

Max-R™ low friction centralizers

Go further, faster with Max-R™ centralizers



Succeeds where others fail

Max-R™ low friction polymer centralizers by Matrix have been designed specifically for today's extended reach and highly deviated casing installation operations. Utilizing propriety blends of premium engineering polymers combined with the expertise of Matrix's thermoplastic engineers, material scientists and decades deep industry experience, the low friction centralizer hasn't just been redefined, it's been reinvented.

With projects becoming more specific, extreme and unusual, there is no such thing as a 'one size fits all' material. The Max-R™ development team is continually pursuing new material formulations to match the mechanical, chemical and physical properties required by customers.

Together with customized modelling, Max-R™ centralizers are field-proven in enabling casing to reach total depth in extreme downhole environments. It has succeeded where others have failed in delivering not only the well but also significant savings in non-productive time, operational expense and reduced environmental impact.

Max-R™ centralizers have been used across the globe, from North America through Western Siberia to the Gulf of Thailand. With over 240,000* centralizers sold, whether your operation is onshore, offshore or deepwater Gulf of Mexico, you will go further, faster with Max-R™.



*As at February 2018

Performance and features

LOW AND ULTRALOW FRICTION

Up to 67% less coefficient of friction than thermoset polymer centralizers and 85% less than steel centralizers.

LOW WEAR

Up to 79% less volume loss than other thermoset polymer centralizers and 98% less than aluminium centralizers.

SHOCK RINGS™

Patented SHOCK RINGS™ manufactured using a high-impact, low friction polymer material providing:

- > Axial shock protection to the leading edge of the centralizer
- > Low friction bearing face during pipe rotation
- > Eliminates centralizer 'rock' as centralizer supported at both ends
- > Mechanically locked in place not glued or interference fit
- > Polymer ring does not pose threat to centralizer body under compressive loads unlike centralizers fitted with metal rings.

POSI-DRIFT™

Patented castellations allow for a tighter tolerance fit onto the pipe to maximize standoff whilst providing a fluid pathway through the ID.

HIGH TEMPERATURE RATING

Up to 225°C (437°F) continuous operating temperature for the Max-R™ Pioneer centralizer.

ENGINEERING GRADE POLYMERS

100% metal free, proprietary blend of premium engineering polymers.

BODY DESIGN

Various width blades available in a complete range of sizes.

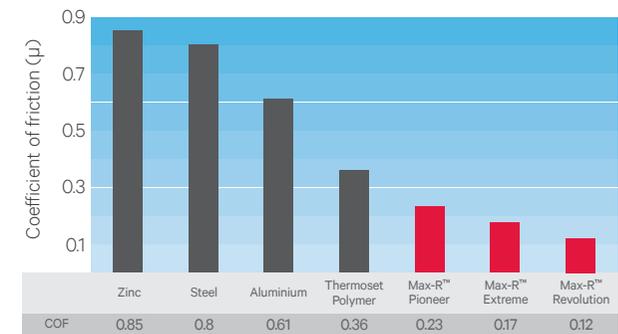
CUSTOMIZABLE

Easily customizable ODs.

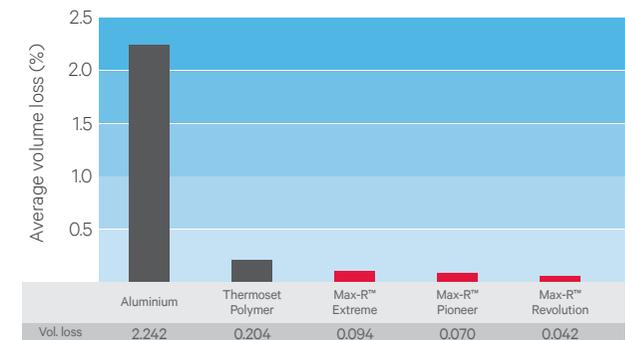
TRACEABILITY

Production batch numbers integrated onto body.

