



MixRite TF-5



MixRite TF 5 Fertilizer and Chemicals Injector

Congratulations on your purchase of one of our high quality products.

To get the best results from the MixRite TF-5 Proportioning Dosing Injector it is important to spend a few minutes reading carefully the explanations and recommendations in this user's manual.

Operating principle

The proportioning dosing injector is fitted on the water line. The flow of water passing through the injector activates it and causes the pumping of liquid fertilizer (or other liquid additive) and injects it in a relative quantity into the water line.

The MixRite TF 5 technical working range:

The flow rate of the water passing through the injector is

Between 0.2 and 5 m³/hour.(0.88 -22 GPM)

The water pressure is between 1 and 8 Bar (14.7and 120 PSI)

The water & air temperatures are not less than 4°C and not more than 40°C .(39°F and not more then 104°F)

Head loss: Low flow 0.1 Bar – High flow 0.8 Bar

The flow rate of the fertilizer and chemicals can be adjusted relative to the flow rate of the water in the range of

0.1% to 1% for Model 001

0.2% to 2% for Model 002

0.5% to 5% for Model 005.

Installing the Injector

Check that Injector package contains the following items:

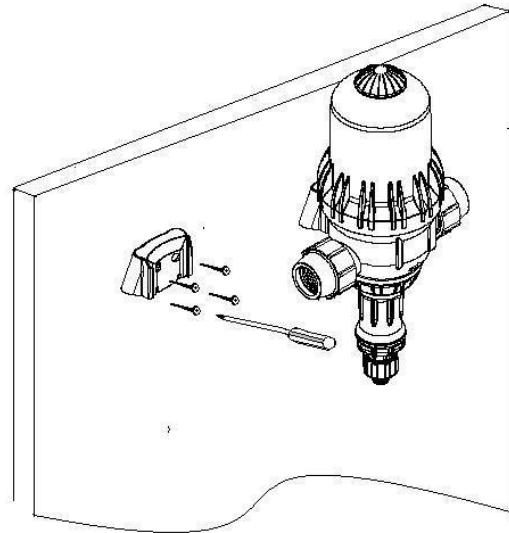
- * One proportioning dosing injector to which are attached two compression fittings (Plasson) for a 32 mm PE pipe or two BSPT 1" or NPT1" threaded couplings according to the model.

- * One flexible suction tube to which is attached a flat seal and a filter.

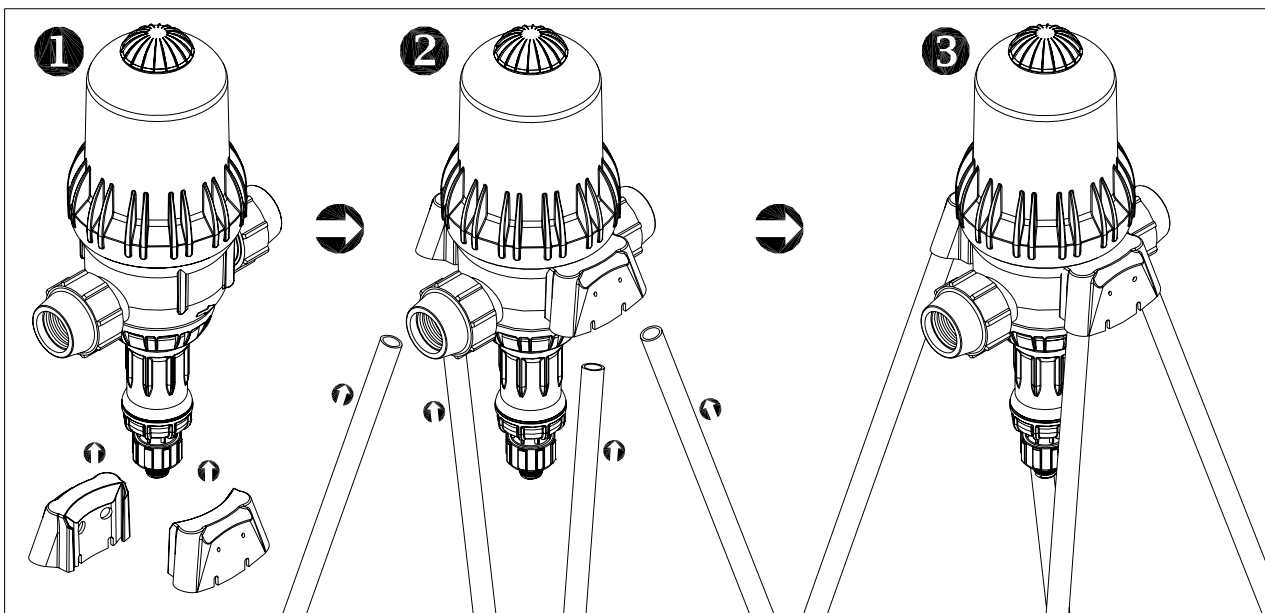
- * 2 stand brackets

- * One User's manual

To fit to a wall – connect one of the brackets to the wall by inserting 4 screws in the Bracket.

