Assembly of anchorage and installation of tendons shall only be performed by qualified post-tensioning specialist personnel.

This installation procedure is generic: follow the specific procedure for each project and the FDoT specifications.

Installation:
1. Preassemble anchor (AM) and plastic transport (PT) borehole silicone grease shall be used to facilitate the threading and the compression of the gasket.
2. Bolt the assembled AM to the pocket former using the two threaded holes located on the front surface of AN. AN shall be placed perpendicular to the tendon's axis and rotated such that the side injection hole points up.
3. The position of the spiral rebar (SR) shall be secured to the AN in its adjacent rotor by track-welding or proper fixing. The SR shall be rotated such that it won’t interfere with 3/4” NPT pipe attachment plate using side injection hole. Align axis of SR with AN. Seal with grease.
4. Install the smooth ducts as shown on shop drawings and insert the PT sealing the connection by heat shrink sleeve. If not possible, with heat shrink sleeve in order to prevent concrete from penetrating.
5. Carry out the pressure test.

Concreting can now proceed:
1. After completion of concrete placement, remove the pocket former and prove that the anchor is clear of any obstructions or damage and that all injection vents are free and secured.
2. Install strands by pushing or pulling individually or as a bundle into duct. Allow sufficient extra length at the anchor for stressing.
3. Check the wedge plate (WP) for rust and clean their holes with wire brush if necessary. Lightly grease or oil them.
4. Carry out the pressure test.

Concrete Class:
- 4000 PSI [27.5MPA]
- 6500 PSI [45MPA]

Concreting can now proceed.

Spiral:
- Commercially available and compatible silicone grease
- Not less than the values shown on the spiral table. These values refer to cylindrical strength.

Stressing can now proceed:
1. Appropriate clearance must be kept behind the hydraulic jack while stressing.
2. Stressing operation shall be executed according to the engineer form and requires the simultaneous reading of pressure and elongation. Check the conformity of the final elongations measurement with prescribed values.
3. Install the protection cap (PC) with O-ring sealing on AN. Use 3/4" NPT pipe attachment plate (if using side injection hole). Special measures shall be taken to facilitate the compression of the O-ring.
4. 3/4" NPT pipe for injecting onto the PC and the 3/4" pipe onto AN. Use 3/4" plug to secure the hole on PC. Use 3/4" thread seal tape. Make sure it improves the tightness of the threading.
5. Carry out the pressure test.

Injection can now proceed:
1. Wax shall be injected through the filler inlet until it escapes from the filler outlet. Special measures shall be applied for long tendons, for tendon parts with high points or inclined tendons to avoid voids.
2. Fill holes with non-shrink grout after post injection stressing operation and inspection are completed.
Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations.

Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations.

Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations.

---

**PIECE INTERNAL CONFIGURATION**

**PIECE EXTERNAL CONFIGURATION**

**NOTE:**
- Vent assemblies can be used as inlet, outlet or drain; when elbows are present, the vent cannot be used for injection / inspection;
- Epoxy grout shall be used to fill recesses: make reference to FDOT standard plans index 462-003 for post-tensioning anchorage and tendon filling details;
- Concrete cover must meet FDOT Structures Design Guidelines Section 1.4.2;
- Components marked with "T" on the drawing are temporary.

---

**BILL OF MATERIALS**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>XX-01-00*</td>
<td>Protection Cap</td>
<td>Nylon 5 - PA660 - according to ASTM D638</td>
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<tr>
<td>2</td>
<td>XX-02-00*</td>
<td>Anchor</td>
<td>Ductil Iron ASTM A536 GR80-55-06 + Galvanization according to ASTM A123</td>
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<td>3</td>
<td>E-IU-XX-07-08*</td>
<td>Smooth Plastic Duct</td>
<td>High Density Polyethylene - according to ASTM D3350</td>
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<tr>
<td>4</td>
<td>00-01-03-M</td>
<td>NPT Pipe Nipple 1/2&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>5</td>
<td>00-01-05-M</td>
<td>NPT Ball Valve 1/2&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>6</td>
<td>00-01-06-M</td>
<td>NPT Plug 1/2&quot;</td>
<td>SCH40 steel</td>
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<tr>
<td>7</td>
<td>00-01-07-M</td>
<td>NPT Female Plug 1/2&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>8</td>
<td>00-01-08-M</td>
<td>NPT Ball Valve 3/4&quot;</td>
<td>SCH40 steel</td>
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<tr>
<td>9</td>
<td>00-01-09-M</td>
<td>NPT Plug 3/4&quot;</td>
<td>High Density Polyethylene - according to ASTM D3350</td>
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<tr>
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<td>00-01-10-M</td>
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<td>11</td>
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<td>NPT Elbow 3/4&quot;</td>
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<td>00-01-12-M</td>
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<td>00-01-13-M</td>
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<td>SCH40 steel</td>
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<td>00-01-14-M</td>
<td>NPT Elbow 3/4&quot;</td>
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<tr>
<td>15</td>
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<td>NPT Plug 3/4&quot;</td>
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**MISCELLANEOUS MATERIALS**

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<tr>
<th>ITEM</th>
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<tbody>
<tr>
<td>15</td>
<td>Commercially available thread seal tape</td>
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</tbody>
</table>
5/16"-18 UNC HEX BOLT, 3/4" LONG, WHOLE THREADED

5/16" TYPE A NARROW WASHER

ANCHOR 12-03-00

PROTECTION CAP 12-01-00

Material: Stainless Steel GR316L - according to ASTM F593

Title: PROTECTION CAP BOLTS for 12AMTS15

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE CONCOURSE, 5-T2 200 - BAY HARBOR ISLAND - 33154 FL

CHECKED: T.CICCONE 12/20/2016

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NOTE:

- This drawing is not intended for manufacturing purposes.

