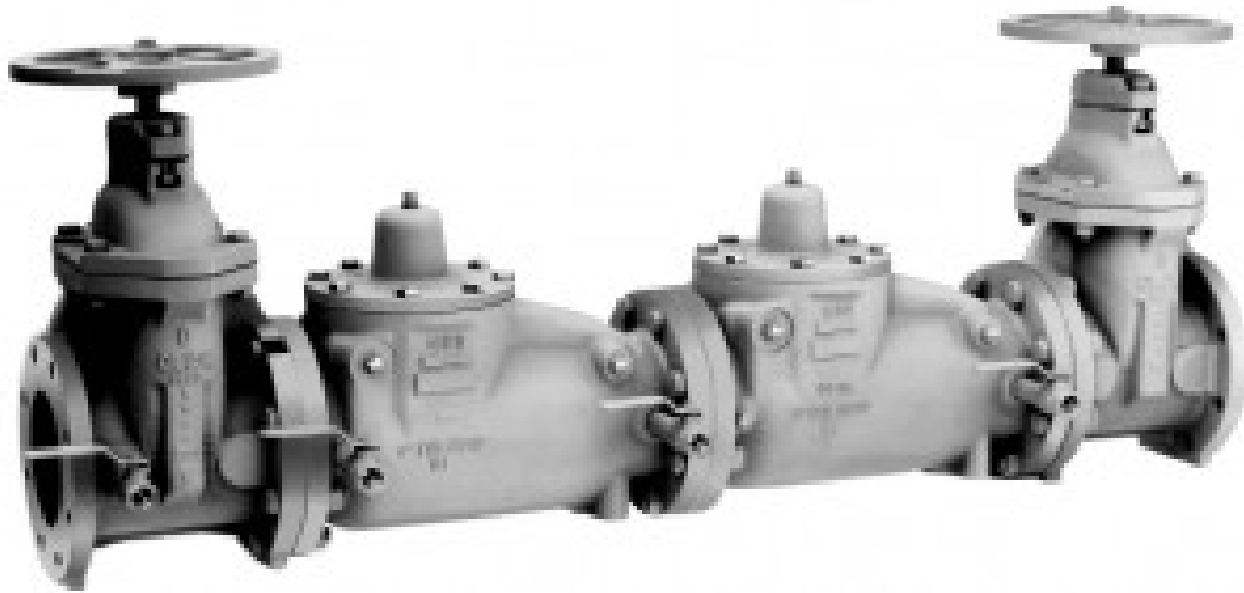


Model D-4

2" - 10"



American Backflow
Products Company



Product Overview

Model D-4 (1991-2005) Utilized the 3084 Toggle Lever Check Valves. (2" size was discontinued in 2003)

Replacement hardware parts were discontinued in 2005. Only repair kits with rubber parts are available.

Check Cover Removal

The check covers are secured by bolts and sealed by an o-ring.

2" through 6" sizes remove all but two cover bolts, leaving two bolts 180 degrees apart. Press down on the cover while removing the last two bolts to prevent the cover from being forcibly ejected by the spring.

