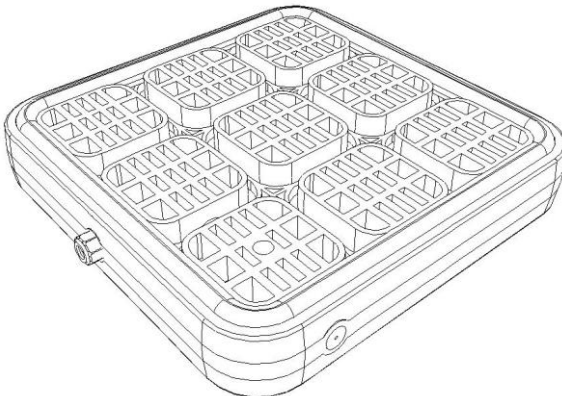


Vac-Clamp powered by compressed air

PATENTED

VC5 (double sided, self mounting)

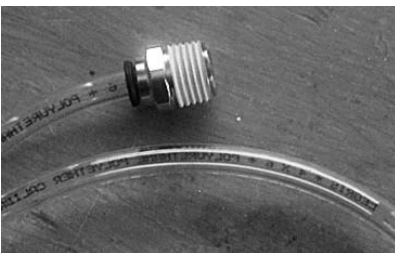
Instructions, read before use:



VAC-CLAMP IS INTENDED FOR USE AS A HOLDING MECHANISM FOR PARTS WITH AT LEAST ONE FLAT SIDE. IT HAS NO MOVING PARTS AND IS POWERED BY COMPRESSED AIR. SUITABLE FOR WOOD, PLASTIC, GLASS, ALUMINIUM ETC.

Unpack and check

- This package contains a transparent air supply line, a 3 piece spare seal/gasket "pack" as well as the Vac-Clamp unit (shown above) which has a seal already fitted.
- The transparent air supply line has a "quick fit" (1/4"BSP) connector on it. The open end of the supply line should be pushed firmly into the Vac-Clamp, until it stops. To check correct installation pull gently on the line. A properly installed airline cannot be pulled out.
- Care should be taken to prevent the black collar from being depressed while the clamp is in use. This will cause the air hose to release immediately. The air hose will flail and may cause injury.

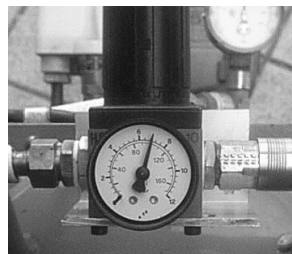


Mounting

- The Double sided Vac-Clamp requires only a flat non-porous surface for successful mounting.
- This will enable the user of this unit to easily move the clamp from horizontal to vertical in a matter of seconds.
- There are two separate vacuum generation units within the double-sided unit. These two work independently of one another, so the unit will hold itself to the surface that it will be mounted to.
- Releasing the air supply will stop all vacuum generation. Keep this in mind when using the clamp vertically. It will fall off.

Air Supply

- The “quick fit” 1/4”bsp fitting, on the transparent air supply line, is a very common thread form for valves. Most on/off valves and “snap on” fittings will have this thread form.
- We recommend that an on/off valve be used with this unit, and that the valve be fixed firmly in place. Vac-Clamp can supply an appropriate valve if required. Refer to accessories on page 7
- For maximum performance air supply must be between 80 psi and 120 psi (600 to 800 kPa). **Exceeding 120 psi 800kPa could damage the unit and be potentially dangerous.** Less than 80 psi (600kPa) will mean reduced holding power.
- Less than 80 psi (600kPa) will give reduced holding power. Refer to the graphs at the end of this book for the performance graphs.
- Air supply needs to be clean. Oil or dust in the air supply will block internal parts within the clamp and reduce its’ efficiency. Small amounts of water condensate will not adversely affect the clamp.
- A small compressor will power Vac-Clamp quite easily as it uses only 40 litres of air per minute (about 2cfm).
- The compressed air should be coming from a receiver so the air is not pulsed. Compressors that run from a car socket will probably not have this



Rubber Seal

- The seal/gasket installed into the Vac-Clamp unit has been performance tested and is ready for use in its' current form.

- If you need to re-install the seal/gasket, please note the oval shape of the rubber. **DO NOT** twist the seal prior to installing. Twisting will result in a poor or nonexistent seal.



- Different shaped, and quite small, work pieces can be held by moving the rubber seal to the required size i.e. smaller than the work piece. The three piece seal kit should be able to accommodate almost all situations

- If a seal needs to be cut it is good practice to make the seal 3mm (1/8") longer than required, as the rubber will readily compress.

