

MANUFACTURED BY PARKER - PGI DIVISION

Installation, Operation and Maintenance
Manual for In-Line Breakaway Coupler
Model IB125
1-1/4" FNPT x 1-1/4" FNPT

January 2018

Form FVC 106 Rev D

IMPORTANT: KEEP THIS DOCUMENT WITH THE PRODUCT UNTIL IT REACHES THE END USER.

The In-Line Breakaway Coupler is designed to disconnect two hoses before a straight pull force on both hoses exceeds 450 pounds. Upon disconnect, poppets in both halves of the coupler snap closed to stop flow of product from both hoses.

1. Only properly trained personnel, including end user, should handle NH₃ equipment and NH₃ product.
2. Contact with or inhalation of Liquid Anhydrous Ammonia (NH₃) can cause **SERIOUS INJURY OR DEATH**.
3. Before installation or removal of any valve, the system must be purged of all product (i.e. coupler, fittings, etc.).
4. Personal Protective Equipment (PPE), safety gloves, goggles and clothing should be worn.
5. For proper handling and storage of NH₃ refer to ANSI Standard K61.1 / CGA G-2.1 and local codes and Authorities having jurisdiction. **WARNING:** Follow code when plumbing bleeders or hydrostat for proper placement.
6. An abundant supply of fresh water should be available to provide immediate first aid treatment for exposure to NH₃.
7. To ensure long term safe operation, the manufacturer recommends that this product should be inspected before every usage season and be repaired or replaced as required.
8. Always use safety gloves, goggles and protective clothing.

WARNING! FAILURE TO READ AND UNDERSTAND THE INFORMATION/INSTRUCTIONS IN THIS DOCUMENT CAN LEAD TO PROPERTY DAMAGE, SERIOUS INJURY, OR DEATH.

WARNING! PROPER OPERATION OF THIS DEVICE AND YOUR SAFETY DEPEND ON THE FOLLOWING:

1. The installed In-Line Breakaway Coupler (Figure 1) must be able to freely move in all directions in order for it to be presented with a straight pull by the hoses in the event of a separation. If the coupler cannot move freely, one of the hoses may pull at an angle which causes the required separation force to increase greatly and may bind the coupler preventing separation. Since pull away events often occur in a turn or a pull-away, the ability of the coupler to align in a straight line with the hose is critical to operation of this device. Check for all possible obstructions before the IB125 is used.
2. All piping and valves in the system should be able to withstand a pull force greater than 450 lbs.
3. Manually connect and disconnect this device before every usage season. Verify closure and full movement of poppets and inspect for corrosion debris, binding or any other obstruction and replace or repair as required.

WARNING!

- Contact with NH₃ liquid or inhalation of NH₃ vapors can cause serious injury or death.
- Protective clothing, goggles and gloves must be worn at all times.
- Emergency water must be available to flood any NH₃ contact area on the body.



