#### Membrane Plant Toolkit Details

Ensure the safe removal of membranes and anti-telescopic devices (ATDs) from your plant.

With the use of tools that are designed and fit for purpose, potential damage to your plant, membranes and ATD's are reduced, and risk of harm and injury to your operators is lowered.

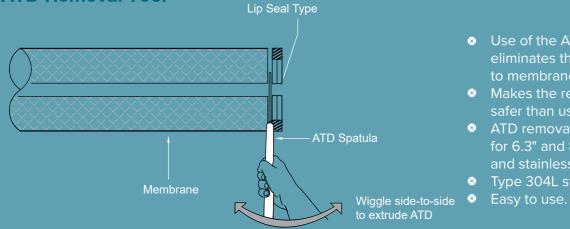
- Housing end cap removal tools
- Removal of membranes from the housing
- Membrane push rod tool
- Membrane ejector block pigging tools
- Removal of ATD's and blank end plugs from the membranes.

All tools are stored in a waterproof case with wheels, ensuring that the tools are available for use when required and supports safe transport around the factory.

- (L x W x H) 1.34m x 0.43m x 0.17m
- Weight is maximum 30kg.

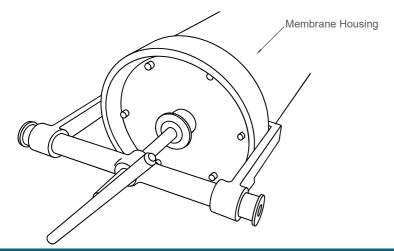
To view the video on how to use the tools, please go to www.smartmembranesolutions.co.nz and select Removal Tools from the Products Menu.

#### **ATD Removal Tool** 6" and 8" ATD Tube



- Solution Use of the ATD removal tool eliminates the risk of damage to membranes
- Makes the removal of ATDs much safer than using screw drivers
- Solution State for 6.3" and 8.0" polysulfone and stainless steel ATDs
- Type 304L stainless steel

#### Housing End Cap Compressing Tool



- Specifically for 8.0" RO
- Use of compressor tool eliminates the risk of damage to membrane housing
- Makes the removal of caps much safer for operators
- Type 304L stainless steel
- Easy to use.



# **Membrane Removal Toolkit**



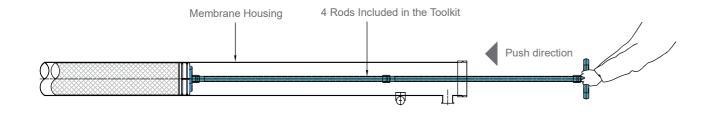




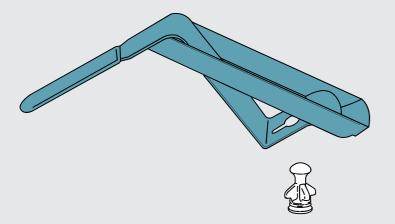
### Membrane Removal Toolkit

#### Membrane Push Rod Tool

- Multi-module push rod assembly
- Four 1.2m rods, handle and UHMPE lined end cap included
- Will not scratch membrane housing internals
- Type 304L stainless steel
- Makes for easy removal of membranes.



#### **Blank End Plug Removal Tool**



- Use of the BEP removal tool eliminates the risk of damage that screwdrivers can cause to the plugs and user
- Suitable for small and large blank end plugs
- Type 304L stainless steel 8
- Easy to use.

## Membrane Ejector Block Use (Pigging)

The hydraulic ejector blocks with hydraulic seals are designed to be used for either 6.3" or 8.0" spiral wound membranes that are too tight for physical removal with the sectional push rod tool.

of membranes with water.

