



Shipping: 2332 S 25th St
Omaha, NE 68105
Phone: (402) 344.4434
Fax: (402) 344.8091
www.BRAND-HYD.COM



EFC FLOW CONTROL INSTALLATION & USER GUIDE

SAFETY PRECAUTIONS:

- It is the purchaser's responsibility to determine the suitability of any Brand Hydraulics Co. product for an intended application, and to ensure that it is installed in accordance with all federal, state, local, private safety and health regulations, codes and standards. Due to the unlimited variety of machines, vehicles and equipment on which our products can be used, it is impossible for Brand Hydraulics Co. to offer expert advice on the suitability of a product for a specific application. It is our customer's responsibility to undertake the appropriate precautions, testing and evaluation to prevent injury to the end-user.
- Overpressure may cause sudden and unexpected failure of a component in the hydraulic system, resulting in serious personal injury or death. Always use a gauge when adjusting a relief valve.

SPECIFICATIONS:

- 3000 psi (207 bar) rating.
- Weighs 8-1/2 lbs. (3.9 kg).
- Standard Port size #12SAE (1-1/16 – 12).
- 10-Micron Filtration Recommended.
- Pulse Frequency (90 to 115 hz).
- Coil
 - 12 VDC standard (24 VDC).
 - 9.6 ohms (48 ohms).
 - 15 watts (15 watts).
 - 1.0 amp max (0.5 amp max.).
- Response Time
 - 0.035" Standard dash pot (375 ms).
 - 0.020" Dash pot (900 ms).
 - 0.093 Dash pot (175 ms to 350 ms depending on flow).
- Spool leakage (3.05 in³/min. @ 1000 psi ((50 ml/min. @ 68.9 bar) on EX port).

FEATURES:

- **CF port (Controlled Flow)** - Flow coming from the CF port is pressure compensated and proportional to the current received by the coil. Flow can vary from closed to wide open.
- **EX port (Excess Flow)** - Flow coming from the EX port is also pressure compensated. Note: When zero current is received by valve entire flow will exit valve via the EX port.

MOUNTING & ADJUSTMENT INSTRUCTIONS:

- **Mounting** – Valve can be mounted in any orientation. Valve must be mounted on a flat surface. Special attention should be paid to not bend or twist the casting when mounting. Doing so may cause the compensator spool to bind, causing valve to fail. It is recommended to install washers between casting and mounting surface.
- **Manual Override Adjustment** – The flow rate from the valve can be manually adjusted. This feature can be used if power to the coil is lost.
 - To manually adjust controlled flow:** First, remove the 7/16" acorn nut. Next, loosen the 7/16" jam nut. Finally, turn the override screw clockwise with a flat head screwdriver to manually adjust the flow out of the CF port.
- **Relief Adjustment (If equipped)** –Relief valve can be set anywhere within the range of 750 psi to 3000psi.
 - To adjust relief pressure:** First, loosen the relief lock nut and then turn the relief adjustment fitting clockwise to increase the pressure setting. Both the relief lock nut and relief adjustment fitting accept a 1.375" wrench. EX port MUST be plumbed back to tank for relief function to operate.



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FREQUENTLY ASKED QUESTIONS:

Q: Can the CF port be blocked or plugged?

A: No. If the CF port is blocked or plugged for any reason the compensation spool will attempt to compensate for increasing pressure, and shift thus blocking the EX port as well, and rendering valve inoperable. **DO NOT BLOCK CF PORT.**

Q: Can the EX port be blocked or plugged?

A: The EX port can be blocked or plugged, but doing so requires a pressure compensated or load sense pump. Plugging the EX port may create instability issues that can be remedied by switching the compensator spool to a different spool. (Part # XDC609)

FREQUENTLY ASKED QUESTIONS cont'd:

Q: Can flow be sent in reverse through valve.

A: Requires a special compensator spool to be accomplished. Valve number will begin with an EFCC. If you're unsure of your valve's model number, please contact factory for assistance.

Q: How many amps are required to shift orifice spool to full flow?

A: 1 amp is required to fully shift orifice spool. 350mA is generally the amperage needed to see flow begin from the CF port.

Q: What kits are available for this valve?

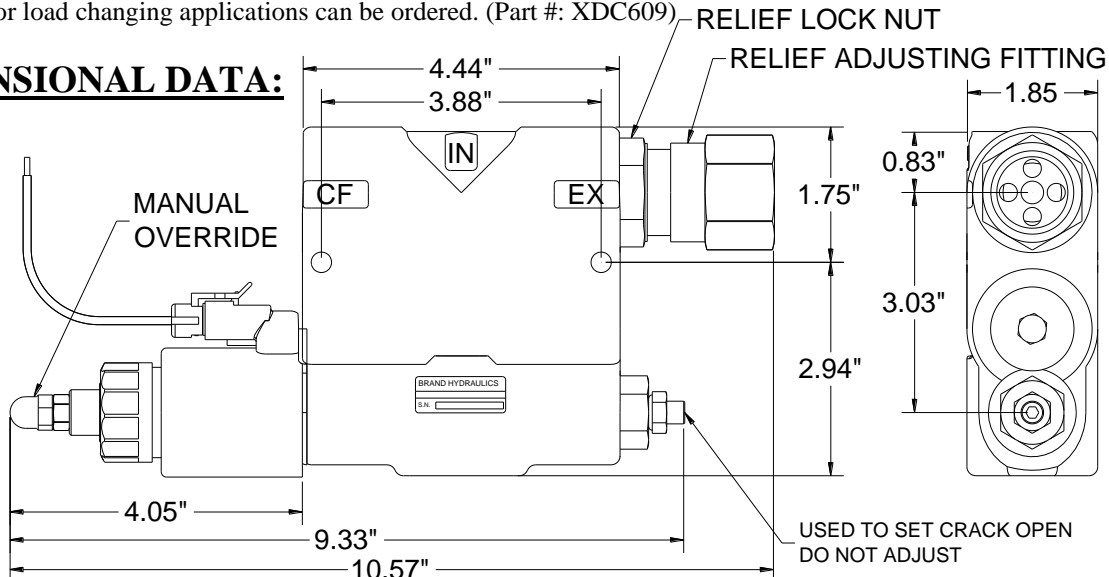
A: There is a replacement seal kit available for this valve. (Part #: EFC-K) If valve is equipped with a relief, there also is a relief kit available (Part #: EFCR-K)

