Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

Series PWHC80

Heavy Commercial Reverse Osmosis Systems

WATTS pure water

Connection Size: 2" - 4"
Max. Productivity: 22 GPM to 238 GPM

Watts Series PWHC80 reverse osmosis (RO) systems are heavy commercial grade high-pressure RO units for the reduction of total dissolved solids from water. They are designed to supply reverse osmosis quality water with production rates ranging from 22 to 238 gallons per minute. These units are designed for floor-sitting installations. Reverse osmosis is a process where high-pressure feed water is fed into a semi-permeable membrane. In the membrane, quality water is allowed to pass through the membrane material and exit as permeate water. Dissolved mineral salts are not allowed to pass through the membrane and become a concentrated reject stream that is sent to a drain. These RO systems use high-pressure/high-rejection membranes to achieve a nominal average NaCl ionic rejection of 99.1%.

Series PWHC80 RO systems are a time-tested line of reverse osmosis systems engineered with quality and durability in mind. This series comes with a pre-selected assortment of features, including our digital controller, with built-in conductivity meter for control and monitoring. If more complex control and monitoring is required, an advanced controller is available as optional upgrade. Corrosion resistant fiberglass reinforced plastic (FRP) membrane housings, inlet and outlet pre-filter pressure gauges, low-pressure switch with programmable delayed auto restart, high-pressure switch for system protection inputs, tank level and pretreatment interlock, built-in conductivity meter, high-conductivity alarm output, adjustable reject, permeate and reject water flow meters (flow sensors will be utilized for PWHC8040062 and bigger units), permeate water check valve, inlet solenoid valve /motorized feed valve, pump feed throttle globe valve, membrane feed and reject water pressure gauges, programmable auto flush, and adjustable reject valve are all standard features.

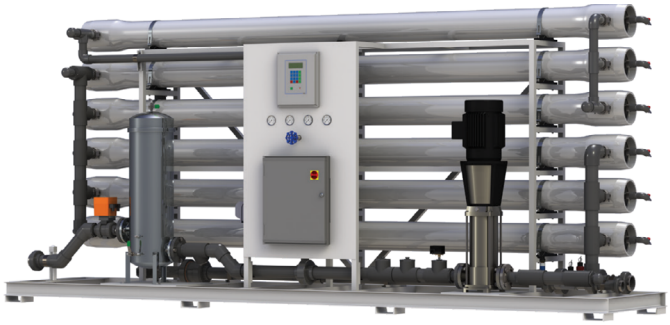
These systems are designed to feed an atmospheric storage tank for collection of the reverse osmosis water, or they can be directed directly to distribution line. Reverse osmosis water has a wide variety of applications including municipal water treatment, steam boiler and steam sterilizer make up, laboratory use, spot free rinsing, ice and beverage water, water for cooking, food processing, metal plating and finishing, as well as water for humidification. Reverse osmosis is also the pretreatment of choice for ion exchange type de-ionization (DI) systems. Using RO water as make up to a DI system reduces the exhaustion rate of the DI resin by up to 95 percent saving time, money, and chemicals associated with DI resin regeneration.

⚠ WARNING

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

NOTICE

For indoor installation only.



PWHC8040076

Features

- Built-in Feed and Permeate Water Conductivity meter with high conductivity alarm output
- Low energy heavy duty brackish membranes, 99.1% nominal salt rejection. 440 sqft
- Membrane Auto Flush
- Powder coated carbon steel support frame
- Corrosion resistant 300 psi FRP high-pressure membrane housings
- Pressure gauge for pre-filter pump discharge
- Low feed water pressure safety switch
- Digital microprocessor based controller with 2 line, 20 character LCD backlit display
- 20" prefilter in a stainless steel filter housing
- Multistage centrifugal pump
- Tank level and pretreatment interlock inputs
- Permeate, and reject water flow meter sensors
- Adjustable reject and reject recycle valves
- Permeate check valve
- Automatic inlet solenoid valve /actuated control valve
- Dedicated outlet from RO panel for chemical feed control

Optional Features

- Feed blending valve
- Advanced controller with more complex monitoring & controlling functions (default for PWHC8040062 and larger)
- pH sensor
- ORP sensor
- Permeate sampling port
- Various power option: 220VAC 3PH 50Hz, 380VAC 3PH 50Hz, 460VAC 3PH 60Hz

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

WATTS®

Specifications

A Series PWHC80 reverse osmosis system shall be installed to provide reverse osmosis quality water. For pre-treatment considerations, a water softener can be installed to prevent scale formation by removing calcium and magnesium hardness, ensuring they do not accumulate on the RO membranes. As an alternative, an antiscalant chemical dosing system can be installed before the RO unit to prevent certain types of scale and fouling. A backwashing carbon filter can be used to remove chlorine, protecting the membranes from degradation caused by chlorine exposure. Additionally, a backwashing sediment filter can be installed to reduce the Silt Density Index (SDI), minimizing particulate fouling of the RO membranes. For detailed chemical selection and equipment sizing, please consult a Watts Technician.

