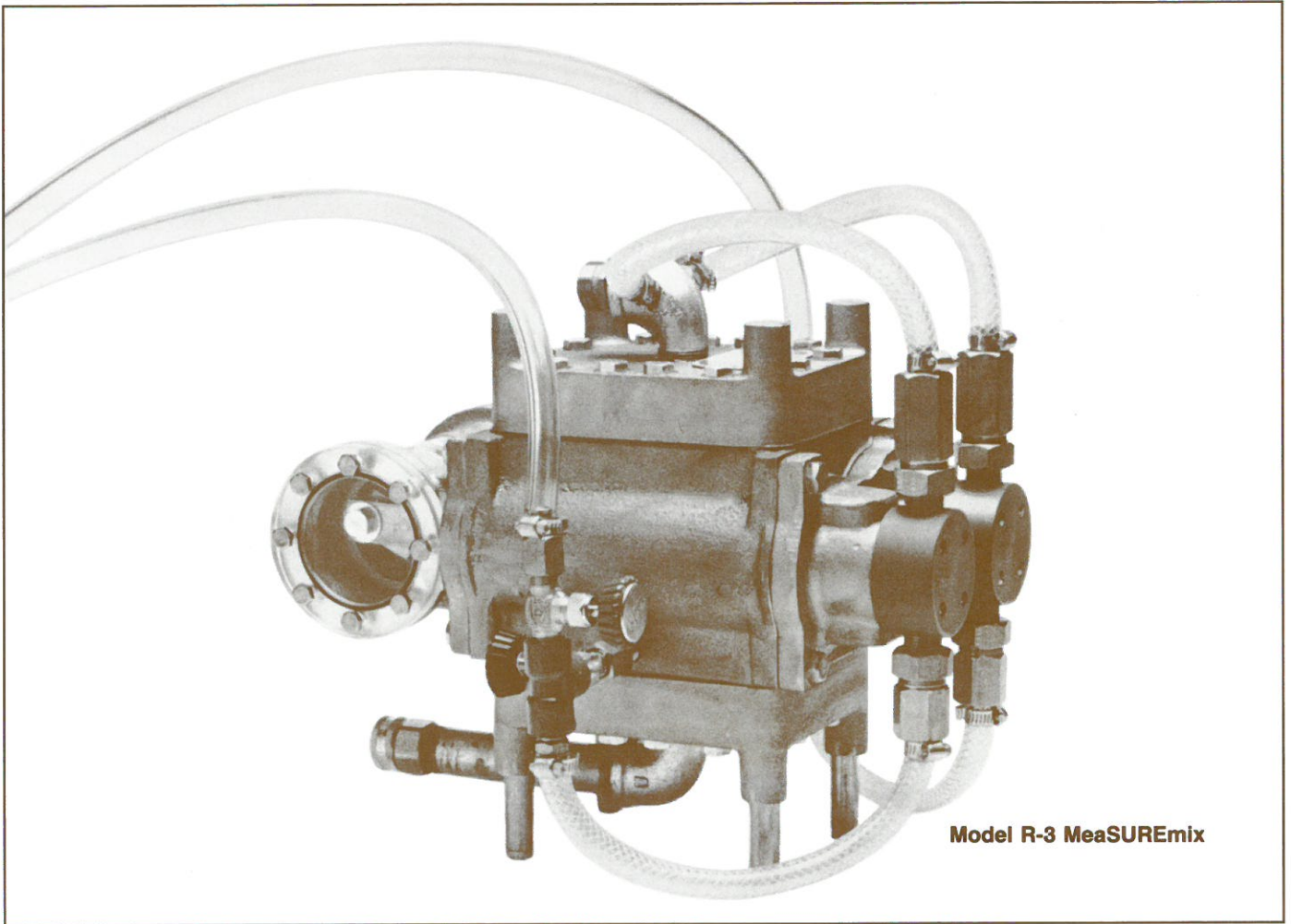


SMITH

meaSUREmix

LIQUID FERTILIZER INJECTORS



Model R-3 MeaSUREMENTmix

MODELS TO CHOOSE FROM:

Model R-3 for 3 to 12 GPM water flow.
Model R-4 for 5 to 20 GPM water flow.
Model R-6 for 10 to 40 GPM water flow.
Model R-8 for 20 to 100 GPM water flow.

ALL MODELS HAVE THESE IMPORTANT ADVANTAGES:

- No electric motor needed. Operates on water flow.
- Accurate proportion ratios, permanently set at factory.
- No lubrication or adjustment required.
- Reduced cost of plant feeding.
- Sturdy construction for long service life.
- Always safe for your plants. Can never inject too much solution.

SMITH PRECISION

1299 LAWRENCE DRIVE, NEWBURY PARK, CALIFORNIA 91320 U.S.A.

SAFETY FIRST

The Smith MEASUREMIX is designed for safety. The proportion of water to chemical solution remains the same, regardless of changes in water pressure. The solution is injected in an accurate, controlled proportion as water passes through the machine. The proportion also remains the same regardless of the amount of water that flows through, within wide limits. The MEASUREMIX can never inject more solution than the set proportion allows, no matter what goes wrong. This important feature prevents plant "burning" and expensive losses under any condition. Your plants are safe with a Smith MEASUREMIX.

SIMPLICITY OF OPERATION

The Smith MEASUREMIX has a precision-built water motor connected internally to a piston-type injector pump. The MEASUREMIX operates on water power and requires no electric motor or gasoline engine. The water passing through the water motor provides the power to run the injector pump. The water motor actually *meters* the water running through. For every revolution of the water motor, there is one stroke of the injector pump. By this simple principle, the proportion of water to fertilizer-solution is always accurately maintained.

