



Winder[®]

Walcoom Corporation



Endeavor

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Winder® FRP Membrane Housing

80% of membrane separation device will choose **FRP membrane housing**

since its achievable strength design, optimal performance, weight, cost.

The corrosion resistance of chlorate is better than that of stainless steel.

And the fatigue resistance is superior to metal.

Winder® FRP membrane housing can comply with the hygiene requirements of pharmaceutical industry and fits all standard sized membrane element.



2.5" FRP Membrane Housing Contents

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2.5" FRP Membrane Housing

- ☆ Composite Construction.
- ☆ Unique Mirror Finish ID.
- ☆ Quick Locking System.
- ☆ Smooth Inner Wall Surface.
- ☆ Brightly Colored Baking Process.
- ☆ Adapters, Interconnectors & Mounting Clamps Available.
- ☆ Certified by ASME, ISO9001, ISO14001 and GB/T2800.



Technical Specification

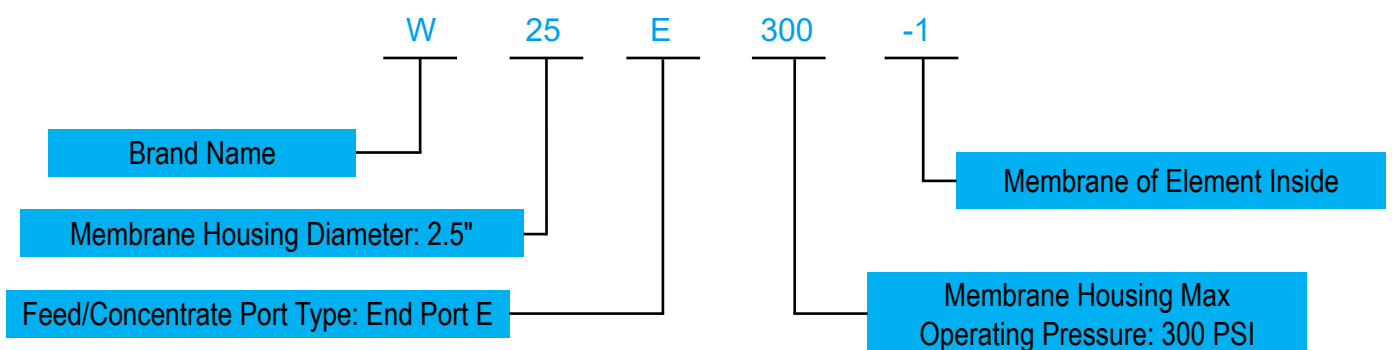
Material: Fiberglass and epoxy.
Working Pressure: 300–1000 PSI.
Operating Temperature: -10 °C–49 °C.
Connection Type: End port.
Operating pH Range: 3–11.
Cleaning pH Range: 2–12 (≤ 30 min).

Test

Burst Test : 6 times of its design pressure.
Cycle Test: 100000 times.
Hydraulic Test: 100% quality assurance test with 1.2 times stage elevation.
Barcol Hardness Test: Repeated once every 1.5 meters.
Test every membrane housing, not sampling.

Explanation Model

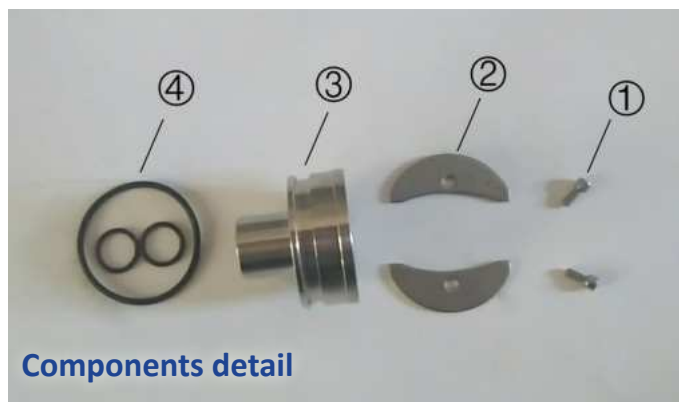
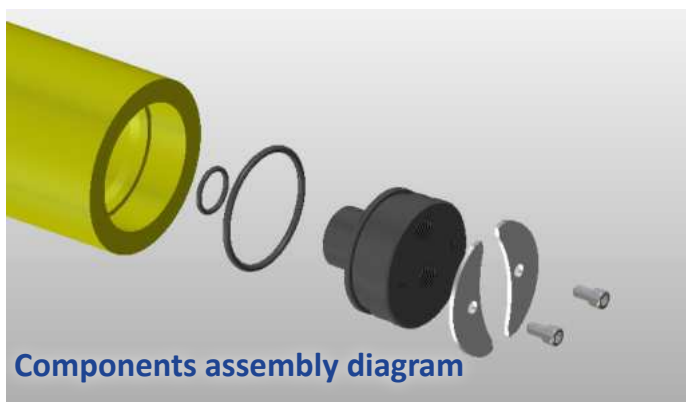
Explanation of Codes of Winder Membrane Pressure Vessels



Specification

Model No.	Design Pressure (PSI)	Operating Temperature	Feed Port (inch)	Permeate Port (inch)	Connection	Element Length
W2514E300	300	-10 °C–49 °C	1/4" RC	1/4" RC	End port	14" × 1
W2521E300	300	-10 °C–49 °C	1/4" RC	1/4" RC	End port	21" × 1
W2540E300	300	-10 °C–49 °C	1/4" RC	1/4" RC	End port	40" × 1
W2514E1000	1000	-10 °C–49 °C	1/4" RC	1/4" RC	End port	14" × 1
W2521E1000	1000	-10 °C–49 °C	1/4" RC	1/4" RC	End port	21" × 1
W2540E1000	1000	-10 °C–49 °C	1/4" RC	1/4" RC	End port	40" × 1

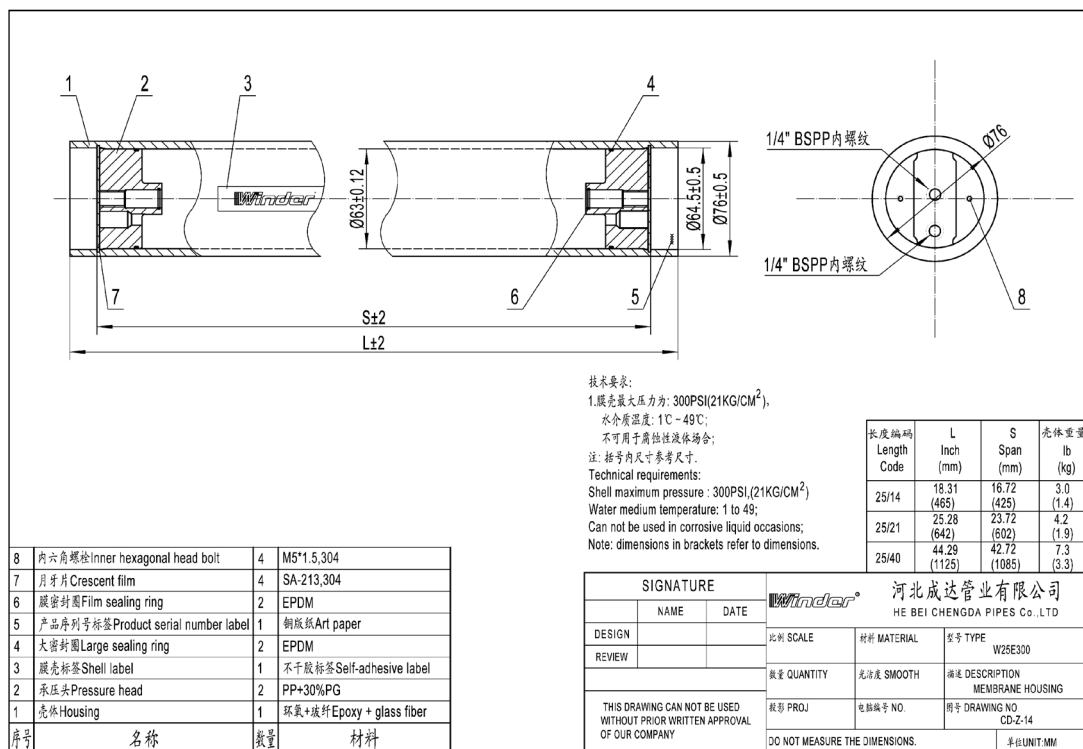
Components



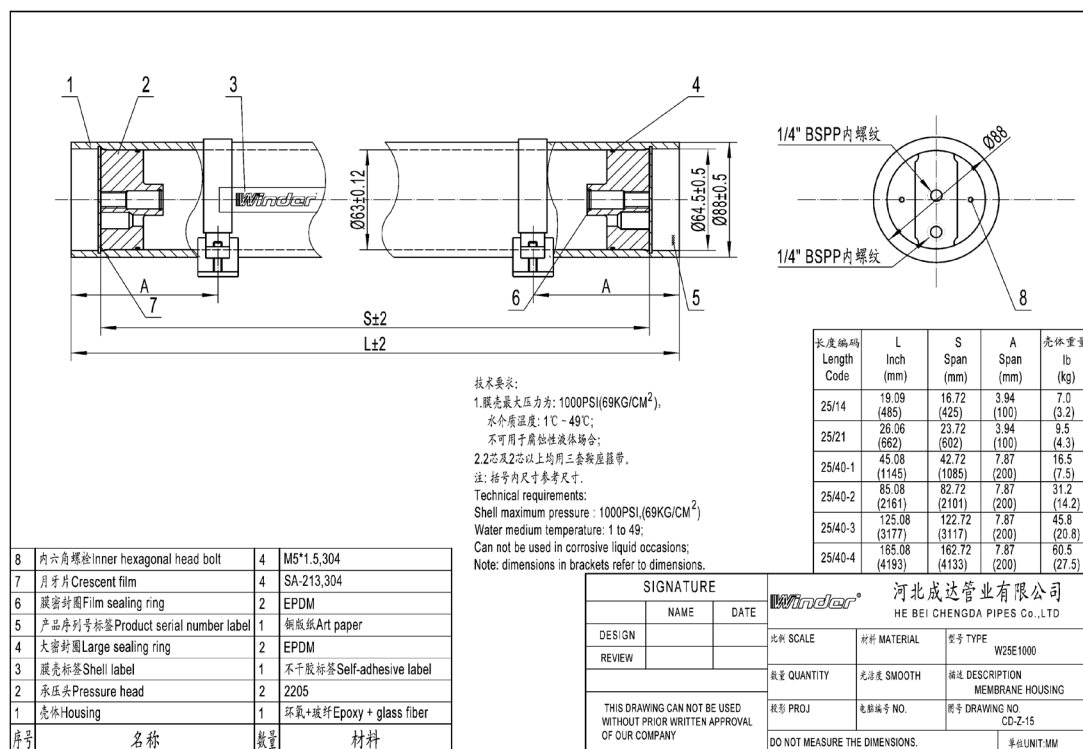
Serial-Number	Description	Material
①	Inner hexagonal head bolt	M5*1.5, 304
②	Crescent film	SA-213, 304
③	Pressure head	2205
④	Sealing rings	EPDM

Addendum Drawings

1. W25E300 FRP membrane housing drawing



2. W25E1000 FRP membrane housing drawing



4" FRP Membrane Housing Contents

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4" FRP Membrane Housing

- ☆ Composite Construction for Best Chemical Compatibility & Corrosion Resistance.
- ☆ Unique Mirror Finish ID.
- ☆ Smooth Inner Wall & Brightly Baking Surface.
- ☆ Length From 1 Element to 4 Elements.
- ☆ Adapters, Interconnectors & Mounting Clamps Available.
- ☆ Inlet & Outlet, Size & Quantity Can be Selected.
- ☆ Certified by ASME, ISO9001, ISO14001 and GB/T2800.



