FRITZ EMDE

Mechanical and vacuum engineering

Kasseler Straße 48-50
34289 Zierenberg

Telefon + 49 (56 06) 20 44, 20 45
Telefax + 49 (56 06) 15 74

E-Mail: info@fritz-emde.de
Web: www.fritz-emde.com

Worldwide operation in over 130 countries

PRECISION, INNOVATION AND ORGANISATION
IN THE SERVICE OF THEIR CUSTOMERS ARE
THE ELEMENTS OF EFFICIENT EMDE-TECHNOLOGIES.

Groupe of companies:

EMVAK – FRITZ EMDE, S.L.
Spain

Rambla Exposición, 101 Local 5
08800 Vilanova i La Geltrú (Barcelona)
España

Tel.: + 34 93 814 70 28
Fax: + 34 93 814 70 29
Móv.: + 34 670 379 994
E-Mail: emvak@emvak.com
Web: www.emvak.com

EMVAK – FRITZ EMDE, SARL
France

E-Mail: info@emvak.fr
Web: www.emvak.fr

Richard Wuttig – Feuerschutz GmbH
Germany

Kasseler Straße 61
34289 Zierenberg
Deutschland

Tel.: + 49 (56 06) 37 60, 13 06
Fax: + 49 (56 06) 15 74

E-Mail: info@wuttig-feuerschutz.de
Web: www.wuttig-feuerschutz.com

EMDE – A POWERFUL PERTNER FOR THE FUTURE

The comprehension and knowledge of the market lead to highest quality in the production, consultation an in service.

We offer you:

» Safeness due to an experience for more than five decades in the scope of vacuum and conveying engineering and strictest know-how about the requirements of the market
» Systematic research and development oriented toward rising requirements of the practice
» Strong commitment with the aim to disburden the customer by better and better individual solutions
» Consistent research and development of machines and procedures for efficient production of vacuum units and conveyors
» Production with extensive quality control following DIN EN ISO 9001:2000
» Comprehensive consulting service for specific questions in the field of vacuum and conveying engineering
» A network of associated companies enables an international, worldwide exchange of conceptions and experiences
» New products, more production output, more efficient operation, automation

Our range of services includes **series production** as well as **production of special machines** according to customer concern and our know-how.
Our engineering team as well as our technical consultant is always at your disposal.

Important aspects of the future are systematic present for EMDE vacuum and conveying engineering.

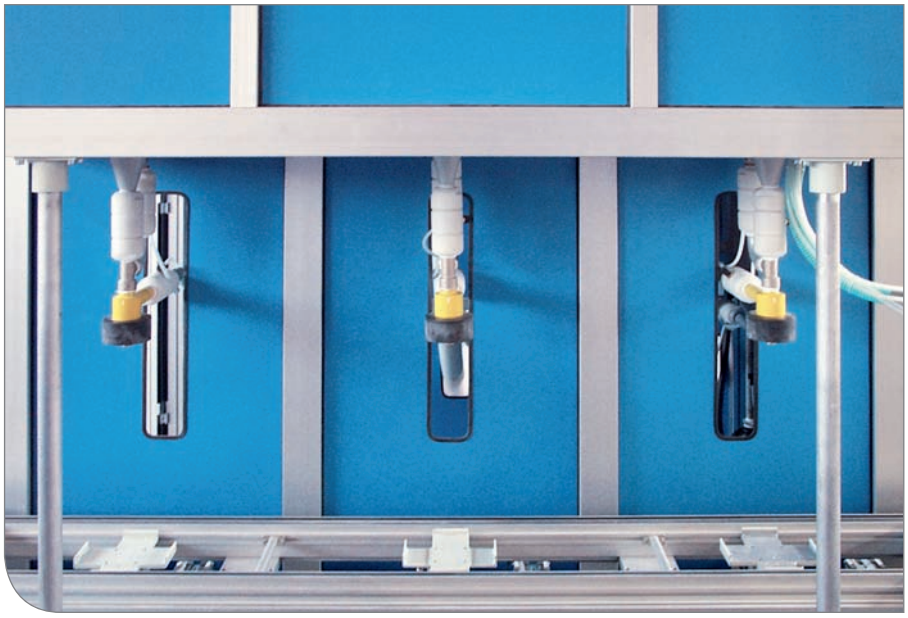
CONTENT

**SPS-controlled fire extinguisher filling plant AMK-500 TRIO –
belt system facilitates the filling techniques reliable and precise.**

The automatic EMDE – SPS-controlled fire extinguisher filling plant AMK-500 TRIO – belt system and the Siemens-SPS-control with EMDE-software guarantee a high operational reliability in the filling of fire extinguishers.

The compact construction of the AMK-500 TRIO demands a low space requirement in the production plant. The working stations of filling, processing and final completion of the fire extinguisher are coordinated with the production process to secure the quality standards as well as the productivity.
All components are manufactured according to the standards for unitries and convince by its safety standards beyond the requested standards.

Operation of the AMK-500 TRIO guided by menue, compact and easy to survey by Siemens-Touch PC.



