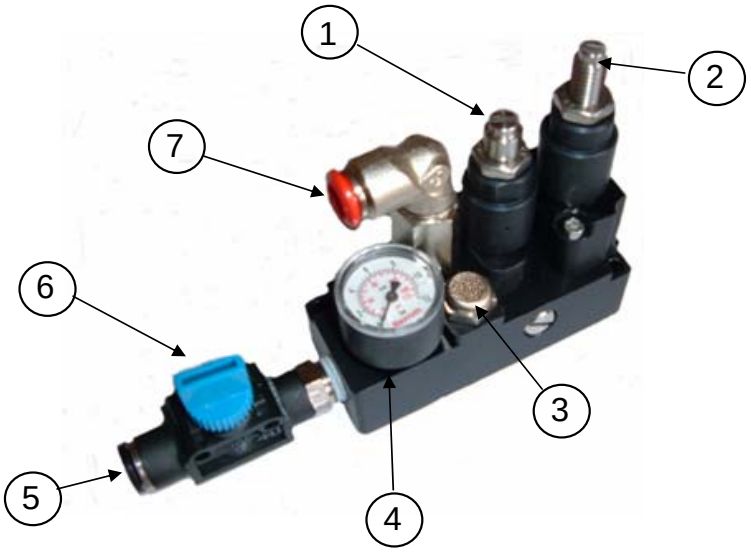
X-Block - set-up and installation guide

X-Block -

creates, monitors and controls a low pressure closed pneumatic circuit between itself, a small air tank and any number of actuators connected to it. There is no limit to the number of actuators that can be connected to one X-Block.

Movement of the actuator is still governed by its control valve which will only supply compressed air on its 'working' stroke. However, the compressed air used to return the actuator on its 'non-working' stroke is now sourced from X-Block.



X-Block - Controls & connections

1 – Outlet pressure limiter

2 - Outlet pressure regulator

3 – Exhaust bleed

4 – Outlet pressure gauge

5 – Outlet (8mm)

6 – Outlet shut-off valve

7 – Air supply (8mm)

Important steps prior to installing X-Block

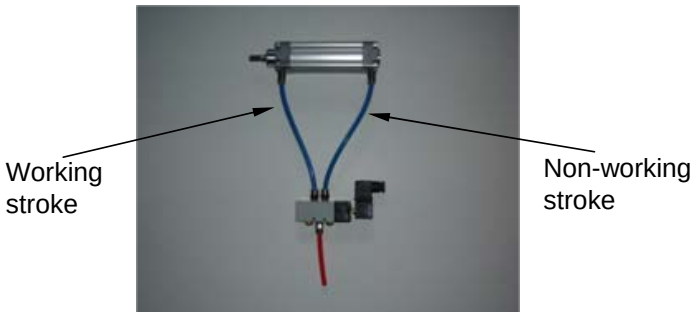
To maximise the potential savings offered by fitting X-Block we strongly advise you to check your machine for air leaks and rectify them. Any leaks would reduce the effectiveness of the device and could, if the leaks were severe, prevent X-Block from reaching its set pressure thereby causing the machine to operate incorrectly.

Please ensure the air supply is dry and filtered to at least 40 microns

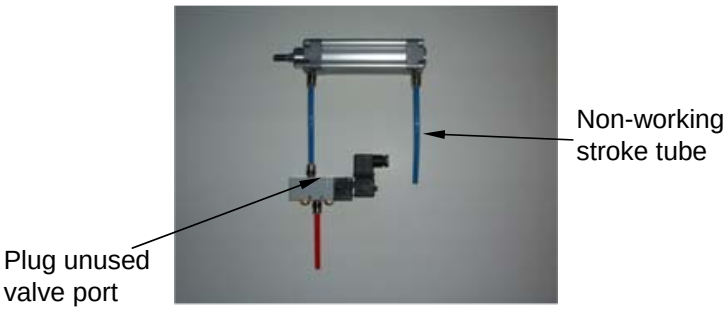
If the machine is operating in a dusty or aggressive environment or is subject to wash down procedures, then it is strongly recommended that X-block is housed in a protective enclosure.

Step 1 – locate a suitable position on the machine to mount the tank(s) in any orientation using the mounting brackets supplied. The tanks must be positioned *no more* than 4 metres pipe run from any cylinder to be connected to it.

Step 2 – Identify pipe connection for the cylinder's non-working stroke.



