

# The real world



UNIQUE PROTECTION EQUIPMENT





SAVING LIVES





# OUR MISSION:

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 Lillieroth, Founder and Managing Director, TST Sweden



# SAVING LIVES







**YOU'RE**

**SAFE**

**WITH US**





We're on a mission: To improve people's safety and performance in extremely demanding work environments. It's no coincidence that we're the leading company for protective clothing and products. Over the years, we've developed a culture of continuous innovation in which methods, concepts, and products are developed and refined on an ongoing basis.

We are Smooth, Ambitious, Futuristic, Energetic.

In short: We are S.A.F.E. So are you.

## WE ARE BUILDING IT TOGETHER

TST has a clear ideology which rests on a stable foundation of values. The core values concern what we believe in and how we can offer maximised business values for our customers.

The mission is a succinct statement that answers why we are here and explains the higher purpose of our business.

The vision is the future image of the mission's success. It reminds us of where we are heading and our long-term goals.

The promise is the pinnacle of our brand. It is about what we do for our customers and how we want to be perceived. The promise is something we must always keep for better or worse.

Along with you, our ideology is one of the most important building blocks in our culture.







**WATERJET P**

**UP TO 3**





# PROTECTION

000 BAR





# 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

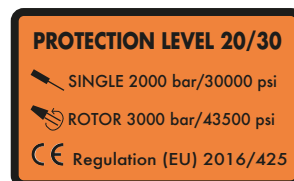
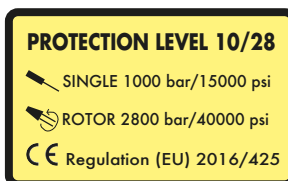
Outer material HD is extremely durable TECHSTEEL™ which is 50% more resistant against abrasion and tearing! Request for these qualities comes originally from the industry of concrete removal and demolition.



## 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.

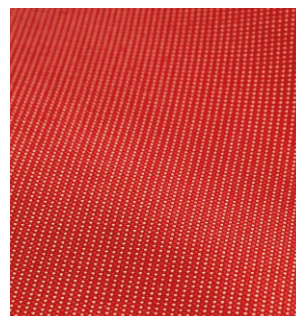
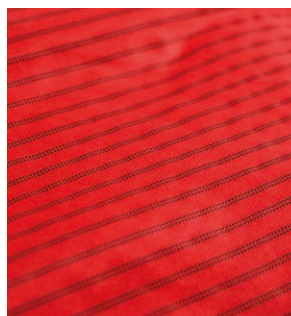
Orange label indicates protection for 2000 bar/30000 psi single jet and 3000 bar/43500 psi rotor jet – 20/30.



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



## 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.



# WITH ATTRACTIVE PRICING



## 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. 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

### 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!

### 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

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 CAN BE ORDERED SEPARATELY

#### HELMET



ART. NO.  
5102168 5000

#### HEARING PROTECTION



ART. NO.  
5105168 5000

#### VISOR HOLDER



ART. NO.  
5103168 5000

#### VISOR (PACK OF 10)



ART. NO.  
5104168 5000

#### CHIN STRAP



ART. NO.  
5102190 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.

## 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

### 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)



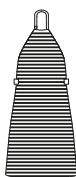




## APRON



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.

## 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.



# 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



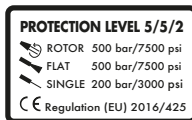
Single/Rotor*	Art. No.	Model No.
10/28	5100047	5000
20/30	5100068	5085

\*Protection level – see test results on page 22.



# PROTECTIVE GLOVES 500 BAR/7500 PSI

Waterproof Gloves with **protection up to 500 bar/75000 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.



SIZES	ART. NO.
9, 11	5600025 5000

# JACKET WITH HAND PROTECTION



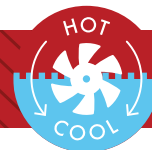
The Jacket provides effective full front protection as well as around the neck and shoulders. It also has integrated Hand Protections. Ideally combined with Head Protection 20/30, Trousers and Gaiters or Boots 3000 for maximum protection. Weight Jacket 20/30 L/XL approx. 2,7 kg/6 lbs.



