



Product Info

Welcome to the technical documentation of Obduramus Umwelttechnik GmbH. In the following, we present the detailed product information sheets for our rehabilitation systems for the trenchless maintenance of wastewater networks.

We know from experience that every sewer system and every damage pattern presents unique requirements. Should you not find the ideal answer for your specific structural challenge within our standard portfolio, we see this not as an obstacle but as an incentive: We specialize in developing customized special solutions and bespoke fabrications tailored precisely to your project.

In doing so, you benefit from our many years of expertise in mechanical internal pipe rehabilitation and the reliability of our patented Circum technology. Therefore, please do not hesitate to send us your project data, damage reports, or specific requirements. Our team of experts will analyze the information thoroughly and contact you promptly to develop a technically sophisticated and economically sustainable rehabilitation solution using our high-quality stainless steel sleeves.

Contact:

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obduramus® CIRCUM-MINI

**Internal repair sleeve
with DIBt approval –
for small to medium diameters**

- ⊙ Compression seal
- ↔ Pipe diameter DN 100 – DN 800
- ★ Application:
Longitudinal cracks, radial cracks, leaky pipe connections, missing wall sections, abandoning unused laterals, replacing missing formwork behind liners, part formation.

Obduramus Circum-MINI For small to medium diameters

The Circum-MINI stainless steel repair sleeve is an internal pipe sleeve which has been approved by the DIBt (German Institute for Structural Engineering). It is positioned over the damaged spot using an inflatable packer and then pressed against the pipe walls. Expanding the stainless steel sleeve presses the EPDM seal against the inner pipe walls and permanently seals the damaged spot.

Technical Information

Width	200 to 450mm
Nominal width	DN 100 – DN 800
Seal	EPDM approval in accordance with DIN-EN 681-1
Stainless steel sleeve	1.4404

Advantages of the Circum-MINI:

- DIBt approval
- Patented external lock
- No protruding obstacles
- Packer-protecting
- Fully fitted and ready to mount
- Free from environmentally harmful lubricants
- Internal pressure tested up to 16 Bar

The system has been tested by IKT for resistance high pressure flushing and for water tightness under external pressure.

- P07104-T02 water tightness test
- P07104-T03 field test

Test report available for download from our website.

TECHNICAL INFORMATION

Obduramus Circum-MINI

Item number	Sleeve DN	Sleeve length	Total Ø rolled	V4A stainless steel sleeve			EPDM seal			Designed for pipes:		Individual Sealing length	Total weight
				Sheet thickness	Roll size	Max. expansion	Rubber thickness	Sealing lips height	Height incl. lips	Min. internal Ø	Max. internal Ø		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
1-100 Mini	100	200/140/100	92	0,8	83	118	1,5	3,0	4,5	95	110	200/140/100	0,63
1-125 Mini	125	200/140/100	102	0,8	93	132	1,5	3,0	4,5	110	125	200/140/100	0,75
1-150 Mini*	150	400	133	1,0	117	154	2,0	5,0	7,0	140	162	310	2,11
1-175 Mini	175	400	149	1,0	133	182	2,0	5,0	7,0	157	188	310	2,5
1-200 Mini	200	400	166	1,2	150	204	2,0	5,0	7,0	175	215	310	3,2
1-225 Mini	225	400	181	1,2	165	222	2,0	5,0	7,0	190	232	310	3,6
1-250 Mini	250	420	206	1,2	190	254	2,0	5,0	7,0	215	262	330	4,4
1-300 Mini	300	420	253	1,2	235	306	2,0	6,0	8,0	262	316	330	5,2
1-350/375 Mini	350/375	420	312	1,2	290	390	2,0	8,0	10,0	320	398	330	6,0
1-400 Mini	400	420	348	1,5	325	407	2,0	8,0	10,0	355	420	330	8,1
1-450 Mini	450	450	385	1,5	360	460	2,5	8,0	11,0	400	468	350	9,4
1-500 Mini	500	450	445	1,5	420	506	2,5	8,0	11,0	451	520	350	10,6
1-525 Mini	525	450	445	1,5	420	530	2,5	8,0	11,0	455	538	350	10,9
1-600 Mini	600	450	536	2,0	510	610	2,5	8,0	11,0	541	623	350	16,5
1-700 Mini	700	450	626	2,0	600	714	2,5	8,0	11,0	631	727	350	19,6
1-700-S Mini¹	700	450	586	2,0	560	714	2,5	8,0	11,0	631	727	350	19,2
1-750 Mini	750	450	586	2,0	560	760	2,5	8,0	11,0	635	768	350	20,5
1-800 Mini	800	450	726	2,0	700	810	2,5	8,0	11,0	731	823	350	22
1-800-S Mini¹	800	450	586	2,0	560	810	2,5	8,0	11,0	731	823	350	21,4