VARIETY OF USES

The Smith MEASUREMIX is built to dispense all kinds of liquid chemicals. The machines are built of the finest materials known. The water motors are made of bronze and stainless steel. Injector pistons are built of stainless steel on all models, and valves and fittings in the injector system are stainless steel on standard models. A great variety of liquid solutions may be used, as has been proven by years of service in many localities.

ACCURACY

The Smith MEASUREMIX is accurate within 95 to 98 percent. At a standard ratio of 1 to 100 for example, this accuracy insures that the fertilizer solution will always be maintained between 1 part in 95 parts of water and 1 part in 105 parts of water. Frequently, accuracy is maintained between 1 part in 98 and 102 parts of water.

PROPER CHOICE OF LIQUID FERTILIZER

We strongly advise that your choice of chemicals be based on the advice of soil analysis experts. Advice from these men who can analyze your soil regularly will bring you the greatest success, and will cost the least in the long run. If their advice to you is to use chemicals or mixes that can be applied in a *liquid* form, the Smith MEASUREMIX is the injector to use, as it was designed to meet the practical demands of scientific soil control.

ECONOMY AND SAVINGS

The Smith MEASUREMIX is designed to provide economy of operation. You save cost of labor and you save time when you fertilize while you water. You save fertilizer cost, as liquid fertilizer usually costs less than solid fertilizer. Finally, with a controlled fertilizer program, your plants grow better, yielding more profit to you.

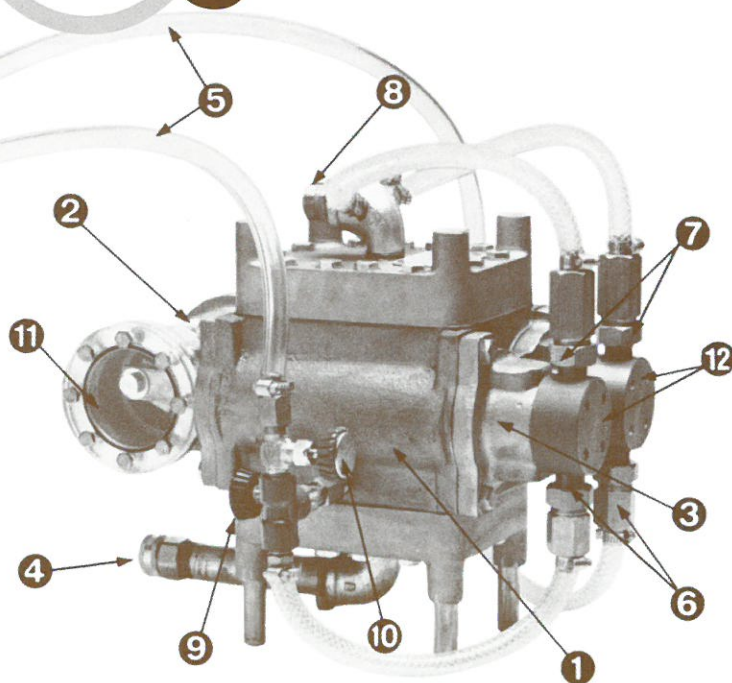
MODEL
R-3

meASUREmix

Standard Proportion . . . 1 to 100
Maximum Water Flow Rate . 12 GPM
Minimum Water Flow Rate . . 3 GPM
Connection, Hose or Pipe . . . 3/4-inch

The Smith Model R-3 MEASUREMIX weighs only 75 pounds, and is portable when mounted on a small wagon or cart (not supplied by manufacturer). As a portable unit, the Model R-3 MEASUREMIX can be used for fertilizing trees and shrubs around buildings, in parks, or on estates. Nurserymen have found the Model R-3 ideal for small growing areas, or for spot-feeding in special areas. Hobbyists make good use of this model, which can also be used for permanent installation by simply removing the hose connection adapters.

The Smith Model R-3 MEASUREMIX is 12½ inches high, 8 inches wide, and 13½ inches long. The four mounting bolts with spacers are suitable for mounting on a platform or baseplate up to ¾ inch thick. Bolts are spaced at four corners of a 4½ by 5½ inch rectangle. Shipping weight is 90 pounds.



The cylinder block (1) crankshaft housing (2), and injector head (3) comprise the body of the Smith MEASUREMIX Model R-3. The water inlet (4) is threaded for ¾-inch pipe for connection to the water source. The water inlet has an adapter to take ¾-inch hose, and is also equipped with a removable strainer screen inside. The fertilizer intake tube (5) is made of translucent plastic tubing to allow visual flow check. The intake tube is 6 feet long but may be supplied longer if desired. The intake check valve (6) of the double-ball type is shown in the illustration (optional check valves have a different appearance). The discharge check valve (7) is similar to the intake check valve. The outlet (8) for water-fertilizer mixture is a ¾-inch pipe elbow with ¾-inch hose adapter. The priming valve (9) lets water into the injector system for easy priming of the injector pump and is also used for quick washing of the injector system after operation. The priming valve (10) for dip tube is also used for shutting off the fertilizer supply during periods when the machine is not in use. The crankshaft windows (11) are made of clear plastic, so that motion of the crankshaft is visible. The machine runs so quietly that this is the only way to be sure the machine is operating. The check valve insert (12) allows for easy O-ring replacement.

