



SUBMITTAL PACKAGE

BOSTON STP SANIBRANE® MBR PLANT (PROJECT# 080040)

JANUARY 2009



Membrane Module
SaniBrane® MBR Module
TMR090-050S

*M-401
to
M-403*

TORAY Membrane Module Specification Sheet

- Model : Submerged Membrane Module for MBR “MEMBRAY” TMR090 series

Table 1 Membrane Properties

Membrane Material	PVDF (Polyvinylidene fluoride)
Nominal Pore Size	0.08 micron meter

Table 2 Cleaning Limits

Cleaning chemicals and chemicals concentration	Sodium hypochlorite (effective chlorine concentration) : 2,000-6,000 mg/L(pH is around 12) Oxalic acid : 0.5-1.0wt% Citric acid : 1.0-3.0wt%
Cleaning pH Range	0 – 12
Maximum Cleaning Temperature	40 degree C
Maximum Back Wash Pressure	10 kPa

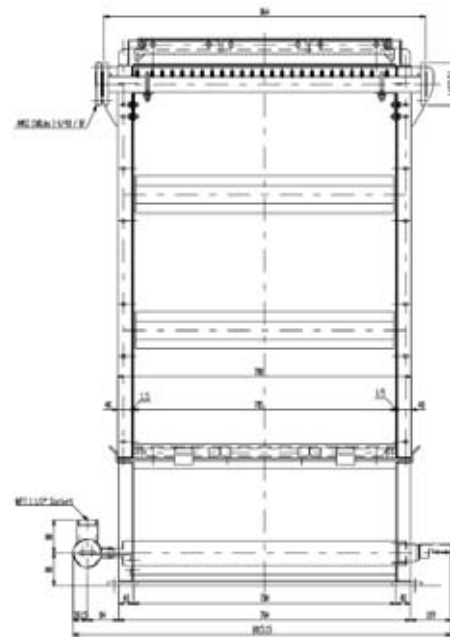
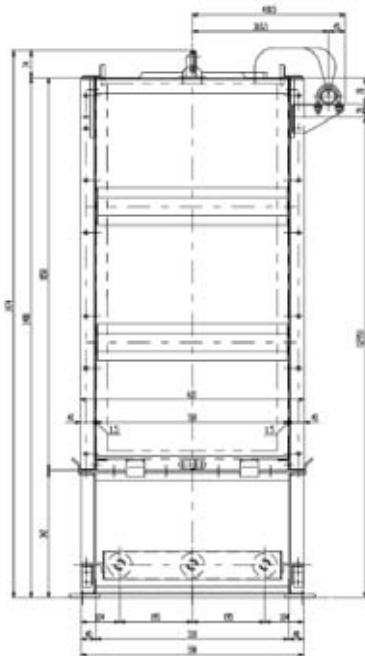
Table 3 Module Specifications

Module Type		TMR090-050S	TMR090-100S
Number of membrane elements		50	100
Membrane Surface Area		45m ²	90m ²
Element block structure		single deck	single deck
Weight (kg)	Module (dry)	360	675
	Aeration block (dry)	40	65
	Element block (dry)	320	610
	Element block (sludge clogging) ^{*1}	570	1,100
Material	Diffuser, Flame, Permeated water manifold	304 stainless steel (316SS as option)	
Connection flange	Manifold	ANSI 150Lbs 1 1/4B	ANSI 150Lbs 2B
	Air diffuser	NTP 1 1/2 (One Side)	NTP 1 1/2 (Both Side)
Operating Range	Raw Water Pretreatment	Screen with Openings 3mm or smaller	
	Maximum Temperature	40 degree C	
	pH ^{*2} of liquid	5-10	
	Maximum MLSS	18,000 mg/L	
	Maximum Trans-membrane pressure	20 kPa	
	Maximum Scouring Air Flow rate (NL/min/Module)	650	1,300

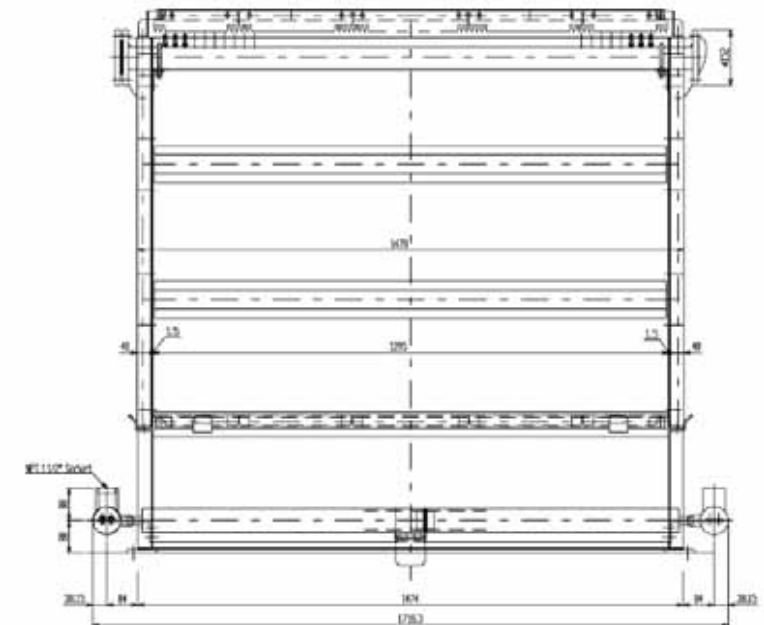
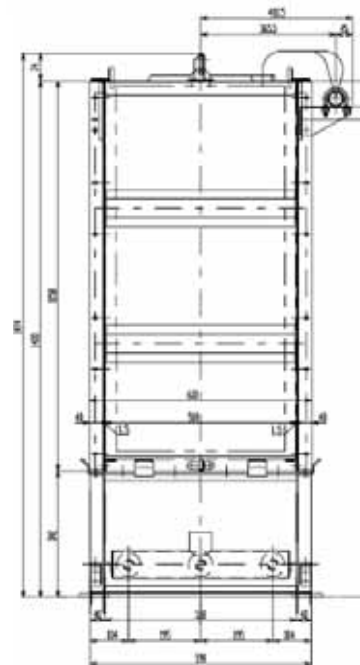
*1. The maximum weight is assumed for a case of sludge clogging between elements.

