

PROFESSIONAL  
ENVIRONMENTAL  
PROTECTION  
PRODUCTS

## HYDROGEOLOGICAL INVESTIGATIONS AND CIVIL/UNDERGROUND ENGINEERING





## **SAVATECH d.o.o.**

We are a division of Savatech d.o.o., the mainstay of the development of rubber manufacturing within the Sava Group. We manufacture and sell rubber products for environmental protection and rescue operations. Our growing division was established thirty years ago and is constantly striving to meet our customer's current and future needs and expectations.

### **KNOWLEDGE AND EXPERIENCE**

Thirty years of experience and knowledge, investment in new technology, team-work and working closely with our business partners, has enabled us to develop new and exciting products and to continuously improve our existing product range.



### **PROFESSIONAL SERVICE**

A professional but caring approach, flexibility and quick delivery times combined to provide the ideal service in support of our quality product range.



### **QUALITY PRODUCTS**

When assessing quality of our products we carefully consider a number of criteria including environmental suitability, ease of use, design, safety, reliability, and packaging. Our production facilities are certified to the ISO 9001 and ISO 14001 standards.



### **A PARTNER TO RELY ON**

We understand the value of long-term business relationships. Our aim is to develop trusting relationships, which foster success and bring benefits to both our partners and ourselves.



## **SOLEXPERTS AG**

The Swiss company Solexperts AG has been active for more than 25 years in the area of civil and underground engineering. Solexperts develop, produce and apply high precision geotechnical and hydrogeological measuring and testing instruments as well as geo-monitoring systems. Highly skilled personnel, consisting of engineers, geologists, hydrogeologists, electronic and mechanical technicians, supported by our software department, produce tailor-made solutions for our worldwide clients. Sava-Solexperts Inflatable Packers successfully combine Savatech's rubber products manufacturing expertise and Solexperts' skills and experience in packer system production and application.



We at Solexperts use the Inflatable Packers ourselves and continually update and enhance them together with Savatech.



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## APPLICATIONS

Sava-Solexperts Inflatable Packers are designed for any number of applications in boreholes or water wells. They are used whenever a borehole or well has to be sealed while at the same time guaranteeing access to the isolated borehole section.

The main areas of application for Sava-Solexperts Inflatable Packers are:

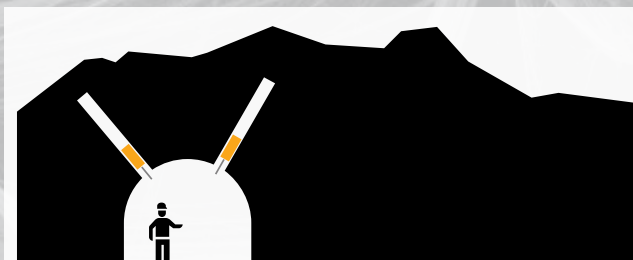
### HYDROGEOLOGICAL INVESTIGATIONS:



Hydraulic testing and monitoring of defined borehole sections to estimate the hydraulic parameters (steady-state hydraulic head, transmissivity, permeability, storativity, etc.) of geological formations or engineered barriers.

- **Hydrological assessments for the planning and construction of dams and tunnels**
- **Hydrological characterization of waste disposal sites, hazardous waste sites and hydraulic barriers**
- **Optimization of groundwater monitoring and water wells**

### CIVIL AND UNDERGROUND ENGINEERING:



Borehole or borehole section sealing to enable pressure and depth-oriented grouting or injecting for consolidation and waterproofing.

- **Grouting for foundations, tunnels and galleries**
- **Injections for slope and underground stabilization**
- **Sealing of water producing boreholes**

# SAVA-SOLEXPERTS PACKERS

## NEW SAVA-SOLEXPERTS RING DESIGN PACKERS

Always striving for high quality and improvements, we are now presenting a completely new and innovative high pressure packer design. Due to unique anchoring solution we are now reaching better adhesion between rubber sleeve and steel flanges, what consequently leads to superior performances. With this latest improvement we want to fully establish ourselves as a manufacturer of top quality solutions and satisfy our vision of constant improvement.

