



Marine Growth Covers by
TOTAL MARINE TECHNOLOGY

Marine Growth Covers

TMT's experienced engineers design and build an extensive range of ROV-deployable Marine Growth Covers (MGCs) in our Australian offices, using robust, lightweight and durable materials. The TMT Marine Growth Covers are easy to install and provide an economical way of protecting subsea receptacles from biofouling, corrosion and inorganic deposits.

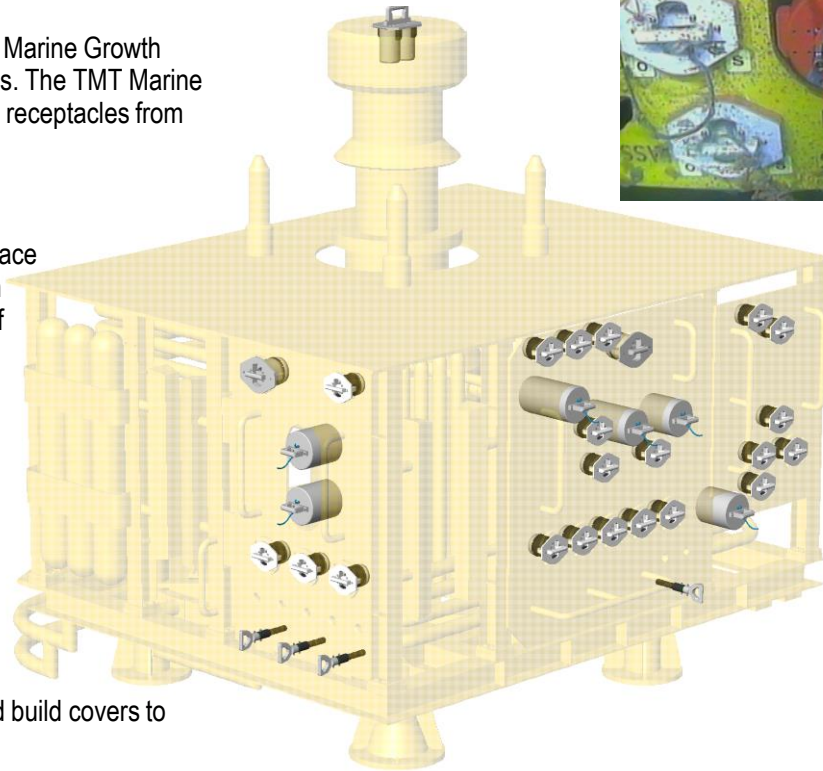
All MGCs are ROV-deployable with handles to suit different manipulator jaws

The MGC fits into or over the receptacle to protect the surfaces that subsea tools interface with. Where required, o-rings or nitrile seals provide further sealing, as well as aiding in cap retention within the receptacle. The installation of the covers inhibits the build-up of marine growth by limiting the flow of seawater within the receptacle. The inclusion of sacrificial copper inhibits corrosion and biofouling. This helps to minimise the time-consuming cleaning processes sometimes needed before using the receptacle.

TMT can customise* MGCs to suit any application. All TMT MGCs are designed to last over 40 years in the subsea environment.

TMT's range of standard MGCs includes Class 1 – 5, ISO Linear Types A and B, and Type B Hot Stabs; while our customised range includes Tronic EFL, FLX, Siamese Class 1 – 4, Tubing Head Spool, Low Torque Interface, Vetco Bucket and Vetco Gray Type 72A.

TMT's range of MGCs are engineer-designed and built in Australia. We can design and build covers to suit your needs.

