

WATERJET PROTECTION

UP TO 3000 BAR



SAVING LIVES

OUR PROMISE: SAVING LIVES

Our customers are not like other customers. At least their jobs aren't. Our customers' workplaces are often the complete opposite of a nice and cosy office, with a pleasant indoor climate, a comfortable office chair to sit on and coffee within arm's reach. Our customers spend their working days on oil platforms, alongside roads, in ports and in heavy industry. Often the environments are full of risks and the jobs are demanding, sometimes even highly dangerous.

Our mission is to make sure that they come home to their loved ones – every day. This is our reason for being and this is what drives us to go to work every morning. We're not sure if safety is in our genes or if it's developed

because of Scandinavia's harsh climate, but safety has always been important in Sweden. Perhaps this is most evident in Swedish industry, which includes Volvo with its safe cars and Autoliv, the world's leading automotive safety supplier.

TST Sweden's motto is saving lives. This is not only our duty, it also makes us feel good. It would be difficult to find anything more meaningful to spend our time on.



Jörgen Lillieoth, Founder and Managing Director, TST-Sweden



WATERJET PROTECTION

ADVANCED PROTECTIVE EQUIPMENT FOR WATERJETTING

Ever since we developed our first collection of protective clothing for waterjetting in 1994, we have consulted end users across the world. Our aim is to offer a broad range of protective equipment with technically advanced features, high level of comfort and high quality. TST® was first with CE-marked products for waterjetting

protection and it is a challenge to keep up with the technical development on pumps and accessories, and the demands from the users. To further improve our products, we use special fabrics containing the worlds strongest fiber – Dyneema® fiber. Being an official licensee of DSM Dyneema gives us, and you, a great advantage for the future!

VENTILATION

We have taken comfort to the next level with the option Ventilation in Trousers and Overall. This improves comfort when working in warm environments. Look for the Hot-to-Cool symbol. A perforated tube has been integrated into the bibs, which allows compressed air to cool the operator. In order to make maximum use of the ventilation a continuous airflow of 250-400 l/minute (9-14 CFM) at 7 bar (100 psi) is required. Also smaller compressors can be used if there is a possibility to regulate the airflow.



CERTIFICATION

All of our protective products are CE-labelled. We are also certified in accordance with ISO 9001:2015 and ISO 14001:2015 – important tools for ensuring the quality of our products and our work to lay the foundation for positive environmental development.



WATERPROOF

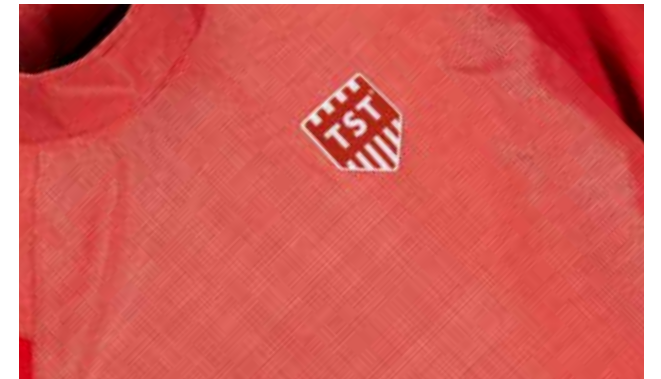


Outer material in coated Polyamide. HD is furthermore reinforced with Vectran (LCP) for maximum strength and durability. The materials are dirt- and water repellant which keeps the operator dryer and lighter. ISO 811 specifies a hydrostatic pressure method for determining the resistance of fabrics to penetration of water. Hydrostatic head is 2000 mm.

CONCRETE HEAVY DEMOLITION

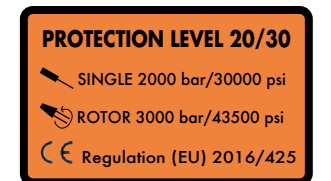
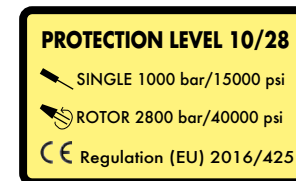
50% STRONGER AGAINST ABRASION AND TEARING

Outer material HD is extremely durable TECHSTEEL™ which is 50% more resistant against abrasion and tearing! Request for these qualities comes originally from the industry of concrete removal and demolition.



