



Pipe stoppers ■ Testing sets for house connections ■ Rehabilitation packers
Lifting bags ■ Leak sealing bags ■ Rubbermoulded parts





The company of VAPO spol. s r.o. was established in 1993 and is based in Červený Kostelec, Czech Republic. The company specializes in two fields: rubberized-fabric products and moulded mechanical-rubber parts.

Among the rubberized-fabric products rank sealing bags for pipings, lifting bags, sealing bags for fissures, sealing wedges and pipe rehabilitation packers. Further rubberized-fabric products are made according to specific requirements of our customers.

There is a wide range of mechanical-rubber parts manufactured by our company. The parts are produced on classic electric-heated moulding machines.

We are able to produce even in small series from one up to several thousand pieces. We process all kinds of elastomers including FPM, ECO and VMQ. Our main range of products includes various packing elements, bushings, stops, collars, cuffs, diaphragms (even with textile), springs, etc.



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The pipe stoppers **U**, **PU** and **PU-F** are effective tools for the quick and reliable sealing or closing of drainage systems, pipelines, sewers and gullies. They are mainly used during repair and maintenance work, accidents and for the leak test with water or air according to DIN EN 1610 of new or save sewers and pipe sections. Therefore they are highly valued in the water system organizations, construction industry, civil engineering and rescue and fire brigades.

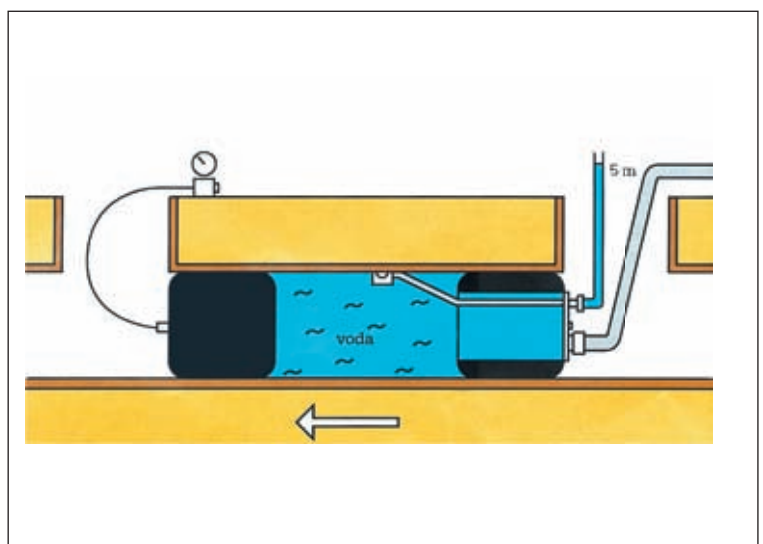
The pipe stoppers are made of quality rubber reinforced with fabric. They withstand weather, temperature from -30 °C to 80 °C, use and waste water and they are middle resistant of chemicals.

The basic series consists of 26 standard types in sizes to fit 50 to 1600 mm pipe diameters. All pipe stoppers are tested by 1, 3 multiple of operating pressure and they withstand a back pressure 1 bar or 0,5 bar. There is a short operating instruction on every pipe stopper.



Pipe Stoppers U

Type		U 4/7	U 5/10	U 7/15	U 10/20	U 15/30	U 20/40	U 20/50	U 30/60	U 50/100	U 60/120	U 100/160
Part - No.		1127	1101	1102	1103	1107	1104	1128	1105	1106	1108	1109
Pipe diameter	mm	40–70	50–100	70–150	100–200	150–300	200–400	200–500	300–600	500–1000	600–1200	1000–1600
Operating pressure	bar	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	1,5	1,0
Test pressure	bar	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	2,0	1,3
Back pressure	bar	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	0,5	0,5
Diameter	mm	38	47	67	96	135	190	190	290	450	560	850
Cylinder length	mm	160	340	330	510	550	580	740	730	1050	1290	2000
Total length	mm	210	390	380	570	610	640	800	790	1130	1360	2070
Weight	kg	0,3	0,5	0,6	1,5	2,5	3,9	4,5	7,6	22	35	99



TEST PIPE STOPPERS



Test Pipe Stoppers PU

Type		PU 7/15	PU 10/20	PU 20/50	PU 50/80	PU 50/120
Part - No.		1201	1202	1203	1204	1205
Pipe diameter	mm	70–150	100–200	200–500	500–800	500–1200
Operating pressure	bar	1,5	1,5	1,5	1,5	1,5
Test pressure	bar	2,0	2,0	2,0	2,0	2,0
Back pressure	bar	0,5	0,5	0,5	0,5	0,5
Diameter	mm	67	96	190	450	450
Cylinder length	mm	330	510	580	680	970
Total length	mm	450	610	690	720	1000
Weight	kg	2,1	5,2	12,5	38	48
Bypass		1"	1"	1x1" 1x2"	2x1" 1x2,5"	2x1" 1x2,5"

Flexible Test Pipe Stoppers PU–F

Type		PU 7/15 F	PU 10/20 F	PU 15/30 F	PU 20/40 F	PU 20/50 F	PU 30/60 FL	PU 30/60 F	PU 50/100 F	PU 60/120 F	PU 100/160 F
Part - No.		1216	1214	1215	1213	1235	1218	1210	1211	1212	1217
Pipe diameter	mm	70–150	100–200	150–300	200–400	200–500	300–600	300–600	500–1000	600–1200	1000–1600
Operating pressure	bar	2,5	2,5	2,5	2,5	2,5	2,5	1,5	2,5	1,5	1,0
Test pressure	bar	3,3	3,3	3,3	3,3	3,3	3,3	2,0	3,3	2,0	1,3
Back pressure	bar	1,0	1,0	1,0	1,0	1,0	1,0	0,5	1,0	0,5	0,5
Diameter	mm	67	96	135	190	190	290	290	450	560	850
Cylinder length	mm	330	510	550	580	740	730	730	1050	1290	2000
Total length	mm	440	570	640	670	830	820	820	1140	1380	2090
Weight	kg	1,6	2,4	4	6,6	7	13	13,6	39	59	110
Bypass		1"	1"	1"	2"	2"	2"	2x2"	2x2"	2x2"	2x2"



Maximum back pressure measured in dry iron pipe – bar

Type	Pipe diameter in mm																
	40	50	70	75	100	150	200	250	300	400	500	600	800	1000	1200	1400	1600
U 4/7 – 2,5 bar	1,6	1,5	1,2														
U 5/10 – 2,5 bar		1,9	1,6	1,4	1,1												
U 7/15 – 2,5 bar				2,0	1,5	1,2											
U 10/20 – 2,5 bar					2,2	1,8	1,4										
U 15/30 – 2,5 bar						2,4	2,1	1,5	1,3								
U 20/40 – 2,5 bar							2,3	2,1	1,9	1,5							
U 20/50 – 2,5 bar							2,1	1,8	1,7	1,5	1,4						
U 30/60 – 2,5 bar									2,2	1,9	1,6	1,3					
U 50/100 – 2,5 bar											1,6	1,5	1,2	1,0			
U 60/120 – 1,5 bar												0,9	0,7	0,6	0,5		
U 100/160 – 1 bar														0,8	0,7	0,6	0,5
PU 7/15 F – 2,5 bar				2,0	1,5	1,2											
PU 10/20 F – 2,5 bar					2,2	1,8	1,4										
PU 15/30 F – 2,5 bar						2,4	2,1	1,5	1,3								
PU 20/40 F – 2,5 bar							2,3	2,1	1,9	1,5							
PU 20/50 F – 2,5 bar							2,1	1,8	1,7	1,5	1,4						
PU 30/60 FL – 2,5 bar									2,2	1,9	1,6	1,3					
PU 30/60 F – 1,5 bar									1,0	0,8	0,7	0,6					
PU 50/100 F – 2,5 bar											1,6	1,5	1,2	1,0			
PU 60/120 F – 1,5 bar												0,9	0,7	0,6	0,5		
PU 100/160 F – 1 bar														0,8	0,7	0,6	0,5



