



ELKHART BRASS

OPERATING & MAINTENANCE INSTRUCTIONS

8297 STINGER® Portable Monitor

The Elkhart Model 8297 is one of the most versatile and innovative master stream appliances ever offered to the fire service. Its compact design, light weight and unique quick-release horizontal swivel joint allows faster and more efficient master stream deployment, whether as a deck gun or as a portable deluge set.

The 8298 top mount adapter and the 8299 deck mount fixture are optional for utilizing the 8297 as a deck gun. The 8298 is designed for pre-piping directly from the pump. The 8299 is designed to be fed with one or two pony lengths of 2.5" or 3.0" hose from the apparatus' discharge outlets.

There are six optional portable bases available: two 2.5" clappered female swivel inlets; one 3.5" swivel inlet; one 4.0" swivel inlet; one 4.5" swivel inlet; one 4.0" Storz inlet; and one 5.0" Storz inlet. The portable base support legs can be folded for compact storage in an apparatus compartment or for carrying preconnected to a supply hose line.

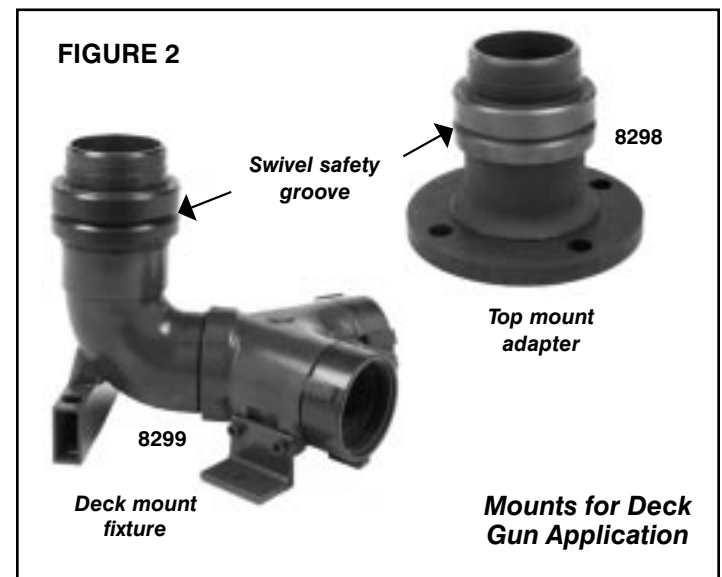
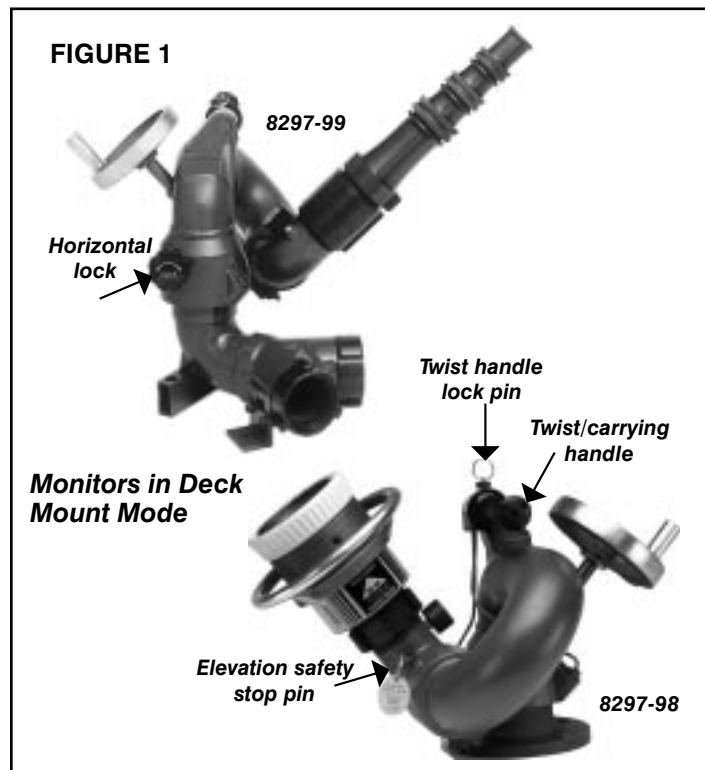
The Model 8297 is rated for flows up to 1250 gallons per minute in the deck mount mode, up to 1000 gallons per minute with a single inlet portable base, and 800 gallons per minute with the two inlet portable base. Maximum recommended inlet pressure for any mode of operation is 200 psi.

