

INSTALLATION INSTRUCTIONS FOR QUALIFIED TECHNICIANS FOR INLINE BREAKAWAY DEVICES (ILB)

H14914M
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ANSI NGV 4.4

*FOR USE WITH ANY CERTIFIED ELECTRICALLY CONDUCTIVE HOSE INTENDED FOR FILLING
COMPRESSED NATURAL GAS VEHICLES UP TO SERVICE PRESSURE OF 5000 PSI*

SECTION A: INTRODUCTION

How to use this Manual This manual has been prepared as a step by step users guide for the OPW ILB series of Inline Safety Breakaway Valves.

This information is intended as a general outline to familiarize the installer/end user with the techniques and procedures used to install, reconnect and maintain the Breakaway Device.

General

The Inline Breakaway (ILB) series of valves are intended to protect the dispenser, vehicle and fueling nozzle from damage if a vehicle moves away from the refueling point while still coupled to the fuel line.

The ILB is designed to be used with any approved hose intended for filling compressed natural gas vehicles (CNGV). The Breakaways operate at service pressure up to 5,000 psi and has an operating temperature range of -40°C to 85°C (-40°F to 185°F). These units are designed to separate within range of 150+/-30 lbs (670+/-134N) as specified by the ANSI NGV4.4. Breakaway Device Safety Standard.

SECTION B: INSTALLATION

The inlet and seal for these Inline Breakaway are as follows:

<u>Breakaway</u>	<u>Inlet/Outlet</u>	<u>Seal</u>
ILB-1	SAE J1926-6 O-Ring boss port with 9/16-18 UNF threads	Size #906 (P/N 1146) 70 durometer NBR Nitrile
ILB-5	SAE J1926-10 O-Ring boss port with 7/8-14 UNF threads	Size #910 (P/N 1127) 70 durometer NBR Nitrile.

CAUTION: THE ILB MUST BE CONNECTED BETWEEN THE DISPENSER AND THE NOZZLE SO IT IS FREE TO ALIGN ITSELF IN A STRAIGHT MANNER BETWEEN ITS TWO HOSES. (FIGURE 1).

All OPW series of Breakaways for CNG require special installation precautions to insure safe and reliable operation. The installation shall conform with the requirements of authorities having jurisdiction or in the absence of requirements with standards NFPA 52, *Compressed Natural Gas (CNG) Vehicular Fuel Systems*, or *CAN/CSA-B108, NGV fueling stations installation code as applicable*.

Installation Procedure

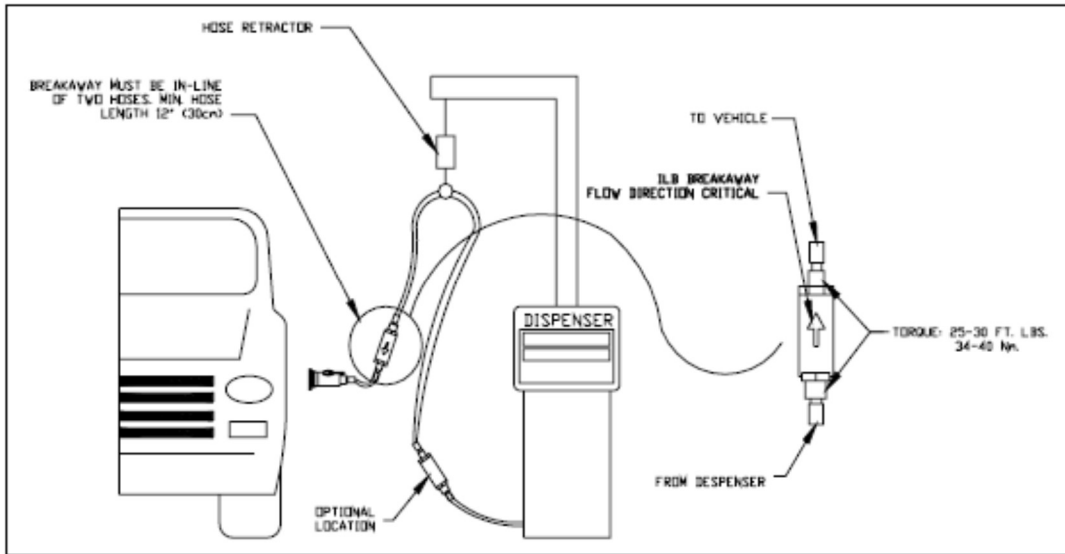
Step 1. Inspect the unit and ensure that both halves are fully connected. If you can easily pull the two halves apart then please refer to section D: Re-assembly before continuing with the installation.