Technical Specification

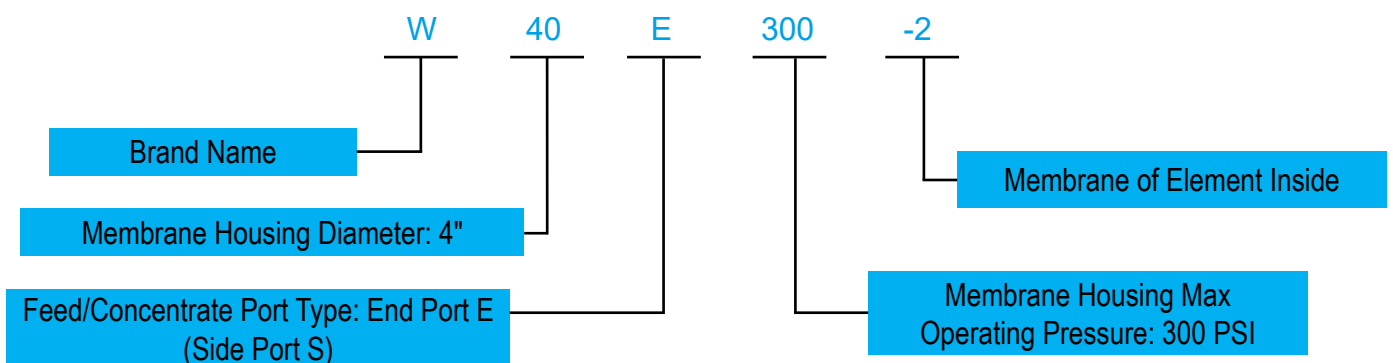
Material: Fiberglass and epoxy.
Working Pressure: 150–1000 PSI.
Operating Temperature: -7 °C–49 °C.
Connection: End port, side port optional.
Operating pH Range: 3–11.
Cleaning pH Range: 2–12 (≤ 30 min).

Test

Burst Test : 6 times of its design pressure.
Cycle Test: 100000 times.
Hydraulic Test: 100% quality assurance test with 1.2 times stage elevation.
Barcol Hardness Test: Repeated once every 1.5 meters.
Test every membrane housing, not sampling.

Explanation Model

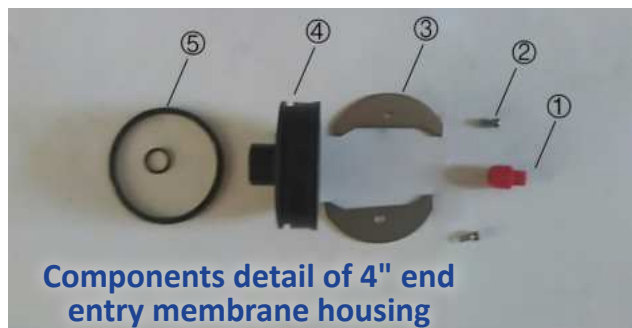
Explanation of Codes of Winder Membrane Pressure Vessels



End Entry Specification

Model No.	Design Pressure (PSI)	Operating Temperature	Feed Port (inch)	Permeate Port (inch)	Connection	Element Length
W40E150	150	-10 °C–49 °C	3/4" NPTF	1/2" NPTF	End Port	40" × (1–4)
W40E300	300	-10 °C–49 °C	3/4" NPTF	1/2" NPTF	End Port	40" × (1–4)
W40E450	450	-10 °C–49 °C	3/4" NPTF	1/2" NPTF	End Port	40" × (1–4)
W40E600	600	-10 °C–49 °C	3/4" NPTF	1/2" NPTF	End Port	40" × (1–4)
W40E1000	1000	-10 °C–49 °C	3/4" NPTF	1/2" NPTF	End Port	40" × (1–4)

End Entry Components

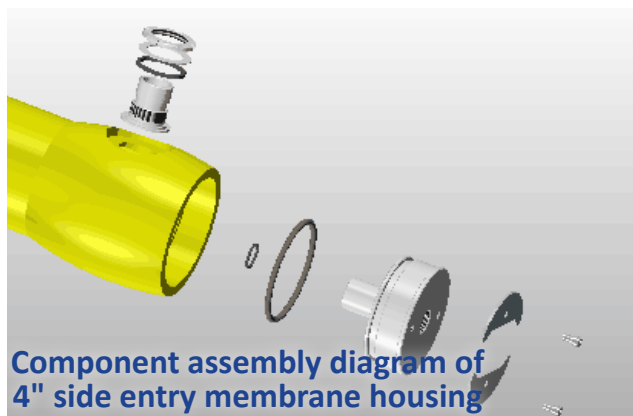


Serial-Number	Description	Material
①	Permeate port	ABS
②	Inner hexagonal head bolt	M6*1 304
③	Crescent film	SA-213, 304
④	Pressure head	PP + 30% FG
⑤	Sealing rings	EPDM

Side Entry Specification

Model No.	Design Pressure (PSI)	Operating Temperature	Feed Port (inch)	Permeate Port (inch)	Connection	Element Length
W40S150	150	-10 °C–49 °C	DN25 1"	1/2" NPTF	Side port	40" × (1–4)
W40S300	300	-10 °C–49 °C	DN25 1"	1/2" NPTF	Side port	40" × (1–4)
W40S450	450	-10 °C–49 °C	DN25 1"	1/2" NPTF	Side port	40" × (1–4)
W40S600	600	-10 °C–49 °C	DN25 1"	1/2" NPTF	Side port	40" × (1–4)
W40S1000	1000	-10 °C–49 °C	DN25 1"	1/2" NPTF	Side port	40" × (1–4)

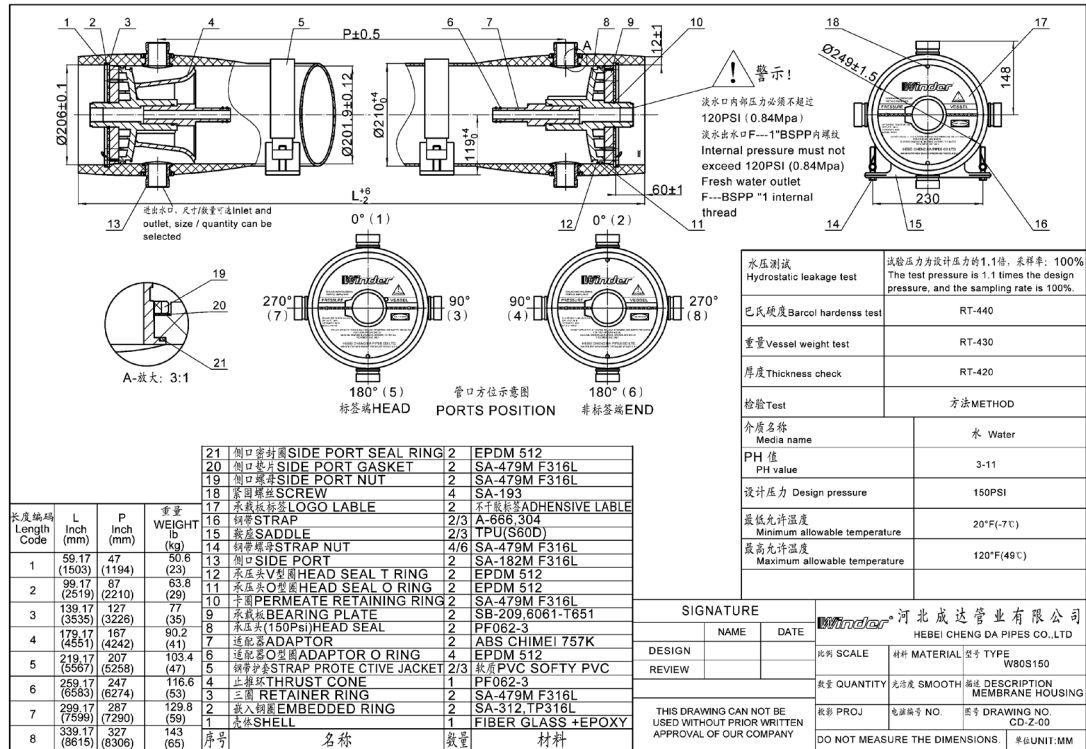
Side Entry Components



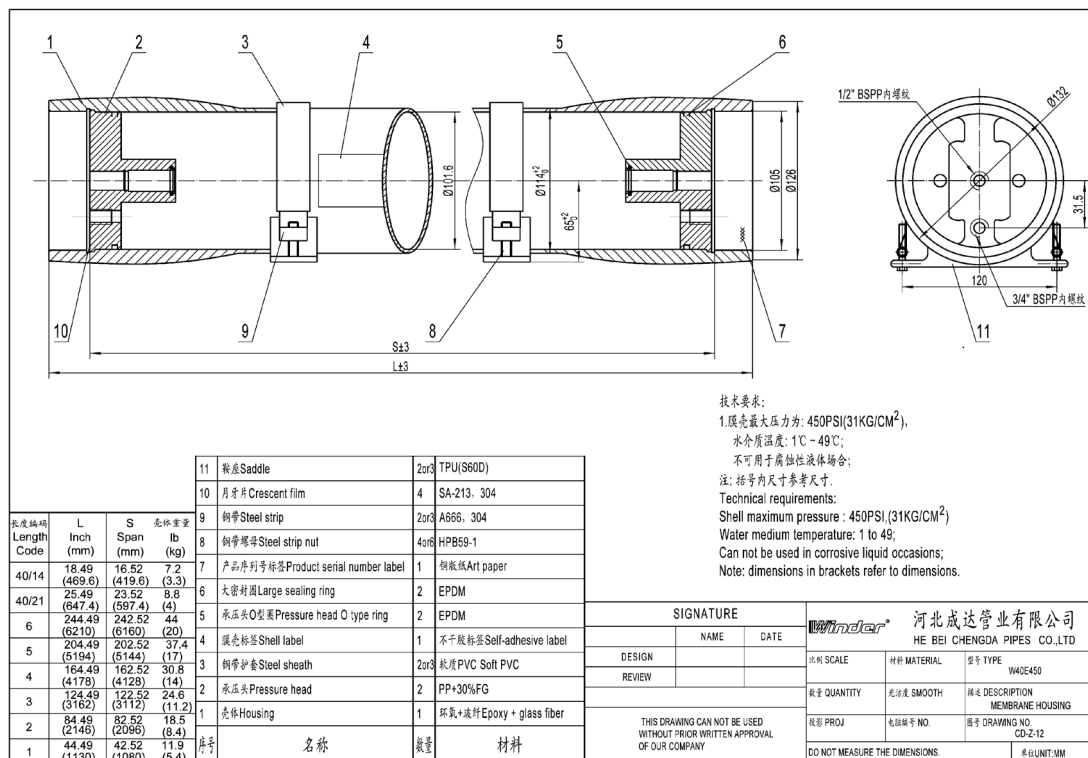
Serial-Number	Description	Material
①	Inner hexagonal head bolt	M6*1 304
②	Crescent film	SA-213, 304
③	Pressure head	2205
④	Sealing rings	EPDM 512
⑤	Adaptor	2205
⑥	Adaptor O ring	EPDM 512

