

*“Classic” Couplings*

**Banlaw LubeCentral™ “Classic” Couplings**

**Industry Compatible Fluid Transfer Couplings**

Thank you for purchasing this high quality Banlaw product. Please read through and understand the information in this Product Data Sheet (PDS) BEFORE installation or operation of the product to avoid potential health safety & environment (HS&E) risks or property damage.

**1 PRODUCT DESCRIPTION**

The range of Banlaw LubeCentral “Classic” fluid couplings are designed for the *clean, safe and efficient transfer of oils, coolant and similar fluids*. The Classic range of couplings also suit industry compatible couplings<sup>#</sup> manufactured by third parties, commonly used in the mining, rail, port and transport industries. For around 30 years, these couplings have provided end-users with a safer and more robust product, designed, manufactured and tested for harsh operating environments including underground mining.

<sup>#</sup> Excepting Banlaw AUS38W and AUS39W Couplings.



**Figure 1 - Examples of Banlaw “Classic” Fluid Transfer Couplings (Dust Caps & Plugs not shown)**

Figure 1 illustrates examples of the Classic range of couplings, with each pair of matching couplings uniquely “keyed” to prevent cross-matching of couplings and the cross-contamination of different fluids. Industry terminology often refers to each pair of couplings by a specific fluid type, e.g. *crankcase, hydraulic, transmission, and coolant*, however each pair of couplings may be assigned to any compatible fluid type. **Dust Caps** for each Receiver (male coupling) and **Dust Plugs** for each Nozzle (female coupling) are available for purchase separately to further reduce contamination ingress and improve fluid quality. More detailed information on these Classic couplings is available in the range of **Banlaw Product Specification Guide (PSG)** documents.

## 2 IMPORTANT RESTRICTIONS ON THE USE OF THIS PRODUCT



1. The safe installation and subsequent operation of a Banlaw product relies on the completion of all necessary *“due diligences”* specifically for the assessment of the Banlaw product(s) being suitable for the intended application(s). Such an assessment is best achieved through the cooperation of the supplier/OEM (Banlaw) and the customer or end-user. Once such an assessment deems the Banlaw product(s) to be suitable, the customer or end-user shall ensure effective *“change management”* applies should any prominent or influential aspect of the application (upon which the initial assessment was based) be subject to change and may affect the ongoing suitability (i.e. safety and proper function) of the Banlaw product.



1. In accordance with the EU Pressure Equipment Directive (PED 97/23/EC), no Banlaw LubeCentral product is to be used with a Group 1 (dangerous) substance within the EU. (As per Banlaw’s internal assessment of the PED during October 2010). Unless noted otherwise by Banlaw, the Banlaw LubeCentral™ “Classic” Couplers have not been assessed under any other Regulatory or Industry Standard, Code, Directive, Guideline or other governance which may apply to the use of this product in specific applications. Please consult Banlaw prior to installation if in doubt.
2. To avoid potentially serious safety hazards, no attempt should be made to *connect* or *disconnect* the couplings during fluid flow or whilst the fluid within the couplings remains pressurised#. A maximum# of 50kPa(g) (7.3psig) residual pressure is the recommended limit.
3. The Banlaw LubeCentral™ “Classic” Couplers are designed for use with incompressible non-flammable liquids (e.g. oils and coolants) commonly found in the mining, construction, rail and similar industries. **Please contact Banlaw prior to the use of this product with other (foreign) liquids.**
4. Particularly for the *“Arctic”* coupler range, changes in the physical properties (e.g. thickening, agglomeration, etc.) of a fluid at low temperatures may cause reduced functionality of the couplers.

### Note:



1. This product is unsuitable for use with AdBlue (DEF) or with an alternative fluid (or substance) whose properties may affect the safety, function or reliability of the product. Please consult with Banlaw to confirm fluid compatibility if in doubt.
2. For “Classic” Coupler **dimensions** and the **Part Numbers** of the various Couplers and accessories available, please refer to the relevant Banlaw Product Specification Guide (PSG), the Banlaw website, or contact Banlaw or your nearest Banlaw authorised distributor.

