



ATS SAF-T-PACKER®

The Solution to Safe and Effective Packing Injection INSTRUCTIONS for TYPES "GA", "GB" and "GC"

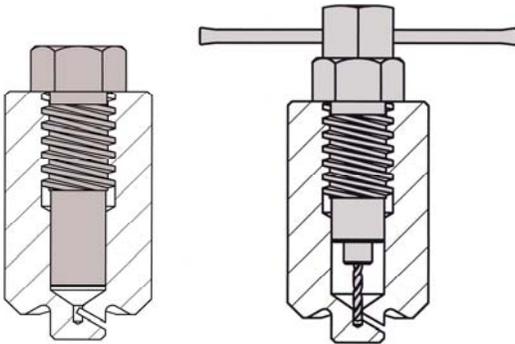
GENERAL

The ATS SAF-T-PACKER is a safety device to be used under full line pressure to loosen or remove impacted packing at the discharge tip of packing cylinders on ATS Thermal Pak TP2 Slip Type Expansion Joints and Series P2 Ball Joints equipped with Type "B" or Type "C" packing cylinders which are provided with a safety valve to prevent blowback. The design of packing cylinders with safety valves results in a long column of impacted packing that remains in the cylinder above the discharge tip. This column of packing adds to the effectiveness of the discharge tip, however, it also increases the amount of torque required to inject packing. The use of the SAF-T-PACKER will substantially reduce the torque required to inject packing and will prevent shear failure of the plunger head, plunger threads, and/or discharge tip of the packing cylinder.

SAFETY PRECAUTION: The injection of packing into a fully pressurized expansion or ball joint is a safe operation when it is accomplished using the procedures and instructions listed in this publication. Personnel doing the packing injection should read and fully understand these instructions before starting the packing injection process. ATS offers training seminars for maintenance personnel when requested.

CAUTION: Please note Type "A" Packing Cylinders are not furnished with an integral safety valve and therefore, ATS does not recommend the use of a SAF-T-PACKER with a Type "A" Packing Cylinder when the system is pressurized. If it is not practical to depressurize the system the following procedure **must** be used.

TYPE "A" CYLINDERS / GA SAF-T-PACKER



LEFT: TYPE "A" PACKING CYLINDER WITH MATING PLUNGER. (No Safety Valve)

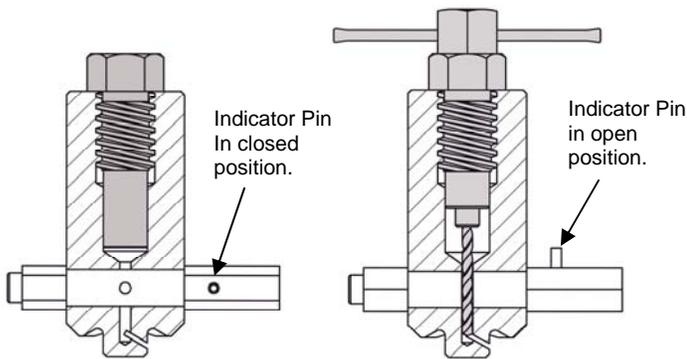
RIGHT: MODEL GA SAF-T-PACKER FULLY ENGAGED IN TYPE "A" PACKING CYLINDER.

1. The Model "GA" SAF-T-PACKER with a #33 drill bit is used with the Type "A" Packing Cylinder (Packing Cylinders without a safety valve); however extreme caution must be used.
2. Ensure the drill bit located at the end of the SAF-T-PACKER is in the fully retracted position.
3. Remove the packing plunger from the packing cylinder and install the Model "GA" SAF-T-PACKER.
4. Fully engage the acme threads of the SAF-T-PACKER housing with the packing cylinder.
5. Rotate the handle of the SAF-T-PACKER clockwise until the handle or bit holder bottoms in the packing cylinder. **DO NOT** use excessive force to bottom the bit.
6. Once the bit has been fully engaged, retract it by turning the handle counterclockwise until the drill bit is fully retracted. For safety reasons the SAF-T-PACKER has been designed to prevent complete disengagement of the bit.
7. **CAUTION:** Once the tip of the packing cylinder is cleaned out there is a possibility that internal pressure may cause the packing material and/or flowing fluid to blow-back out of the packing cylinder as the SAF-T-PACKER is removed. Thus when using the SAF-T-PACKER in a packing cylinder without a safety valve always use extreme caution when disengaging the SAF-T-PACKER from the cylinder. If there is any sign of blow-back as the tool is removed, immediately fully re-engage the SAF-T-PACKER and try to add packing to an adjacent packing cylinder. In most cases the addition of packing to a packing cylinder on one or both sides of the problem packing cylinder will permit the SAF-T-PACKER to be removed.
8. If blow-back is still apparent, it may be necessary to depressurize the system to inject additional packing.
9. Remove the SAF-T-PACKER from the packing cylinder. Ensure the bit is fully retracted into its housing to avoid damage to the bit during handling and storage.
10. To replace a damaged drill bit use a 1/16 inch Hex Allen Key to loosen the set screw holding the bit in place. Replace with a new #33 drill bit. (1-1/2 inch long for Model GA)

