

LIMITATIONS, DESCRIPTION & MAINTENANCE **OF THIS SYSTEM**

MODEL WRU 4 RO/DI

LIMITATIONS-OUTPUT OF PURE WATER. THE THIN FILM COMPOSITE MEMBRANE IN THIS SYTEM IS RATED BY GALLONS PER DAY OF PRODUCTION IT CAN ACHIEVE. 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 BECOMES SATURATED (WITHIN ONE WEEK).

DESCRIPTION OF SYSTEM FUNCTIONS

LOOK AT THE SYSTEM FROM THE FRONT...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 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 FILM 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 SEPERATION** OF PURE WATER FROM TOTAL DISSOLVED SOLIDS (TDS), PESTICIDES, VIRUSES, BACTERIA, HERBICIDES, HEAVY METALS, CYSTS, CALCIUM, ARSENIC, ETC. **NOTE: THE PORE SIZE OF THE MEMBRANE IS NO LONGER THAN .001 MICRON. (OR, 1/1000 OF A MICRON)**

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

4.)THE **PURE WATER EXITS** THE MEMBRANE HOUSING THOUGH A **YELLOW 1/4" POLYETHYLENE TUBE**. THIS TUBE ENTERS **THE THIRD CANISTER**, WHICH CONTAINS **A DYED MIXED BED OF DEIONIZING CATION AND ANION RESINS**.

THE PURE WATER EXITING THE MEMBRANE HOUSING HAS LITTLE IF ANY TDS REMAINING AND ENTERS THE THIRD CANISTER WHERE THE DYED MIXED BED RESINS OF THE DI CARTRIDGE WORK TO **REMOVE REMAINING NEGATIVELY AND POSITIVELY CHARGES IONS (TDS)** THAT MAY STILL EXIST IN THE PURE PRODUCT WATER.

NORMALLY, DI RESIN IS USED BY ITSELF TO REMOVE ALL TDS IN SOURCE

WATER. USED IN THIS MANNER, DI RESINS BECOME EXHAUSTED QUICKLY. HOWEVER, WHEN DI MIXED BED RESIN IS USED IN COMBINATION WITH REVERSE OSMOSIS TECHNOLOGY, THE DI RESIN CARTRIDGE HAS ONLY TO REMOVE RESIDUAL TDS REMAINING IN THE R.O. PURE PRODUCT WATER AND THE **RESIN WILL LAST FOR SEVERAL HUNDREDS OF GALLONS** BEFORE THE CARTRIDGE NEEDS TO BE CHANGED. THE DYED RESINS IN THE CARTRIDGE **CHANGE COLOR** TO LIGHT TAN AND YELLOW **WHEN THE CARTRIDGE IS EXHAUSTED.**

5.) **ZERO TDS WATER EXITS THE THIRD CANISTER THROUGH A BLUE TUBE.** THIS TUBE SHOULD LEAD TO A RESERVOIR OR TANK AS THE SITUATION OF USE DICTATES.

MAINTENCE OF THE SYSTEM

1.) **CARTRIDGES IN CANISTERS #1 AND # 2** SHOULD BE **CHANGED** **AFTER 1500 GALLONS** OF **PURE WATER** HAS BEEN PRODUCED. **KEEP A LOG ON APPROXIMATE WATER PRODUCED** BECAUSE CHLORINE REMOVAL IS VERY IMPORTANT TO THE LIFE OF THE MEMBRANE AND TIMELY REPLACEMENT OF THE CARBON BLOCK PREFILTER CARTRIDGES PROTECT THE MEMBRANE.

2.) IF THE CARTRIDGE IN CANISTER #1 HAS BEEN CHANGED DUE TO CLOGGING, IT WILL NOT BE NECESSARY TO CHANGE IT ALONG WITH THE

CARTRIDGE IN CANISTER #2 AT THE 1500-GALLON PURE WATER MARK.

THE CARTRIDGES IN CANISTER #1 WILL PROBABLY ALWAYS BE CHANGED OUT TIMELY DUE TO SEDIMENT EXHAUSTION.

3.) **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.

4.) WHEN THE **DI CARTRIDGE** IN CANISTER #3 **CHANGES COLOR**, IT IS **EXHAUSTED AND SHOULD BE CHANGED.** THE NEW CARTRIDGE HAS A RUBBER WASHER ON THE TOP ONLY AND THE CARTRIDGE FITS IN THE CANISTER ONLY IF THE WASHER IS FACING UP.

5.) **REPLACE THE MEMBRANE.** EVERY YEAR OR MORE OFTEN, 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 VASELINE ON THE TWO O-RINGS LOCATED ON END SHAFT. ALSO, PUT VASELINE ON MEMBRANE HOUSING CAP O-RING. PUSH NEW MEMBRANE INTO HOUSING (TWO 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 THE 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).

6.) 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). INSIDE RED TUBING WILL BE A CAPILLARY STYLE FLOW RESTRICTOR, PULL IT OUT OF THE RED TUBING.

7.) SANITIZING THE SYSTEM. (A GOOD TIME IS WHEN THE MEMBRANE MUST BE CHANGED) TURN OFF THE WATER SOURCE. REMOVE ALL CARTRIDGES AND MEMBRANES. POUR 2 OUNCES OF CHLORINE BLEACH INTO CANISTER #1. TIGHTEN ALL EMPTY CANISTERS & HOUSINGS AS IF THEY CONTAINED CARTRIDGES AND MEMBRANES. TURN OFF WATER SOURCE. **MAKE SURE END OF BLUE TUBE IS NOT A RESERVOIR OR TANK. PUT END OF BLUE TUBE IN A DRAIN.** FILL THE SYSTEM UNITL

WATER RUNS OUT OF RED & BLUE TUBES SHUT OFF WATER. WAIT
1/2 HOUR AND THEN FLUSH OUT SYSTEM BY LETTING THE WATER
RUN FOR 15 MINUTES. RE ATTACH BLUE TUBE TO TANK OR RESERVOIR.
REPLACE THE MEMBRANE AND CARTRIDGES. SEAL ALL CANISTERS AND
MEMBRANE HOUSING. TURN ON SYSTEM AND CHECK FOR LEAKS.

LIMITED WARRANTY

ENTIRE SYSTEM HAS A LIMITED ONE YEAR WARRANTY.

INCLUDES BOTH MATERIAL AND WORKMANSHIP.

(REPLACEABLES SUCH AS CARTRIDGES, ELEMENTS &

MEMBRANES ARE NOT COVERED UNDER MATERIALS AND

WORKMANSHIP).