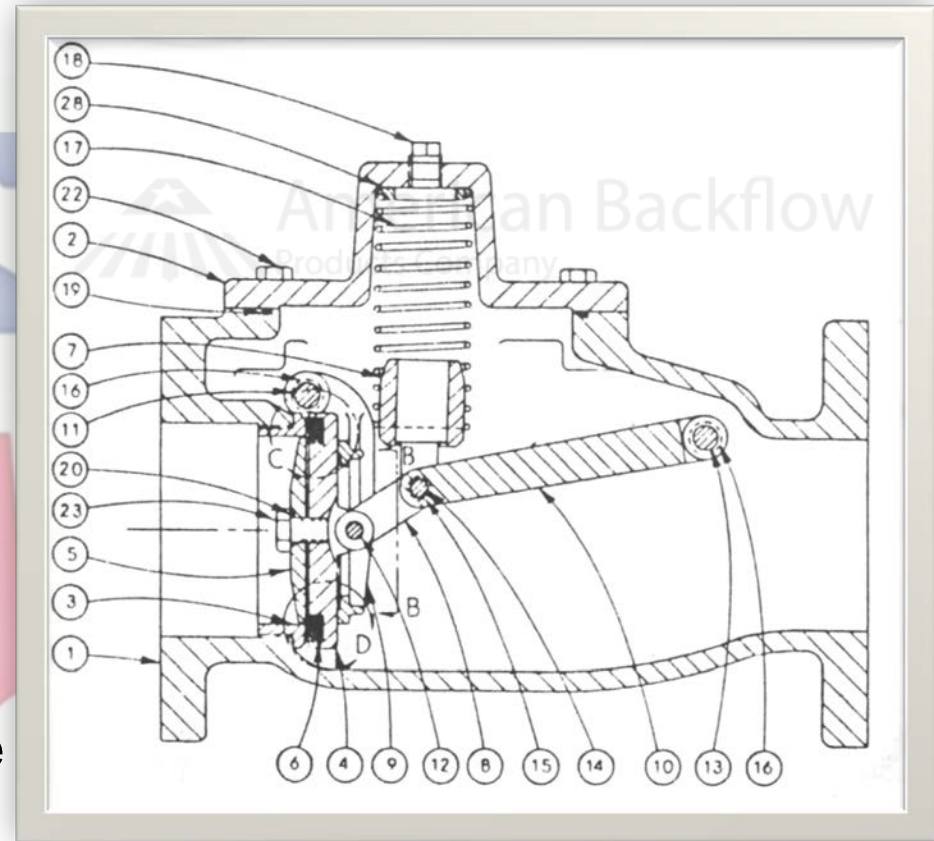
8" and 10" sizes, it is suggested that all-thread rod and nuts (jack screws) be used when removing or replacing the covers. The 8" size uses two 5/8"-11 all-thread approximately 8" long. The 10" size uses two 3/4" -10 approximately 8" long. Remove two cover bolts on opposite sides of the cover, and install all-thread rod. Install and tighten nuts down to cover. Remove remaining cover bolts. Simultaneously, back the jack screw nuts off until the spring tension is completely released. Remove the cover.

Check Valve Removal

Remove the two pipe plugs on each side of the valve body, to expose the lever arm pin (item 13) and the hinge pin (item 11).

Using a brass rod (smaller in diameter than the pins), gently tap out the rear lever arm (item 13) pin first.

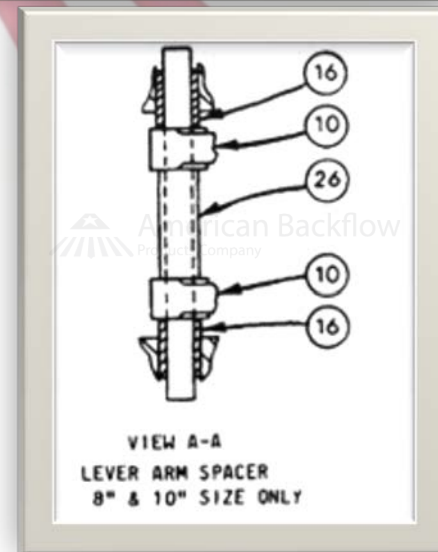
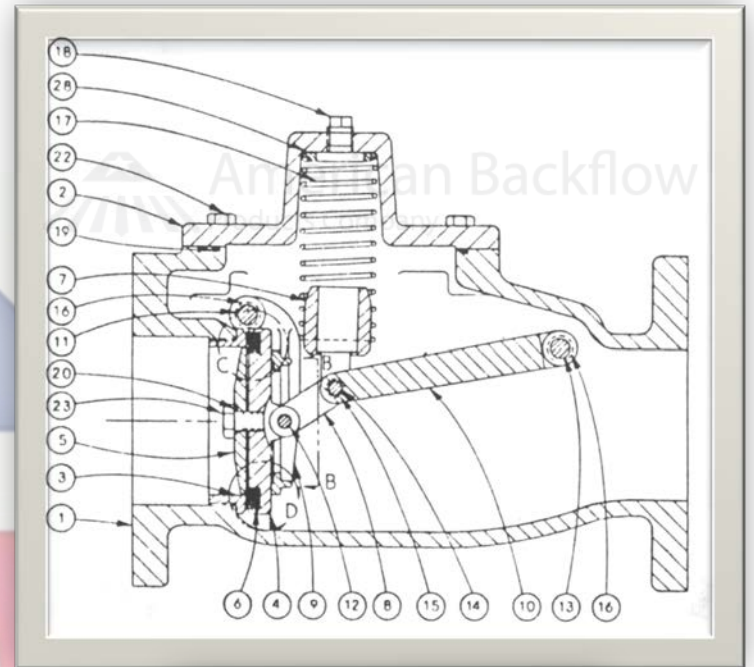
CAUTION: Support the lever arm (item 10) while completely removing the lever arm pin. Let the lever arm rest gently in the bottom of the check valve.