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.

# 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.



## 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.

Striped areas are protected



Front 5080



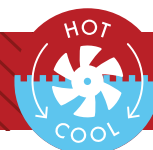
Back 5080



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.

## OVERALL WITH HAND PROTECTION



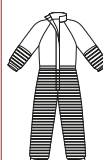
Protection against water jets on the whole front of the legs up to the waist, on the forearms and the integrated Hand Protections. The neoprene collar seals well round the neck while maintaining freedom of movement. An Overall is always in place, no matter if the operator is climbing on ladders or working 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.



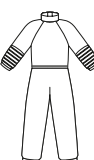
For work in warm environments Overall can be ordered with ventilation, which distributes fresh air in the legs and up in the back. Needs hook up to an air compressor.



Striped areas are protected



Front 5080



Back 5080



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 way to secure 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. Tensile strength 30 kN. Minimum order 50 pcs.



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

# 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

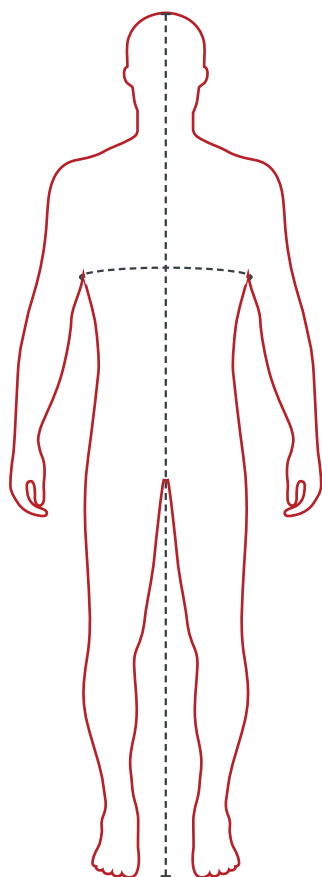
The Martindale method, also known as the Martindale rub test, simulates natural wear of a seat cover, in which the textile sample is rubbed against a standard abrasive surface with a specified force. The test equipment works in intervals of 5000 cycles, totaling the wear number (unit: Martindale) of 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



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





WE ARE  
**S•A•F•E**

**SMOOTH  
AMBITIOUS  
FUTURISTIC  
ENERGETIC**

---

**= S.A.F.E.**



**PROOP**

**UP TO 5**

PROTECTION LEVEL S/S  
ROTOR 500 bar/7250 psi  
FLAT 500 bar/7250 psi  
SINGLE 200 bar/2900 psi  
CE EN 16753

TESTED FOR  
HYDRAULIC FLUID  
PENETRATION





ERATOR



500 BAR



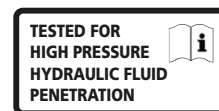
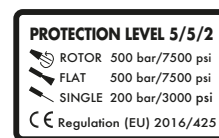
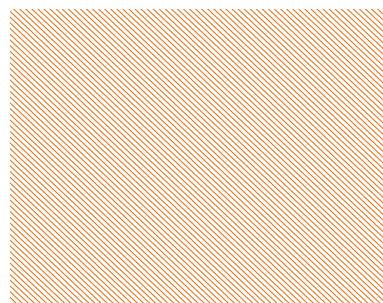
# PROOPERATOR

Until now there has been no adequate protection for High Pressure Cleaning or Hydraulic fluid leakage, and certainly not certified for High Visibility. Nothing that has been adapted to the power of today's equipment or user demands for comfort and functionality. Our experience from waterjetting

with very high pressures (up to 3000 bar), and other types of personal protective equipment, has been the basis for this line of clothing. ProOperator - High Pressure Cleaning and Hydraulic Fluid Protection.

## AREAS WITH PROTECTION

Striped fabric clearly identifies protected areas and the labels tell the level of protection. As high pressure cleaning and hydraulic fluid leakage is very dangerous, it is essential that the operator knows where and what he or she is protected for.