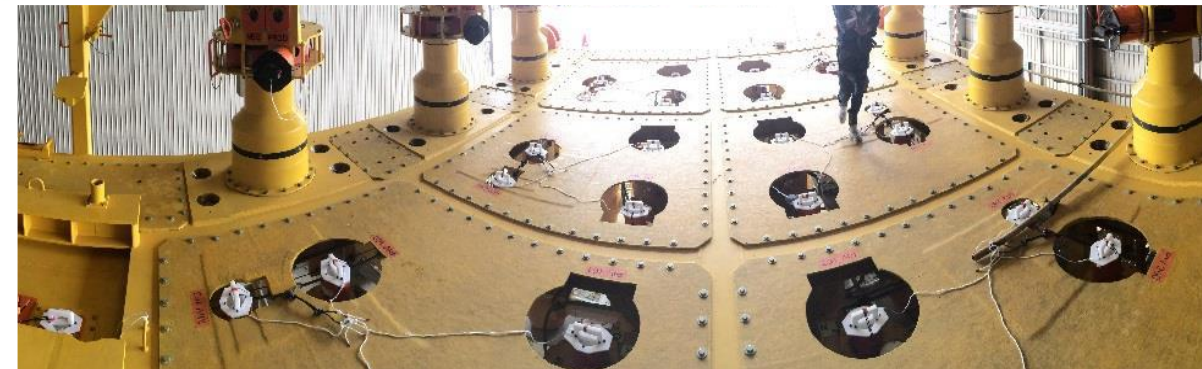


Similar Products

TMT also designs and builds related items such as acid plugs, acid shrouds and trash/debris caps. Contact us for more information.



Before MGCs



MGCs Installed



ISO Linear Type B

The MGC fits over the ISO 13628-8 Linear Type B interface to protect both the front and rear faces of which subsea tools interface with.

Polyurethane rods are used to retain the cover in position and stop it from rotating. An optional design that covers the entire receptacle up to the rear flange is also available. This ensures the valves actuating shaft is protected from deposits.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Non-metallic
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-9566):

Dimensions (mm)	Ø246 x 262 (H)
Weight in Air	6.05 kg
Weight in Seawater	1.64 kg
Depth Rating	unlimited



The TMT Class 5 Marine Growth Cover (MGC) protects subsea XT rotary intervention valve buckets to standard ISO 13628-8 high torque receptacles.

The non-metallic plug is fitted with a nitrile ring to retain the MGC in the receptacle.

The cover is assembled using titanium bolts.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium bolts
- Lanyard
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-9496):

Dimensions (mm)	Ø186 x 258 (H)
Weight in Air	6.9 kg
Weight in Seawater	1.9 kg
Depth rating	unlimited



Class 5



Type B Hot Stab

The TMT Male ISO Type B Hot Stab Marine Growth Cover (MGC) is a non-metallic plug that is fitted with O-rings for sealing and retention. The provision of a polyurethane flexi-handle between the handle and stab allows for easy subsea installation. The stab is assembled using titanium fixing pins.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Lanyard
- Titanium rods
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-8880):

Dimensions (mm)	Ø42.7 x 441 (L)
Weight in Air	3.7 kg
Weight in Seawater	0.33 kg
Depth Rating	unlimited



The TMT MGC – ISO 13628-8 Class 1 - 4 Marine Growth Cover (MGC) protects high torque valve buckets on subsea XT rotary intervention valves.

The non-metallic plug includes a nitrile ring for better retention. The MGC fits over and into the ISO 13628-8 Class 1 - 4 bucket interface to protect both the inside and mating face of the subsea receptacle into which it is installed.

The cover is assembled using titanium bolts.

Features:

- Corrosion-resistant materials
- Easy to install and remove
- Field proven
- Handle suits different manipulator jaw configurations
- Lanyard
- Titanium bolts
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-9487):

Dimensions (mm)	310 (H) x Ø152
Weight in Air	5.7 kg
Weight in Seawater	1.5 kg
Depth Rating	unlimited