*2. Excludes chemical cleaning of the elements using a designated chemical.

Note) This specification sheet will be updated by TORAY from time to time.



TMR090-050S



TMR090-100S

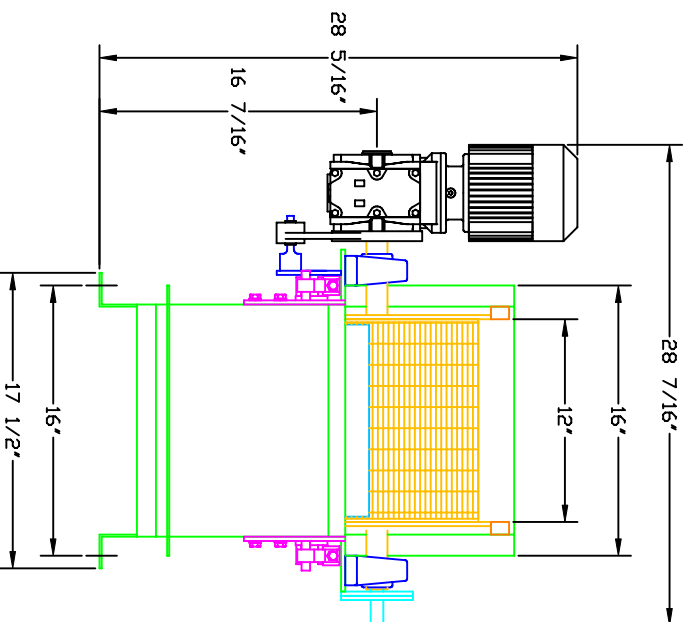
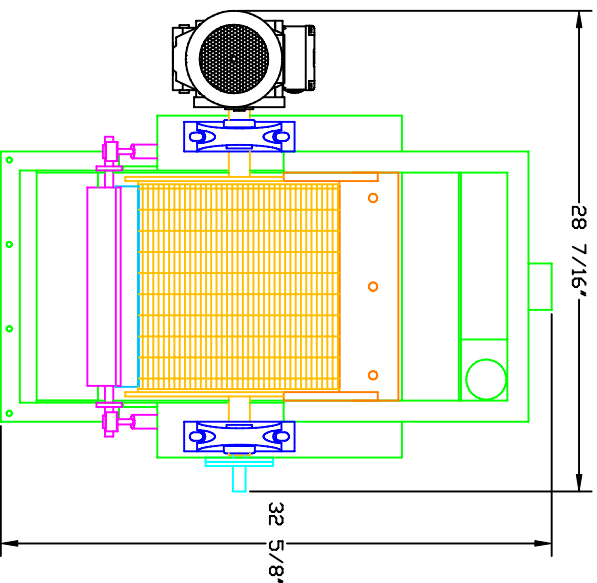
* Indicates the maximum size (excluding the connection tube).

Module Configuration



Automatic Fine Screen
IPEC
RSS1212301

SC-101



COMPONENTS	
ITEM	DESCRIPTION
P/N	
1610	BRAKE CONST.: # 11 GAUGE MAT'L: 304 SS FITTINGS: 2" FNPT a) EFFLUENT: 3" FNPT c) OVERFLOW: 2" FNPT
2	SCREEN DRUM DIA. 12 5/8" ID x 12" CONST: 63 VEVEPIRE / LSR @ 5/8" C/C MAT'L: 304 SS STUD: 0.005"
3653	DRIVE END PLATE CONST: 1/4" # 36 3/4" Ø MAT'L: 304 SS
3654	FREE END PLATE CONST: 1/4" # 36 3/4" Ø C/4 # 1/4" X 4 1/4" HOLLOW SHAFT MAT'L: 304 SS
2015	DOCTOR BLADE MAT'L: MONEL SIZE: .035" x 3' x 11 7/8"
2910	DOCTOR BLADE HOLDER CONST.: 3/16" PLATE / 3/4" Ø SHAFT MAT'L: 304 STAINLESS STEEL
2870	TENSIONING GEAR MAT'L: 304 STAINLESS STEEL # 5 SPRING
5610	SPRAY BAR CONST: 2" Ø Sch-40 PIPE MAT'L: 304 SS FITTINGS: 3/8" FNPT INLET NOZZLES: 3 FAN SPRAY - 1 gpm @ 40 psi
7	DRIVE TYPE: HELICAL W/IRM MFR: SEV EURODRIVE MODEL: SAA7DTD1Y4 MOTOR: 220V 3/50

[illegible]