applies a sealing force between the fitting and the hose. As with all types of clips the integrity of the joint will be affected by the compression of the hose and other factors e.g. the surface integrity of the fitting.

The graph above illustrates the maximum force that can be applied to each size of clip without deforming it. **If this force is exceeded deformation of the Herbie Clip will occur.**

Note that every situation is different. The force applied to each Herbie Clip should be determined by experimenting in each case. In most cases, less than half of the 'Maximum Applied Force' will be needed to tighten the Herbie Clip.

Fact Sheet 008 shows that The pneumatic tools apply a maximum force of around 1200 Newton's which should be more than enough for every situation. Smaller Herbie Clips will need less force to tighten than larger Herbie Clips. Therefore when determining the force needed to tighten, start off at a lower pressure and build up until you are satisfied that the Herbie Clip has been tightened enough.

The tighter the clip is applied, the greater the pressure resistance of the hose/clip assembly.

Care should be taken to ensure not to apply forces to a clip above the maximum force specified above

Appendix 2
Pneumatic Tool Heads

**Maxi Piston
Tool Heads**

Small Head
To Suit Clip Sizes A -

Medium Head
To Suit Clip Sizes E - Q

Large Head
To Suit Clip Sizes R - 163



NOT TO SCALE

**Maxi Calliper
Tool Heads**

Small Calliper Head
To Suit Clip Sizes A - T

Large Calliper Head
To suit clip sizes N - 105

