

# X-FLO INSTALLATION PROCEDURE

## Introduction

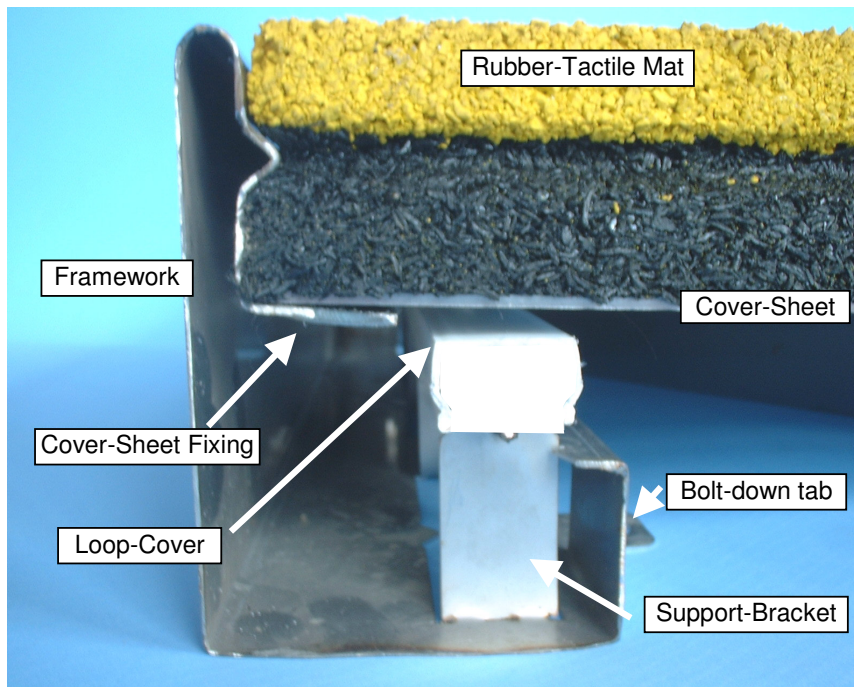
All work should be carried out in a tradesman like manner, taking into account all relevant health and safety regulations.

The work area should be protected from the weather, public and other trades. This protection should remain in place until such time as the concrete has cured, the pavement is reinstated and all other hazards are removed.

During the installation process, care must be taken not to bend, dent or crush the sides of the frame or the tray with pavement construction equipment.

Excess concrete and debris must be cleaned off all surfaces.

### Components



Please check that all listed components are delivered.

### Each X-FLO Unit should include:

- 1 x Stainless steel frame
- 1 x Stainless steel Cover-sheet
- 1 x Rubber mat
- 14 x Stainless steel fixing screws for cover-sheet.

### Tools require for installing a X-FLO unit:

- 3mm Allen key ("T" handle is best)
- Broad screwdriver
- Concreting tools as required.
- Termination tools as required.

## Frame Installation

**NB** Remove Rubber mat and Cover-sheet from frame before installation.

Packing tape is provided for easy removal of the mat by the installation contactor.

This tape must **be** removed prior to the installation.

To remove rubber mat, it is best to use 1 or 2 large flat screwdrivers.

The screwdrivers should be inserted between the mat and the edge of the unit.

The screwdrivers must be forced down as far as possible (40mm) and the mat may then be prized up in a levering action taking care not to damage the rubber mat, the stainless steel cover sheet below or the frame.

