James Walker

# Walkersele® OSJ
# On-site joining of rotary seals

Issue 7

- Reduce or eliminate requirement for equipment disassembly
- Performs as an endless seal
- On and Off-shaft fitting options
- Custom fitting options available
- Site survey and fitting service

High Performance Sealing Technology

James Walker

# On-site seal joining

## High performance innovation

Walkersele® OSJ offers the best of both worlds, combining the ease and maintenance economies of split seal assembly with the fluid sealing performance of an endless seal.

The many user benefits of Walkersele OSJ include:

- **Cost effective maintenance** – the performance and integrity of an endless-type seal is achieved:
  - **without major plant stripdown**
  - **without expensive on-site vulcanising**
  - **without the need for specialist tools**
  - **without the need for specially trained fitters**

- **No compromise** – installed units provide the sealing performance of high-integrity endless Walkerseles

- **Worldwide proven** – thousands of seals in operation on marine propulsion systems, gearboxes, power stations, sugar refineries, etc...

**Walkersele OSJ is available in three elastomer grades;**
- Nitrile (NBR)
- Hydrogenated nitrile (HNBR)
- Fluorocarbon (FKM)

Other materials are available for specialist applications on request

## The development of OSJ

For many years, on-site vulcanising was the only answer to split-seal assemblies where leakage was unacceptable, but this process could prove expensive, as it needed a high level of skill and elaborate jigs. So we developed Walkersele® OSJ.

The different OSJ® kits have been developed in partnership with customers across a variety of industries as we have looked to address maintenance issues they were encountering.

Our original OSJ system was designed to eliminate the need for total strip-down in order to replace a shaft seal – particularly important in saving time and considerable equipment costs for applications such as wind turbine main shafts, ship's propeller shafts and stabilisers.

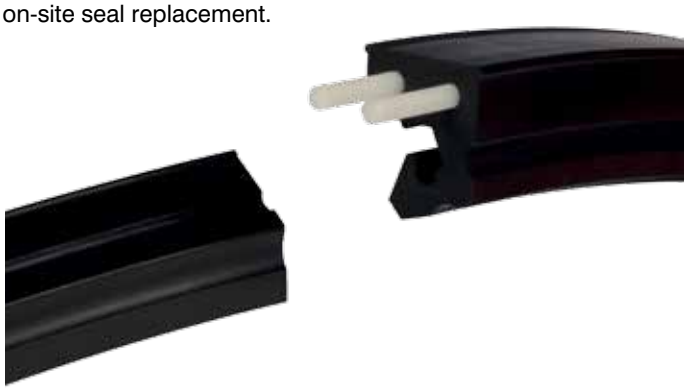
The benefits of the OSJ system were immediately recognised by our customers but as they then sought to extend the benefits and savings of using the system to new applications, it became evident that a new methodology would be required. This was particularly the case where access was restricted, seals were particularly large in profile or couldn't be supported on the shaft whilst the joining procedure was carried out.

Faced with such challenges it was James Walker field engineers who created the new OSJ-D system, which now means that virtually any application requiring a Walkersele® can have a replacement seal fitted on site.

# Walkersele® OSJ-2

## Walkersele® OSJ-2 on-shaft fitting for standard applications

Where reasonable access can be gained to the shaft and housing the original OSJ®-2 system is the ideal option for on-site seal replacement.



### Key features:

- Precision cut joining faces drilled for locating pegs and adapted for the joining process.
- Custom moulded silicone jig provides precise alignment of seal ends.
- Secure hold and accurate alignment during fitting procedure with twin-peg locating system.
- Shaft sizes 60mm to 2000mm (Consult James Walker Applications Engineering for advice on larger sizes).

## Seal availability

### Profiles:

Walkersele® OSJ-2 is supplied in all Walkersele designs that incorporate seal backs moulded from rubberised fabric.

The relevant profiles include our three leading designs, D6, D7 and D8, as well as the more specialised D1, D1/DL, D5, and D6/DL.

### Materials:

Walkersele OSJ-2 is supplied in three main elastomer grades — nitrile (NBR), hydrogenated nitrile (HNBR) or fluorocarbon (FKM). For full information on all of our designs and materials, please see our Walkersele® Radial Lip Seals guide.

### Temperature limit:

This is dependent on the seal material, but please note that the bonding technique imposes an upper limit of 150°C on the seal.

### Sizes:

The latest OSJ seals are readily supplied for shaft sizes from 60mm to 2000mm. We also have special On-Site Joining techniques for seals outside this range, and for applications where space is limited. Please contact our Applications Engineering Team for advice.

### Performance envelope:

If you need guidance, please discuss exact details of media compatibility, pressure, temperature and surface speed with our Applications Engineering Team.

# Walkersele® OSJ-D

## Walkersele® OSJ-D
## off-shaft fitting for restricted access

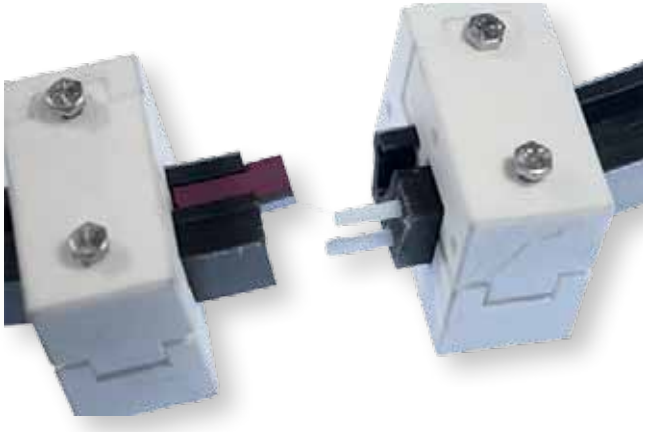
Where access to the shaft and housing is restricted for whatever reason, we have developed the alternative OSJ®-D fitting option.

