

IDENTIFICATION & INSTALLATION OF SPOOL SEAL

There are two types of seals for the control valve, a quad-ring seal and a lip seal. First identify the control valve (See Page 13, 14, 15 or 16) to find which seal is used. See the Parts Micro-Fiche for your model loader for the part number of the quad-ring seal or the lip seal used. Use the following procedure to install the seals into the control valve.

NO CHAMFER

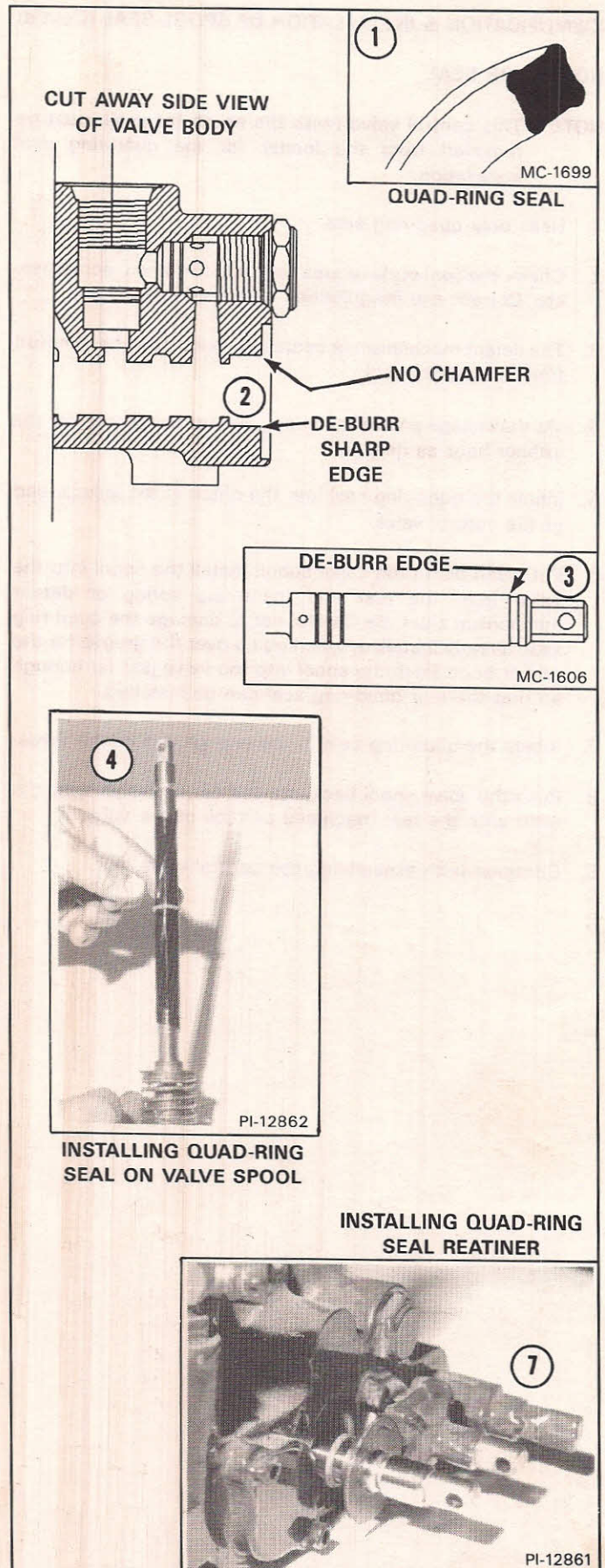
1. Uses only quad-ring seal.
2. Check the seal surface area for rust, corrosion, scratches, etc. Correct any irregularities before continuing. De-burr the sharp edge at the seal area (both ends).
3. At the linkage end of the spool, de-burr the groove for the rubber boot as needed.

NOTE: Lubricate with grease between the seal and retainer before installation (both ends).

4. Put clean oil on the valve spool. Install the quad-ring seal over the valve spool. Be Careful not to damage the quad-ring seal on the valve spool edges.

NOTE: An alternate method to protect the quad-ring seal by putting plastic material (Example: Discarded microfiche card) over the spool to protect the seal.

5. Install spool into the valve bore.
6. Slide the linkage end quad-ring seal over the rubber boot groove. Be Careful not to damage the seal.
7. Install the quad-ring seal retainer.
8. Continue with assembling the control valve.