IMPORTANT: Safety critical operating features are keyed by bold red print.

A. OPERATION IN THE DECK GUN MODE

The monitor is shown attached to the top mount adapter in Figure 1. The number 8298 deck mount adapter (Figure 2) should be bolted to a three-inch riser pipe with a 3" - 150 # ANSI companion flange. **The riser pipe must have sufficient lateral support bracing to withstand a nozzle reaction force up to 800 pounds.** The monitor is also

inlet end of the monitor over the 8298 or 8299 and push down on the monitor carrying handle bracket. The latch pins will first pass over the swivel safety groove and then snap into position at the underside of the swivel. **Prior to flowing water through the monitor, always check to be sure latch pins are fully engaged.** This can be done by pulling up firmly on the monitor carrying handle and nozzle (see Figure 3). When water pressure is applied to the unit, the monitor will lift up slightly (about 3/16") to allow the latch pins to contact the base swivel. This vertical movement is inherent and necessary to the quick-release joint design.

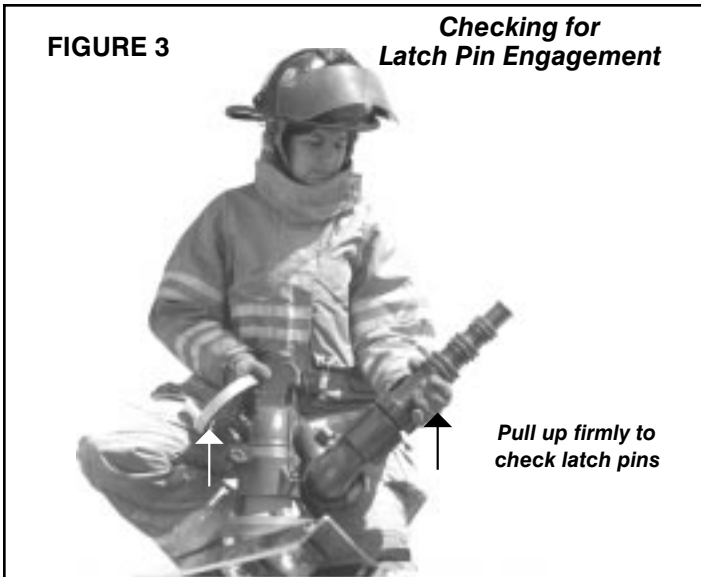


shown attached to the deck mount fixture in Figure 1. **The structure to which the 8299 deck mount fixture (Figure 2) is attached must be able to withstand a nozzle reaction force up to 800 pounds.**

To install the monitor on the 8298 or 8299, simply position the

The monitor handwheel drives a fully enclosed worm gear which controls the stream elevation. Clockwise rotation of the wheel will lower the stream, and counterclockwise rotation will raise the stream. A safety stop pin (Figure 8) prevents the stream from being lowered below 35° in the portable mode. The safety stop may be overridden in the deck mount application by pulling out the stop pin and then turning the handwheel to position the stream to the desired elevation.

Large flow master streams are extremely powerful; therefore, great care must be taken in directing such streams to avoid injury

FIGURE 3**Checking for Latch Pin Engagement**

Pull up firmly to check latch pins

to personnel and unwanted damage to property. The arch shaped trajectory of a fire stream makes it difficult for the operator to direct the stream to the intended target. For this reason, it is recommended that a firefighter be positioned at least eight to ten feet to the side of the monitor to give directions for accurate positioning of the stream. This recommendation would apply to either deck or portable operation.

The stream can be positioned horizontally by simply pushing or pulling on the “return bend” portion of the monitor body adjacent to the handwheel. The horizontal stream position can be held by tightening the horizontal lock knob (Figure 1). The worm gearing used to control vertical stream position will automatically hold the stream at the chosen elevation.

It is anticipated that the majority of 8297 users will store the monitor on the top mount adapter, or the deck mount fixture, ready for immediate use. When stored in this manner, the monitor horizontal lock should be kept tightened to prevent unit from spinning on the lower swivel joint while the apparatus is in motion. It is also recommended that only the highly efficient Elkhart Model 282A short stream shaper be used with this monitor. The use of old fashioned long stream shapers with heavy nozzles may diminish worm gear life.