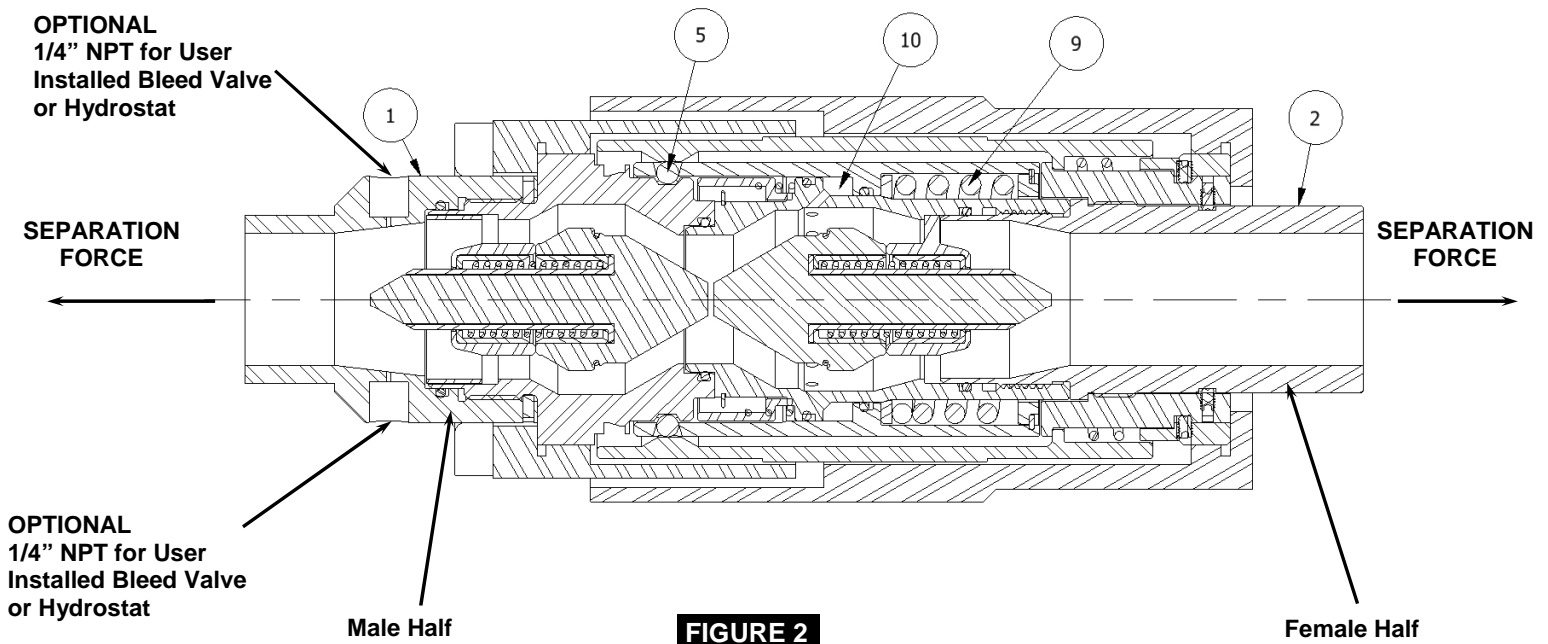
IB125

FIGURE 1

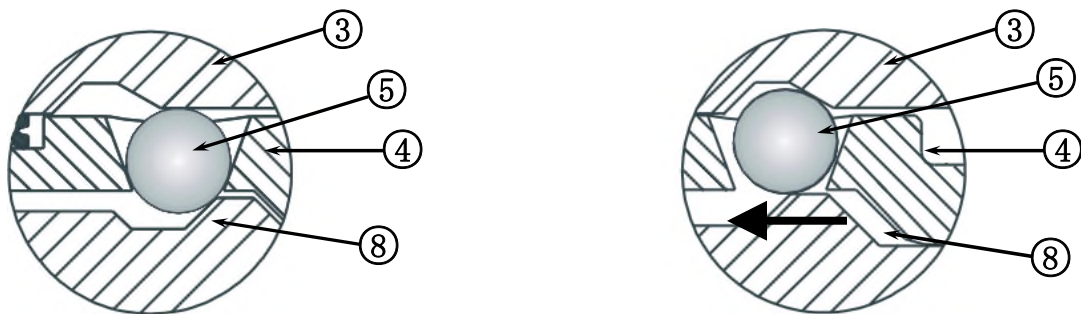
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Operation

1. When the In-Line Breakaway Coupler is connected and under pressure, the spring-biased opposing poppets are held open by each other to allow smooth flow of Anhydrous Ammonia through the coupler.



2. When fully engaged, the Male Half (1) is secured to the Female Half (2) by 20 Locking Balls (5). The separation of the Male Half (1) from the Female Half (2) is accomplished when, and only when, one of the hoses becomes taut and is in a straight line pull with the IB125 Breakaway Coupler.
3. When an excessive separation force is applied to either hose, the Locking Balls (5), being pulled by the Male Half (8), force the Female Half (4) to compress the Breakaway Spring (9). After about 1/4" of travel, the Locking Balls (5) are forced into the release groove, allowing a full disconnect. After separation, the Male Half Poppet and the Female Half Poppet will seal and prevent additional NH₃ release to the atmosphere, as shown in Figure 4.



DETAIL "X"

Male Half ⑧ installed in Female Half ④ in the engaged and operating position.

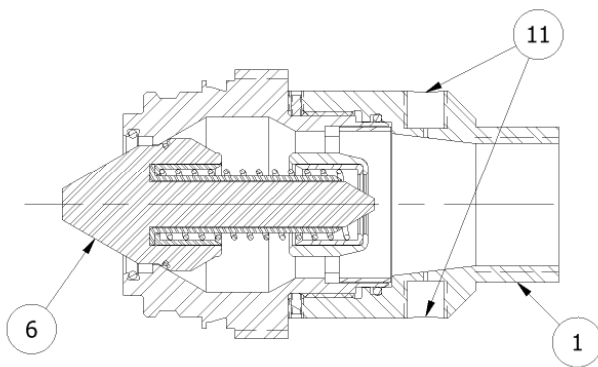
FIGURE 3

DETAIL "Y"