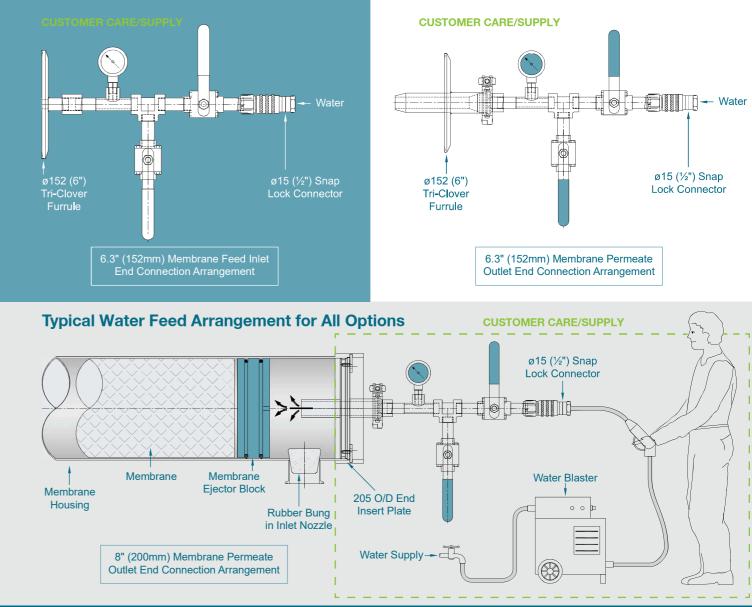
SMS Toolkit contains:

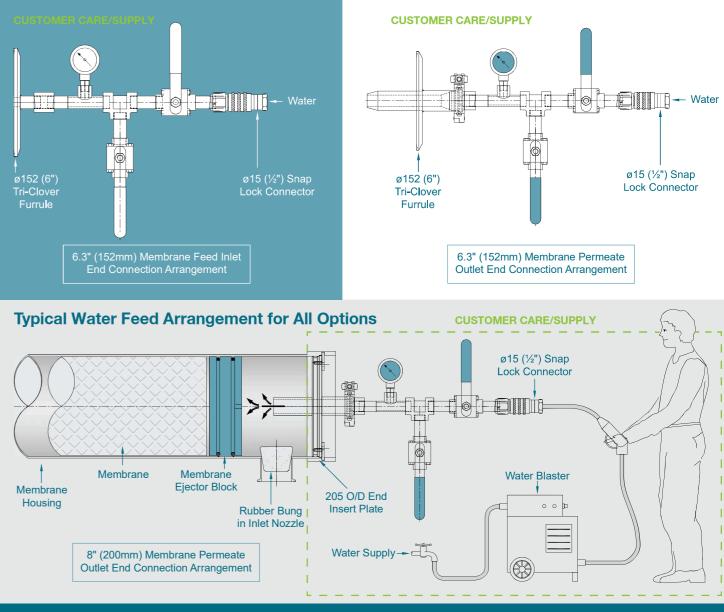
- A 8.0" membrane ejector block with hydraulic seals
- A 6.3" membrane ejector block with hydraulic seals
- A rubber wedge plug for plugging the feed inlet or retentate outlet port.

supply equipment between customers has significant variation.

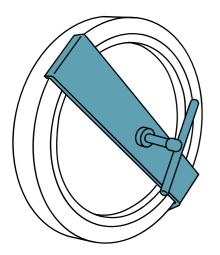
6.3" or 8.0" membrane pressure vessel. This includes:

- A small water blaster, delivering 7 10 litres per minute
- A pressure gauge
- Water supply valve, drain valve and suitable connection fittings (generally a combination of tri-clover) and quick connect hydraulic couplings)
- Pressure relief if required.





#### Housing End Cap Removal Tools



- Once compressed, use of this tool eliminates the risk of damage to membrane housing
- Makes the removal of end caps
- much safer for operators
- Type 304L stainless steel
- Easy to use.

### Membrane Removal Toolkit

- Please ensure the plant has the necessary procedures in place to allow for safe removal
- SMS do not supply the vessel feed or permeate end cap/spigot, or water blaster fittings, as vessels and water
- Shown below are the recommended equipment customers must supply to safely supply water to either a