When the 8297 monitor is installed on fire apparatus used in cold climates, a drain valve should be provided in the riser pipe which sup-

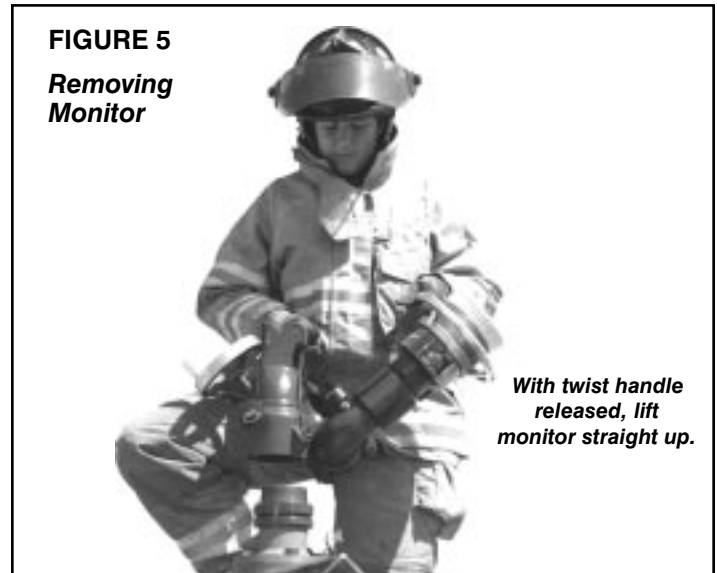
plies the monitor. **The riser should be drained immediately after each use during cold weather to prevent freezing and possible damage to the monitor and piping. The discharge portion of the monitor must be drained by simply lowering the discharge elbow below horizontal and allowing the water to drain through the nozzle.**

B. CONVERSION FROM DECK MOUNT TO PORTABLE BASE

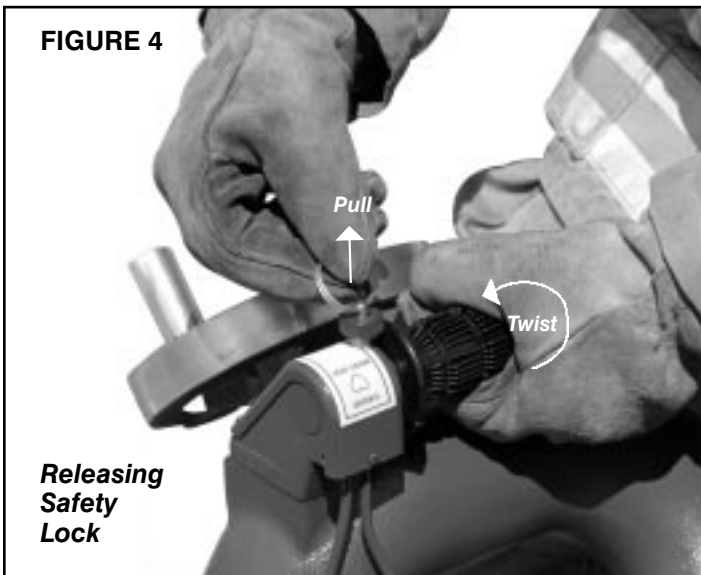
To convert from deck pipe mode to operation with the portable base, the monitor may be removed from the 8298 or 8299 adapter by following these steps:

1. Fully release horizontal lock.
2. Pull up twist handle lock pin.
3. While pulling up on lock pin, rotate handle to release position with twisting action as shown in Figure 4.
4. While holding twist handle in release position, use other hand to support nozzle and lift monitor off the base adapter (Figure 5).
5. The twist handle can now be released to return to its normal position.

The monitor and nozzle are now ready for installation on the portable base.

FIGURE 5**Removing Monitor**

With twist handle released, lift monitor straight up.

FIGURE 4

Releasing Safety Lock

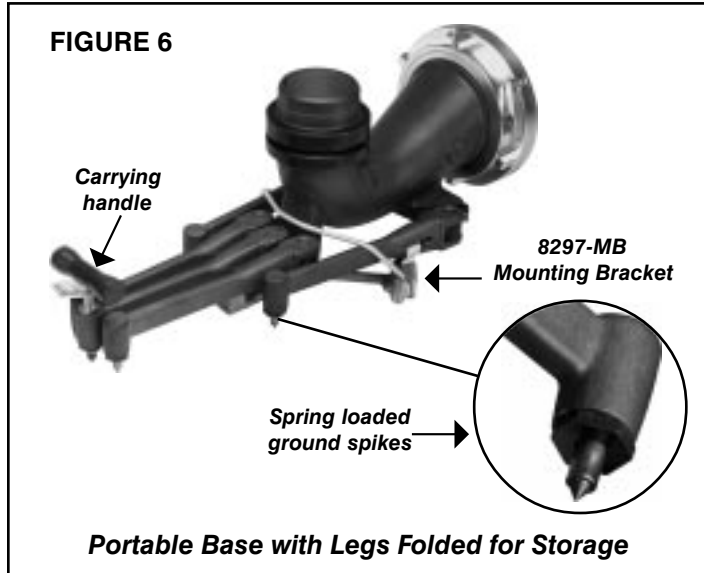
C. OPERATION IN THE PORTABLE MODE (GROUND MONITOR)