### 3 PRODUCT SPECIFICATIONS

OPERATING PRESSURES – “Classic” Nozzles and Couplings (Coupled/Connected)			
INDUSTRY TYPE	COUPLINGS	BP	SWP
“Crankcase”	AUS29W Nozzle Coupled with AUS27W	12MPa (1,740psi) 19MPa (2,756psi)	3MPa (435psi) 4.75MPa (689psi)
“Transmission”	AUS32W Nozzle Coupled with AUS33W Receiver	17MPa (2,466psi) 46MPa (6,672psi)	4.25MPa (616psi) 11.5MPa (1,668psi)
“Hydraulic”	AUS34A Nozzle Coupled with AUS41A Receiver	40MPa (5,801psi) 16MPa (2,321psi)	10MPa (1,450psi) 4MPa (580psi)
“Coolant”	AUS36A Nozzle Coupled with AUS37W Receiver	40MPa (5,801psi) 30MPa (4,351psi)	10MPa (1,450psi) 7.5MPa (1,088psi)
“Push to Connect”	AUS39W Nozzle Coupled with AUS38W Receiver	6MPa (870psi) 40MPa (5,801psi)	1.5MPa (218psi) 10MPa (1,450psi)
“R” Series (R17 and R18)	AUS81A Nozzle Coupled with AUS80A Receiver	10MPa (1,450psi) 10MPa (1,450psi)	2.5MPa (363psi) 2.5MPa (363psi)

**Table 1 - Operating Pressures**

Operating Temp. Range °C (°F)	“Standard” Classic Couplers; -10°C to 55°C (14 to 131°F) “Arctic” series Classic Couplers; -40 to 55°C (-40 to 131°F) <sup>##</sup>
Max. Recommended Temp.	120°C (248°F) – after risk assessment
Maximum Operating Pressure	Refer <b>Operating Pressures</b> (Table 1) <b>The SWP must not be exceeded.</b>
Maximum Fluid Flowrate	Depends on Coupling Size, Fluid Density and Fluid Viscosity – please consult Banlaw
Compatible Fluids (refer also <b>Material Composition</b> )	Common mineral and synthetic oils, coolants and other similar incompressible non-flammable liquids – please consult Banlaw to confirm compatibility if in doubt
Material Composition (Couplings only)	Zinc plated carbon steels, brass, Viton (FKM), NBR (Nitrile), HNBR, Fluorosilicone
Process Connections	For process connections and sizes available, refer Banlaw PSG’s, Brochures or contact Banlaw

**Table 2 - Operating Specifications**

- Legend:**
- “BP”; Minimum Burst Pressure (coupling failure)
  - “SWP”; Maximum recommended Safe Working Pressure (*do not exceed*).
  - “Coupled”; Matching Nozzle and Receiver fully connected (engaged).
  - <sup>##</sup> This temperature range refers only to the “Arctic” series Classic Couplers, i.e. a coupling with the suffix “-CT” within the part number – e.g. AUS29W-CT.
- Notes:**
1. All pressure data refers to the **internal** fluid pressure within the coupling(s), where each coupling(s) is in “as new” condition.
  2. Mating couplings must be depressurised prior to connection or disconnection.
  3. “Receiver”; male coupling, typically used on the “reservoir” (recipient) side of the fluid transfer system.
  4. The SWP of each Receiver corresponds to the “Coupled” SWP in Table 1.
  5. “Nozzle”; female coupler, typically used on fluid supply (dispensing) side.
  6. Operating Pressures tested at approx. 25°C (77°F) ambient temperature.

7. All data refers to Couplers in an undamaged “as new” condition and is subject to a tolerance (variation) due to inherent, expected changes in the mechanical properties of materials of construction and because of factors such as; raw material specifications, temperature, aging, fatigue, mechanical wear, etc.

Please contact Banlaw should you require additional technical information.

For **grease** transfer, please contact Banlaw for additional Banlaw grease transfer product recommendations.

