

Technical data
and
certification

BONDED & SLIP-ON RUNNING & STORAGE GUIDE

OBLIQUE
advancing sealing solutions

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RUMA PRODUCTS B.V.

QMS

Company

Hoogeveen, The Netherlands

Running & storage

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Running & storage

Bonded and slip-on seal system running instructions.

1. Ensure that packaging has not been damaged and is in place. In the event that packaging has been damaged visually inspect the swelling seal elastomer for both damage and localised swelling. If damage is present or swelling has occurred quarantine this item and use a backup seal. Make good detailed colour photos of the damage and or swelling and contact Ruma Products with copies from these for advice on next step with this Item.
Email to: info@oblique.eu
 - a. Please note that considerable work has been done to ensure that the packaging materials do not degrade in extreme climatic conditions.
 - b. Packing material commonly contains chemicals that in the worst case will permanently damage the elastomer. Please do not remove the packaging and replace with alternatives that have not been tested fully. Damage of a permanent nature can occur to the elastomers.
2. On the rig floor remove all wrapping material and install the swelling seal in the tubing string, ensure that care is taken not to damage the swelling sealing surfaces. Please note the following.
 - Record the swelling serial number and technical Information.
 - Check the equipment to be run is the correct item as specified in the company completion program.
 - The bonded seal is supplied with pre-fitted running guides mounted in front of and behind the seal section. We have deliberately fitted them with a 5-10mm gap between the seal and the running guides. Ensure that this is correct and that this has not been altered.
 - The bonded seals consist of a seal and two running guides that are set in front of and behind the seal section. The running guide are fitted with grub-screws that are torqued in the factory to their correct value (see table Torque values) in a diagonally opposite fashion.
 - The slip-on seals are supplied with running guides to be mounted in front of and behind the seal section. We recommend them to be fitted with a 5-10mm gap between the slip-on seal and the running guides. Ensure that this is correct and that this has not been altered.
 - When slip on seals are to be fitted with a centraliser (recommended) we would advise that the centraliser be first fitted

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to the pipe followed by the slip on seal. This is because when running into the well centralisers are known to move. If they now move they not move to a position where they can interfere with the seals.

- The slip-on seals consist of one or more running guides that are fitted together or loose to be set in front of and behind the seal section. Torque the running guide to its correct value (see table Torque values) in a diagonally opposite fashion. Ensure that this is correct and that this has not been altered.
- After torquing the running guide grubs screws to the correct value. Strike the running guards sharply with a large hammer and re-torque. Pipe often has a mill scale and or mill varnish covering, this action helps breaks this and enables a better holding force.
- Elastomer storage is not a problem in temperatures down to and exceeding -40C however the elastomer can be extremely brittle and will shatter if mechanically shocked. Ensure that elastomer is not hit or badly handled at these low temperatures. Ensure that the seal has a temperature not colder than -25°C when being used.
- Ensure that the anticipated completion time to get the seal to depth corresponds with the delivered swelling versus time curve. Note: in worse case conditions the curve should allow for time to get to depth as well as time to pull back to surface.
- Ensure care is taken when running through the BOP and proceed to run into the well in a similar manner to all normal completion equipment. Be aware that time should NOT be allowed to slip during the running procedure. Swelling is CONTINUOUS once in contact with well fluids.

3. **Important Information:** Water swelling elastomers and their speed and degree of swell is influenced by the following factors:

- Fluid temperature. The higher the temperature the more rapid is the swell.
- Fluid salinity: the sweeter the fluid the more rapid is the swell.

In the event of delays and difficulties with running long liners the following needs to be considered. To delay water swell hold the completion brine as cold as possible and as saline as conditions allow. In the event that these conditioning steps are not possible consider ADDING GLYCOL or SIMILAR to the completion brine. GLYCOL has the effect of altering the diffusion gradient of the

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completion brine, reducing and or almost stopping the rate of swell. This completion mixture would have to be circulated out of the well once the problems requiring its use have been eliminated.

Maintenance

No maintenance is required Item is not to be exposed to rain water or other water sources.

Re-use

In exceptional circumstances slip-on seals can be re-used, however there are a number of conditions that need to be considered:

1. Check the dimensions are still in accordance with the data release sheet.
 2. Check the sleeves are free from visual defects (i.e. scratches, dents, etc.)
 3. Check the running guides on visual defects (i.e. scratched, dents, etc.)
 4. Make sure the sleeves and running guides internal and external is cleaned before reuse.
 5. Use new grub screws for the mounting of the running guides on the pipe.
- Any defect should be regarded as non-conformance and no longer suitable for re-use.

