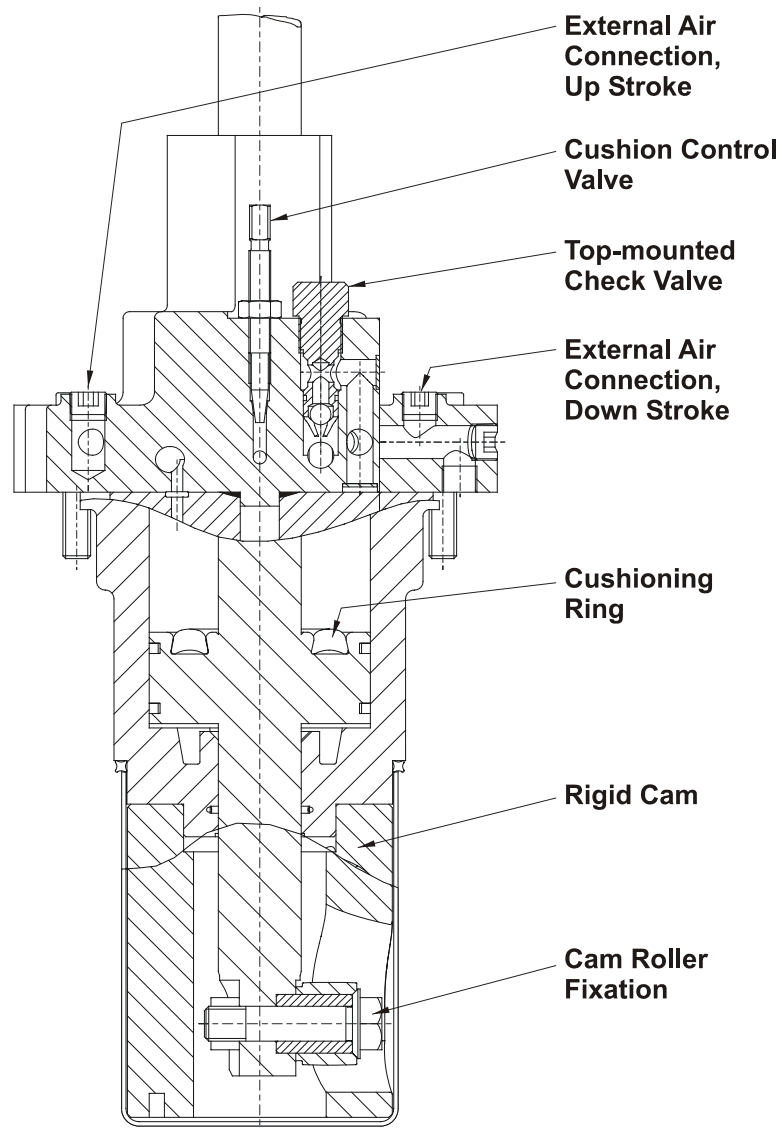


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Two-way air operated Funnel Mechanism 210- 440



1. Description

The principal new feature of this mechanism is the air operation for both, the up and the down stroke. The funnel arm movement is a combined vertical and horizontal motion generated by a rigid cam and cam roller arrangement. Due to this motion profile generated by the cam, this funnel mechanism can only be operated together with pantographic baffle arms.

The new design and motion profile allows the funnel mechanism to operate at faster speeds. The absence of the up-stroke spring (commonly used with conventional funnel mechanisms) allows better motion control that reduces the risk of the funnels being thrown out.

The upstroke cushion control valve is incorporated into the cylinder head, while speed control is adjusted through the Electro Pneumatic Valve Block (EPVB) or an external valve.

This new funnel mechanism features many design improvements as already incorporated in the previous mechanism 210-220 and described in detail in TNB 46:

- Rigid cam design with CNC machined cam track closed at both ends
- Cam roller arrangement with optimal mechanical connection
- Top mounted ball check valve for full down stroke air flow
- Upstroke cushion control valve located on the top of the cylinder head
- Integrated lubrication line for the piston rod bearing
- Elastomeric cushioning ring to dampen the piston impact at end of upstroke

2. Specification

Straight lift	10 mm
Swing angle	60° during 50 mm lift
Total lift	60 mm
Operating air pressure	2.1 bar
Operating air consumption	0.04 Nm ³ /min at 15 cycles
Lubrication	Mineral or synthetic oil Emhart Glass Specification "A"
Funnel Arms	Quick Change or Conventional
Funnels	According to Emhart Glass Mold Design Data

3. Availability

The 210-440 Funnel Mechanism is available for the following machine types and configurations:

Part No.	Machine Type	Configuration
210-440-1	F & EF 5 ½	SG & 5 ½" DG
	F & EF 6 ¼	SG & 6 ¼" DG
	AIS	6 ¼" DG & 4 ¼" TG

The new funnel mechanism supersedes the spring operated funnel mechanism 210-220 and the two-way air operated modified version thereof 210-391.

Most of the wear parts of these superseded mechanisms are common with the new mechanism.

4. Installation Requirements

The funnel mechanism is prepared for the operating air supply from the EPVB through the section frame or for an operating air supply from an external valve located on the overhead manifold.

4.1 Air Supply Through the Section Frame

This application is generally used together with the 26-lines EPVB. The installation requires the Centering Ring 210-131-3 which has the additional porting for the piston-up operating air. The dowel holes of this centering ring are in a different position - requiring realigning of the centering ring and redrilling of the dowel holes. Using the centering ring as a drilling template, a $\frac{3}{8}$ " pipe hole must be drilled and tapped in the section frame top plate for the piston-up operating air connection. The air supply lines need to be installed according to the valve block configuration.

4.2 Air Supply Through an External Valve

This application is generally used where there is no spare timing event available from the EPVB. The centering ring required can be any assembly group of 210-131.

For the connection of the overhead piping to the funnel mechanism the respective pipe plugs on the cylinder head must be removed. The pilot air for the valve is from the existing connecting port at the top plate. Refer to drawing 210-712 for the valve and piping arrangement.

5. Features and Benefits

5.1 Features

- Improved cam design and cam roller fixation
- Enlarged air passages
- Easily accessible ball check valve
- Optimised upstroke cushioning
- Improved motion control
- Precise mechanism movement

5. 2 Benefits

- Less mold equipment wear
- Faster operating speed
- Prolonged mechanism service life
- Greater maintenance convenience