Check Valve Removal

Grasp the yoke (item 7) with one hand, while removing the front hinge pin (item 11). Lift out the toggle-lever clapper assembly, being careful that the brass seat is not dented.

NOTE: On 8" and 10" sizes, a lever arm spacer (item 26) is installed between the two lever arms to maintain proper distance between them, and prevent binding.



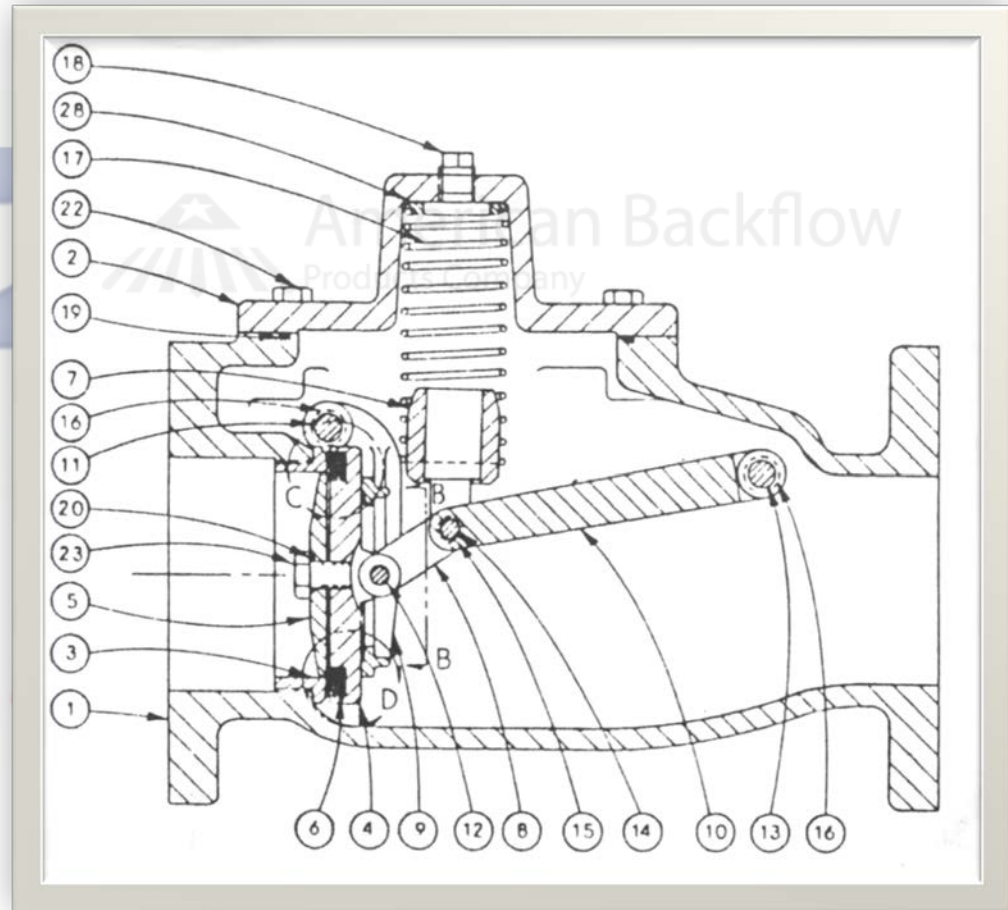
Check Valve Disassembly

2" through 8" sizes remove the retaining bolt (item 23) from the center of the disc guide.