Step 2. Ensure that the threads on both the hose fitting as well as the inlet and outlet ports are clean and free of any debris, oil, grease or teflon tape.

Step 3 Ensure that the proper sealing o-rings are installed on the male hose fittings according to the fitting and o-ring manufacturer's instructions. These o-rings must be 70 Durometer Nitrile (NBR). Two of these o-rings are included with each assembly instruction sheet and must be installed. For additional o-rings contact OPW customer service; order part number 001146 for the ILB-1 and part number 001127 for ILB-5. **DO NOT SUBSTITUTE TEFLON TAPE.**

Step 4. Only use the wrench flats when tightening the hose to the ILB breakaways. Do not grasp the housing.

Step 5. Ensure that flow direction arrow is pointing in the direction of gas flow.(Figure 2)



Step 6. Using a properly sized wrench, tighten the fitting to a torque of 25 ft-lbs. (34Nm) to 30 ft-lbs. (40Nm).

Warning: Excessive over tightening will gall the threads and weaken the Connection. Do not wrench across coupling.

Step 7. After Installation, test the limit for leaks. Slowly pressurizes and test the Connection using a suitable leak detector (e.g. Snoop®). The test pressures should include both low (100psi / 0.86 MPa) and high (3000 - 5000psi / 20 -35 MPa). For safety reasons, always pressurize at the low pressure first.

SECTION C: SEPARATION OF ILB

The ILB will split into two parts upon disconnection when force within the range of 150+/-30 lbs (670+/-134N) is applied axially to the breakaway coupling. (Figure 3).

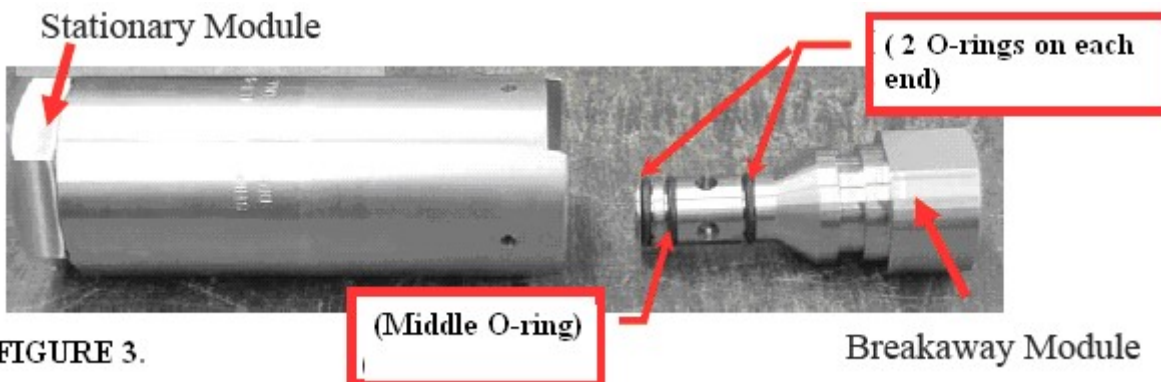


FIGURE 3.

NOTE The Middle Oring must be placed as shown in Fig 3

The Stationary Module is the portion that remains permanently attached to the hose on the dispenser. It shuts off the gas supply from the upstream dispenser, storage tanks and compressor. The Breakaway Module (vehicle side) will detach and slowly vent off the gas stored in hose and nozzle that remain coupled to the vehicle. This is to ensure that the driver is not carrying a pressurized hose away from the station, eliminating a dangerous situation.