**“IF IN DOUBT, ASK!”**

## 4 KEY FEATURES

The range of Banlaw “Classic” Couplers incorporate the following key features;

- **“Dry-Break”** (normally closed) function.
- **“Ball Lock Latching Mechanism”**; typically considered the most secure means of fluid coupler mechanical “latching” (connection).
- **“Robust Construction”**; manufactured from materials suited to harsh operating conditions – key structural and wearing parts are manufactured in zinc plated higher strength carbon steels and not plastics or aluminium.
- **“Matching Couplers”**; matching Couplers have been designed (i.e. keyed) to only engage with the correct Coupler, virtually eliminating the risk of fluid cross-contamination.
- **“Dust Caps and Dust Plugs”**; as accessories, Receiver Dust Caps and Nozzle Dust Plugs are available to promote improved protection against contamination ingress, lower fluid contamination and extended Coupling life – refer section 7.
- **AUS38W Receiver and AUS39W Nozzle;**
  - **“Push to Connect”** operation, i.e. the Nozzle actuator (collar/sleeve) does not need to be manually retracted to engage the Nozzle with the Receiver – the Couplers are simply “pushed together”.
  - **“Flush-Face”** design, markedly reducing the opportunity for contamination ingress and build-up into the Couplers and the fluid stream. Residual contamination can be cleared using a clean rag.
- **Arctic range available;** basic function and leak testing of these couplings has been conducted in an independent laboratory at -40° (-40°F) under the guidance of MIL-STD-810G. The Arctic (cold temperature) Couplings are fitted with fluid seals rated for extreme cold climates.
- **“Bi-Directional Fluid Flow”**; once connected, fluid flow through the Classic couplings may occur in either direction – i.e. there is no check (non-return) mechanism to control the direction of flow. This allows fluid to be evacuated from a Receiver using a matching Nozzle.

## 5 INSTALLATION GUIDELINES

This Installation Guide is general, and is not meant to replace or override installation guidelines that arise out of a *due diligence* assessment of a Banlaw product for a specific (intended) application.

### 5.1 Pre-Installation Guidelines



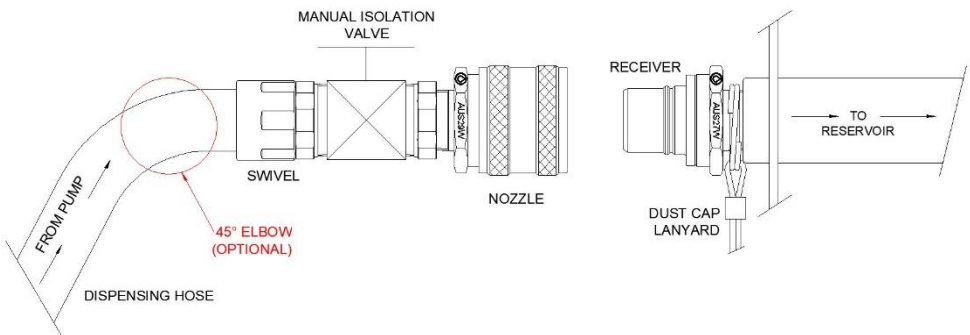
- Any proposed installation/application/operation of the Banlaw Classic Couplers shall satisfy the Specifications detailed in section 3, and other requirements within this document. As fluid transfer is typically conducted at relatively high pressures, the specifications for any *other* parts, equipment and accessories used with these Couplers must also comply with the parameters (e.g. pressure, temperature,

flowrate, etc.) of the application. **Failure to ensure a Classic Coupler and other equipment are used strictly in accordance with their applicable specifications will introduce potentially serious safety hazards.**

- This Product shall only be used by **competent persons**, trained and/or directly supervised in their safe and proper operation.
- **A safe means shall be provided to bleed residual fluid pressure from within the Couplings (Nozzle and Receiver) prior to connection and disconnection.**
- The manual effort required to connect and disconnect these Couplers has been minimised as far as is practicable, however the operation of the Couplers must consider **ergonomics** to avoid potentially serious work health & safety (WHS) hazards. I.e. the way in which the Couplers are used for **each** intended application must be part of a pre-installation due diligence assessment. Difficulty in the manual handling of the couplers and the remaining fluid transfer system equipment may not only introduce such WHS hazards, but also create a neglect to perform the required fluid transfer operation due to such difficulties. Key manual handling tasks are likely to include;
  - Operation of a manual valve(s) – if fitted.
  - Carriage of the Nozzle, fluid dispensing hose and dispensing equipment to & from the storage location and the fluid service point (i.e. Receiver location).
  - Connection of the Couplers, particularly at extended reach.
  - Disconnection of the Couplers, particularly at extended reach.
- Fluids used with these Couplers must be rated and otherwise suitable for the requirements of the application, particularly temperature. The use of these Couplers with a fluid at a temperature near or below its Pour Point may increase the risk of Coupling malfunction and difficulty of operation.