Transport and storage.

- Store in a dry dark warehouse in originally supplied transport packaging.
- If maintained in their original storage packaging, the seals can be stored in the above conditions for 3-5 years without noticeable effect. We recommend that for periods longer than this that Ruma products be contacted prior to use for degradation testing advise.
- Packaging and wrapping have been developed and tested for long term storage and will not damage the elastomer if maintained in their packaging for a number of years. This wrapping consists of a barrier wrap of Teflon coated paper to ensure no damage to the elastomer and an isolation wrap. Please note this is NOT CLINGFILM but a special wrap against UV light and has undergone a year and a half testing in the Omani sun to ensure that both the wrap AND the elastomer are correctly protected.
- Please use a barrier wrap (Teflon coated paper) on seals if they are to be fitted with Lamiflex or equivalent protection for offshore environments. This is to stop direct contact with the seal. We recommend using the Lamiflex or equivalent only OVER the existing Ruma wrapping.
- Item can be transported by plane, ship, rail or road and requires no specific special or specific handling or safety instructions.

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Table: Torque values

		M8	M12
Standard Pitch		1,25 mm	1,75 mm
External Diameter	Maximum	7,97 mm	11,96 mm
	Minimum	7,76 mm	11,70 mm
thread Root Diameter	Maximum	6,43 mm	9,81 mm
	Minimum	6,23 mm	9,54 mm
Grub screw Point Diameter		2,00 mm	3,00 mm
Allen Key Hexagon Size Across Flats	Nominal	4 mm	6 mm
	Maximum	4,09 mm	6,14 mm
	Minimum	4,02 mm	6,02 mm
Allen Key Across Points	Nominal	4,58 mm	6,86 mm
Allen Key Socket (Standard length) Depth Allen Key Socket (Non Standard Length) Depth	Nominal	5,00 mm	8 mm
	Reduced	3,00 mm	4,8 mm
Following reduced lengths Non Standard		<10 mm	<14 mm
Torque Value		20 Nm	45 Nm

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Manufacture Certification



CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**Ruma Products B.V.
Lindberghstraat 45
7903 BM Hooerveen
The Netherlands**

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standard:

ISO/TS 29001:2010

The Quality Management System is applicable to:

According to specifications the design and development, engineering, testing, manufacturing and delivery of swelling and non-swelling products and systems.

Approval Certificate No: RQA667933	Original Approval	:	30 June 2015
	Current Certificate	:	3 December 2015
	Certificate Expiry	:	29 June 2018

Issued by: Lloyd's Register Nederland B.V.

K.P. van der Mandelien d/a, 3002 MB Rotterdam, Nederland
This approval is valid only in accordance with the LRQA assessment and certification procedures and conditions.



CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

**Ruma Products B.V.
Lindberghstraat 45
7903 BM Hooerveen
The Netherlands**

has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standard:

ISO 14001 : 2004

The Environmental Management System is applicable to:

According to specifications the design and development, engineering, testing, manufacturing and delivery of swelling and non-swelling sealing products and systems.

Approval Certificate No: RQA667117	Original Approval	:	31 January 2014
	Current Certificate	:	26 June 2017
	Certificate Expiry	:	14 September 2018

Issued by: Lloyd's Register Nederland B.V.



K.P. van der Mandelien d/a, 3002 MB Rotterdam, Nederland
This approval is valid only in accordance with the LRQA assessment and certification procedures and conditions.



CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**Ruma Products B.V.
Lindberghstraat 45
7903 BM Hooerveen
The Netherlands**

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standard:

ISO 9001 : 2008

The Quality Management System is applicable to:

According to specifications the design and development, engineering, testing, manufacturing and delivery of swelling and non-swelling sealing products and systems.

Approval Certificate No: RQA666229	Original Approval	:	3 December 2012
	Current Certificate	:	3 December 2015
	Certificate Expiry	:	14 September 2018

Issued by: Lloyd's Register Nederland B.V.



K.P. van der Mandelien d/a, 3002 MB Rotterdam, Nederland
This approval is valid only in accordance with the LRQA assessment and certification procedures and conditions.

RUMA Products Oblique is ISO 29001, 14001 and 9001 Certified



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