**There are two basic manners in which the X-FLO unit may be installed as outlined below.**

### Option 1:

**Directly on to wet concrete.**

1. The substrate should be prepared in accordance with the requirements for the surrounding pavement.
2. The base material should be properly compacted to 175mm below finished pavement level.
3. Conduit or ducting should be placed where needed to allow for termination.
4. Consideration must be given to drainage to prevent the cavity becoming waterlogged. A PVC duct with a minimum diameter of 20mm is recommended. This duct should extend from the lowest point within the cavity, out through the curb and into the adjacent channel.
5. A minimum of 75mm thick concrete base (<10mm aggregate) should be placed in the area where the frame is to be positioned.
6. The frame should then be lowered into place and carefully tapped down to the desired level. The frame must be set in a **flat plane** i.e. no warp or twist.
7. Once the frame is in position and correctly aligned, concrete should be haunched up and over the lower internal flange of the loop-support section. The finished level of the outside haunching should allow for the finish of the surrounding pavement e.g. bitumen, pavers, concrete etc.
8. Care should be taken to ensure that no concrete interferes with the positioning and operation of the Cover-sheet.
9. Ensure that the cables are able to pass under the Cross-brace and through the Framework where required
10. Replace Cover-sheet and Rubber Tactile Mat once concrete is firm.

## Option 2:

### **Fixed to a pre set slab of concrete.**

1. The concrete slab on to which the frame is to be set must be smooth, flat and in a single horizontal plane (this can be sloping).
2. It must also have provisions for ducting of loop-feeder cable and drainage.
3. The slab must be 100mm below the level of the surrounding pavement.
4. Position the frame in the desired position and mark the location of the holes to be drilled.
5. Use “Dyna-bolts” or similar suitable fixing to secure the frame.
6. If shims are used to correct the level of the concrete then the entire underside of the frame must be supported.
7. It is recommended that the outside of the frame is haunched (as in **Option 1**) with concrete in order to protect the frame from pavement construction equipment e.g. compactors.
8. The finished level of the outside haunching should take into account the finish of the surrounding pavement e.g. bitumen, pavers, concrete etc.

The other aspects of this type of installation remain the same as **Option 1**

### **Installation of X-FLO Coversheet & Mat**

1. Once the loop is connected to the loop-feeder cable, place the Cover-sheet on the ledges provided on the inside of the frame.
2. **Important** – Use all 14 screws provided to fix Cover-sheet in place. If there is some misalignment of the holes, insert a Hex key into an adjacent hole to lever the Cover-sheet into position or use a broad flat screwdriver placed between the Frame and the edge of the Cover-sheet.
3. Lower rubber matting into position on top of the flat tray and insert the 4 corners first. Press the mat firmly in to place by starting at the corners and working towards the middle of each edge. A little water or silicon spray prior to starting will make this easier if preferred.

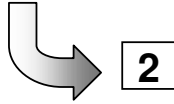
The X-FLO is now ready for calibration and operation.

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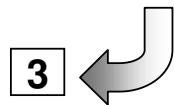
Typical Installation (Option 1). For installations in the USA please see attached appendix.



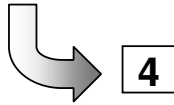
1



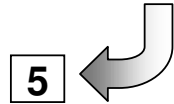
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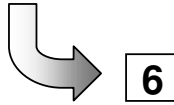
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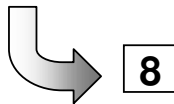
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7



8

## Connection to Loop Feeder Cable

1. Connect flying leads to loop-feeder cable. It is recommended that this cable be shielded. Connections should be soldered, covered with silicon and have heat-shrink tubing properly fitted.
2. It is recommended that the flying leads be twisted.
3. Excess cabled should be positioned in such a way as not to interfere with the operation of the tray.
4. Adjacent units may be connected in series or independently. If connected in series, allowance should be made for interconnecting ducting during the installation of the frame.

## Calibration of Loop-Detector

The following steps apply to most types of Loop-Detectors. Some other Loop-Detectors will require an inductor in series with the X-FLO to reduce the sensitivity.

The aim is to set the Loop-Detector so that the minimum weight required is only just detected. This is to ensure that any heavy weights do not cause a delay in “un-detecting”

1. As inductive loops take a little time to settle down, it is best to jump up and down a few times on each unit before tuning.
2. Place a 20kg weight (not metal) on the unit to be tested. A 20-litre plastic bucket of water or a 20kg bag of sand is recommended.
3. Take note of the % change recorded by the Loop-Detector e.g. 0.45%
4. Set the sensitivity of the Loop-Detector to the increment that detects this % change.
5. “Reset” the Loop-Detector.