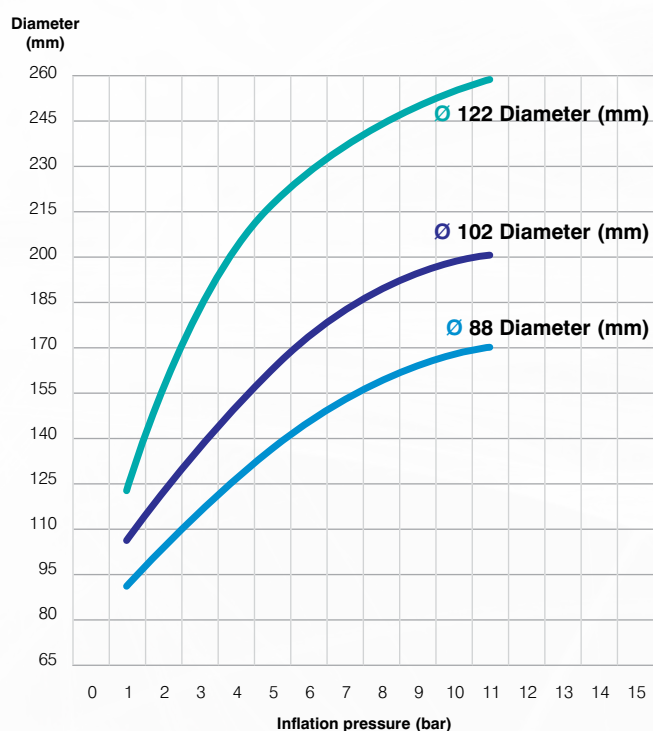
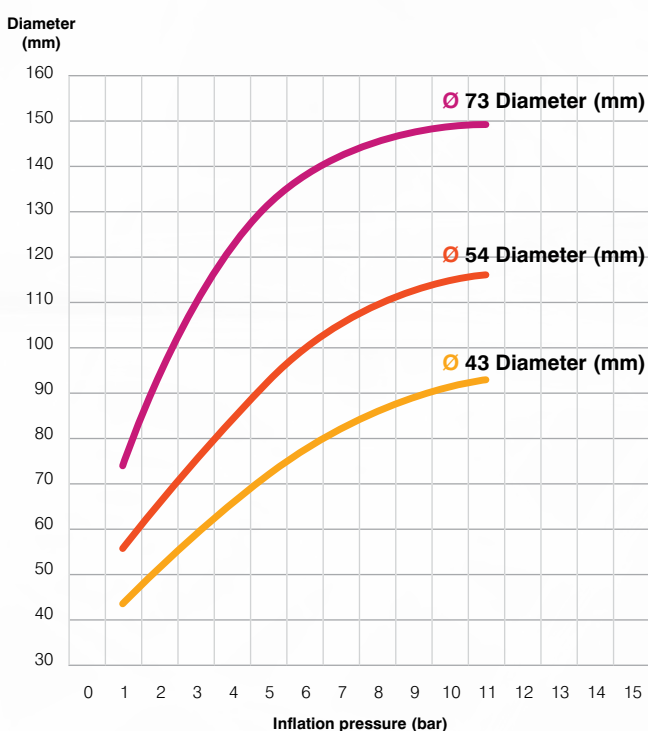
New SAVA-SOLEXPERTS RING packers are available in two different designs: with and without replaceable sleeve. All exposed metal parts on both designs are made out of stainless steel. The sleeve itself is produced from high quality rubber compound (prepared and mixed in SAVA) reinforced with multiple layers of steel cords. Further to that special steel RINGS are integrated into the rubber sleeve making even higher pressures and even bigger diameters possible.

All packers are available as single-, double- and multi-packer systems. Each packer part is individually available. Custom made packers are possible upon request.

