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HAMMELMANN

Australia



Waterjet Protection

PROTECTION UP TO 3000 BAR/43500 PSI



Trousers

Hand Protection

Jackets

Waistcoat/Aprons

Overalls

Shoes/Accessories

TST RANGE

Available in Red or Hi-Vis



SIGMA COMPLETE KIT

Offers very good protection. Ventilation is an option. Includes: Waistcoat and Overall with integrated Hand Protection.

Size S, M, L, XL, 2XL, 3XL.

Single/Rotor*	Size	Art. No.
10/28	S-3XL	51K20047
20/30	S-3XL	51K20068

DELTA COMPLETE KIT

Offers very good protection and excellent comfort. Ventilation is an option. Includes: Waistcoat, Trousers and Hand Protection.

Size S, M, L, XL, 2XL, 3XL.

Single/Rotor*	Size	Art. No.
10/28	S/M-2XL/3XL	51K10047
20/30	S/M-2XL/3XL	51K10068

GAMMA COMPLETE KIT

Provides comprehensive protection and high comfort. Ventilation is an option. Includes: Trousers and jacket with integrated Hand Protection.

Size S, M, L, XL, 2XL, 3XL.

Single/Rotor*	Size	Art. No.
10/28	S/M-2XL/3XL	51K30047
20/30	S/M-2XL/3XL	51K30068

* Protection Level



Comfort details in the back.



TROUSERS

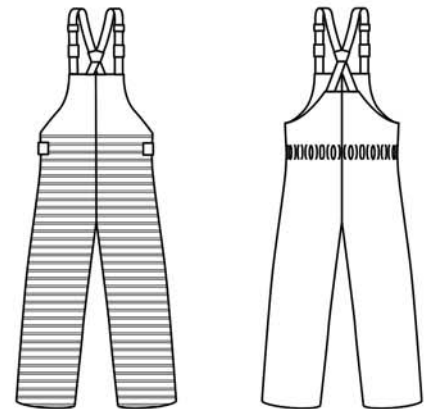
The trousers are fitted with front protection up to the waist. The zips on the outside of the legs are protected by a sealing velcro flap. Wide, adjustable braces with stretch in the back. Elastic part in the rear waist and adjustable band in the sides for maximum comfort and perfect fit. Trousers are very popular among workers who move a lot, climb or crawl. Can be ordered with optional ventilation. Preferably used in combination with Waistcoat or Jacket, Hand Protection, Gaiters or Boots 3000.

Weight 2.4 kg.
(Trousers 20/30, L/XL).

Size S/M, L/XL, 2XL/3XL.



Waist adjustment for perfect fit.



Protected Areas Striped

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

* Protection Level



JACKET WITH HAND PROTECTION

The Jacket provides effective full front protection as well as around the neck and shoulders. It also has integrated Hand Protection. Ideally combined with Trousers and Gaiters or Boots 3000 for maximum protection.

Weight 2.4 kg.
(Jacket 20/30 Model 5080, L/XL).
Size S/M, L/XL, 2XL/3XL.



Front 5080



Back 5080

Protected Areas Striped

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

* Protection Level

WAISTCOAT

The Waistcoat offers effective protection and optimal comfort. Various sizes possible by using the velcro fasteners at the waist and back. The Waistcoat used in combination with Hand Protection, Trousers, Overall and Gaiters or Boots 3000.

Weight 1.2 kg.
(Waistcoat 20/30 Model 5000, M/2XL).
Size M/2XL, 3XL



Front 5000



Back 5000

Protected Areas Striped

Single/Rotor*	Size	Art. No.	Model No.
10/28	M/2XL, 3XL	5120047	5000
20/30	M/2XL, 3XL	5120068	5000

* Protection Level

OVERALL WITH HAND PROTECTION

Protection against water jets on the front of the legs, the forearms and on the integrated hand protection. The neoprene collar seals well against the neck while maintaining freedom of movement. Suitable for operators climbing on ladders or working in narrow spaces. Ideally combined with waistcoat for upper body protection, Gaiters or Boots 3000 for foot protection and balaclava for better comfort. The overall can also be fitted with ventilation.

Weight 3.3 kg.

Size S, M, L, XL, 2XL, 3XL.



Neopren collar seals round the neck.



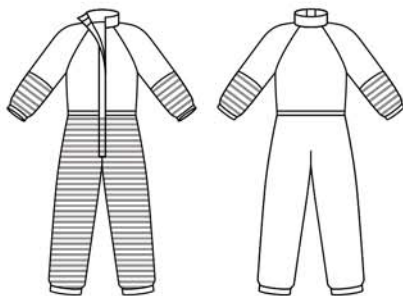
Ventilation comfort option for warm environments.



Connection with flow regulator.



Integrated Hand Protection



Front 5080

Back 5080

Protected Areas Striped

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

* Protection Level

WAISTCOAT WITH APRON

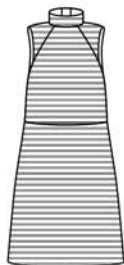
A thoughtful combination between the Waistcoat and Apron giving superior freedom of movement and comfort, but still offering effective protection for the whole front of the body. The construction with a Waistcoat on top helps spread the weight of the protective garment. The height of the Apron and the size of the Waistcoat can be adjusted with velcros – this means that it can be used by different operators or for different purposes. Hand Protection and Gaiters or Boots 3000 are suitable complements for extended protection.

Weight 3.3 kg.

(Waistcoat with Apron 20/30).

One size.

Adjustable height of the Apron - safer, better comfort and can be used by different sized operators.



Front 5000



Back 5000

Protected Areas Striped

Single/Rotor*	Size	Art. No.	Model No.
10/28	One size	5123547	5000
20/30	One size	5123568	5000

* Protection Level





Adjustable shoulderband – perfect fit and weight distribution!

