

Cylinder Set Hackworth (pair)

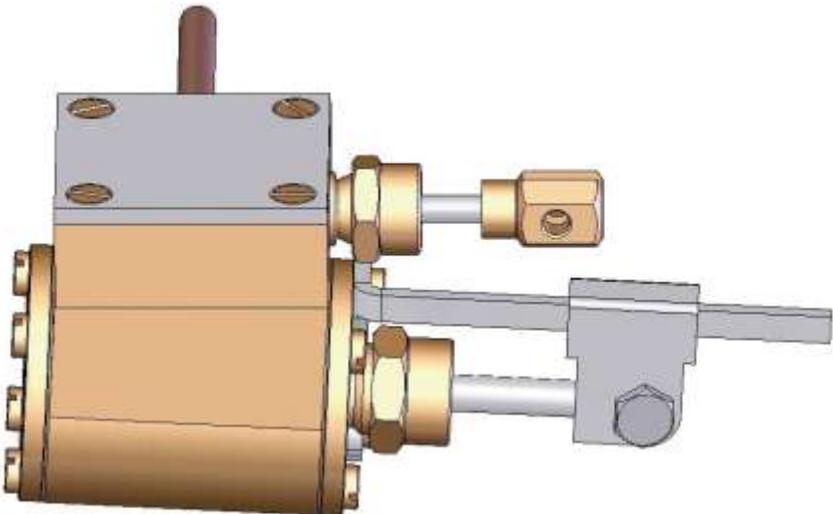
9/16" (14.288mm) Bore.

5/8" (15.875mm) Stroke.

5/32" Valve Travel.

This set contains one pair of double acting slide-valve cylinders. They are designed specifically for use with our Hackworth valve-gear set (part code HVG).

HEX WRENCH FOR CYLINDER SCREWS INCLUDED.



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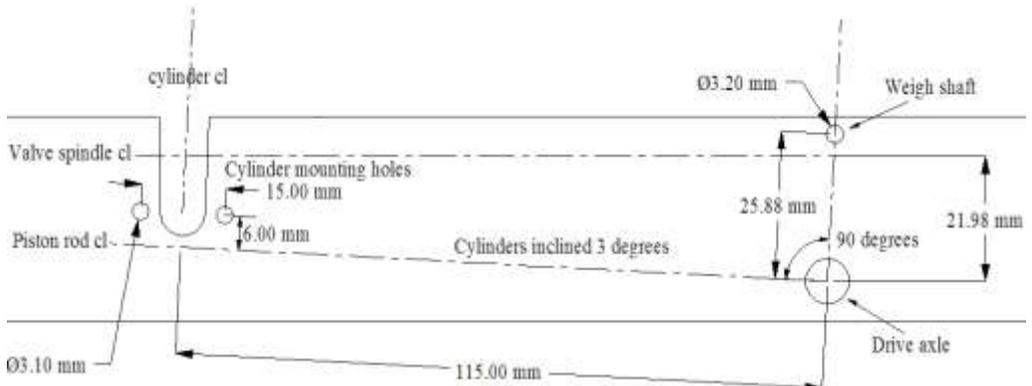
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Construction.

If constructing your own frames, ensure that all the holes are set out accurately as shown in the diagram below. These dimensions assume the use of ROUNDHOUSE Hackworth Valve Gear.



The cylinders are fixed to the chassis by two M3 socket screws in the inside face of each cylinder. The Piston Rod is angled down by 3 degrees. Ensure that the centre line of the piston rod passes through the centre line of the drive axle before tightening these socket screws with the hex wrench provided.

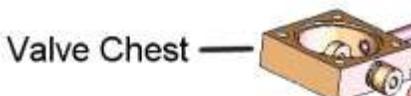
The steam inlet pipes are the two short 1/8" dia. copper pipes attached to the inside faces of the steam chests. The exhaust pipes are the longer 1/8" dia. copper pipes attached to the cylinder blocks. The exhaust pipes should be bent to shape to pass up round the steam inlet pipes and up into the smokebox under the chimney. The exhaust pipes may be shortened if required. These are lightly screwed into the cylinder blocks, so take care when bending to shape or the threaded end of the soft copper pipe may be damaged. They will be held in place by the smokebox etc. and it is not necessary for them to be sealed.

Connecting rods should be attached to the piston rods by the shouldered screws supplied and should be made from 1/16" thick material. The screw passes through the dummy crosshead (which is only cosmetic), through a 3.3mm dia. hole in the end of the connecting rod and screws into the 6BA tapped hole in the end of the piston rod.



Valve Chest Cover

Valve Chest 'O' ring



Valve Chest

Steam Inlet Pipe

Valve Spindle Gland 'O' ring

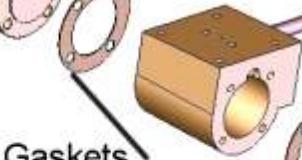
Valve Spindle

Valve Rod end

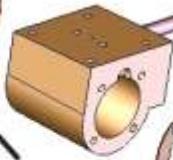
Slide Valve



Front Cylinder Cover



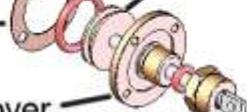
Gaskets



Piston Ring



Piston



Rear Cylinder Cover

Exhaust Pipe



Slide Bar



The valve chest covers are removable for accurate setting of the valve gear and full instructions for setting timing are included in the ROUNDHOUSE Hackworth Valve Gear Set.

Maintenance

When new, the cylinders will require running for several hours before they reach their full performance as the slide valve must `bed in`. A cylinder lubricator must be fitted to ensure that there is an adequate supply of steam oil into the cylinders at all times.

The piston rod and valve spindle glands are fitted with `O` rings and should not be over-tightened. If a steam leak develops just nip up the gland enough to stop the leak, and no more. Over-tightening will have an adverse effect on running.

The piston is also fitted with an `O` ring which can be easily replaced if it becomes worn or damaged.

Because the slide valves are held onto the port faces by steam pressure, it is possible for small particles of dirt, lime scale etc. which are carried through with the steam, to become lodged between the two and thereby break the seal necessary for operation. This would show up as an excess amounts of steam being exhausted up the chimney with a continuous hiss coupled with loss of power or failure to run at all. The remedy is quite simple and involves removing the valve chest cover, lifting the valve chest just enough to remove the slide valve from the side and cleaning the valve and port face. Take care not to rotate the valve spindle or nut and replace the slide valve the same way round as it was and there will be no need to reset the valve timing. Squirt a little steam oil into the valve chest as you replace the parts, to help lubricate and seal the valve. Ensure that the valve chest `O` rings are seated correctly in their recesses before re-fitting the valve chest cover.

If all is operating correctly, when running the locomotive slowly, you should hear the separate beats of the exhaust up the chimney as the valve opens and closes.



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