STANDARD OPTION

OPTION C: Includes all stainless steel double-ball check valves with all other valves and fittings of stainless steel, or plastic. Recommended for consistent use with usual inorganic fertilizer mixtures. Contains no rubber parts.

ACID OPTION

OPTION P: Contains single-ball check valves with plastic housings and acid-resistant rubber balls. All other items in contact with the fluid are various types of acid-resistant materials. Recommended for units injecting any concentration of *sulfuric acid* for pH control. (Phosphoric acid may be satisfactorily injected with stainless steel options.) Usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-3.

ALGICIDE OPTION

OPTION PS: For use with chlorine and bromine solutions that destroy microorganisms. Similar to **Option P**, usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-17.

PESTICIDE / FUNGICIDE OPTION

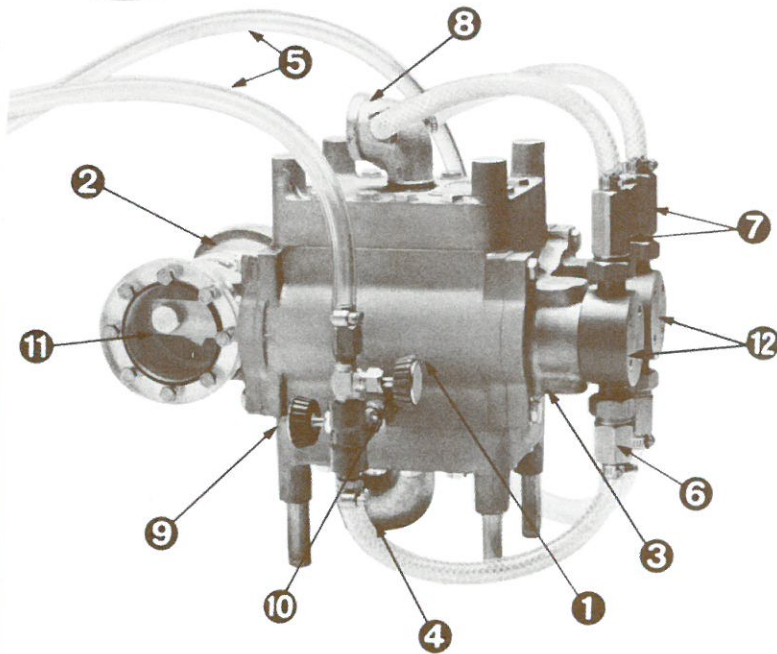
OPTION I: Includes all stainless steel double ball check valves and fittings. Contains no plastic working parts. Recommended for consistent use with the insecticides/fungicides that contain hydrocarbon base harmful to PVC plastics, such as wettable powders and emulsions.

SPECIAL PROPORTIONS: Any of the single-injector options listed above or the two-injector options listed below, may be provided with special proportions. Special proportions always available for the R-3 model are 1:50, 1:150, and 1:200, in addition to the standard 1:100 proportion. For availability of other special proportions, write factory.

TWO-INJECTOR OPTIONS: All R-3 machines may be provided with two-injector options. See detailed description on page 10. May have one option on one side, another on the other side. Proportions may be different on each side.

MODEL
R-4

meaSUREmix



The cylinder block (1) crankshaft housing (2), and injector head (3) comprise the body of the Smith MEASUREMIX Model R-4. The water inlet (4) is threaded for 1-inch pipe for connection to the water source. The fertilizer intake tube (5) is made of translucent plastic tubing to allow visual flow check. The intake tube is normally 6 feet long but may be supplied longer if desired. The intake check valve (6) of the double-ball type is shown in the illustration (optional check valves have a different appearance). The discharge check valve (7) is similar to the intake check valve. The outlet (8) for water-fertilizer mixture is a 1-inch pipe elbow. The priming valve (9) lets water into the injector system for easy priming of the injector pump and is also used for quick washing of the injector system after operation. The priming valve (10) for dip tube is also used for shutting off the fertilizer supply during periods when the machine is not in use. The crankshaft windows (11) are made of clear plastic, so that motion of the crankshaft is visible. The machine runs so quietly that this is the only way to be sure the machine is operating. The check valve insert (12) allows for easy O-ring replacement.

Standard Proportion . . . 1 to 100
Maximum Water Flow Rate . 20 GPM
Minimum Water Flow Rate . . 5 GPM
Connection, Inlet and Outlet . 1-inch

The Smith Model R-4 MEASUREMIX weighs only 75 pounds, and is portable when mounted on a small wagon or cart (not supplied by manufacturer). As a portable unit, the Model R-4 MEASUREMIX can be used for fertilizing trees and shrubs around buildings, in parks, or on estates. Nurserymen have found the Model R-4 ideal for small growing areas, or for spot-feeding in special areas. Hobbyists make good use of this model, which can also be used for permanent installation.

The Smith Model R-4 MEASUREMIX is 12½ inches high, 8 inches wide, and 13½ inches long. The four mounting bolts with spacers are suitable for mounting on a platform or baseplate up to ¾ inch thick. Bolts are spaced at four corners of a 4½ by 5½ inch rectangle. Shipping weight is 90 pounds.

STANDARD OPTION

OPTION C: Includes all stainless steel double-ball check valves with all other valves and fittings of stainless steel, or plastic. Recommended for consistent use with usual inorganic fertilizer mixtures. Contains no rubber parts.

ACID OPTION

OPTION P: Contains single-ball check valves with plastic housings and acid-resistant rubber balls. All other items in contact with the fluid are various types of acid-resistant materials. Recommended for units injecting any concentration of *sulfuric acid* for pH control. (Phosphoric acid may be satisfactorily injected with stainless steel options.) Usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-3.