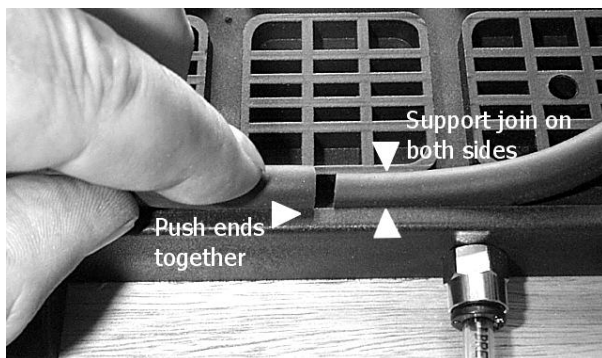
- If you do need to cut a seal/gasket ensure that the ends to be joined are cut square. There should be no frayed edge to allow loss of vacuum. To achieve this type of cut use a SHARP chisel and cut in one pass preferably using a mallet on the chisel. This will give the square end required.

- It is best to put the ends together in the clamp before pressing the remainder of the seal in.

- The join of the seal should always be supported on both sides.

- **ALWAYS INCLUDE THE SUCTION HOLE IN ANY SHAPE TO BE MADE.**

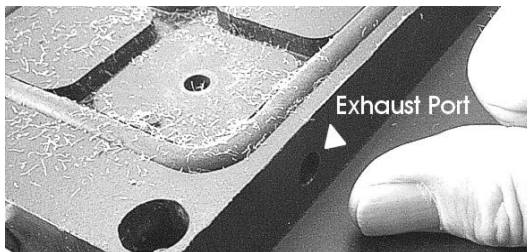
- Extra seal/gasket kits are available. Refer to page 7 for a list of accessories



Clearing the suction hole from dust or debris

- Even though most dust particles will not affect the clamp, the clamp may become blocked. Simply follow these instructions to unblock

1. Clear excess dust and debris from the work surface of the clamp by blowing or sweeping.
2. Locate the air exhaust on the side of the clamp, (when it is working you can feel the air coming out). The double sided has two ports.
3. With the air switched on hold your finger tightly over the exhaust and block the airflow. **DO NOT PUT YOUR FACE OVER THE CLAMP WHILST DOING THIS IT MAY BE HAZARDOUS. DUST WILL FLY INTO YOUR FACE.**
4. Airflow is reversed and will now come out of the suction hole.
5. Dust and debris will be ejected from the suction hole.
6. You may need to repeat this procedure a couple of times to completely unblock the suction hole.
7. Remember to blow or sweep off the excess dust.
8. Vac-Clamp should be ready for action.



Irregular, small shapes

- Vac-Clamp can hold small and irregular shaped work pieces by moving the seal into the work grooves of the clamp that best suits the shape required.

- Use the different sized seal/gasket
- The seal may need to be cut to fit the size of the work piece. It is best to make the seal slightly longer (3mm, 1/8") than is exactly required, as the rubber will compress readily.



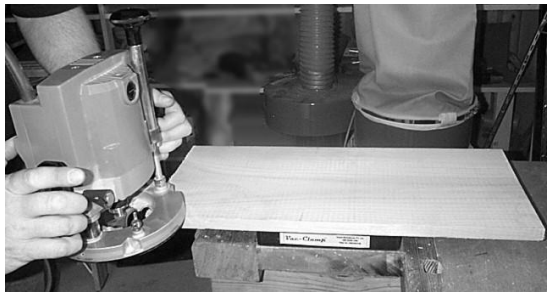
Small work pieces

- The picture alongside shows a small piece of material being worked safely.
- The piece measures only 100mm x 100mm (4" x 4") and does not move even with a 3hp plunge router.
- Note that the clamp has a rated holding power of 800 grams per cm² (12 psi), so a large area is held with greater force than a small area
- Naturally enough the seal will need to be adjusted to allow the largest holding area, for smaller pieces.



Large work pieces

- Larger work pieces can be held by just one Vac-Clamp, but the work piece will need to be supported at its' extremities with support blocks. The lever action that comes with large work-pieces may cause the work piece to lift off the clamp.
- Very large work pieces will need to be held by at 2 or more clamps. Consider how traditional forms of clamp would be used as a guide.
- By using more than one clamp the margin of safety is increased particularly if using timber. Knotholes may cause loss of suction in a particular clamp but the other clamps holding the large work piece should provide adequate holding power. Always check the work piece before commencing work.