SHORT PIPE STOPPERS

Due to their length, these pipe stoppers are especially suitable for sealing of house connections but they are often used for leak tests. The short pipe stoppers are made of top-quality rubber and their metal parts are made of stainless materials.

The diameter of the standard product line ranges from 50 to 300 millimetres.



Short pipe stoppers

Type		UK 5/7	UK 7/10	UK 10	UK 10/15	UK 15	UK 15/20	UK 20	UK 20/25	UK 25/30
Part - No.		1404	1411	1401	1406	1402	1409	1403	1410	1407
Pipe diameter	mm	50–70	70–100	100	100–150	150	150–200	200	200–250	250–300
Operating pressure	bar	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Test pressure	bar	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Diameter	mm	46	67	90	90	140	140	180	180	240
Cylinder length	mm	125	130	160	160	220	220	260	260	290
Total length	mm	180	185	220	220	280	280	320	320	350
Weight	kg	0,3	0,4	0,6	0,7	1,2	1,3	2,3	2,4	4,2



Short Bypass Pipe Stoppers PUK

Type		PUK 5/7	PUK 7/10	PUK 10/15	PUK 15/20	PUK 20/25	PUK 25/30
Part - No.		1415	1405	1408	1412	1413	1414
Pipe diameter	mm	50–70	70–100	100–150	150–200	200–250	250–300
Operating pressure	bar	2,5	2,5	2,5	2,5	2,5	2,5
Test pressure	bar	3,3	3,3	3,3	3,3	3,3	3,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5
Diameter	mm	46	67	90	140	180	240
Cylinder length	mm	125	130	160	220	260	290
Total length	mm	180	185	220	280	320	350
Weight	kg	0,3	0,4	0,8	2	3,6	5,9
Bypass		1/4"	1/2"	1/2"	1"	2"	2"

BYPASS PIPE STOPPERS



The use of these pipe stoppers is advantageous if a higher rate of flow is required. The water passes through the stainless-steel centre part. The rubberized-fabric cover is put on this part and is exchangeable in case of defect. The diameter of the standard product line ranges from 100 to 1200 millimetres.

Bypass Pipe Stoppers PU–G

Type		PU 10 2 G	PU 10/15 2 G	PU 15 2 G	PU 15/20 2 G	PU 10/20 2 G	PU 20/50 4 G	PU 50/80 12 G	PU 50/120 12 G
Part - No.		1220	1221	1222	1223	1206	1207	1209	1219
Pipe diameter	mm	100	100–150	150	150–200	100–200	200–500	500–800	500–1200
Operating pressure	bar	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
Test pressure	bar	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Diameter	mm	90	90	115	115	90	185	450	450
Cylinder length	mm	230	290	230	290	550	620	680	970
Total length	mm	320	380	320	380	650	700	830	1120
Weight	kg	2,3	2,9	3	3,5	4,5	9,5	38	48
Bypass		2"	2"	2"	2"	2"	4"	12"	12"

HIGH-PRESSURE PIPE STOPPERS

If the standard sealing pipe stoppers cannot be used due to high back pressure, these high-pressure pipe stoppers are recommendable. Higher operational pressure is ensured by the special Kevlar reinforcement used in all the stoppers. The diameter of the standard product line ranges from 50 to 600 millimetres.

High-Pressure Pipe Stoppers UU – 6 bar

Type		UU 5/7	UU 7/10	UU 10/15	UU 15/20	UU 20/30	UU 30/40	UU 50/60
Part - No.		1119	1113	1114	1115	1116	1117	1118
Pipe diameter	mm	50–70	70–100	100–150	150–200	200–300	300–400	500–600
Operating pressure	bar	6	6	6	6	6	6	6
Test pressure	bar	7,8	7,8	7,8	7,8	7,8	7,8	7,8
Back pressure	bar	3	3	3	3	3	3	3
Diameter	mm	47	67	96	135	190	290	450
Cylinder length	mm	340	330	510	550	580	730	1050
Total length	mm	390	380	570	610	640	790	1130
Weight	kg	0,5	0,6	1,5	2,5	4,9	8,5	25

High-Pressure Pipe Stoppers UU – 12 bar

Type		UU 7/9	UU 10/13	UU 14/17	UU 20/25	UU 30/35
Part - No.		1129	1130	1131	1132	1133
Pipe diameter	mm	70–90	100–130	140–170	200–250	300–350
Operating pressure	bar	12	12	12	12	12
Test pressure	bar	16	16	16	16	16
Back pressure	bar	10	10	10	10	10
Diameter	mm	67	96	135	190	290
Cylinder length	mm	330	510	550	580	730
Total length	mm	380	570	610	640	790
Weight	kg	0,6	1,5	2,5	4,9	8,5



EGG-SHAPED PIPE STOPPERS

These pipe stoppers are used for sealing egg-shaped sections and they are also suitable for the use in leak tests with water or air. These stoppers are manufactured in two forms. The forms that copy the shape of the pipe and the cushion-shaped forms. The former ones

are commonly used for smaller sections while the latter are suitable for larger sections because they can be installed to sewerages through the standard gullies. The standard product line consists of 13 models each of different size.



Egg-shaped Pipe Stoppers UV, UVP

Type		UV 30/45 40/60	UV 50/75 60/90	UV 70/105 90/135	UVP 50/75 60/90	UVP 70/105 90/135
Part - No.		1601	1602	1603	1604	1605
Sealing cross - section	mm	300–400 450–600	500–600 750–900	700–900 1050–1350	500–600 750–900	700–900 1050–1350
Operating pressure	bar	1	1	1	1	1
Test pressure	bar	1,3	1,3	1,3	1,3	1,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5
Dimensions (w x h x l)	mm	270 x 380 x 800	470 x 690 x 1060	650 x 960 x 1360	700 x 2100	1000 x 2500
Weight	kg	10	35	52	18	26