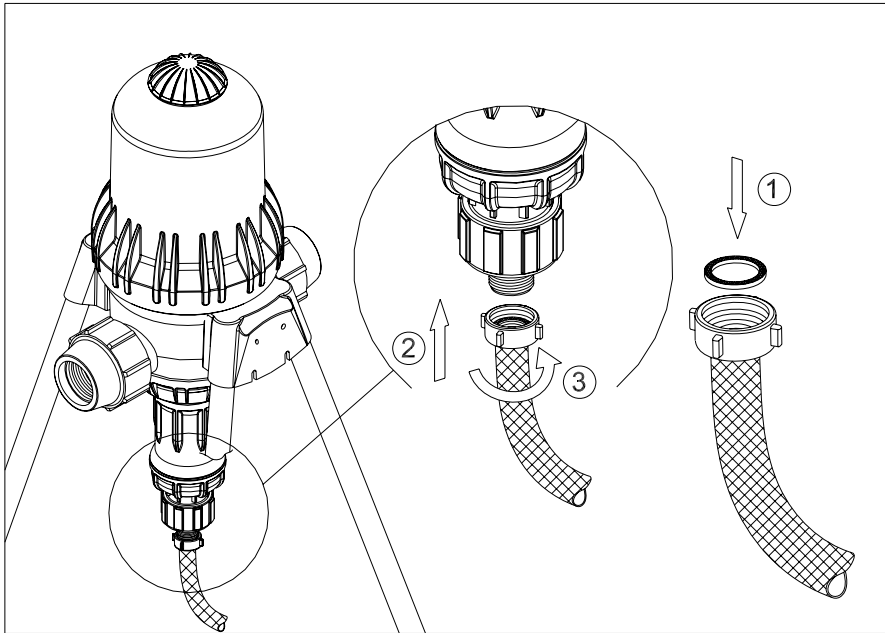


To install the stand – insert the brackets into the body grooves at the bottom and press up until they fit in place. Place the legs in the holes and press until they well locked.



Connection of the suction tube

Insert the flat seal into the nut of the coupling on the end of the tube (1). Thread and tighten the nut to the inlet valve on the bottom of the injector. Make sure that the nut is threaded and tightened properly (2, 3).



Connection of the Injector to a 1" threaded line - MixRite TF 5

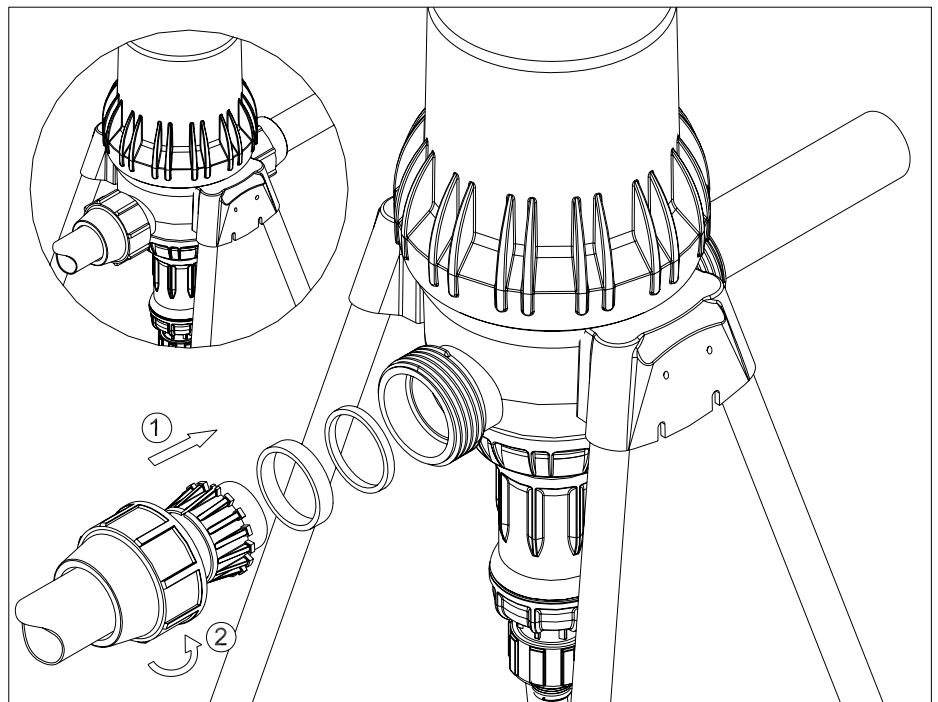
Note the direction of the water flow. Place the injector so that the arrow stamped on the body of the injector and the red arrow on central sticker point in the direction of the water flow. Connect the injector using the plastic couplings.

Connection of the Injector to a 32 mm. polyethylene line - MixRite TF 5

Note the direction of the water flow. Place the injector so that the arrow stamped on the body of the injector and the red arrow point in the direction of the water flow. Make sure that the ends of the entry pipe and exit pipe are cut straight and that the end is in the shape of a rounded cone. The distance between the entry end and the exit ends should be about 20 cm. (7.87")

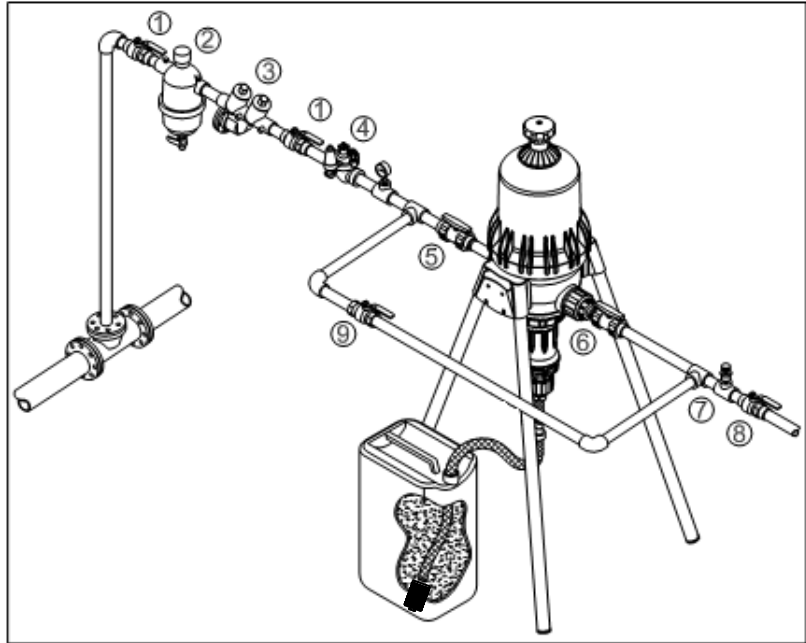
Remove the 32 mm nut from the injector and the white ring and slide them onto the pipe at a short distance from the end. Check that there is an accessory seal 32 and that the sealing 32 fixture closes the unit from outside. 1) Insert the pipe into the entry opening or exit opening in accordance with the direction indicated and push it so that the pipe penetrates, passes the seal and stops at the end of the track.

