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Bryan Donkin RMG
Gas Controls Limited

Installation,
 Commissioning,
 Testing & Servicing
 Instructions for

Series 590

General:

The Series 590 Rollchek Valve has been designed to meet the British Gas/SBGI agreed standard for Non-Return Valves. (U 064: U9623)

Maximum Operating Pressure: 7 Barg (100 psig)

Maximum Reverse Pressure: 7 Barg (100 psig)

Flow Capacities:

For Natural Gas (SG = 0.6) at 1 mbar pressure drop, STP Conditions.

Valve with Strainer Fitted

Nominal Size	Flow Capacity
50 mm (2")	64 sm ³ /hr (2250 scfh)
80 mm (3")	122 sm ³ /hr (4300 scfh)
100 mm (4")	177 sm ³ /hr (6250 scfh)
150 mm (6")	487 sm ³ /hr (17200 scfh)

See Publication Ref. NR.NRV/590/0995

Valve Reverse Leakage Rate:

This is substantially better than the standard which permits the following maximum leakages:

Nominal Size	Flow Capacity
50 mm (2")	3 sdm ³ /hr (10.6 scfh)
80 mm (3")	6 sdm ³ /hr (21.2 scfh)
100 mm (4")	10 sdm ³ /hr (35.3 scfh)
150 mm (6")	20 sdm ³ /hr (70.6 scfh)

Installation:

Note: Valve suitable for use in horizontal pipeline only.

1. Before Installation:

Remove end protection covers and internal packing. With a screwed-end valve check that the internally fitted strainer is undamaged and secured firmly by its circlip. Flanged valves have a loose strainer packed under the hardboard flange protection. Check this for any damage. Inspect valve externally for damage.

Check that the door has complete freedom of swing between its two end positions and returns positively under the action of gravity from the open position with the Rollcheck positioned so that the cover flange is horizontal.

Ensure that there is no dirt or foreign matter inside the valve

Check that the body seat face is clean and undamaged.

Thoroughly purge inlet piping to remove dirt and debris that could damage the valve and prevent its satisfactory operation.

2. Install the Rollcheck in the pipeline:

Make sure that the flow arrow points in the correct direction and that the cover flange is as near to the horizontal plane as possible - certainly less than 5° from the horizontal in any direction.

Take care that the gap in the piping is appropriately sized to ensure no undue pipe force effects on tightening flange bolting or screwing-in connection pipes. Tighten flange bolts or screwed connections.

Check that the cover nuts are all tight.

For best service life and effective closure on back pressure, the Rollchek must be installed with the strainer provided

Commissioning:

Check that the Rollchek has been installed with the flow arrow in the correct direction with the cover flange as near horizontal as possible.

Check all connections are tight and that there are no leaks

The Rollcheck is now ready to work

Testing:

Two R 1/8" pressure test tapings are provided in the underside of the valve body, one each side of the door position. These are fitted with pressure test nipples suitable for push on rubber tubing at pressures up to 350 mbarg (5 psig) only. Whilst these test nipples, left closed, will remain gas-tight at all pressures up to 7 barg (100 psig), should it be necessary to connect piping to the valve at pressures above 350 mbarg (5 psig) then the standard nipples must be replaced by a high pressure type.

Tappings can be employed as follows:

With a differential pressure gauge connected across the two points to indicate the forward flow pressure loss across the door at any particular flow rate.

For back-leakage measurement, by isolating the pipework upstream of the Rollchek and attaching an appropriate sensitive flow meter to the upstream tapping point.

Spares Kit:

1. Comprises the following:

- 1 - Door Rubber
- 1 - Door Sealing Washer
- 2 - Bearing Blocks
- 1 - Cover Gasket

Servicing:

Note: Do not lubricate or grease this valve

Remove the top cover

Check bearing block bushes for wear. This would be indicated by excessive door bracket movement. Examine door rubber for wear or damage and body seat face for dirt.

Should it necessary to attend to any of these matters the sequence for dismantling is as follows:

- (a) Remove all bearing block screws
- (b) Lift out door bracket in its bearings
- (c) Loosen door centre nut and capscrews
- (d) Dismantle door from door bracket noting correct orientation of parts and that the door is attached to the door bracket on the side marked INLET SIDE

The door rubber or bearing blocks can now be replaced if necessary and the body seat face cleaned.

Reassemble door on bracket taking care to ensure that the parts are replaced correctly as noted in step, (d), (do not forget the sealing washer under the head of the capscrew - this should be carefully examined and replaced as necessary).

Care should be taken when tightening the centre nut and capscrew to ensure that sufficient load is applied to effect a seal but not high enough to distort the door plates. The recommended procedure is to hold the centre nut across flats in a vice and with all parts positioned carefully tighten the capscrew with a suitable Allen key until the door/rubber sandwich is just felt to be clamped, i.e. can no longer be freely rotated. It should be noted that the capscrew is of a special locking type which will not vibrate and loosen off in service. This is due to a nylon patch applied to the screw which will resist turning without the necessity of applying a high clamping load.

After several disassemblies the locking ability of the centre screw may deteriorate and it should be replaced if it can be screwed into the centre nut without resistance (friction). Before returning the bracket assembly to the valve body recheck orientation of parts and that the door is free to spin and pivot relative to the door bracket.

Slide bearing blocks on the door bracket and lower door together with bearing blocks into bearing block locating holes.

Check door for freedom and then screw down bearing blocks.

Check that the door returns positively under the action of gravity from the full open position.

Replace cover (do not forget the gasket) and evenly tighten down cover nuts.