Static coefficient of friction (Dry)



Volume loss per ASTM G99

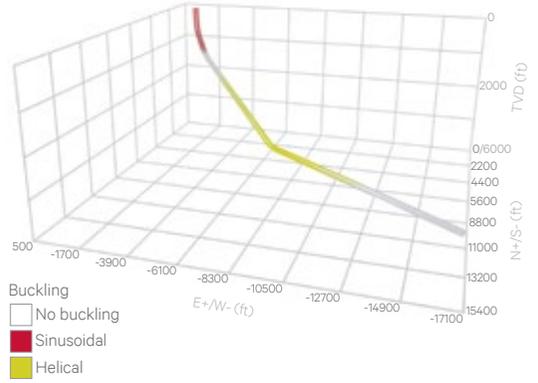


Customized torque, drag and placement modelling

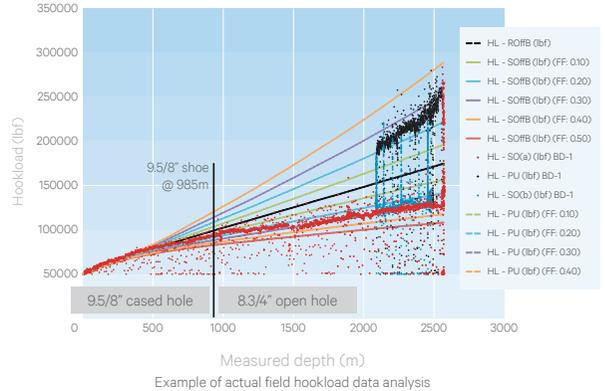
Utilizing industry recognized and respected torque, drag and centralizer placement modelling software from Pegasus Vertex Inc, Matrix offers much more than the typical centralizer analysis service.

Matrix's engineers will work with you on your particular area of interest or concern and customize the analysis to meet your requirements. Whether this be a simple stand-off analysis or more involved post operation evaluation to determine actual casing drag, Matrix is able to supply the data that enables you to make informed decisions and reach precise conclusions.

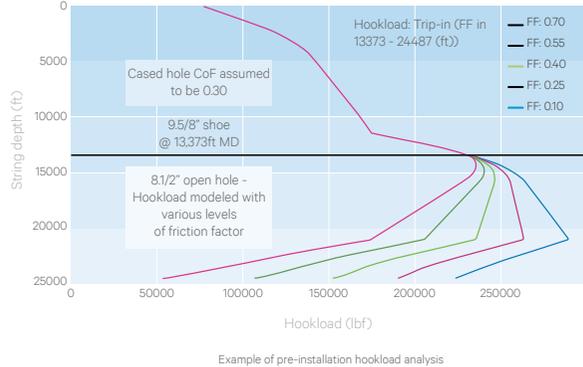
Buckling effect at Total Depth



Hookload (SO and PU) field data analysis for BD-1 (18 Dec 15)

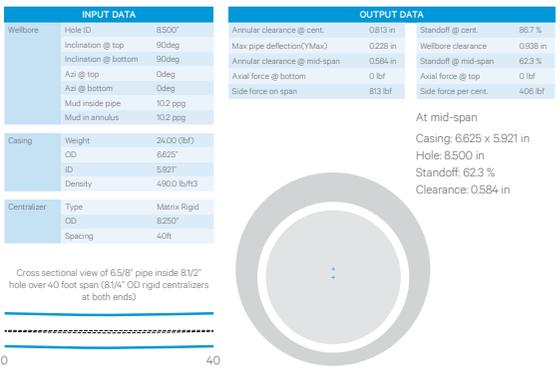


Run-in hookload analysis with variable friction factors in open hole section without rotation



Example of pre-installation hookload analysis

Standoff analysis at mid-span between centralizers for 6.5/8 inch liner



Range and application



MAXR Pioneer

- High strength, low friction centralizer
- Cemented casing and liners
- Well screens, slotted liners, run with swell packers
- Max operating temp: 437°F/225°C
- Sizes: 4.1/2" to 7" (Various ODs)