All sleeves are available without flaring, with one-end flared or both ends flared. Please specify when ordering..

Dimensions within the scope of our production tolerances.. *Serial installation of DN 150 is possible in clay with 2 sleeves ¹can be inserted without removing the cone..

**obduramus®**
CIRCUM-LEM

**Liner end sleeve with
DIBt approval –
At the end, it's all sealed**

- ⊙ Compression seal
- ↔ Pipe diameter DN 100 – DN 800
- ★ Application:
Connecting and sealing liner ends on
pipes and structures, protecting
vulnerable liner ends.

Obduramus Circum-LEM

At the end, it's all sealed

The Circum-LEM liner end sleeve has been approved by the DIBt (German Institute for Structural Engineering). It is using mechanical compression and seals the liner ends in pipes. Expanding the stainless steel sleeve presses the EPDM seal against the inliner and also permanently seals it to the host pipe. The EPDM seal's special geometry ensures the bridging and sealing of any gaps within the lined pipe end.

Technical Information

Width	200 mm to 300 mm
Nominal width	DN 150 – DN 800
Seal	EPDM approval in accordance with DIN-EN 681-1
Stainless steel sleeve	1.4404

Advantages of the Circum-LEM

- DIBt approval
- Patented external lock
- No protruding obstacles
- Packer-protecting
- Fully fitted and ready to mount
- Free from environmentally harmful lubricants

The system has been tested by IKT for resistance high pressure flushing and for water tightness under external pressure.

- P07104-T01 water tightness under external pressure
- P07104-T06 Field test and water tightness test

Test report available for download from our website.