Addendum Drawings

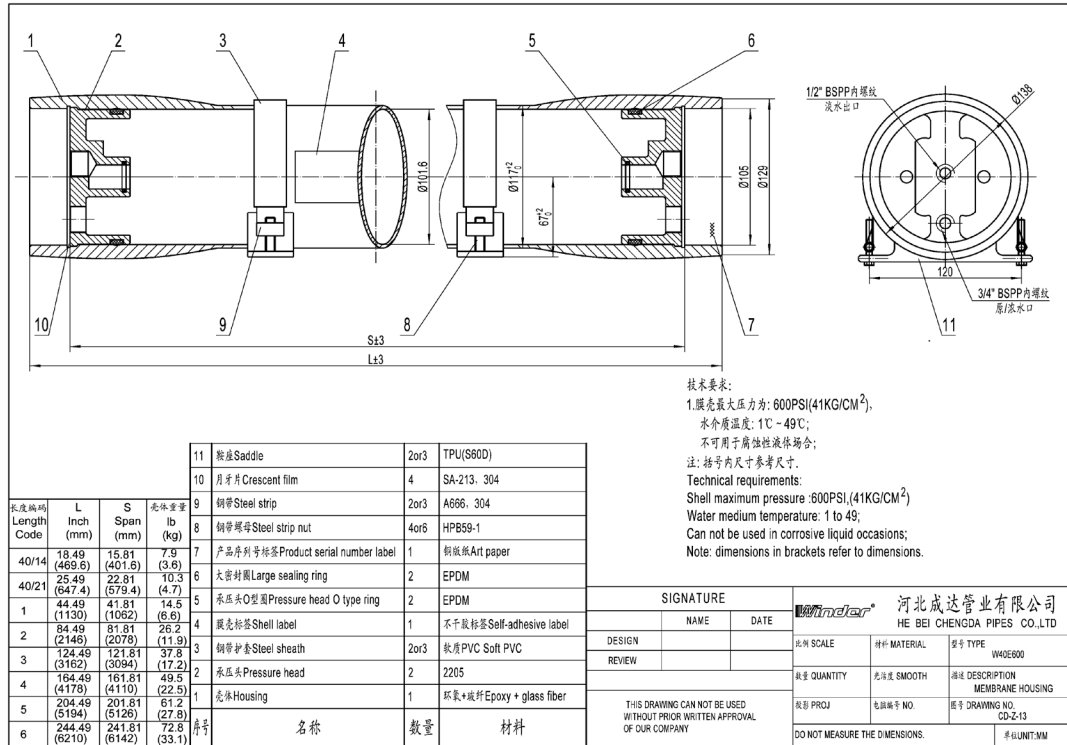
1. W40E300 FRP membrane housing drawing



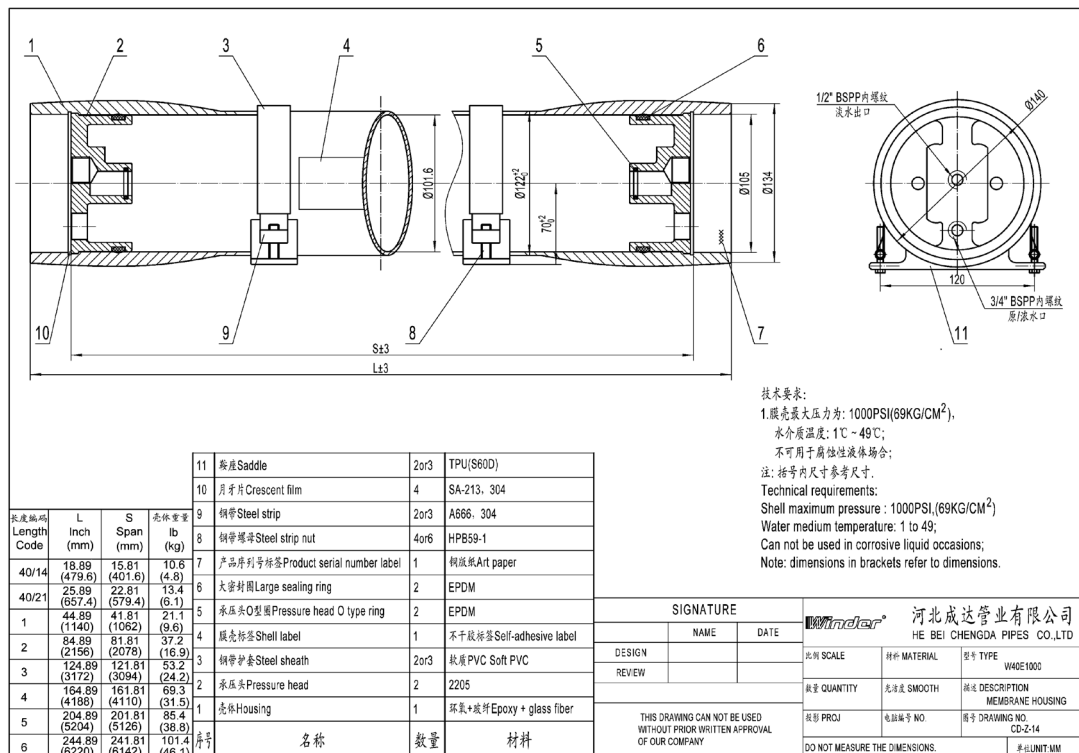
2. W40E450 FRP membrane housing drawing



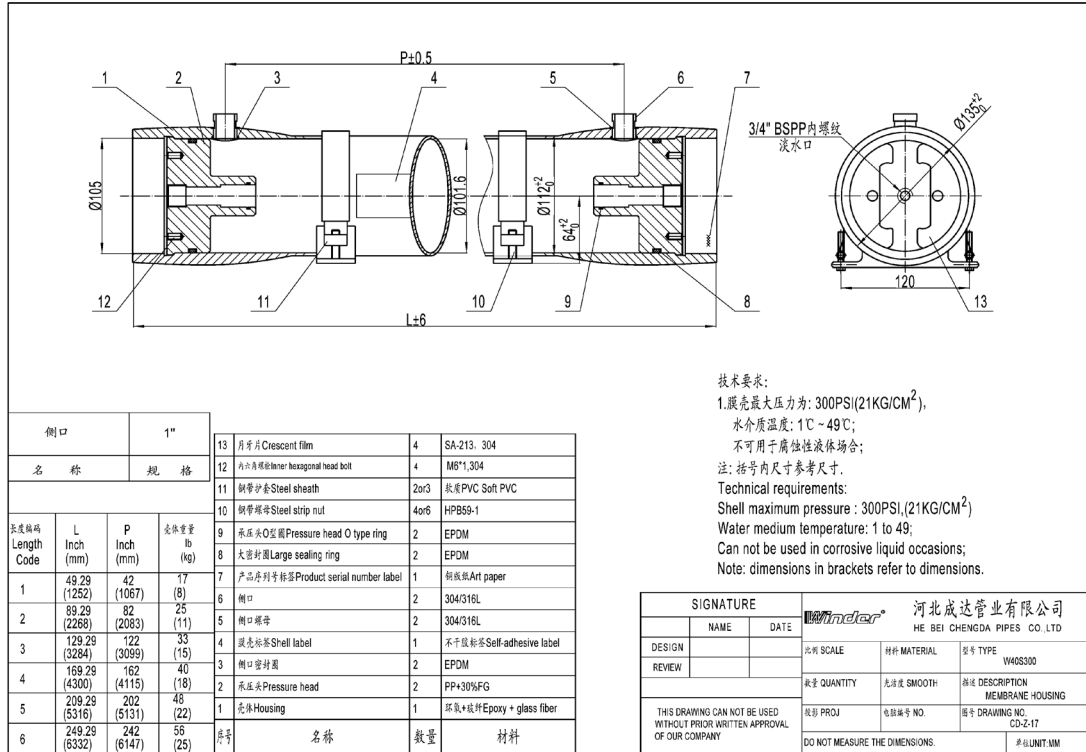
3. W40E600 FRP membrane housing drawing



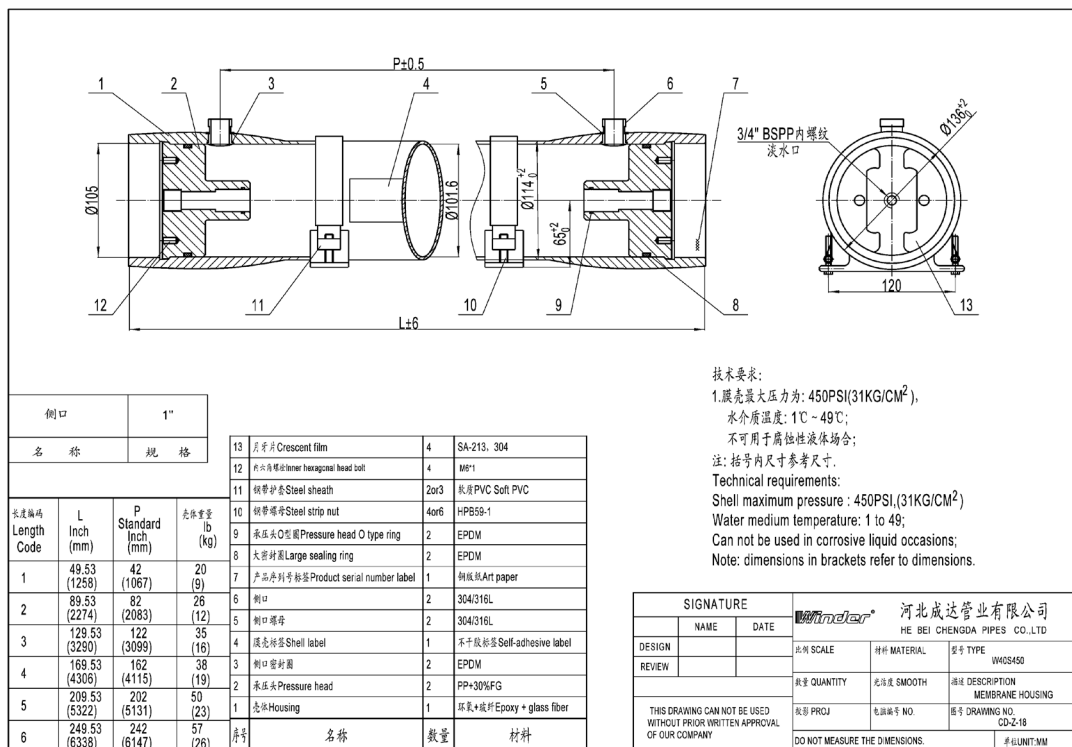
4. W40E1000 FRP membrane housing drawing