PROTECTION LEVEL - YELLOW AND ORANGE

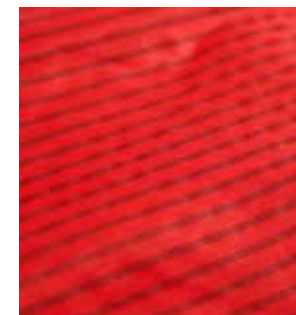
Yellow label indicates protection for 1000 bar/15000 psi single jet and 2800 bar/40000 psi rotor jet – 10/28. Orange label indicates protection for 2000 bar/30000 psi single jet and 3000 bar/43500 psi rotor jet – 20/30.



Single/Rotor*	Size	Art. No.	Model No.
10/28	S/M-2XL/3XL	NN	5000
20/30	S/M-2XL/3XL	NN	5085

AREAS WITH PROTECTION

Striped (10/28) and glossy (20/30) fabric clearly identifies protected areas and the labels tell the level of protection. As high pressure cleaning is very dangerous, it is essential that the operator knows where and what he or she is protected for.



SELECTED COMBINATIONS WITH ATTRACTIVE PRICING



1. ALFA KIT

Alfa Kit includes:

- Waistcoat with Apron and Hand Protections.
- Weight Alfa Kit approx. 3,8 kg/8.4 lbs.

Single/Rotor*	Size	Art. No.	Model No.
10/28	ONE SIZE	51K4047	5000
20/30	ONE SIZE	51K4068	5085

*Protection level - see test results on page 22.



2. GAMMA KIT

Gamma Kit includes:

- Trousers and Jacket with integrated Hand Protections
- Ventilation is an option.
- Weight Gamma Kit 20/30 size L/XL approx. 5,5 kg/12.1 lbs.

SIZES	ART. NO. OPT. VENTILATION
S/M-2XL/3XL	5198000 5030



Single/Rotor*	Size	Art. No.	Model No.
10/28	S/M-2XL/3XL	51K3047	5000
20/30	S/M-2XL/3XL	51K3068	5085

*Protection level - see test results on page 22.

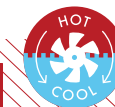


3. SIGMA KIT

Sigma Kit includes:

- Waistcoat and Overall with integrated Hand Protections
- Ventilation is an option.
- Weight Sigma Kit 20/30 size L approx. 6,4 kg/14.1 lbs.

SIZES	ART. NO. OPT. VENTILATION
S-3XL	5198000 5040



Single/Rotor*	Size	Art. No.	Model No.
10/28	S-3XL	51K2047	5000
20/30	S-3XL	51K2068	5085

*Protection level - see test results on page 22.



4. DELTA KIT

Delta Kit includes:

- Waistcoat, Trousers and Hand Protections
- Ventilation is an option.
- Weight Delta Kit 20/30 size L/XL approx. 5,2 kg/11.5 lbs.

SIZES	ART. NO. OPT. VENTILATION
S/M-2XL/3XL	5198000 5030



Single/Rotor*	Size	Art. No.	Model No.
10/28	S/M-2XL/3XL	51K1047	5000
20/30	S/M-2XL/3XL	51K1068	5085

*Protection level - see test results on page 22.

HEAD PROTECTION 20/30



- Bluetooth®
- Noise reduction mic.
- Mounted in seconds
- 8 hours talk/listening
- 250 hours stand by time
- Charges with Micro USB in 3 hours
- For rough environments - IP54

Supplied with carrying bag

Helmet with Visor, Hearing Protectors and optional wireless Bluetooth® communication for phone. All parts are tested and certified for protection against liquids with pressure up to 3000 bar/43500 psi. Helmet also meets the requirements for Industrial safety helmets. The interior is comfortable and can be adjusted to a very good fit. The Visor meets the requirements for Eye protection. It is replaceable and can be set in folded up position. Hearing Protectors are classified. SNR=32dB. They can be adjusted vertically and set in different positions against the head, for optimal protection and fit. A 3-point chin strap is supplied in the Head Protection kit.