The portable base is prepared for use by simply rotating each of the four folding legs into its locked position, starting with the two rearmost legs (see Figures 6 & 7). **It is very important that the legs be in the locked position prior to initiating water flow.** The 8297 is designed to have the supply hose lines attached with the manifold inlets to the rear of the monitor discharge. **To minimize the possibility of the charged hose lines moving the monitor, supply hose should be kept straight in line with their respective inlet port for a distance of at least ten feet.** When possible, the front leg of the portable monitor should be aimed at the middle of the potential fire target, and **horizontal rotation of the monitor should be limited to 45° either side of straight ahead.**

When the monitor is operated in the portable mode, the unit must be anchored with the safety chain provided. The chain should be attached to the monitor at the carrying handle on the front support leg (Figure 8) and hooked around a substantial stationary object lo-

cated in front of the monitor, such as a stake, parking meter, fence post, etc.

To install the monitor on the portable base, first make sure horizontal lock is fully released, then simply align monitor inlet over the portable base discharge swivel and push down on the twist handle bracket. There is no need to release the latch pins with the twist handle prior to pushing the monitor over the base swivel. The monitor will bottom against the portable base after the latch pins have snapped into



the latched position. **Before flowing water make sure latch pins are fully engaged.** Check pin engagements by placing one hand under nozzle assembly and the other hand on the twist grip; then pull up firmly.

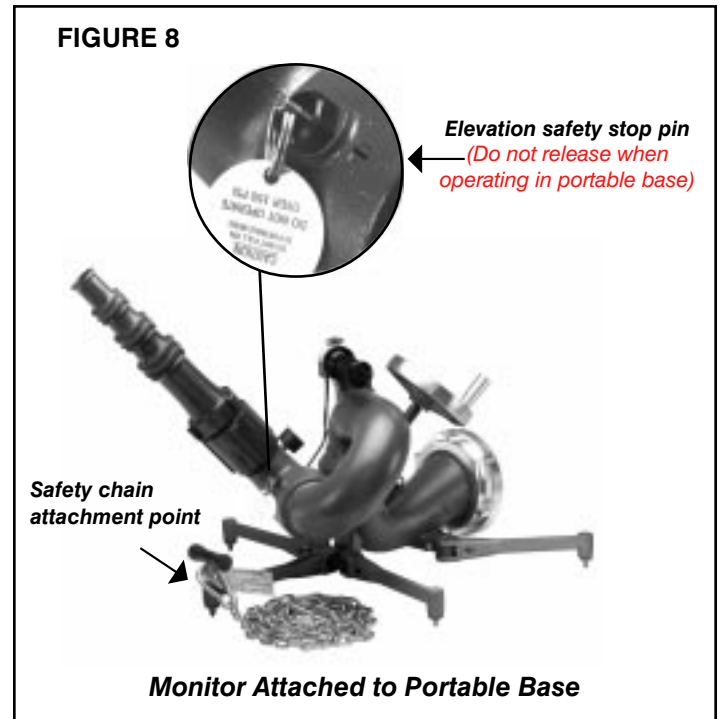
The 8297 monitor has a safety stop to limit minimum stream elevation to 35° above horizontal in order to prevent sliding of the monitor when used in the portable mode (see Figure 8). This stop should not be overridden in the portable mode. If the nozzle stream



is lowered below 35° the monitor will slide in response to the stream reaction force. If the stream is lowered below horizontal in the portable mode the nozzle reaction force may cause the entire monitor to lift off the ground, resulting in extreme danger to personnel.

The horizontal lock should be kept tightened except when stream direction is being changed. This practice will help to prevent inadvertent horizontal swing of the stream due to vibration.

