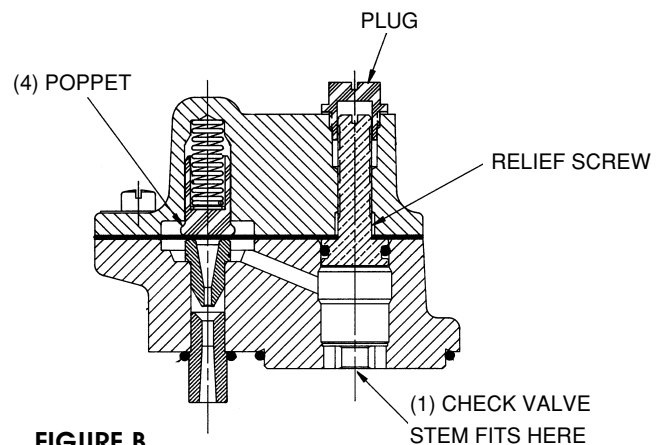


Bulletin: RJ-23-35  
Revision: B  
Product: Functional Element  
Reference: Features Update  
Date: July 1994

The Red Jacket Functional Element is a complex instrument which performs specific operations of the Red Jacket 4" "Extracta" petroleum pumps. These are the critical segments and operations:

1. Check Valve-The functional element guides the stem of the check valve which can be tightened down with an adjusting screw to assist in pressure testing the lines. When the adjusting screw is adjusted into the up position, a secondary seal is created (by way of a diaphragm) that backs up the o-ring seal on the adjusting screw. (See #1 in Figures A and B).
2. Pressure Relief-The functional element allows expansion relief and also relieves full pump pressure to approximately 8 to 18 psi (red or standard) or 11 to 13.5 psi (silver or orange precision functional element) every time the pump is shut off. Operation of the pressure relief system can always be verified by watching pressure fall to the relief pressure immediately after the pump is turned off. Many competitive pumps DO NOT have this feature. (See #2 in Figure A).
3. Vacuum Source-The functional element has a nozzle and venturi assembly inside it which provides a vacuum of 10 to 25 inches for creating syphon loops from tank to tank. (See #3 in Figure A).
4. Air Eliminator-The functional element provides a high point in the pump where air can be collected and discharged back to the tank. If product in the tank ever falls below the air eliminator tube, air WILL NOT enter the column pipe allowing air to be discharged to the dispenser when the pump is turned on. The poppet of the relief valve acts as a shut off valve to keep product in the column pipe from falling back into the tank. Many competitive pumps DO NOT have this design feature. (See #4 in Figure B).
5. Cap/Plug - Effective with date codes 4.0494, the cap that covers the vent closing screw is threaded plastic. The cap is yellow in color and will be provided on all functional element replacement and on final pump assemblies.

If you have questions regarding the operation of the functional element or Red Jacket petroleum equipment in general, please call our Technical Applications Department at **1-800-2-MARLEY**.



**FIGURE A**

**FIGURE B**