Notes:

The Loop Detector should be set to the least sensitive setting that still allows the unit to detect the 20kg weight near the edges.

Check that the unit does not “lock on” when a person stands in the centre. This will generally only occur if the Loop-Detector is set too sensitive.

Re-check the unit after 24 hours and again after 7 days, recalibrating the Loop-Detector if necessary.

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### Maintenance (only if required)

1. Remove rubber mat with two large screwdrivers, taking care not to damage the mat or the framework.
2. Remove screws in stainless steel Cover-sheet.
3. Remove Cover-sheet.
4. Inspect cavity and connections for damage and corrosion.
5. Remove any excess silt or other debris.
6. Check drainage/ducting is clear.
7. Replace Cover-sheet, fixings and rubber mat.
8. Reset loop-detector in control cabinet
9. Rubber mats can be repaired with Loctite 406
10. Replacement mats are available through your supplier.

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## Signing off form: Site Report

### Checklist:

(tick)

- Test operation with 20kg weight (not metal). A 20-litre plastic bucket of water or a 20kg bag of sand is recommended.
- Check that the unit does not "lock on" when a person stands in the centre.
- Place sticker on pole (if required)
- Remove debris and any other hazards to the public.

Location: \_\_\_\_\_  
City: \_\_\_\_\_  
Unit serial number(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Supplied by: \_\_\_\_\_  
Installed by: \_\_\_\_\_  
Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date installed: \_\_\_\_\_

Describe Layout: \_\_\_\_\_  
Describe Configuration: \_\_\_\_\_

Sign here: \_\_\_\_\_  
Return copy to: \_\_\_\_\_

Date: \_\_\_\_\_

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PO Box 177  
Whakatane  
New Zealand.

Email: [admin@advancedtrafficsupplies.com](mailto:admin@advancedtrafficsupplies.com)

Fax \*\*64 (07) 312 4650

## *Wiring Options*

### 1. **Existing Sites with Pedestrian Call Buttons.** (Make Call and Call Cancel).

#### a) X-FLO is used in place of existing button to make and cancel calls.

- The existing button may be left in place as a dummy.
- Existing call button cables are used with the termination at the control cabinet being into a loop-detector channel rather than the existing call button termination.
- Controller reconfigured to include “call-cancel”.

#### b) X-FLO is used in conjunction with the existing call button with the ability to cancel calls.

- The existing call button is left in tact.
- New loop-feeder cable is laid t o connect X-FLO units to the loop-detector in the control cabinet.
- Controller is configured to facilitate “Call Cancel” and/or make “Calls”

### 2. **New Sites**

X-FLO units are installed with cables connected to Loop-Detector cards in the same manner as Traffic-Loops. Trunking and loop-feeder cable are used where and when appropriate.

### 3. **LED Road Stud Activation**

As per Option 2 with the cables terminating in the Control Box provided with the LED Studs.

## **Notes:**

- X-FLO units may be connected in series or parallel with one another.
- X-FLO units may be used in conjunction with call buttons but must be connected to a separate channel in the detector if the “Call Cancel” feature is to be used.
- X-FLO units may be connected in parallel with a call button however this does not allow for the “Call Cancel” feature to be activated.

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## Additional Guidelines for installations within the USA:

1. Most authorities prefer the tactile surface to be no more than 8 inches from the curb.
2. Where the nature of the site does not permit the X-FLO sensor pad to be positioned less than 8 inches from the curb, designers may consider using units without a tactile surface and positioning the units behind a row of regular non-sensitive tactiles.
3. Where possible, the preferred layout in the USA is to have 2 X-FLO unit laid side-by-side in portrait giving a zone 4 feet wide by 3 feet deep.