Class 1 - 4



ISO Linear Type A

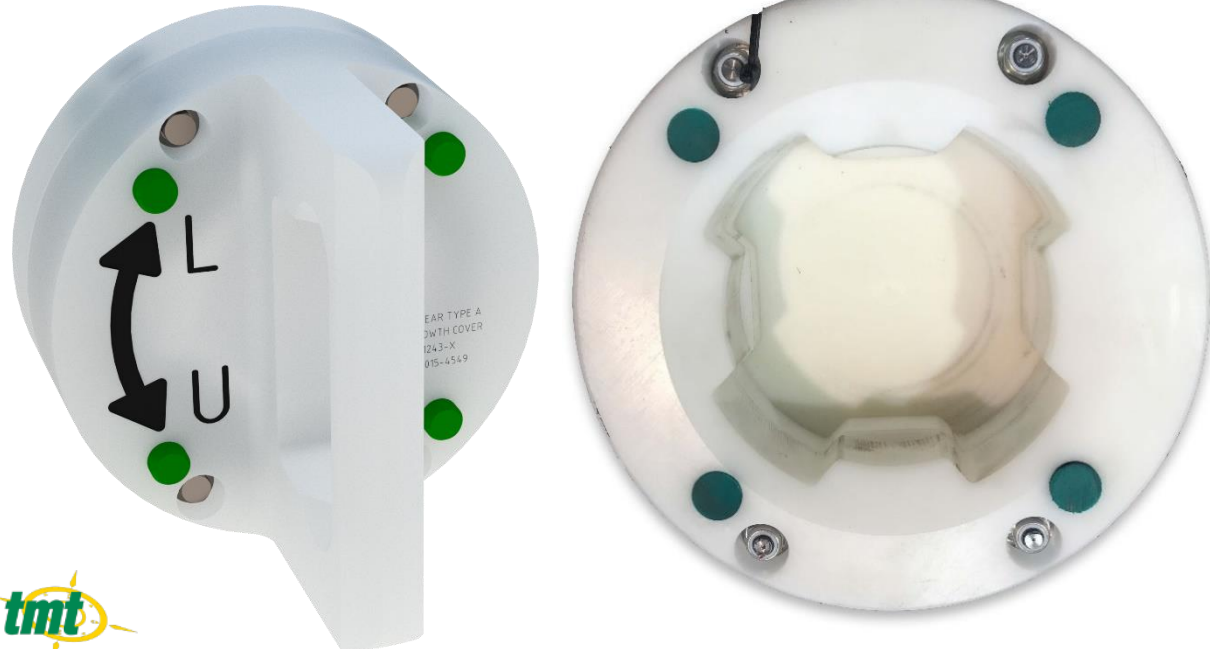
The TMT Marine Growth Cover (MGC) ISO Linear Type A fits over and into the ISO 13628-8 Linear Type A interface to protect both the inside and mating face of the subsea receptacle into which it is installed. The cover is held in place using four polyurethane retention rods. The cover is assembled using titanium bolts.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium bolts
- Field proven
- Four polyurethane retention rods
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0014-1243):

Dimensions (mm)	Ø246 x 230 (H)
Retention Rods (mm)	Ø20 x 70
Weight in Air	6.3 kg
Weight in Seawater	1.8 kg
Depth Rating	unlimited



The TMT Marine Growth Cover (MGC) Vetco Gray (VG) Type 72A is a non-metallic plug that is fitted with a nitrile ring for retention, similar to an O-ring. The cover is assembled using titanium bolts.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium bolts
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-9530):

Dimensions (mm)	Ø304 x 395 (H)
Weight in Air	6.1 kg
Weight in Seawater	1.72 kg
Depth Rating	unlimited

Mk2 Vetco Gray Type 72A



Tubing Head Spool

The Tubing Head Spool Marine Growth Cover (MGC) is a non-metallic plug that is fitted with an O-ring as a retention mechanism.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Non-metallic
- Lanyard
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-8562):

Dimensions (mm)	Ø102 x 165 (H)
Weight in Air	0.57 kg
Weight in Seawater	0.15 kg
Depth Rating	unlimited



The TMT Tronic Electronic Flying Lead (EFL) Marine Growth Cover (MGC) is a non-metallic plug that is assembled using titanium pins and a polyurethane flexi-handle between the handle and plug. The plug includes an O-ring seal to retain the MGC in the receptacle.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium pins
- Lanyard
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-0159_01 & _02):

Dimensions (mm)	Ø49 x 325 (H)
Dimensions (mm)	Ø41 x 325 (H)
Weight in Air	1.2 kg
Weight in Seawater	0.3 kg
Depth Rating	unlimited

Tronic EFL



Siamese Class 1 - 4

This Siamese Class 1 - 4 MGC is a prime example of TMT's ability to custom design a cover to suit any receptacle. The Siamese Class 1 - 4 MGC suits 2 x ISO Class 4 receptacles that are positioned close to each other. The MGC uses its weight as a retention mechanism in a vertical bucket. The cover is assembled using titanium bolts.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium bolts
- Lanyard
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0011-8837):

Dimensions (mm)	350 (L) x 260 (W) x 386 (H)
Weight in Air	10.6 kg
Weight in Seawater	3.2 kg
Depth Rating	unlimited



The Vetco MGC uses its weight in seawater as a retention mechanism in a vertical bucket. The cover is assembled using titanium bolts.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Titanium bolts
- Field proven
- Suits standard receptacles as per ISO 13628-8
- 40 year design life

Specifications (0012-0790):

Dims (mm)	Lid \varnothing 600, Shaft \varnothing 441 x 534 (H)
Weight in Air	66.3 kg
Weight in Seawater	10.2 kg
Depth Rating	unlimited

Vetco Bucket

Low Torque Interface

The TMT Low Torque Interface (LTI) Marine Growth Cover (MGC) is a non-metallic plug that is fitted with an O-ring that acts as a retention mechanism.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Lightweight and compact design
- ROV deployable
- 40 year design life

Specifications (0013-2376):

Overall Dimensions (mm)	Ø160 x 170 (H)
Weight in Air	1.61 kg
Weight in Water	0.44 kg
Depth Rating	unlimited



The TMT FLX Marine Growth Cover (MGC) is sealed and retained by an O-ring installed on the inside of the lid and a polyurethane rod, which also assists with centring the tool for insertion. A lanyard is provided to tie back to the structure. The cover is assembled using titanium bolts.