Egg-shaped Test Pipe Stoppers PUV, PUV-F and PUVF

Type		PUV 30/45 40/60	PUV 50/75 60/90	PUV 70/105 90/135	PUV 30/45 40/60 F	PUV 50/75 60/90 F	PUV 70/105 90/135 F	PUVP 50/75 60/90	PUVP 70/105 90/135
Part - No.		1303	1301	1302	1304	1305	1306	1307	1308
Sealing cross - section	mm	300–400 450–600	500–600 750–900	700–900 1050–1350	300–400 450–600	500–600 750–900	700–900 1050–1350	500–600 750–900	700–900 1050–1350
Operating pressure	bar	1	1	1	1	1	1	1	1
Test pressure	bar	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Dimensions (w x h x l)	mm	280 x 410 x 750	470 x 690 x 880	650 x 960 x 1060	270 x 380 x 800	470 x 690 x 1060	650 x 960 x 1360	700 x 2100	1000 x 2500
Weight	kg	36	48	65	12	38	56	21	30
Bypass		1x1" 1x2"	1x1" 1x2,5"	1x1" 1x2,5"	1x1" 1x2"	2x2"	2x2"	2"	2"

PILLOW PIPE STOPPERS



These pipe stoppers are mainly used in various sewers and storm sewers. Their advantage is in their ability to be inserted into the sewer through the standard gullies. The special Kevlar reinforcement enables us to manufacture these stoppers in large diameters. The standard product line ranges from 1000 to 2200 millimetres.

Pillow Pipe Stoppers UP, PUP

Type		UP 100/140	UP 140/180	UP 180/220	PUP 100/140	PUP 140/180	PUP 180/220
Part - No.		1110	1111	1112	1225	1226	1227
Pipe diameter	mm	1000–1400	1400–1800	1800–2200	1000–1400	1400–1800	1800–2200
Operating pressure	bar	0,7	0,6	0,5	0,7	0,6	0,5
Test pressure	bar	1,05	0,8	0,65	1,05	0,8	0,65
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5
Width of pillow	mm	1450	2050	2650	1450	2050	2650
Length of pillow	mm	2300	3200	3900	2300	3200	3900
Weight	kg	40	73	115	43	77	120
Bypass					2"	2"	2"

TEST STOPPERS FOR GULLIES



These short, light and easy-to-handle stoppers are used for leak tests of standard gullies using water or air as the testing medium according to DIN EN 1610. The accessories are identical with common pipe stoppers. If required, we are able to manufacture the stopper of a different shape or size. They are standard and light – L.

Test Stoppers for Gullies US

Type		US 60/65	US 60/65 L	US 80/85 L	US 100/105 L
Part - No.		9028	9038	9116	9117
Pipe diameter	mm	600–650	600–650	800–850	1000–1050
Operating pressure	bar	1,5	1,0	1,0	1,0
Diameter	mm	560	580	780	980
Cylinder length	mm	300	200	200	200
Weight	kg	19	4,9	7,2	10
Bypass		2"	2"	2"	2"

SKITTLE PIPE STOPPERS



These pipe stoppers are used for sealing of pipelines with a restricted inlet area. Owing to their shape and flexibility they enable easy installation. Leak tests of house connections with air or water with these pipe stoppers are very easy, too. The standard product line cover a range from 50 to 200 millimetres.

Skittle Pipe Stoppers UE

Type		UE 5/9	UE 8/15	UE 12/20
Part - No.		1705	1701	1702
Pipe diameter	mm	50–90	80–150	120–200
Operating pressure	bar	2,5	2,0	1,5
Test pressure	bar	3,5	2,6	2,0
Back pressure	bar	1,0	1,0	1,0
Diameter	mm	48	78	116
Length	mm	300	380	520
Total length	mm	350	430	570
Opening for insertion	mm	35	40	50
Weight	kg	0,35	0,48	0,95

Test Skittle Pipe Stoppers PUE

Type		PUE 5/9	PUE 8/15	PUE 12/20
Part - No.		1706	1703	1704
Pipe diameter	mm	50–90	80–150	120–200
Operating pressure	bar	2,5	2,0	1,5
Test pressure	bar	3,5	2,6	2,0
Back pressure	bar	1,0	1,0	1,0
Diameter	mm	48	78	116
Length	mm	300	380	520
Total length	mm	520	600	770
Opening for insertion	mm	35	40	50
Weight	kg	0,55	0,68	1,17
Bypass	mm	4	4	6

HALFROUND PIPE STOPPERS

These pipe stoppers are due to their length suitable for sealing of house connections and domestic pipe systems. Owing to their shape, they are easy to install in pipelines with bends. Because they are short the air

requirement is low and easily ensured by foot or hand pump. The standard product line covers a range from 50 to 200 millimetres.



Halfround Pipe Stoppers UR

Type		UR 5/7	UR 7/10	UR 10/15	UR 15/20
Part - No.		9109	9110	9042	9094
Pipe diameter	mm	50–70	70–100	100–150	150–200
Operating pressure	bar	2,5	2,5	2,5	2,5
Test pressure	bar	3,3	3,3	3,3	3,3
Back pressure	bar	0,5	0,5	0,5	0,5
Diameter	mm	46	67	90	140
Cylinder length	mm	95	100	120	170
Total length	mm	140	155	180	230
Weight	kg	0,3	0,4	0,5	1

CONE PIPE STOPPERS

Cone pipe stoppers have in comparison with classical pipe stoppers different construction, but their use is the same. They are mainly used during repair and maintenance work, accidents and the leak tests of pipe-lines. This construction allow their use for all profiles, also egg-shaped, rectangular and many any others.

These pipe stoppers are made of quality rubber. Therefore they have good chemical resistance, high age-resistance, low weight, and they are simply reparable. The diameter of standard product line ranges from 150 to 2200 mm.



Cone Pipe Stoppers ULK

Type		ULK 15/40	ULK 25/60	ULK 40/100	ULK 50/120	ULK 60/140	ULK 70/160	ULK 120/220
Part - No.		1125	1120	1121	1126	1122	1123	1124
Pipe diameter	mm	150–400	250–600	400–1000	500–1200	600–1400	700–1600	1200–2200
Operating pressure	bar	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Test pressure	bar	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Weight	kg	2	4,1	11	15	26	41	89

Cone Test Pipe Stoppers PULK

Type		PULK 15/40	PULK 25/60	PULK 40/100	PULK 50/120	PULK 60/140	PULK 70/160	PULK 120/220
Part - No.		1233	1228	1229	1234	1230	1231	1232
Pipe diameter	mm	150–400	250–600	400–1000	500–1200	600–1400	700–1600	1200–2200
Operating pressure	bar	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Test pressure	bar	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Back pressure	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Weight	kg	3,7	10,5	21	26	36	52	102
Bypass		1"	2"	2,5"	2,5"	2,5"	2,5"	2,5"



ACCESSORIES

Part-No. Description

2001	Inflation hose with quick couplings, 3 m
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2002	Inflation hose with nipples, 5 m
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2003	Inflation hose with nipples, 10 m
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2083	Safety and control gauge 0,7 bar – V 0,7
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2079	Safety and control gauge 1 bar – V 1
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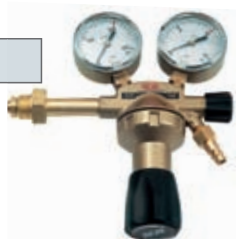
2039	Safety and control gauge 1,5 bar – V 1,5
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2080	Safety and control gauge 2,5 bar – V 2,5
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2005	Pressure reducer 200/8 bar
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2066	Pressure reducer 300/8 bar
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50152	Cylinder 7 l
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50151	Cylinder 5 l
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2036	Adapter for tireventil
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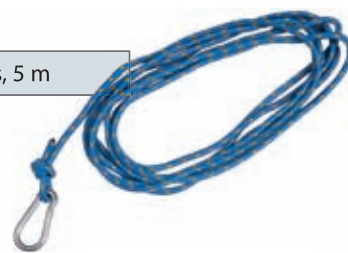


