Technical Bulletin

Title: RESTRICTOR INNER SEALS		Bulletin No: TB-10010882/01.01
Prepared By: G. REID	Approved By: P. MACDONALD	Date: 05/09/2022

New Restrictor Multiline Inner Seals

for NOV Elmar Wireline Valves

1 INTRODUCTION

The purpose of this technical bulletin is to introduce a new range of 'Restrictor' Wireline Valve Inner Seals to complement our existing 'Constrictor' range.

2 WHAT ARE THESE NEW 'RESTRICTOR' SEALS?

Restrictors look and behave very much like Constrictors, but they are made from alternative materials. For example, the elastomer element can be supplied in either Nitrile (NBR) or Viton (FPM).

3 WHY HAVE THEY BEEN CREATED?

Due to a global shortage of Hydrogenated Nitrile (HNBR) elastomer compounds it has become very difficult for NOV Elmar to satisfy our customers' requirements for Constrictor seals. Using these alternative materials allows us to continue to serve our customers while we all strive to weather the storm of supply chain limitations.

4 HOW CAN I BUY THEM?

Restrictor seals can be offered for sale as spares immediately. If you have an outstanding order for Constrictor seals and would like to take advantage of the relatively short delivery times associated with Restrictors instead, please contact your local sales representative.

5 WHAT'S THE DIFFERERENCE BETWEEN A RESTRICTOR AND A CONSTRICTOR?

The main functional differences are related to temperature ratings and chemical compatibility. For example, while Constrictor inner seals perform well across a broad range of temperatures, Restrictor seals are targeted at the extreme ends of operational temperatures. NBR should be considered for low temperatures and FPM should be used for high temperature applications. In addition to material differences, there are also certification considerations related to each product type. See detailed summary on page 4.

	Constrictor	Restrictor (NBR)	Restrictor (FPM)
Elastomer type	HNBR (Hydrogenated Nitrile)	NBR (Nitrile)	FPM (Viton
Validation/Testing	API 16A Validated & F.A.T.	F.A.T.	F.A.T.
Temperature range	-20°C to 150°C	-39°C to 100°C	-10°C to 220°C
Chemical compatibility (1 = Excellent, 2 = Good, 3 = Not recommended)			
H2S (<5%)	1	2	1
H2S (5% to 10%)	2	3	2
H2S (10% to 40%)	2	3	2
H2S (> 40%)	3	3	3
CO2	1	3	2
Methanol	1	1	3
Glycol	1	1	2
Geothermal	3	3	3
Amines	2	2	3
Acids	2	3	2

*Note: Temperature ranges and chemical compatibility are for general guidance only. Performance is dependent on several variables, e.g., seal size and operating pressure. See TB-10006393 for further details.