

WEST SYSTEM® brand 301 Mini Pumps and 303 Special Ratio Mini Pumps are designed for convenient and accurate metering of resin and hardeners. For convenience, the pumps mount directly onto the resin and hardener containers, and eliminate the mess involved with measuring by weight or volume.

301 Mini Pumps are calibrated to deliver the correct working ratio of 5 parts of 105 resin to 1 part of either 205 Fast or 206 Slow hardeners. : 303 Special Ratio Mini Pumps are calibrated to deliver the working ratio of 3 parts of 105 resin to 1 part of either 207 Special Coating or 209 Super Slow hardeners, with one full pump stroke of resin for each one full pump stroke of hardener.

#### INSTALLATION

Prior to installation, insert the extension into the 4.8 litre and 24 litre pack RESIN pump. Remove the container lid and replace with the pump: smaller pump to hardener - larger pump to resin.



#### PRIMING PUMPS

Place a mixing cup under the pumps when priming. Prime each pump by pushing the head down until you feel resistance. Release the pump and allow to return to the top of the stroke. After a short pause, push the head down again until you feel resistance, then release. The point of resistance should be higher after each stroke until, after several strokes, resistance is met at the top of the stroke. All of the air in the pump should now be displaced with fluid. The fully primed pump will produce a continuous stream of resin or hardener with a slow steady stroke of the pump.

After extended periods of rest, the pumps may require re-priming.

#### METERING RESIN AND HARDENER

**PUMP ONE FULL STROKE OF RESIN FOR EACH FULL STROKE OF HARDENER** to dispense the correct resin/hardener ratio. The resin pump automatically dispenses 5 times the quantity of the hardener pump, giving the correct ratio of 5:1.

**IMPORTANT** When metering resin and hardener, depress each pump head fully and continuously to the bottom of its stroke. Allow the pump heads to return **completely, and unassisted**, to the top of the stroke. **DO NOT PULL IT.**

Partial pump strokes will give the wrong ratio. Do not attempt to adjust the cure rate by altering the ratio. Refer to the WEST SYSTEM® *User Manual & Product Guide* for tips on controlling cure time.

Before using pumps to meter epoxy for a job, it is a good idea to meter and mix a small batch of epoxy to assure the pumps are operating properly and to observe the mixture's curing characteristics under your current working conditions. The mixture should cure to a hard solid overnight at room temperature and above.

*A simple test to check the mix ratio is to pump 1 full stroke of resin and 5 full strokes of the hardener pump into separate, equal sized containers. The level in each container should be equal, to slightly more, in the hardener sample.*

## OPERATING PUMPS IN COLD TEMPERATURES

Cold temperatures cause a substantial increase in the viscosity of the resin and hardeners, requiring more force to pump the thicker materials. For best dispensing, in colder conditions, place the resin and hardener containers in tubs of warm water to reduce the viscosity and to avoid the pumps jamming or breaking under pressure. In cool temperatures, depress the pumps slower and allow extra time for pumps to return to the top of the stroke.

## TROUBLE SHOOTING

If the pump starts to splutter continuously and is obviously affecting pumped quantities, repair before further use.

The spluttering could be due to:

1. Being out of resin or hardener
2. Contamination inside the pump, preventing the ball seals from working correctly.

First try cleaning the pump as above. If the problem still persists, replace the pump.

These pumps have generally proved reliable and should last for some time with the correct use and maintenance.

If you have used equal numbers of full resin and hardener strokes, and your pumps are operating properly, the resin and hardener containers will empty at about the same time. If you have a substantial amount of resin or hardener left over when you run out of the other, check the pumps to be sure they are operating properly. If the pumps do not operate properly, contact the technical staff at ATL Composites.

Mix resin and hardener together thoroughly before use, or before adding powder modifiers.

**NOTE** ATL Composites check each pump as it is packed to ensure it is correctly assembled. However, as with all manufactured goods, it is possible that a faulty pump may inadvertently get through. It is the responsibility of the end user to check the pumps are working correctly before use. If a faulty pump is found, ATL Composites will be happy to replace it.

ATL Composites accept no responsibility for incorrect mix ratios caused by human error or faulty pumps.

\* Due to pump manufacturing tolerance limitations, the pumps are set up at a 4.7:1 ratio but could vary between 4.5:1 and 5:1. This is the acceptable mix ratio variation range for WEST SYSTEM® brand epoxy.

## PACK SIZES

	Mix ratio 5:1		Mix ratio 3:1
Order Code	SIZE	Order Code	SIZE
301B	1.2 L	303B	1.33 L
301C	4.8 L	303C	5.33 L
301D	24 L	303D	26.7 L

## STORAGE & CLEANING

Pumps may be left on the containers during storage. Store resin and hardener in a dry location at room temperature. Keep containers upright to prevent leaks. After a long storage, pumps may need to be re-primed.

Pumps should not need cleaning during regular use. When cleaning is necessary, remove pumps from containers and dry as much as possible. Use a mix of 2 parts methylated spirits and 1 part white vinegar to clean the resin pump, and hot water for cleaning the hardener pump. Shake the pumps thoroughly to remove most liquid and allow to completely dry before reusing.

After a long storage, dried resin or hardener may plug the spout opening. If necessary, use a wire brush to clear the opening.

## HEALTH AND SAFETY

WEST SYSTEM® brand R105 resin and hardeners have moderate sensitising potential, and should be kept out of the eyes and off the skin.

- Use with good ventilation and adequate safety equipment including impervious gloves and safety glasses.
- If skin contact occurs, remove contaminated clothing immediately, and wash the affected area thoroughly with ATL's 845 hand cleaner and water, avoiding the use of solvents except in the case of massive contamination.
- If eye contact occurs, immediately flush with running water for at least 15 (fifteen) minutes and seek medical advice.

• If swallowed:

**Resins** - DO NOT induce vomiting, and contact a doctor or the Poisons Information Centre.

**Hardeners** - DO NOT induce vomiting, give plenty of milk or water and contact a doctor or the Poisons Information Centre.