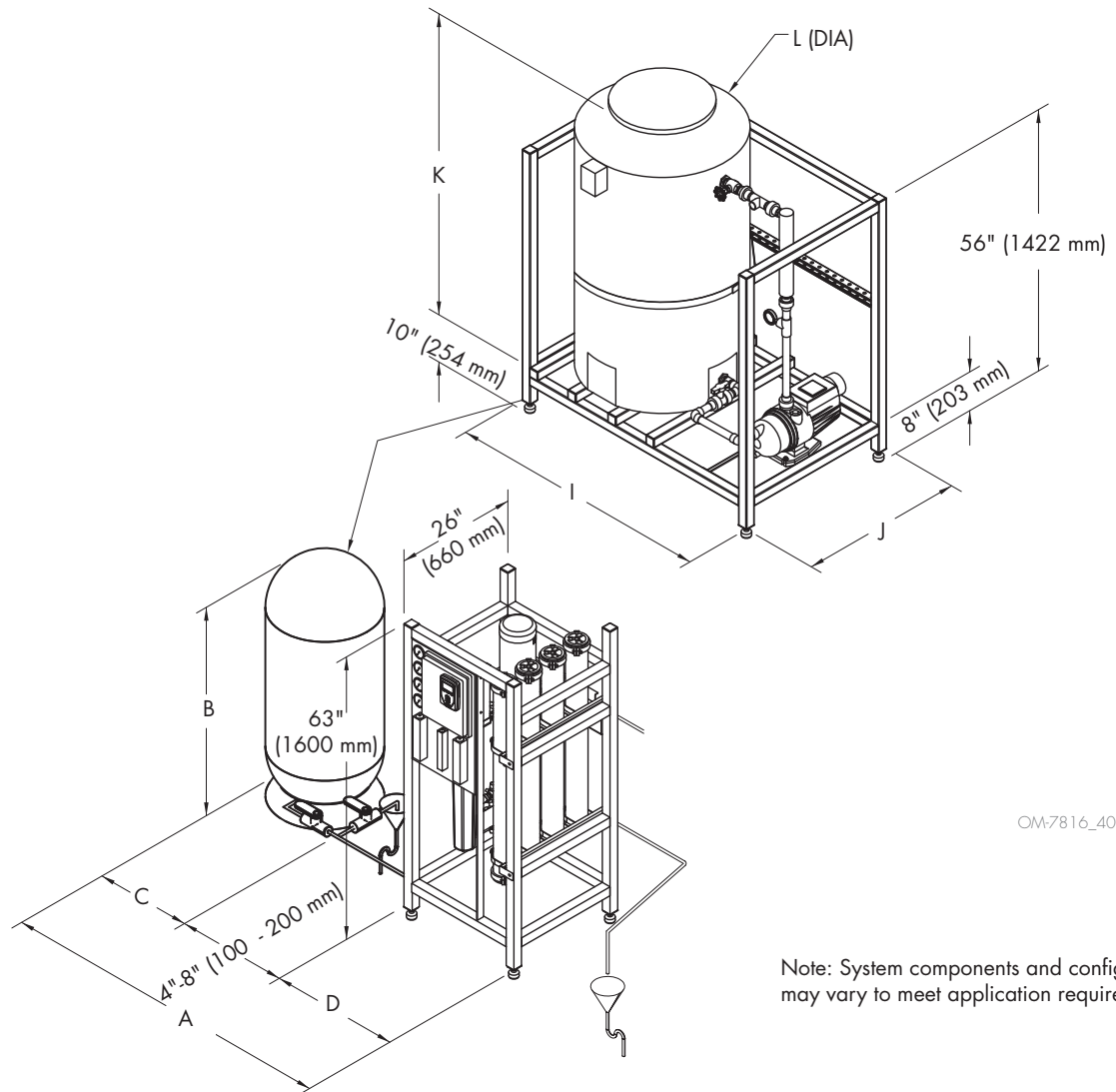


# 400 series water treatment system

**FIGURE 1-1: DRISTEEM 400 SERIES REVERSE-OSMOSIS SYSTEM OVERVIEW**



**Table 1-1:  
DriSteem 400 series RO system dimensions**

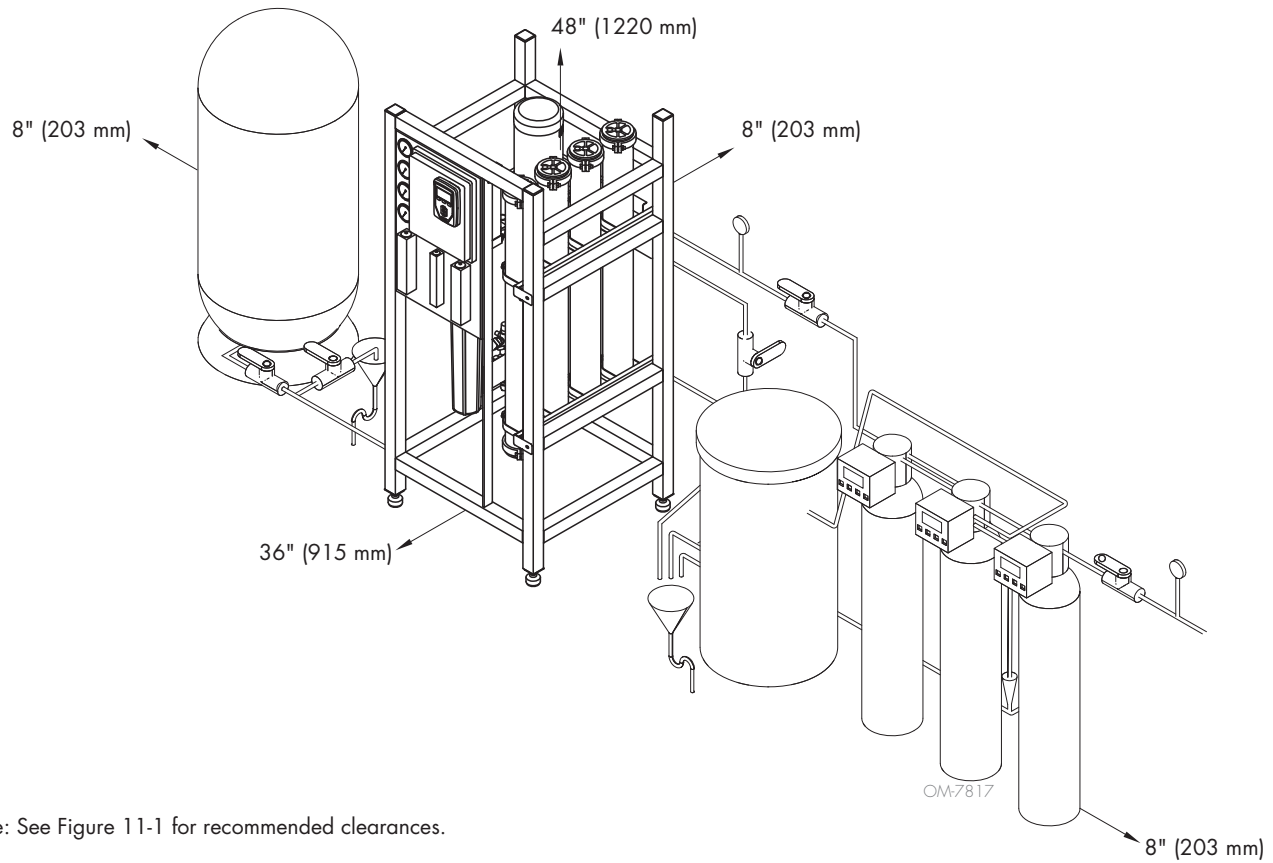
Model	Dimensions					
	A		B		C	
	inches	mm	inches	mm	inches	mm
401	55	1397	24	610	28	711
402	55	1397	24	610	28	711
403	55	610	24	610	28	711
404	55	610	24	610	28	711
406	80	2032	24	610	37	940
408	72	1829	30	762	37	940
412	90	2286	30	762	46.5	1181

**Table 1-1:  
Atmospheric RO holding tank specifications**

RO station model	Description	I	J	K	L
AT-165	165 gal (567 L)	56" (1422 mm)	35" (889 mm)	51" (1295 mm)	31" (787 mm)
AT-300	300 gal (1135 L)	60.5" (1536.7 mm)	39.5" (1003 mm)	77" (1955.8 mm)	35.5" (901.7 mm)

# System dimensions

**FIGURE 2-1: DRISTEEM 400 SERIES REVERSE-OSMOSIS SYSTEM CLEARANCES**



# Components overview

## REVERSE OSMOSIS STATION

The reverse-osmosis (RO) station is floor-mounted and removes approximately 98% of total dissolved solids.