MAXR Extreme

- Extremely high Impact strength, low friction centralizer
- Designed for Arctic operations
- Ideally suited for large Intermediate Casing Strings where impact from surface operations are a concern
- Max operating temp: 225°C/437°F
- Sizes: 4.1/2" to 10.3/4" (Various ODs)
- 5.1/2" also available in heavy duty passive (5°) and spiral blade design



MAXR Revolution

- World record holder: highest step-out ratio completion. Step out ratio of 5.84:1, length of 3,710m, TVD of 636.6m
- Self lubricating, ultralow friction – the lowest friction, solid centralizer in the industry
- ERD and very high step-out ratio horizontal wells
- Complex, high value, multilateral completions
- Max operating temp: 133°C/271°F
- Sizes: 4.1/2" to 9.5/8" (Various ODs)

Real world results

MAX-R™ PIONEER CENTRALIZERS –

26% REDUCTION IN WELL COSTS

After experiencing continual high levels of drag preventing the casing from reaching targeted depths together with equipment breakage resulting in significant non-productive time, in 2013 a southeast Asian operator switched from semi-rigid steel centralizers to Max-R™ Pioneer centralizers. The switch has resulted in 100% success in reaching total depth, elimination of an entire casing string, 30% reduction in time, 26% reduction in well costs, increased production rates and less environmental impact.

MAX-R™ REVOLUTION – WORLD RECORD SET

In 2015 a Canadian operator working in Australian waters set a new world record with the highest step-out ratio installation of well screens. Utilizing Matrix Revolution ultralow friction polymer centralizers, the screens were run to a measured depth of 3,710m (12,172ft) in a shallow 636.6m (2,090ft) true vertical depth well, resulting in a step-out ratio of 5.84:1. The screens were installed without the aid of a rotational device thus saving time, cost and maintaining operational simplicity.

MAX-R PACKER PROTECT™ –

TAMES AGGRESSIVE SHALE FORMATION

A leading North American multi-stage completion company required a high wear resistant polymer centralizer that would protect the packer elements of their horizontal frac completion systems during installation in very aggressive shale formations.

To add to the challenge the equipment was often assembled in the shop and freighted by road to the field in sub-freezing temperatures. Thus the centralizers had to be able to withstand high-energy impact forces at temperatures as low as -50°C (-58°F) whilst retaining the material wear properties to protect the packers when running in the hole.

After significant research, development and testing, the Max-R Packer Protect™ system was developed which combines hybrid Max-R™ Extreme polymer blend materials with a wide blade design. The result is a polymer centralizer that is ready to work in the most extreme environments, both at surface and in the hole.



20,000m² of state-of-the-art

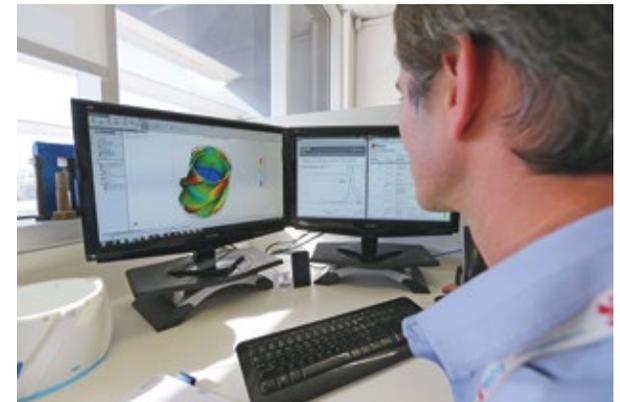
Located in Western Australia, the Matrix manufacturing facility houses automated, high pressure injection moulding machines used to produce the Max-R™ range of low friction centralizers.

It is also home to a team of multidisciplinary engineers and material scientists. Research and development is part of the Matrix DNA and by remaining focussed on advanced polymer and composite material technologies, ongoing development programmes are dedicated to continually enhance product performance, improve operational technical limits and create more value for their customers.



ABOVE: Located in the Australian Marine Complex, the southern hemisphere's premier integrated marine industrial facility

RIGHT: One of Matrix's highly qualified material scientists



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