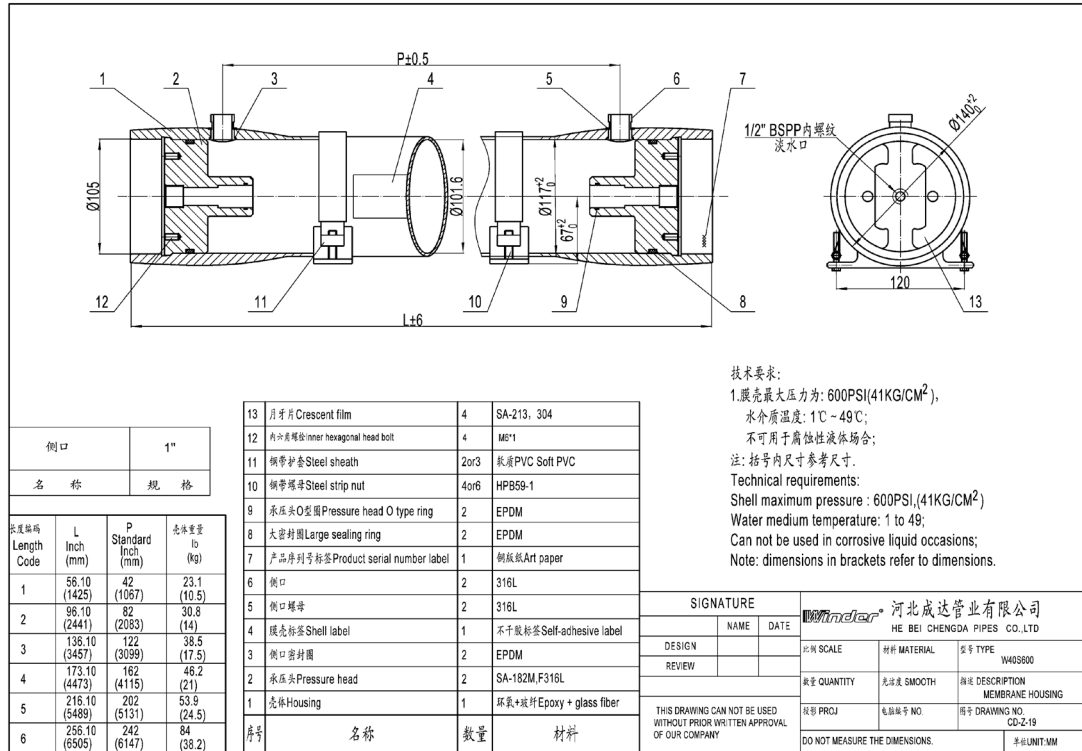
5. W40S300 FRP membrane housing drawing



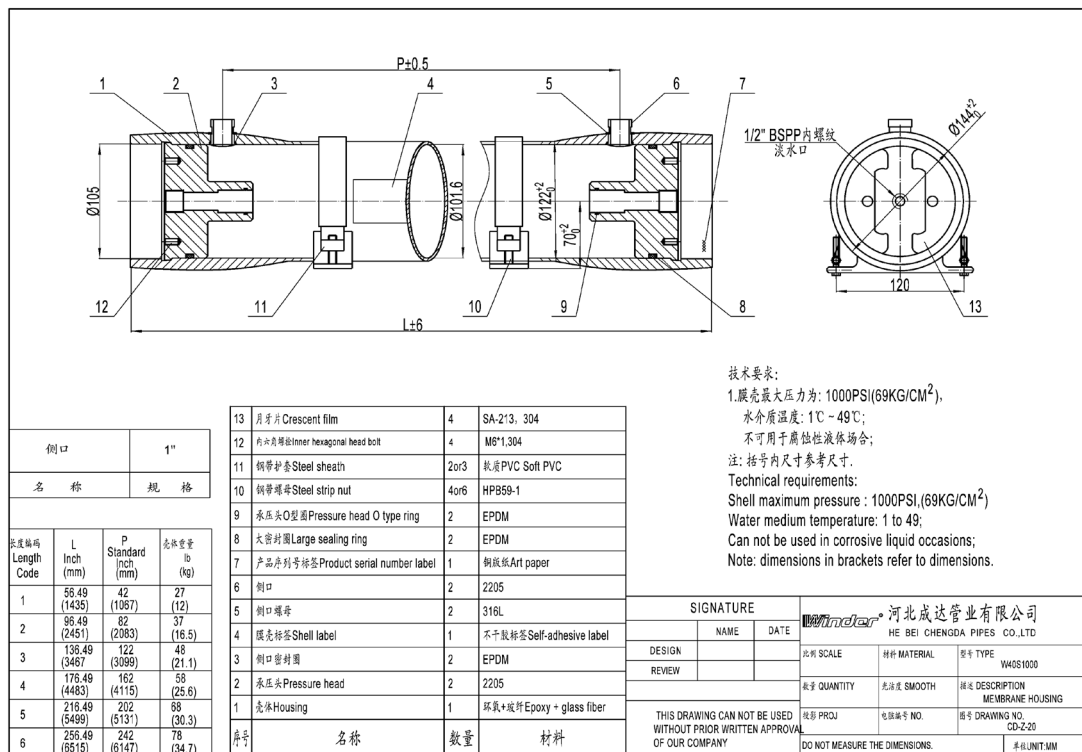
6. W40S450 FRP membrane housing drawing



7. W40S600 FRP membrane housing drawing



8. W40S1000 FRP membrane housing drawing



8" FRP Membrane Housing Contents

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8" FRP Membrane Housing

- ☆ Composite Construction for Best Chemical Compatibility & Corrosion Resistance.
- ☆ Smooth Inner Wall, Unique Mirror Finish ID.
- ☆ Beautiful & Attractive Appearance.
- ☆ Length From 1 Element to 8 Elements.
- ☆ Adapters, Interconnectors & Mounting Clamps Available.
- ☆ Inlet & Outlet, Size & Quantity Can be Selected.
- ☆ Certified by ASME, ISO9001, ISO14001 and GB/T2800.



Technical Specification

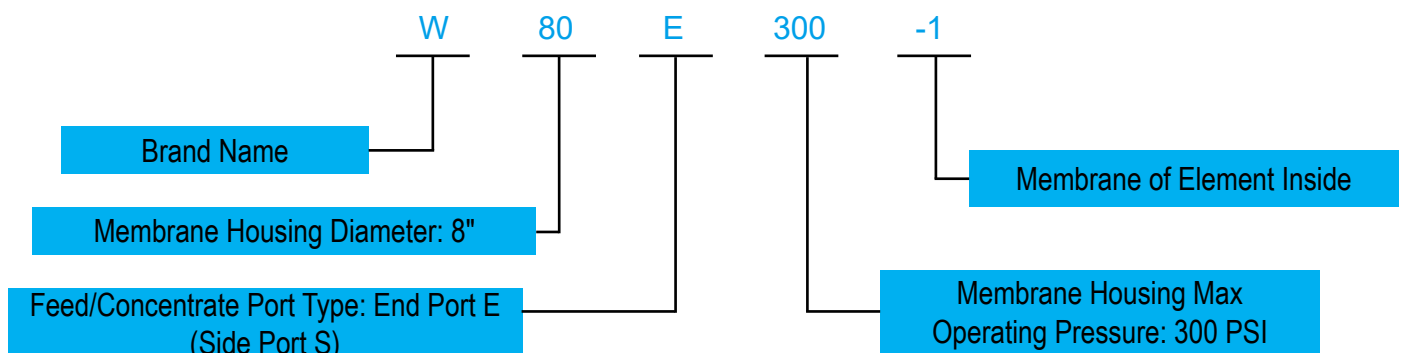
Material: Fiberglass and epoxy.
Working Pressure: 150–1800 PSI.
Operating Temperature: -7 °C–49 °C.
Connection: End port, side port optional.
Operating pH Range: 3–11.
Cleaning pH Range: 2–12 (≤ 30 min).

Test

Burst Test : 6 times of its design pressure.
Cycle Test: 100000 times.
Hydraulic Test: 100% quality assurance test with 1.2 times stage elevation.
Barcol Hardness Test: Repeated once every 1.5 meters.
Test every membrane housing, not sampling.

Explanation Model

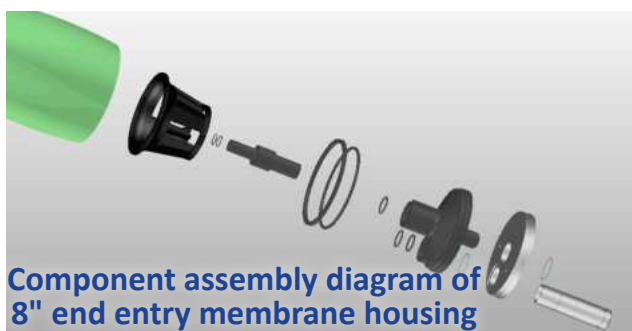
Explanation of Codes of Winder Membrane Pressure Vessels



End Entry Specification

Model No.	Design Pressure (PSI)	Operating Temperature	Feed Port (inch)	Permeate Port (inch)	Connection	Element Length
W80E150	150	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E300	300	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E450	450	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E600	600	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E1000	1000	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E1200	1200	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E1500	1500	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)
W80E1800	1800	-10 °C–49 °C	DN40 1.5"	1" NPTF	End port	40" × (1–8)

End Entry Components

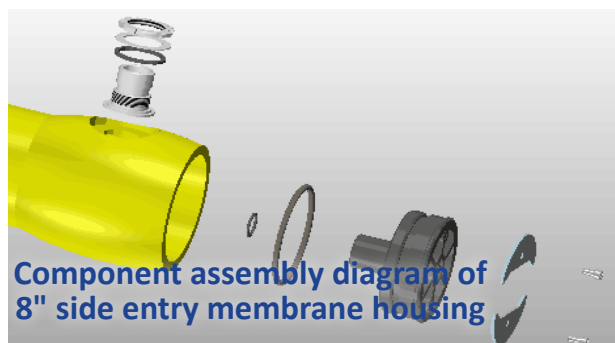


Serial-Number	Description	Material
①	Permeate port	ABS
②	Three turns locking ring	SA-479M F316L
③	Permeate retaining ring	EPDM 512
④	F/C Port	SS304
⑤	Bearing Plate	SB-209, 6061-T651
⑥	Head Seal	PF062-3
⑦	Head Seal O Ring	EPDM 512
⑧	Adaptor	ABS CHIMEI 757K
⑨	Adaptor O Ring	EPDM 512
⑩	Head Seal Ring	EPDM 512
⑪	Thrust Cone	PF062-3

※ **Note:** Do not install thrust cone at feed port.

Side Entry
Specification

Model No.	Design Pressure (PSI)	Operating Temperature	Feed Port (inch)			Permeate Port (inch)	Connection	Element Length
W80S150	150	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	DN100 4"	1" NPTF	Side port	40" × (1–8)
W80S300	300	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	DN100 4"	1" NPTF	Side port	40" × (1–8)
W80S450	450	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	DN100 4"	1" NPTF	Side port	40" × (1–8)
W80S600	600	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	-	1" NPTF	Side port	40" × (1–8)
W80S1000	1000	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	-	1" NPTF	Side port	40" × (1–8)
W80S1200	1200	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	-	1" NPTF	Side port	40" × (1–8)
W80S1500	1500	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	-	1" NPTF	Side port	40" × (1–8)
W80S1800	1800	-10 °C–49 °C	DN40 1.5"/DN50 2" /DN65 2.5"	DN80 3"	-	1" NPTF	Side port	40" × (1–8)

