





	Form Title:	<p style="text-align: center;"><b>ENGINEERING BULLETIN</b></p>	Document #:	<b>EB-09-99</b>
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	Document Title:	<p style="text-align: center;"><b>Q.R.B. Hydrolet Clamp Ring Installation and Torque Rating</b></p>	Date:	<b>Dec. 27, 1999</b>
				Page:

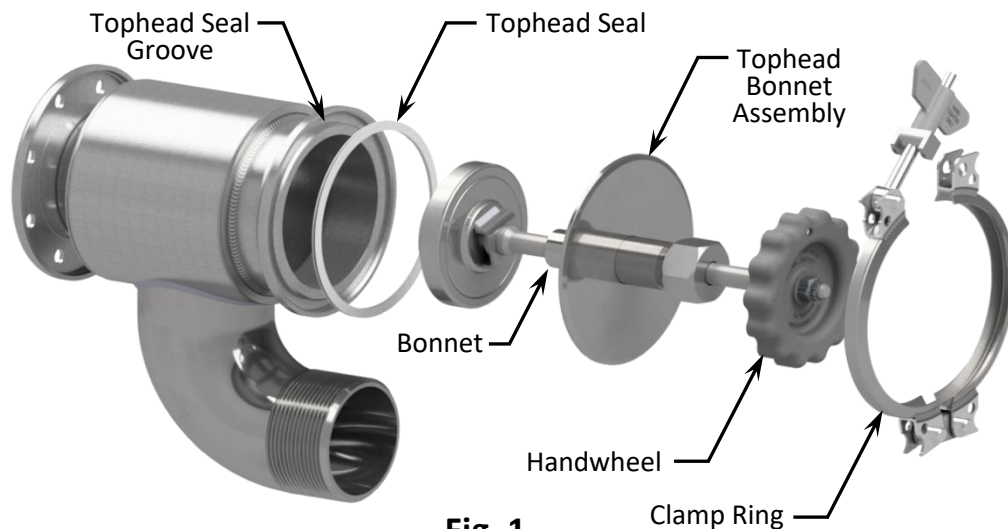
**Description of Bulletin:** This bulletin provides a guideline for proper Q.R.B. Hydrolet Clamp Ring installation and acceptable torque rating of Clamp Ring Wing Nut.

**Background Details:** Betts Quick Release Bonnet (Q.R.B.) Hydrolet Valves are designed with a Wing Nut and Clamp Ring assembly that is used to hold the Tophead Bonnet Assembly in place. The Tophead Bonnet Assembly can be easily removed from the valve body for cleaning, inspection or maintenance. It is imperative the Clamp Ring is installed properly to ensure safe operation.


 <b>WARNING</b>		<b>Pressure Hazard</b> – Cargo tank, piping or valves may contain residual pressure and failure to safely relieve could result in sudden loss of pressure causing death or serious injury.
 <b>WARNING</b>		<b>Flammable Product</b> – Cargo tank, piping or valves may contain product that could present a risk of fire, explosion or other hazards resulting in death or serious injury.
 <b>WARNING</b>		<b>Corrosive Material</b> – Cargo tank, piping or valves may contain corrosive material. Protective clothing including gloves and face shield shall be worn.

**Clamp Ring Installation Instructions:**

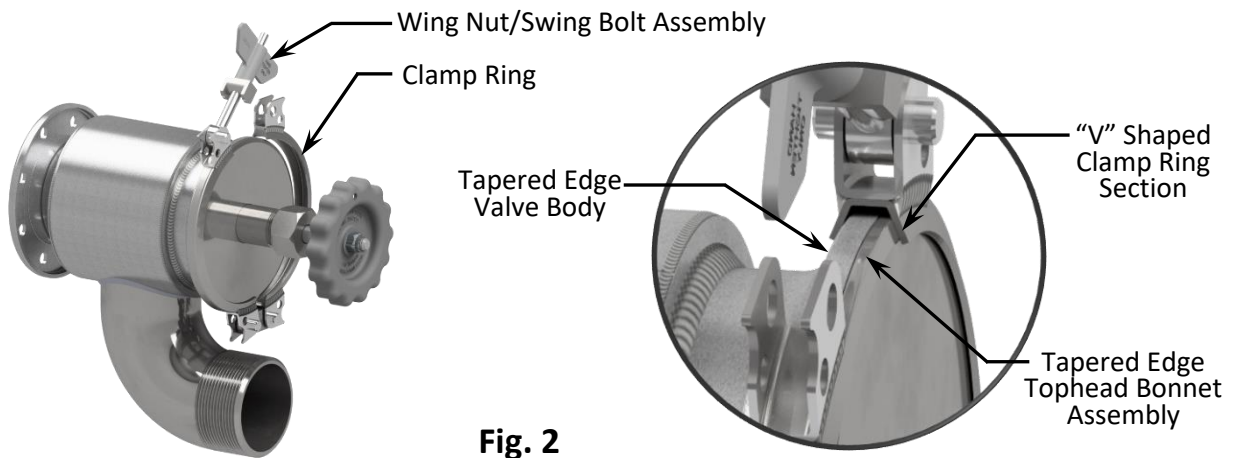
1. Inspect valve to ensure all components are genuine Betts' parts and not "look-alike" replacements. Non-Betts' parts will impede the proper function and safety of the valve.
2. Inspect valve and replace any worn or damaged parts. Pay particular attention to gaskets and sealing surfaces.
3. Inspect *Tophead Seal Groove* to ensure groove is clean and free of corrosion or debris. (See Fig. 1)
4. Install *Tophead Seal* in *Tophead Seal Groove*. (See Fig. 1) Various styles of seals are available, such as a PTFE Envelope gasket or a Teflon Encapsulated O-ring.
5. To ensure the *Tophead Bonnet Assembly* can be properly seated on the valve body, the *Handwheel* must first be rotated counterclockwise until the visible threads of the stem are hidden within the *Bonnet*.