2047	Quick coupling for tireventil
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Part-No. Description

2046	Rope with snap hooks, 5 m
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2065	Adapter quick coupling – tire ventil
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2010	Venting and meassuring hose, 6 m for PU 10/20
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2009	Venting and meassuring hose, 6 m for PU 20/50, PU 50/80, PU 50/120
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2060	Venting and meassuring hose, 6 m for PU 30/60 F, PU 50/100 F
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2011	Stopcock with Storz D couplings
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2012	Stopcock with Storz C couplings
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2013	Stopcock with Storz B couplings
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Part-No. Description

2058	Manometer for the leak test with air 0–250 mbar with hose, 5 m
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2086	Digital manometer for the leak test with air with hose, 5 m
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2032	Adapter for the leak test with air N – D 25
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2035	Adapter for the leak test with air N – C 52
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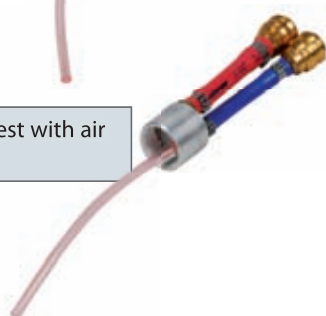
2073	Adapter for the leak test with air N – B 75
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2064	Adapter for the leak test with air N – PUK 1/2"
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2069	Adapter for the leak test with air N – PUK 1"
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Part-No. Description

50435	Hand pump
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50103	Foot pump
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2023	Reduction Storz D 25/GEKA-coupling
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2061	Reduction Storz C 52/GEKA-coupling
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2070	Reduction Storz B 75/GEKA-coupling
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2025	Reduction GEKA/quick coupling
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2088	Adapter for the leak test with water NV – C 52
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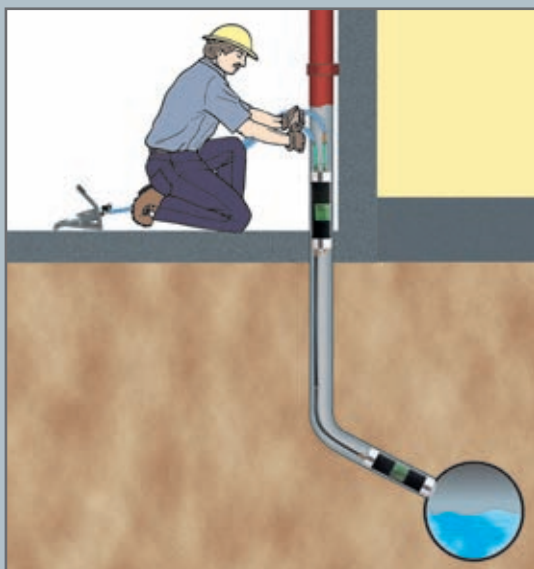
2087	Adapter for the leak test with water NV – B 75
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TESTING SET FOR HOUSE CONNECTIONS DS 8/15



This set is used for DN 80 to 150 mm pipe leak tests using air as the testing medium. They can be used both in straight sections of the pipe and in section with round or sharp bends or knee pieces up to 90 degrees. The set consists of a digital pressure gauge and all the necessary fittings and accessories for carrying out leak tests according to DIN EN 1610.



Accessories and spare parts:

Part-No. Description

1502	Test pipe stopper HPU 8/15	1 pcs
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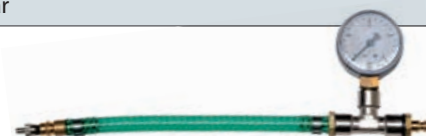
1505	Test pipe stopper HPU 8/15 W	1 pcs
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1501	Pipe stopper HU 8/15	1 pcs
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2089	Filling armature with manometer 0-4 bar	1 pcs
------	--	-------



2090	Test armature for the leak test with air	1 pcs
------	--	-------



2091	Digital manometer with hose, 1 m	1 pcs
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2107	Sliding and filling rod, 2 m	4 pcs
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2108	Sliding and filling rod, 1 m	1 pcs
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2109	Sliding and filling rod, 0,5 m	2 pcs
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2095	Rope with snap hooks, 10 m	1 pcs
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50243	Portable case	1 pcs
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2106	Redukce MINI/V – 7,2/R	1 pcs
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2085	Redukce MINI/R – 7,2/V	1 pcs
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TESTING SET FOR HOUSE CONNECTION DS 10/20

Accessories and spare parts:

Part-No. Description

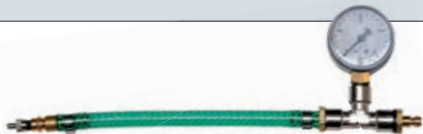
1504	Test pipe stopper HPU 10/20	1 pcs
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1503	Pipe stopper HU 10/20	1 pcs
------	-----------------------	-------



2089	Filling armature with manometer 0–4 bar	1 pcs
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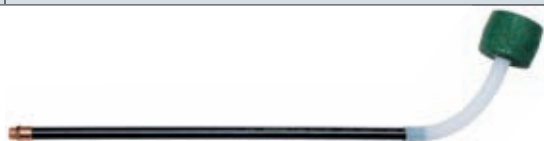
2101	Adapter for the leak test with air	1 pcs
------	------------------------------------	-------



2098	Stopcock G1" with GEKA couplings	1 pcs
------	----------------------------------	-------



2099	Float	1 pcs
------	-------	-------



2100	Safety armature 300 mbar for the leak test with air	1 pcs
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2107	Sliding and filling rod, 2 m	4 pcs
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2108	Sliding and filling rod, 1 m	1 pcs
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2109	Sliding and filling rod, 0,5 m	2 pcs
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2105	Adapter for digital manometer	1 pcs
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This set is used for DN 100 to 200 mm pipe leak tests using air or water as the testing medium. They can be used both in straight sections of the pipe and in section with round or sharp bends. The set consists all the necessary fittings and accessories for carrying out leak tests according to DIN EN 1610.

2097	Venting and measuring hose with GEKA couplings, 5 m	1 pcs
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2095	Rope with snap hooks, 10 m	1 pcs
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2106	Reduction MINI/V – 7,2/R	1 pcs
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2085	Reduction MINI/R – 7,2/V	1 pcs
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50244	Portable case	1 pcs
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REHABILITATION PACKERS

Rehabilitation packers **P**, **FP**, **DP** and **HP** are used for repairing locally-damaged sewerages or other pipelines or for their successive maintenance. The packers can be applied to fissures, leaky joints, misalignments, root downgrowth and corroded sections. Sewerages made of all kinds of materials in the diameter ranging from 50 mm to 1200 mm can be maintained or repaired in this way.