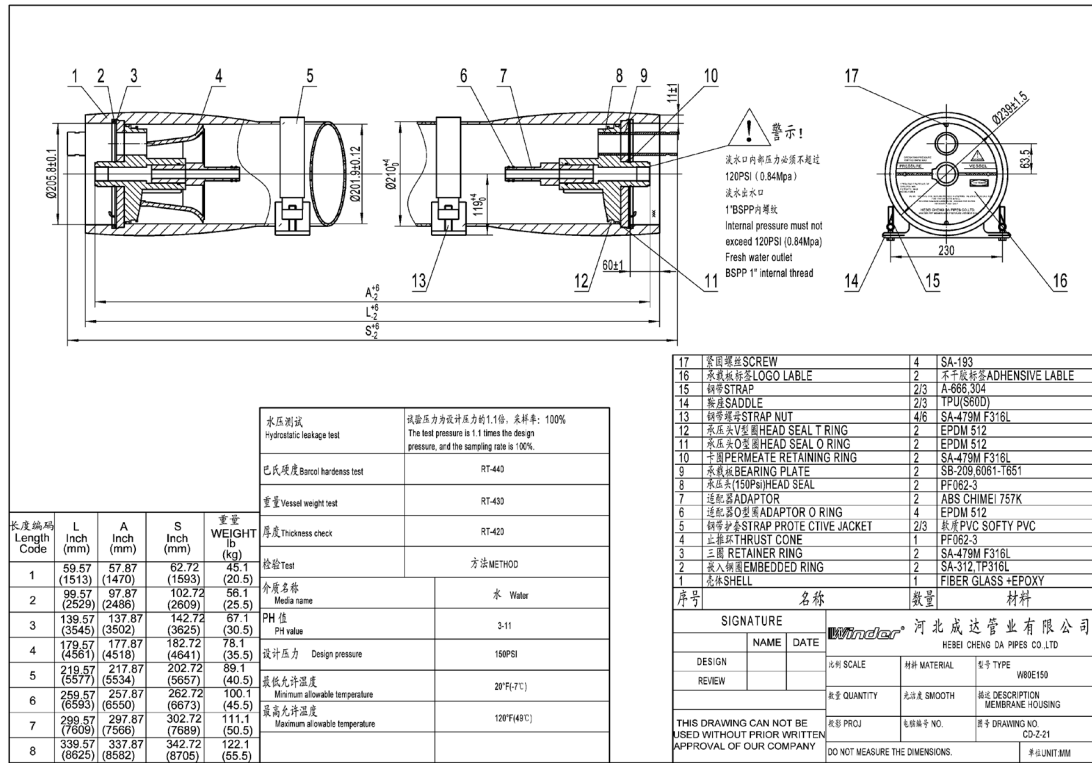
Side Entry
Components

Serial-Number	Description	Material
①	Three Turns Retainer Ring	SA-479M F316L
②	Permeate port	EPDM 512
③	Permeate retaining ring	ABS
④	Bearing Plate	SB-209, 6061-T651
⑤	Head Seal	PF062-3
⑥	Head Seal Ring	EPDM 512
⑦	Head Seal O Ring	EPDM 512
⑧	Adaptor	ABS CHIMEI 757K
⑨	Adaptor O Ring	EPDM 512
⑩	Thrust Cone	PF062-3

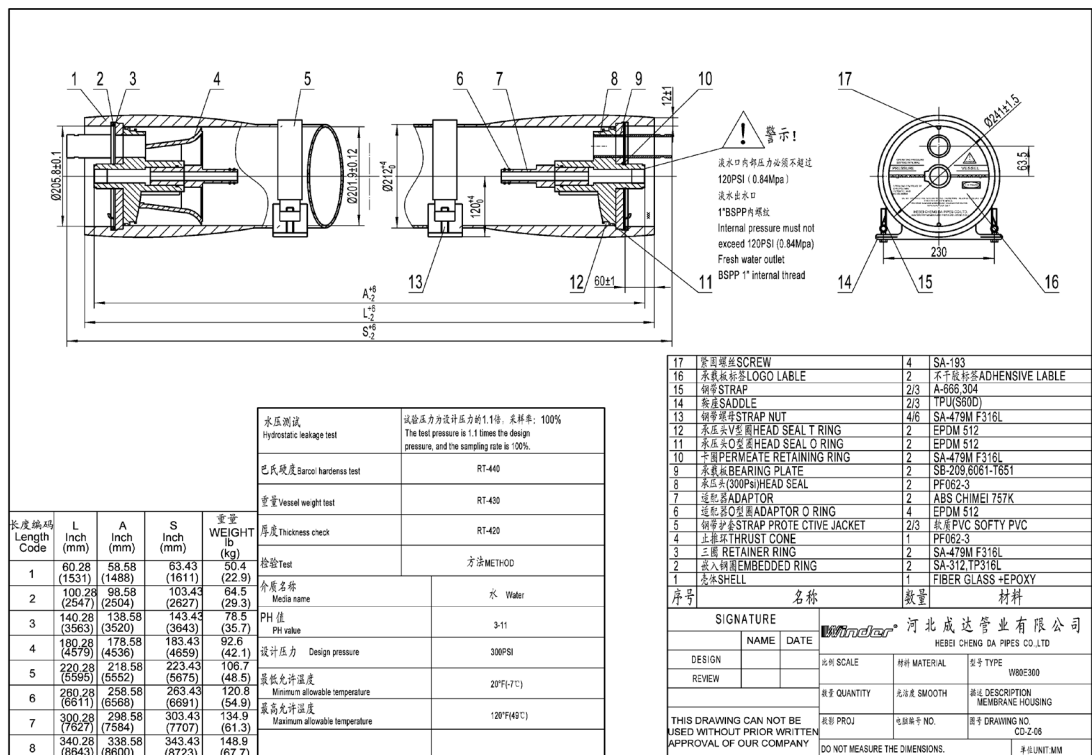
※ **Note:** Do not install thrust cone at feed port.

