

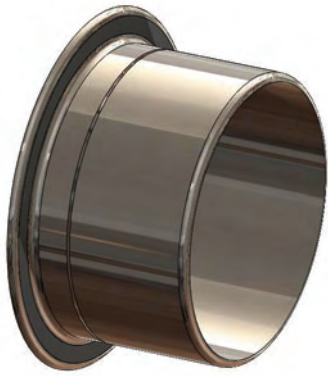


# DICHTOMATIK



**Shaft repair sleeves**

**WSH R**



## WSH R

Standard stock range

### Description

Product group	WSH Shaft repair sleeve
Design	R Repair
Material	stainless steel 1.4301 (AISI 304)
Mounting sleeve material	carbon steel 1.0330 (SAE 1008)

### Operational application limits

The operational application limits such as temperature, circumferential speed and pressure are determined by the rotary shaft seal selected. As a rule, the WSH R covers the operating parameters for all standard rotary shaft seals.

### Technical data

The sliding surface for the rotary shaft seal is an important machine element in the rotary seal system and must therefore meet a number of technical requirements in order to achieve a good sealing effect and a long service life.

Surface finish/  
roughness values  $R_a = 0.2$  bis  $0.8 \mu\text{m}$   
 $R_z = 1$  bis  $5 \mu\text{m}$   
 $R_{\text{max}} \leq 6.3 \mu\text{m}$

Surface processing Lead-free grinding

Surface hardness HV 220 (95 HRB)  
wear-resistant  
processing

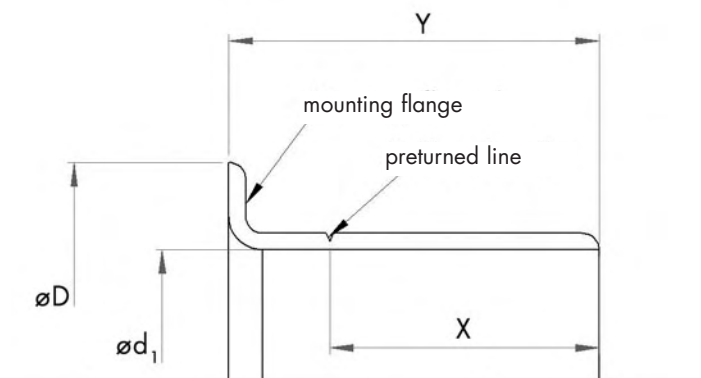
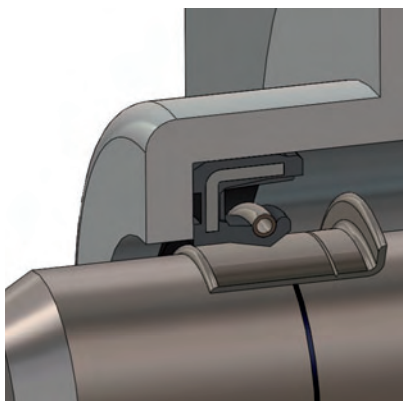
Wall thickness 0.28 mm thin-wall  
design

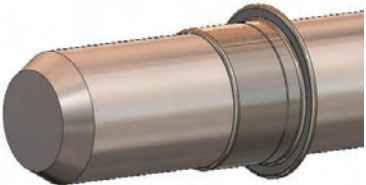
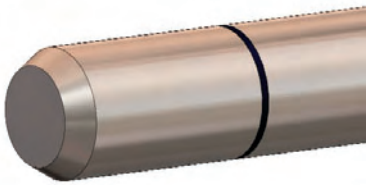
### Application area

WSH R shaft repair sleeves are used to repair grooved or worn rotary shaft seal sliding surfaces, e.g. in drive technology. They offer a cost-effective alternative to replacement or the laborious reworking of the worn shaft as they are simply pulled over the worn sliding surface.

Deep grooves can result in the original rotary shaft seal dimension having to be replaced with a rotary shaft seal with a smaller inner diameter because the original diameter has been significantly reduced by the reworking of the shaft. This problem with the grooved shaft in the sliding surface area can be solved quickly and easily using the WSH R, without having to dismantle and rework the shaft or use a rotary shaft seal of a different size.

Naturally, WSH R can also be used as original equipment for machines, aggregates or plants to avoid the complex, costly and in some cases also difficult processing of the sliding surface on the shaft.





### Function and benefits

Using the WSH R to repair the shaft ensures that complete functionality is restored quickly and lastingly.