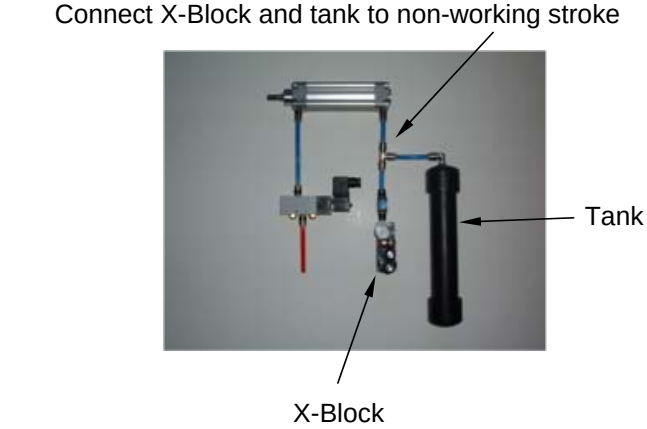
Step 3 – Ensure the cylinder air is exhausted then disconnect the non-working stroke pipe from valve and plug the valve port.



Step 4 – Select the correct tube size from the table below, then connect the cylinder's non-working stroke to the tank.

Cyl diameter	tube size
10-32mm	8mm
40-63mm	10mm
80mm & above	12mm

Step 5 – Using 8mm tube, connect X-Block's outlet (5) to the tank and cylinder.



Step 6 – Using 8mm tube, connect mains air to X-Block's air supply connection (7)

Mains air supply

Step 7 – Ensure X-Block's outlet shut-off valve(6) is in the closed position and that the machine is safe to operate before switching air on to X-Block. Using a screwdriver, gradually increase the outlet pressure by turning regulator screw(2) clockwise until the reading on the outlet pressure gauge(4) is approximately 1 – 1.5 bar.

Step 8 – Open the outlet shut-off valve(6) which will allow the tank and cylinder to pressurise, for large tank/cylinders this will take a short while. The outlet pressure will initially drop, then gradually return to its set level. If the outlet pressure fails to reach the set value see **fault finding.**

Step 9 – *Before* checking operation of the cylinder, make sure no damage to the machine or process can be caused by its movement. If safe to proceed, check the movement of the cylinder several times by operating its control valve. If the non-working stroke is too slow, increase the outlet pressure a small amount then operate several times again. The outlet pressure should not be set higher than 2.5 bar or the working stroke will slow down.

Step 10 – If connecting several cylinders to X-Block, then only connect one at a time and repeat steps 7 to 9 after each cylinder connected.

Step 11 – Once all the cylinders are connected and working satisfactorily, tighten the locknut on the outlet pressure regulator(2). Using a screwdriver, turn the outlet pressure limiter(1) anti-clockwise until air can be felt coming from the exhaust bleed(3) or the pressure level drops. Then turn the outlet pressure limiter(1) slowly clockwise until the bleed stops and the pressure level has returned to normal, then turn it one more full turn clockwise, tighten the locknut.

Fault finding

Since there are no moving parts within X-Block and each unit is individually tested at manufacture, any problems encountered are likely to be with the set-up or with the cylinders connected to X-Block.

Cylinder too slow on working stroke - X-Block outlet pressure is set too high. Check the pressure reading on gauge(4). Turn the outlet pressure regulator screw(2) half a turn anti-clockwise, then momentarily close the outlet shut-off valve to part vent the tank, re-open the valve and check the pressure gauge(4). Repeat until operation of the cylinder is satisfactory.

X-Block unable to attain set pressure – if this occurs during initial set-up immediately after a cylinder has been connected, it indicates a leak across the piston seals or a nose seal leak in the cylinder. If this occurs during use some time after installation, it indicates a leak has developed within a cylinder or circuit connected to X-Block. The defective cylinder must be repaired or replaced or the leak rectified.

Air continually exhausting from bleed(3) – If the outlet pressure is at the correct level, then the outlet pressure limiter is set too low. Re-adjust by turning limiter(1) clockwise until bleed stops, then turn one full turn more. If this fails to rectify the problem and the outlet pressure continues to rise higher than set, it indicates a leak across a piston seal permitting mains air to transfer in to the X-Block circuit. The suspect cylinder must be identified and repaired.

Do not attempt to connect a single-acting cylinder or any cylinder normally controlled by a 5/3 valve to X-Block.

In the unlikely event that problems are still encountered, as a precaution, disconnect X-Block then please email full details of the installation and a complete description of the nature of the problem to the address below. X-Block is supplied with a 2-year warranty and providing all installation requirements are met and the fault finding procedures have been carried out, if the unit proves to be faulty, a replacement X-Block will be supplied free of charge.

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