To facilitate the penetration of the pipe spread a little silicone grease on the end of the tube before inserting it. Push the white ring in until it reaches the thread (2). Close the nut and tighten securely. In the same way connect the injector to the other pipe.



Installing the injector on an irrigation line

It is recommended to fit a **main valve**(1) at the beginning of the line as well as a **backflow prevention valve** (3). On a drinking water line, according to local regulations, it is obligatory to install a backflow prevention valve to prevent entry of chemicals into the drinking water. Then as shown in the diagram the following have to be installed: A **pressure reducer** (4) to protect the injector from excess pressure, a **filter** (2) of at least 75 mesh, a valve (6) before entry to the injector vacuum valve (7) to prevent siphoning when the injector is not operating, and valves to the feed lines have then to be installed. It is advisable to add a bypass pipe through which the water can flow to allow irrigation without fertilizer or when it is required to dismantle the injector.

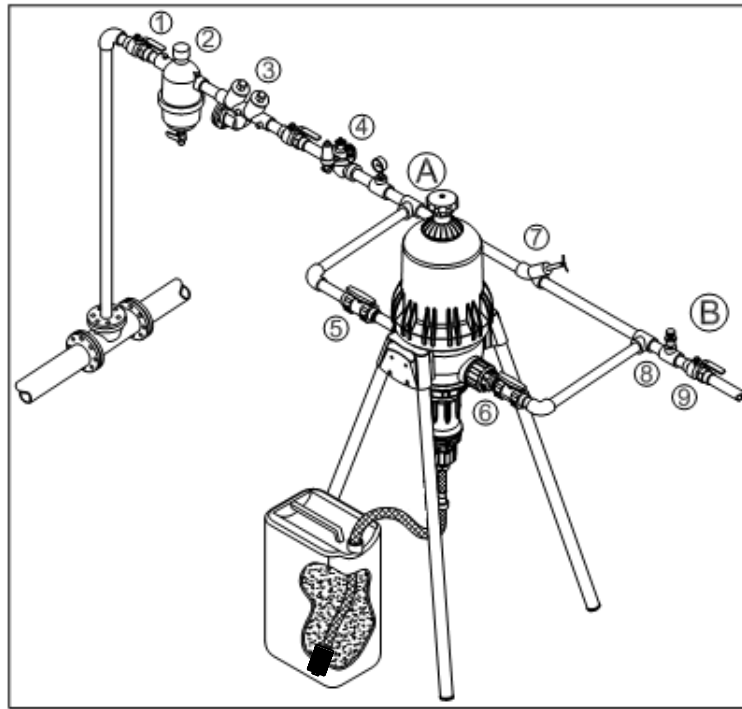


Installation of the injector on a bypass line

It is necessary to fit the proportional dosing injector to a bypass line when irrigating with a flow rate higher than the maximum recommended for the injector. The bypass enables only part of the water flow to pass through the bypass and activate the injector, while the remainder passes through the main line. Using the choke valve (7) on the main line, the flow of water passing through the main line is regulated so that the rest of the flow passes through the bypass and activates the injector. The metering must be calculated in accordance with the flow rate passing through both lines.

It is necessary to fit a main valve (1) at the beginning of the line and after it a **backflow prevention valve** (3), **pressure reducer** (4), a water filter (2) of at least 75 mesh, a T connection (A) for diversion from the main line to the bypass, a valve on the bypass before the inlet to the proportioning dosing injector, a valve after the outlet from the injector (9) on the bypass, and a T-connector for the return to the main line (B). A choke valve, preferably an angled valve, should be fitted on the main line between the bypass junction and the return connection, to regulate the flow rates between the main line and the bypass.

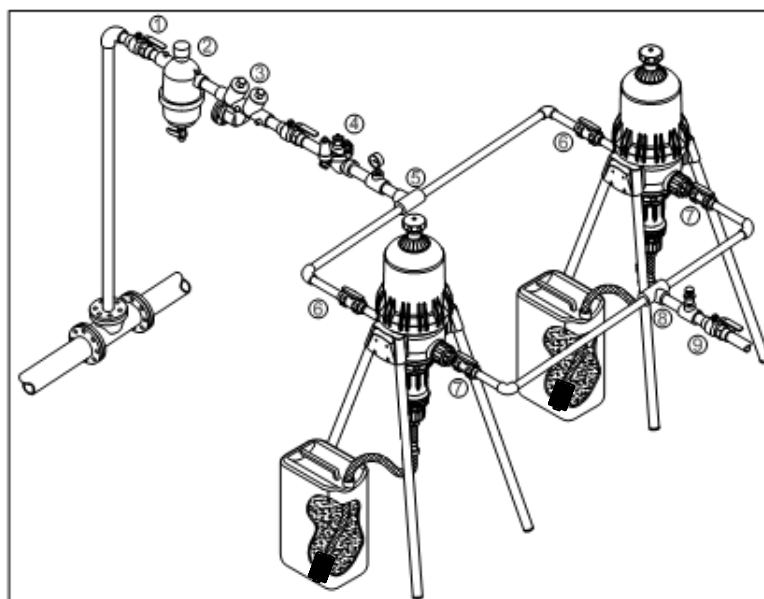
An **anti vacuum valve** (8) should be fitted together with valves for the branch lines after the return connection from the bypass.