Obduramus Circum-LEM

Liner end sleeve

Item number	Liner end sleeve DN	Sleeve length	V4A stainless steel sleeve			EPDM rubber seal			Designed for pipes:		Liner thickness		Cut-back Liner	Weight
			Sheet thickness	Roll size	Max. expansion	Rubber thickness	Height lips Liner	Height lips Pipe	Min. internal Ø	Max. internal Ø	min.	max.		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
6-100 LEM	100	200/140/100	0.8	83	118	1,5	3,0	4,5	95	110	1,0	6,0	50 – 140	0,45
6-125 LEM	125	200/140/100	0,8	93	132	1,5	3,0	4,5	110	125	1,0	6,0	50 – 140	0,55
6-150 LEM	150	250	1,0	117	154	2,0	4,0	11,0	147	176	3,0	9,0	100 – 140	1,42
6-175 LEM	175	250	1,0	133	182	2,0	4,0	11,0	157	181	3,0	9,0	100 – 140	1,7
6-200 LEM	200	250	1,2	150	204	2,0	4,0	11,0	180	226	3,0	9,0	100 – 140	2,1
6-225 LEM	225	250	1,2	170	222	2,0	4,0	11,0	198	232	3,0	9,0	100 – 140	2,3
6-250 LEM	250	250	1,2	190	254	2,0	5,0	11,0	220	276	3,0	9,0	100 – 140	2,4
6-300 LEM	300	250	1,2	235	306	2,0	5,0	11,0	265	328	3,0	9,0	100 – 140	3,2
6-350/375 LEM	350/375	250	1,2	290	390	2,0	5,0	11,0	320	398	3,0	9,0	100 – 140	4,2
6-400 LEM	400	250	1,5	325	407	2,0	5,0	11,0	355	429	3,0	9,0	100 – 140	4,8
6-450 LEM	450	250	1,5	360	460	2,0	5,0	11,0	400	482	3,0	9,0	100 – 140	6,9
6-500 LEM	500	300	1,5	420	506	2,0	5,0	12,0	451	528	5,0	12,0	100 – 140	7,6
6-525 LEM	525	300	1,5	442	530	2,0	5,0	12,0	455	538	5,0	12,0	100 – 140	8,2
6-600 LEM	600	300	2,0	510	610	2,0	5,0	12,0	541	632	5,0	12,0	100 – 140	10,6
6-700 LEM	700	300	2,0	590	714	2,0	5,0	12,0	631	736	5,0	12,0	100 – 140	12,6
6-700-S LEM*	700	300	2,0	560	714	2,0	5,0	12,0	631	736	5,0	12,0	100 – 140	12,2
6-750 LEM	750	300	2,0	560	760	2,0	5,0	12,0	635	768	5,0	12,0	100 – 140	13,4
6-800-S LEM*	800	300	2,0	560	810	2,0	5,0	12,0	731	832	5,0	12,0	100 – 140	114,9
6-800 LEM	800	300	2,0	700	810	2,0	5,0	12,0	731	832	5,0	12,0	100 – 140	14,4

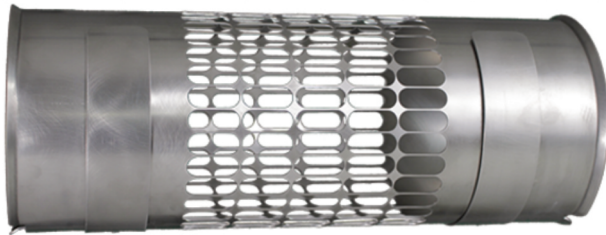
Dimensions within the scope of our production tolerances *can be inserted without removing the cone

CIRCUM FLEX



obduramus® CIRCUM-FLEX

Flexible Internal repair sleeve
Flexible solution



- ⊙ Flexible compression seal
- ↔ Pipe diameter DN 150 – DN 600
- ★ Application:
Radial offsets up to 20mm, axial angle deviations up to 5°

Obduramus Circum-FLEX

Flexible Solution

The Circum-Flex is a flexible stainless steel repair sleeve. This sleeve can be used to seal offsets up to 20 mm and axial angle deviations up to 5°. Due to its special geometry, it adapts perfectly to the offsets and angle deviations. The EPDM is protected by means of a 1 mm thick PE plastic.

Advantages of Circum-FLEX:

- Patented external lock
- No protruding obstacles
- Packer-protecting
- Fully fitted and ready to mount
- Free from environmentally harmful lubricants

Technical Information

Width	400 to 450mm
Nominal width	DN 150 – DN 600
Seal	EPDM approval in accordance with DIN-EN 681-1
Stainless steel sleeve	1.4404