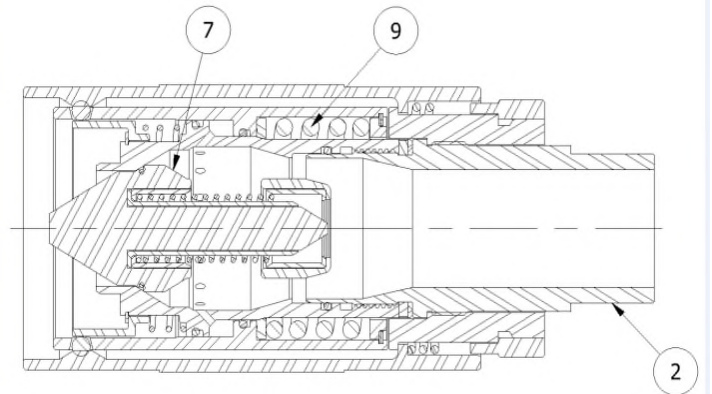
Male Half ⑧ starting to disengage from Female Half ④ allowing full disconnect.

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Operation (cont.)



Male Half



Female Half

FIGURE 4

When separation occurs . . .

- the Male Half is completely disengaged from the Female Half.
- the Male Poppet (6) and the Female Poppet (7) are no longer opposing each other and are free to seal the Anhydrous Ammonia from leaking to the atmosphere.
- Each half of the In-Line Breakaway Coupler will isolate their respective hoses and piping to prevent additional release of Anhydrous Ammonia.

Installation

1. Two (2) 1/4" NPT ports, with a #54 hole, (11) are provided on the Male Half of the In-Line Breakaway Coupler to allow the installation of a Bleed Valve and a Hydrostatic Relief Valve, as needed.

CAUTION : Alternative methods must be provided to bleed the pressure from the hose after a breakaway, in-order to reconnect the coupler halves.

CAUTION: Bleed valves must remain open until the Male Half is coupled with the Female Half.

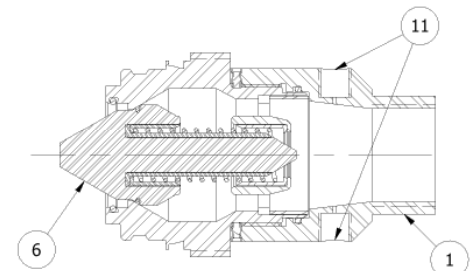


FIGURE 5

2. The Female Half of the In-Line Breakaway Coupler does **NOT** provide any ports for installation of a Bleeder Valve or a Hydrostatic Relief Valve.

CAUTION : Alternative methods must be provided to bleed the pressure from the hose after a breakaway, in-order to reconnect the coupler halves.

CAUTION: Bleed valves must remain open until the Male Half is coupled with the Female Half.

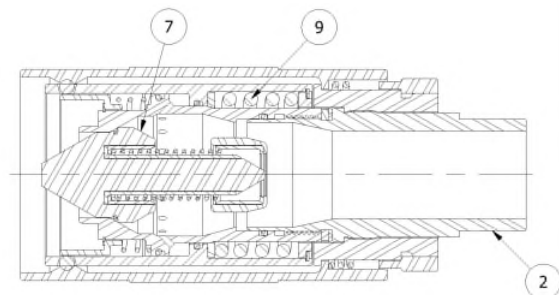


FIGURE 6

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Installation (cont.)

3. Ensure both a Bleed Valve and a Hydrostatic Relief Valve are installed properly in the system to protect the inlet AND the outlet hose connected to the coupler. When the In-Line Breakaway Coupler separates, the poppets within each half of the coupler will trap Anhydrous Ammonia in the hoses between the poppets and the shut-off valves. Adapters, Tees, etc. may be used on either or both sides of the IB125 system to ensure the use of Bleeders and Hydrostats meet all codes.
4. The In-Line Breakaway Coupler may be installed at any point along a hose to protect the hose from being stretched to failure, but must have a minimum hose length of 14" on each half of the coupler. The In-Line Breakaway coupler may be installed either between the toolbar and the nurse tank (Figure 7), between two nurse tanks being pulled in tandem (Figure 8) or to protect a Riser System from a Pull-away (Figure 9).



EXAMPLE: IB125 TOOLBAR APPLICATION

FIGURE 7

WARNING!

For Toolbar applications, check to be sure that there are no obstructions that might interfere with free movement of the coupler with the toolbar in its highest and lowest positions. If two couplers are installed with a single tool bar, each one should be able to pass this test when both couplers are fully installed and connected.

