

## LIMITATIONS, DESCRIPTIONS AND MAINTANCE OF THIS SYSTEM

### MODEL WRU 3 RO-(GPD)

**LIMITATIONS – OUTPUT OF PUREWATER.** THE THIN FILM COMPOSITE MEMBRANE IN THIS SYSTEM IS RATED BY GALLONS PER DAY OF PRODUCTION IT CAN ACHIVE. THIS RATING WAS DETERMINED AT A WATER INLET PSI OF 65. A WATER TEMPERATURE OF 77 DEGREES FAHRENHEIT AND A WATER TDS LEVEL OF 500 MG/L NaCl SOLUTION. IF INLET PRESSURE IS BELOW 65, THERE IS A PROPORTIONATE DECREASE IN PURE WATER PRODUCTION. IF THE WATER IS BELOW 77 DEGREES FAHRENHEIT, PRODUCTION WILL BE LESS, IF MORE THAN 500 TDS IS PRESENT IN THE SOURCE WATER, PRODUCTION MAY BE SLIGHTLY AFFECTED. SYSTEM OUTPUT WILL INCREASE AFTER CARTRIDGES AND MEMBRANE BECOME SATURATED (WITHIN ONE WEEK).

### DESCRIPTION OF SYSTEM FUNCTIONS

LOOKING AT THE SYSTEM FROM THE FRONT --- FROM RIGHT TO LEFT.

- 1) THE **FIRST CANISTER** CONTAINS A **5-MICRON CARBON BLOCK** CARTRIDGE. THE **PURPOSE** OF THIS CARTRIDGE IS TO **REMOVE SEDIMENT** FROM THE SOURCE WATER. THE FACT THAT IT IS A CARBON BLOCK MEANS THAT THE CARTRIDGE WILL ALSO DO A **SECONDARY** FUNCTION OF **REMOVING CHLORINE** FROM THE SOURCE WATER. (P/N IWF CTO 85-5)
- 2) THE **SECOND CANISTER** CONTAINS A **1-MICRON CARBON BLOCK** CARTRIDGE. THE **PURPOSE** OF THIS CARTRIDGE IS TO **REMOVE CHLORINE**. THE FACT THAT THE CARTRIDGE IS RATED AT 1-MICRON MEANS THAT IT WILL ALSO CONTINUE A **SECONDARY** FUNCTION OF **REMOVING ADDITIONAL SEDIMENT** FROM THE SOURCE WATER. (P/N IWF CTO 85-1).
- 3) THE **MEMBRANE HOUSING** (MOUNTED HORIZONTALLY) CONTAINS A GALLON PER DAY (GPD) PRODUCTION RATED **THIN FLIM COMPOSITE MEMBRANE**. THE SOURCE WATER HAS PASSED THROUGH CANISTERS #1 AND #2 AND IS CLEAN AND CHLORINE FREE. THE PREFILTERED SOURCE WATER ENTERS THE MEMBRANE HOUSING TO BEGIN THE **PROCESS OF REVERSE OSMOSIS SEPARATION** OF PURE WATER FROM TOTAL DISSOLVED SOLIDS (TDS), PESTICIDES, VIRUSES, BACTERIA, HERBICIDES, HEAVY METALS, CYSTS, CALCIUM, ARSENIC. ECT. **NOTE: THE PORE SIZE OF THE MEMBRANE IS NO LARGER THAN .001 MICRON. (OR, 1/1000 OF A MICRON).**

THE PURE WATER EXITS THE MEMBRANE HOUSING THROUGH A BLUE ¼" POLYETHYLENE

TUBE. THIS TUBE LEADS TO THE RESERVOIR OR TANK WHERE IT WILL BE STORED OR USED TO RESUPPLY EVAPORATED TANK WATER.

THE REJECTED TDS WATER EXITS THE MEMBRANE HOUSING THROUGH A RED TUBE AND FLOWS THROUGH A FLOW RESTRICTOR AND DOWN THE WASTE DRAIN OF THE LOCATION PREMISES.