## COMPETITIVE ADVANTAGES

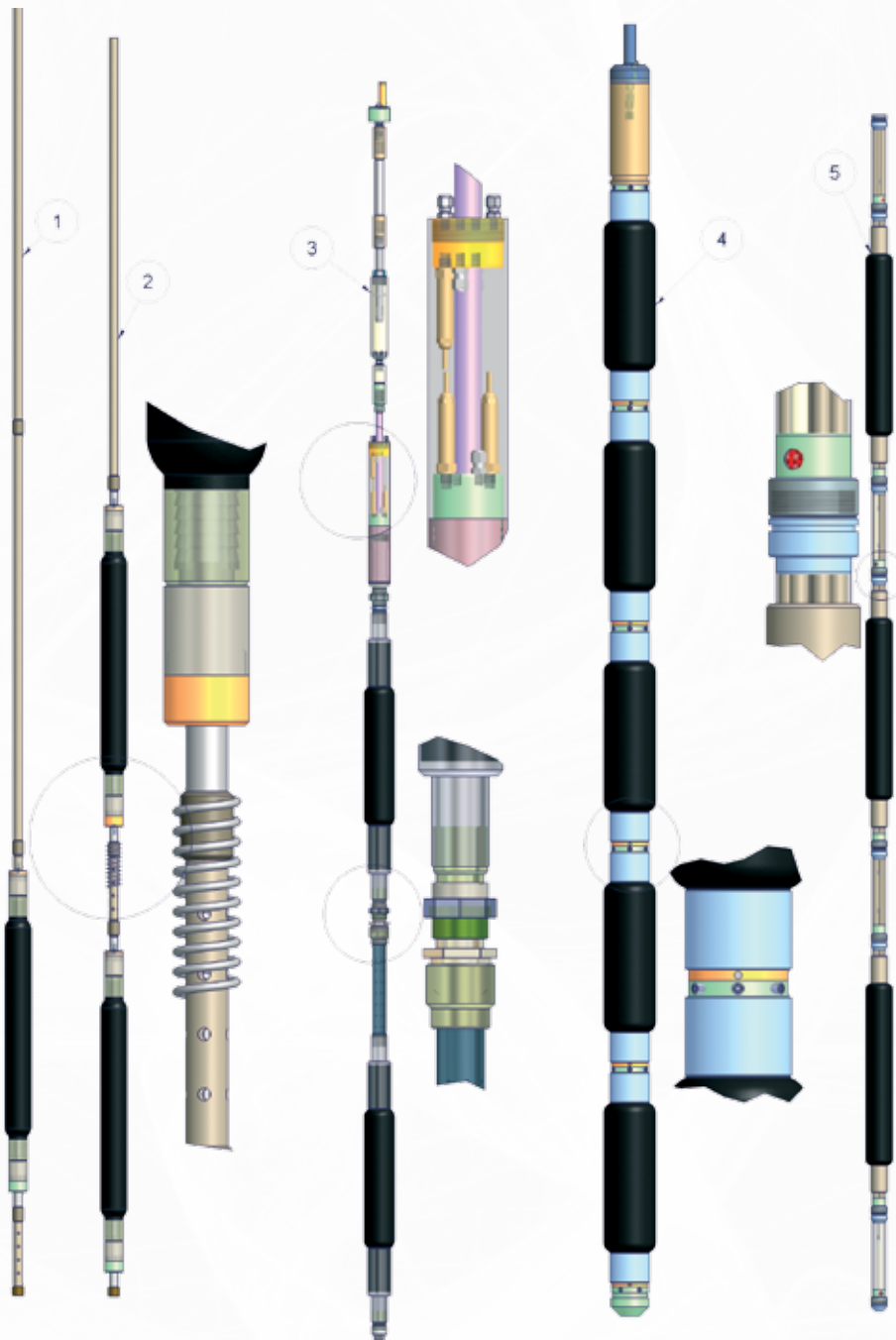
PERFORMANCES	MATERIAL	ABILITIES
high inflation pressures	stainless steel	single-, double- and multi-packer systems
large inflation diameters	aramid reinforcement	each packer individually made
big mandrel inside diameters	steel reinforcement	custom made packers
long durability	high quality rubber	application services

## PACKER PERFORMANCES UNDER ATMOSPHERIC CONDITIONS



## PACKER SYSTEMS

Solexperts offers complete packer systems and an extensive array of accessories. Our products and services include everything from single- to multi-packer systems to down-hole and surface equipment and data acquisitions. We will be glad to assemble a custom packer system perfectly meeting your specific needs. Beyond that, our experienced test engineers, hydrogeologists and technicians are available to perform and analyze various borehole tests on a contract basis.