**SECTION A-A**

A

A

Ø6.98" 
[Ø177.17mm]

Ø0.21" 
[Ø5.34mm]

---

### Material:
NBR - according to FDoT Tab. 2.2.1.7-1 Sec. 960

### Title:
Centro Guarnizioni TIGER s.r.l
PROTECTION CAP O-RING
for 12AMTS15 PT SYSTEM

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<table>
<thead>
<tr>
<th>Rev</th>
<th>Date</th>
<th>Description</th>
<th>Material</th>
<th>Treatment</th>
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<td>12/20/16</td>
<td>First issue</td>
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</tbody>
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| Code: OR 06700 |
| Drawn : L.CIVATI |
| Checked : T.CICCONE |

---

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WEDGE PLATE for 12AMTS15 (12-06") External and Internal Unbonded systems

Material: Steel A36 Normalized

Dimensions:
- Ø5.28" [Ø134mm]
- Ø6.3" [Ø160mm]
- 2.44" [Ø62mm]
- 2.68" [Ø68mm]

Marking: passing hole Ø3/8" [Ø9.5mm]

Check: T.CICCONE

Date: 05/14/2018

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Steel A36 Normalized

INCH [mm] FOR REFERENCE ONLY
I have independently reviewed the calculations and testing reports, along with the documentation and certified that TENSA system spiral rebar detail meets the requirements as outlined in paragraph 3.3 PTI Anchorage Zone Design.

[*] Do not apply post-tensioning forces until the concrete mean compressive strength f_c' is not less than the values shown in the present drawing.

NOTE: The local zone reinforcement is to be shown on the shop drawings.
NOTE:

- This drawing is not intended for manufacturing purposes.
Minimum radius of curvature for prefabricated sections of duct: 8 ft (2.44 m).
Minimum radius of curvature for straight sections of duct to be field bent: 12 ft (3.66 m).

NOTE:
- This drawing is not intended for manufacturing purposes;
- Duct meets FDoT requirements (Par. 2.2.1.2 and 2.4.4 Section 960):
  - maximum dimensional ratio (DR) of 17 as per ASTM D3035 or ASTM F714
  - 125 psi rated
  - minimum cell class of 445574C as per ASTM D3350
  - minimum OIT of 40 minutes as per ASTM D3895

Updated with measures for US and European versions.

Material: High Density Polyethylene- according to ASTM D3350
Title: SMOOTH PLASTIC DUCT 3.50" for External and Internal Unbonded Systems - Std. fit for 12AMTS15

Dimensions: 8 ft (2.44 m) US 0.22" [5.5mm] EU 0.21" [5.4mm]
           12 ft (3.66 m) US Ø3.06" [Ø77.8mm] EU Ø3.12" [Ø79.2mm]
           12 ft (3.66 m) US Ø3.50" [Ø88.9mm] EU Ø3.54" [Ø90.0mm]

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**NOTE:**

- The United States (US) coupler must be used with the corresponding US duct; the European (EU) coupler must be used with the corresponding EU duct;
- The installation procedure is general; reference to manufacturer's instruction manual for the detailed installation instructions;
- This drawing is not intended for manufacturing purposes;
- Coupler meets FDoT requirements (Par. 2.2.1.5 Section 960):
  - 150 psi rated
  - minimum cell class of 445574C as per ASTM D3350
  - minimum OIT of 40 minutes as per ASTM D3895

**INSTALLATION**

**Preparing the duct**
1. Scrape the duct up to 0.4” (10mm) beyond the insertion length of the fitting.
2. Clean the welding area and let it dry.
3. Insert the duct ends straight into the fitting for the correct length.
4. Install the aligners in order to keep straight position.

**The Welding Process**
5. Connect the welding cables to the electrofusion coupler connectors and enter the welding parameters in the device.
6. At the end of the welding cycle, disconnect the cables and wait for the cooling.
7. Remove the aligners.

**ELECTROFUSION COUPLER**

for 3.5” HDPE DUCT CONNECTION

Standard fit for 12AMTS15

**Material:**
High Density Polyethylene - according to ASTM D3350

**Treatment:**
-

**Date:** 10/08/19

**Checked:** T.CICCONE

**Date:** 05/14/18

**Drawn:** L.CIVATI

**Code:** -

**Part #:** E-IU-12-07-12

**Dimensions:**

**Description:**

1111 KANE CONCOURSE, S.TE 208 - BAY HARBOR ISLAND - 33154 FL

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NOTE:

- Thickness is type L, i.e. 0.035" [0.9 mm] backing + 0.043" [1.1 mm] adhesive;
- This drawing is not intended for manufacturing purposes;
- Heat shrink sleeve meets or exceeds FDoT requirements (Table 2.2.1.8-1 Section 960);
- For the installation make reference to manufacturer procedure.
NOTE:

- This drawing is not intended for manufacturing purposes;
- Coupler meets or exceeds FDoT requirements (Section 960-2.2.1.5 and 2.4.4);
- Standard fit for 3.00" [76mm] corrugated plastic duct and 3.50" smooth plastic duct.

Material:
Polypropylene - according to ASTM D4101

Treatment:

Title:
GTI STEPLESS COUPLER
Adaptation for 3.00" corrugated duct and 3.50" smooth plastic duct with 12AMTS15 trumpet

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