To return the monitor and base to their storage positions, remove monitor from portable base using same technique described in Section A. The portable base support legs are returned to their storage positions by pulling back on the leg lock release pin which protrudes from either side of the leg near the hinge (Figure 7). This action causes the leg lock pin to retract from the bore in the leg bracket. With the lock pin retracted, swing the leg to the storage position. Drain all water from monitor and portable base before placing in storage.



D. MAINTENANCE PROCEDURES

QUICK-RELEASE SWIVEL JOINT

Monthly and after each use, check the joint latch pins for free movement by rotating twist handle back and forth several times. Observe pin movement through the monitor inlet while rotating twist handle. Proper pin positions for latched and released conditions are shown as Figures 9 & 10 respectively. If pins do not move freely, check cable guide tubes for damage. If no damage to tubes is apparent, disassembly of the latch pin mechanism will be necessary to determine cause of malfunction and to allow corrective action. Assembly sequence is indicated on parts diagram.

Do not apply lubrication to the latch pins or latch pin bores. Lubricants may attract dirt particles that could lodge in the close clearance between the latch pins and their bores, resulting in jamming of the pins. The surface of the pin bores is impregnated with Teflon, which should provide sufficient lubricity for the life of the product.

If a latch pin does not retract to correct position when twist handle is fully rotated, there is probably excessive slack in the cable controlling that pin. Cable slack can be taken up as follows (refer to parts diagram):

1. Remove twist lock pin sub-assembly (80882001) by turning knob of pin assembly counterclockwise.

2. Remove bracket cover (23511000).
3. Remove cable set screw (61270000). Apply loctite grade 222 to set screw and thread back into hole in twist handle. Do not tighten.
4. Use pliers to grasp free end of cable and pull cable taut until latch pin just begins to retract in bore.
5. Allow latch pin to just contact its stop in the latched position and tighten set screw.
6. Rotate twist handle to recheck for correct pin travel. Limits of travel must be as indicated in Figures 9 & 10.
7. Install bracket cover.
8. Reinstall safety lock pin assembly with twist handle in "latched" position. Screw assembly in until it bottoms against twist handle, then back out ¼ turn. Operate twist handle to be sure safety lock pin snaps into hole when twist handle is released.

After each use, check that interior of monitor inlet (quick-release joint) is clean. Flush out dirt with clean water. To assure ease of monitor horizontal rotation, periodically apply a light coating of general purpose petroleum base grease to "U" cup seal (62151000) within the monitor inlet. It is not necessary to remove the seal for this purpose, as only the inside diameter of the seal needs to be lubricated.

ELEVATION CONTROL GEARING

Grease enclosed worm gearing annually. Attach grease gun to fitting located at the front end of the worm case on the underside of the monitor body. Apply grease until excess appears between discharge elbow and monitor body. Wipe off excess.

The roll pin (item #13 on assembly drawing sheet 1) was designed to shear in order to prevent damage to the enclosed worm gearing on the discharge elbow. Without this shearing feature, it might be possible for the untrained operator to damage gear teeth if he attempts to turn the handwheel against the vertical travel safety stop. **Proper train-**

ing of all personnel in the purpose and use of the elevation travel stop pin (Figure 8) will prevent annoying failures of the shear pin.

LOCKING DEVICES

Check elevation stop mechanism to be sure that stream cannot be lowered below 35° without releasing lock. Check that horizontal lock mechanism functions effectively.

PORTABLE BASE

The ground spikes at the outer end of each support leg are essential to safe operation in the portable mode. These spikes are spring loaded and must be able to slide freely in and out of their retainer fittings (Figure 6). Check spikes after each use to be sure they are not fouled with dirt. If necessary, remove the hex retainer fitting, push spike and spring out of fitting and flush loose parts and leg socket with clean water. Reassemble parts in reverse order, being sure that hex of retainer tightens down against under surface of leg. Recheck to be sure spike floats freely and that spring pushes spike fully out against shoulder. The tip portion of the ground spike is made of solid carbide. Inspect these tips after each use to be sure they are sharp. If tip is found to be broken or chipped, replace with new spike (81125000).

Inspect leg hinge pin and lock pin areas after each use and remove any dirt by flushing with clean water. **Do not apply lubricant to leg lock pins.** Lubricant may attract dirt, which could cause interference between close-fitting parts. Be sure lock pins move freely and engage fully into lock pin holes.

REPAIR PARTS

Repair parts may be ordered from Elkhart Brass Mfg. Company per the attached parts list and assembly drawing.

If you have any further questions pertaining to the Stinger®, please feel free to call on us at any time. Thank you for choosing Elkhart for your fire suppression needs.