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TYPE "B" CYLINDER / GB SAF-T-PACKER

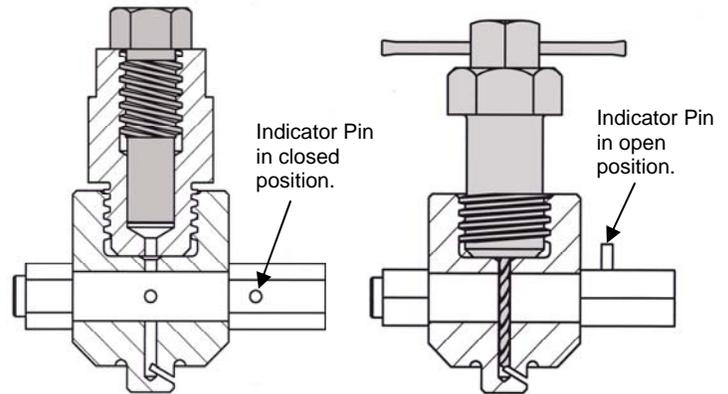


LEFT: TYPE "B" PACKING CYLINDER WITH SAFETY-VALVE AND MATING PLUNGER.

RIGHT: MODEL GB SAF-T-PACKER FULLY ENGAGED IN TYPE "B" PACKING CYLINDER.

1. Rotate the safety valve to its closed position. The pin located in the valve stem indicates the valve position, the valve is closed when the pin is horizontal and open when the pin is vertical. Lubrication of the safety valve with DRY-SLIDE lubricant or other suitable lubricants will facilitate rotation. DRY-SLIDE lubricant for temperatures up to 750° is available from ATS.
2. Ensure the 11/64-inch diameter drill bit located at the end of the SAF-T-PACKER is in the fully retracted position.
3. Remove the packing plunger from the packing cylinder and install Model "GB" SAF-T-PACKER.
4. Fully engage the acme threads of the SAF-T-PACKER housing with the packing cylinder, then rotate the shutoff valve to its open position (pin located vertical).
5. Rotate the handle of the SAF-T-PACKER clockwise until the handle or bit holder bottoms in the packing cylinder. **DO NOT** use excessive force to bottom the bit.
6. Once the bit has been fully engaged, retract it by turning the handle counterclockwise until it is above the safety valve, then rotate the valve to its closed position (pin located horizontal). For safety reasons the SAF-T-PACKER has been designed to prevent complete disengagement of the bit.
7. Remove the SAF-T-PACKER from the packing cylinder. Ensure the bit is fully retracted into its housing to avoid damage to the bit during handling and storage.
8. To replace a damaged drill bit use a 1/16 inch Hex Allen Key to loosen the set screw holding the bit in place. Replace with a new 11/64-inch diameter drill bit. (2-1/2 inch long for Model GB)
9. Always return the indicator pin to the closed position.

TYPE "C" CYLINDER / GC SAFE-T-PACKER



LEFT: TYPE "C" UNIVERSAL PACKING CYLINDER ASSEMBLY WITH SAFETY VALVE, MANUAL PACKING INJECTOR AND MATING PLUNGER.

RIGHT: MODEL GC SAF-T-PACKER FULLY ENGAGED IN TYPE "C" PACKING CYLINDER.

1. Rotate the safety valve to its closed position. The pin located in the valve stem indicates the valve position, the valve is closed when the pin is horizontal and open when the pin is vertical. Lubrication of the safety valve with DRY-SLIDE lubricant or other suitable lubricants will facilitate rotation. DRY-SLIDE lubricant for temperatures up to 750° is available from ATS.
2. Ensure the 11/64-inch diameter drill bit located at the end of the SAF-T-PACKER is in the fully retracted position.
3. Remove the manual packing injector or hex cap (not shown) from the universal packing cylinder and install Model "GC" SAF-T-PACKER.
4. Fully engage the acme threads of the SAF-T-PACKER housing with the packing cylinder, then rotate the shutoff valve to its open position (pin located vertical).
5. Rotate the handle of the SAF-T-PACKER clockwise until the handle or bit holder bottoms in the packing cylinder. **DO NOT** use excessive force to bottom the bit.
6. Once the bit has been fully engaged, retract it by turning the handle counterclockwise until it is above the safety valve, then rotate the valve to its closed position (pin located horizontal). For safety reasons the SAF-T-PACKER has been designed to prevent complete disengagement of the bit.
7. Remove the SAF-T-PACKER from the packing cylinder. Ensure the bit is fully retracted into its housing to avoid damage to the bit during handling and storage.
8. To replace a damaged drill bit use a 1/16 inch Hex Allen Key to loosen the set screw holding the bit in place. Replace with a new 11/64-inch diameter drill bit. (2 inch long for Model GC.)
9. Always return the indicator pin to the closed position.