- ① single-packer grouting system
- ② double-packer grouting system

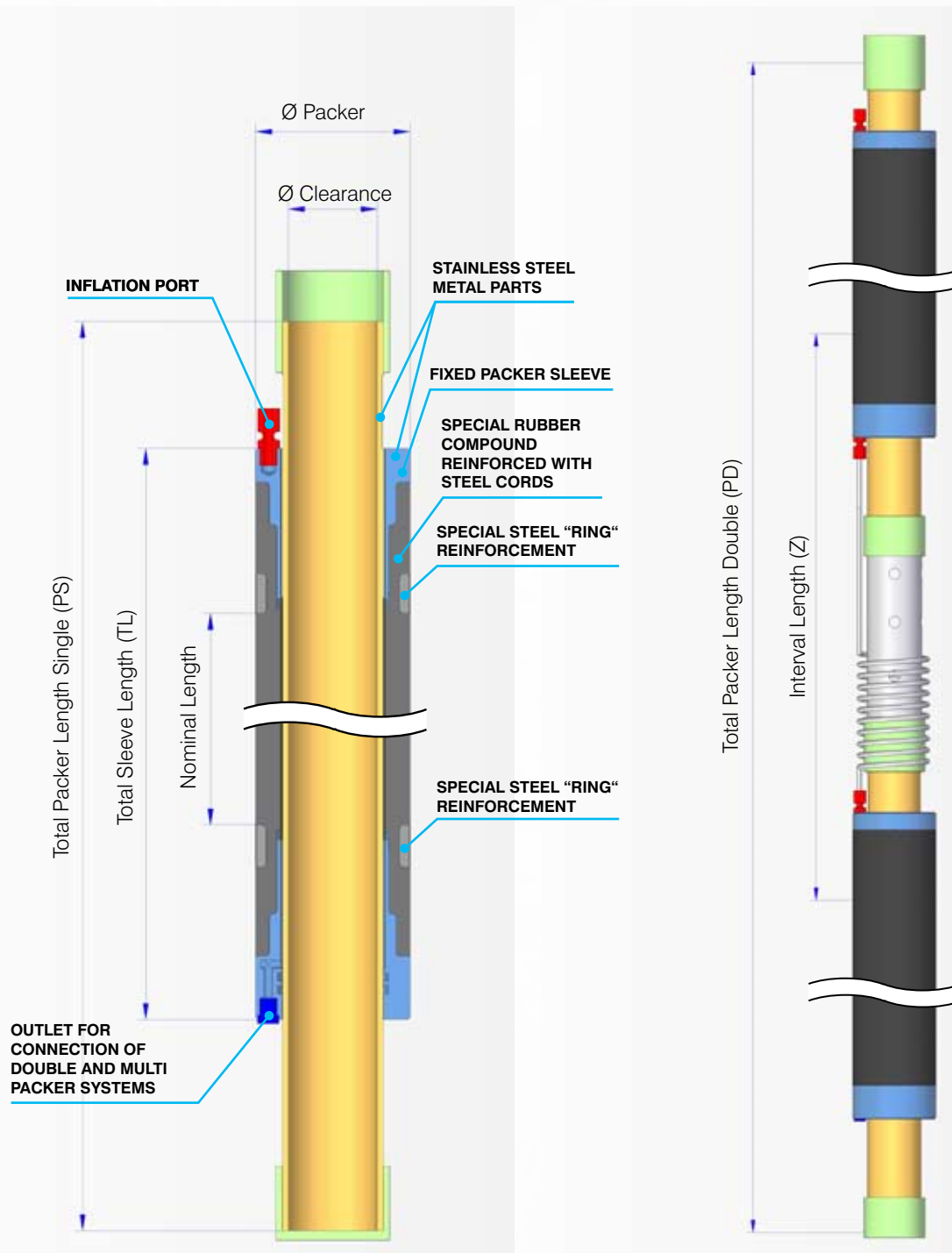
- ③ double-packer hydraulic test system
- ④ multi-packer system
- ⑤ stand-pipe multi-packer system



## BaseRING DESIGN

- **FIXED SLEEVE**
- **STAINLESS STEEL FLANGES AND MANDREL**
- **INTEGRATED STEEL RING REINFORCEMENT**

Sava-Solexperts baseRING packers are a cost-effective solution with most of the benefits and capabilities of standard high pressure packer design. BaseRING design offers high quality, high pressure packer with stainless steel metal parts and packer sleeve mounted directly to the mandrel. It is a basic solution when replaceable sleeve is not needed, but good quality and multiple usability is still required.



Description	Reference	baseRING 43	baseRING 54	baseRING 73	baseRING 88	baseRING 102	baseRING 122
Single 500	Part number	291001	291002	291003	291004	291005	291006
Single 1000	Part number	291007	291008	291009	291010	291011	291012
Double 500	Part number	291013	291014	291015	291016	291017	291018
Double 1000	Part number	291019	291020	291021	291022	291023	291024
Borehole diameter (mm)	min-max	45 - 95	56 - 115	76 - 150	90 - 170	105 - 200	126 - 260
Packer outer diameter (mm)	Ø	43	54	73	88	102	122
Clearance (mm)	Ø	16.1	27.3	41.9	53.1	53.1	80.8
Total sleeve length 500 (mm)	TL	670	670	670	678	686	712
Total sleeve length 1000 (mm)	TL	1170	1170	1170	1178	1186	1212
Total packer length Single 500 (mm)	PS	810	830	830	850	880	890
Total packer length Single 1000 (mm)	PS	1310	1330	1330	1350	1380	1390
Total packer length Double 500 (mm)	PD	1810	1830	1930	1950	2080	2090
Total packer length Double 1000 (mm)	PD	2810	2830	2930	2950	3080	3090
Interval Length (mm)	Z	500	500	600	600	700	700
Thread	Size	R 0,5"	R 1"	R 1,5"	R 2"	R 2"	R 3"