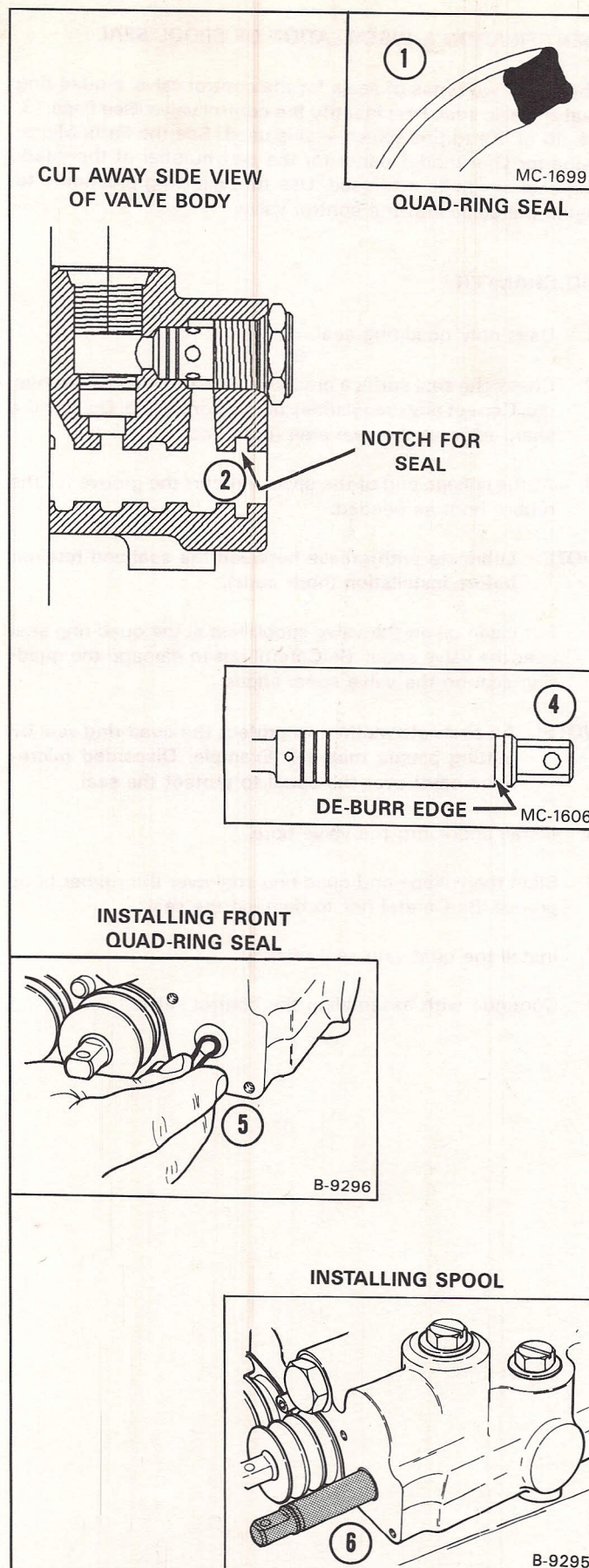


IDENTIFICATION & INSTALLATION OF SPOOL SEAL (Cont'd)

NOTCH FOR SEAL

NOTE: This control valve (with the notch for seal) must be removed from the loader for the quad-ring seal installation.

1. Uses only quad-ring seal.
2. Check the seal surface area for rust, corrosion, scratches, etc. Correct any irregularities before continuing.
3. The detent mechanism or centering spring must be removed from the valve spool.
4. At the linkage end of the spool, de-burr the groove for the rubber boot as needed.
5. Install the quad-ring seal into the notch in the linkage end of the control valve.
6. Put clean oil on the valve spool. Install the spool into the valve from the rear end (centering spring or detent mechanism side). Be Careful not to damage the quad-ring seal, already installed, when going over the groove for the rubber boot. Push the spool into the valve just far enough so that the rear quad-ring seal can be installed.
7. Install the quad-ring seal in the rear groove of the valve.
8. Push the valve spool back into the control valve until it is even with the rear machined surface of the valve.
9. Continue with assembling the control valve.