SIZES	ART. NO.
ONE SIZE. 52-64	5102068 5000
OPT. WIRELESS COMM.	ART. NO.
ONE SIZE	5105568 5000

TECHNICAL DESCRIPTION

- Helmet is made of fiberglass reinforced polyamide
 - Temperature range -30° to +150°
 - Recommended life span 3-5 years
- CE-marking, approved according to:**
- Industrial safety helmets: SS-EN397:2012
 - Eye protection: SS-EN166:2001
 - Hearing Protection: SS-EN 352-3:2002

TEST RESULTS FOR HEAD PROTECTION

The different levels of protection have been determined by CE-testing according to the table below.

Note! Different values (pressure, water flow, nozzle, distance, speed) can give significantly different results!

Protection level	Pressure bar (psi)	Flow l/min (gpm)	Nozzles		RPM	Distance mm (in.)	Linear Speed m/s (in./sec)	Result
			n	Dia. mm (in.)				
20/30	2000 (30000)	17.9 (4.7)	1	0.8 (.031)	-	75 (3)	0.5 (20)	NO PENETRATION
20/30	3000 (43500)	19.5 (5.2)	2	0.6 (.024)	3000	75 (3)	0.5 (20)	NO PENETRATION

PARTS THAT CAN BE ORDERED SEPARATELY

HELMET	HEARING PROTECTION	VISOR HOLDER	VISOR (PACK OF 10)	CHIN STRAP	HELMET SUSPENSION
ART. NO. 5102168 5000	ART. NO. 5105168 5000	ART. NO. 5103168 5000	ART. NO. 5104168 5000	ART. NO. 5102190 5000	ART. NO. 5102490 5000

NECK PROTECTION 20/30

Neck Protection is an excellent complement to the Head Protection. It helps protecting the sensitive area between Head Protection and Jacket/Overall/Waistcoat. Attaches to the rear of the Helmet. Closes with hooks&loops in front of the face. Can be worn in- or outside the visor. Prepared for use together with TST Head Protection 5102068. Only in protection level 20/30.



SIZES	WEIGHT	ART. NO.
ONE SIZE	0,27 KG/9.5 OZ.	5110568 5085



GAITERS

The Gaiters are to be worn outside of the operator's regular protective boots. The entire area round the leg and the foot is protected. Three clips and hook&loops in the rear, and an easily adjustable strap under the sole, ensures that the Gaiters stay in place. Very comfortable and light to wear. Only in 20/30 protection level. Sold in pairs.



SIZES	WEIGHT	ART. NO.
ONE SIZE	1.5 KG/3.3 LBS.	5158068 5085

BOOTS 3000



Boots 3000 withstands "everything" within waterjetting on account of its fixed aluminium gaiters. The gaiters are moulded and jointed, which gives both excellent comfort and mobility. Not suitable on uneven ground and is sensitive to small stones. (For that we recommend the Gaiters.) The Boots conform to the requirements set out in BGR 191.

SIZES	WEIGHT	ART. NO.
EUR 42-48 US/UK 9-13	1.9 KG / 4.2 LBS. EACH (BOOT 3000 SIZE 42)	5052080 5000

See shoe size conversion table on page 23.