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FIGURE 8



IB125 - Tandem Tank Installation

IB125 RISER APPLICATION

FIGURE 9

OPTIONAL BLEEDER
& HYDROSTAT

Female Half

Male Half



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Installation (cont.)

5. The installed In-Line Breakaway Coupler must be able to freely move in all directions in order for it to be presented with a straight pull by the hoses in the event of a separation. If the coupler cannot move freely, one of the hoses may pull at an angle which causes the required separation force to increase greatly and may bind the coupler preventing separation.
6. The In-Line Breakaway Coupler may be installed in either direction of flow. However, it is beneficial to install the In-Line Breakaway Coupler in an orientation to minimize the collection of dirt, water and ice between the two bumpers. By having the shorter length of hose connected to the Female Half the water will drain over top of the bumper on the Male Half.



FIGURE 10

INITIAL CONNECTION & RECONNECTION AFTER A SEPARATION

1. Close all hose system valves and inspect all hoses, valves and fittings for proper condition.
2. Open Bleed Valves to relieve pressure from both halves of the In-Line Breakaway Coupler until both halves of the coupler are connected.
3. Inspect the Female Half of the In-Line Breakaway Coupler by unscrewing the Bumper and sliding it onto the hose to expose the Outer Release Sleeve (Figure 12).
4. Slide the Outer Release Sleeve to check for smooth motion and to ensure the locking balls are not visible and covered by the Inner Guard. If the Inner Guard is not covering the locking balls, slide the Outer Release Sleeve several times until the Inner Guard slides and covers the locking balls. (Figure 11)

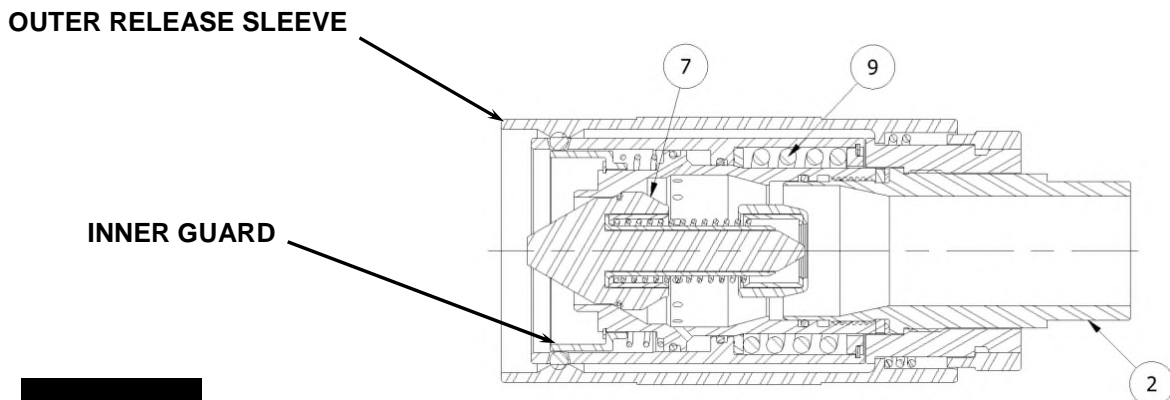


FIGURE 11

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INITIAL CONNECTION & RECONNECTION AFTER A SEPARATION

5. Slide the Bumper from the hose onto the Female Half and screw it back in place. (Figure 13)
6. Inspect the Male Half of the In-Line Breakaway Coupler by verifying that the main O-ring outside the poppet is present and properly seated. (Figure 12)
7. Insert the Male Half into the Female Half using firm hand pressure to reconnect the coupler. To verify that the coupler is fully engaged, firmly tug on the hoses to ensure the two halves are connected.
8. Close all bleed valves and open hose system valves according to applicator manufacturer's instructions when ready to apply the Anhydrous Ammonia fertilizer.