The shaft repair sleeve is used as a counter-surface to the rotary shaft seal in the tribological rotation seal system, i.e. in addition to the rotary shaft seal and the lubricant used, the WSH R is the third important component.

WSH shaft repair sleeves offer the user the following benefits:

- > Fast and simple repair; mounting sleeve included
- > Cost-effective restoration of the sliding surface on the shaft, as dismantling and reworking of the shaft are not necessary
- > No costly machine down time, as the repair time is reduced to a minimum.
- > Low cost repair method
- > The rotary shaft seal sliding surface is long-lasting restored to complete functionality
- > Secure fit on the shaft due to press fit
- > Optimally machined and wear-resistant surface guarantees long service life
- > Retention of original seal dimensions
- > Simplification of spare parts stockpiling

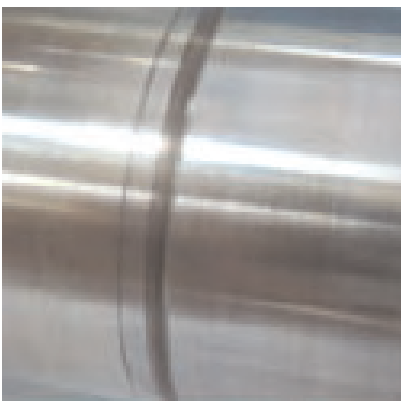
### Installation

The installation of the WSH R is very simple and requires little time, as it can be performed using the mounting sleeve supplied and the detachable mounting flange. Nevertheless, the WSH R should be installed very carefully and without canting on to the shaft so that no damage occurs during installing and good sliding and sealing characteristics are achieved in combination with the rotary shaft seal.

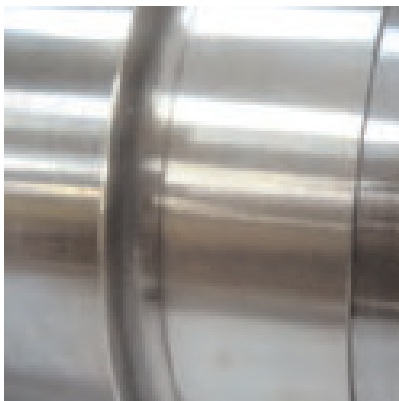
The next step is to clean the rotary shaft seal sliding surface on the shaft and check it for damage because, due to the thin wall thickness of the WSH R, unevenness on the shaft can be transferred to the WSH R surface and thereby have a negative influence on the sealing effect. Any burrs should be removed and grooves, nicks, score marks or significant unevenness should be smoothed out using a suitable epoxy filling compound. In this case, the WSH R must be attached before the filling compound has hardened. Shaft repair sleeves must not be placed over keyseats, depressions or thread runouts.

The WSH R shaft repair sleeve is placed over the worn sliding surface in accordance with the following installation instructions, thereby ensuring a fast, simple and cost-effective repair.

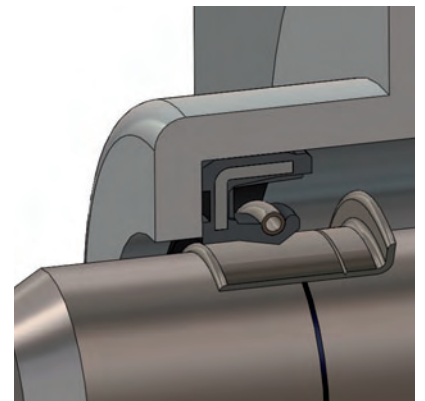
Worn shaft with groove



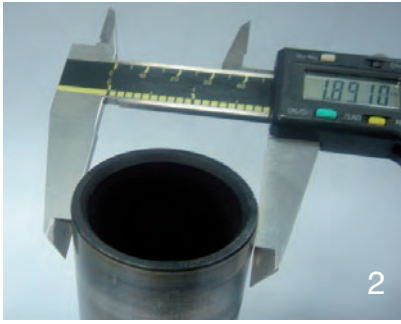
Shaft with attached WSH R



Rotary shaft seal is working on assembled WSH R







### Installation instructions

1. Clean the surface of the worn shaft and remove any burrs.

2. Measure the shaft diameter at 2-3 different places near to the worn area and select the WSH R.

3. Lightly lubricate the shaft surface prior to installation (facilitates installation).

4. Place the WSH R, flange side first, on the shaft.

5. Slide the mounting sleeve over the WSH R. If the mounting sleeve is too short, a pipe can be used as a mounting sleeve.