The use of an isolation valve (e.g. manual ball valve) **adjacent the Nozzle inlet** is recommended to provide a means of isolating supply (pump) pressure from the Nozzle prior to disconnection from the Receiver. Fluid pressure within both couplers must be bled prior to connection.

Figure 2 below is an example (only) of a fluid transfer system incorporating Banlaw Classic couplings.



**Figure 2 - Example of a fluid transfer system using Classic Couplings**

## Note:



To improve ease of use (ergonomics) in the event the Receiver is installed at a height above (human) chest height (i.e. approx. 1.2m, 4'), end-users may benefit from the installation of an **elbow** (e.g. 30°, 45° or 90°) between the Receiver outlet and its process connection – refer example in Figure 3.

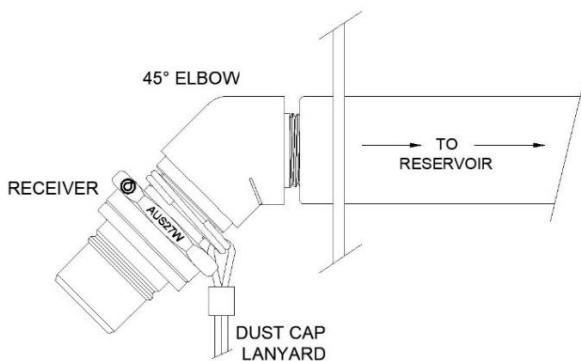


Figure 3 - Example of a Receiver with an Elbow

## 5.2 Installation Guidelines

### Note:



#### General Installation Notes;

1. Conduct a **Job Hazard Analysis (JHA)** *prior* to install to mitigate health, environmental and equipment hazards. Use appropriate PPE.
2. Do **NOT** install any parts that are damaged or are otherwise faulty.
3. Do **NOT** install parts which are not compatible with mating parts.
4. Conduct all necessary measures to **prevent the ingress of contamination** into the Couplers and other parts.
5. Only engage threads of the same thread type. Ensure all threaded connections are clean and in good condition. Avoid over-tightening.
6. An appropriate thread sealant is recommended on NPT threaded process connections. Use **sparingly** and avoid excess use of Loctite and similar products – *residual thread sealants etc. may cause contamination and malfunction of the Couplers.*
7. Use only proper **hand tools** for the installation of all components – e.g. 43mm (1-11/16") spanner for Nozzles and 43mm (1-11/16") deep socket for Receivers. Avoid the use of power or impact tools, and adjustable wrenches (e.g. stilsons).
8. Use consumables (e.g. Loctite products) strictly in accordance with the OEM Safety Data Sheet (SDS) and operating guidelines. Do not use consumables beyond their expiry date.
9. Ensure all likely **energy sources** – e.g. fluid pressure – are appropriately isolated and/or eliminated *prior* to installation of the Couplers and other parts.
10. Ensure all **Dust Cap** lanyard "split rings" are secured to the threaded process (outlet) connection of each Coupler during installation, or otherwise secured to a location adjacent the Couplers.

11. For the “Arctic” Coupler range, it is recommended each Coupler is flushed using the proposed arctic grade fluid to remove any other remnant fluid from within a Coupler which may solidify once exposed to low temperature.

## 6 BASIC OPERATING INSTRUCTIONS



- Do ***NOT*** attempt to either connect or disconnect the Couplers whilst ever residual fluid pressure remains within a Coupling (Nozzle or Receiver);
  - a. It may not be possible nor viable to bleed all residual pressure due to the effect of static (gravity) head pressure. As a guide (only), the residual (gauge) pressure should be below 50kPa (7.3psi).
- Do ***NOT*** attempt to connect (use) a Coupler with any non-compatible fluid Coupler or other fitting.
- Do ***NOT*** operate a Coupler or any other fluid evacuation equipment that is damaged or otherwise faulty and potentially unsafe for use.
- Do ***NOT*** make any attempt to connect Couplers without first removing contamination from the mating surfaces of each Coupler.
- Do ***NOT*** make any attempt to open a Coupler by any means other than connecting with a mating Coupler. For example, no attempt shall be made to bleed residual fluid pressure from a Coupler by manually opening a Coupler using a tool or foreign object or loosening the process connection to a Coupler – instead use a dedicated bleed valve.