## 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 a 2 layer laminate withstands water and dirt more effectively. This keeps the operator dryer and lighter, and the clothing is easy to clean. Several products also have waterproof zippers with overlapping flaps. Excellent for the toughest conditions!





## THE STRONGEST FIBER IN THE WORLD!

Dyneema® is the world's strongest fiber (15 times stronger than steel on a weight for weight basis). This makes it possible to offer high levels of protection against waterjetting hazards even with lightweight fabric.



## HIGH VISIBILITY - EN ISO 20471

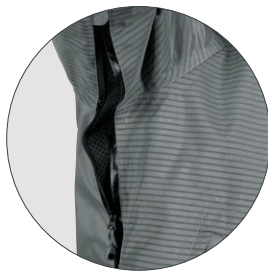
There is a growing demand for High Visibility Personal Protective Equipment and therefore TST decided to develop and certify a series of clothes for that purpose. All the good protective qualities and functional details from the regular ProOperator products were kept, and the High Visibility details required were added. The result is extremely functional clothes, with excellent comfort! The great looks is a pleasant side effect - High Visibility High Pressure Cleaning and Hydraulic Fluid Protection.

## IT'S ALL IN THE DETAILS

Thoughtful details are often the difference between good and excellence. We know that by working closely with the users.



Reinforcements on the knees / pockets for knee pads.



Openable ventilation in the armpits.



Pocket for ID card on the right sleeve.



Detachable hood with three adjustment possibilities and room for head protection.

## JACKET WITH HOOD



2-layer functional jacket which is CE certified for protection against High Pressure Cleaning and tested for high pressure hydraulic fluid. Very smooth and flexible to wear. Lined for high comfort. Water- and dirt repellant outside. Thoughtful details as openable ventilation in the armpits, comfortable cuffs and adjustable spacious hood.

- Lined for highest comfort
- Waist adjustable with drawstrings
- Inside pocket with zipper
- Special pocket for phone
- Protection on the entire front and head
- Waterproof zippers with overlapping flaps
- Pocket for ID card on the right sleeve

## HIGH VISIBILITY



SIZES

XS-3XL

ART. NO.

5622025 5000

WEIGHT

1.6 KG / 3.5 LBS. (SIZE L)

SIZES

XS-3XL

ART. NO.

5622025 5690

WEIGHT

1.6 KG / 3.5 LBS. (SIZE L)



# TROUSERS



Adjustable elastical waist for perfect fit. Practical details such as knife pocket, leg pocket and dual loops for belt. Zippers down on the legs allows them to widen to facilitate donning the boots.

- Protection on the whole front
- Detachable braces (included)
- Leg pocket with waterproof zipper on left leg
- Pockets for knee pads
- Reinforcements on the knees
- Knife pocket on right leg
- Waterproof zippers with overlapping flap

## HIGH VISIBILITY



SIZES

XS-3XL

ART. NO.

5632025 5000

WEIGHT

1.3 KG / 2.9 LBS. (SIZE L)

SIZES

XS-3XL

ART. NO.

5632025 5690

WEIGHT

1.3 KG / 2.9 LBS. (SIZE L)

## OVERALL WITH HOOD



Excellent for the toughest conditions! Lined for high comfort. Water- and dirt repellant outside. Openable ventilation in the armpits, waterproof cuffs, adjustable hood,

- Lined for high comfort
- Inside pocket with zipper
- Special pocket for phone
- Protection on the entire front and head
- Elastical back waist
- Zippers at the bottom of the legs
- Knife pocket on right leg
- Pockets for knee pads
- Pocket for ID card on the right sleeve
- Reinforcements on the knees

## HIGH VISIBILITY



SIZES

XS-3XL

ART. NO.

5640025 5000

WEIGHT

2.5 KG / 5.5 LBS. (SIZE L)

SIZES

XS-3XL

ART. NO.

5640025 5690

WEIGHT

2.6 KG / 5.7 LBS. (SIZE L)





## VEST HIGH VISIBILITY



Comfortable vest with protection on both the front and the back. Water- and dirt repellant outside.

