



Check Valve Kit Manual

#12024

Valve repair kit **12024** contains one each of the following:

11014 HP Poppet	11526 AS Inlet Poppet
11126 HP Poppet Spring	11015 HP Seat

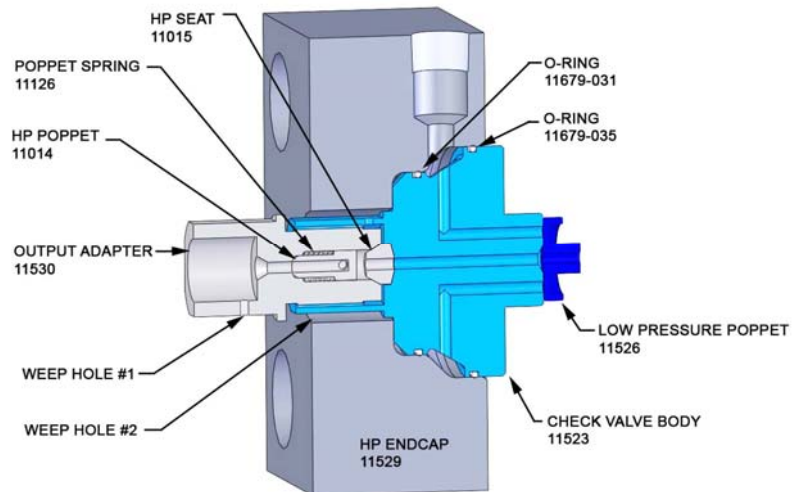
NOTE: Check valve repair may be necessary when the HP end cap area becomes hot to the touch or the intensifier strokes faster in one direction without seal leakage.

Kit installation procedure:

Check valve replacement and reconditioning is the second most common intensifier maintenance function. The low pressure check valve allows inlet water to enter the HP cylinder and the HP poppet lets the pressurized water from the HP cylinder exit the intensifier. Over time the faces of the poppet, seat, and check valve body may become worn.

The check valve repair process involves replacing the HP poppet, HP seat, poppet spring, and LP poppet, as well as lapping the face of the check valve body.

1. **Remove** the HP end cap from the HP cylinder.
2. **Unscrew** the output adapter from the check valve body and remove and discard the HP poppet, poppet spring and the HP seat.
3. **Inspect** the low pressure poppet face of the check valve body. A worn face indicates that it should be lapped as described in the **Check Valve Body Reconditioning** section below.



4. **Apply** HP lubricant to *both* sides of the HP seat and place the seat in the cavity of the check valve body.
5. **Install** the poppet spring and HP poppet into the output adapter and tighten the adapter into the check valve body.
6. **Replace** the o-rings on the outside of the check valve body.
7. **Verify** that the basket interior is free of grease.
8. **Replace** the LP poppet in the poppet basket located in the *static* end of the HP cylinder. Do **not** put any lubricant here. The lubricant may prevent the LP poppet from moving freely.
9. **Reassemble** the end of the intensifier.

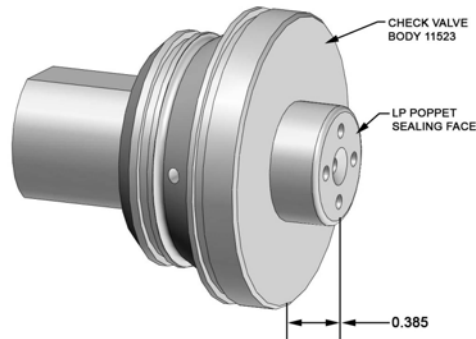
Check Valve Body Reconditioning

During use the **CV body face** becomes worn from the action of the LP poppet. It may be indented from repeated poppet impact or have erosion tracks. It is necessary to periodically inspect this surface and if necessary return it to a flat and near mirror finish. This procedure is for a moderately worn CV body face. Severe wear will require that the face be turned in a lathe or ground on a precision surface grinder prior to lapping.

If the sealing face has slight indentations only, use the lapping paper. Lapping is complete when the **CV body face** is flat and has a near mirror finish.

Deeper indentations will need to be lapped with the **SiC abrasive paper** first. Lapping is complete with the abrasive paper when the face has an even appearance and any indentations are removed.

NOTE: Repeated lapping may shorten the check valve body's sealing diameter length so that it is not usable. If the sealing diameter length is less than 0.385 in. it should be replaced.



This procedure is for a moderately worn CV body face. Severe wear requires turning on a lathe or ground on a precision surface grinder prior to lapping.

If the sealing face has slight indentations only, use the 1500 grit paper. Lapping is complete when the **CV body face** is flat and has a near mirror finish.

Deeper indentations will need to be lapped with the **600 grit SiC abrasive paper** first. Lapping is complete with the abrasive paper when the face has an even appearance and any indentations are removed.

The following items are required for the lapping procedure:

- Granite inspection plate at least 9 in. x 12 in.
- 8.5 in. x 11 in. sheets of 600 and 1500 grit SiC abrasive paper
- Lapping film

Lapping Procedure:

1. **Place** either the abrasive paper or lapping film on the granite plate and **secure** the film in place with masking tape around the edges.
2. **Hold** the check valve flat against the abrasive surface to prevent any rocking of the part. **Move** the check valve body back and forth on the film or paper. **Rotate** the valve **45** degrees after each movement until the face of the body is evenly finished. **Repeat this procedure for the Poppet face if needed.**



Reference 12814 AS- Series Intensifier Pumps Manual for additional instructions.