ALGICIDE OPTION

OPTION PS: For use with chlorine and bromine solutions that destroy microorganisms. Similar to **Option P**, usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-17.

PESTICIDE / FUNGICIDE OPTION

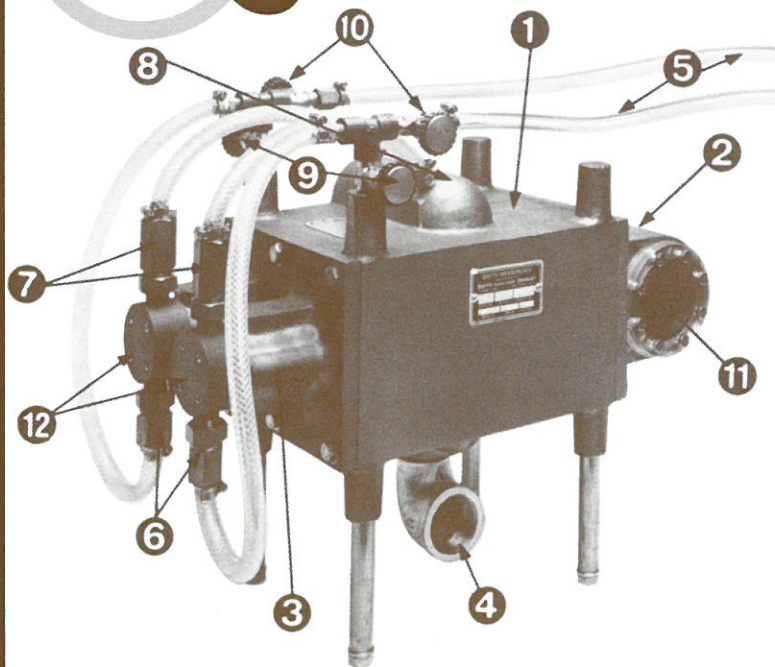
OPTION I: Includes all stainless steel double ball check valves and fittings. Contains no plastic working parts. Recommended for consistent use with the insecticides/fungicides that contain hydrocarbon base harmful to PVC plastics, such as wettable powders and emulsions.

SPECIAL PROPORTIONS: Any of the single-injector options listed above or the two-injector options listed below, may be provided with special proportions. Special proportions always available for the R-4 model are 1:200, 1:300, and 1:400, in addition to the standard 1:100 proportion. For availability of other special proportions, write factory.

TWO-INJECTOR OPTIONS: All R-4 machines may be provided with two-injector options. See detailed description on page 10. May have one option on one side, another on the other side. Proportions may be different on each side.

MODEL
R-6

meaSUREmix



The cylinder block (1), crankshaft housing (2), and injector head (3) comprise the body of the Smith MEASUREMIX Model R-6. The water inlet (4) for connection to the water source is threaded to take 1½-inch pipe. No strainer is supplied, but a strainer is available as optional equipment and must be used if there is any sand, silt, or other hard abrasive material in your water. The fertilizer intake tube (5) is made of translucent plastic tubing, allowing visual flow check. The intake tube is ⅝-inch diameter and 10 feet long, but can be supplied longer if desired. The double-ball **IN** check valve (6) is shown, as well as the double-ball **OUT** check valve (7). The outlet (8) for discharge of water-fertilizer mixture has a 1½-inch pipe size. The priming valve (9) lets water into the injector system for easy priming of the injector pump and quick washing of the injector system after use. The priming valve (10) for the dip tube is also used for shutting off the fertilizer supply during periods when the machine is not in use. The crankshaft windows (11) are made of clear plastic, and are used to observe motion of the crankshaft to be sure it is turning. The check valve insert (12) allows for easy O-ring replacement.

Standard Proportion 1 to 200
Maximum Water Flow Rate... 40 GPM
Minimum Water Flow Rate... 10 GPM
Connection, Inlet and Outlet 1½ inch

The Smith Model R-6 MEASUREMIX is designed for use where the flow of water is between 10 gallons per minute and 40 gallons per minute. The Model R-6 will operate, however, at 5 GPM, with some sacrifice of accuracy. The Model R-6 weighs approximately 150 pounds, and is usually installed permanently in a 1½-inch pipe line, but can be mounted on a wagon or cart (not supplied by manufacturer). This model MEASUREMIX is generally specified for medium greenhouses and landscape projects. The R-6 is designed for intermediate use between R-4 and R-8 applications. The Smith Model R-6 MEASUREMIX is 14 inches high, 8 inches wide, and 20 inches long, and weighs 150 pounds (165 pounds shipping weight). The connections, both inlet and outlet, are threaded for 1½-inch pipe. The machine runs smoothly and quietly and should be bolted to a platform or base plate up to ¾ inches thick. Bolts are spaced at four corners of a rectangle, measuring 6⅞ to 9¼ inches. One-half inch mounting bolts are provided.

STANDARD OPTION

OPTION W: Includes all stainless steel double-ball check valves with all other valves and fittings of stainless steel, or plastic. Recommended for consistent use with usual inorganic fertilizer mixtures. Contains no rubber parts.

ACID OPTION

OPTION P: Contains single-ball check valves with plastic housings and acid-resistant rubber balls. All other items in contact with the fluid are various types of acid-resistant materials. Recommended for units injecting any concentration of *sulfuric acid* for pH control. (Phosphoric acid may be satisfactorily injected with stainless steel options.) Usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-3.