Installation of two injectors in parallel

When the water flow rate in the irrigation line is higher than the maximum nominal flow rate of the injectors, the water may be divided between two injectors. If the 2 injectors are used for pumping the same type of fertilizer, the scales should be adjusted in an identical manner to the same level of metering. Two different additives may be metered at different levels. The metering in each unit must be calculated separately for each flow rate passing through each of the two injectors.

It is necessary to fit a main valve (1) at the beginning of the water line water and after it, a backflow prevention valve (3) , a pressure reducer (4) , a filter (2) with at least a 75 mesh. A T-junction (5) is then fitted from the main line into 2 lines. To each of these lines are fitted a regulation valve (6), the injector, and a non-return valve immediately after the injector (7) and a connection back to the main line (8). Care must be taken to ensure that both branches are exactly the same length.



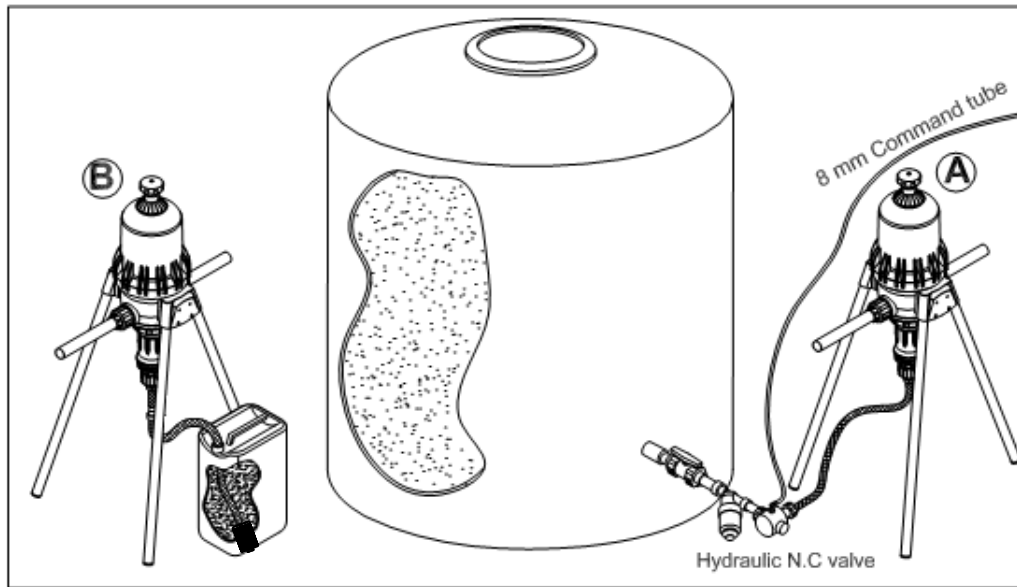
Connection to the Fertilizer Tank

Connect the suction tube to the fertilizer tank (preferably about 5 cm (2") above the bottom). The liquid fertilizer must be passed through a filter with at least a 120 mesh.

If the fertilizer is drawn from an open tank, a heavy weight should be placed at the end of the suction tube that will keep the opening of the suction tube inside the additive liquid and prevent the tube from floating and falling outside the tank.

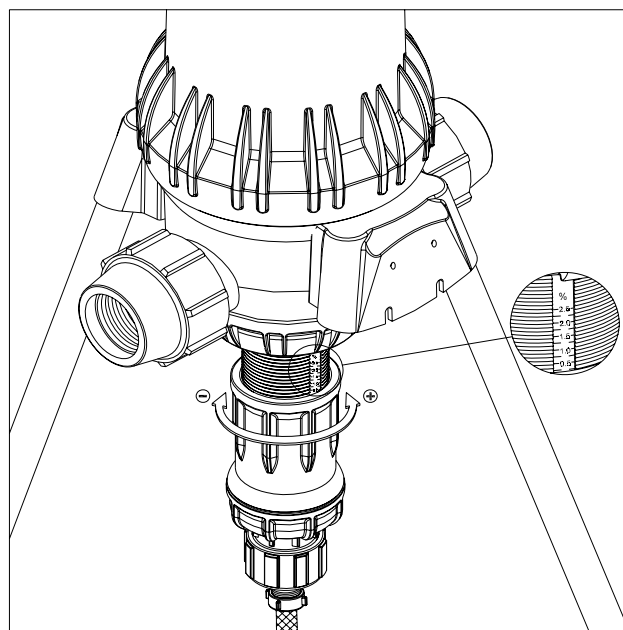
Make sure that the level of the fertilizer is always below the injector. Otherwise uncontrolled flow of the fertilizer may occur.