TECHNICAL INFORMATION

Obduramus Circum-FLEX



Flexible Internal repair sleeve

Item number	Sleeve DN	Sleeve length	Total Ø rolled	Max radial offset	Max angular deviations	V4A stainless steel sleeve			EPDM seal			Designed for pipes:		Individual Sealing length
						Sheet thickness	Roll size	Max. expansion	Rubber thickness	Sealing lips height	Height incl. lips	Min internal Ø	Max internal Ø	
	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm
1-150 Flex	150	400	133	20	5	1,0	117	154	2,0	5,0	7,0	140	162	310
1-175 Flex	175	400	149	20	5	1,0	133	182	2,0	5,0	7,0	157	188	310
1-200 Flex	200	400	166	20	5	1,2	150	204	2,0	5,0	7,0	175	215	310
1-225 Flex	225	400	181	20	5	1,2	165	222	2,0	5,0	7,0	190	232	310
1-250 Flex	250	420	206	20	5	1,2	190	254	2,0	5,0	7,0	215	262	330
1-300 Flex	300	420	253	20	5	1,2	235	306	2,0	6,0	8,0	262	316	330
1-350/375 Flex	350/375	420	312	20	5	1,2	290	390	2,0	8,0	10,0	320	398	330
1-400 Flex	400	420	348	20	5	1,5	325	407	2,0	8,0	10,0	355	420	330
1-450 Flex	450	450	385	20	5	1,5	360	460	2,5	8,0	11,0	400	468	350
1-500 Flex	500	450	445	20	5	1,5	420	506	2,5	8,0	11,0	451	520	350
1-525 Flex	525	450	445	20	5	1,5	420	530	2,5	8,0	11,0	455	538	350
1-600 Flex	600	450	536	20	5	2,0	510	610	2,5	8,0	11,0	541	623	350

All sleeves both ends flared.

Incl. backing foil made of PE thickness 1mm

Dimensions within the scope of our production tolerances.



obduramus® **CIRCUM-MANHOLE**

Manhole connection sleeve

In the end, everything is sealed and flexible

- ⊙ Compression seal
- ↔ Pipe diameter DN 100 – DN 800
- ✱ Application:
Installation of Circum rehabilitation sleeves

Obduramus Circum-Manhole **Manhole connection seal**

The Circum-manhole connection sleeve uses mechanical compression to securely seal pipe connections at the manhole. By expanding the stainless steel sleeve, the EPDM seal is pressed firmly against the pipe and the manhole, creating a durable and watertight connection between the pipe and the manhole structure. Thanks to its specially designed EPDM geometry, the seal reliably bridges tolerances and gaps, ensuring long-term tightness even in uneven connection areas.

Advantages Circum-Manhole

- Patented external lock
- No protruding obstacles
- Packer-protecting
- Fully fitted and ready to mount
- Free from environmentally harmful lubricants

Technical Information

Width	200 to 220mm
Nominal width	DN 100 – DN 800
Seal	EPDM approval in accordance with DIN-EN 681-1
Stainless steel sleeve	1.4404

TECHNICAL INFORMATION

Obduramus Circum-MINI Manhole



Internal repair sleeve length 150mm

Item number	Sleeve DN	Sleeve length	Total Ø rolled	V4A stainless steel sleeve			EPDM seal			Designed for pipes:		Weight
				Sheet thickness	Roll size	Max. expansion	Rubber thickness	Sealing knob height	Height incl. knobs	Min. internal Ø	Max. internal Ø	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
A-P-150-EPDM-2S-150	150	150	129	1,0	117	154	2,0	5,0	7,0	140	162	0,8
A-P-200-EPDM-2S-150	200	150	164	1,2	150	204	2,0	5,0	7,0	175	215	1,2
A-P-250-EPDM-2S-150	250	150	202	1,2	190	254	2,0	5,0	7,0	215	262	1,6
A-P-300-EPDM-2S-150	300	150	251	1,2	235	306	2,0	6,0	8,0	262	316	1,9
A-P-400-EPDM-2S-150	400	150	345	1,5	325	407	2,0	8,0	10,0	355	420	2,9
A-P-500-EPDM-2S-150	500	150	442	1,5	420	506	2,5	8,0	11,0	451	520	3,5
A-P-600-EPDM-2S-150	600	150	531	2,0	510	610	2,5	8,0	11,0	541	623	5,5
A-P-700-EPDM-2S-150	700	150	621	2,0	600	714	2,5	8,0	11,0	631	727	6,5
A-P-800-EPDM-2S-150	800	150	721	2,0	700	810	2,5	8,0	11,0	731	823	7,3

Dimensions within the scope of our production tolerances..