ALGICIDE OPTION

OPTION PS: For use with chlorine and bromine solutions that destroy microorganisms. Similar to **Option P**, usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-17.

PESTICIDE / FUNGICIDE OPTION

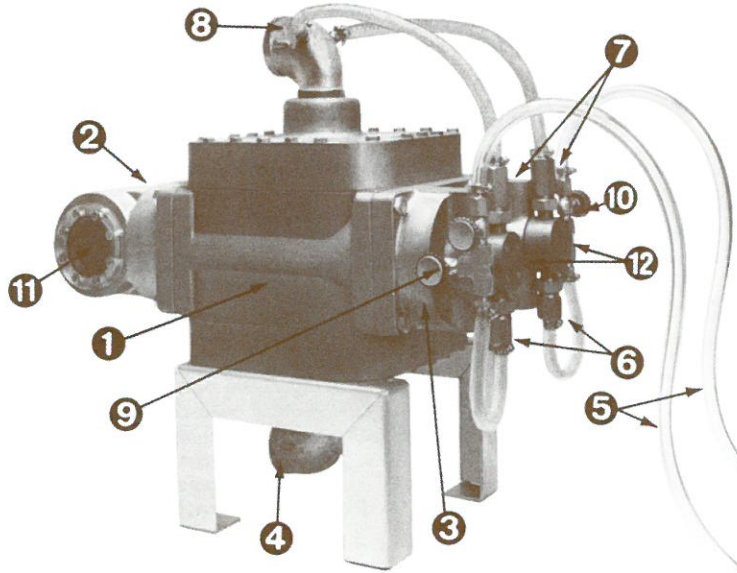
OPTION I: Includes all stainless steel double ball check valves and fittings. Contains no plastic working parts. Recommended for consistent use with the insecticides/fungicides that contain hydrocarbon base harmful to PVC plastics, such as wettable powders and emulsions.

SPECIAL PROPORTIONS: Any of the single-injector options listed above or the two-injector options listed below, may be provided with special proportions. Special proportions always available for the R-6 model are 1:50, 1:100, and 1:500, in addition to the standard 1:200 proportion. For availability of other special proportions, write factory.

TWO-INJECTOR OPTIONS: All R-6 machines may be provided with two-injector options. See detailed description on page 10. May have one option on one side, another on the other side. Proportions may be different on each side.

MODEL
R-8

meaSUREmix



The cylinder block (1), crankshaft housing (2), and injector head (3) comprise the body of the Smith MEASUREMIX Model R-8. The water inlet (4) for connection to the water source is threaded to take 2-inch pipe. No strainer is supplied, but a strainer is available as optional equipment and must be used if there is any sand, silt, or other hard abrasive material in your water. The fertilizer intake tube (5) is made of translucent plastic tubing, allowing visual flow check. The intake tube is 10 feet long, but can be supplied longer if desired. The double-ball intake check valve (6) is shown in the picture. The optional single-ball type check valve has a different appearance. The discharge check valve (7) is similar to the intake check valve. The outlet (8) for discharge of water-fertilizer mixture has a 2-inch pipe size. The priming valve (9) lets water into the injector system for easy priming of the injector pump and quick washing of the injector system after use. The priming valve (10) for the dip tube is also used for shutting off the fertilizer supply during periods when the machine is not in use. The crankshaft windows (11) are made of clear plastic, and are used to observe motion of the crankshaft to be sure it is turning. The check valve insert (12) allows for easy O-ring replacement.

Standard Proportion 1 to 200
Maximum Water Flow Rate 100 GPM
Minimum Water Flow Rate . 20 GPM
Connection, Inlet and Outlet . 2-inch

The Smith Model R-8 MEASUREMIX is designed for use where the flow of water is between 20 gallons per minute and 100 gallons per minute. The Model R-8 weighs approximately 250 pounds, and is usually installed permanently in a 2-inch pipe line. This model MEASUREMIX is generally specified for larger growing areas where flow of water is substantial. The Model R-8 will operate, however, at 10 GPM, with some sacrifice of accuracy. A number of growers utilize a Model R-8 MEASUREMIX in combination with a Model R-3 MEASUREMIX. With the combination of the two models, a system is capable of handling a flow rate from as little as 3 GPM (one hose) to as much as 100 GPM.

The Smith Model R-8 MEASUREMIX is 19 inches high, 11 inches wide, and 22 inches long. The machine runs smoothly and is heavy enough so that it does not need to be bolted down to any support. Four legs support the Model R-8 MEASUREMIX, which weighs 250 pounds (290 pounds shipping weight). The connections, both inlet and outlet, are threaded for 2-inch pipe.

STANDARD OPTION

OPTION F: Includes all stainless steel double-ball check valves with all other valves and fittings of stainless steel, or plastic. Recommended for consistent use with usual inorganic fertilizer mixtures. Contains no rubber parts.

ACID OPTION

OPTION P: Contains single-ball check valves with plastic housings and acid-resistant rubber balls. All other items in contact with the fluid are various types of acid-resistant materials. Recommended for units injecting any concentration of *sulfuric acid* for pH control. (Phosphoric acid may be satisfactorily injected with stainless steel options.) Usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-3.

ALGICIDE OPTION

OPTION PS: For use with chlorine and bromine solutions that destroy microorganisms. Similar to **Option P**, usually installed as one injector of a two-injector option (see below). For more details write for special sheet AM-17.