**baseRING 43 Packer Performances**

Borehole diameter (mm)	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
Inflation pressure (bar)	145	125	105	85	80	75	70	45	40	35	30						

**baseRING 54 Packer Performances**

Borehole diameter (mm)	56	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135
Inflation pressure (bar)	155	140	120	100	80	70	60	50	40	35	30	25	20				

**baseRING 73 Packer Performances**

Borehole diameter (mm)	76	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155
Inflation pressure (bar)	110	100	90	80	70	60	55	50	40	35	30	30	25	25	25	20	

**baseRING 88 Packer Performances**

Borehole diameter (mm)	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170
Inflation pressure (bar)	130	120	110	110	100	90	80	70	60	55	50	45	40	35	35	30	30

**baseRING 102 Packer Performances**

Borehole diameter (mm)	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220
Inflation pressure (bar)	110	100	90	85	80	75	70	65	60	55	45	35	30	25	20		

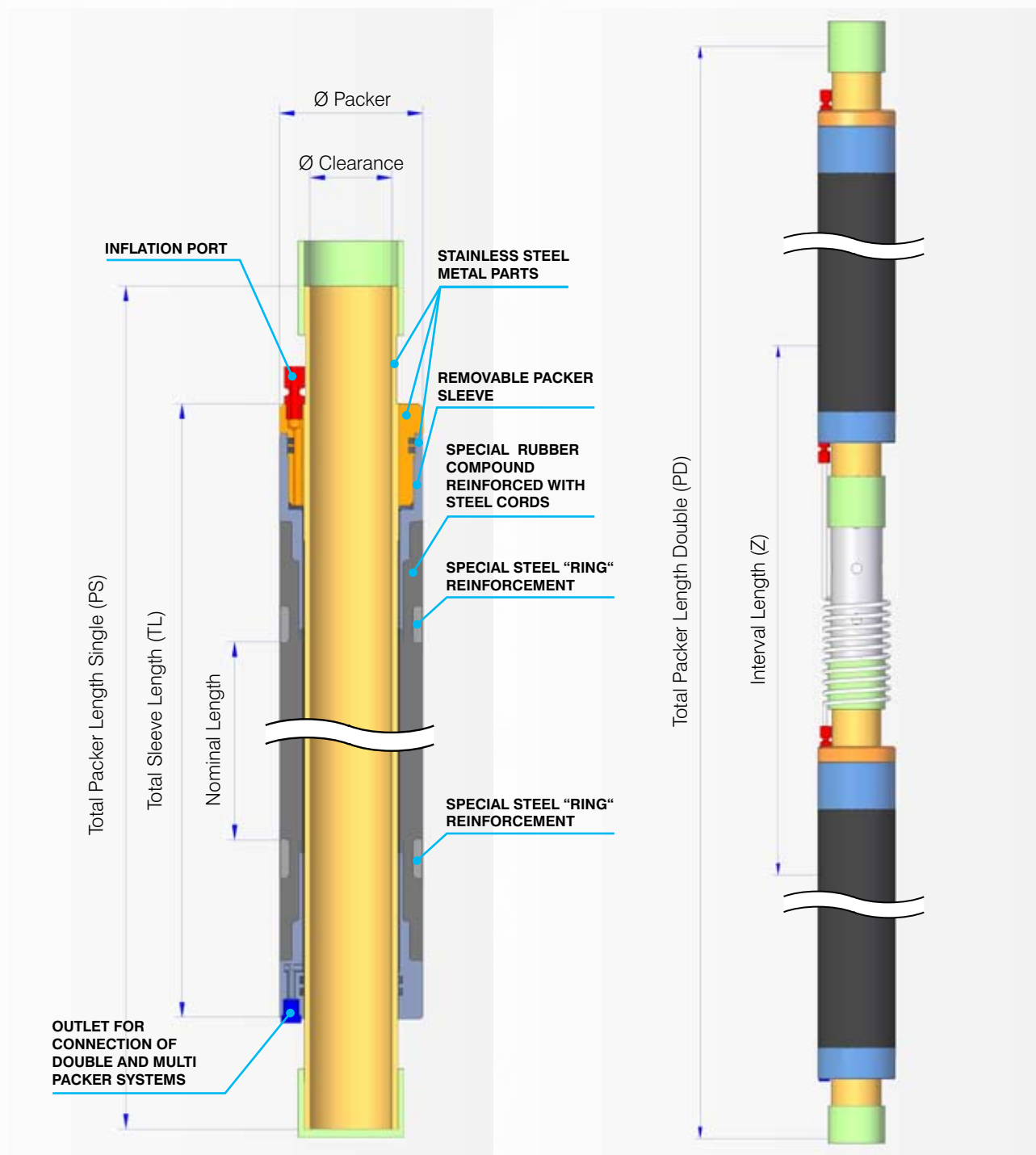
**baseRING 122 Packer Performances**

Borehole diameter (mm)	126	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280
Inflation pressure (bar)	103	100	80	70	60	55	50	45	40	35	30	30	25	25	20		

## ProRING DESIGN

- REPLACEABLE SLEEVE
- STAINLESS STEEL FLANGES AND MANDREL
- INTEGRATED STEEL RING REINFORCEMENT

Sava-Solexperts proRING packers offer separation of the sleeve from its inner mandrel, which allows you to simply replace damaged sleeve when needed. Sleeves are also available separately and its metal parts are (like packer itself) made completely of stainless steel. ProRING design will satisfy all professional users as it combines excellent performances and long durability.





Description	Reference	proRING 43	proRING 54	proRING 73	proRING 88	proRING 102	proRING 122
Single 500	Part number	291025	291026	291027	291028	291029	291030
Single 1000	Part number	291031	291032	291033	291034	291035	291036
Double 500	Part number	291037	291038	291039	291040	291041	291042
Double 1000	Part number	291043	291044	291045	291046	291047	291048
Replacement Sleeve 500	Part number	291049	291050	291051	291052	291053	291054
Replacement Sleeve 1000	Part number	291055	291056	291057	291058	291059	291060