These packers can be divided into several groups: short packers, flexible packers, lateral packers and long packers. They are made of a special rubber guaranteeing the necessary flexibility, strength and resistance. All their metal parts are made of corrosion-resistant materials.

The maintenance work consist of placing the packer and its insertion piece (a fabric of glass fibres impregnated with a special artificial resin) into the piping on the damaged point. This procedure can be monitored by using a closed-loop television while the packer is not under pressure. Then the packer is inflated to the working pressure and the glass-fibre-fabric insertion piece is pressed against the wall of the pipe. As the overflowing resin penetrates the fissures and cavities, the damaged spot and the glass-fibre-fabric insertion piece become firmly connected. After the resin gets hardened, its static load capacity is supported with a short tube with gradual reductions. Then the packer is deflated and pulled out of the piping.

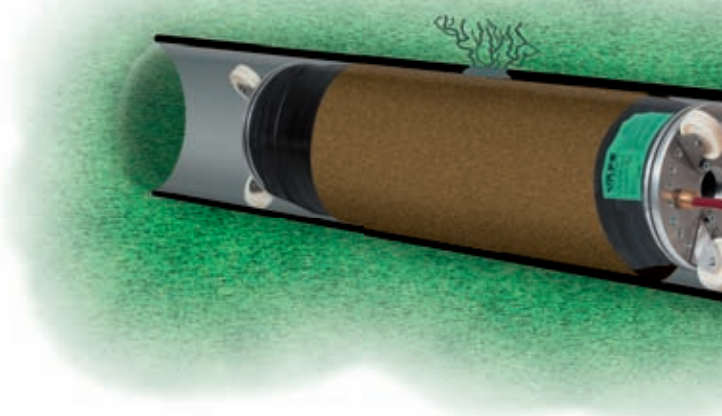
SHORT PACKERS



Short packers are provided with an exchangeable two-layer rubberized-fabric sleeve mounted on a metal central part. Moreover, the packers are provided with wheels at both its ends at an angle of 120°. The wheels ensure the stability of the packer in the pipeline. Its design allows water to flow freely during the repair. The length of the effective surface is 600 mm which is sufficient for repairing a joint or a short damaged spot.

Short Packers P

Type	Part - No.	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Weight kg	Operating pressure bar
P 15/20	7101	150–200	100	800	980	7,0	2,0
P 25/30	7102	250–300	190	800	1030	17,0	2,0
P 30/35	7107	300–350	235	800	1030	21,0	1,5
P 35/40	7103	350–400	290	800	1030	25,0	1,5
P 45/50	7104	450–500	380	900	1130	38,0	1,5
P 60/70	7105	600–700	480	1000	1230	52,0	1,0

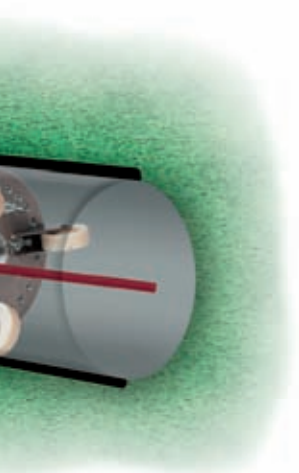




Flexible Packers FP

Flexible packers are provided with a single-layer rubberized-fabric sleeve with metal faces with wheels at both its ends at an angle of 120°. The wheels ensure the stability of the packer in the pipeline. Its design allows water to flow freely during the repair. The effective surface ranges from 600 to 3500 mm. Their flexibility allows easy installation in the pipeline.

Type	Part – No.	Pipe diameter	Rubber body diameter	Rubber body length	Total length	Weight	Operating pressure	Bypass
		mm	mm	mm	mm	kg	bar	
FP 10/15–1	7209	100–150	65	1000	1120	1,9	2,5	–
FP 10/15–1,5	7211	100–150	65	1500	1620	2,3	2,5	–
FP 10/15–2	7210	100–150	65	2000	2120	2,6	2,5	–
FP 10/15–2,5	7212	100–150	65	2500	2620	2,9	2,5	–
FP 10/15–3	7213	100–150	65	3000	3120	3,3	2,5	–
FP 10/15–3,5	7214	100–150	65	3500	3620	3,7	2,5	–
FP 10/15–4	7215	100–150	65	4000	4120	4,0	2,5	–
FP 15/25–1	7201	150–250	105	1000	1180	5,0	2,0	2"
FP 15/25–1,5	7216	150–250	105	1500	1680	6,3	2,0	2"
FP 15/25–2	7202	150–250	105	2000	2180	7,5	2,0	2"
FP 15/25–2,5	7217	150–250	105	2500	2680	8,8	2,0	2"
FP 15/25–3	7218	150–250	105	3000	3180	10,0	2,0	2"
FP 15/25–3,5	7219	150–250	105	3500	3680	11,3	2,0	2"
FP 15/25–4	7220	150–250	105	4000	4180	12,5	2,0	2"
FP 20/30–1	7236	200–300	144	1100	1340	10,0	1,5	2"
FP 20/30–1,5	7237	200–300	144	1600	1840	11,1	1,5	2"
FP 20/30–2	7238	200–300	144	2000	2240	12,2	1,5	2"
FP 20/30–2,5	7239	200–300	144	2600	2840	13,3	1,5	2"
FP 20/30–3	7240	200–300	144	3000	3240	14,4	1,5	2"
FP 20/30–3,5	7241	200–300	144	3600	3840	15,5	1,5	2"
FP 20/30–4	7242	200–300	144	4000	4240	16,6	1,5	2"
FP 30/40–1	7203	300–400	235	1100	1340	19	1,5	2"
FP 30/40–1,5	7221	300–400	235	1600	1840	21	1,5	2"
FP 30/40–2	7204	300–400	235	2000	2240	23	1,5	2"
FP 30/40–2,5	7222	300–400	235	2600	2840	26	1,5	2"
FP 30/40–3	7223	300–400	235	3000	3240	28	1,5	2"
FP 30/40–3,5	7224	300–400	235	3600	3840	31	1,5	2"
FP 30/40–4	7225	300–400	235	4000	4240	33	1,5	2"
FP 45/60–1	7205	450–600	365	1200	1440	36	1,0	4"
FP 45/60–1,5	7226	450–600	365	1700	1940	40	1,0	4"
FP 45/60–2	7206	450–600	365	2000	2240	42	1,0	4"
FP 45/60–2,5	7227	450–600	365	2700	2940	46	1,0	4"
FP 45/60–3	7228	450–600	365	3000	3240	49	1,0	4"
FP 60/80–1	7207	600–800	365	1400	1640	37,5	1,0	4"
FP 60/80–1,5	7229	600–800	365	1700	1940	41,5	1,0	4"
FP 60/80–2	7208	600–800	365	2000	2240	43,5	1,0	4"
FP 60/80–2,5	7230	600–800	365	2700	2940	47,5	1,0	4"
FP 60/80–3	7231	600–800	365	3000	3240	50,5	1,0	4"
FP 80/100–1,5	7235	800–1000	550	1800	2040	82	1,0	4"
FP 100/120–2	7534	1000–1200	550	2200	2440	88	1,0	4"



LONG PACKERS

Long Packers DP



Long packers consist of a rubberized-fabric tube ended with aluminium faces at both its ends. The faces are provided with quick-couplers to facilitate inflation of the bag and with handling eyes. These packers are not provided with wheels and do not allow the medium to flow during the repair. The effective surface ranges from 1100 to 3600 mm.