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TECHNICAL INFORMATION

Obduramus Circum-MINI Manhole



Internal repair sleeve length 200mm

Item number	Sleeve DN	Sleeve length	Total Ø rolled	V4A stainless steel sleeve			EPDM seal			Designed for pipes:		
				Sheet thickness	Roll size	Max. expansion	Rubber thickness	Sealing lips height	Height incl. lips	Min. internal Ø	Max. internal Ø	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
A-P-150-EPDM-2S-200	150	200	129	1,0	117	154	2,0	5,0	7,0	140	162	1,1
A-P-175-EPDM-2S-200	175	200	147	1,0	133	182	2,0	5,0	7,0	157	188	1,3
A-P-200-EPDM-2S-200	200	200	164	1,2	150	204	2,0	5,0	7,0	175	215	1,6
4-P-225-EPDM-2S-200	225	200	180	1,2	165	222	2,0	5,0	7,0	190	232	1,8
A-P-250-EPDM-2S-200	250	200	202	1,2	190	254	2,0	5,0	7,0	215	262	2,1
A-P-300-EPDM-2S-200	300	200	251	1,2	235	306	2,0	6,0	8,0	262	316	2,5
A-P-400-EPDM-2S-200	400	200	345	1,5	325	407	2,0	8,0	10,0	355	420	3,9
A-P-500-EPDM-2S-200	500	200	442	1,5	420	506	2,5	8,0	11,0	451	520	4,7
A-P-600-EPDM-2S-200	600	200	531	2,0	510	610	2,5	8,0	11,0	541	623	7,3
A-P-700-EPDM-2S-200	700	200	621	2,0	600	714	2,5	8,0	11,0	631	727	8,7
A-P-800-EPDM-2S-200	800	200	721	2,0	700	810	2,5	8,0	11,0	731	823	9,8

Dimensions within the scope of our production tolerances..

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TECHNICAL INFORMATION

Obduramus Circum-MINI Manhole



Internal repair sleeve length 250mm

Item number	Sleeve DN	Sleeve length	Total Ø rolled	V4A stainless steel sleeve			EPDM seal			Designed for pipes:		Weight
				Sheet thickness	Roll size	Max. expansion	Rubber thickness	Sealing knob height	Height incl. knobs	Min. internal Ø	Max. internal Ø	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
A-P-150-EPDM-2S-250	150	250	129	1,0	117	154	2,0	5,0	7,0	140	162	1,3
A-P-200-EPDM-2S-250	200	250	164	1,2	150	204	2,0	5,0	7,0	175	215	2,0
A-P-250-EPDM-2S-250	250	250	202	1,2	190	254	2,0	5,0	7,0	215	262	2,6
A-P-300-EPDM-2S-250	300	250	251	1,2	235	306	2,0	6,0	8,0	262	316	3,1
A-P-400-EPDM-2S-250	400	250	345	1,5	325	407	2,0	8,0	10,0	355	420	4,8
A-P-500-EPDM-2S-250	500	250	442	1,5	420	506	2,5	8,0	11,0	451	520	5,9
A-P-600-EPDM-2S-250	600	250	531	2,0	510	610	2,5	8,0	11,0	541	623	9,2
A-P-700-EPDM-2S-250	700	250	621	2,0	600	714	2,5	8,0	11,0	631	727	10,9
A-P-800-EPDM-2S-250	800	250	721	2,0	700	810	2,5	8,0	11,0	731	823	12,2

Dimensions within the scope of our production tolerances..

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obduramus® VIP-WECO

**BIG diameters up to 3500mm
and more**

- ⊙ Compression seal
- ↔ Pipe diameter DN 600 – DN 3500
- ✱ Application:
Radial cracks, leaky pipe connections,
missing wall sections, abandoning un-
used laterals, replacing missing formwork
behind inliners and Liner end sleeve

Obduramus VIP-WECO Rehabilitation seal

During installation, stainless steel clamping rings and a seal made of EPDM, NBR or silicone are placed over the damaged areas of the pipe inner wall. A stainless steel sheet is then placed under the lock area and the sleeve is pressed on using a hydraulic hand pump. Finally, a piece of sheet metal is inserted into the lock.