Table 3-1: 400 series RO station specifications							
Model	401	402	403	404	406	408	412
Permeate flow rate, lbs/hr (kg/hr) or GPD (LPD) 50 °F (10 °C) (see Note 4)	490 (220) 1,420 (5,400)	820 (370) 2,380 (9,010)	1,430 (650) 4,120 (15,620)	1,790 (810) 5,150 (19,520)	2,750 (1,250) 7,930 (30,040)	3,585 (1,630) 10,310 (39,050)	5,240 (2,380) 15,070 (57,070)
Permeate flow rate, lbs/hr (kg/hr) or GPD (LPD) 77 °F (25 °C) (see Note 4)	620 (280) 1,800 (6,810)	1,040 (470) 3,000 (11,350)	1,800 (821) 2,880 (10,900)	2,250 (1,020) 6,500 (24,600)	3,475 (1,580) 10,000 (37,850)	4,510 (2,050) 13,000 (49,200)	6,600 (3,000) 19,000 (71,910)
System voltage/phase, Amp draw with RO components (see Note 1)	480/3, 2.5 220-240 /1, 10.0 120/1, 19.2	480/3, 2.5 220-240/1, 10.0 120/1, 19.2	480/3, 6.0 208-240/1, 15.4	480/3, 6.0 208-240/1, 15.4	480/3, 6.0 208-240/1, 15.4	480/3, 6.0 208-240/1, 15.4	480/3, 6.0 208-240/1, 15.4
Fuse size with RO components (see Note 2)	480/3, 15 220/1, 15 120/1, 25	480/3, 15 220/1, 15 120/1, 25	480/3, 15 220/1, 20	480/3, 15 220/1, 20	480/3, 15 220/1, 20	480/3, 15 220/1, 20	480/3, 15 220/1, 20
Dimensions (W/D/H), inches (mm)	28/26/63 (711/660/1600)	28/26/63 (711/660/1600)	28/26/63 (711/660/1600)	28/26/63 (711/660/1600)	37/26/63 (940/660/1600)	37/26/63 (940/660/1600)	46½/26/63 (1181/660/1600)
Shipping weight, lbs (kg)	440 (200)	470 (213)	510 (231)	540 (245)	645 (293)	705 (320)	870 (395)
Supply water connection dia., inches (see Note 3)	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb
RO system permeate water outlet connection dia., inches	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb	¾" hose barb
Connection to pressurized RO storage tank dia., inches	1	1	1	1	1	1	1
Common drain outlet connection dia., inches	1" hose barb	1" hose barb	1" hose barb	1" hose barb	1" hose barb	1" hose barb	1" hose barb
5-micron RO prefilter diameter x height, inches (mm)	2.5 x 20 (64 x 508)	2.5 x 20 (64 x 508)	2.5 x 20 (64 x 508)	2.5 x 20 (64 x 508)	4 x 20 (102 x 508)	4 x 20 (102 x 508)	4 x 20 (102 x 508)
RO pump motor power, hp (kW)	1 (0.75)	1 (0.75)	3 (2.2)	3 (2.2)	3 (2.2)	3 (2.2)	3 (2.2)
Qty. of RO membranes	1	2	3	4	6	8	12
RO membrane diameter x height, inches (mm)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)	4 x 40 (102 x 1016)
Notes:							
1. 220V/1-phase systems can also operate on 208V/1-phase and 240V/1-phase power.							
2. Wiring and branch circuit protection (Type RK1, J, or T fusing) to be provided by installer in accordance with NEC requirements.							
3. 40 psi (280 kPa) minimum supply water pressure.							
4. Extra low energy membranes.							

# System operation temperature

DriSteem rates reverse-osmosis systems at 50°F (10°C).

This is lower than the industry standard of 77°F (25°C).

To find the membrane permeate rate at a different temperature, follow these steps:

1. Find the temperature correction factor (TCF) from the below table.
2. Divide the rated permeate flow by the temperature correction factor.

The result is the permeate flow at the desired temperature.