### **MAINTENANCE OF THIS SYSTEM**

- 1) IF PURE WATER PRODUCTION BEGINS TO SLOW DOWN IT USUALLY MEANS THE **5-MICRON CARBON BLOCK CARTRIDGE** IN THE **FIRST CANISTER** IS BEGINNING TO CLOG WITH SEDIMENT AND SHOULD BE CHANGED.
- 2) THE **SECOND CANISTER** CONTAINS A **1-MICRON CARBON BLOCK CARTRIDGE** THAT SHOULD BE CHANGED AFTER THE SYSTEM HAS PRODUCED 1,500 GALLONS OF PURE WATER. **KEEP A LOG OF THE APPROXIMATE GALLONAGE OF PURE WATER PRODUCED BY THE SYSTEM.** CHLORINE REMOVAL FROM SOURCE WATER IS VERY IMPORTANT TO OBTAIN MAXIMUM LIFE FROM THE SYSTEM MEMBRANE.
- 3) IF THE CARTRIDGE IN THE FIRST CONTAINER HAS NOT CLOGGED FROM SOURCE WATER SEDIMENT BEFORE PURE WATER PRODUCTION REACHES 1,500 GALLONS AND IT IS TIME TO CHANGE THE CARTRIDGE IN CANISTER #2, CHANGE BOTH THE 1 AND 5-MICRON CARBON BLOCKS IN CANISTER #1 AND #2.
- 4) **CHANGING A CARTRIDGE.** THE SYSTEM COMES WITH A SPANNER WRENCH. IT LOOKS LIKE A SMALL TENNIS RACKET WITH NO STRINGS. IT FITS AROUND THE BOTTOM PART OF THE CARTRIDGE CANISTER AND SLIDES UP THE SIDES OF THE CANISTER SUMP UNTIL IT CAN SLIDE UP NO FURTHER. TURN OFF WATER TO THE SYSTEM. WHEN FACING THE SYSTEM, TURN WRENCH RIGHT TO LEFT (COUNTER CLOCKWISE) TO LOOSEN AND REMOVE THE SUMP. REMOVE CARTRIDGE FROM THE CANISTER SUMP. RINSE OUT SUMP WITH WATER. THE NEW CARTRIDGE HAS A RUBBER WASHER ON EACH END. SPREAD A LITTLE VASELINE OVER THE SURFACE OF EACH WASHER TOP. INSERT THE CARTRIDGE IN EITHER DIRECTION. THERE IS NO WRONG WAY. SPREAD VASELINE OVER THE SURFACE OF THE O-RING AND REPLACE IT ON THE HEAD OR SUMP. SCREW CANISTER SUMP BACK ONTO CANISTER HEAD. WITH SPANNER WRENCH TURN LEFT TO RIGHT TO TIGHTEN. TURN WATER ON AND CHECK FOR LEAKS.
- 5) **FLUSHING THE MEMBRANE.** WHEN IT IS TIME TO FLUSH THE MEMBRANE, REMOVE THE RED TUBE FROM THE MEMBRANE HOUSING. THE FITTING HOLDING THIS TUBE IS AN ACETAL QUICK CONNECT. THE ACETAL RING SURROUNDING THE RED TUBE SHOULD BE PRESSED FIRMLY AGAINST THE BODY OF THE ACETAL FITTING. THEN THE RED TUBE CAN BE PULLED OUT OF THE ACETAL RING (COLLET). PUSHING THE RING