Type	Part - No.	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Weight kg	Operating pressure bar
DP 20/30-1,5	7403	200-300	150	1500	1600	4,8	1,5
DP 20/30-2	7404	200-300	150	2000	2100	5,9	1,5
DP 20/30-2,5	7402	200-300	150	2500	2600	7,0	1,5
DP 20/30-3	7405	200-300	150	3000	3100	8,1	1,5
DP 20/30-3,5	7417	200-300	150	3500	3600	9,1	1,5
DP 20/30-4	7406	200-300	150	4000	4100	10,2	1,5
DP 30/40-1,5	7418	300-400	240	1500	1600	8,5	1,5
DP 30/40-2	7407	300-400	240	2000	2100	10,6	1,5
DP 30/40-2,5	7419	300-400	240	2500	2600	12,7	1,5
DP 30/40-3	7408	300-400	240	3000	3100	14,7	1,5
DP 30/40-3,5	7401	300-400	240	3500	3600	16,7	1,5
DP 30/40-4	7409	300-400	240	4000	4100	18,8	1,5
DP 40/50-1,5	7420	400-500	340	1500	1600	16,0	1,0
DP 40/50-2	7410	400-500	340	2000	2100	21,0	1,0
DP 40/50-2,5	7421	400-500	340	2500	2600	24,0	1,0
DP 40/50-3	7411	400-500	340	3000	3100	26,5	1,0
DP 40/50-3,5	7422	400-500	340	3500	3600	29,0	1,0
DP 40/50-4	7412	400-500	340	4000	4100	32,0	1,0
DP 50/60-1,5	7423	500-600	430	1500	1600	21,0	1,0
DP 50/60-2	7413	500-600	430	2000	2100	28,3	1,0
DP 50/60-2,5	7424	500-600	430	2500	2600	31,8	1,0
DP 50/60-3	7414	500-600	430	3000	3100	35,4	1,0
DP 50/60-3,5	7425	500-600	430	3500	3600	39,0	1,0
DP 50/60-4	7415	500-600	430	4000	4100	42,5	1,0
DP 60/80-1,5	7434	600-800	510	1500	1600	45,0	0,6
DP 60/80-2	7436	600-800	510	2000	2100	49,0	0,6
DP 60/80-2,5	7430	600-800	510	2500	2600	52,5	0,6
DP 60/80-3	7437	600-800	510	3000	3100	56,0	0,6
DP 60/80-3,5	7438	600-800	510	3500	3600	59,5	0,6
DP 60/80-4	7439	600-800	510	4000	4100	63,0	0,6

BEND PACKERS

Bend packers thanks to their construction are suitable for repairing in bend parts of pipelines at an angle from 45° to 90°. This construction and excellent rubber material of packers ensure, that the repaired part is plain and without bumps.



Bend Packers OP

Type	Part - No.	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Weight kg	Operating pressure bar
OP 5/7 - 0,4	7515	50-70	35	400	510	0,5	2,0
OP 5/7 - 0,6	7512	50-70	35	600	710	0,55	2,0
OP 5/7 - 1	7516	50-70	35	1000	1110	0,65	2,0
OP 7/9 - 0,6	7501	70-90	45	600	720	0,7	2,0
OP 7/9 - 1	7502	70-90	45	1000	1120	0,8	2,0
OP 7/9 - 1,5	7503	70-90	45	1500	1620	0,9	2,0
OP 8/11 - 1	7513	80-110	56	1000	1120	1,1	2,0
OP 8/11 - 1,5	7514	80-110	56	1500	1620	1,2	2,0
OP 10/13 - 1	7506	100-130	65	1000	1120	1,4	2,0
OP 10/13 - 1,5	7507	100-130	65	1500	1620	1,7	2,0
OP 14/17 - 1	7508	140-170	86	1000	1130	3,3	2,0
OP 14/17 - 1,5	7509	140-170	86	1500	1630	4	2,0
OP 18/21 - 1	7504	180-210	107	1000	1130	5	2,0
OP 18/21 - 1,5	7505	180-210	107	1500	1630	6	2,0

Sliding and filling rods for rehabilitation packers

Part-No. Description

2129	Sliding and filling rod	0,5 m - 20 G
2130	Sliding and filling rod	1 m - 20 G
2127	Sliding and filling rod	1,5 m - 20 G
2120	Sliding and filling rod	2 m - 20 G
2131	Sliding and filling rod	2,5 m - 20 G
2132	Sliding and filling rod	3 m - 20 G



Part-No. Description

2037	Sliding and filling rod	0,5 m - 20 KR
2040	Sliding and filling rod	1 m - 20 KR
2041	Sliding and filling rod	1,5 m - 20 KR
2038	Sliding and filling rod	2 m - 20 KR



Lateral Packers HP

Type	Part – No.	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Weight kg	Operating pressure bar
HP 5/7–0,6	7331	50–70	35	600	710	0,55	3,0
HP 5/7–1	7332	50–70	35	1000	1110	0,65	3,0
HP 5/7–1,5	7336	50–70	35	1500	1610	0,75	3,0
HP 5/7–2	7333	50–70	35	2000	2110	0,9	3,0
HP 5/7–2,5	7335	50–70	35	2500	2610	1,05	3,0
HP 5/7–3	7337	50–70	35	3000	3110	1,2	3,0
HP 7/10–0,6	7313	70–100	45	600	720	0,65	3,0
HP 7/10–1	7314	70–100	45	1000	1120	0,75	3,0
HP 7/10–1,5	7315	70–100	45	1500	1620	0,85	3,0
HP 7/10–2	7316	70–100	45	2000	2120	0,95	3,0
HP 7/10–2,5	7319	70–100	45	2500	2620	1,2	3,0
HP 7/10–3	7317	70–100	45	3000	3120	1,5	3,0
HP 7/10–3,5	7320	70–100	45	3500	3620	1,65	3,0
HP 7/10–4	7318	70–100	45	4000	4120	1,8	3,0
HP 10/15–0,6	7301	100–150	65	600	720	1,1	2,5
HP 10/15–1	7302	100–150	65	1000	1120	1,4	2,5
HP 10/15–1,5	7303	100–150	65	1500	1620	1,8	2,5
HP 10/15–2	7304	100–150	65	2000	2120	2,1	2,5
HP 10/15–2,5	7321	100–150	65	2500	2620	2,5	2,5
HP 10/15–3	7309	100–150	65	3000	3120	2,9	2,5
HP 10/15–3,5	7322	100–150	65	3500	3620	3,3	2,5
HP 10/15–4	7311	100–150	65	4000	4120	3,7	2,5
HP 10/20–0,6	7348	100–200	68	600	720	1,55	2,5
HP 10/20–1	7349	100–200	68	1000	1120	2,05	2,5
HP 10/20–1,5	7350	100–200	68	1500	1620	2,65	2,5
HP 10/20–2	7351	100–200	68	2000	2120	3,25	2,5
HP 10/20–2,5	7352	100–200	68	2500	2620	3,85	2,5
HP 10/20–3	7353	100–200	68	3000	3120	4,45	2,5
HP 10/20–3,5	7354	100–200	68	3500	3620	5,05	2,5
HP 10/20–4	7355	100–200	68	4000	4120	5,65	2,5
HP 15/25–0,6	7305	150–250	105	600	730	2,5	2,0
HP 15/25–1	7306	150–250	105	1000	1130	3,2	2,0
HP 15/25–1,5	7307	150–250	105	1500	1630	4,0	2,0
HP 15/25–2	7308	150–250	105	2000	2130	4,8	2,0
HP 15/25–2,5	7323	150–250	105	2500	2630	5,6	2,0
HP 15/25–3	7310	150–250	105	3000	3130	6,4	2,0
HP 15/25–3,5	7324	150–250	105	3500	3630	7,2	2,0
HP 15/25–4	7312	150–250	105	4000	4130	8,0	2,0