Borehole diameter	min-max (mm)	45 - 95	56 - 115	76 - 150	90 - 170	105 - 200	126 - 260
Packer outer diameter (mm)	Ø	43	54	73	88	102	122
Clearance (mm)	Ø	16.1	27.3	41.9	53.1	53.1	80.8
Total sleeve length 500 (mm)	TL	709	712	714	726	743	767
Total sleeve length 1000 (mm)	TL	1209	1212	1214	1226	1243	1267
Total packer length Single 500 (mm)	PS	810	830	830	850	880	890
Total packer length Single 1000 (mm)	PS	1310	1330	1330	1350	1380	1390
Total packer length Double 500 (mm)	PD	1810	1830	1930	1950	2080	2090
Total packer length Double 1000 (mm)	PD	2810	2830	2930	2950	3080	3090
Interval Length (mm)	Z	500	500	600	600	700	700
Thread	Size	R 0,5"	R 1"	R 1,5"	R 2"	R 2"	R 3"

**proRING 43** Packer Performances

Borehole diameter (mm)	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
Inflation pressure (bar)	145	125	105	85	80	75	70	45	40	35	30						

**proRING 54** Packer Performances

Borehole diameter (mm)	56	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135
Inflation pressure (bar)	155	140	120	100	80	70	60	50	40	35	30	25	20				

**proRING 73** Packer Performances

Borehole diameter (mm)	76	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155
Inflation pressure (bar)	110	100	90	80	70	60	55	50	40	35	30	30	25	25	25	20	

**proRING 88** Packer Performances

Borehole diameter (mm)	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170
Inflation pressure (bar)	130	120	110	110	100	90	80	70	60	55	50	45	40	35	35	30	30

**proRING 102** Packer Performances

Borehole diameter (mm)	105	110	115	120	125	130	135	140	145	150	160	170	180	190	200	210	220
Inflation pressure (bar)	110	100	90	85	80	75	70	65	60	55	45	35	30	25	20		

**proRING 122** Packer Performances

Borehole diameter (mm)	126	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280
Inflation pressure (bar)	103	100	80	70	60	55	50	45	40	35	30	30	25	25	20		

## ACCESSORIES / SERVICES

### ACCESSORIES

Developed, designed, produced and distributed by Solexperts

#### Down-hole equipment

##### LINES

- pressure- and flow- lines in different materials and sizes up to 600 bar
- tripple- or quadruple flat packs (lines and data cable in one flat pack coated)