6. The WSH R is pushed over the worn area by gently tapping the mounting sleeve with a hammer (or a suitable press tool).

7. To remove the mounting flange on the WSH R, cut in as far as the predetermined breaking point using side cutters and tear off the flange along the returned line.

8. After installation check the shaft surface again for burrs.

9. Lubricate the WSH R before installing the seal.

10. Install the rotary shaft seal.

### Disassembly

The WSH R shaft repair sleeves can be removed from the shaft in different ways, namely by

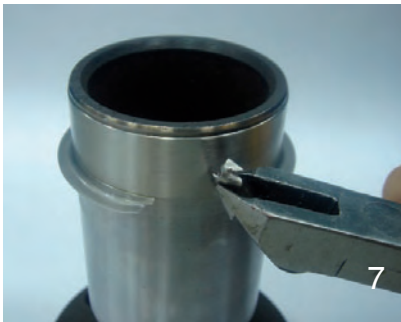
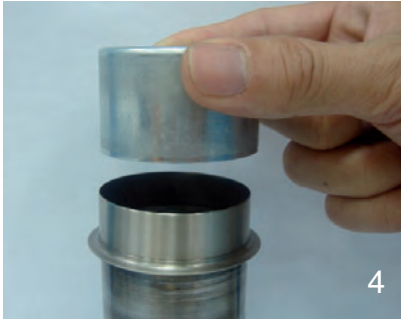
> heating – the thermally expanded WSH R can be removed easily from the shaft without damaging it

> gently tapping across the width of the sleeve with a hammer peen – the shaft repair sleeve stretches and can be removed with ease

> tearing off the shaft repair sleeve using side cutters, applied at the predetermined breaking point

> slitting the shaft repair sleeve using a chisel

WSH R shaft repair sleeves cannot be reused.



### Remarks

The shaft repair sleeves are packed individually for diameters ranging from 12 to 200 mm and supplied ex stock with the mounting sleeve and installation instructions in several languages. In principle, we can supply WSH R shaft repair sleeves up to a diameter of 370 mm, please contact us. Shaft repair sleeves with thicker walls and larger diameters are also available on request.

### Any Seal. Any Time

All the articles in our standard range can be ordered directly from our warehouse and their availability checked at [www.dichtomatik.de](http://www.dichtomatik.de). Other dimensions can be manufactured.



### Deutsch Montage

1. Oberfläche des Wellendichtungsflansches an der Wellenoberfläche abreiben und mögliche Grate entfernen
2. Den Wellendiameter an 2-3 verschiedenen Stellen nahe dem verschlissenen Bereich messen
3. Die Wellenschutzhülse auswählen (siehe Bild)
4. Die Wellenschutzhülse mit dem Montageflansch leicht einfetten (erleichtert die Montage)
5. Die Wellenschutzhülse auf die Welle setzen (siehe Bild)
6. Die Wellenschutzhülse auf die Welle schieben. Wenn die Montagehülse zu kurz ist, kann sie mit Hilfe einer Pressvorrichtung auf die Montagehülse geschoben werden (siehe Bild)
7. Zum Entfernen des Montageflansches an der Wellenschutzhülse, mit einem Seitenschneider die Wellenschutzhülse an der vorgedrehten Linie abreißen (siehe Bild)
8. Wellenoberfläche nach der Montage nochmals auf Grate überprüfen
9. Vor der Dichtungsmontage die Wellenschutzhülse einfetten
10. Montage des Wellendichtungsflansches