IDENTIFICATION & INSTALLATION OF SPOOL SEAL (Cont'd)

SHORT CHAMFER

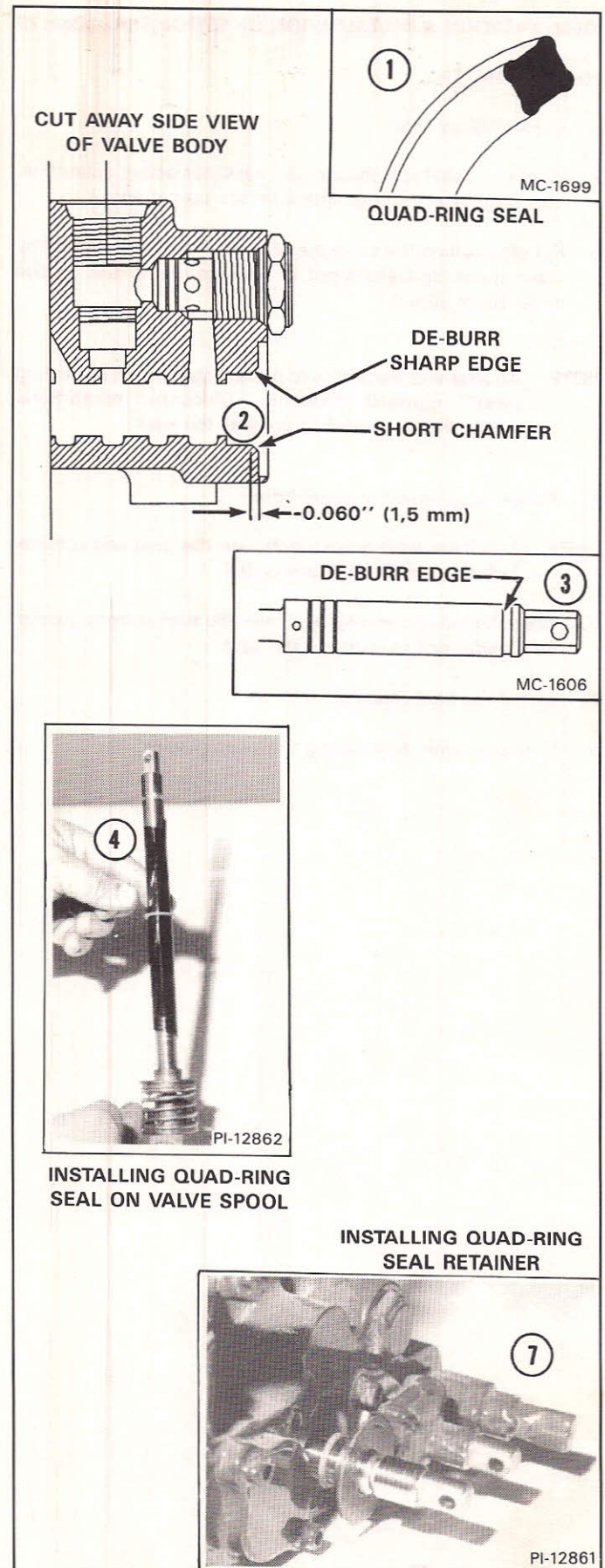
1. Uses only quad-ring seal.
2. Check the seal surface area for rust, corrosion, scratches, etc. Correct any irregularities before continuing. De-burr the sharp edge at the seal area (both ends).
3. At the linkage end of the spool, de-burr the groove for the rubber boot as needed.

NOTE: Lubricate with grease between the seal and retainer before installation (both ends).

4. Put clean oil on the valve spool. Install the quad-ring seal over the valve spool. Be Careful not to damage the quad-ring seal on the valve spool edges.

NOTE: An alternate method to protect the quad-ring seal by putting plastic material (Example: Discarded microfiche card) over the spool to protect the seal.

5. Install spool into the valve bore.
6. Slide the linkage end quad-ring seal over the rubber boot groove. Be Careful not to damage the seal.
7. Install the quad-ring seal retainer.
8. Continue with assembling the control valve.



IDENTIFICATION & INSTALLATION OF SPOOL SEAL (Cont'd)

LONG CHAMFER

1. Uses only lip seal.
2. Check the seal surface area for rust, corrosion, scratches, etc. Correct any irregularities before continuing.
3. Put clean oil on the valve spool. Install the lip seal over the valve spool, Be Careful not to damage the lip seal on the valve spool edges.

NOTE: An alternate method is to protect the lip seal by putting plastic material (Example: Discarded micro-fiche card) over the spool to protect the seal.

4. Install spool into the valve bore.

NOTE: Lubricate with grease between the seal and retainer before installation (both ends).

5. Slide the linkage end lip seal over the rubber boot groove. Be Careful not to damage the seal.
6. Install the seal retainer.
7. Continue with assembling the control valve.

