

INSTALLATION GUIDELINES—READ BEFORE STARTING!

PILLOW PACKERS 18 to 48"



HammerHead® point repair resin's working time / pot life and cure time is greatly affected by temperature and mass. Store in a dry place between 50-86° F. The ambient cure resin is formulated for pot life and cure times published. Starting temperature of the resin will greatly affect the working and cure time on your project. Warmer resins will have less working/cure times and cooler resins will have more working/cure times. Once the contents of the resin bag are mixed they must be applied to the fiberglass mat and installed within the working time listed on the resin cure chart provided. This is a tested and proven system, only use HAMMERHEAD components. Always wear proper PPE (Personal Protective Equipment).

STEP 1: INSPECTION AND CLEANING

Visually inspect the pipe section to be repaired using a CCTV camera or other sufficient means to thoroughly view the pipe. Inspect the area to identify any conditions that may prevent proper installation of the repair. Consult a HammerHead representative if necessary. Prior to installation of the repair, clean the pipe by removal of all debris, solids, roots, other deposits and sharp edges that could puncture the packer during installation. Visually inspect the pipe again to be sure it is ready to be repaired.

STEP 2: MEASURING

Insert camera or tape measure into the pipe. Place your camera or tape measure at the center of the damaged area. Record this measurement with a piece of tape on your camera push rod or by tape measure.

STEP 3: PREPARE AIR HOSE AND INSPECT PACKER

Connect air source to the regulator. With air hose, connect the regulator to the pillow packer, use measurements from STEP 2 for marking the air hose at the spot that will indicate that the pillow packer will be centered at the location to be repaired. Inspect the pillow packer for tears and holes.

STEP 4: PERFORM TRIAL RUN

A trial run is only recommended for pillow packers if there are bends to be encountered. It is important to make sure that the pillow packer can pass through the bends. If a trial run is to be completed, secure the provided protective sleeve to the packer to protect the packer from damage during the trial run. Verify that the packer can reach the area to receive the repair. **DO NOT INFLATE!** Remove the packer from the pipe.

STEP 5: LAYOUT MATERIALS

- Layout work surface and secure to the ground or floor. This should only be performed on a flat surface.
- Layout all fiberglass pieces on top of the work surface.
- Layout all resin bags.
- Make sure that all materials are easily accessible.

STEP 6: PREPARE THE PACKER (FIGURE 1-2)

If applicable, replace the protective sleeve from the trial run with a new sleeve. **DO NOT REUSE THE PROTECTIVE SLEEVE.** Using the tape provided, secure the protective sleeve to the ends of the packer. Carefully poke a hole in the protective sleeve for the air coupling to connect the air hose.

STEP 7: RESIN MIX (FIGURE 3-4)

- Double glove by putting two gloves on each hand.
- Resin bag activation:
 - Using Pin Style – Remove pin by separating the inner and outer pin.
 - Using Heat Seal (without pin) – Roll up one end of the bag until the inner seal divider in the middle opens.
- Mix by massaging the resin inside the bag thoroughly until the resin has consistent color. Approximately one minute.

STEP 8a: WET OUT – 1 PC FIBERGLASS DESIGN (FIGURE 5-7)

- Wet out fiberglass matting with chop strand side facing up.
- Flip fiberglass sheets over to biaxial side and wet out as done on chop strand side.

STEP 8b: WET OUT – 2 PC FIBERGLASS DESIGN (FIGURE 5-7)

- Start with all fiberglass matting facing biaxial side up.
- Fold over each piece of fiberglass matting greater than ½ way. Wet out the exposed fiberglass chop strand facing up.
- Fold over each piece of fiberglass matting ½ way in the opposite direction. Wet out the newly exposed chop strand side.
- Unfold each piece of fiberglass matting. Each piece should be biaxial side up.
- Wet out the newly exposed axial side.
- Lay the smaller piece of fiberglass matting on top of the larger piece.
- Fold the larger piece of fiberglass over the smaller piece with a 1" overlap.

STEP 9: LOAD THE PACKER (FIGURE 8-10)

Place the packer on to the wet-out mat with the packer positioned 75% to one side of the mat. This will result in a 75% to 25% distribution of the mat. This is important so that gravity does not cause the fiberglass to fall away from the packer during inflation. With the fiberglass mat properly distributed, fold the fiberglass onto the packer and secure the fiberglass mat with the provided nylon ties.

- Fold the short side of the mat first.
- Fold the long side of the mat.
- Tuck excess matting into the underside of the pillow.
- Fold packer in half.
- Secure the fiberglass mat to the packer with the provided nylon ties.
- Warning: lifting hazard. Improper lifting can cause muscle strain or back injury. Use proper lifting techniques and team lift when handling the mat and the packer.

STEP 10: LOADING PACKER INTO PIPE

- Pull or lift packer into the predetermined location.
- All personnel must exit the pipe.
- Warning: lifting hazard. Improper lifting can cause muscle strain or back injury. Use proper lifting techniques and team lift when handling the mat and the packer.