Although the basic principles involved in the joining of the seal ends remain the same, a number of innovations have been made around the jig and clamping tool.

The new clamping blocks allow the seal to be successfully joined without being supported on a shaft. They hold the seal ends in place whilst bonding takes place where the use of the metal clamping band being applied around the outside of the seal to pull the seal together is not possible due to lack of access.

This new adaptation of the OSJ® method allows the seal to be joined and then manoeuvred into its housing even in cases where access may only be available through small inspection or access hatches.

- New OSJ-D clamping tool is available across a range of seal sizes / options.
- Individual seals are supplied with a custom silicone jig for precise location during the joining process.
- Seals provided with twin-peg locating system, offering accurate joint positioning.
- The clamping system and tool kit can be used for multiple installations of the same size of seal.



As with the Walkersele® OSJ-2 system, OSJ®-D is available for all Walkersele designs and in three grades of elastomer — nitrile (NBR), hydrogenated nitrile (HNBR) or fluorocarbon (FKM).

As this system also utilises the same adhesive, the bonding technique still imposes an upper operating temperature limit of 150°C on the installed seal. For further guidance on any aspect of on-site seal joining, please discuss your requirements with our Applications Engineering Team.

# Technical assistance

## Site surveys

Our Applications Engineering Team will advise you on the suitability of Walkersele® OSJ and fitting options for any specific shaft sealing application.

We have the capability to offer a detailed on-site survey through our field engineering teams to help assess and ensure that any access, shaft, bearing or housing irregularities are taken into account when specifying your replacement seals.

Our detailed order and manufacturing records, plus the capability of laser marking for product identification, simplify the task of re-ordering seals for existing applications.

## Fitting service

As with any seal, correct fitting is essential if the seal is to operate correctly and provide a full and reliable lifespan.

The OSJ® fitting process is simple and although it can be carried out by your own maintenance and engineering personnel, James Walker is able to offer support if required, including;

- Emergency or scheduled maintenance
- Fully skilled engineers with extensive experience of rotary sealing applications
- Experienced in a broad range of applications including marine propulsion, wind energy and hydropower industries

## Training

Although OSJ® can be fitted without the need for specialist skills or tooling, successful application of the OSJ technique relies on careful adherence to all stages of the joining process – as laid down in the detailed fitting instructions supplied with each kit.

We recommend that first-time users attend one of our hands-on training sessions that can be carried out at your premises, in the field or at one of our sites.

The James Walker training course provides an initial certification of competence which can then be maintained through regular refresher courses or supervision in the field by a James Walker engineer.

## Technical advice

Expert technical advice on the best sealing technology solution for a specific application is always available from our Applications Engineering Team.

James Walker

**James Walker worldwide support & distribution**


**James Walker Asia Pacific**
Tel: +65 6267 4788
*Fax: +65 6267 4980*
Email: sales.sg@jameswalker.biz

**James Walker Australia**
Tel: +61 (0)2 9721 9500
*Fax: +61 (0)2 9721 9580*
Email: sales.au@jameswalker.biz

**James Walker Benelux**
*(Belgium)*
Tel: +32 3 820 7900
*Fax: +32 3 828 5484*
Email: sales.be@jameswalker.biz
*(Netherlands)*
Tel: +31 (0)186 633111
*Fax: +31 (0)186 633110*
Email: sales.nl@jameswalker.biz

**James Walker Brasil**
Tel: +55 11 4392 7360
*Fax: +55 11 4392 5976*
Email: sales.br@jameswalker.biz

**James Walker China**
Tel: +86 21 6876 9351
*Fax: +86 21 6876 9352*
Email: sales.cn@jameswalker.biz

**James Walker Deutschland**
Tel: +49 (0)40 386 0810
*Fax: +49 (0)40 389 3230*
Email: sales.de@jameswalker.biz

**James Walker France**
Tel: +33 (0)437 497 480
*Fax: +33 (0)437 497 483*
Email: sales.fr@jameswalker.biz

**James Walker Iberica**
Tel: +34 94 447 0099
*Fax: +34 94 447 1077*
Email: sales.es@jameswalker.biz

**James Walker Inmarco (India)**
Tel: +91 (0)22 4080 8080
*Fax: +91 (0)22 2859 6220*
Email: info@jwinmarco.com

**James Walker Ireland**
Tel: +353 (0)21 432 3626
*Fax: +353 (0)21 432 3623*
Email: sales.ie@jameswalker.biz

**James Walker Italiana**
Tel: +39 02 257 8308
*Fax: +39 02 263 00487*
Email: sales.it@jameswalker.biz

**James Walker Mfg (USA)**
Tel: +1 708 754 4020
*Fax: +1 708 754 4058*
Email: sales.jwmfg.us@jameswalker.biz

**James Walker New Zealand**
Tel: +64 (0)9 272 1599
*Fax: +64 (0)9 272 3061*
Email: sales.nz@jameswalker.biz

**James Walker Norge**
Tel: +47 22 75 75 00
Email: sales.no@jameswalker.biz

**James Walker Oil & Gas (USA)**
Tel: +1 281 875 0002
*Fax: +1 281 875 0188*
Email: oilandgas@jameswalker.biz

**James Walker South Africa**
Tel: +27 (0)31 304 0770
*Fax: +27 (0)31 304 0791*
Email: sales.za@jameswalker.biz

**James Walker UK**
Tel: +44 (0)1270 536000
*Fax: +44 (0)1270 536100*
Email: sales.uk@jameswalker.biz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Registered Office: Lion House, Oriental Road, Woking, Surrey GU22 8AP, United Kingdom. Reg No. 07393831 England



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