- Protection all around the Vest
- Good for warm environments
- Special pocket for phone



SIZES

S-3XL

ART. NO.

5620025 5690

WEIGHT

1 KG / 2.2 LBS. (SIZE L)





TST  
WATERJET  
PROTECTION  
2000 BAR 100°C  
EN 16676-1:2015

PROTECTION LEVEL  
Type: PROTECT 1000 Bar/100°C  
Type: FLAT 1000 Bar/100°C  
Type: SMOOTH 2000 Bar/100°C  
CE 011081

TESTED FOR  
HIGH PRESSURE  
HYDRAULIC FLUID  
PENETRATION



## APRON

The full area of the Apron has built-in protection. Good alternative in warm environments. The Apron is equipped with a new, cleverly designed shoulderband which improves the comfort of the operator. Properly adjusted, it distributes the weight extremely good. Easy to put on and take off.

SIZES	ONE SIZE
ART. NO.	5623025 5000
WEIGHT	0.8 KG / 1.8 LBS.



## ARM PROTECTIONS

The Arm Protections have built in protection all the way round the arm, from the wrist to the upper arm. Elastic cuffs in both ends for easy donning and good fit. Developed and recommended for personnel working at test rigs for hydraulics. Tested to withstand high pressure hydraulic fluid according to the table on page 18. Sold in pairs.

SIZES	XS/M, L/2XL
LENGTH	XS/M: 40 CM L/2XL 50 CM
ART. NO.	5602025 5000
WEIGHT	0.35 KG / 0.8 LBS.



# HEAD PROTECTION 20/30



Supplied with carrying bag



- 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

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. 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

- The Head Protection 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 CAN BE ORDERED SEPARATELY

### HELMET



ART. NO.  
5102168 5000

### HEARING PROTECTION



ART. NO.  
5105168 5000

### VISOR HOLDER



ART. NO.  
5103168 5000

### VISOR (PACK OF 10)



ART. NO.  
5104P10068

### CHIN STRAP



ART. NO.  
5102190 5000



## PROTECTIVE GLOVES 500 BAR

Waterproof Gloves with protection for up to 500 bar 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.



SIZES	ART. NO.
9, 11	5600025 5000

## PROOPERATOR BOOTS 500 BAR

Protective and waterproof Boots CE-certified for pressurized liquids and tested for high pressure hydraulic fluid up to 500 bar / 7500 psi pressure! The Boots are professionally designed for hours and hours of hard work. Completely vulcanized rubber with reinforcement to withstand pressurized liquids on the foot (black parts.) Also fitted with steel toecap and steel inserts to withstand sharp objects from under. Textile inner lining for good comfort. The sole is designed for good grip. If extra grip is needed, eg in winter, it can be fitted with spikes. The boot shaft can be tightened with an adjustable strap. Sold in pairs.



SIZES	EUR 36-48
ART. NO.	5652025 5000



Note: Boots 500 withstands 300 bar / 4350 psi nozzle.





PROPERATOR

Hose Protection / Slangskydd  
Art. No. 5660045 5940 90  
WWW.PROPERATOR.COM



## HOSE PROTECTION / SHROUD

The lance is held near vital parts of the body and hoses break, often near couplings and connections like on the lance. Be safer with a Hose Protection/Shroud. The Hose Protection/Shroud provides effective protection for the operator! It has been tested for 500 bar / 7500 psi. An adjustable strap holds the Hose Protection/Shroud securely in place. The Hose Protection/Shroud is very smooth and flexible.

