RCX Lo-Shok SPM Valve Overview

Sub Plate Mounted (SPM) valves are 3-way, 2-position fluid control valves. SPM valves are used throughout National Oilwell Varco (NOV) control systems to direct hydraulic fluid within hydraulic circuits.

- NOV RCX Lo-Shok SPM valve assemblies have been created to address industry requests for a more robust and reliable valve.
- RCX Lo-Shok SPM valves are direct circuit replacements with matched flow rates. Closing times are not affected.
- RCX Lo-Shok SPM valves utilize improved materials and are designed to reduce hydraulic shock (water hammer). Test data provided on sheet 2.
- RCX Lo-Shok SPM valves must be used with RCX Lo-Shok SPM valve blocks. RCX Lo-Shok SPM valve blocks may be re-machined to NOV specifications. Non-RCX Lo-Shok blocks cannot be re-machined.

RCX Lo-Shok SPM Valve Components

Key Benefits

- Purge fitting available - Circulates pilot fluid and bleeds air from the control chamber
- SAE-4 port only (O-ring boss style)
- Nord-Lock washer retains assembly bolt
- Spring chamber filled with control fluid to prevent corrosion
- Seawater chamber drains through milled slot
- Cap threads made from high-strength copper all for anti-galling properties
- Keyhole assembly of actuator rod and spool eliminates retainer nut (see detail view - B)
- Spool support improved by moving wear bands further apart (see Detail View - A)
- Spool clearances and line-on-line spool timing (opening/closing) of vent and supply port used to minimize interflow.

Improved cage design - Designed to prevent “crushing”

Improved cage seals (Hi-Gap) - Designed to accommodate cavity rework and larger extrusion gaps

Cage flow design - Flow areas designed to gradually open and close the supply and vent chambers as the spool shifts.

RCX Lo-Shok SPM — Cross Section

Detail View - A

- Improved cage seals (Hi-Gap)
- Improved cage design

Detail View - B

- Key/Keyhole design eliminates retainer nut
- Rod installed into spool