10" sizes (only) remove sixteen retaining screws from the disc guide (item 5).

The check disc is free once the guide is separated from the disc retainer (item 4).

NOTE: An o-ring (item 20) is installed on the retaining bolts for sizes 2 1/2", 3", 4", 6", and 8".



Check Seat Service

Check seats are o-ring sealed and pressed into the body.

Replacement seats are no longer in production.

Very fine nicks on the seating edge can be restored by slowly working 400 wet or dry sandpaper back and forth on both sides (top and inner throat) of the seat.

Check Disc Replacement

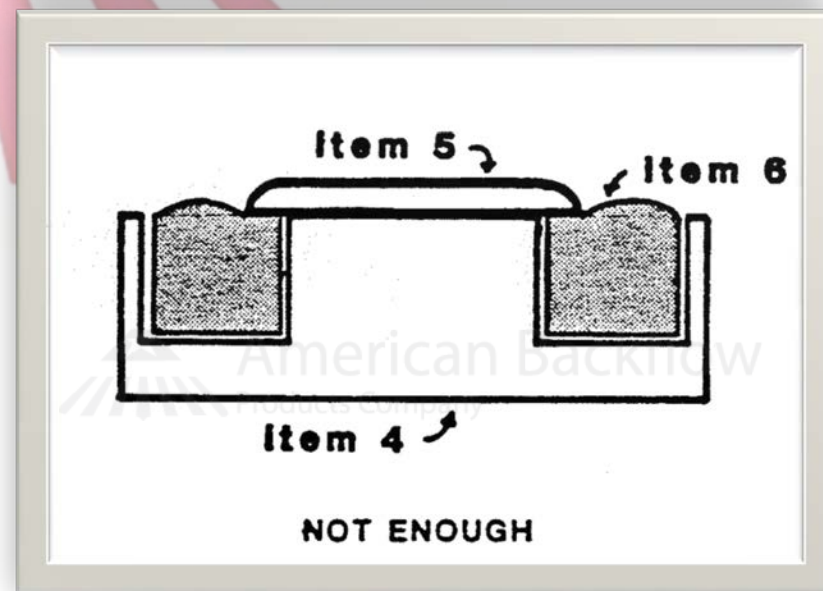
When installing a new check disc, fiber spacer washers between the retainer and guide MAY or MAY NOT be required.

Fiber spacer washers (item 33) are installed to ensure the proper “squeeze” on the disc (item 6).

Too many washers will not allow sufficient squeeze on the disc (not a water tight seal). This will cause the check valve to fail.

Too few washers between the guide and retainer can generate TOO MUCH squeeze on the disc, causing it to bulge around the guide. This will also cause the check to fail.

Proper squeeze on the disc is achieved when the disc cannot be rotated and no bulge appears.