How the Classic Couplers are connected (engaged) and disconnected (disengaged) is the same as other similar industry fluid couplings incorporating a ball-lock style latching mechanism – e.g. common fluid power (hydraulic) Couplers. Only the AUS38W and AUS39W Couplings are “***push to connect***”, i.e. no need to retract (pull back) on the AUS39W Nozzle actuator (collar) during ***connection*** with the mating AUS38W Receiver.

### A) COUPLING CONNECTION

1. Unless specific site (application) liquid dispensing procedures dictate otherwise, ensure the liquid supply pump is **OFF** (i.e. not running) prior to Coupler connection.
2. Retrieve the Nozzle and attached hose from their designated storage holster. Inspect all such equipment for signs of fluid leakage, damage or other defects. Safely **carry** the equipment over to the **matching** Receiver, i.e. the fluid servicing point – do ***NOT*** drag the Nozzle along the ground.
3. Using the designated fluid pressure bleed procedure, bleed fluid pressure from within the Couplings.

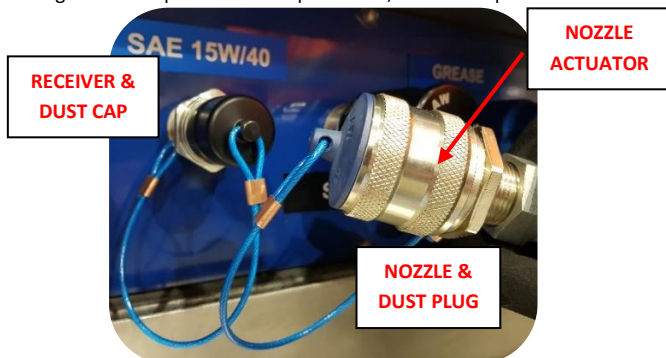


Figure 4 – Examples of Classic Couplings ready for use

4. If installed, ensure the manual valve adjacent the **Nozzle** inlet is in the ON (open) position. Closing the valve may cause a hydraulic “lock” within the Nozzle and increase the manual effort required for connection.
5. Verify the **Receiver** is bled to remove residual pressure.
6. Retract Nozzle Actuator and remove Dust Plug from Nozzle. Remove any residual contamination from the front region of the Nozzle using a clean rag.



Figure 5 - Dust Plug removed from a Nozzle

7. Remove Dust Cap from Receiver. Remove any residual contamination from the Receiver using a clean rag.

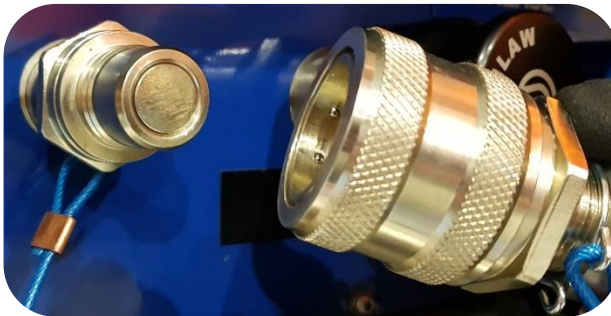


Figure 6 - Dust Cap removed from a Receiver

8. Whilst supporting the weight of the Nozzle etc. retract (i.e. pull back) the Actuator and concentrically **align** the Nozzle with the Receiver, “feeling” the front end of the Receiver fit within the recess on the mating face of the Nozzle.