### HOSE PROTECTION Ø 41 mm / 1.6 in.

Length	Art. No.
750 mm/2.5 ft.	5660045 5920
1400 mm/4.6 ft.	5660045 5940

## 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





[illegible]

## NOTES



**JACKET WITH HOOD**

SIZES XS-3XL

ART. NO. 5622025 5000

**TROUSERS**

SIZES XS-3XL

ART. NO. 5632025 5000

**OVERALL WITH HOOD**

SIZES XS-3XL

ART. NO. 5640025 5000

**APRON**

SIZES ONE SIZE

ART. NO. 5623025 5000

**JACKET WITH HOOD  
HIGH VISIBILITY**

SIZES XS-3XL

ART. NO. 5622025 5690

**TROUSERS  
HIGH VISIBILITY**

SIZES XS-3XL

ART. NO. 5632025 5690

**OVERALL WITH HOOD  
HIGH VISIBILITY**

SIZES XS-3XL

ART. NO. 5640025 5690

**VEST  
HIGH VISIBILITY**

SIZES XS-3XL

ART. NO. 5620025 5690

**ARM PROTECTIONS**

SIZES XS/M, L/2XL

ART. NO. 5602025 5000

**HEAD PROTECTION  
20/30**

SIZES ONE SIZE. 52-64

ART. NO. 51K02168 90

**PROTECTIVE GLOVES  
500 BAR**

SIZES 9, 11

ART. NO. 5600025 5000

**PROOPERATOR  
BOOTS 500 BAR**

SIZES EUR 36-48

ART. NO. 5652025 5000

**HOSE PROTECTION /  
SHROUD**

SIZES	ART. NO.
750 MM	5660045 5920
1400 MM	5660045 5940

**TST SPECIAL  
GREASE REMOVER**

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

# PROTECTION UP TO 500 BAR/7500 PSI

## TECHNICAL DESCRIPTION

Outer material: Coated for water- and dirt repellancy. Inner material: Polyester mesh. Protective material:

Special fabric containing Dyneema® fiber. Seams are taped. Approved according to the directive Regulation (EU) 2016/425.

## TEST RESULTS – PROTECTION LEVELS CLOTHING

The different levels of protection have been determined by testing according to the table below. In High Pressure Cleaning mainly three types of nozzles/jets are used – 1 rotor, flat and single. The safety levels have been chosen to cover the most common working situations and to verify the quality of clothing and protective qualities. Note! Different values (for example pressure, flow, nozzle, distance or speed) can give significantly different results!

### PROTECTION LEVEL 5/5/2

-  ROTOR 500 bar/7500 psi
-  FLAT 500 bar/7500 psi
-  SINGLE 200 bar/3000 psi
-  Regulation (EU) 2016/425

Protection level	Pressure bar (psi)	Flow l/min (gpm)	Nozzle type	Distance (mm)	Speed (m/s)	Result
5/5/2	500 (7500)	16,9	Rotor - 1 Rotor jet	75	0,5	No penetration
5/5/2	500 (7500)	16,9	Flat - Single fan jet 15°	75	0,5	No penetration
5/5/2	200 (3000)	10,7	Single - Single round jet	75	0,5	No penetration

## TEST RESULTS – HYDRAULIC FLUID

The different levels of protection against hydraulic fluid have been determined by testing according to the table below. The smallest Sapphire nozzle, only 0,15 mm, has been used to simulate a so called pin burst. The safety levels have been chosen to cover the most common working situations and to verify the quality of clothing and protective qualities. Note! Different values (pressure, flow, burst size, distance, speed) can give significantly different results!

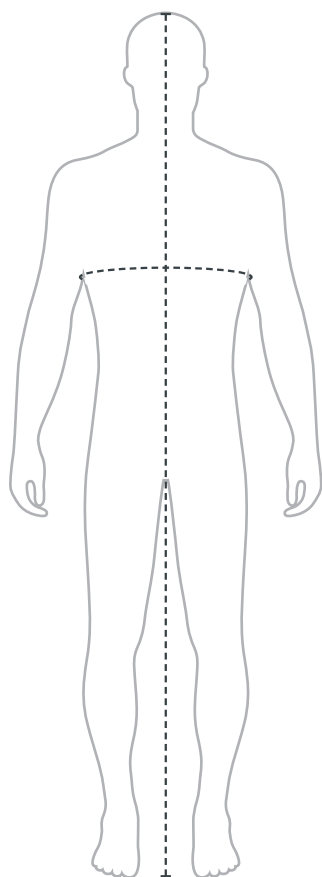
### TESTED FOR HIGH PRESSURE HYDRAULIC FLUID PENETRATION



Pressure bar (psi)	Nozzle type	Distance (mm)	Speed (m/s)	Break-through time (s)
250 (3750)	0,15 mm Sapphire - pin	5	0	> 60 s
350 (5100)	0,15 mm Sapphire - pin	5	0	35 s
500 (7500)	0,15 mm Sapphire - pin	5	0	4 s



