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	<b>Rego NG303 EFV Removal and Replacement with Increased Bleed-Flow Type</b>			

## Purpose

This document will outline the steps necessary to remove existing EFV (Chart PN: 20909776) and replace with the “Increased Bleed-Flow” version (Chart PN: 20997963).

## Overview

Certain R110-coded fuel systems have excess flow valves (EFV) that can false check (temporarily close) during vehicle startup. This condition is caused by differential pressure between the upstream and downstream side of the EFV during flow. To address the false checking that may occur, the “Increased Bleed-Flow” version EFV can be used (Chart PN: 20997963). Once checked, this valve allows a small amount of fuel to flow from the upstream to downstream side, reducing the differential pressure until the valve resets itself to the normal flow setting.

## Parts Affected

Rego NG303 Type Excess Flow Valve, Chart PN 20909776

## Parts Needed

Qty	Part Number	Description
1	11751555	3/8” Flaretite Seal
1	20997963	Increased Bleed-Flow Type Excess Flow Valve

## Tools Needed

- 1/2” Combination Wrench or Hex Socket Adapted to Drill or Ratchet
- 11/16” Combination Wrench
- 7/8” Combination Wrench
- 1-1/8” Combination Wrench
- Internal wire brush

## Other Supplies

- Nickel Impregnated Thread Sealant Tape (PN: 11811511)
- Anti-Seize Lubricant for Stainless Steel

## Safety

Ensure the servicing technician has read this procedure in its entirety prior to beginning. They will follow the procedure in a step by step process. Ensure all appropriate personal protective equipment is worn as required. Any special safety considerations will be highlighted in red and should be paid special attention.

**This procedure is intended for use by trained technicians with experience on systems using LNG. Review all applicable safety documents before beginning this procedure.**



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## Rego NG303 EFV Removal and Replacement with Increased Bleed-Flow Type

### Upgrade Steps

1. Make sure the vehicles parking brake is set and wheels are chocked.
2. Remove the 4 shroud plumbing protective cover attaching bolts. Use a  $\frac{1}{2}$ " hex socket or  $\frac{1}{2}$ " combination wrench. Retain the cover and bolts to reinstall in later steps.
3. Turn off Fuel Shutoff Valve (Red Hand wheel shown in photo below) by rotating it clockwise until it is fully closed.



4. Turn on the ignition switch and start the engine to depressurize the fuel line downstream of the Fuel Shutoff Valve.
5. Once the engine stops, turn the ignition off, remove and secure the key.

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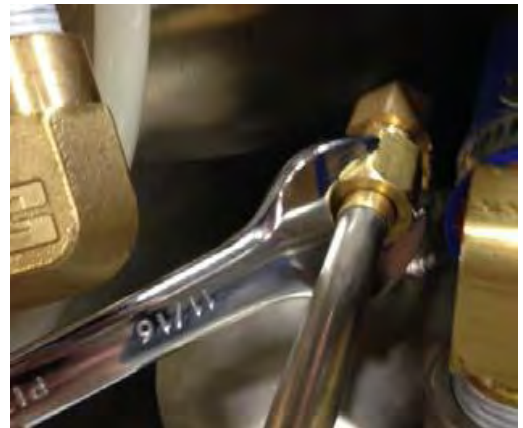
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## Rego NG303 EFV Removal and Replacement with Increased Bleed-Flow Type

- Using an **11/16"** combination wrench, **loosen the** flare nut of the **3/8"** O.D. stainless steel tube in between the EFV and heat exchanger. Loosen the nut two full turns and wiggle the tube by hand to loosen it in its mating fitting, this will also allow any residual pressure to safely escape. (See photos below for nut locations).



(Nut Location for Left Hand Tanks)



(Nut Location for Right Hand Tanks)

- Once residual pressure has escaped it is safe to completely loosen and remove the flare nut from its connecting fitting.
- Using **11/16"** combination wrench, loosen the compression nut of the EFV while holding the EFV body with a **1-1/8"** combination wrench.



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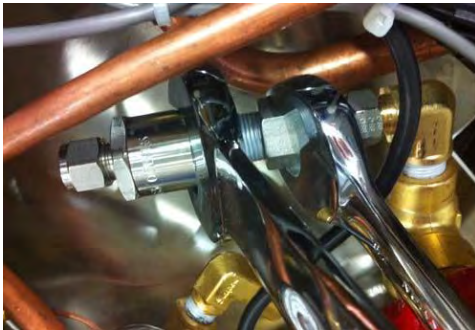
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## Rego NG303 EFV Removal and Replacement with Increased Bleed-Flow Type

9. Remove the stainless steel tube from the tank and keep it to reinstall in a later step.
10. Remove the Flaretite seal from the male flare fitting and discard.
11. Remove the existing EFV per the appropriate steps below:
  - a. For Left-Handed HLNG Tanks, use a 7/8" Combination wrench to hold the stainless steel fitting on the NPT side of the EFV and use a 1-1/8" combination wrench to grip the body of the EFV and loosen.
  - b. For Right-Handed HLNG Tanks, loosen the EFV using a 1-1/8" combination wrench.



(Left Hand)



(Right Hand)

12. Clean the remaining thread sealant tape from the female pipe threads with an internal wire brush.
13. Use a shop air gun to lightly blow out any remaining debris from the fitting and threads.
14. Apply thread sealant tape to male threads of the excess flow valve and install it hand-tight into the female pipe threads that were cleaned in Step 12. (Refer to VT-0030 for proper thread tape installation procedures)
15. Use wrenches as listed in Step 11 to tighten the EFV into the female threads.
16. Place the compression fitting end of the tube that was removed in Step 9 into the EFV and tighten the compression nut finger-tight.
17. Install a Flaretite seal onto the end of the fitting going into the heat exchanger.
18. Place the flared end of the tube onto the flare fitting of the heat exchanger, start and thread the nut onto the flared fitting finger tight, then tighten it with **11/16" Combination Wrench**.



(Nut Location for Left Hand Tanks)



(Nut Location for Right Hand Tanks)

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**Rego NG303 EFV Removal and Replacement with Increased Bleed-Flow Type**

19. Using  $11/16$ " combination wrench, tighten the compression nut of the EFV while holding the EFV body with a  $1-1/8$ " combination wrench.



20. Apply anti-seize lubricant to the four screws that mount the shroud cover to the shroud and install shroud cover then tighten screws with  $1/2$ " combination wrench or hex socket.
21. Fully open the Fuel Shutoff Valve by turning the handle counter-clockwise.
22. Turn on ignition switch to power (open) the fuel shut off solenoid.
23. Leak test all fittings and connections.

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