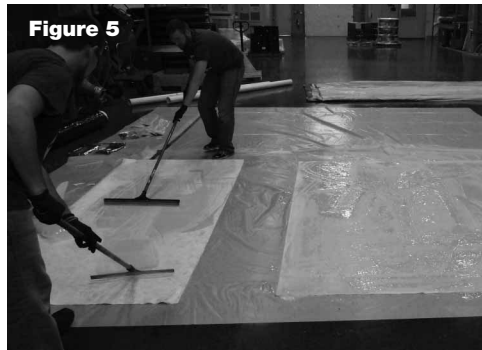
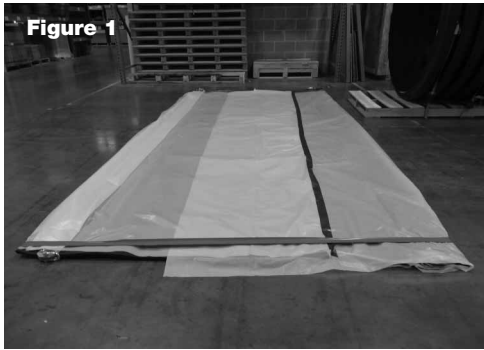
STEP 11: INFLATION OF THE PACKER

Using the air regulator, inflate the packer. When using a pillow packer, proper training is important in identifying how much pressure to use. Increased pressure may be required when offsets or bends are encountered. Visual inspection by camera or other means is important to verify that there is no annular space left after inflation. The nylon cable will release allowing the wetted mat to be pressed against the inner surface of the pipe at the point of the repair. Caution: Care must be taken during packer inflation, especially when the damage to the pipe is severe. Contact your HammerHead representative to answer installation questions.

STEP 12: REMOVE THE PACKER

Leave the packer in place under maintained pressure allowing the Point Repair to cure for the predetermined time frame (utilize the resin cure chart or consult with your HammerHead representative). Deflate the packer and remove. Inspect the point of the repair with the CCTV camera. Warning: lifting hazard. Improper lifting can cause muscle strain or back injury. Use proper lifting techniques and team lift when handling the mat and the packer.

VISUAL INSTRUCTIONS



STEP BY STEP CHECKLIST



- Inspect and clean host pipe
- Determine diameter and length of patch needed
- Measure distance to repair area
- Prepare air hose
- Inspect packer
- Perform a trial run
- Layout materials and setup work area
- Prepare packer
- Thoroughly mix resin Time: _____
- Wet out fiberglass matting
- Load the packer
- Push or pull the packer into position
- Inflate the packer Time: _____ PSI: _____
- Deflate and remove the packer Time: _____

POINT REPAIR SYSTEMS BY HAMMERHEAD® TRENCHLESS REORDER INFORMATION

Description	Part #
3.00 x 24.00", Point Repair, Summer	PR-S3
3.00 x 24.00", Point Repair, Winter	PR-W3
3.00 x 24.00", Point Repair, Winter Express	PR-F3
4.00 x 24.00", Point Repair, Summer	PR-S4
4.00 x 24.00", Point Repair, Winter	PR-W4
4.00 x 24.00", Point Repair, Winter Express	PR-F4
6.00 x 24.00", Point Repair, Summer	PR-S6
6.00 x 24.00", Point Repair, Winter	PR-W6
6.00 x 24.00", Point Repair, Winter Express	PR-F6
8.00 x 24.00", Point Repair, Summer	PR-S8
8.00 x 24.00", Point Repair, Winter	PR-W8
8.00 x 24.00", Point Repair, Winter Express	PR-F8
10.00 x 24.00", Point Repair, Summer	PR-S10
10.00 x 24.00", Point Repair, Winter	PR-W10
10.00 x 24.00", Point Repair, Winter Express	PR-F10
12.00 x 24.00", Point Repair, Summer	PR-S12
12.00 x 24.00", Point Repair, Winter	PR-W12
12.00 x 24.00", Point Repair, Winter Express	PR-F12
15.00 x 24.00", Point Repair, Summer	PR-S15
15.00 x 24.00", Point Repair, Winter	PR-W15
15.00 x 24.00", Point Repair, Winter Express	PR-F15
18.00 x 24.00", Point Repair, Summer	PR-S18
18.00 x 24.00", Point Repair, Winter	PR-W18
18.00 x 24.00", Point Repair, Winter Express	PR-F18
24.00 x 24.00", Point Repair, Summer	PR-S24
24.00 x 24.00", Point Repair, Winter	PR-W24
24.00 x 24.00", Point Repair, Winter Express	PR-F24
3.00 x 48.00", Point Repair, Summer	PR-S3X48
3.00 x 48.00", Point Repair, Winter	PR-W3X48
3.00 x 48.00", Point Repair, Winter Express	PR-F3X48
4.00 x 48.00", Point Repair, Summer	PR-S4X48
4.00 x 48.00", Point Repair, Winter	PR-W4X48
4.00 x 48.00", Point Repair, Winter Express	PR-F4X48
6.00 x 48.00", Point Repair, Summer	PR-S6X48
6.00 x 48.00", Point Repair, Winter	PR-W6X48
6.00 x 48.00", Point Repair, Winter Express	PR-F6X48
8.00 x 48.00", Point Repair, Summer	PR-S8X48
8.00 x 48.00", Point Repair, Winter	PR-W8X48
8.00 x 48.00", Point Repair, Winter Express	PR-F8X48
10.00 x 48.00", Point Repair, Summer	PR-S10X48
10.00 x 48.00", Point Repair, Winter	PR-W10X48
10.00 x 48.00", Point Repair, Winter Express	PR-F10X48
12.00 x 48.00", Point Repair, Summer	PR-S12X48
12.00 x 48.00", Point Repair, Winter	PR-W12X48
12.00 x 48.00", Point Repair, Winter Express	PR-F12X48
15.00 x 48.00", Point Repair, Summer	PR-S15X48
15.00 x 48.00", Point Repair, Winter	PR-W15X48
15.00 x 48.00", Point Repair, Winter Express	PR-F15X48
18.00 x 48.00", Point Repair, Summer	PR-S18X48
18.00 x 48.00", Point Repair, Winter	PR-W18X48
18.00 x 48.00", Point Repair, Winter Express	PR-F18X48
24.00 x 48.00", Point Repair, Summer	PR-S24X48
24.00 x 48.00", Point Repair, Winter	PR-W24X48
24.00 x 48.00", Point Repair, Winter Express	PR-F24X48

