

## Ultra low pressure BWRO

# T M G

Type	Diameter Inch	Membrane Area ft <sup>2</sup> (m <sup>2</sup> )	Salt Rejection %	Product Flow Rate gpd(m <sup>3</sup> / d)	Feed Spacer Thickness mil
TMG10	4"	87(8)	99.5	2,400(9.1)	31
TMG20-370	8"	370(34)	99.5	9,500(36.0)	34
TMG20-400	8"	400(37)	99.5	10,200(38.6)	28

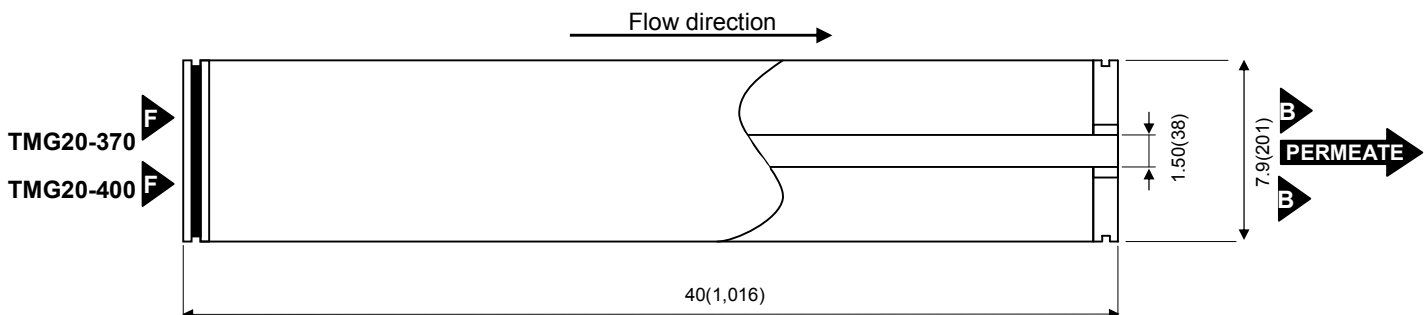
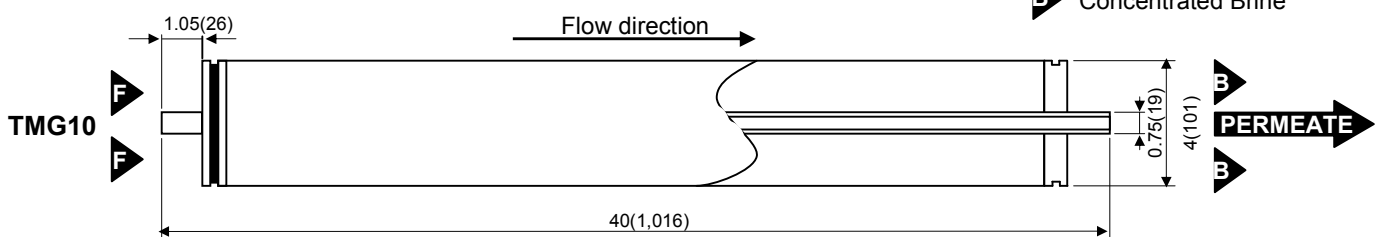
1. Membrane Type		Cross Linked Fully Aromatic Polyamide Composite
2. Test Conditions	Feed Water Pressure Feed Water Temperature Feed Water Concentration Recovery Rate Feed Water pH	110 psi(0.76MPa) 77° F(25°C) 500 mg/l NaCl 15% 7
3. Minimum Salt Rejection		99.0%
4. Minimum Product Flow Rate		2,000gpd(7.6m <sup>3</sup> /d)(TMG10) 7,500gpd(28.4m <sup>3</sup> /d)(TMG20-370) 8,200gpd(31.0m <sup>3</sup> /d)(TMG20-400)

## Dimensions

All dimensions shown in Inches (millimeter).

**F** Feed Water

**B** Concentrated Brine



## Operating Limits

Maximum Operating Pressure _____	365psi (2.5 MPa)
Maximum Feed Water Temperature _____	113° F (45°C)
Maximum Feed Water SDI15 _____	5
Feed Water Chlorine Concentration _____	Not Detectable
Feed Water pH Range, Continuous Operation _____	2-11
Feed Water pH Range, Chemical Cleaning _____	1-12
Maximum Pressure Drop per Element _____	20psi (0.14 MPa)
Maximum Pressure Drop per Vessel _____	60psi (0.4 MPa)

## Operating Information

1. For the recommended design range, please consult the latest Toray technical bulletin, design guide lines, computer design program, and/ or call an application specialist. If the operating limits given in this Product Information Bulletin are not strictly followed, the Limited Warranty will be null and void.
2. All elements are wet tested, treated with a 1% by weight percent sodium bisulfite storage solution, and then vacuum packed in oxygen barrier bags, or treated with tested feed water solution, and then vacuum packed in oxygen barrier bags with deoxidant inside. To prevent biological growth during short term storage, shipment, or system shutdown, it is recommended that Toray elements be immersed in a protective solution containing 500 - 1,000 ppm of sodium bisulfite (food grade) dissolved in permeate.
3. The presence of free chlorine and other oxidizing agents under certain conditions, such as heavy metals which acts as oxidation catalyst in the feed water will cause unexpected oxidation of the membrane. It is strongly recommended to remove these oxidizing agents contained in feed water before operating RO system.
4. Permeate from the first hour of operation shall be discarded.
5. The customer is fully responsible for the effects of chemicals that are incompatible with the elements. Their use will void the element Limited Warranty.

## Notice

1. Toray accepts no responsibility for results obtained by the application of this information or the safety or suitability of Toray's products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each product combination for their own purposes.
2. All data may change without prior notice, due to technical modifications or production changes.

Asia and Oceania:  
Toray Industries, Inc.  
RO Membrane Products Department

1-1, Nihonbashi muromachi 2-chome  
Chuo-ku, Tokyo 103-8666, Japan  
Tel : +81 3 3245 4540  
Fax: +81 3 3245 4913  
<http://www.toraywater.com>

Americas:  
Toray Membrane USA, Inc.  
Sales Office

13435 Danielson St,  
Poway, CA 92064, USA  
Tel: +1 858 218 2390  
Fax: +1 858 486 3063

Europe, Middle East and Africa:  
Toray Membrane Europe AG

Grabenerstrasse 8  
CH-4142 Münchenstein 1, Switzerland  
Tel: +41 61 415 87 10  
Fax: +41 61 415 87 20

CHINA:  
Toray BlueStar Membrane Co., Ltd.

No.5 Anxiang Street, Area B,  
Beijing Tianzhu Airport Economic Development Zone,  
Beijing, 101318 P.R.C.  
Tel: +86 10 80490552  
Fax: +86 10 80485217