The RO system shall be a low-energy/high-rejection type unit complete with all components necessary for proper operation. The system shall be a floor-sitting design. The RO permeate water is usually collected in an atmospheric storage tank with the tank level controlled by an electronic level float. The RO shall be equipped with inputs for the tank level float as well as pretreatment interlock to shut the RO system down in the event the pretreatment begins a backwash cycle. Electrical requirements are 220 VAC 60 Hz, 3 PH with optional power available. A local drain is required to accept drain water from the system. The feed water pressure must not fall below 1 psi. The feed water temperature must not fall below 40°F or exceed 85°F (4-29°C).

The system shall produce reverse osmosis quality water with 99.1% nominal average ionic rejection of total dissolved solids when operated within the manufacturer's operational specifications.

Feed Water Guidelines

pH	4 to 10
Hardness (maximum)	Less than 1 grain per gallon as $CaCO_3$ (Softened) preferred 0 or anti scale chemical injection if not softened (contact your Watts representative)
Feed Water Pressure (minimum)	45 psi
Temperature	40-85°F (4-29°C)
Free Chlorine (maximum)	Less than 0.1 mg/L
Iron (maximum)	Less than 0.1 mg/L
Oil and H_2S	None Allowed
Turbidity	Less than 1.0 NTU
Silt Density Index	Less than 5.0 SDI preferred < 3 SDI

NOTICE

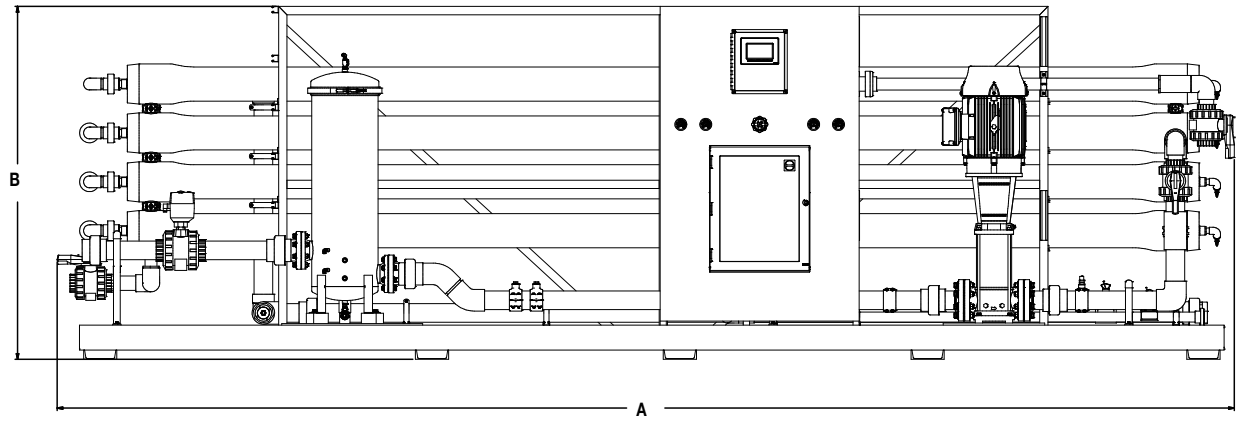
For all other guideline information please contact your Watts representative. Published maximum production rates are based on a feed water of 77°F, SDI of less than 3, 2000 ppm TDS, and pH 8 with a feed pressure of 150 psi. Individual membrane productivity may vary (± 15%). May be operated on other feed waters with reduced capacity.

Percent rejection is based on membrane manufacturer's specifications; overall system percent rejection may be less.