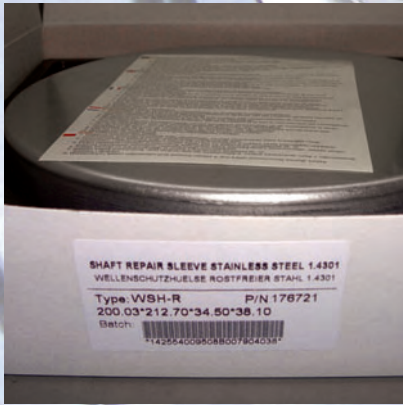
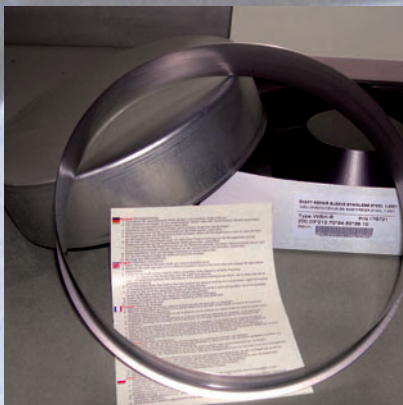
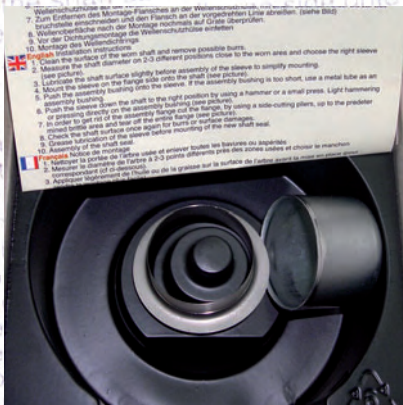
### English

1. Clean the surface of the worn shaft and remove possible burrs
2. Measure the shaft diameter on 2-3 different positions close to the worn area and choose the largest installation requirement
3. Lubricate the shaft surface slightly before assembly of the sleeve to simplify mounting
4. Mount the sleeve on the shaft (see picture)
5. Push the sleeve onto the shaft (see picture)
6. Push the assembly bushing into the groove. If the assembly bushing is too short, use a metal tube as an assembly bushing
7. In order to get rid of the assembly flange cut the flange, by using a side-cutting pliers, up to the predrilled groove
8. Check the shaft for burrs before mounting of the new shaft seal
9. Grease the surface of the sleeve before mounting
10. Mounting of the shaft seal



### Français

1. Nettoyer la surface de l'arbre usé et éliminer les bavures ou aspérités
2. Mesurer le diamètre de l'arbre à 2-3 points différents près des zones usées et choisir la plus grande valeur de montage
3. Appliquer une légère couche de graisse sur la surface de l'arbre avant la mise en place de la douille



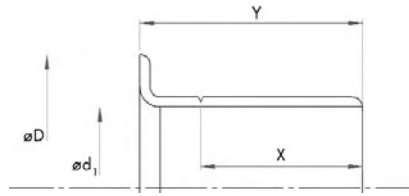
The technical details in this catalogue are based on experience and standart tests repeated in quality assurance and are to be seen as general and non-binding approximate values which may well vary up or down. We therefore recommend that you consult our technical department for concrete cases in which limits may be reached.

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Item No.	Ref. No.	d <sub>1</sub>	D	X	Y
176631	99049	12	15.5	6	8.4
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176636	99078	20	23.6	8	11
176638	99084	22	30.2	6.6	9.1
176639	99085	22	30.2	8	12
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117578	99111	28	34.9	9.5	12.7
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176666	99177	45	53	14	17
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176697	99334	85	90.9	10.1	12.7
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176700	99353	90	101.6	13.4	16.9
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125861	99354	90	101.6	23	28
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176702	99374	95	102.4	8.7	12.7
176701	99364	95	102.5	11.9	15.1
176703	99393	100	109.5	20.6	25.4
117580	99413	105	113.5	20	23.2
124968	99452	115	127	20.6	23.8
176707	99473	120	129.8	20	25
176709	99490	125	137.2	10	14
176710	99492	125	137.2	26	32
176712	99552	140	151	20.5	25.4
176713	99571	145	154.9	19.1	22.2
176714	99595	150	159	26	30
176715	99630	160	171.4	25.4	31.8

Sizes metric

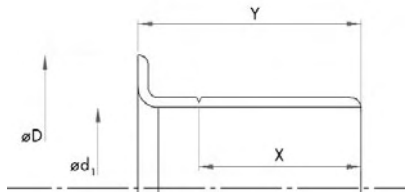




**WSH R**

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**Sizes imperial**



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176648	99131	33.35	40.5	12.7	15.9
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176660	99169	41.9	53	14.3	17.5
176657	99165	42.06	53	14	17.5
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176661	99170	44.17	52.4	9.5	12.7
176665	99176	44.86	52.4	14.3	17.5
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176668	99189	48.03	56	14	17
176670	99198	50.3	58.8	14.3	17.9
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176717	99700	177.8	189.9	25.4	31.8
176718	99721	180.01	190.5	33	38
176719	99726	184.86	197.1	32	38
176720	99750	190.5	200	20.6	25.4
176721	99787	200.03	212.7	34.5	38.1

# Any seal. Any time

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