(COLLET) TOWARD THE FITTING RELEASES ITS GRIP ON THE TUBE. ONCE THE RED TUBE IS FREE FROM THE FITTING YOU WILL SEE THE FLOW RESTRICTOR WEDGED INTO THE END OF THE RED TUBE. PLUCK THE RESTRICTOR OUT OF THE RED TUBE. REPLACE THE TUBE INTO THE ACETAL RING AND PUSH. YOU WILL FEEL A RESISTANCE WHEN THE TUBE TOUCHES THE O-RING LOCATED INSIDE THE FITTING. WHEN YOU FEEL THIS RESISTANCE, PUSH THE RED TUBE THROUGH THIS RESISTANCE AND THUS THROUGH THE O-RING. THE RED TUBE IS NOW RELEASED. TURN ON THE SYSTEM FOR 10 MINUTES. WITHOUT THE FLOW RESTRICTOR IN PLACE, WATER WILL FLOW QUICKLY OVER THE SURFACE OF THE MEMBRANE AND WASH AWAY ANY BUILT UP PRECIPITATED MATERIAL THAT HAS COLLECTED ON THE SURFACE OF THE MEMBRANE. AFTER 10 MINUTES OF FLUSHING, TURN OFF SYSTEM AND REPLACE THE FLOW RESTRICTOR.

- 6) **REPLACE THE MEMBRANE.** EVERY YEAR, CHECK THE WATER EXITING THE BLUE TUBE AND READ ITS TDS CONTENT. IF TDS EXCEEDS 40 PPM, THE MEMBRANE SHOULD BE REPLACED. TURN OFF SYSTEM. REMOVE YELLOW TUBE FROM THE ACETAL QUICK CONNECT IN THE CENTER OF THE MEMBRANE HOUSING CAP. UNSCREW MEMBRANE HOUSING CAP. BE CAREFUL NOT TO LOSE THE O-RING. WITH PLIERS, GRIP THE PLASTIC ROUND END OF THE MEMBRANE. PULL HARD TO BREAK SEAL. TAKE NEW MEMBRANE AND SPREAD VASLINE ON END TUBE O-RINGS. ALSO, PUT VASLINE ON MEMBRANE HOUSING CAP O-RING. PUSH NEW MEMBRANE INTO HOUSING (2 O-RING TUBE FIRST) WITH THE PALM OF YOUR HAND. YOU WILL FEEL THE TWO O-RINGS HIT THE POST CAVITY AT THE OTHER END OF HOUSING. PUSH WITH A LITTLE EXTRA PRESSURE AT THAT POINT TO FEEL THE O-RINGS SLIDE INTO THE POST CAVITY. SCREW ON CAP WITH O-RING AND REATTACH YELLOW TUBE WITH A HARD PUSH INTO THE ACETAL QUICK CONNECT RING (COLLET).
- 7) **SANITIZING THE SYSTEM.** (A GOOD TIME IS WHEN MEMBRANE MUST BE CHANGED). TURN OFF WATER SOURCE. REMOVE ALL CARTRIDGES AND MEMBRANE. POUR 2 OUNCES OF CHLORINE BLEACH INTO CANISTER #1. TIGHTEN ALL EMPTY CANISTERS & HOUSING AS IF THEY CONTAINED CARTRIDGES AND MEMBRANES. TURN ON WATER SOURCE. **MAKE SURE END OF BLUE TUBE IS NOT IN A RESERVIOR OR TANK. PUT END OF BLUE TUBE IN A DRAIN.** FILL THE SYSTEM UNTIL WATER RUNS OUT OF RED & BLUE TUBES. SHUT OFF WATER. WAIT /2 HOUR. NOW, FLUSH OUT THE SYSTEM BY LETTING THE WATER RUN FOR 15 MINUTES. REATTACH BLUE TUBE TO TANK OR RESERVIOR. REPLACE THE MEMBRANE AND CARTRIDGES. SEAL ALL CANISTERS AND HOUSING . TURN ON SYSTEM AND CHECK FOR LEAKS.

## **LIMITED WARRANTY**

ENTIRE SYSTEM HAS A LIMITED ONE YEAR WARRANTY THAT INCLUDES BOTH MATERIAL AND WORKMANSHIP. (REPLACEABLES SUCH AS CARTRIDGES, ELEMENTS, AND MEMBRANES ARE NOT COVERED).