Lateral packers are suitable for maintaining and repairing small-diameter pipes especially with house piping. They consist of a rubberized-fabric tube rounded at both its ends to facilitate manipulation in pipe bends. The effective surface ranges from 500 to 3700 mm.

SMALL LATERAL PACKERS

Small lateral packers are used for repairing of the smallest diameter of house pipeline. For easy manipulation in pipe bends the rigid ends of packer are made as short as possible. The effective surface ranges from 300 mm to 1300 mm.

Small Lateral Packers

Type	Part – No.	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Weight kg	Operating pressure bar
HP 3/4 – 0,4	7330	30–40	25	400	450	0,30	3,0
HP 3/4 – 0,6	7341	30–40	25	600	650	0,40	3,0
HP 3/4 – 1	7342	30–40	25	1000	1050	0,60	3,0
HP 3/4 – 1,5	7343	30–40	25	1500	1550	0,90	3,0
HP 3,5/5 – 0,4	7339	35–50	30	400	450	0,35	3,0
HP 3,5/5 – 0,6	7340	35–50	30	600	650	0,45	3,0
HP 3,5/5 – 1	7344	35–50	30	1000	1050	0,65	3,0
HP 3,5/5 – 1,5	7345	35–50	30	1500	1550	0,95	3,0



CUSTOM-MADE PRODUCTS

Based on our many years' experience in developing rubberized fabrics, we are able to manufacture a wide range of other products meeting specific requirements of our customers. We are quite experienced in

manufacturing pipe stoppers and rehabilitation packers in sizes different from the standard product line. We are also able to manufacture air- or water-filled bags of various shapes and sizes for industrial use.

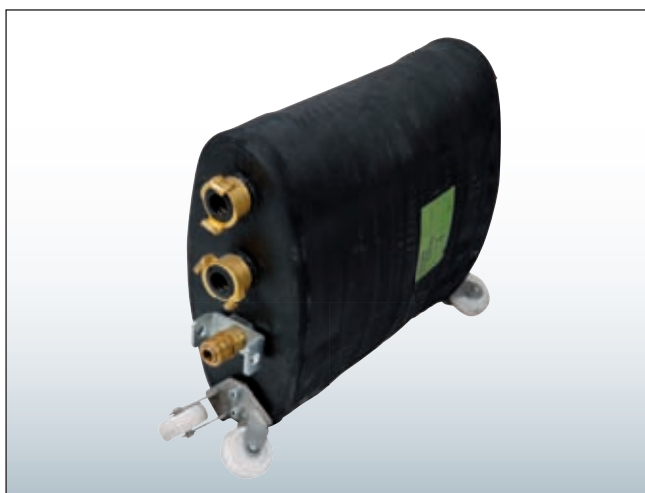


TABLE OF RESISTANCE FOR PIPE STOPPERS AND REHABILITATION PACKERS

A – Pipe stoppers and Rehabilitation packers

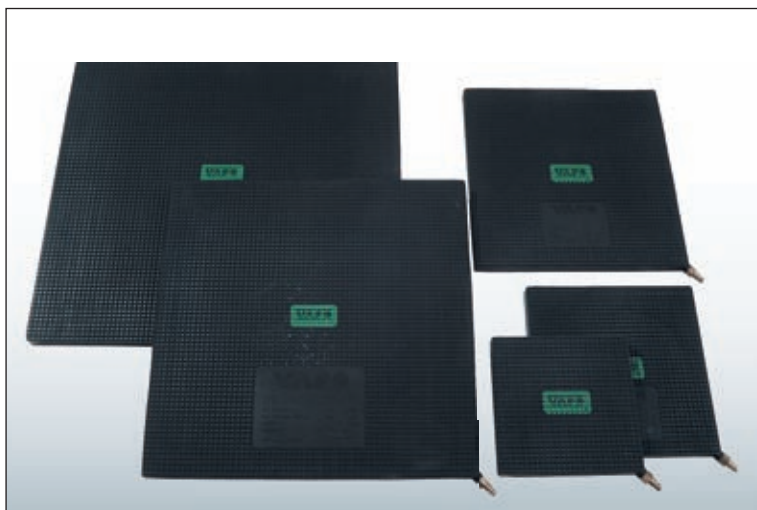
B – Pipe stoppers resistant to oil

C – Cone pipe stoppers ULK and PULK

Chemicals	Concentration %	A	B	C
Acetone		+/-	--	++
Acetylene – Alcohol		++	++	++
Aniline		+/-	--	--
Petrol		--	++	++
Benzene		--	--	--
Boric Acid	10	++	++	++
Brake Fluid		++	--	++
Butanol		++	++	++
Butyric Acid		--	+/-	--
Calcium Hydroxide		++	+/-	++
Calcium Hypochlorite	15	++	--	++
Diesel Oil		--	++	++
Ethanol		++	++	++
Formaldehyde	40	++	++	++
Glycerine		++	++	++
Kerosene		--	++	+/-
Methanol	50	++	++	++
Mineral Oil		--	++	++
Methyl Chloride		--	--	--
Natural Gas		--	++	++
Nitric Acid Diluted	50	+/-	+/-	--
Ozone		--	--	++
Phenol		--	--	--
Phosphoric Acid	60	+/-	--	++
Propanol		++	+/-	++
Sodium Hydroxide	20	++	++	++
Sodium Hypochlorite	10	+/-	--	++
Sulphuric Acid	20	++	++	++
Sulphuric Acid	50	++	+/-	++
Sulphuric Acid	60	--	--	+/-
Toluene		--	--	--
Ammonium Hypochlorite		+/-	--	++
Vinegar Acid		++	+/-	+/-
Ferrous Hypochlorite		++	++	++
Sea Water		++	++	++

++ resistant
+/- partially resistant
-- non-resistant

LIFTING BAGS



These bags made of top-quality rubber and the Kevlar fibres enable rescuers to lift and remove heavy loads in various natural disasters, to pull people out of damaged vehicles in car or train accidents etc. The bags are also very useful in assembling heavy machines, tire changing in all kinds of vehicles and they are extraordinarily advantageous in assembling, repairing and maintaining water supply lines, water mains, gas lines and oil pipelines. The lifting bags can also be used for splitting stone blocks and pushing them away and they can be found very useful at airports, in the army etc. The standard set consists of five different models the lifting force of which is 3 to 30 metric tons.