When connecting to a large fertilizer tank use a valve that is not affected by the fertilizer and an N.C. valve to prevent the siphon effect. The valve will only open when there is water pressure in the irrigation line



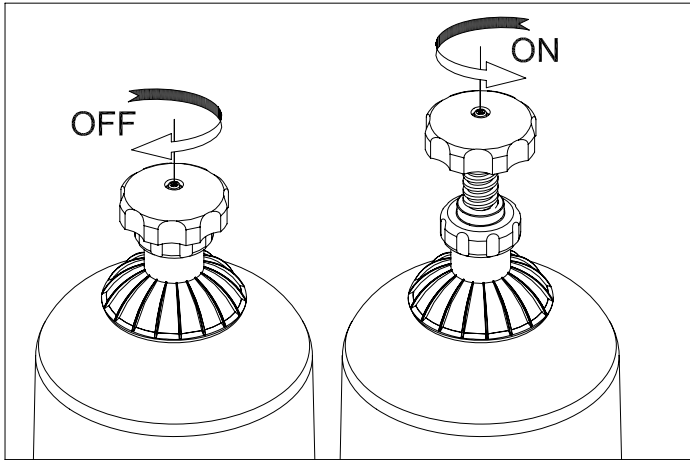
Adjustment of Metering

On the metering cylinder there is a scale indicating the percentage of additives. When the entry valve is closed and there is no water pressure in the injector, turn the adjustment control nut and set its upper edge on the percentage required. Turning it counterclockwise increases the amount of fertilizer metered. Turning it clockwise decreases the amount of fertilizer metered. The actual fertilizer metering rate should be checked. If necessary, adjust by increasing or decreasing the adjustment control nut.



Manual On/Off Control

In models with a manual on/off control the suction can be controlled while the water flows through the injector. Turning the on/off handle clockwise to the end of the threads stops the suction. Turning the on/off handle counter clockwise till it is fully open starts the operation of the suction unit.



Hydraulic On/Off Control

In models with a hydraulic on/off control the suction can be controlled while the water continues to flow through the injector, using a connection to the control tubes that are controlled by the irrigation computer by means of electric valves.

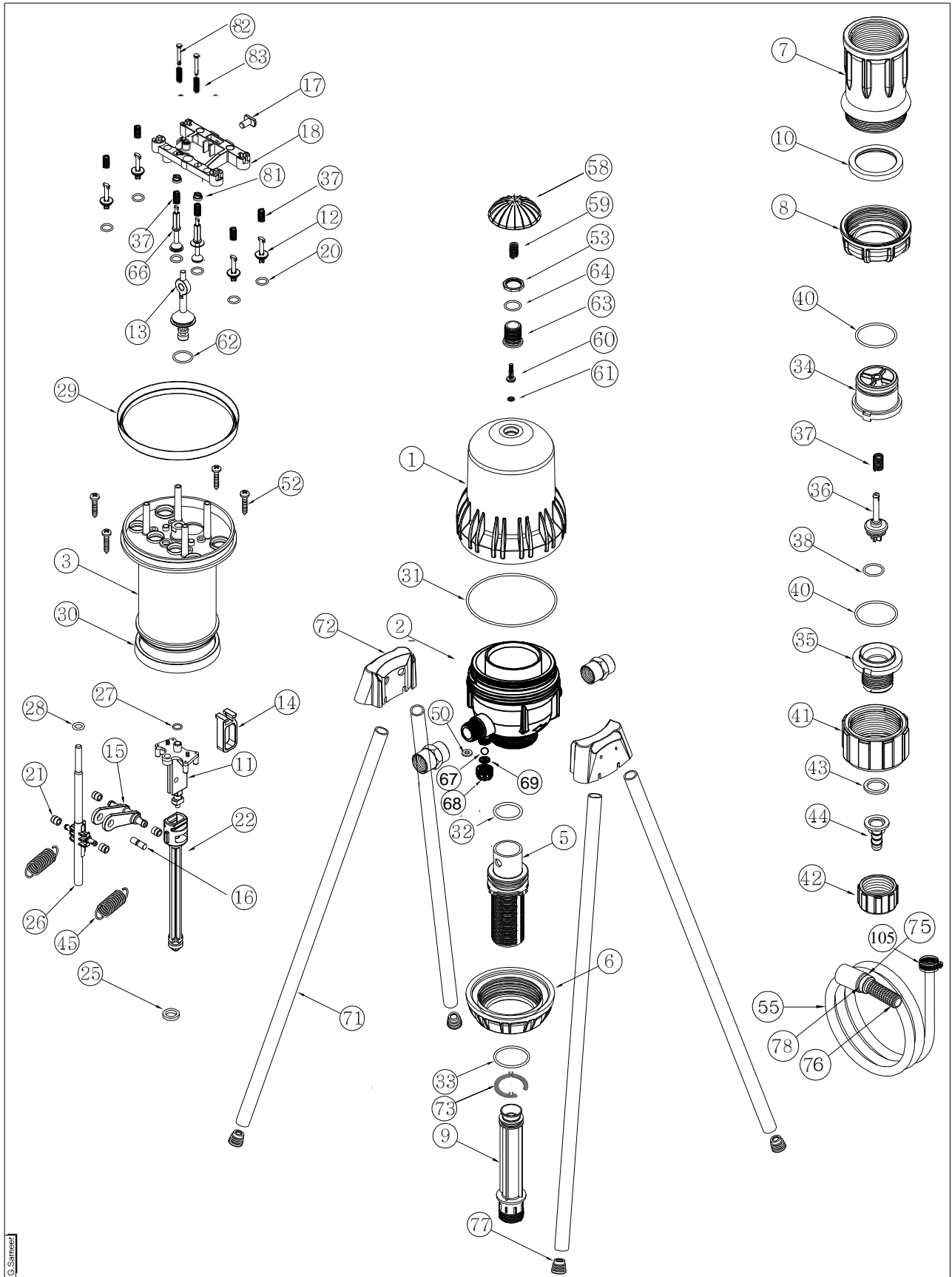


Routine Maintenance

Regularly clean the water filter at the the injector inlet and the fertilizer suction filter.

If it is planned not to operate the injector for a long period, operate the injector for a few minutes with the metering tube immersed in a tank with clean water to remove fertilizer residues from the injector preventing them solidifying in the injector.

If there is a fear of frost, and the temperature falling below 4° C (39°F), empty the water from the injector. To do this, close the entry and exit valves securely. Open and dismantle the 3/4" record that connects the suction pipe. Press the suction check valve using a finger or a thin rod, allowing all the water that has collected in the injector to drain out while pressing the air release valve at the top of the injector.