**Fig. 1**

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- Place *Tophead Bonnet Assembly* on valve body and wrap *Clamp Ring* around perimeter of *Tophead Bonnet Assembly* and *Valve Body* so the “V” shaped clamp ring halves engage the tapered edges of the *Tophead Bonnet Assembly* and *Valve Body*. (See Fig. 2)

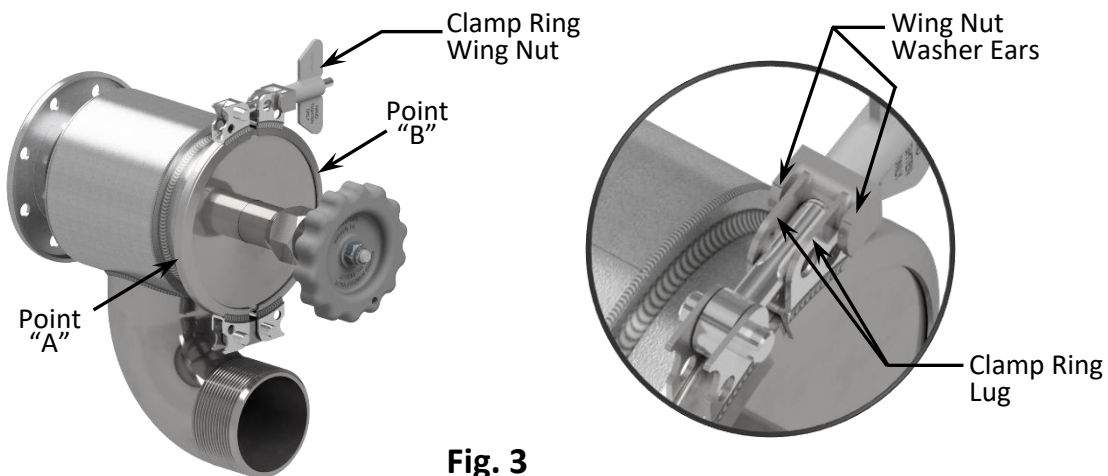


**Fig. 2**

- Pull the *Clamp Ring* halves together and rotate *Wing Nut/Swing Bolt Assembly* into place. (See Fig. 3)
- Ensure that the *Wing Nut Washer Ears* straddle both sides of the *Clamp Ring Lug*. (See Fig. 3)  
Failure to do so can allow *Clamp Ring Lugs* to spread apart, leading to failure of *Clamp Ring*.
- Gently tap each *Clamp Ring* half at Point “A” and Point “B” (See Fig. 3) with a non-sparking and non-marring hammer to help seat the *Clamp Ring*.
- Tighten the *Clamp Ring Wing Nut* “hand-tight” to **no more than** 7.5 lbf-ft [10.2 N·m] torque.

 <b>WARNING</b>	<p><b>Do not exceed 7.5 lbf-ft torque on <i>Clamp Ring Wing Nut</i>. Greater torque can damage clamp ring assembly causing failure of <i>Clamp Ring</i>.</b></p>
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- Inspect the *Clamp Ring* to ensure it is seated properly around the entire perimeter.
- Leak test valve prior to returning to service.
- For additional instruction see Maintenance Manual [MM-HY001](#).



**Fig. 3**