Ritherdon Atlas Socket

TECHNICAL DATA SHEET

The Ritherdon Atlas Socket Range is a secure foundation system that makes it easy to remove and replace a column without excavation. It is designed to firmly secure a column within the ground, while also allowing the column to be replaced when needed. The ease and speed with which the Atlas allows columns to be replaced drastically reduces maintenance and keeps traffic flowing.

The Atlas also has an isometric clamping mechanism (i.e. equal pressure right around the pole) which creates a very tight grip without distorting the column installed within the socket, preventing pole rotation in high wind locations. Designed and tested in accordance with foundation standard CD 354 “Design of minor structures”, EN40-2:2004 “Lighting columns Part 2: General requirements and dimensions” and BS EN 124:2015 “Gully tops and manhole tops for vehicular and pedestrian areas”.

Figure 1 – A Ritherdon Atlas Socket

Table 1 - Product Range showing sizes, planting depths and torque resistances at 30kNm clamp-bolt tightness.

Socket Size mm	Standard Planting Depths mm	Torque Resistance kNm
76	450, 600, 750, 900, 1050	0.49
89	450, 600, 750, 900, 1050	0.71
115	450, 600, 750, 900, 1050	0.89
140	450, 600, 750, 900, 1050	2.08
145	450, 600, 750, 900, 1050	No Data*
168	450, 600, 750, 900, 1050	2.24

*Will likely be between the values for the 140mm and 168mm sockets.

Features and Benefits

- Uniform gripping action with high strength grip.
- Clamping system will not pierce or damage your post.
- 100% stainless steel construction.
- Aesthetic design with attractive top cover.
- Circular design suitable for rapid, core excavation.
- Very quick replacement of poles and columns.
- Flexible planting depth.
- Rotating cable entry.
- Sweeping bend duct for easy feeding of SWA cables.
- Replaceable clamp and brushed stainless steel cover plates.
- Dust cover for protection during transport and before installation.
- Saves repair costs and minimises traffic disruption.
- Easy to handle on site due lightweight construction.
- Protects pole and column integrity, increasing service life.

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Components

Clamping & Cover Plates

- The fixings used to tighten the adjustable clamp onto the socket head are grade A2/304 stainless steel. Depending on the size of the socket the bolts are either M8 or M10.
- The two parts of the cover plate are attached using grade A2/304 stainless steel screws, M5 x 12mm long with a socket button head.
- The two parts of the cover plate are made using 304 grade stainless steel, but can be made using 316 grade stainless steel for very harsh conditions.

Figure 2 – Socket head with clamp and 1 out of 2 cover plates

Top Section

- The top piece of the socket body is made to accommodate the clamping mechanism used to grip the post.
- Made from 4003 stainless steel.
- Coated black gloss using Architectural Grade Polyester Powder
- The top section is approximately 325mm in height.

Figure 3 – Top Section

Extension Pieces

- Extension pieces are used to lengthen the socket.
- Placed between the top and bottom sections, can be stacked on top of one another.
- Made from 4003 stainless steel.
- The extension pieces are connected to the socket top and bottom sections using grade A2/304 stainless steel screws, M5 x 8mm long with a Pozi-Drive head.
- Extension pieces are available at 150mm, 300mm and 450mm in height.

Figure 4 – 150mm Extension Piece

Bottom Section

- The bottom section made from 4003 stainless steel and is connected to the top section or extension pieces using grade A2/304 stainless steel screws, M5 x 8mm long with a Pozi-Drive head.
- The bottom plate has a hole in it to allow cable entry.
- A standard (Non-Illuminated) Socket will be blanked off using a blanking disc fixed in place with stainless steel Pop-Rivets.
- The bottom section is 150mm in height.

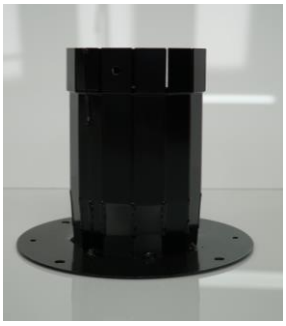

Figure 5 – Bottom Section

Additional Components

If the post requires a power supply (Illuminated Socket), we have two options available. The Duct Foot Bend and the Sweeping Bend.