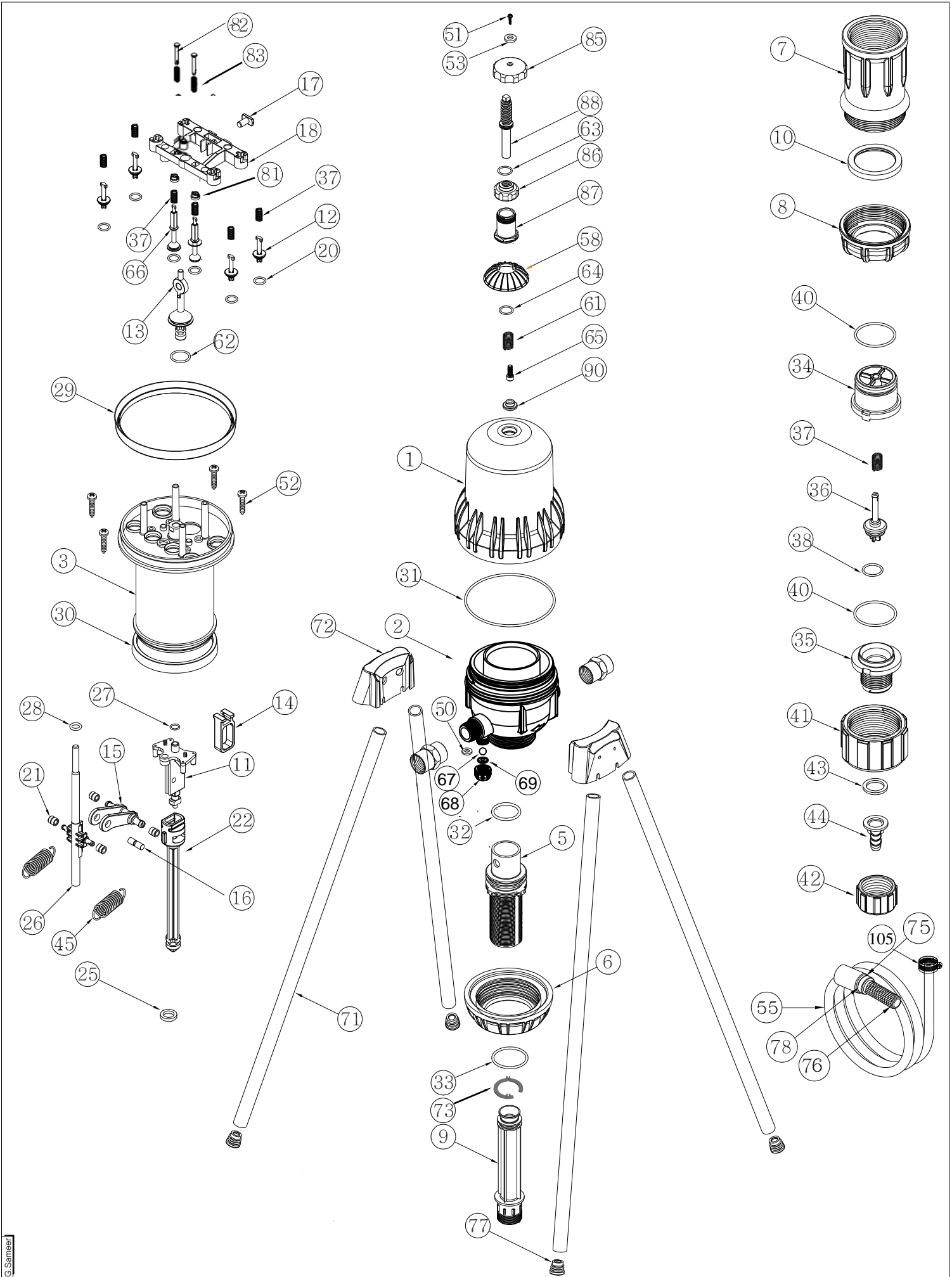




PARTS

MIXRITE TF 5 - 0.1%-1%
 MIXRITE TF 5 - 0.2%-2%
 MIXRITE TF 5 - 0.5%-5%

| No. | COMPONENT NAME | COMPONENT CODE | No. | COMPONENT NAME | COMPONENT CODE |
|-----|------------------------------|----------------|-----|-----------------------------------|----------------|
| 1 | TF 5 COVER | 35201011301 | 36 | PISTON CHECK VALVE | 36030162284 |
| 2 | BODY 1" BSP | 35202041302 | 37 | SPRING FOR CHECK VALVE | 38060797429 |
| 2 | BODY 1" NPT | 35202031302 | 38 | O RING 2-206 | 38022060084 |
| 2 | | | 39 | | |
| 2 | BODY 32 | 35202051302 | 40 | O RING 30*3 | 38003032246 |
| 3 | PISTON TF5 | 35203013103 | 41 | CHECK VALVE NUT | 36030622100 |
| 5 | CYLINDER SUPPORT TF5 | 35204011305 | 42 | NUT 3/4"HOLE 20 | 36030120033 |
| 6 | CYLINDER SUPPORT NUT TF5 | 35205011806 | 43 | WASHER FOR SWIVEL 3/4" | 37245581200 |
| 7 | ADJUSTMENT NUT TF5 | 35207011807 | 44 | RECORD BODY 19X3/4" - 5% model | 32454759122 |
| 8 | LATCH NUT TF5 | 35208011808 | 44 | RECORD BODY 12x3/4" - 1%,2% MODEL | 32454752122 |
| 9 | CYLINDER 1% MIXRITE TF 5 | 35209016109 | 45 | SPRING 1 TF 10 /TF5 | 38000001149 |
| 9 | CYLINDER 2% MIXRITE TF 5 | 35210016109 | | | |
| 9 | CYLINDER 5% MIXRITE TF 5 | 35211016109 | 50 | FLAT SEAL | 36000022248 |
| 10 | CYLINDER SUPPORT SPACER TF5 | 35217013110 | 52 | EJOTE SCREW WN-1412 | 38000001152 |
| 11 | INSIDE BASE TF5 | 35212010111 | 53 | NUT 3/4" | 38000007389 |
| 12 | LARGE EXIT VALVE 3 TF5 | 35219013112 | | | |
| 13 | CENTRAL VALVE 3 TF5 | 35227011113 | 55 | SUCTION TUBE 19mm - 5% MODEL | 36030001955 |
| 14 | TOGGLE FRAME TF5 | 35227011214 | 55 | SUCTION TUBE 16 mm - 1%,2% model | 36030001655 |
| 15 | TOGGLE TF5 | 35216013115 | 58 | AIR RELEASE | 35016003858 |
| 16 | TOGGLE PIN TF5 | 35213013116 | 59 | SPRING 5 | 38060000059 |