# SIZING TABLES / WASHING INSTRUCTIONS



## HEIGHT

## CHEST

Measure the circumference of your chest at its widest point.

## SIZES (MENS)

Jacket Trousers Overall	Height cm (ft. in.)	Chest cm (in.)
XS	160-167 (5'3"-5'6")	84 (33")
S	168-175 (5'6"-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
36	4	3
37	5	4
38	5 1/2	4 1/2
39	6 1/2	5 1/2
40	7 1/2	6 1/2
41	8 1/2	7 1/2
42	9	8
43	10	9 1/2
44	10 1/2	10
45	11 1/2	10 1/2
46	12	11
47	13	12
48	14	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



# WORK SAFETY SO





**PLACE**

**SOLUTIONS**

# WORKPLACE SAFETY SOLUTIONS

The Workplace Safety Solutions products are developed for when you need to protect sensitive equipment, machinery or people from water, water jetting, gravel spray and ricochets! They have an extremely strong outer protective fabric called TECHSTEEL™.

All fabric is tested to withstand up to 3000 bar/43500 psi, 43 l/min, at stand-off distance 1,5 m / 5 ft, which equals a force of approx. 550 Nm.  
1100 bar/16000 psi, 100 l/min, at stand-off distance 2,3 m / 7.5 ft, which equals a force of approx. 740 Nm.

## WSS OPERATOR BOOTH

When the operator needs to be protected from water, water jetting, gravel spray and ricochets the Operator Booth provides a safe and comfortable working environment. The Operator Booth consists of an inflatable body, which is dressed with an extremely durable TECHSTEEL® cover. Inside there is a floor. The Booth is prepared for connecting to Protective Wall and Protective Curtain. There are several anchor points, at ground level and high up.

A "back door" can be ordered separately.

Very handy to transport and store thanks to the inflatable body.

Measurements approx. 1x1,7x2,1 m / 3.3x5.6x6.9 ft.



SIZE	WEIGHT	ART. NO.
1X1,7X2,1M/3.3X5.6X6.9	26 KG / 58 LBS	5850010 5000

## WSS SCUFFGUARD

Protect valuable hoses from wear and tear with Scuffguard, TECHSTEEL® cover. The 2 m/6.6 ft. version is easy to mount as it is closed with hooks and loops. The 5 m/16.4 ft. version is like a tube. Inner dia is approx. 57 mm / 2,2 in for both versions. Both have eyelets for fastening at the ends.



LENGHT	WEIGHT	ART. NO.	MOD. NO.
2 M / 6.6 FT.	n.n KG / n.n LBS.	5880060	5970
5 M / 16.4 FT.	n.n KG / n.n LBS.	5880050	5978



## WSS PROTECTIVE CURTAIN

Practical curtains which can be put together to form a protective wall of desired length. Each section is approx. 152x250 cm / 5x8.2 ft. and when put together they build 147 cm / 4.8 ft. 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. Can be connected directly to the Operator Booth and with Connecting Panel to the Wall.

### Art. No. Connecting Panels

Curtain to Wall – Keder-female 5827040 5450  
Curtain to Wall – Keder-male 5827040 5460



SIZE	WEIGHT	ART. NO.
152X250 CM / 5X8.2 FT.	2.2 KG / 4.9 LBS.	5800010 5000

## WSS PROTECTIVE WALL

Protective Wall is a stand alone solution which doesn't require "something to hang on". Several walls can be connected together indefinitely. The wall can be disassembled for easy transport and storage. Each section is approx. 168x220 cm / 5.5x7.2 ft. Comes complete with alu frame, feet, protective fabric and bottom flap. Connecting panel and "sand bags" for weight, are available accessories.