The VIP-WECO can withstand an internal pressure of up to 20 bar and an external pressure of up to 2.0 bar.

The typical installation time is approximately 40 minutes per sleeve.

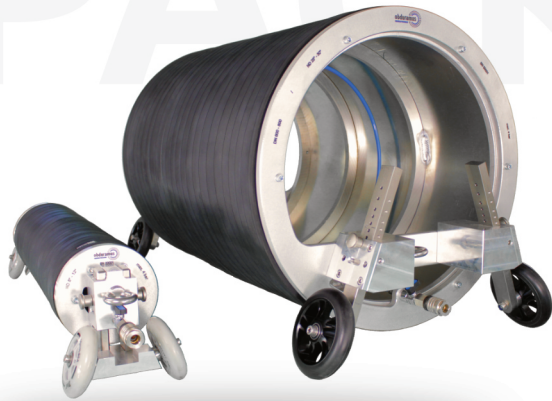
Technical Information

Width	280 to 480mm
Nominal width	DN 600 – DN 3500
Seal	EPDM approval in accordance with DIN-EN 681-1
Stainless steel sleeve	1.4404, 1.4301, 1.4571

Advantages VIP-WECO

- Reduced downtime thanks fast installation
- Cost-effective
- Can be used in almost all pipe materials
- Works with round and non circular profiles ellipse, oval, egg etc.
- Can be used horizontal and vertical
- Permanent elastic and flexible
- Free from environmentally harmful lubricants

CIRCUM PACKER



obduramus® CIRCUM-PACKER

Rehabilitation packer -
for every diameter the perfect packer

- ⊙ Rehabilitation packer
- ↔ For sleeves DN 150 – DN 800
5 sizes available
- ★ Application:
Installation of Circum rehabilitation
sleeves

Obduramus Circum-PACKER Installation - made easy

Circum-PACKER packers have been specially developed for the installation of Circum rehabilitation sleeves. By using high-quality materials and many years of manufacturing expertise, we deliver a robust and durable product that is perfectly tailored to the needs of the installer. The Circum-PACKER is equipped with an adjustable wheel set, which can be set to the required nominal width without tools. The Circum-PACKER is connected to your compressed air system via the attached compressed air quick coupling. Due to the uniform expansion over the entire length the sleeves are already completely pressed on, when the first pressure is applied. It's not necessary to move the packer under the locks.

Technical Information

Packer 1	DN 150 - 225
Packer 2	DN 200 - 300
Packer 3	DN 350 - 525
Packer 4	DN 500 - 600
Packer 5	DN 600 - 800

Advantages Circum-PACKER

- Specially developed for Circum sleeves
- The perfect packer for every nominal width
- Tool-free adjustable wheel set
- Quick compressed air coupling
- Quick exhaust valve
- No need to move the packer under the locks
- Installation with low contact pressure max.
4 bar / 14.5 psi

TECHNICAL INFORMATION

Obduramus Circum- PACKER

For Circum-MINI sleeves

Item Number	Name	Total length Length rubber	Ø Packer	Weight	Min. DN Max DN	Max. operating pressure	Effective-surface	Type Circum MINI	Length sleeve
A-4-P1-S	Packer 1: 150/225 With adjustable Wheel set	635 mm	110 mm	8kg	150 mm	4,0 bar	300 mm - DN 225	DN 150 DN 175 DN 200 DN 225	400 mm
		420 mm			225 mm				
A-4-P2-S	Packer 2: 200/300 With adjustable Wheel set	810 mm	140 mm	10 kg	200 mm	4,0 bar	300 mm - DN 300	DN 200 DN 225 DN 300	420 mm
		510 mm			300 mm				
A-4-P3-S	Packer 3: 350/525 With adjustable Wheel set	920 mm	280 mm	27 kg	350 mm	4,0 bar	350 mm - DN 525	DN 350 DN 400 Dn 450 DN 500 DN 525	450 mm
		610 mm			525 mm				
A-4-P4-S	Packer 4: 500/600 With adjustable Wheel set	920 mm	385 mm	35 kg	500 mm	4,0 bar	350 mm - i DN 600	DN 500 DN 525 DN 600	450 mm
		630 mm			600 mm				
A-4-P5-S	Packer 5: 600/800 With adjustable Wheel set	950 mm	465 mm	45 kg	600 mm	4,0 bar	350 mm - DN 800	DN 600 DN 700 DN 750 DN 800	450 mm
		650 mm			800 mm				