Lifting Bags ZP

Type		ZP 3	ZP 6	ZP 10	ZP 20	ZP 30
Part - No.		1801	1802	1803	1804	1805
Lifting capacity	kN	30	60	100	200	300
Lifting height	mm	120	160	210	300	350
Dimensions	mm	230 x 230	300 x 300	390 x 390	530 x 530	640 x 640
Insertion height	mm	27	27	27	27	27
Air requirement at 8 bar	l	16	38	90	250	470
Operating pressure	bar	8,0	8,0	8,0	8,0	8,0
Test pressure	bar	12,0	12,0	12,0	12,0	12,0
Burst pressure	bar	75,0	64,0	57,0	45,0	36,0
Weight	kg	1,5	2,4	4,3	7,6	11,2

Accessories

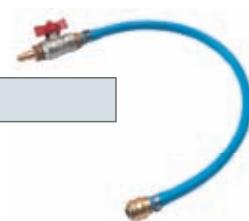
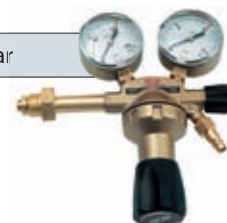
Part-No. Description

2001	Inflation hose with quick couplings, 3 m
2014	Inflation hose with quick coupling and nippel, 5 m
2015	Inflation hose with quick coupling and nippel, 10 m
2028	Safety and control gauge 8 bar-V 8
2029	Double safety and control gauge 8 bar-2 V 8



Part-No. Description

2005	Pressure reducer 200/8 bar
2066	Pressure reducer 300/8 bar
50152	Cylinder 7 l
2034	Stopcock with hose



These bags are intended for the quick sealing of accidental cracks on various tanks, cisterns, barrels and pipelines. Using special fixing belts, these bags enable repairmen to seal even large-scale defects. The sealing wedges are capable to seal smaller cracks or holes quickly and safely.

Leak Sealing Bags TV, Sealing Wedges TK

Type		TV 20/20	TV 25/40	TK 75	TK 55/70
Part - No.		1901	1902	1903	1904
Max. sealing area	mm	200 x 200	250 x 400	75	55 x 70
Operating pressure	bar	1,5	1,5	1,5	1,5
Test pressure	bar	2,0	2,0	2,0	2,0
Sealing pressure	bar	1,5	1,5	1,5	1,5
Weight	kg	1,5	4	0,4	0,4



Accessories

Part-No. Description

50153	Tensioning and extensioning belt with ratchet, 5 m
50154	Tensioning and extensioning belt with ratchet, 10 m



2020	Sealing plate 230 x 230 mm
2021	Sealing plate 300 x 500 mm



2003	Inflation hose with nipples, 10 m
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2039	Safety and control gauge 1,5 bar – V 1,5
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2031	Extension for leak wedge, 500 mm
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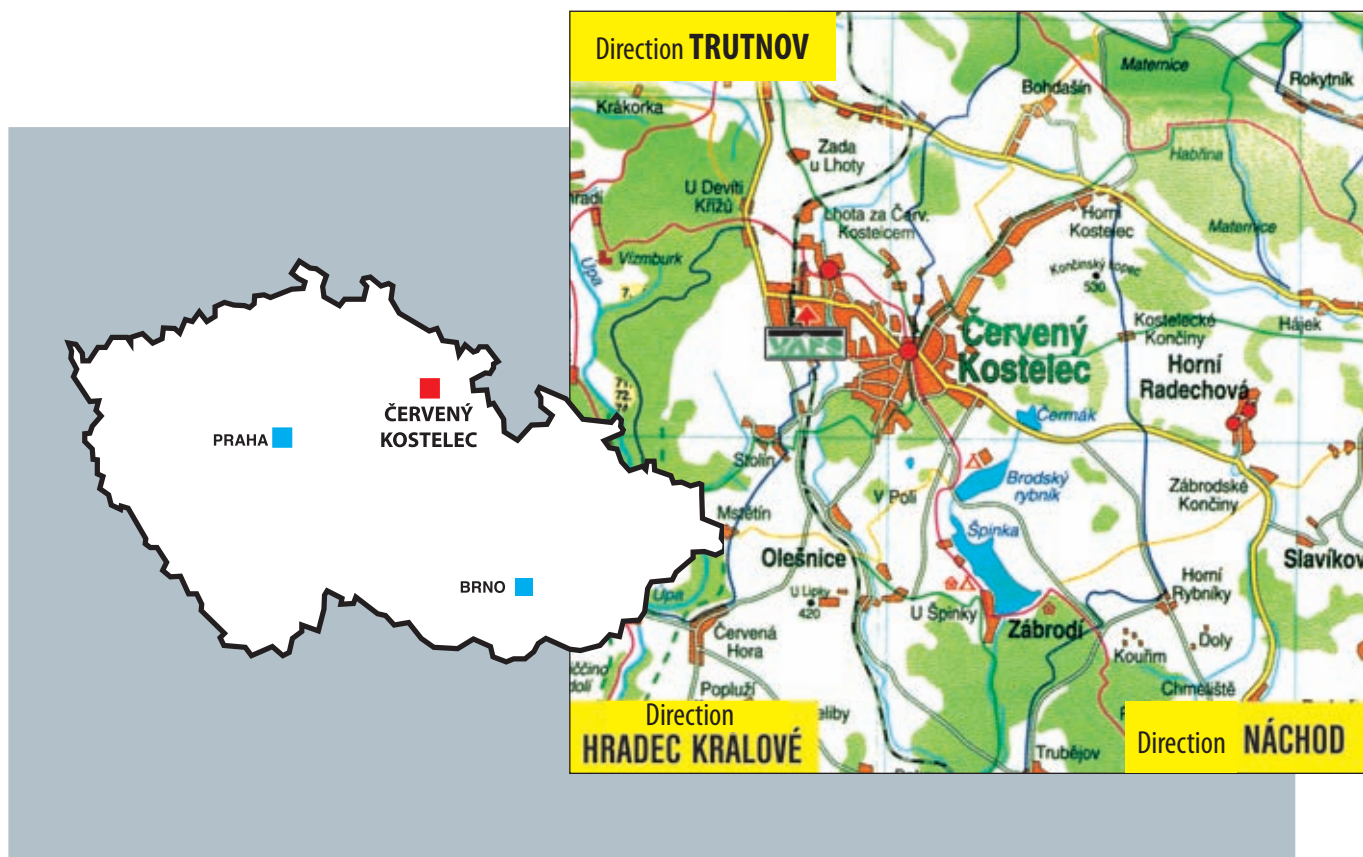


RUBBERMOULDED PARTS

There is a wide range of mechanical-rubber parts manufactured by our company. The parts are produced on classic electric-heated moulding machines. We are able to produce even in small series from one up to several thousand pieces.

We process all kinds of elastomers including FPM, ECO and VMQ. Our main range of products includes various packing elements, bushings, stops, collars, cuffs, diaphragms (even with textile), springs, etc.







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