Description	Part #
30.00 x 48.00", Point Repair, Summer	PR-S30X48
36.00 x 48.00", Point Repair, Summer	PR-S36X48
42.00 x 48.00", Point Repair, Summer	PR-S42x48
48.00 x 48.00", Point Repair, Summer	PR-S48x48

ELBOW POINT REPAIR, (3.00–8.00" x 24.00")

3.00 x 24.00", Elbow Point Repair, Summer	PR-ELS3
3.00 x 24.00", Elbow Point Repair, Winter	PR-ELW3
3.00 x 24.00", Elbow Point Repair, Winter Express	PR-ELF3
4.00 x 24.00", Elbow Point Repair, Summer	PR-ELS4
4.00 x 24.00", Elbow Point Repair, Winter	PR-ELW4
4.00 x 24.00", Elbow Point Repair, Winter Express	PR-ELF4
6.00 x 24.00", Elbow Point Repair, Summer	PR-ELS6
6.00 x 24.00", Elbow Point Repair, Winter	PR-ELW6
6.00 x 24.00", Elbow Point Repair, Winter Express	PR-ELF6
8.00 x 24.00", Elbow Point Repair, Summer	PR-ELS8
8.00 x 24.00", Elbow Point Repair, Winter	PR-ELW8
8.00 x 24.00", Elbow Point Repair, Winter Express	PR-ELF8

HANDLING AND CURE TIMES

IMPORTANT!

Pot life and cure time are greatly affected by temperature. Warmer temperatures result in less pot life and less cure time. Colder temperatures provide more pot life and require longer cure time. Always read, understand and comply with hazard warnings described in Safety Data Sheet(s) before use.

SUMMER RESIN

Ambient Temperature	Pot Life * (Minutes)	Cure** (Minutes)
50° F (10° C)	35–50	280
68° F (20° C)	25–38	130
86° F (30° C)	20–25	118

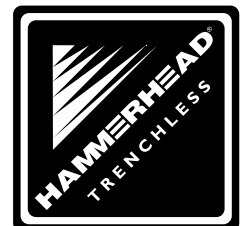
WINTER RESIN

50° F (10° C)	22–25	120
68° F (20° C)	12–15	90
86° F (30° C)	5–8	50

WINTER EXPRESS RESIN

50° F (10° C)	15	50
59° F (15° C)	10	40
68° F (20° C)	5	35
86° F (30° C)	NOT RECOMMENDED	

*Pot life: Approximate time available after resin has been mixed to complete installation before resin starts to set. **Cure time: Time for resin to cure after resin has been mixed.



REORDER YOUR SUPPLIES ONLINE AT
WWW.HAMMERHEADSHOP.COM

800.331.6653 (USA only) | international: +1 920.648.4848 | web: www.hammerheadtrenchless.com | email: info@hammerheadmole.com

Charles Machine Works reserves the right to make changes in engineering, design and specifications; add improvements; or discontinue manufacture at any time without notice or obligation. HAMMER-HEAD and HAMMERHEAD LOGO are registered trademarks of Charles Machine Works, Perry, OK. ©2020 Charles Machine Works. All Rights Reserved. PN: IS1127

A Charles Machine Works Company