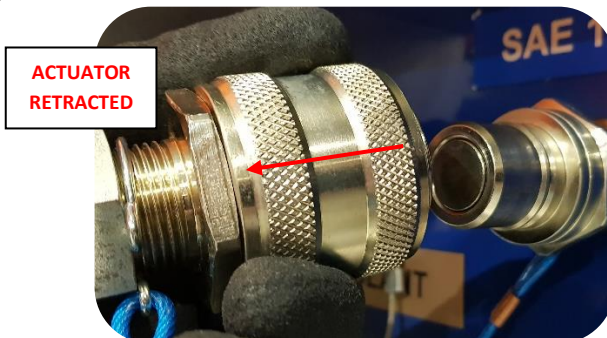


Figure 7 - Nozzle Actuator Retracted prior to Connection



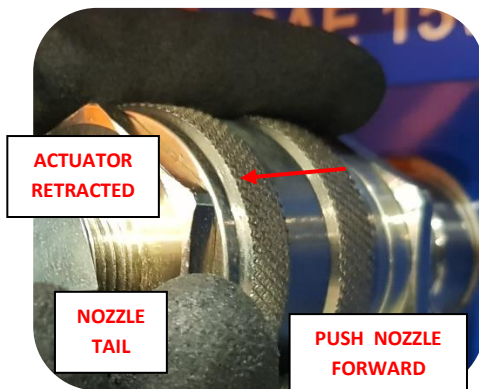


Figure 8 - Connecting Nozzle with Receiver

9. Once the Couplers are aligned and whilst holding only the **rear** (tail) of the Nozzle, in **one** swift but smooth movement securely **push** onto Receiver whilst holding the **Nozzle Actuator back**. **Do not release the Nozzle until fully engaged with the Receiver.**
10. Once fully engaged, **release** the Nozzle Actuator and ensure it returns **forward** – give the Actuator a push forward if required. The ball lock mechanism is engaged once the Actuator moves into the fully forward position.
11. Pull back on **rear** (only) of the Nozzle to ensure a secure connection. If Nozzle disconnects, ensure no dirt and other contamination are within the ball lock groove of the Receiver, and repeat steps 3 to 10 until couplings are connected.
12. If fitted and once the couplers are securely connected, ensure all bleed valves are closed, and start the supply pump to initiate liquid transfer. Supervise (monitor) fluid transfer process.

#### B) COUPLING DISCONNECTION

13. Once the liquid transfer is completed and **prior** to disconnecting the Couplers, **stop** (turn OFF) the liquid supply pump, and if fitted, **close** the manual isolation valve at the Nozzle inlet.
14. Using the designated fluid pressure bleed procedure, bleed all measurable pressure from within the Couplings.
15. Retract and hold back Nozzle Actuator and **steadily** remove Nozzle from the Receiver. Pull back on the Nozzle with one steady and smooth movement. **Hold the Nozzle Actuator back during the entire disconnection process.**

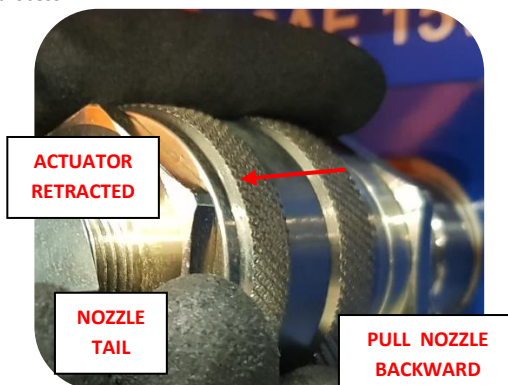
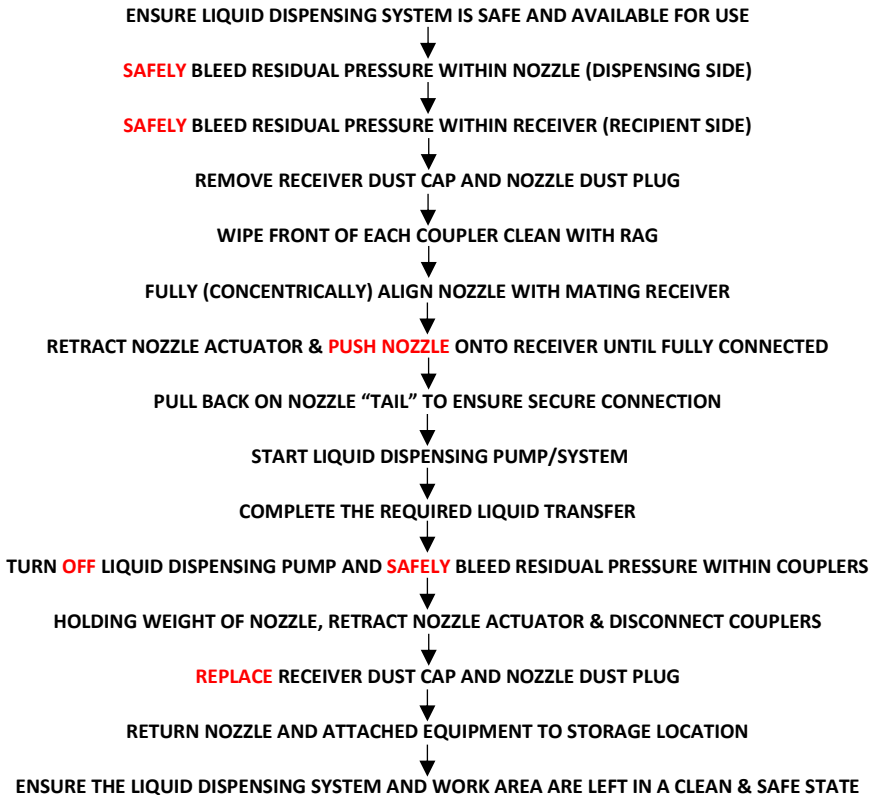


