

## Mark XX Hydraulic Tool

### Overview

- The Mark XX Hydraulic Tool is designed to help place the larger D.S. Brown compression seals into the deck / bridge opening.
- Can be used for installing “AF” “AW”, “CS”, “CA”, “CV”, and “H” series seals.
- “AF”, “AW”, and the “CS” series type seals are designed more for pedestrian traffic.
- “CA”, “CV”, and “H” series type seals are designed for bridge decks, spillways, dams, stadium ramps, pedestrian overpasses, and parking decks.
- The Mark XX Hydraulic Tool can close down to as little as 1-1/2” and will open up to as wide as 6-1/2” from the inside of the compression blades to the inside of the opposite compression blade.
- D.S. Brown typically supplies the Mark XX Hydraulic Tool for seals that are 3” and up to 6”.

### Adjustments, Connections, Tools and Maintenance

- The Mark XX requires a minimum air pressure of 90 PSI to operate properly.
- The Mark XX has a Chicago fitting on it allowing for an easy connection to the air hose of a 175 – 185 PSI air compressor.
- If during installation of the compression seals the temperature falls below 40° F, care should be taken to prevent moisture from getting into the hydraulic system by using a water separator on the air hose/compressor. A moisture trap is provided on the pump unit as well. Both applications should be used in this circumstance.
- Prior to beginning installation, check the hydraulic fluid in the tank reservoir. Use an AW46 Standard Hydraulic Oil Fluid to refill if necessary.



*Mark XX Hydraulic Tool Unit*

- Hydraulic fluid should be visible in the site glass. **DO NOT** overfill the hydraulic fluid.
- The air line reservoir should have air tool oil in it. D.S. Brown recommends LO713-060 oil.
- All Mark XX Hydraulic Tools ship ready to install but it is recommended to check all fluid settings before the first use. Always check fluids after each use.
- Connect all hydraulic hoses to the pump and to the machine itself. All hoses have been sized so that the inlet and the outlets cannot be placed on the wrong connections.
- If any difficulty is experienced while placing the proper hydraulic line onto the proper connection, take a clean shop rag and wrap around the hydraulic hose end, place the end of the hydraulic hose onto a hard surface, and then push. This will release the hydraulic pressure in the line and allow for a proper connection.
- The valve on the pump itself should be opened with the air line connected to the Chicago fitting. The operator should then hear the system being pressurized.

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- The Mark XX is now ready to be operated. The left operation handle operates the ejection seal bar. The right handle operates the opening and closing of the compression blades.



- The air pressure on the regulator will be at around 90 PSI during normal operation. If necessary, the air pressure on the regulator can be adjusted to a higher setting with a recommended maximum of 110 PSI.

### Installation Guidelines/Checklist

- ☐ Lay out the seal to be installed near the joint opening and confirm that it is the proper seal, at the proper joint location.
- ☐ **Place 5 to 8 feet of lubricant-adhesive inside the joint area. Make sure to also apply lubricant adhesive to both the seal itself and the Mark XX compression blades. Note: Do not apply adhesive more than 8 feet in advance of the installation machine. Tacky adhesive will inhibit installation of the seal.**
- ☐ Place the seal to be installed over the joint opening.
- ☐ Adjust the depth bolts on the ejector bar to the proper depth that you want the seal to be set at. Note: D.S. Brown seals are to be set at a minimum depth of 1/4". This will allow for any upward movement of the seal to stay below the roadway surface when in a fully compressed state.

- ☐ Place the Mark XX over the seal with the compression blades in the wide-open position and the ejector bar in the full upward position.
- ☐ Compress the seal into a smaller state than the joint opening itself.
- ☐ Place the seal and the compression blades inside of the joint opening.
- ☐ Stand on the foot pedals of the ejector bar and eject the seal into the joint opening.
- ☐ Remove the compression blades out of the joint, before proceeding with further installation.
- ☐ **Note: DO NOT open the compression blades while the blades are still inside of the joint area.** This could damage or bend the compression blades on the Mark XX. This could also damage the sidewall on the inside of the joint area and result in an improper bond of seal to the sidewall itself.
- ☐ Work the seal inside of the joint area by placing 18" to 24" at a time. Repeat this process across the whole joint.
- ☐ **Note: If there is a buildup of lubricant-adhesive on the compression blades, this could hinder the seal or compression blades from going inside the joint area.** If this is experienced, use a strong solvent and thoroughly clean off the compression blades before resuming installation.
- ☐ At the conclusion of installation, release the air pressure to the hydraulic pump by disconnecting the air line from the pump itself.
- ☐ After releasing the air pressure in the pump, move both operating handles back and forth to relieve any buildup of pressure in the hoses before disconnecting them. Failing to do so could result in hydraulic fluid spraying on the operator as well as others in the surrounding work area.
- ☐ The shafts on the Mark XX should be greased on a daily basis.

*\* For joint widths greater than 2-1/2", it is recommended that the seal depth be set to a minimum of 1/2".*



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300 East Cherry Street • North Baltimore, OH 45872 | Telephone: 419.257.3561 • Fax: 419.257.2200 | [www.dsbrown.com](http://www.dsbrown.com)