Duct Foot Bend

- The Duct Foot Bend can accommodate standard 110 ducting and the cable can be threaded through this and the duct foot, into the socket and on through the post to where it is needed.
- The top plate of the bracket which supports the Duct Foot is attached to the Bottom Section of the socket using grade A2/304 stainless steel nuts, washers and screws, M8 x 16mm long with a hexagon head. The slots allow the direction of the Duct Foot to be moved to suit the required direction of the clamp in the top of the socket.
- The height of the unit is 250mm which will have to be considered when excavating.

Figure 6 – Duct Foot Bend

Sweeping Bend

- The Sweeping Bend is often used when stiff Wire Armored Cable is required. Occasionally, when trying to thread stiff cable through a duct foot, the cable does not bend and can get stuck or be very awkward.
- The use of the Sweeping Bend will almost eliminate these issues and makes threading the cable much easier. However, there is a tradeoff to be considered – the depth of this unit will require a deeper hole to be excavated.
- This unit can be rotated and is attached to the Bottom Section in exactly the same way as the Duct Foot.
- The height of the unit is 450mm which will have to be considered when excavating.

Figure 7 – Sweeping Foot Bend

Testing

Crash Testing

In-house testing was conducted by Ritherdon to assess the performance of the Atlas Socket during a collision. A 115mm socket was buried in concrete, a 115mm pole was installed within and a tipper haulage truck with a rear bumper was reversed into the pole. The socket remained undamaged, and the damaged pole was able to be replaced quickly and easily.

Figure 8 – Crash Testing the Atlas Socket

Impact Loading

External testing was conducted by Horiba-Mira to assess the performance of the Atlas Socket during a collision. A 76mm socket was buried in concrete within a metal box, a 76mm pole was installed within and a piston was used to apply force to the pole until the pole gave way. The socket remained undamaged, and the damaged pole was able to be replaced quickly and easily. The peak bending moment was found to be 6.82kNm.

Figure 9 – Impact Loading Atlas Socket

Torque Testing

In-house testing was conducted by Ritherdon to assess how much force would be required to cause the pole to rotate within the socket. The socket is required to prevent the column from rotating within the socket in the event that high speed winds create a torque on the pole by acting on the surface area of column or any signs attached to the column. The socket was set up in a rig and torque was applied until the pole rotated one degree within the socket. The results of this experiment are shown in Table 1.

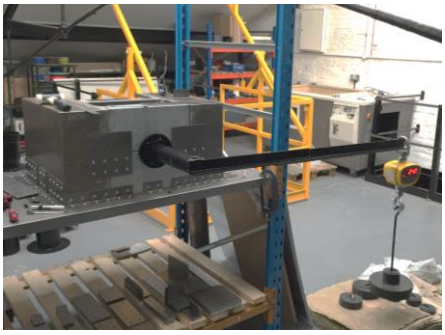

Figure 10 – Torque Testing Atlas Socket

Permanent Set and Deflection Loading

Permanent set and deflection loading tests were performed externally by Horiba-Mira in accordance with BS EN 124: 2015 at the loads stated for class B125 covers, performed on 76mm and 168mm sockets. In both cases the measured values fell within the acceptable range described in the standard.

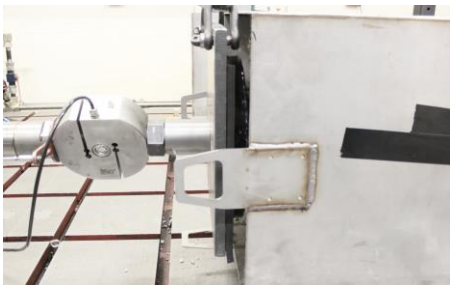

Figure 11 – Deflection Loading Testing

Please contact our technical team if you require a more detailed report of the testing or if you have any other questions and would like to discuss any aspect of this data sheet.