Male Half

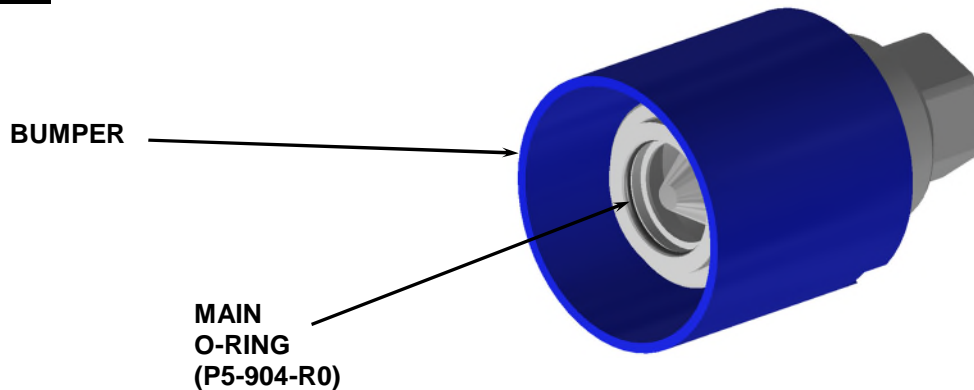


FIGURE 12

Female Half

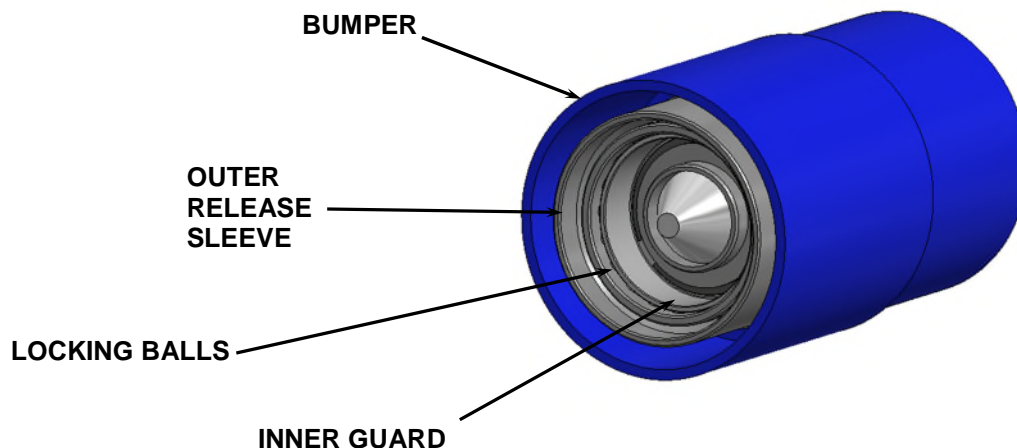


FIGURE 13

WARNING!

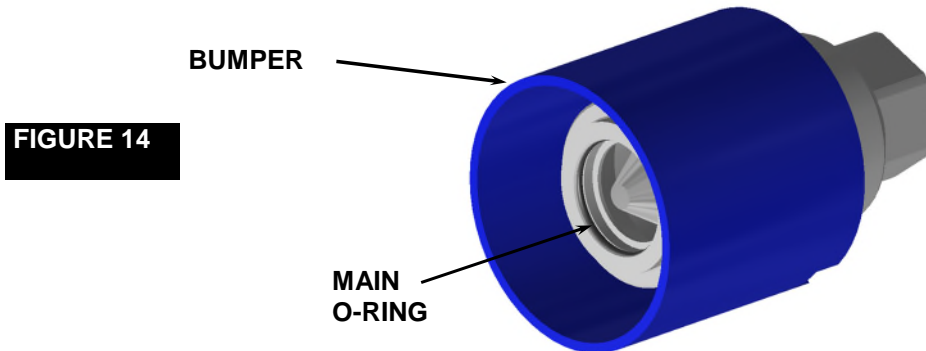
IN THE EVENT OF A FORCED DISCONNECT, THE MAIN O-RING IN THE MALE HALF MAY BE BLOWN OUT OF ITS GROOVE. BE SURE TO CLEAN AND INSPECT THE MALE HALF AND THE O-RING, AND RE-INSTALL THE O-RING IN ITS PROPER LOCATION AS SHOWN IN FIGURE 12.

MANUAL DISCONNECT

1. Close all hose system valves.
2. Open Bleed Valves to relieve pressure from both halves of the In-Line Breakaway Coupler until both halves of the coupler are connected.
3. Unscrew the Bumper from the Female Half of the In-Line Breakaway Coupler and slide it back onto the hose to expose the metal Outer Release Sleeve. (Figure 13)
4. Slide the Outer Release Sleeve back to allow disconnection of the two halves.

MAINTENANCE

- If the main O-ring on the Male Half becomes worn, damaged or is lost, Service Kit Part Number P5-904-R0 is available through your local distributor. As part of routine maintenance, this o-ring should be replaced before every usage season. Two extra o-rings are provided with each IB125 for your convenience. (Figure 14)



- If the Bumper OPERATING & SAFETY INSTRUCTION Decals become damaged, a Service Kit Part Number IB125-2014 is available through your local distributor. (Figure 15)



USER SAFETY RESPONSIBILITY STATEMENT FOR ALL PARKER PRODUCTS

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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