Figure 9 - Disconnecting Nozzle from Receiver

16. Once disconnected, release Actuator. Ensure both the Nozzle and Receiver return to their “normally closed” (sealed) state. If not, promptly repeat (only) steps 8, 9, 10 and 15. If either coupler still fails to close, promptly isolate any fluid supply to the faulty Coupler. Place this fluid transfer line “Out of Service” to prevent further use until the faulty Coupler is replaced.
17. Using a clean rag, wipe residual fluid from the Receiver and Nozzle. **Replace** the Receiver Dust Cap, and the Nozzle Dust Plug.
18. Safely return the Nozzle etc. by carrying them to their designated storage location, i.e. do **NOT** drag the Nozzle along the ground, or allow impact with any object. Ensure any bleed valves are closed and the fluid transfer system is otherwise left in a safe idle state.
19. **Ensure work area and all equipment are left clean & tidy.**
20. Ensure any faults or incidents identified during the fluid transfer are promptly reported for attention.

## 6.1 Classic Coupler Operation Overview



## 7 MAINTENANCE GUIDELINES

This Maintenance Guide is general and is not meant to replace or override maintenance guidelines that arise out of a *due diligence* assessment of the Banlaw Classic series Fluid Transfer Couplers for a specific liquid transfer application. For more detailed advice please contact Banlaw or your nearest authorised Banlaw distributor.

The following *preventative maintenance* guidelines apply to the Classic series Couplers;

- Inspect Classic Couplers and other liquid dispensing equipment prior to use for damage, excessive leakage or some other defect which may affect the safe use of the dispensing system.
- **Do NOT store a Nozzle laying on the ground, or otherwise in an area prone to excessive contamination or possible damage.** Ensure there is provision to safely store the Nozzle off the ground, and with the liquid dispensing hose not left laying within plant equipment or operator thoroughfares.
- **Prior** to use, wipe away residual liquid and contamination from all mating surfaces of the couplers (Nozzle & Receiver). This will not only reduce the ingress of contamination into the liquid stream, but also help to avoid accelerated wear & tear of the couplers.
- To further reduce contamination, ensure the use of Receiver Dust Caps and Nozzle Dust Plugs is maintained. The use of Dust Caps & Plugs will also reduce the risk of damage to a Coupler from impact when not in use.
- **Closely** inspect the front area of the **Receiver** (Figure 10) and **Nozzle** (Figure 11) for excessive wear or damage;
  - **Receiver;**
    - Wear to ball lock groove.
    - Damage and excessive wear to leading edge and front face.
    - Fluid leakage from front face.
    - Failure of the Poppet to return “flush” (fully forward, closed).
    - Damage to exterior of the Body.
  - **Nozzle;**
    - Damage and excessive wear to leading edge and front face. Importantly, distortion of the leading edge of the Actuator may affect its required motion (action) and jeopardise the safety of the ball locks.
    - Fluid leakage from front (surrounding the Piston) or from between Actuator and Tail.
    - Damage to the Body O’Ring seal, or the seal is missing.
    - Failure of the Piston to return “flush” (fully forward, closed).
    - Missing ball locks.
- Promptly replace any faulty couplers prior to their next required use or place the coupler(s) “Out of Service” until replacement.