**Table 4-1:**  
Optional permeate rate

Feed water temperature		TCF for thin film	Feed water temperature		TCF for thin film	Feed water temperature		TCF for thin film
°C	°F		°C	°F		°C	°F	
1	33.8	3.64	18	64.4	1.29	35	95.0	0.73
2	35.6	3.23	19	66.2	1.24	36	96.8	0.71
3	37.4	3.03	20	68.0	1.19	37	98.4	0.69
4	39.2	2.78	21	69.8	1.15	38	100.4	0.67
5	41.0	2.58	22	71.6	1.11	39	102.2	0.65
6	42.8	2.38	23	73.4	1.08	40	104.0	0.63
7	44.6	2.22	24	75.2	1.04	41	105.8	0.61
8	46.4	2.11	25	77.0	1.00	42	107.6	0.60
9	48.2	2.00	26	78.8	0.97	43	109.4	0.58
10	50.0	1.89	27	80.6	0.94	44	111.2	0.56
11	51.8	1.78	28	82.4	0.91	45	113.0	0.54
12	53.6	1.68	29	84.2	0.88	46	114.8	0.53
13	55.4	1.61	30	86.0	0.85	47	116.6	0.51
14	57.2	1.54	31	87.8	0.83	48	118.4	0.49
15	59.0	1.47	32	89.6	0.80	49	120.2	0.47
16	60.8	1.39	33	91.4	0.77	50	122.0	0.46
17	62.6	1.34	34	93.2	0.75			

# Components overview

## PRESSURIZED RO HOLDING TANK

The pressurized RO holding tank holds RO water in reserve to be available for high-pressure pumping when there is a demand.

**FIGURE 5-1: PRESSURIZED RO HOLDING TANK**



**Table 5-1:**  
Pressurized RO holding tank specifications

Model	RO station model	Dimensions		Weight		Connections
		Diameter	Height	Empty	Full	
401 402 403 404	80 gal (303 L)	24" (610 mm)	55.5" (1410 mm)	58 lbs (26 kg)	295 lbs (134 kg)	1 1/4" male NPT
406	120 gal (454 L)	24" (610 mm)	66 (1676 mm)	335 lbs (152 kg)	1235 lbs (560 kg)	2" female NPT
408	158 gal (598 L)	30" (762 mm)	58 (1473 mm)	435 lbs (197 kg)	1620 lbs (735 kg)	2" female NPT
412	211 gal (799 L)	30" (762 mm)	76 (1930 mm)	515 lbs (234 kg)	2100 lbs (953 kg)	2" female NPT

**Notes:**

- There is a possibility that the tank becomes much heavier if the air balloon is emptied or if precharge is different than 28 psi (195 kPa).
- Listed water volumes and weights are at an operating pressure of 30 to 50 psi (210 to 345 kPa) with a precharge of 28 psi (195 kPa).