PESTICIDE / FUNGICIDE OPTION

OPTION I: Includes all stainless steel double ball check valves and fittings. Contains no plastic working parts. Recommended for consistent use with the insecticides/fungicides that contain hydrocarbon base harmful to PVC plastics, such as wettable powders and emulsions.

SPECIAL PROPORTIONS: Any of the single-injector options listed above or the two-injector options listed below, may be provided with special proportions. Special proportions always available for the R-8 model are 1:400 and 1:500, in addition to the standard 1:200 proportion. For availability of other special proportions, write factory.

TWO-INJECTOR OPTIONS: All R-8 machines may be provided with two-injector options. See detailed description on page 10. May have one option on one side, another on the other side. Proportions may be different on each side.

FERTILIZER DIP TUBE STRAINER

The Smith dip-tube strainer is recommended for all options except P. Option P is an acid option, and acid solutions attack the stainless steel of which the strainer is made, making it useless in a few days. Acid solutions are normally very clear and clean, anyway.

For all other options, the dip tube offers inexpensive insurance for injector system parts. Its 50-mesh screen keeps out all particles large enough to clog injectors. It can be used in any size of tank (it is even small enough to fit into an ordinary glass gallon jug). Special new type polypropylene plastic connectors are supplied to connect strainers to dip tubes. Three types are available:

W-5093- $\frac{3}{8}$ to connect to $\frac{3}{8}$ O.D. dip tubes

W-5093- $\frac{1}{2}$ to connect to $\frac{1}{2}$ O.D. dip tubes

W-5093- $\frac{5}{8}$ to connect to $\frac{5}{8}$ O.D. dip tubes

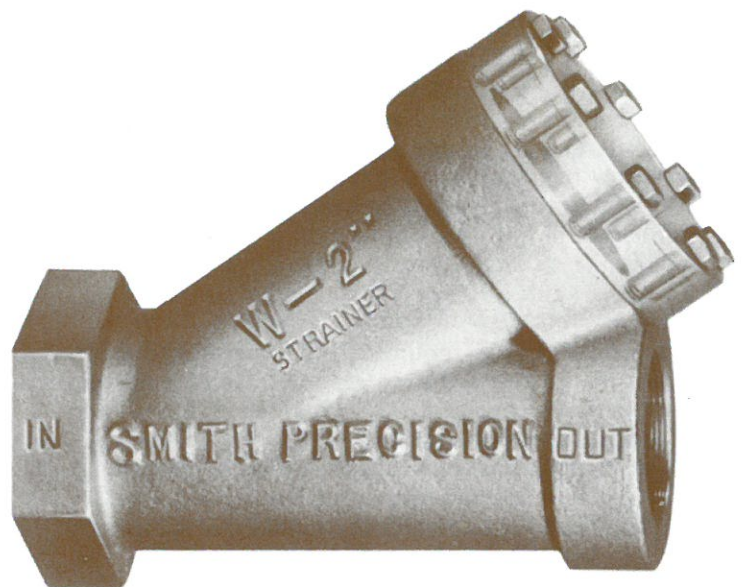


STRAINERS

Three sizes of Smith Precision water strainers are kept in stock for the convenience of MEASUREMIX users. All have bronze bodies so they won't rust, and strong, 80-mesh stainless steel screens. The R-3 model has a small screen built in behind the water inlet hose fitting. For permanent, piped installations, specify the Smith Precision $\frac{3}{4}$ -inch strainer.

Other MEASUREMIX models require outside strainers such as that illustrated. Recommended sizes: R-4, 1 inch; R-6, 1 $\frac{1}{2}$ inch; R-8, 2 inch. Smith Precision does not make strainers for larger models, however we will supply them if requested.

Note the clear plastic window through which you can see when it needs cleaning.



IMPORTANCE OF WATER FLOW RATE

Since Smith MEASUREMIX units sense water flow rates, a selection of model should be made on the basis of water flow rates, not on the basis of pipe size alone. To determine the proper model MEASUREMIX to use, the prospective user should know, with reasonable accuracy, the range of flow rates he will use. Maximum and minimum water flow rates are listed in this catalog for each MEASUREMIX model.

HOW TO CHECK WATER FLOW RATE METER METHOD

If the water supplied to your system flows through a water meter, flow rate can be obtained easily. Turn on your sprinkling or irrigation system fully. Read the meter at a specific time, allow the meter to run for a period of minutes, and then read the meter again. Since most water meters measure in terms of cubic feet, it will be necessary to convert the difference between beginning and ending meter readings into gallons. The formula for this conversion is:

$$\text{RATE OF FLOW} = 7.5 \left[\frac{\text{Meter B} - \text{Meter A}}{\text{Minutes}} \right]$$

Where:

- RATE OF FLOW** is expressed in gallons per minute.
- METER A** is beginning meter reading.
- METER B** is ending meter reading.
- MINUTES** is duration of test.

NOTE: A trick may be used to obtain the answer quickly by timing the meter for exactly seven and a half minutes. The difference in beginning meter reading and ending meter reading will then be gallons per minute, because the 7.5 cancels out in the formula.

OPEN CONTAINER METHOD

If the water supply flows through a single opening, a suitable container can be used to measure the water flow rate. Simply turn on the flow fully, and time how many minutes it takes for the tank to fill. Divide the capacity of the tank in gallons by the number of minutes to obtain flow rate in gallons per minute.

SPRINKLER HEAD METHOD

A pressure gage is required to get necessary information to estimate the water flow rate of a system with sprinkler heads. The sprinkler system should be operating fully.