Dimensions within the scope of our production tolerance

TECHNICAL INFORMATION

Obduramus LEM PACKER

For Circum-LEM sleeves

Item- Number	Name	Size Usage Range		Ø Packer	Length	Max pressure	Safety. factor	Weight	Thread size of inflation valve	Quick coupling	Eye bolt M-thread
		min DN	max DN								
A-5- BLEM1	LEM Packer 1: OBDURAMUS 100/175 mm	150	175	86 mm	350 mm	4,5 bar	1,3x	1,5 kg	1/8"	Lüdecke 1/4"	1xM6
A-5- BLEM2	LEM Packer 2: OBDURAMUS 200/250 mm	200	250	145 mm	480 mm	4,5 bar	1,3x	6,0 kg	1/4"	Lüdecke 1/4"	2xM12
A-5- BLEM3	LEM Packer 3: OBDURAMUS 300/400mm	300	400	195 mm	560 mm	3,0 bar	1,3x	11,9 kg	1/4"	Lüdecke 1/4"	2xM12
5- BLEM4	LEM Packer 4: OBDURAMUS 500/700 mm	500	700	370 mm	1040 mm	2,5 bar	1,3x	22,0 kg	1/2"	Lüdecke 1/2"	2xM12

All LEM-Packers are equipped with an additional safety chain which connects the flanges on both ends of the packer.

All LEM-Packers are equipped with alu flanges. Eyebolts are in stainless steel (SS316).

The quick coupling is standard not in stainless steel. If requested, the quick coupling can be in SS316. The extra cost for this is 75 € per coupling.

obduramus® **LINER-CUT-BACK- SET**

**Cut-back-set for Inliner –
Clean affair with strong performance**



- ⊙ Cut-Back-Set
- ↔ For Inliner-Thickness up to 15 mm
- ✱ Application:
Powerful long-neck and angle grinder including water nebulizer for precise and low-dust cutting back of the inliner.

Obduramus LINER-CUT-BACK-SET

Clean solution with strong performance

The Obduramus LINER-CUT-BACK-SET contains one powerful long-neck and one powerful angle grinder including numerous accessories. Safely stored in the functional case, everything is ready to hand. The included water nebulizer reliably binds accumulating dust. Spacer discs allow millimeter-precise cutting back without damaging the pipe.

Advantages of LINER-CUT-BACK-SET

- Powerful motors with 1 ps/hp
- Water nebulizer for dust binding
- Numerous accessories
- Functional stored in case

Technical Information

Power	1 ps/hp
Air consumption	0,136 m³/min bzw. 0,540 m³/min
Release	Lever
Length	~ 390 mm

Obduramus LINER-CUT-BACK-SET

For cutting back Liner

Long-neck grinder

Item number	Power	Weight	Air consumption	Sound level	Length	Free speed	max operating pressure	Collect	Vibration	Release
LHS LEM	1 ps/hp	1,73 kg	0,136 m ³ / min	89 dB (A)	394 mm	14600 r/min	6,3 bar / 90 psi	6 mm	4,0 m/s ²	Lever

Angle grinder

Item number	Power	Weight	Air consumption	Sound level	Length	Free speed	max operating pressure	Collect	Vibration	Release
WS LEM	1 ps/hp	1,70 kg	0,540 m ³ / min	88,6 dB (A)	390 mm	13000 r/min	6,3 bar / 90 psi	6 mm	2,2 m/s ²	Lever