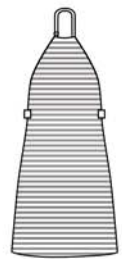
Foldable front which fastens with press studs. Makes it easier to work on stairs or ladders!

APRON

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 spread the weight of the Apron which is important for comfort. The Apron can be upfolded and fastened, for easier work on stairs or ladders. Very easy to put on and off. Recommended for work on flat surfaces and is often used in combination with Hand Protection and Gaiters or Boots 3000.

Weight 1.4 kg.
(Apron 20/30).

One size.



Front 5000

Protected Areas Striped

Single/Rotor*	Size	Art. No.	Model No.
10/28	One size	5123047	5000
20/30	One size	5123068	5000

HAND PROTECTION

The Hand Protection protects the hand and the forearm. The entire area is protected. Easy to put on and a thumb strap keeps it in place. A wide velcro makes it easy to adjust for different arms and clothing. Often used in combination with Waistcoat or Apron. (Hand Protection is integrated in the Overall and the Jacket.) Specific right and left hand designs.

Weight 0.3 kg.

(Hand Protection 20/30).

One size.



Front 5001



Back 5001

Protected Areas Striped

Single/Rotor*	L/R	Art. No.	Model No.
10/28	Left	5100047	5001
10/28	Right	5100047	5002
20/30	Left	5100068	5001
20/30	Right	5100068	5002

* Protection Level





BOOTS 3000

Fixed aluminum gaiters are moulded and jointed, which offer excellent comfort and mobility. Not suitable on uneven ground and are sensitive to small stones. For that we recommend the gaiters below. The boots conform to the requirements set out in BGR 191 and EN 345-1 99A5 S5.

Weight 1.9 kg each.
(Boot 3000 size 9).

Size Eur 42-48 / US 8.5, 9, 10, 11, 12, 13.5

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)

Tested and certified according to BGR 191

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 waterjetting.** Can ideally be used together with the Overall.

One size.



Protection all around the leg.

GAITERS

The gaiters are to be worn outside of the user's regular protective boots. The entire area around the leg and the foot is protected.

Three clips and velcro in the rear, and an easily adjustable strap under the sole, ensure that the gaiters stay in place. Very comfortable and light to wear. Sold in pairs.

Weight 1.0 kg.

One size

Single/Rotor*	Size	Art. No.	Model No.
20/30	One size	5158068	5000

* Protection Level

HOSE PROTECTION/SHROUD

Hoses and couplings break, often very close to the operator and at sensitive areas of the body, such as the abdomen, the arms or the neck. These areas are difficult to protect properly. To further improve the safety of the operator, the use of a hose protection/shroud is recommended. The hose protection is placed on the hose at the connection to the gun. Closest to the gun, where the hose is most likely to break, there is a 250 mm 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 gun. The hose protection/shroud is smooth and flexible.

Available in 3 lengths: 750, 1400, 1800mm and 3 diameters: 36, 47 and 59mm. Swivel options also available.

Weight 2.3 kg.

(Hose protection diameter 59mm, length 1400mm.)

Hose Protection	Length
Ø 36 mm / 1.42 in.	750 mm/2.5 ft.
Ø 36 mm / 1.42 in.	1400 mm/4.6 ft.
Ø 36 mm / 1.42 in.	1800 mm/5.9 ft.
Ø 47 mm/1.85 in. sw	1400 mm/4.6 ft.
Ø 59 mm / 2.32 in.	750 mm/2.5 ft.
Ø 59 mm / 2.32 in.	1400 mm/4.6 ft.
Ø 59 mm / 2.32 in.	1800 mm/5.9 ft.



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. **It is not intended for use on any hand held equipment.**

Lengths 400mm or 5m / Inner diameter 61mm.

Weight 400mm – 0.4kg / 5m – 3.8kg.

Hose Connection Cover	Length
Ø 61 mm / 2.4 in.	400 mm / 1 ft 4 in.
Ø 61 mm / 2.4 in.	5 m / 16 ft 5 in.

TECHNICAL INFORMATION

PRODUCT 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 directive 89/686/EEC and BGR 191.



Dyneema® is a registered trademark of Royal DSM N.V.

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!



AREAS WITH PROTECTION

Striped fabric clearly identifies protected areas and the labels tell the level of protection. As waterjetting is very dangerous, it is essential that the operator knows where and what he is protected for.

PROTECTION LEVEL 10/28

- SINGLE 1000 bar/15000 psi
- ROTOR 2800 bar/40000 psi

CE 89/686/EEC

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

PROTECTION LEVEL 20/30

- SINGLE 2000 bar/30000 psi
- ROTOR 3000 bar/43500 psi

CE 89/686/EEC



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.

NEW CERTIFICATION

Clothing is tested and certified in accordance with today's technology both for single and rotor jets.

WATER PROOF

New outer material in a 3 layer laminate withstands water and dirt more effectively. This keeps the operator dryer and is lighter and easier to clean.

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

EUR	US	UK
36	4 1/2	4
37	5	4 1/2
38	6	5 1/2
39	6 1/2	6
40	7 1/2	6 1/2
41	8	7 1/2
42	9	8
43	9 1/2	9
44	10 1/2	10
45	11 1/2	11
46	12	11 1/2
47	13	12 1/2
48	13 1/2	13 1/2

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")

STRONGER PROTECTION

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. Being much thinner and more flexible than traditional materials, such as leather, cotton and metals, products made with Dyneema® fiber will be very comfortable. Employees will appreciate this comfort, combined with higher protection, and consequently are more likely to wear them at all times.



UNIQUE PROTECTION EQUIPMENT

Certified according to ISO 9001:2008 and ISO 14001:2004



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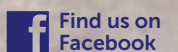
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