Intended function

- Vac-Clamp is designed to hold ANY flat non porous material without damage to delicate surfaces
- Vac-Clamp cannot injure fingers, even if a finger is placed on the suction hole.
- Maximum take up is less than 1.5mm, so only a fingernail can get caught between the clamp and a work piece.
- This method of clamping allows full and unrestricted access to a work piece, whilst it is held.
- The clamp is manufactured from filled nylon and will not damage any cutting tool if an accident does occur.
- Although Vac-Clamp can be used for lifting purposes, we do not recommend it, or encourage it.








Cleaning

- Vac-Clamp requires no special cleaning. Air dusting is all that is usually required.
- Do NOT use solvents.

Useful Notes

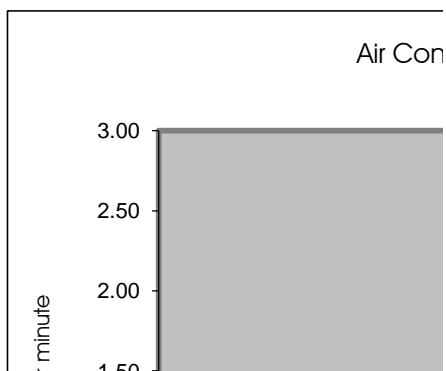
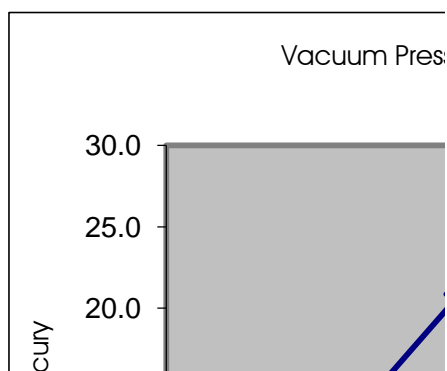
- For any given application use the largest possible holding area. More area gives greater holding power.
- The air supply line is clear to allow monitoring of the quality of the air supply. Dust and oil in the air supply will reduce the performance of the unit and ultimately cause its' demise.
- Although it is possible to use just one square of the clamp we do not recommend it, particularly for routing work.
- Always check the clamp or clamps are holding the work piece to your satisfaction.
- Raw MDF is porous and will not give a stable work-piece. Painted MDF works very well
- Cracks knots and pinholes will allow air to flow through a piece of wood causing greatly reduced holding power. Small openings may be successfully sealed with masking tape

Accessories

<p>Three Piece Oval section rubber seal Closed cell EPDM</p>	 A black, three-piece oval section rubber seal made of closed cell EPDM material, shown in a coiled view.
<p>Tall Rubber Seal 10mm x 6mm $\frac{3}{8}$" x $\frac{1}{4}$" for use on curved or irregular surfaces</p>	 A black, tall rubber seal with a cross-section of 10mm x 6mm and a width of 3/8" x 1/4", designed for use on curved or irregular surfaces.
<p>Tubing transparent 6mm polyurethane For high pressure air.</p>	 A coil of transparent 6mm polyurethane tubing, suitable for high pressure air applications.
<p>On/off valves, Lever type $\frac{1}{8}$" BSP female/female</p>	 A black lever type on/off valve with 1/8" BSP female/female ports, featuring a brass-colored lever and a brass-colored outlet.
<p>Connector fitting, 6mm quickfit $\frac{1}{4}$" BSP male Teflon® coated</p>	 A silver-colored 6mm quickfit connector fitting with a 1/4" BSP male thread, Teflon® coated.
<p>Connector fitting, 6mm quickfit $\frac{1}{8}$" BSP male Teflon® coated Suits lever valve</p>	 A silver-colored 6mm quickfit connector fitting with a 1/8" BSP male thread, Teflon® coated, designed to suit a lever valve.
<p>Tee junction 6mm quickfit</p>	 A purple 6mm quickfit tee junction fitting, used for connecting three lines.

Specifications

Width	160mm	6.3"
Height	25mm	1"
Length	160mm	6.3"
Air consumption	42NI/min ANR @ 0.6MPa	2 cfm @ 80psi
Weight	500 grams	1.1lbs
Holding force	approx 800gm sq cm <small>0.6Mpa supply pressure</small>	approx 12.0 lbs/in ² <small>80psi supply pressure</small>
Main Body material:- Filled Nylon		



Disclaimer: This product is intended to hold non-porous objects. Using this product for any other purpose may be dangerous or fatal. Users should check held items for stability before working or machining. Failure to do so could create a dangerous work area. Whilst every endeavor is made to provide a reliable vacuum hold, the performance of this product is only as good as the proficiency of the user. High altitude will reduce the performance of the clamps. Do not use for lifting purposes. Do not disassemble this product.