##### RODS

- in different sizes, wall thicknesses and lengths
- made of steel, stainless steel or PVC
- various couplings with double O-ring sealing

##### VALVES

- hydraulic, pneumatic and mechanical solutions
- for up to 200 bar and flowrates
- up to 100 l / min, made of steel or stainless steel

##### FILTERS

- steel or stainless steel filters
- sintered ceramic or sintered stainless steel filters
- UHMW / LD-PE filters

##### PROBES

- different sensor types to measure pressure, temperature, humidity, electric conductivity, etc.
- in pressure tight housings up to 200 bar, made of steel or stainless steel

##### SUBMERSIBLE PUMPS

- 2 inch to 4 inch submersible pumps, double valve pumps
- moineau pumps driven by sucker rods

##### SAMPLERS / BAILERS

- for water sampling, on demand at formation pressure

##### CENTRALIZERS

- several systems, different materials
- custom made for any application

#### Surface equipment

##### CABLE REELS

- hydraulic or electric driven with clutch
- for all kinds of cable

##### FLOWBOARDS

- all types of flowmeters and flow controllers
- from ml / day up to 400 l / min and 200 bar

##### WELLHEADS

- for injecting, withdrawal, sealing and monitoring

##### INJECTION PUMPS

- from 1 ml / day to 200 l / min
- for constant pressure or flow up to 200 bar

##### SENSORS

- pressure, temperature and hydrochemical sensors

##### DATA ACQUISITIONS

- data acquisition and visualisation for various applications
- online, via logger or remote inquiry

### SERVICES

#### BOREHOLE TESTING

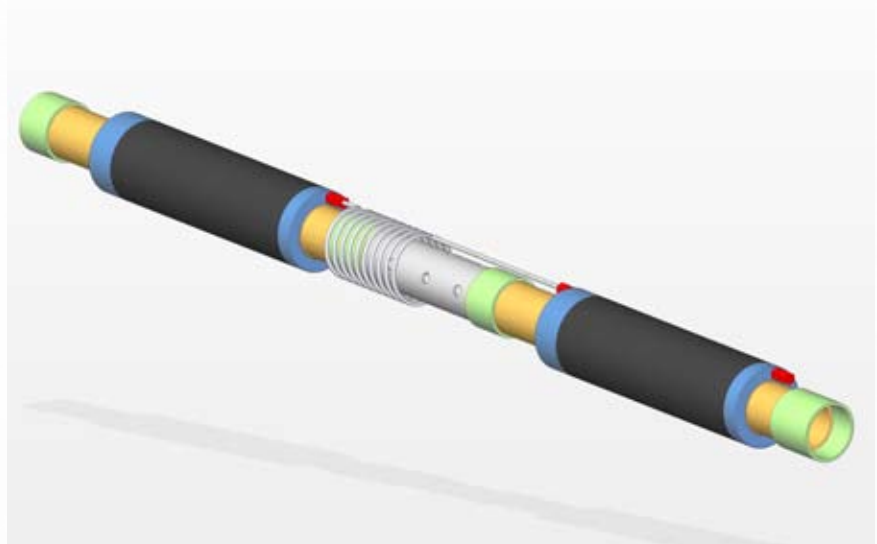
- performance of hydraulic, geotechnical and geophysical in-situ tests