BOOTS 3000 ARE TESTED AND CERTIFIED ACCORDING TO BGR 191

Pressure Bar (psi)	Flow l/min (gpm)	Nozzle Size mm (in.)	Distance mm (in.)	Linear Speed m/s (in./sec)	Thrust N (lbs)
1700 (25000)	20.0 (5.3)	Single 1.0 (.039)	75 (3)	0.2 (7.9)	250 (56)
2500 (36000)	19.0 (5.0)	Monro Jet 0.8 (.031)	75 (3)	0.2 (7.9)	227 (51)
3000 (43500)	19.0 (5.0)	Rotary 3x0.5 (.020)	75 (3)	0.2 (7.9)	243 (55)
3000 (43500)	16.2 (4.3)	Single 0.8 (.031)	75 (3)	0.2 (7.9)	207 (47)

BALACLAVA

The balaclava, which is made of neoprene, is designed to keep the body dry. The breast lap is made of Cordura fitted with adjustable straps to hold it in place. **The Balaclava offers no protection against water jets.**



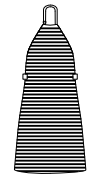
SIZES	ART. NO.
ONE SIZE	5010000 5000



APRON



Striped areas are protected



The full area of the Apron has built-in protection. The position of the Apron can be changed through the adjustable shoulderband. The special construction of this band helps spreading the weight of the Apron which is an important comfort detail. The Apron can be upfolded and fastened, for easier work in stairs and on ladders. Very easy to put on and off. Recommended for work on flat surfaces and is often used in combination with Hand Protections and Gaiters or Boots 3000. The Apron comes in one size. Weight Apron 20/30 approx. 1,5 kg/3.3 lbs.



Single/Rotor*	Size	Art. No.	Model No.
10/28	ONE SIZE	5123047	5000
20/30	ONE SIZE	5123068	5085

*Protection level – see test results on page 22.

HAND PROTECTIONS

The Hand Protection protects the hand and the forearm. The entire area round the arm is protected. Easy to put on and a thumb strap keeps it in place. Specific right and left hand designs. Sold in pair. Weight Hand Protections 20/30 pair approx. 0,7 kg/1.5 lbs



Wide hook&loops makes adjusting easy for different arms and clothing.

Striped areas are protected



Front



Back



Single/Rotor*	Art. No.	Model No.
10/28	5100047	5000
20/30	5100068	5085

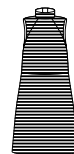
*Protection level – see test results on page 22.



WAISTCOAT WITH APRON



Striped areas are protected



Front 5000



Back 5000

A thoughtful combination between Waistcoat and Apron giving superior freedom of movement and comfort, but still offering effective protection for the whole front of the body. The construction with a Waistcoat on top helps spreading the weight of the protective garment. Hand Protections and Gaiters or Boots 3000 are suitable complements for extended protection. Weight Waistcoat w. Apron 20/30 approx. 3,1 kg/6.8 lbs.

The height of the Apron can be adjusted and the size of the Waistcoat can be adjusted with hook&loops – this means that it can be used by different operators or for different purposes.



Single/Rotor*	Size	Art. No.	Model No.
10/28	ONE SIZE	5123547	5000
20/30	ONE SIZE	5123568	5085

*Protection level – see test results on page 22.

PROTECTIVE GLOVES 500 BAR/7500 PSI

Waterproof Gloves with **protection up to 500 bar/7500 psi** pressure. The Gloves have a rough, sand patterned surface and the material itself provides lots of friction, all for the best grip. Separate inner gloves in nylon for good comfort. The Gloves have also been tested and classified with the highest values for cut protection and for abrasion, tear, and puncture. Outside is dipped in nitrile rubber. Shelf life up to 3 years. Certified in accordance with the CE directive. The Gloves do not withstand high pressure hydraulic fluid. Supplied in 12-pack. Weight Protective Gloves 500 11 - 12-pack approx. 2,74 kg/6 lbs.

PROTECTION LEVEL 5/5/2
 ROTOR 500 bar/7500 psi
 FLAT 500 bar/7500 psi
 SINGLE 200 bar/3000 psi
 CE Regulation (EU) 2016/425



SIZES	ART. NO.
9, 11	5600025 5000

JACKET WITH HAND PROTECTION



The Jacket provides effective full front protection as well as around the neck and shoulders. It also has integrated Hand Protections. Ideally combined with Head Protection 20/30, Trousers and Gaiters or Boots 3000 for maximum protection. Weight Jacket 20/30 L/XL approx. 2,7 kg/6 lbs.