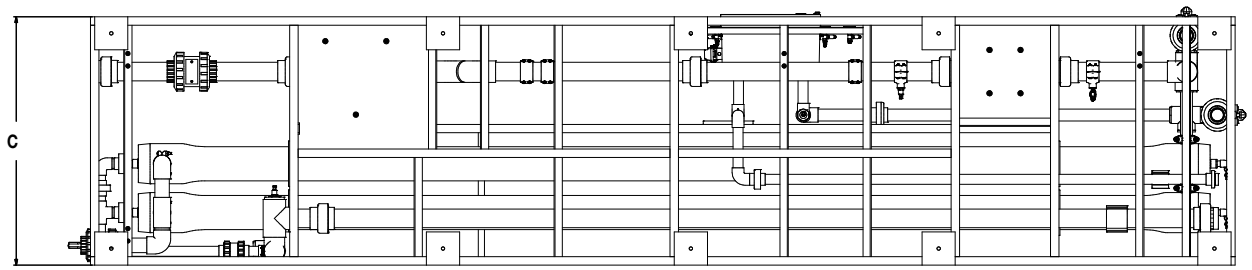
NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Dimensions - Weights



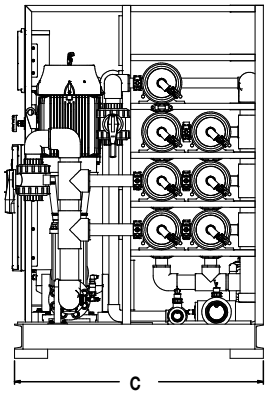
FRONT



TOP

Call customer service if you need assistance with technical details.

MODEL	DIMENSIONS						WEIGHT	
	A		B		C			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
PWHC8040041	72	1829	74	1880	35	889	1305	591.9
PWHC8040051	72	1829	74	1880	35	889	1385	628.2
PWHC8040061	72	1829	80	2032	35	889	1465	664.5
PWHC8040042	112	2845	74	1880	38	965	1585	718.9
PWHC8040052	112	2845	74	1880	38	965	1735	787.0
PWHC8040062	112	2845	80	2032	38	965	1885	855.0
PWHC8040044	194	4928	75	1905	41	1041	2275	1031.9
PWHC8040054	194	4928	75	1905	41	1041	2645	1199.8
PWHC8040064	194	4928	85	2159	41	1041	2910	1320.0
PWHC8040056	276	7010	85	2159	60	1524	3500	1587.6
PWHC8040066	276	7010	85	2159	60	1524	3930	1782.6
PWHC8040076	276	7010	85	2159	60	1524	4450	2018.5



SIDE

Performance

	PWHC8040041	PWHC8040051	PWHC8040061	PWHC8040042	PWHC8040052	PWHC8040062	PWHC8040044	PWHC8040054	PWHC8040064	PWHC8040056	PWHC8040066	PWHC8040076
Order code	7101142	7101143	7101144	7101145	7101146	7101147	7101148	7101149	7101150	7101151	7101152	7101153
Maximum Productivity (gallons per min)	22 gpm	27.5 gpm	33 gpm	44 gpm	55 gpm	66 gpm	88 gpm	110 gpm	132 gpm	165 gpm	200 gpm	238 gpm
Quality (average membrane rejection)	99.1%											
Recovery (user adjustable)	up to 75%											
Membrane Size	8" x 40"											
Membrane surface area (sqft)	440											
Number Of Membranes	4	5	6	8	10	12	16	20	24	30	36	42
Vessel Array	1:1:1:1	1:1:1:1:1	1:1:1:1:1:1	1:1:1:1	2:1:1:1	3:2:1	2:1:1	3:1:1	3:2:1	3:1:1	3:2:1	4:2:1
"Prefilter (system ships with one 5 micron cartridge) "	20"											
Feed Water Connection	2" FNPT					3" FNPT				4" FNPT	4" FNPT	4" FNPT
Product Water Connection	1.5" FNPT			2" FNPT	2" FNPT	2.5" FNPT		3" FNPT				4" FNPT
Reject Water Connection	1.25" FNPT					1.5" FNPT		2" FNPT				
Minimum Concentrate Flow	14 gpm											
Feed Water Pressure (minimum)	45 psi											
Electrical Requirement	230V, 60Hz, 3pH											
Motor Horse Power	10					15		20		25		30
Dimensions W x D x H (approximate inches)	72x35x74		72x35x80	112x38x74		112x35x80	194x41x78		194x41x85	276x60x85		
Shipping Weight (estimated pounds)	1305	1385	1465	1585	1735	1885	2275	2645	2910	3500	3930	4450

Applications

- Food & beverage
- Pharmaceuticals & medical
- Hotels, hospitals, universities
- Boiler feed water
- Municipal water treatment
- Mining water
- Agriculture & hydroponics

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