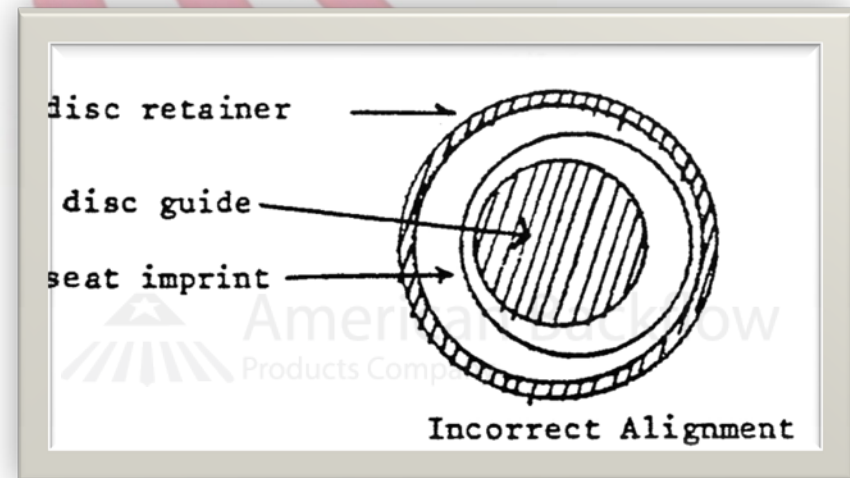
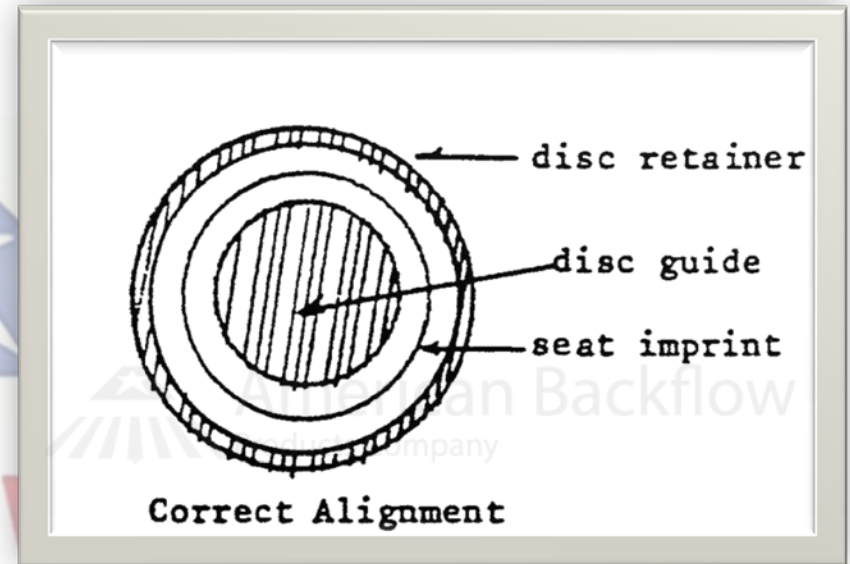
Check Valve Alignment

Re-install clapper assembly. Be careful not to damage check seat.

Support clapper assembly with one hand and install hinge pin.

With clapper assembly supported by hinge pin only, exert pressure to force disc against the seat, and leave an imprint of the seat in the disc.

Remove clapper assembly. Inspect disc to ascertain that alignment is correct.

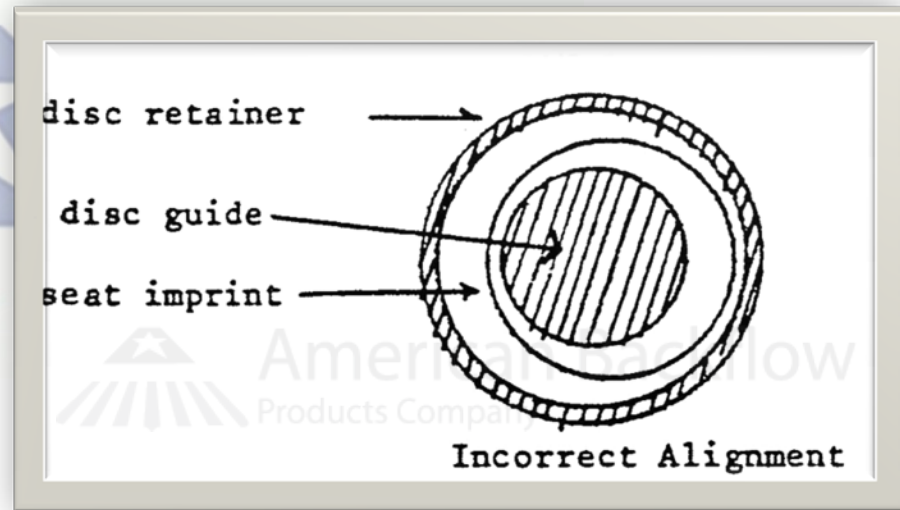


Check Valve Alignment

In the event the seat imprint indicates an incorrect alignment, adjust hinge pin bushing OUT, on the side that corresponds to the least distance between the seat imprint and disc guide.

In this figure, adjust hinge pin bushing on the RIGHT side outward.

Alignment is correct if the seat leaves an imprint on the disc equidistant on all sides of the disc guide.



Check Reassembly Notes

When the two pins that hold the toggle-lever (clapper) assembly are installed, be sure to note that the yoke (item 7) and the lever arm pivots upward freely.