### Art. No. Connecting Panels

Panel between Walls – Keder-keder 5826040 5240  
Wall to Curtain or Booth – Keder-female 5827040 5450  
Wall to Curtain or Booth – Keder-male 5827040 5460

SIZE	WEIGHT	ART. NO.
168X220 CM / 5.5X7.2 FT.	19 KG / 42 LBS.	5820010 5000





SAVING LIVES

## OUR VALUES

### TRUSTWORTHINESS

Through our actions and our products we shall instill 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.





## CONCRETE RENOVATION

These pictures show a typical working place where TST protection for UHP water jetting is needed. A Falch Trailjet is used for blasting concrete off a bridge. The man is wearing an apron and hand protection from TST Sweden.

**Photo** Falch GmbH in Germany  
[www.falch.com](http://www.falch.com)



## GAS FIRE

TST Smart Hose is used to seal off a heavy gas fire. The heat from the fire threatens to set the whole block on fire! The Smart Hose produces a wall off water which keeps the fire and heat under control and lets firefighters concentrate on other important matters.

**Photo** Iconos Vertriebs GmbH in Germany  
[www.iconos-system.com](http://www.iconos-system.com)







## COOLING VEST APPLICATIONS

Stefan Holm doesn't need much of a presentation. Sweden's world famous high jumper is a familiar face! Already to the Olympic Games in Athens 2004, the Swedish and Norwegian Olympic Committees decided to help their athletes with TST Cooling Vests. In time for the games in Beijing, they renovated and upgraded the vests.

[www.tst-sweden.se](http://www.tst-sweden.se)

Anna-Carin Ahlquist is very good at tabletennis, and she is very positive, and she's got MS. The TST Cooling Vest helps her to maintain a comfortable body temperature which really helps her to perform at high level. Several Championship wins are proof of that!

**Photo** Anna-Carin Ahlquist  
[www.nogg.se/hagasessan](http://www.nogg.se/hagasessan)



Mats Nilsson is one of the most winning drivers in Sweden. 12 National Championships in Motocross and Enduro, 3 wins in Novemberkåsan and 6 wins in the legendary Gotland Grand National. Mats uses TST Coolingvest to be able to perform at the maximum.

**Photo** Anders Reidemar



Tõnu Endrekson and Jüri Jaanson clinched a silver medal in double sculls in the Olympic Games in Beijing. They used TST Cooling Vests every day in order to maximize their performance.



## HEATING VEST AND DIVING

We had the opportunity to take part of an interesting test together with some of Swedens best "heavy divers". It was in January and they operated in very cold water. They dressed up as usual but they added one thing, a TST Heating Vest.



**GETTING READY TO DIVE TOOK APPROXIMATELY ONE HOUR FOR THREE MEN, INCLUDING THE DIVER!**



## TOUGH CONDITIONS

They walked out to a steep and climbed down to 30 m depth. There they worked for almost 30 minutes and then they climbed up. All divers liked the comfort the vest gave and they didn't get stiff and numb from the cold as early as without vest. When the torso is warm, the blood circulation is good!



## FIRE NEAR THE WOODS

The Fire Brigade was consulted to burn down an old factory. The conditions were difficult as there were woods and other buildings on three sides. In order to secure the surroundings, they used several TST Smart Hoses. The fire was very intense but everything went well. On the pictures the Smart Hose is used both to shield off and make a fire break, and for controlling the fire.

**Photo** Leif Johansson  
[www.tst-sweden.se](http://www.tst-sweden.se)







UNIQUE PROTECTION EQUIPMENT

### **Do you have a picture?**

Ever since we developed our first collection of heat protection clothing in 1990, we have consulted end users across the world. Today we offer a broad range of protective equipment with technically advanced features, high level of comfort and high quality. We believe in sharing information and learning from each other, so if you want to help us to spread information, contact TST Sweden AB.

**Our unique protection equipment  
is used in harsh environments  
all over the world!**