Single/Rotor*	Size	Art. No.	Model No.
10/28	S/M-2XL/3XL	5122047	5080
20/30	S/M-2XL/3XL	5122068	5085

*Protection level – see test results on page 22.



WAISTCOAT

The Waistcoat offers effective protection and optimal comfort. Often used in combination with Head Protection 20/30, Hand Protections, Trousers, Overall and Gaiters or Boots 3000. Weight Waistcoat 20/30 approx. 1,7 kg/3.8 lbs.



Various sizes possible by using the hook&loops fasteners in the back.

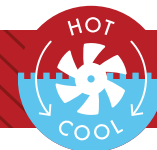


Single/Rotor*	Size	Art. No.	Model No.
10/28	M-2XL	5120047	5000
20/30	M-2XL	5120068	5085

*Protection level – see test results on page 22.



TROUSERS



The Trousers are fitted with full front protection up to the waist. The zips on the outside of the legs are protected by a sealing flap and a hook&loops flap. Wide, adjustable braces in stretch material. Elastic part in the rear waist and a belt which helps to distribute weight and improves the comfort. Trousers are very popular among workers who move a lot, climb or crawl.

Weight Trousers 20/30 L/XL approx. 2,8 kg/6.2 lbs.



For work in warm environments Trousers can be ordered with ventilation, which distributes fresh air in the legs and up in the front. Needs hook up to an air compressor.

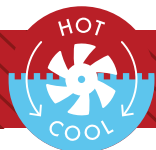


Single/Rotor*	Size	Art. No.	Model No.
10/28	S/M-2XL/3XL	5132047	5000
20/30	S/M-2XL/3XL	5132068	5085

*Protection level – see test results on page 22.



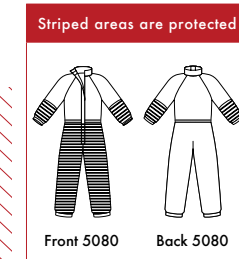
OVERALL WITH HAND PROTECTION



Protection against water jets on the whole front of the legs up to the waist, on the forearms and the integrated Hand Protections. The neoprene collar seals well round the neck while maintaining freedom of movement. An Overall is always in place, no matter if the operator is climbing on ladders or working in narrow spaces. Ideally combined with Head Protection 20/30, Waistcoat and Gaiters or Boots 3000. Weight Overall 20/30 XL approx. 4,7 kg/10.4 lbs.



For work in warm environments Overall can be ordered with ventilation, which distributes fresh air in the legs and up in the back. Needs hook up to an air compressor.



Single/Rotor*	Size	Art. No.	Model No.
10/28	S-3XL	5144047	5080
20/30	S-3XL	5144068	5085

*Protection level – see test results on page 22.



HOSE PROTECTION/SHROUD



Hoses break and couplings break, often very close to the operator and at sensitive areas of the body, such as the abdomen, the arm pit or the neck. These areas are difficult to protect properly. To further improve the safety of the operator, it is recommended to use a Hose Protection/Shroud. The Hose Protection is placed on the hose at the connection to the lance. Closest to the lance, where the hose is most likely to break, there is a 250 mm / 9.8 in. solid steel collar. This provides effective protection for the operator as it has been tested for 3000 bar / 43500 psi. An adjustable strap holds the Hose Protection/Shroud to the lance. The Hose Protection/Shroud is smooth and flexible.



The operator is protected if a coupling or hose breaks.



Swivel for optimal function together with swiveling hose connection.

HOSE PROTECTION Ø 36mm / 1.42 in.

Length	Art. No.	Mod. No.
750 mm/2.5 ft.	5060040	5920
1400 mm/4.6 ft.	5060040	5940
1800 mm/5.9 ft.	5060040	5960

HOSE PROTECTION Ø 47 MM/1.85 IN. SWIVEL

Length	Art. No.	Mod. No.
1400 mm/4.6 ft.	5060050	5942

HOSE PROTECTION Ø 59 MM / 2.32 IN.