TROUBLESHOOTING:

Problem: *Valve chatters or has stability issues.* Instability generally occurs when the valve sees an application that has rapidly changing loads. (i.e.: Fan, Vibration, etc.) Because of these changing loads the compensator spool tries to compensate rapidly. This causes the valve to become unstable, as well as begin to make noises, including a chatter.

Solution: Most instability issues can be solved by using a different compensator spool or spring. A replacement spool designed for load changing applications can be ordered. (Part #: XDC609)

DIMENSIONAL DATA:



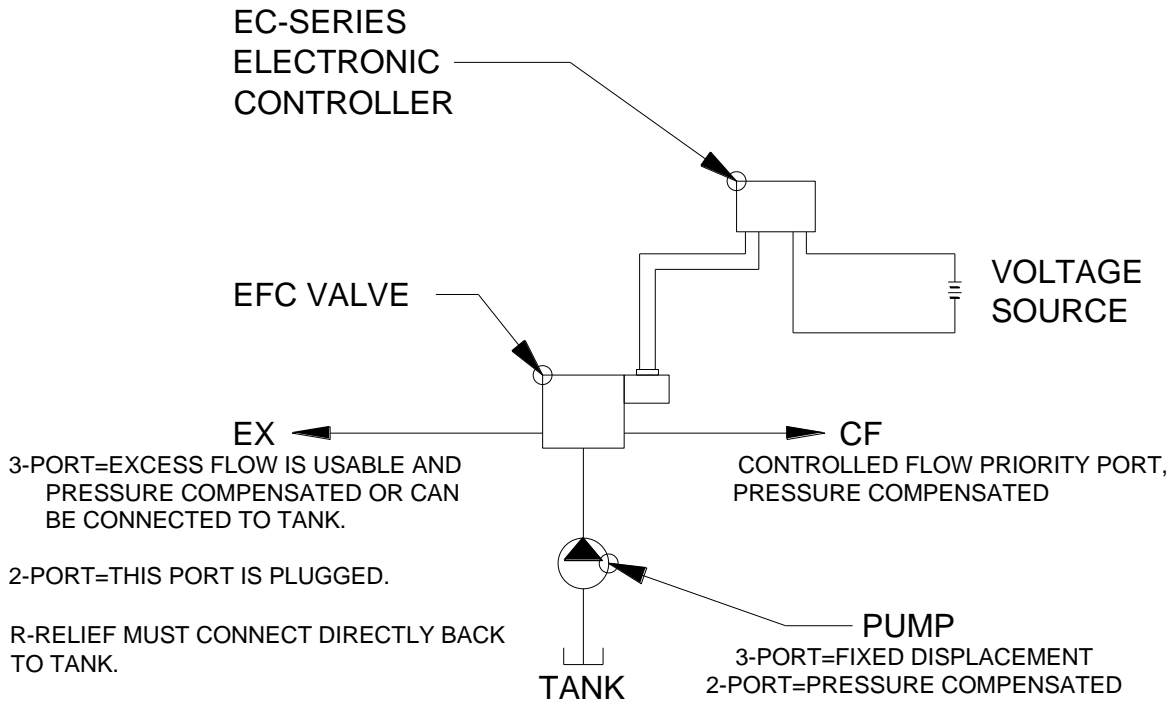


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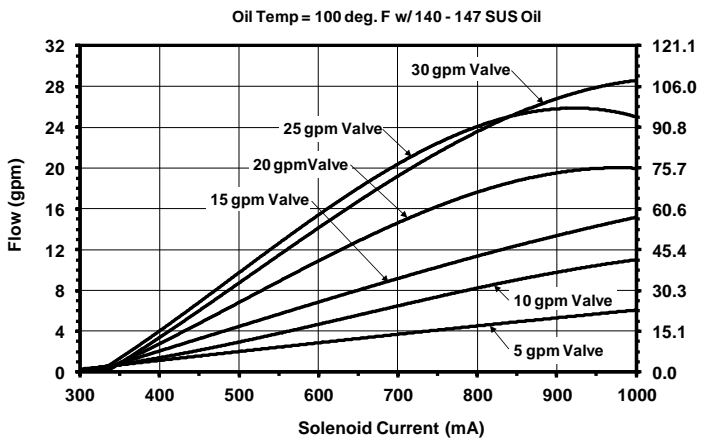
Figure 1: Dimensional Data for EFC valves (EFC with relief shown).

WIRING & HYDRAULIC SCHEMATIC (2 OR 3 PORT):



FLOW & SOLENOID CURRENT INFORMATION (2 OR 3 PORT):

Flow vs. Solenoid Current for EFC 3-Port



Flow vs. Solenoid Current for EFC 2-Port