Addendum Drawings

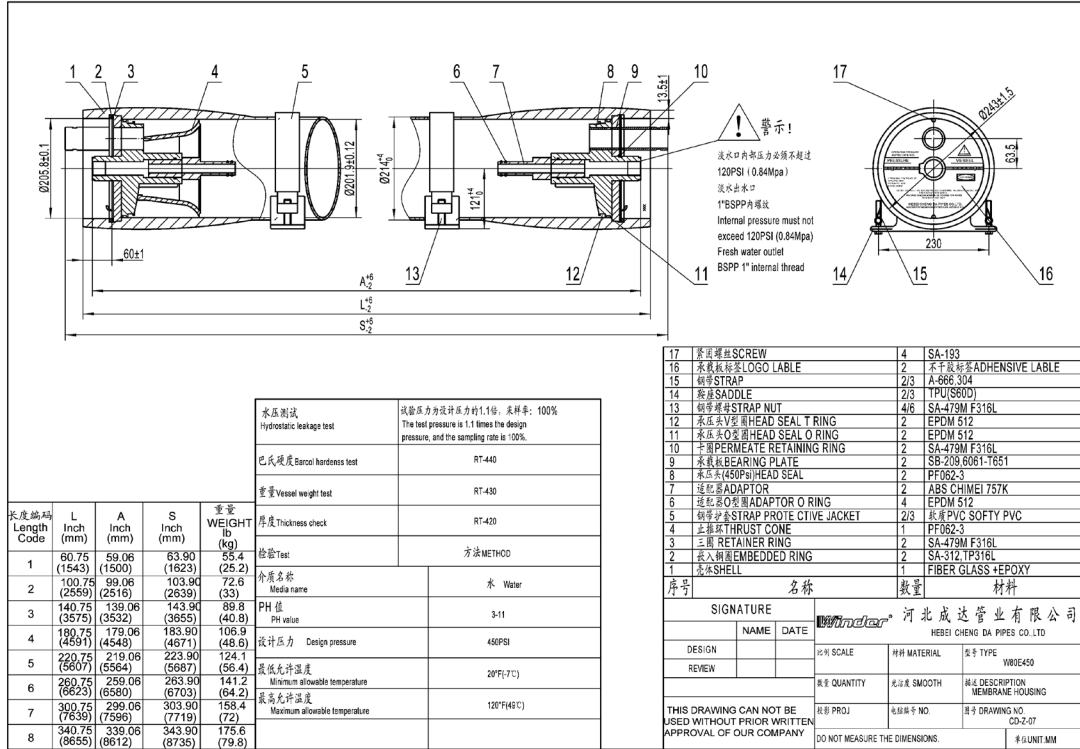
1. W80E150 FRP membrane housing drawing



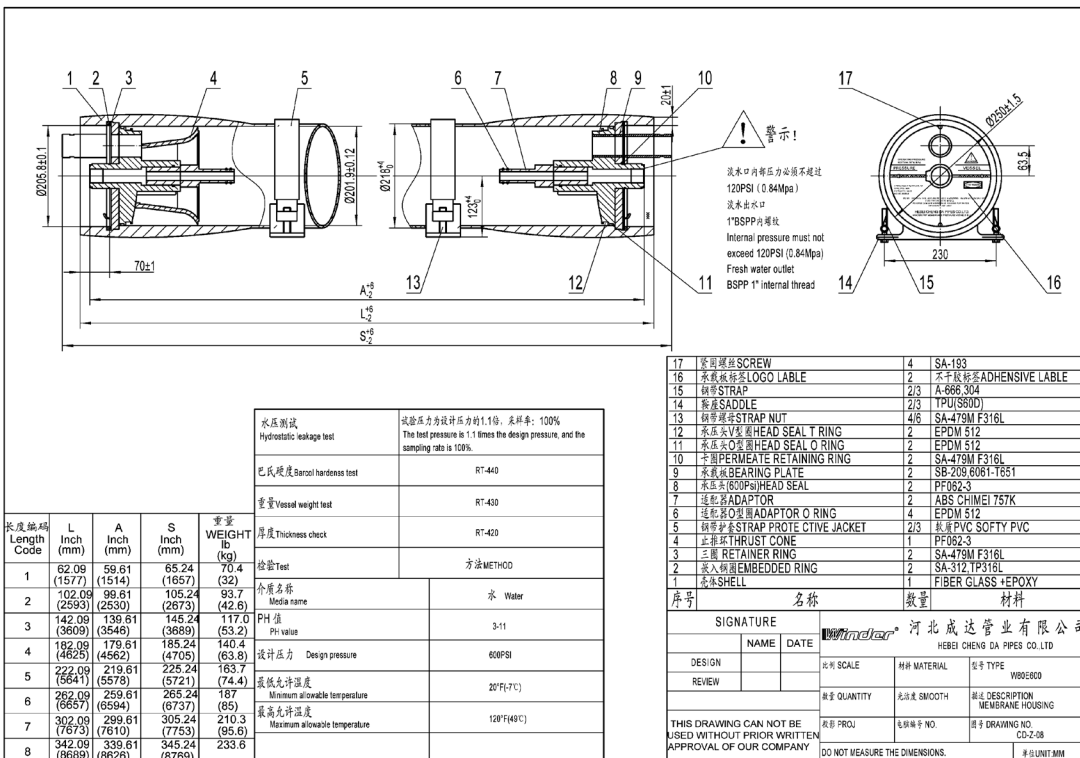
2. W80E300 FRP membrane housing drawing



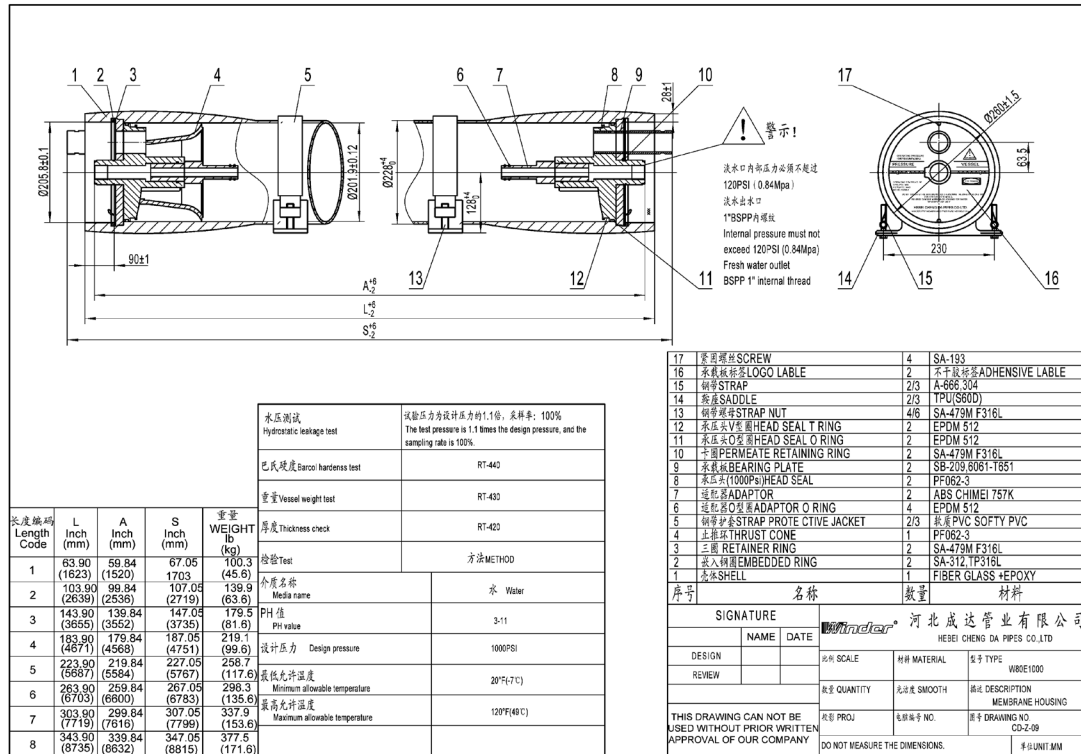
3. W80E450 FRP membrane housing drawing



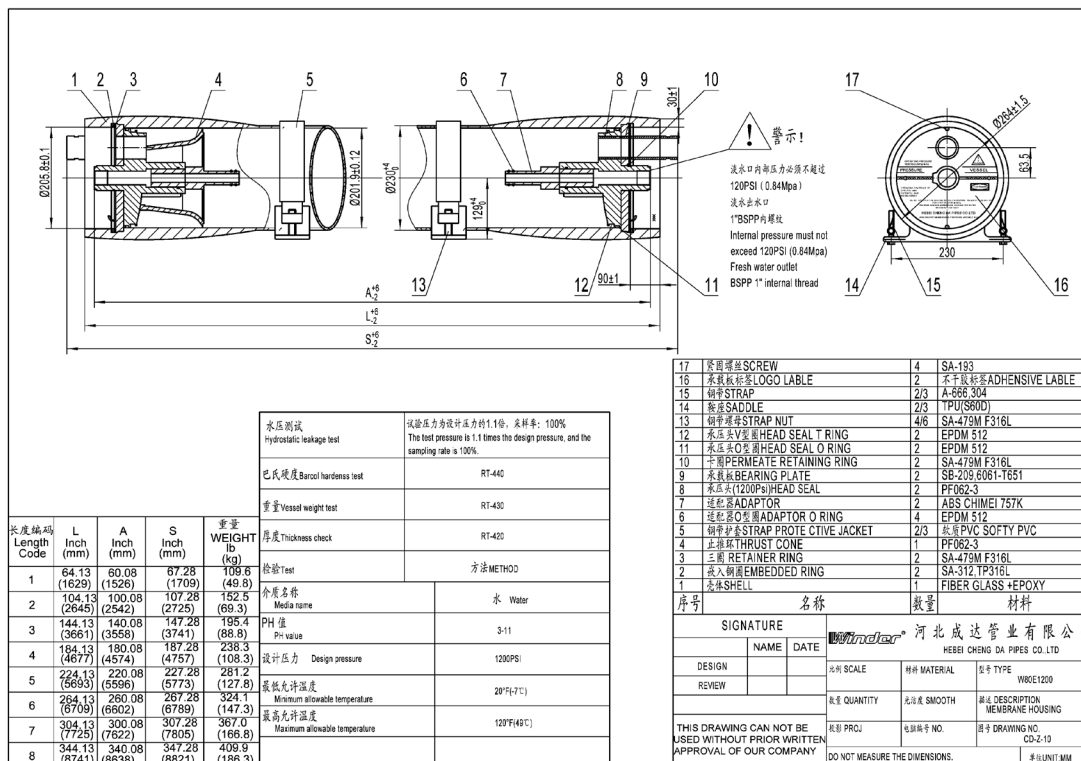
4. W80E600 FRP membrane housing drawing



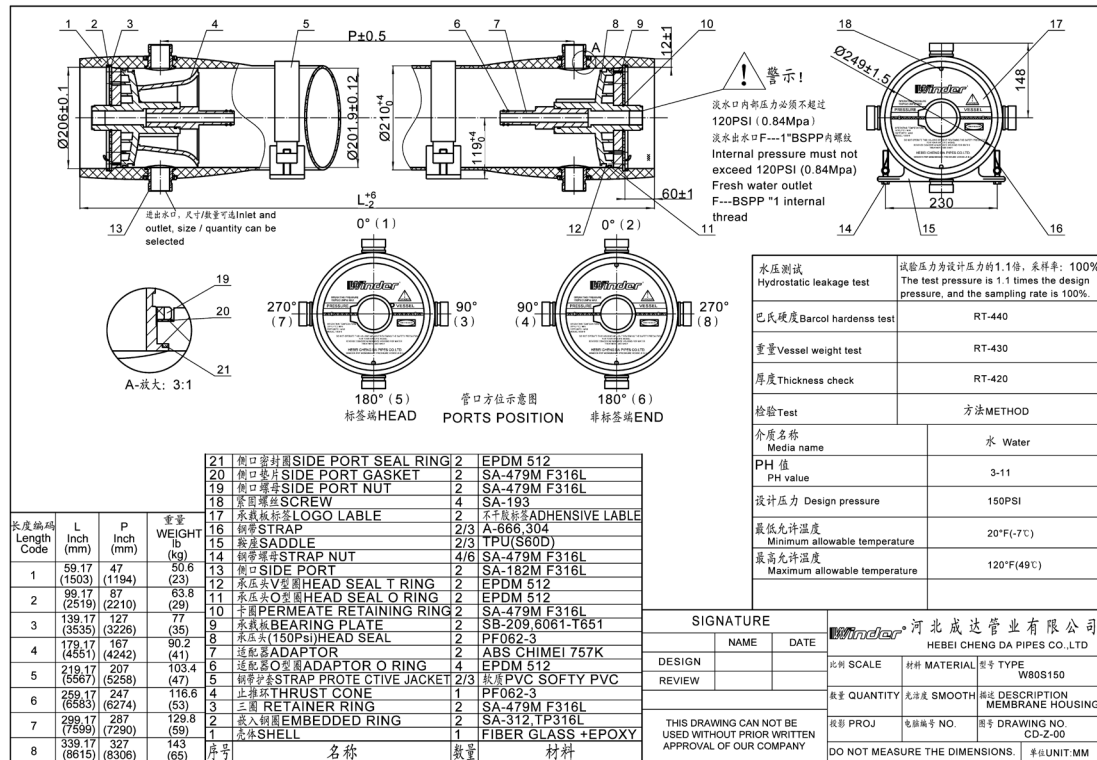
5. W80E1000 FRP membrane housing drawing



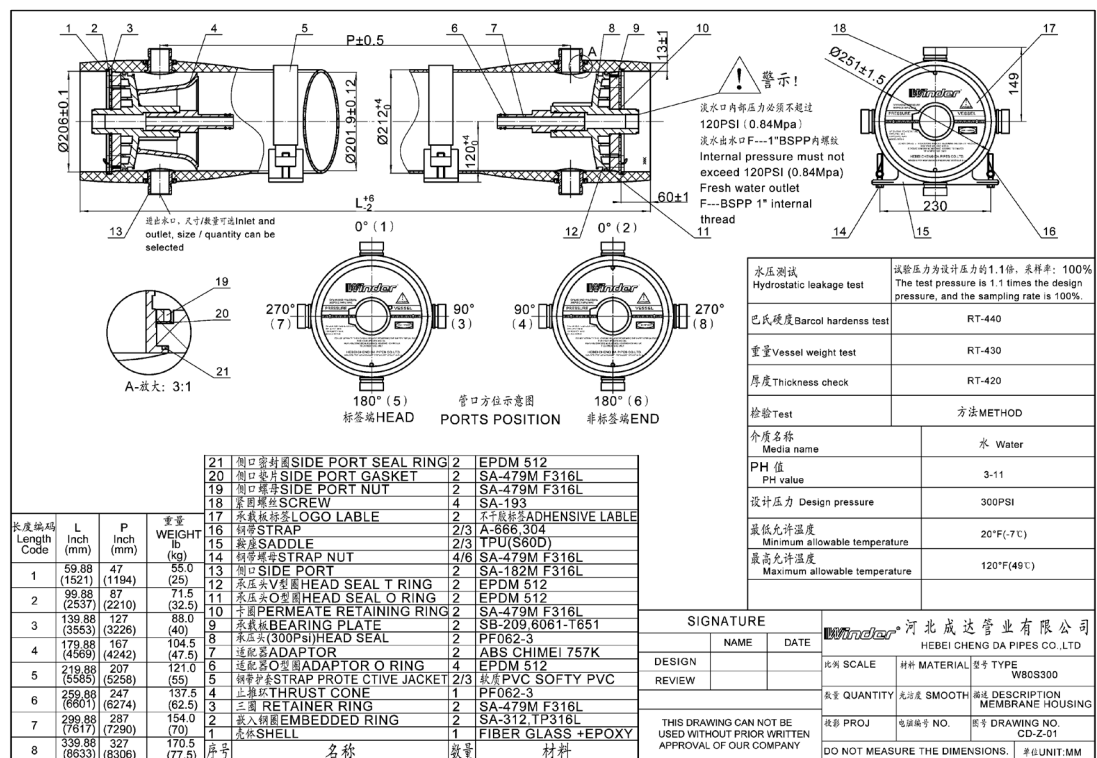
6. W80E1200 FRP membrane housing drawing