Length	Art. No.	Mod. No.
750 mm/2.5 ft.	5060060	5920
1400 mm/4.6 ft.	5060060	5940
1800 mm/5.9 ft.	5060060	5960

HOSE CONNECTION COVER

The Hose Connection Cover is a safety device made to be put where hoses have couplings and connections, for example at foot pedals and pumps. An adjustable strap holds the Connection Cover securely in place. In the other end, there are loops for further fastening or assembling several Covers. It is not tested for "pin hole leaks", but for hose burst at 3000 bar / 43500 psi.



Ø 61 mm / 2.4 in.

Length	Weight	Art. No.	Mod. No.
400 mm / 1 ft 4 in.	0.4 kg / 0.9 lbs.	5071000	5910
5 m / 16 ft 5 in.	3.8 kg / 8.4 lbs.	5071000	5978

WHIP STOP/CHECK

An excellent tool for securing hose ends at foot pedals, pumps or connections. Properly mounted, it will catch a broken hose and prevent it from whipping. The whip stop is mounted by slipping it over the hose ends, stretching it and finally tightening the ends and secure with the rubber lock rings.

Produced and tested in accordance with EN 12195-2.

Width approx 25 mm / 1 in.

Tensile strength 30 kN.

Minimum order 50 pcs.



TENSILE STRENGTH	LENGTH	ART. NO.
30,000 N	APPROX. 75 CM / 2,5 FT.	5072000 5000



PROTECTIVE CURTAIN 3000 BAR

When you need to protect sensitive equipment, machinery or people from water, water jetting, gravel spray and ricochets! Practical curtains which can be put together to form a protective wall of desired length. Withstands up to 3000 bar/43500 psi, 43 l/min, at stand-off distance 1,5 m. 1100 bar/16000 psi, 100 l/min, at stand-off distance 2,3 m. Each section is approx. 152x250 cm / 60x98 in. and when put together they build 147 cm / 57 in. per curtain. On top there are 5 straps for easy mounting and in the bottom there are holes for further securing. The sections are easily connected with 6 smart, strong and easily handled locks.



SIZE	WEIGHT	ART. NO.
152X250 CM / 60X98 IN.	2.5 KG / 5.5 LBS	5800010 5000

TST SPECIAL GREASE REMOVER

Grease Remover, specially formulated for TST clothing. Mixed with water and applied to the soiled garment with a brush.



SIZES	ART. NO.
0.5 LITRE	5092000 5010
2.5 LITRE	5092000 5020

PROTECTION UP TO 3000 BAR/43500 PSI

TECHNICAL DESCRIPTION

Outer material: Laminated Polyamide. Inner material: Polyester mesh. Protective material: Special fabric containing Dyneema® fiber. Seams: Taped. Washing instructions: TST Special Grease Remover. CE-marking: Approved according to the Regulation (EU) 2016/425 and boots BGR 191.

TEST RESULTS FOR CLOTHING

The different levels of protection have been determined by testing according to the table below. Note! Different values (pressure, water flow, nozzle, distance, speed) can give significantly different results!

Protection level	Pressure bar (psi)	Flow l/min (gpm)	Nozzles		RPM	Distance mm (in.)	Linear Speed m/s (in./sec)	Result
			n	Dia. mm (in.)				
10/28	1000 (15000)	19.8 (5.2)	1	1.0 (.039)	-	75 (3)	0.5 (20)	No penetration
10/28	2800 (40000)	18.8 (5.0)	2	0.6 (.024)	3000	75 (3)	0.5 (20)	No penetration
20/30	2000 (30000)	17.9 (4.7)	1	0.8 (.031)	-	75 (3)	0.5 (20)	No penetration
20/30	3000 (43500)	19.5 (5.2)	2	0.6 (.024)	3000	75 (3)	0.5 (20)	No penetration