| 17 | BRIDGE PIN TF5 | 35213013117 | 60 | AIR RELEASER SCREW | 36030284360 |
| 18 | BRIDGE TF5 | 35206011118 | 61 | O RING 2-107 | 38060210761 |
| 19 | | | 62 | O RING 2-113 | 38060211362 |
| 20 | O RING 2-110 | 38060211045 | 63 | ADAPTOR 3/4" | 35000003863 |
| 21 | TOGGLE BEARING | 35121011121 | 64 | O RING 20X3 | 38060220036 |
| 22 | PISTON BAR 1% TF5 | 35222011222 | 65 | | |
| 22 | PISTON BAR 2% TF5 | 35222021222 | 66 | INNER VALVE TF5 | 35220013166 |
| 22 | PISTON BAR 5% TF5 | 35225051222 | 67 | BALL | 38000000067 |
| 23 | | | 68 | 1/2" BSPT NUT | 35226013324 |
| 24 | | | 69 | 1/2" SEAL PLATE | 35217013123 |
| 25 | SUCTION SEAL 1% MIXRITE TF 5 | 35202011225 | 71 | EASEL LEG TF10 | 38000004171 |
| 25 | SUCTION SEAL 2% MIXRITE TF 5 | 35202021225 | 72 | TF10 BRACKET | 35125011872 |
| 25 | SUCTION SEAL 5% MIXRITE TF 5 | 35202051225 | 73 | GUIDE RING CYLINDER SUPPORT TF5 | 35228011168 |
| 26 | OPERATION ROD | 35214013126 | 75 | HOSE COVER 19 MM | 36030111935 |
| 27 | "O" Ring 12X2 | 37005852002 | 75 | HOSE COVER 12 MM - 1%,2% MODEL | 36030111235 |
| 28 | "O" RING 2-011 VITON | 38020111228 | 76 | SUCTION FILTER 30 | 36030013036 |
| 29 | UPPER PISTON SEAL | 35223012229 | 77 | EASEL LEG PLUG D. 22 | 38001003277 |
| 30 | LOWER PISTON SEAL | 35224012230 | 78 | FILTER WEIGHT - 5% MODEL | 38002000107 |
| 31 | O RING 2-356 | 38023562231 | 78 | FILTER WEIGHT - 1%,2% MODEL | 38060801038 |
| 32 | O RING 7*50 | 38050072232 | 81 | V7 INNER VALVE LOCKER | 35028001181 |
| 33 | | | 82 | TF5 PISTON STROKE STOPPER | 35213013119 |
| 33 | O RING 28*7 FOR 1%,2% MODEL | 38028072233 | 83 | SPRING 4 | 38060797430 |
| 33 | O RING 2-219 FOR 5% MODEL | 38022192233 | | | |
| 34 | CHECK VALVE SLEEVE | 36030675102 | | | |
| 35 | CHECK VALVE LID | 36030101101 | | | |
| | | | 105 | SST CLIP SCREW - 5% MODEL | 38013322102 |