NOTE: UPON SEPARATION, A VERY LOUD NOISE MAY BE EXPECTED.

CAUTION: A HOSE BREAKAWAY EVENT IS INTENDED TO PROTECT THE FUELING DEVICE, DISPENSER, AND VEHICLE. HOSE STRETCH WILL CAUSE A WHIPPING ACTION AND MAY RESULT IN PERSONAL INJURY.

SECTION D: RE-ASSEMBLY AFTER BREAKAWAY

Reconnection Procedure

Step 1. Depressurize the dispenser system and hose before attempting re-connection.

Step 2. Clean dirt or debris from both halves of the Breakaway unit before re-assembly is attempted.

Step 3. Inspect both parts of the breakaway. Make sure the o-ring seals have not been damaged (Slits or rough spots) (Figure 4.) If so, please contact OPW customer service for replacement o-rings. For the ILB-1, Order A157 Replacement kit. For the ILB-5 order A155 Replacement Kit. If the o-rings are dry, lubricate them with light grease Parker Super O-Lube® (Silicone Base) before re-assembly.



FIG 4. Breakaway Module O-Rings

Kit Part Number: A155 (For the ILB-5)			Kit Part Number: A157 (For the ILB-1)		
Item	Quantity	Part Number / Description	Item	Quantity	Part Number / Description
1	2	1127/O-RING	1	2	1146/ O-RING
2	1	42005/GARTER SPRING	2	1	42024/GARTER SPRING
3	3	42007/ O-RING	3	3	42020/ O-RING
4	1	42012/ O-RING	4	1	42022/ O-RING
5	1	42014/ MIDDLE O-RING	5	1	001141/ MIDDLE O-RING

Items not included: vise, o-ring pick, Loctite® 270, Parker Super O-Lube® (Silicone base)

NOTE The Middle Oring must be placed as shown in Fig 3

Step 4. Inspect the stationary Module and ensure that the inner garter spring is present and properly situated in the groove (Figure 5). A replacement garter spring is available from OPW customer Service. For the ILB-1 order spring P/N 42024. For the ILB-5 order Spring P/N 42005.



FIG 5. Garter Spring Location

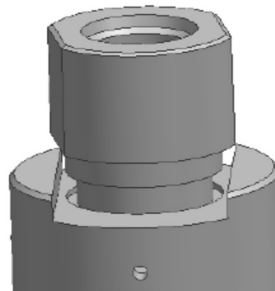


FIG 6. Reconnection Alignment

Step 5. Hold the Breakaway module so that the wrench flats will fit into the slot on the Stationary Module (Figure 6).

Step 6. Push the Breakaway Module into the Stationary Module until a definite click is felt and the wrench flats are in the groove on the Stationary Housing (Figure 7).



FIG 7. Fully Connected Position

Step 7. After re-assembly, test the unit for leaks. Slowly increase the system pressure in steps of 500psi and test the connection using a suitable leak detector (e.g. Snoop®). The test pressure should start at low (100psi /0.86MPa) first and finish at fill line pressure (3000-5000psi/ 20-35MPa). For safety reasons, always apply the pressure slowly and take your time checking for leaks to ensure a good connection.

CAUTION: ANY ATTEMPT TO REPAIR PERSISTENT LEAKS WILL VOID WARRANTY.

SECTION E: ROUTINE CHECKS

After One Year of Service:

- The unit should be routinely checked for leaks while under service pressure.
- This should be carried out by local service representative.

After Four Year of Service:

- The unit should be returned to OPW for rebuilding and replacement of all seals.
- This period should be reduced to twenty-four (24) months if the potential exists for misuse, abuse, if the ILB is used in extreme environmental surroundings, or if more than 20 breakaway have occurred on the unit

PLEASE CONTACT OPW FOR TRAINING AND REPLACEMENT PARTS.

**For Customer Service: Toll Free in USA: (800) 422-2525 Fax: (800) 421-3297
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