#### TEST ANALYSIS

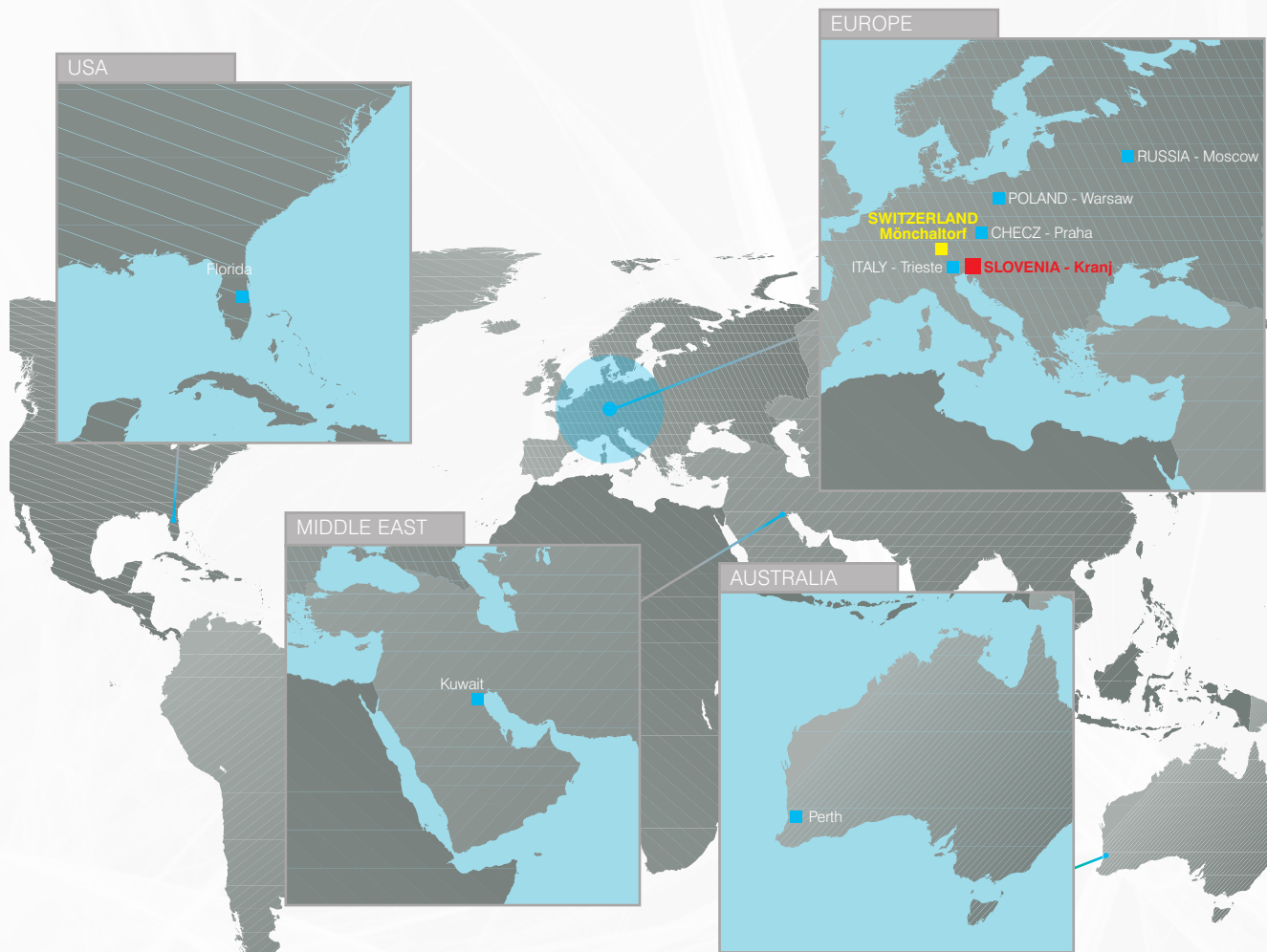
- test analysis and interpretation with own software packages

#### TEST DESIGN AND INSTRUMENTATION

- for short- and longterm testing and monitoring



# FOREIGN TRADE NETWORK



## CZECH SAVA Trade s.r.o. Areál ZEZ Praha a. s.

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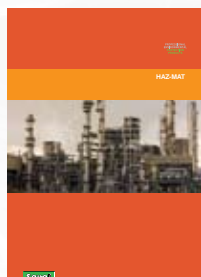
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## OTHER PROGRAMS



### HAZ-MAT

Pneumatic pipe plugs,  
leak sealing bags,  
decontamination, tanks



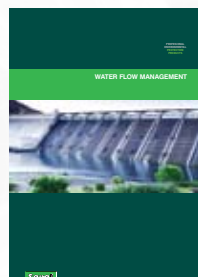
### AIRCRAFT RECOVERY

Aircraft recovery lifting  
bags



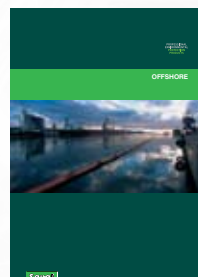
### RESCUE

Low, medium and  
high-pressure lifting  
bags, inflatable  
stretchers, rescue  
walkways, inflatable tents



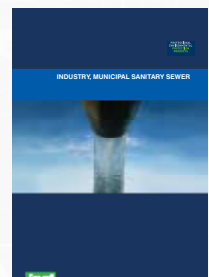
### WATER FLOW MANAGEMENT

Rubber dams



### OFF SHORE

Oil booms



### INDUSTRY, MUNICIPAL SANITARY SEWER

Inflatable rubber pipe  
plugs and pipe packers





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