PARTS

MIXRITE TF 5 ON/OFF - 0.1%-1%
 MIXRITE TF 5 ON/OFF - 0.2%-2%
 MIXRITE TF 5 ON/OFF - 0.5%-5%

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| | | | 39 | | |
| 2 | BODY 32 | 35202051302 | 40 | O RING 30*3 | 38003032246 |
| 3 | PISTON TF5 | 35203013103 | 41 | CHECK VALVE NUT | 36030622100 |
| 5 | CYLINDER SUPPORT TF5 | 35204011305 | 42 | NUT 3/4"HOLE 20 | 36030120033 |
| 6 | CYLINDER SUPPORT NUT TF5 | 35205011806 | 43 | WASHER FOR SWIVEL 3/4" | 37245581200 |
| 7 | ADJUSTMENT NUT TF5 | 35207011807 | 44 | RECORD BODY 19X3/4" - 5% model | 32454759122 |
| 8 | LATCH NUT TF5 | 35208011808 | 44 | RECORD BODY 12x3/4" - 1%,2% MODEL | 32454752122 |
| 9 | CYLINDER 1% MIXRITE TF 5 | 35209016109 | 45 | SPRING 1 TF 10 /TF5 | 38000001149 |
| 9 | CYLINDER 2% MIXRITE TF 5 | 35210016109 | | | |
| 9 | CYLINDER 5% MIXRITE TF 5 | 35211016109 | 50 | FLAT SEAL | 36000022248 |
| 10 | CYLINDER SUPPORT SPACER TF5 | 35217013110 | 51 | SCREW | 38004181152 |
| 11 | INSIDE BASE TF5 | 35212010111 | 52 | EJOTE SCREW WN-1412 | 38000001152 |
| 12 | LARGE EXIT VALVE 3 TF5 | 35219013112 | 53 | SST DISC | 38004001153 |
| 13 | CENTRAL VALVE 3 TF5 | 35227011113 | | | |
| 14 | TOGGLE FRAME TF5 | 35227011214 | 55 | SUCTION TUBE 19mm - 5% MODEL | 36030001955 |
| 15 | TOGGLE TF5 | 35216013115 | 55 | SUCTION TUBE 16 mm - 1%,2% model | 36030001655 |
| 16 | TOGGLE PIN TF5 | 35213013116 | 58 | AIR RELEASE -W.HOLE | 35116003858 |
| 17 | BRIDGE PIN TF5 | 35213013117 | 61 | SPRING | 38000001148 |
| 18 | BRIDGE TF5 | 35206011118 | 62 | O RING 2-113 | 38060211362 |
| 19 | | | 63 | O RING 2-206 | 38022060084 |
| 20 | O RING 2-110 | 38060211045 | 64 | O RING 2-118 | 38021189264 |
| 21 | TOGGLE BEARING | 35121011121 | 65 | SS SCREW M8*55 | 38030183091 |
| 22 | PISTON BAR 1% TF5 | 35222011222 | 66 | INNER VALVE TF5 | 35220013166 |
| 22 | PISTON BAR 2% TF5 | 35222021222 | 67 | BALL | 38000000067 |
| 22 | PISTON BAR 5% TF5 | 35225051222 | 68 | 1/2" BSPT NUT | 35226013324 |
| 23 | | | 69 | 1/2" SEAL PLATE | 35217013123 |
| 24 | | | 71 | EASEL LEG TF10 | 38000004171 |
| 25 | SUCTION SEAL 1% MIXRITE TF 5 | 35202011225 | 72 | TF10 BRACKET | 35125011872 |
| 25 | SUCTION SEAL 2% MIXRITE TF 5 | 35202021225 | 73 | GUIDE RING CYLINDER SUPPORT TF5 | 35228011168 |
| 25 | SUCTION SEAL 5% MIXRITE TF 5 | 35202051225 | 75 | HOSE COVER 19 MM | 36030111935 |
| 26 | OPERATION ROD | 35214013126 | 75 | HOSE COVER 12 MM - 1%,2% MODEL | 36030111235 |
| 27 | "O" Ring 12X2 | 37005852002 | 76 | SUCTION FILTER 30 | 36030013036 |
| 28 | "O" RING 2-011 VITON | 38020111228 | 77 | EASEL LEG PLUG D. 22 | 38001003277 |
| 29 | UPPER PISTON SEAL | 35223012229 | 78 | FILTER WEIGHT - 5% MODEL | 38002000107 |
| 30 | LOWER PISTON SEAL | 35224012230 | 78 | FILTER WEIGHT - 1%,2% MODEL | 38060801038 |
| 31 | O RING 2-356 | 38023562231 | 81 | V7 INNER VALVE LOCKER | 35028001181 |
| 32 | O RING 7*50 | 38050072232 | 82 | PISTON STROKE STOPPER | 35213013119 |
| 33 | | | 83 | SPRING 4 | 38060797430 |
| 33 | O RING 28*7 FOR 1%,2% MODEL | 38028072233 | 85 | ON/OFF KNOB FOR TF | 38000007385 |
| 33 | O RING 2-219 FOR 5% MODEL | 38022192233 | 86 | ON/OFF NUT LEAD FOR TF | 38000007386 |
| 34 | CHECK VALVE SLEEVE | 36030675102 | 87 | ON/OFF CONNECTOR FOR TF | 38000107387 |
| 35 | CHECK VALVE LID | 36030101101 | 88 | ON/OFF SCREW CONNECTOR FOR TF | 38000007388 |
| | | | 90 | ON/OFF OPERATING DISC TF10 | 35200007390 |
| | | | 105 | SST CLIP SCREW- 5% MODEL | 38013322102 |

Troubleshooting Guide

| Problem | Check | Solution |
|------------------------------------|--|---|
| The injector does not work | The injector is fitted with the arrows in the opposite direction to the water flow. | Fit The injector with the arrows in the direction of the water flow. |
| | The inlet and outlet valves are closed. | Open the valves |
| | The inlet filter is blocked. | Clean the filter. |
| | There is no water flow at the appropriate pressure. | Open the main valve. |
| The injector has stopped working | There is no water flow at the appropriate pressure. Open the main valve. Open the nut locking the motor cover, remove the motor cover, and remove the mechanism. Check if the motor seals are defective. | Replace the motor seals. |
| | Check if the springs are broken. | Replace the springs. |
| | Check if the seals above the valves are defective or have been displaced. | Replace the seals. |
| | Check if one of the parts of the mechanism is broken. | Replace the broken part. |
| There is a leak from the injector. | The leak is from the connection between the body and the cover. | Open and remove the motor cover, replace the seal, fit the cover, and thoroughly tighten the cover locking nut. |
| | The leak is from the connection of the suction tube. | Remove the suction tube, replace the defective seal and reconnect. |
| | The leak is from the non-return valve. | Dismantle the non-return valve and replace the defective seal. |
| There is no suction. | The suction filter is blocked. | Clean the filter. |
| | Dismantle the injector unit and check if the suction seal is defective. | Replace the suction seal. |
| | The non-return valve is defective. | Replace the non-return valve. |

For advice, technical support and purchase of spare parts, Contact the authorized sales representative in your area.