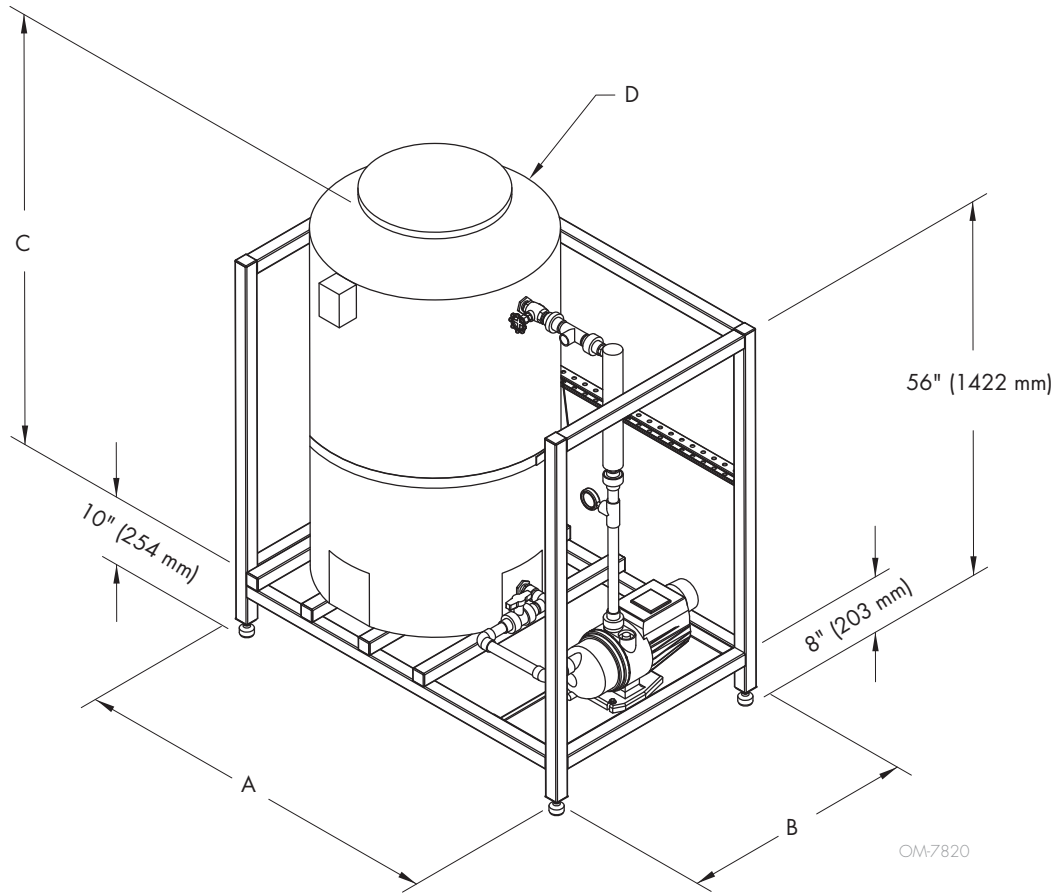
mc\_032213\_1045

# Components overview

## ATMOSPHERIC RO HOLDING TANK

The atmospheric RO hold tank holds a large amount of RO water for large jobs or when additional runtime needs to be guaranteed. System includes a recirculation/booster pump and an UV sterilization system to ensure water purity and supply 30-50 psi (207-345 kPa) water to downstream equipment.

**FIGURE 6-1: ATMOSPHERIC RO HOLDING TANK**



OM-7820

**Table 6-1:**  
Atmospheric RO holding tank specifications

RO station model	Description	A	B	C	D	Weight		Connections
						Shipping	Operating	
AT-165	165 gal (567 L)	56" (1422 mm)	35" (889 mm)	51" (1295 mm)	31" (787 mm)	320 lbs (145.15 kg)	1695 lbs (768.84 kg)	1" (25 mm) PVC
AT-300	300 gal (1135 L)	60.5" (1536.7 mm)	39.5" (1003 mm)	77" (1955.8 mm)	35.5" (901.7 mm)	360 lbs (163.3 kg)	2860 lbs (1297.27 kg)	1" (25 mm) PVC

mc\_032213\_1045

# Interconnecting tubing requirements

**Table 7-1:**  
Maximum length of interconnecting tubing between pump station and RO holding tank

RO station model	Volume		Tubing nominal diameter	Minimum tube I.D.		Maximum developed length*	
	gpm	L/m		in.	mm	ft	m
401	0.55	2.1	1/2"	0.375	10	>100	>30
			3/4"	0.625	16	>100	>30
			1"	0.875	23	>100	>30
402	1.10	4.2	1/2"	0.375	10	64	>20
			3/4"	0.625	16	>100	>30
			1"	0.875	23	>100	>30
403	2.20	8.3	1/2"	0.375	10	18	5.5
			3/4"	0.625	16	>100	>30
			1"	0.875	23	>100	>30
404	3.85	14.6	1/2"	0.375	10	—	—
			3/4"	0.625	16	>100	>30
			1"	0.875	23	>100	>30
406	5.50	20.8	1/2"	0.375	10	—	—
			3/4"	0.625	16	95	29
			1"	0.875	23	>100	>30
408	7.70	29.1	1/2"	0.375	10	—	—
			3/4"	0.625	16	51	16
			1"	0.875	23	>100	>30
412	12.1	45.8	1/2"	0.375	10	—	—
			3/4"	0.625	16	22	7
			1"	0.875	23	89	27

\* Calculations are based on pipe finish factor of 130 and low-pressure piping length of 1' (0.3 m).

\*\* Installation must meet the minimum and maximum inlet pressures for all components, as stated in the specification tables in the "Installation" section of this manual.

mc\_062012\_1424