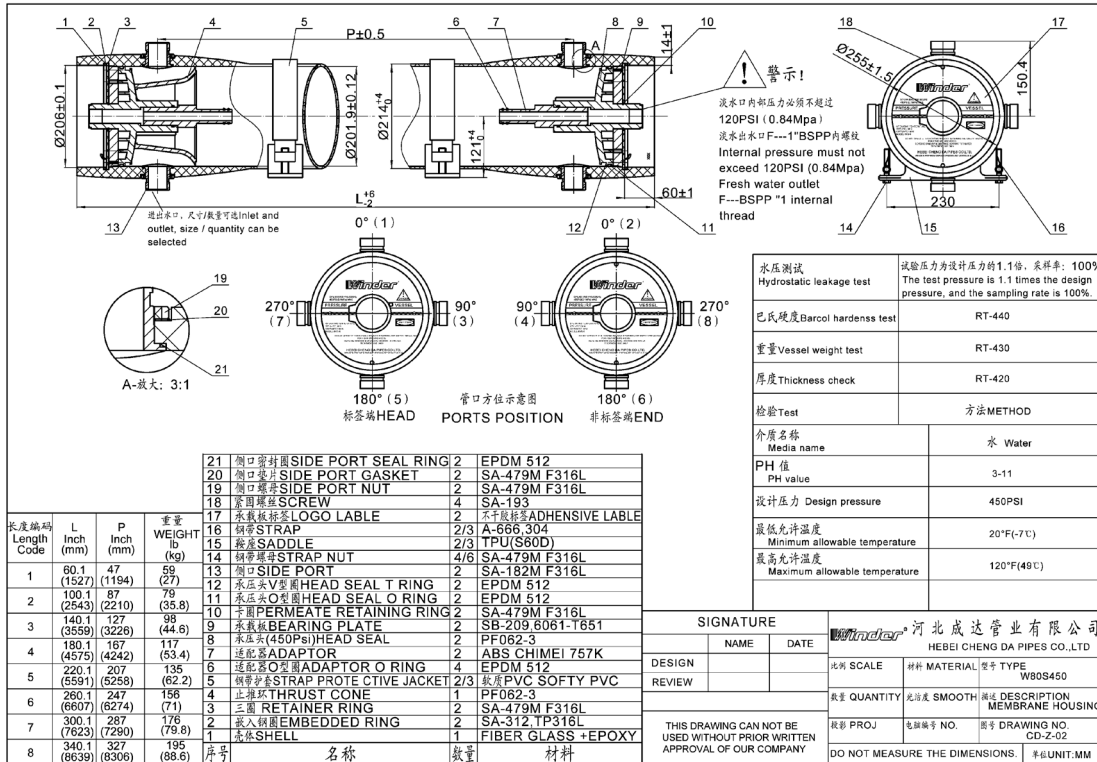
7. W80S150 FRP membrane housing drawing



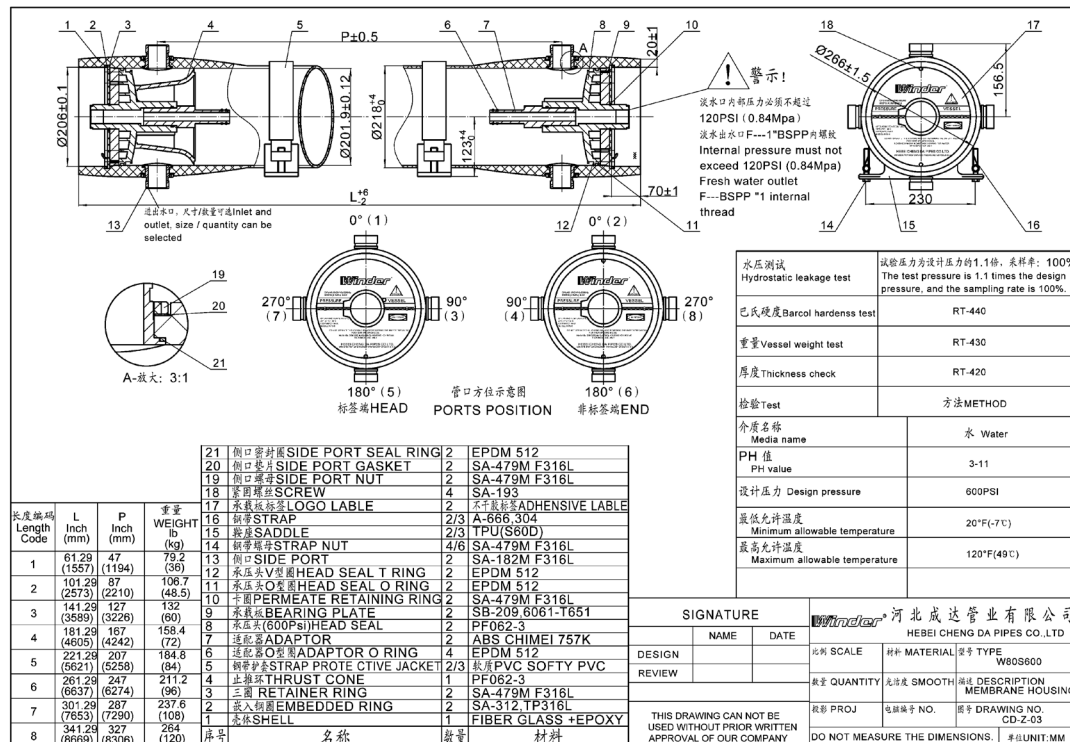
8. W80S300 FRP membrane housing drawing



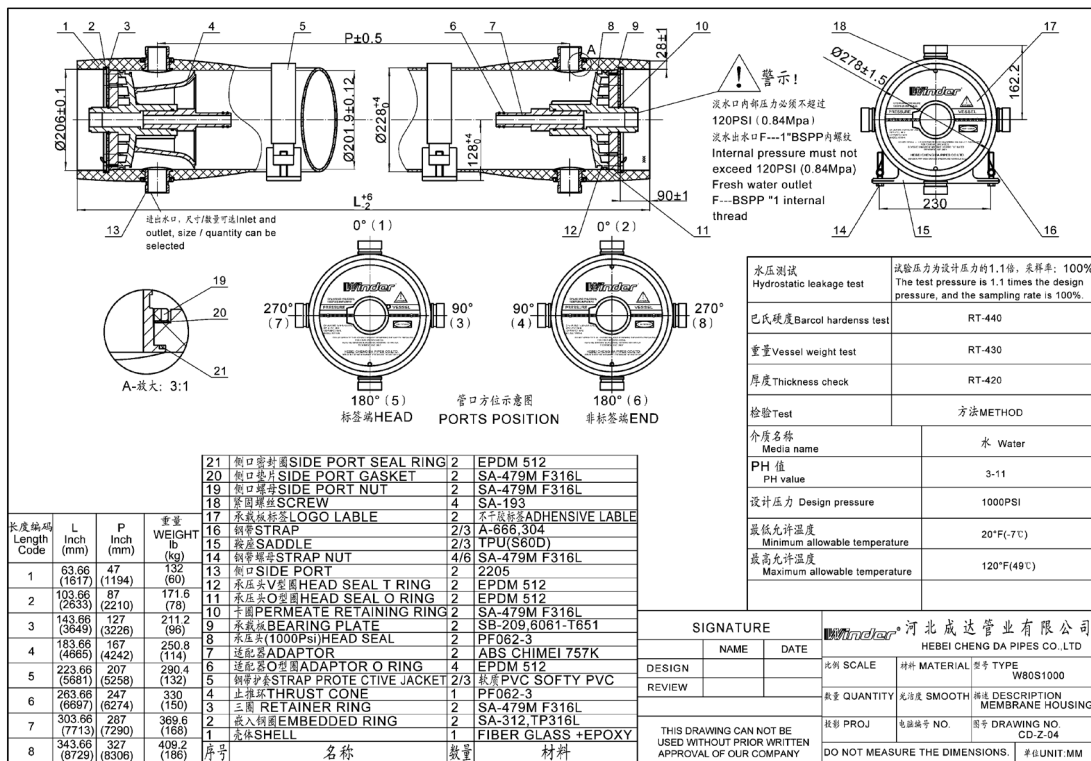
9. W80S450 FRP membrane housing drawing



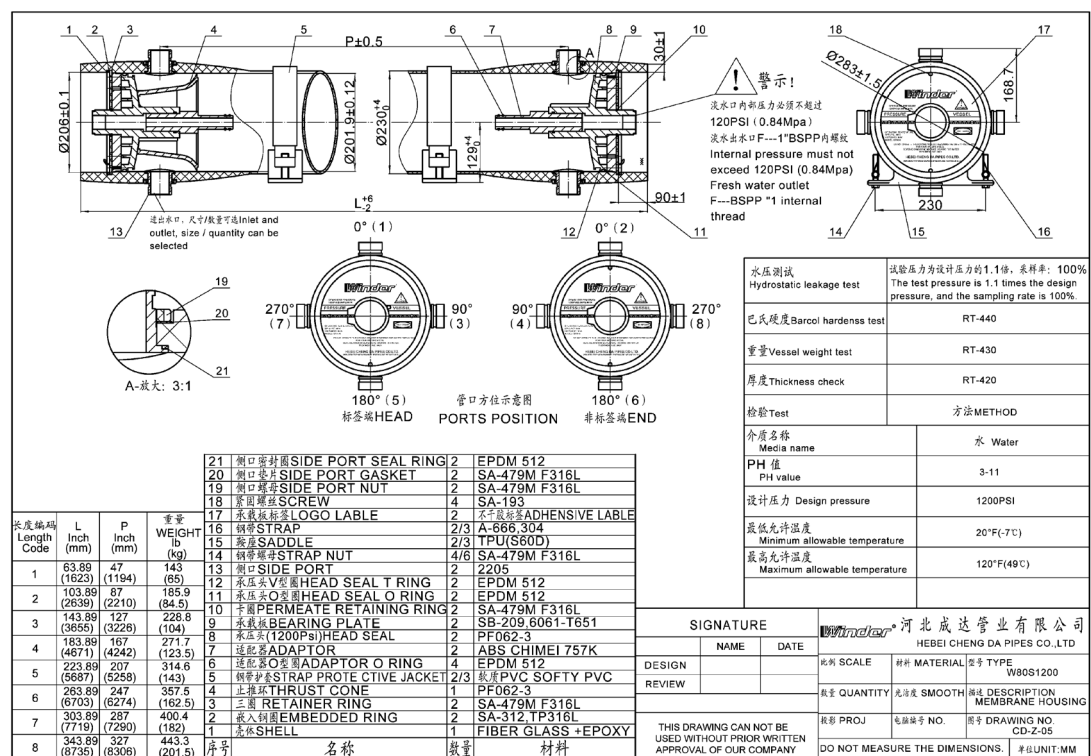
10. W80S600 FRP membrane housing drawing



11. W80S1000 FRP membrane housing drawing



12. W80S1200 FRP membrane housing drawing



Awoy 8" FRP Membrane Housing Contents

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8" FRP Membrane Housing

- ☆ Composite Construction for Best Chemical Compatibility & Corrosion Resistance.
- ☆ Smooth Inner Wall, Unique Mirror Finish ID.
- ☆ Beautiful & Attractive Appearance.
- ☆ Length From 1 Element to 7 Elements.
- ☆ Adapters, Interconnectors & Mounting Clamps Available.
- ☆ Inlet & Outlet, Size & Quantity Can be Selected.



Test

Burst Test : 6 times of its design pressure.

Cycle Test: 100000 times.

Hydraulic Test: 100% quality assurance test with 1.2 times stage elevation.

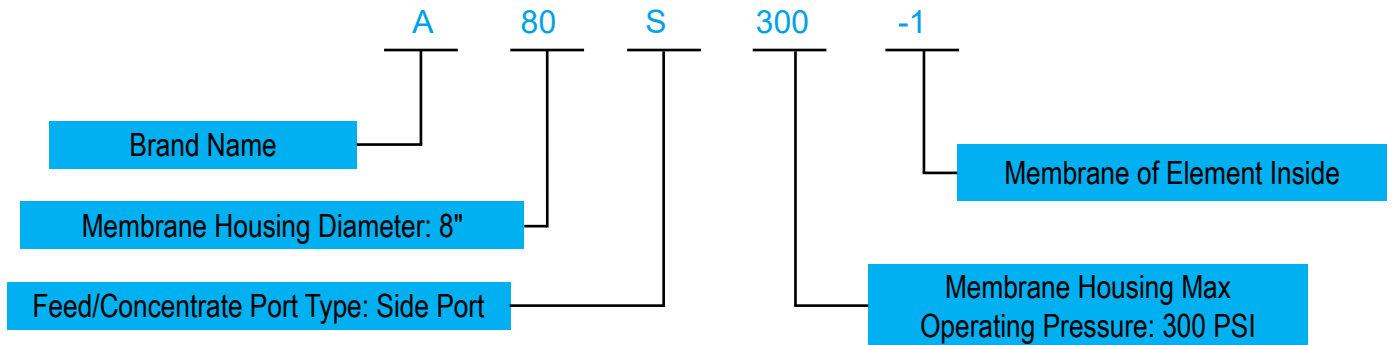
Barcol Hardness Test: Repeated once every 1.5 meters.

Test every membrane housing, not sampling.