- a. Read and record the pressure gage with the sprinkler system operating fully.
- b. Count and record the number of sprinklers operating.
- c. Multiply by the flow rate per sprinkler head at the particular pressure. (Sprinkler head flow rate information for a given pressure is information that can be obtained from the sprinkler head manufacturer or from his sales representative.)

METHOD IF SYSTEM USES PUMP

If a pump is utilized in the system, a pressure gage should be installed in the piping. When the system is operating fully, the pressure indicated on the gage should be read and recorded. The pump manufacturer or his sales representative can supply information regarding the flow rate of the pump against the particular pressure.

MEASUREMIX NOTED FOR LOW MAINTENANCE

The yearly maintenance cost for Smith MEASUREMIX units is low, and can be kept low by two very simple precautions. If the water supply contains sand, silt, or other abrasive particles, a strainer or filter should be provided in the water line. Normally, a strainer is sufficient. However, in an exceptional case where silt is very abrasive, it has been found economical to actually filter the water. Such filters are expensive, but they pay for themselves over a period of time. Generally speaking, if the MEASUREMIX injector system is flushed after each use in accordance with the instruction manual, maintenance costs will be kept at a low figure.

After a customer has used a MEASUREMIX for several years, it becomes advisable to replace all worn parts. We believe that our exchange plan is the most economical way to return a machine to "equal-to-new" condition.

It is, of course, possible to make minor repairs at the end of the first year or two and thus postpone the somewhat more expensive complete overhaul. In fact, we advise customers to make minor repairs themselves whenever they choose to do so. Illustrated parts lists are available upon request to assist in making such repairs. However, certain parts cannot be readily replaced in the field and in such instances, the customer is advised to order an exchange unit, returning his unit for credit. The cost that he ultimately pays is the cost necessary to bring his old machine up to "equal-to-new" condition.

HOW WE DETERMINE COSTS

All MEASUREMIX units have been designed with high quality and highest accuracy kept in mind. Cost has been a secondary consideration. Our cost accounting system tells us how much it costs us to make each part. Our prices for parts, or for complete units, reflect our actual costs plus a small profit margin.

The major constituent of all MEASUREMIX units is bronze, of which the water motor-meter is made. Since we are unwilling to substitute less expensive but inferior materials, prices have gone up more than we would like. Fortunately, our customers continue to recognize the value of superior materials.

INJECTION OF ACID

Some of our customers have been advised by their soil and plant advisor to inject acid into their water. Phosphoric acid is normally used to increase soil acidity, although sulfuric acid has also been used to reduce an alkali soil condition. If you wish to use a Smith MEASUREMIX to inject significant amounts of these acids, we recommend that you use a two-injector option.

Our experience has shown that to separate the acid from the other nutrients will reduce corrosion of injector parts to acceptable amounts. Conversely, our experience has shown that mixing acids with typical fertilizer components is likely to result in very severe corrosion of injector parts. To explain why this circumstance occurs is not easy.

A suggested explanation has been given that a mixture of nitrates (such as ammonium nitrate) and/or chlorides (such as from muriate of potash) with acid, provides a more corrosive mixture than would occur if the acid were separated from the nitrates and chlorides. The mixture results in a dilute solution of "aqua regia," one of the most corrosive acid combinations known.

Option P uses plastic parts and is recommended for the injection of sulfuric acid solutions. Standard stainless steel options are OK for phosphoric acid solutions. *To repeat, should you desire to inject acid solutions, you would be well-advised to select a two-injector option and inject the acid with one injector, and the nutrient with the other.*

SPECIAL PROPORTION OPTION

At an additional cost, your Model R-3, Model R-4, Model R-6, or Model R-8 MEASUREMIX may be fitted with a special proportion. Although the choices are limited, often an individual MEASUREMIX user has a special application that would benefit from use of one of the available choices.

The "stronger" proportions are used where chemicals may not dissolve completely enough to feed plants adequately at the standard proportion. The "weaker" proportions are used where very soluble chemicals are mixed and it is desirable to mix less often. The weaker proportion is also sometimes used in constant-feeding programs where fertilizer is injected every time plants are watered.

The fixed proportion feature in the Smith MEASUREMIX avoids the possibility of human error, preventing plant damage caused by mistakes in setting. Wrong adjustments not only could result in plant "burning" but would also result in an inefficient plant feeding program. The Smith fixed proportion design prevents the possibility of such mistakes.

OPTION CHANGES READILY MADE

To be able to make option changes at will is a very important feature of the Smith MEASUREMIX. The grower may at some time, in the future, decide to change the type of chemicals used. A different option might be better for the newer chemicals, resulting in far lower maintenance costs.

PRESSURE DROPS FOR MeaSUREMENTS UNITS

Table 1. Pressure Drops for Smaller MeaSUREMENTS Injectors

	Water Flow Rate (GPM)										
	3	5	9	10	12	20	30	40	60	80	100
Model R-3 (psi)	1	4	9	11	15	*	*	*	*	*	*
Model R-4 (psi)	*	4	6	7	10	21	*	*	*	*	*
Model R-6 (psi)	*	*	*	1	2	4	9	15	*	*	*
Model R-8 (psi)	*	*	*	*	*	2	3	4	7	11	21

*Indicated water flow rate outside accuracy limit of particular model.

FOUR IMPORTANT ITEMS

1. All MeaSUREMENTS models can run at half the minimum water flow rate listed, at slight reduction in accuracy, thus increasing rangeability.
2. The use of strainers in the water supply line or in extremely difficult cases, filters having 25 micron cartridges, prevents damage due to sand, silt, or clay in the water.
3. All MeaSUREMENTS models have relatively low pressure drops.
4. Having a fixed dilution ratio assures against plant losses due to improper adjustment by an inexperienced worker.