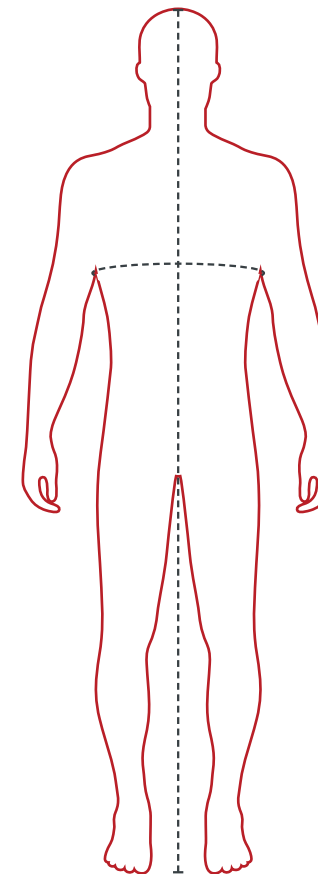
MARTINDALE TEST

The Martindale method, also known as the Martindale rub test, simulates natural wear of a seat cover, in which the textile sample is rubbed against a standard abrasive surface with a specified force. The test equipment works in intervals of 5000 cycles, totaling the wear number (unit: Martindale) of abrasion cycles that leads to the material being worn to a specified degree. The higher the value, the more resistant the material is to abrasion and heavy usage.

Domestic cotton fabrics often have a rating of 20,000 rubs and polyester fabrics have 30,000. TST striped fabric has a rating of 300,000 and the HD fabric has over 500,000. Very strong and durable materials.

The method for Martindale test is EN ISO 12947-1:1998.

SIZING TABLES / WASHING INSTRUCTIONS



HEIGHT

CHEST

Measure the circumference of your chest at its widest point.

SIZES (MENS)

Trousers and Jacket	Height cm (ft. in.)	Chest cm (in.)
S/M	<186 (<6'1")	85-100 (33"-39")
L/XL	187-192 (6'2"-6'4")	108-116 (43"-46")
2XL/3XL	193-206 (6'4"-6'9")	124-132 (49"-52")
Waistcoat		
M-2XL	176-196 (5'10"-6'5")	85-124 (33"-49")
3XL	196-206 (6'5"-6'9")	124-132 (49"-52")
Overall		
S	<175 (<5'9")	92 (36")
M	176-180 (5'9"-5'11")	100 (39")
L	181-186 (5'11"-6'1")	108 (43")
XL	187-192 (6'2"-6'4")	116 (46")
2XL	193-200 (6'4"-6'7")	124 (49")
3XL	201-206 (6'7"-6'9")	132 (52")

CONVERSION TABLE SHOE SIZES (MENS)

EUR	US	UK
42	9	9
43	9 1/2	9 1/2
44	10	10
45	10 1/2	10 1/2
46	11	11
47	12	12
48	13	13

CARE AND WASH INSTRUCTIONS

Zippers and hook&loops are sensitive for dirt and shall always be kept clean. Clothes can be hand washed with brush and TST Grease Remover or a soap solution. Allow to dry in a well ventilated area. Do not expose the garments to diesel or other solvents. Store the garments dry and not in direct sunlight.



Hand wash. Water temperature not above 40°C or 105°F



Do not tumble dry



Do not bleach



Do not dryclean



Do not iron



SAVING LIVES

OUR VALUES

TRUSTWORTHINESS

Through our actions and our products we shall instil a high level of confidence in our customers, suppliers and business partners.

LONG-TERM APPROACH

In our internal and external relationships, we shall be considered a long-term partner. Our products shall be developed and marketed with a long-term profile, where we want to see customers and suppliers staying with us year after year.

DEVELOPMENTAL

By continuously developing our products and working on innovative new solutions, we will bring products to the market that are of the highest class. Collaborations with universities and suppliers at the forefront of textile materials and treatments are a matter of course for us.