Explanation Model

Explanation of Codes of Aowy Membrane Pressure Vessels



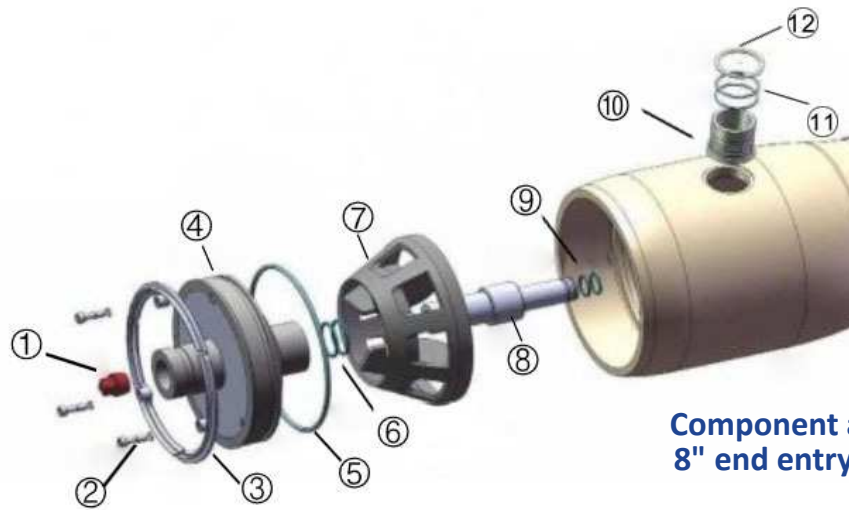
Side Entry Specification

Material	Fiberglass and epoxy
Process	Winded
Working Pressure	300 PSI, 450 PSI optional
Connection	Side port
Operating Temperature	-7 °C–49 °C
Operating pH Range	3–11
Cleaning pH Range	2–12 (≤ 30 min)
Certificate	ISO900:2000
Color	Original or customized

Compare with ASME

Model No.	A80S300	A80S450
Design Pressure (PSI)	300	450
Aowy Cycle Test	13 0000 times	13 0000 times
Cycle Test Standard by ASME	10 0000 times	10 0000 times
Aowy Burst Pressure	61 Bar	85 Bar
Burst Pressure Standard by ASME	23.1 Bar	34.6 Bar

Side Entry Components



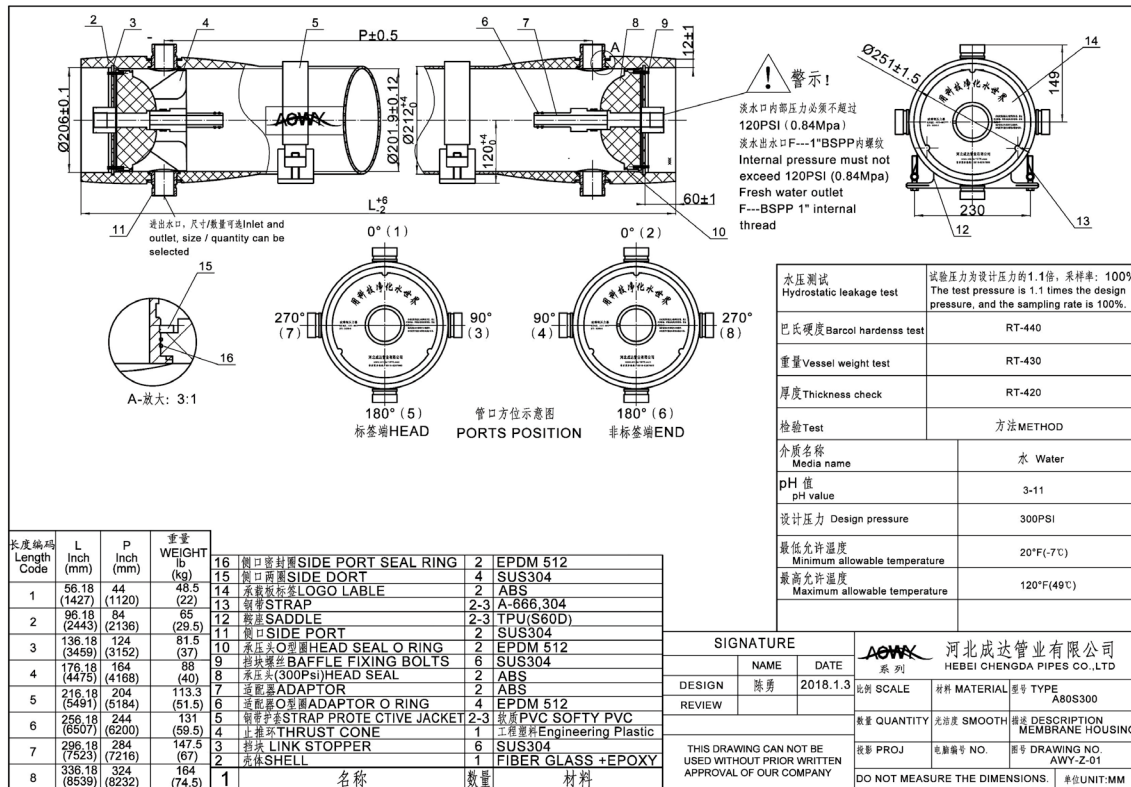
Component assembly diagram of 8" end entry membrane housing

Serial-Number	Description	Material
①	Permeate port	ABS
②	Baffle Fixing Bolts	SUS304
③	Link Stopper	SUS304
④	Head Seal	PF062-3/ABS
⑤	Head Seal V Ring	EPDM 512
⑥	Head Seal O Ring	EPDM 512
⑦	Thrust Cone	PF062-3/Engineering Plastic
⑧	Adaptor	ABS
⑨	Adaptor O Ring	EPDM 512
⑩	Side Port	SUS304
⑪	Side Port Seal Ring	EPDM 512
⑫	Side Port Nut	SUS304

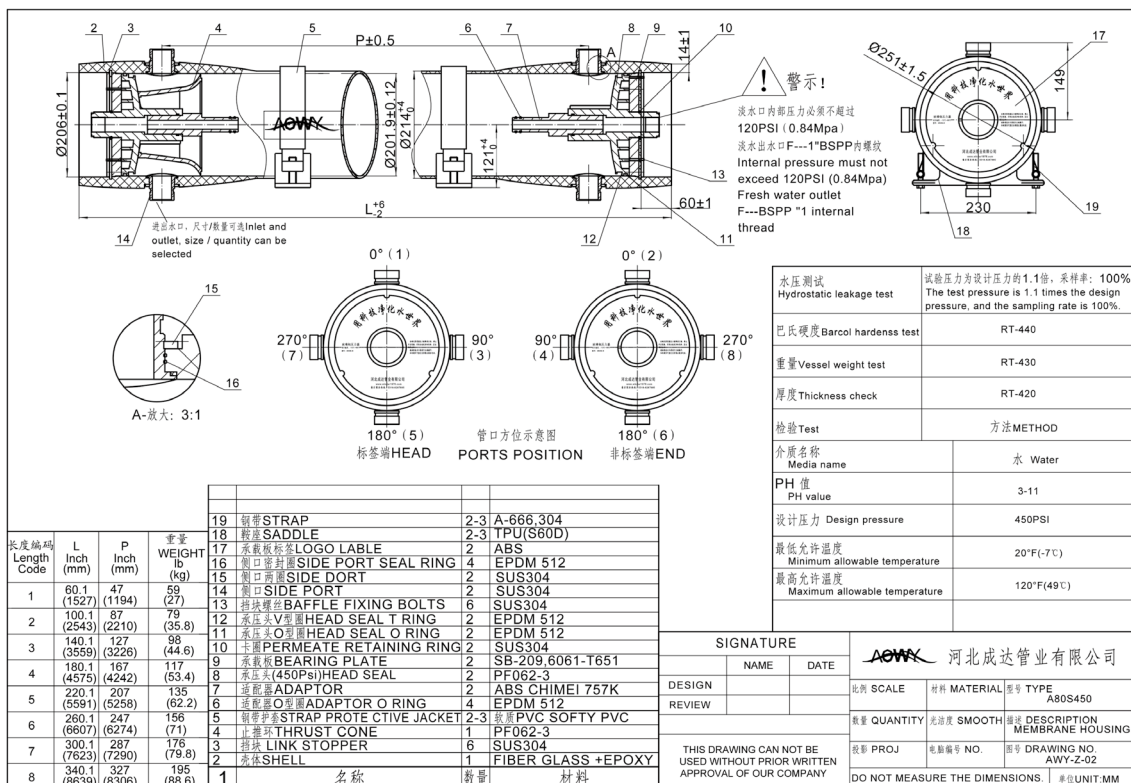
※ **Note:** Do not install thrust cone at feed port.

Addendum Drawings

1. A80S300 FRP membrane housing drawing



2. A80S450 FRP membrane housing drawing



DTRO FRP Housing

- ☆ Designed for RO Technology.
- ☆ Produced by Winding Techniques.
- ☆ Special for High Concentration of Sewage Treatment.
- ☆ Excellent Property of Pressure and Corrosion Resistance.
- ☆ Smooth Inner Wall Surface.
- ☆ Certified by ISO9001, ISO14001.

FRP DTRO Housing Specification



Material	Fiberglass and epoxy
Process	Winded
Pressure Rate (Bar)	75 Bar, 150 Bar, 200 Bar optional
Available Height	1.15 m, 1.2 m
Operating Temperature	-7 °C–49 °C
Color	Original or customized
Certificate	ISO9001, ISO14001

Projects



FRP Precision Filter

- ☆ Patent Product by Winder®.
- ☆ Designed for Satisfy the Water Input Requirement in the Following Procedure.
- ☆ Also Settled for Prevent Small Particles Enter the Finished Water or Damaging the Membranes.
- ☆ Composite Construction is Non-Rusting.
- ☆ Brightly Colored Baking Process.
- ☆ Accessories Design Optimization.



Technical Specification

Material: Fiberglass + epoxy.
Diameter: 202 mm.
Connection Type: Side port.
Operating pH Range: 3–11.
Cleaning pH Range: 2–12 (≤ 30 min).

Test

Burst Test : 6 times of its design pressure.
Cycle Test: 100000 times.
Hydraulic Test: 100% quality assurance test with 1.2 times stage elevation.
Barcol Hardness Test: Repeated once every 1.5 meters.

Model No.	Diameter (mm)	Height (mm)	Connection	Inlet/Outlet	Permeate Port (inch)	Pressure	Water Flow (T/H)
WGL5-20	202	780	Side entry	DN40/1.5" NPT	DN 50	1.0MPa	5.0
WGL5-30	202	1034	Side entry	DN40/1.5" NPT	DN 50	1.0MPa	7.5
WGL5-40	202	1288	Side entry	DN40/1.5" NPT	DN 50	1.0MPa	10.0

Projects

- Production of drinking & domestic water.
- Electronics.
- Printing, dyeing & textile.
- Alcohol & pharmaceutical filtration.
- Acid & alkali filtration.
- Desalination & RO membranes pre-filtration.

Quality Assurance

**Barcol hardness test:**

repeated once every 1.5 meters.

**Hydraulic test:**

100% quality assurance test with 1.2 times stage elevation. Keep pressure for 2 minutes to ensure no leakage.

**Burst test :**

6 times of its design pressure.

Cycle test:

100000 times.

Certificates



ASME

CNAS28001

ISO9001

ISO14001

Projects



Gansu chemical plant water process engineering. May 2014



Biel Crystal water treatment engineering. May 2015



April Fine Paper water treatment engineering. May 2015



Daya Bay Cnoco's refinery project. July 2016



Qingdao wastewater reclamation project. Aug 2016



Dalian Hengli petrochemical water treatment project. Nov 2017



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