TWO INJECTOR OPTION

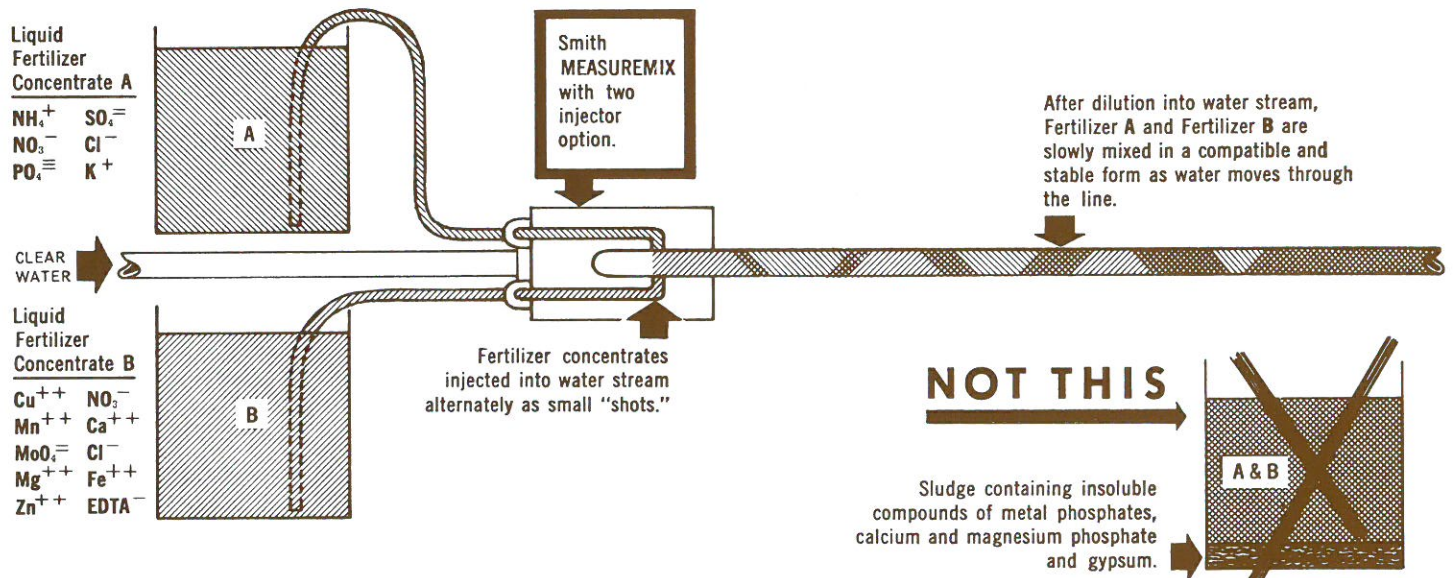
TWO INJECTOR OPTION

WHAT IS IT?

The same Smith MEASUREMIX precision but with two separate injectors on the same unit! The standard unit (Models R-3, R-4, R-6, and R-8) utilizes one of two moving pistons in the water motor to activate a single injector system. An alternate design is now available which utilizes *both* pistons of the water motor. The result is a single unit with two separate injector systems.

WHY IMPORTANT?

A fundamental problem in "continuous liquid fertilizing" by injection of fertilizer concentrate has been the limited number of elements which could be supplied because of incompatibilities in the concentrated form. With the *two injector* option, it is possible to put all required elements into the water stream at predetermined concentrations by preparing two separate concentrates.



ADVANTAGES OF THE TWO INJECTOR OPTION:

1. In the two injector design, both may be used together. If it is desired to use one injector separately, the other injector acts as a built-in spare.
2. A nutrient solution consisting of two fertilizers that would be incompatible in the concentrated form, can be injected into the water stream, provided that the dilute solutions are compatible.
3. Acid solutions can be injected with one system while leaving the physical arrangement or function of the other system intact.
4. One MEASUREMIX unit can be equipped with two different injectors, each with a different proportion, if desired. The choice of two proportions allows more flexibility and may provide for greater efficiency under special conditions.

REPAIRS AND EXCHANGE POLICIES

MODEL R-3, R-6, and R-8 Units with Piston-Type Water Motors

The user himself can readily make many types of repairs for the piston-type MEASUREMIX models. Service instruction information is supplied with each machine, and extra copies are available upon request. Should factory repairs be required, the unit can be sent to the factory, where reconditioning is done, and the unit returned in just a few days. Under our exchange plan, you do not even have to be without a machine while repairs are being made. We will provide a completely satisfactory factory-reconditioned exchange MEASUREMIX before you ship your machine to us. When you use our exchange plan, we ship immediately a completely reconditioned unit from our stock. When the reconditioned unit arrives, you simply return your used machine for credit using the same shipping crate. We recondition your old machine, charge you this repair cost, and put this unit in stock for the next service call. You keep the reconditioned machine, which is guaranteed to be in equal-to-new condition.



SMITH PRECISION PRODUCTS COMPANY

Mailing Address: P.O. Box 276, Newbury Park, CA 91319 USA
Shipping Address: 1299 Lawrence Drive, Newbury Park, CA 91320 USA
Cable Address: Smithpreco, Newbury Park
Telephone: 805/498-6616
FAX: 805/499-2867
TWX: 910/3365-739