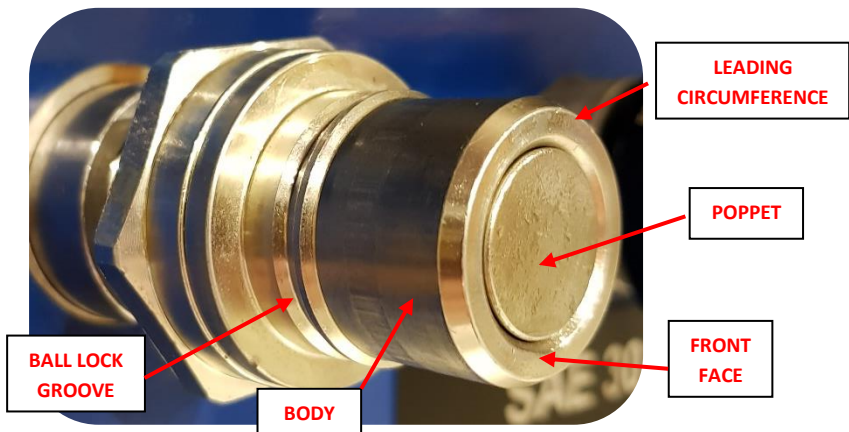


Figure 10 - Critical Areas of Damage on Receivers

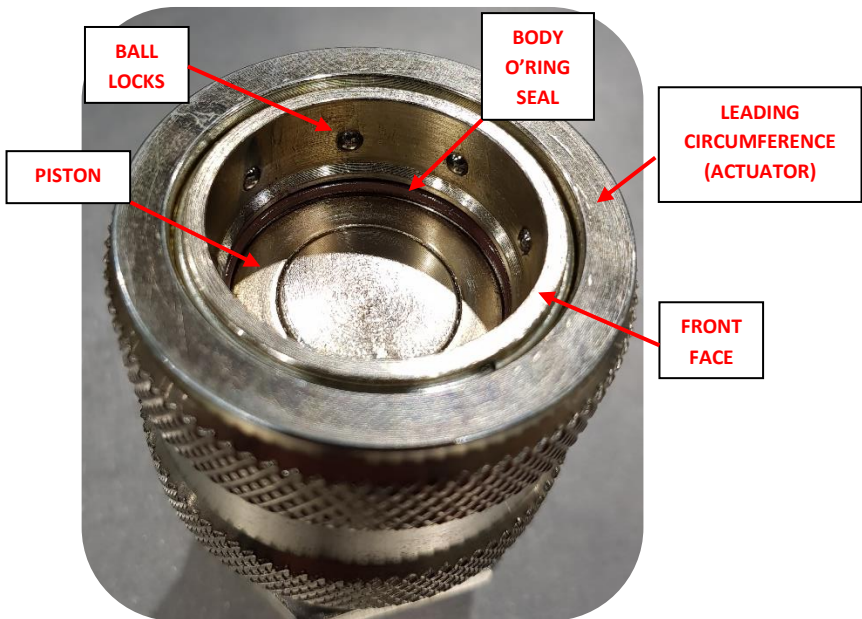


Figure 11 - Critical Areas of Damage on Nozzles

## 7.1 Spare Parts

The Banlaw Classic series Couplers are ***non-serviceable*** items. The following genuine Banlaw spare parts are available to suit this product. **The use of non-genuine parts, or the dismantling, misuse or tampering of this product may cause improper and unsafe function, serious safety hazards, and void Banlaw warranty.** Please see [www.banlaw.com](http://www.banlaw.com) for warranty details and a full list of distributors near your area to source genuine Banlaw replacement spares and new products.

Item Description	Banlaw Part Number
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Receiver Dust Cap	AUS#-C
Nozzle Dust Plug	AUS#-P

**Table 3 - Classic Coupler Spare Parts**

**Notes:**

1. Insert the Classic Coupler Model (e.g. 27W, 29W, 34A, etc.) into the wildcard character “#” to obtain the required Banlaw part number, e.g. AUS27W-C, AUS29W-P, etc.
2. “-C” is for a Receiver Dust **Cap**, and “-P” is for a Nozzle Dust **Plug**.

**END OF DOCUMENT**



**BANLAW – UNIFIED FUEL MANAGEMENT**

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