Features:

- Corrosion-resistant materials
- Easy to install and remove
- Field proven
- Handle suits different manipulator jaw configurations
- Land out indicator
- Lanyard
- Titanium bolts
- 40 year design life

Specifications (0011-8822):

Dimensions (mm)	Ø400 x 503 (H)
Weight in Air	11.7 kg
Weight in Seawater	3.22 kg
Depth Rating	unlimited



FLX

Wellhead Trash Cap

The TMT Wellhead Trash Cap Marine Growth Cover (MGC) is a non-metallic plug that is fitted to the top of a wellhead to prevent dropped objects and other debris from entering the wellhead.

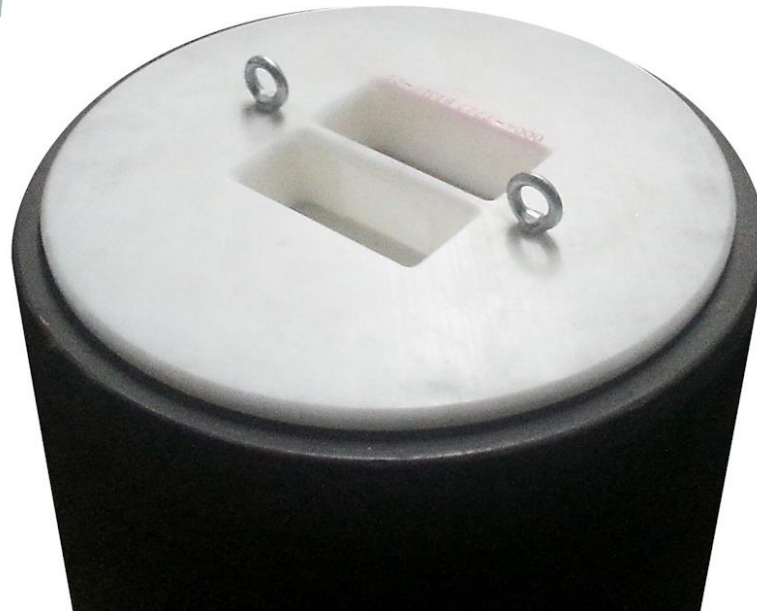
Optional scotchbrite pads on the chamfered surface of the lid enable using the cap to provide a light clean to the wellhead by spinning the cap prior to removal.

Features:

- Easy to install and remove
- Corrosion-resistant materials
- Optional cleaning pads
- Lightweight and compact design
- ROV deployable
- 40 year design life

Specifications (0005-5385):

Overall Dimensions (mm)	Ø600 x 150 (H)
Weight in Air	26 kg
Weight in Water	8 kg
Depth Rating	unlimited



The TMT ISO Bucket Acid Plug is designed to fit an ISO 13628-8 class 1-4 rotary torque receptacle. To overcome the large dimensional differences between buckets and to ensure a good seal while the insertion and removal force remains relatively constant, the tool uses a rubber disk seal (secondary) and a high-density polyethylene (HDPE) sponge seal (primary) to seal against the receptacle inner diameter. Acid is injected via the built-in hot stab receptacle with a check valve to prevent leaks.

The TMT ISO Bucket Acid Plug is held in place using latch dogs designed to hold a positive pressure (5 psi) within the rotary receptacle. This allows the displacement of the seawater and the positive pressure resists inhibitor wash-out during the de-calcification process.

Shear dowels are fitted to the dogs to allow the forced removal of the plug, if required.

Features:

- Corrosion- and acid-resistant materials
- Handle suits different manipulator jaws
- Latch dogs
- Built-in check valve
- Titanium bolts
- 10-14 days subsea life

Specifications (0013-1680):

Dimensions (mm)	Ø280 x 377 (H)
Weight in Air	7.5 kg
Weight in Seawater	3.5 kg
Shear Pin Breaking Load	1000 kg
Depth Rating	unlimited

ISO Bucket Acid Plug



TMT ROW



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