» Absolute dustless filling procedure
» Modular construction enables variable extension according to customer concern
» Control of the complete procedure by sensor technology
» Large fire fighting appliances can be filled by additional adaptor outside of the unit
» Three disjoined filling positions
» Variable height adjustment of filling head driven byspindle in case of change of fire exinguisher model
» Three integrated fi lter tanks with automatic filter cleaning
» Three universal filling heads appropriate for all fire extinguisher openings
» Automatic dosing for 1 – 12 kg with control weighing
» Filling and final completion with three workmen
» Powder filling capacity: approx. 1500 pcs. per day à 8 hours according to powder quality*

** Theoretically calculated numerical value for powder filling without moving and handling time.*

Advantages at one sight:
» Own research and development
» Job-oriented production according to customers requirements
» Latest technology
» Extensive and optimal provision of services
» Highest cost-effectiveness

The way to economy and precision is achieved by the EMDE – SPS-controlled AMK-500 TRIO fire extinguisher filling plant.

TECHNICAL DATA

SPS-control:	Siemens
Filter system:	self-cleaning, maintenance-free
Vacuum pump:	rotary vane vacuum pumps air-cooled, 63 m^3/h
Scale:	3 x 60 kg, 10 g resolution
Motor:	three-phase current 400 V, 50 Hz, 32 A
Compressed-air:	8 – 10 bar, 1000 – 1500 l/min
Construction:	aluminium with aluminium casing
Dimensions (l x w x h):	approx. 2000 x 2200 x 4000 mm
Colour:	hammer finish painted blue or according to customer wish

SPS controlled belt system

» Variable transport pallet dimension up to max. 400 x 400 mm
» Loading capacity of transport pallet up to 18 kg
» Variably adjustable speed of the belt (standard speed 6.9 m/min)
» Individual length of belt due to the modular construction of the single belt segments
» Subsequent extensibility with additional belt segments
» Variable, millimeter-exact positioning of STOP-position for working stations

TECHNICAL DATA

Construction:	aluminium with twin-belt conveyor
Transport pallet:	15 pcs.
Pallet insert:	15 pcs. each for 1 kg, 2 kg and 6 kg
Motor:	three-phase current 230/400 V, 50 Hz, 0.43 A, 0,09 kW
Dimensions (l x w x h):	approx. 6100 x 3000 x 600 mm

Valve Screwing Unit AEAE

Automatical EMDE-Valve Screwing Unit, model AEAE

Screwing of the armature is completely automatically and is effected according to the torque or according to the position of the extinguisher. The use of armature with swivel nut is unappropriate for the automatic screwing station.

Adaption and armature screwing is effected by special adaptor and height adjustment by compressed-air cylinder. The requested torque can be selected continuously by frequency converter.

TECHNICAL DATA

Motor:	gear motor 1 kW, 230/400 V, 6 A, 50 Hz, IP 54
Compressed-air:	8 – 10 bar
Telescope:	length for 1 – 12 kg extinguisher
Torque:	adjustable 80 – 250 Nm
Construction:	aluminium with aluminium casing
Dimensions (l x w x h):	approx. 1000 x 500 x 2500 mm
Colour:	hammer finish painted blue or silvergrey

Advantages at one sight:
» Short time of assembly, operator is only for supervision
» Without high manual strength
» Fast and easy handling for changing the screwing adaptor

Nitrogen Filling Units AN2BS

Automatic Nitrogen Filling Unit, model AN2BS for fast pressurizing with nitrogen.

Advantages at one sight:
» Sensor-controlled positioning for the different fire extinguishers
» Automatic alignment of the extinguishers on the pallet
» Automatic adaptation and filling with nitrogen up to the preset pressure
» Pressure control by detectors; automatic disconnection of filling valve due to adjustable filling pressure

TECHNICAL DATA

Control system:	Siemens SPS – S7
Max. pressure:	max. admitted nitrogen filling pressure 16 bar
Compressed-air:	8 – 10 bar
Construction:	aluminium light profile with steel construction

Multiflex Chain Conveyor

TECHNICAL DATA

Construction:	steel construction made of double-T and U-profiles
Casing:	steel sheet
Conveyor belt:	EMDE-Multiflex approx. 18 m length/55 mm width
Gear motor:	approx. 1 kW, 2 A, IP 54
Pneumatic:	compressed-air cylinder 25/50 mm stroke
Transport pallet:	15 pcs.
Pallet insert:	15 pcs. each for 1 kg, 2 kg and 6 kg
Colour:	hammer finish painted yellow or according to customer wish
Dimensions (l x w x h):	approx. 6000 x 1700 x 600 mm

Optional:
SPS controlled Multiflex Chain Conveyor

Consisting of:
» Synchronous Multiflex chain conveyor with integrated working stops (speed adjusted to optimum working procedure of the unit)
» Automatic release of working stops after finished working procedure

Nitrogen-Helium Blender

Nitrogen-Helium Blender

» Module to generate a composite of nitrogen-helium in a direct continuous operation during filling
» Integration of this assembly unit to be made at the nitrogen Filling Units AN2BS

TECHNICAL DATA

Dimensions (l x w x h):	approx. 700 x 400 x 800 mm	
Weight:	approx. 60 kg	
Motor:	230 V, 16 A, 50 Hz	
Inlet pressure:	at least 25 bar	
Single frame	Dimensions:	approx. 1800 x 1800 x 41000 mm
	Burden:	1250 kg

» Continuous adjustment of the mixing ratio by controller
» Permanent monitoring of inlet pressure for exact gas mixture

BIG-BAG cabine in open construction (as double frame or single frame)

Construction:
» Steel construction as supporting element with central space for a BIG-BAG
» Charging hopper with suction connection for removal of powder from several BIG-BAGs
» Electric chain pulley with manual push trolley (optional: electric trolley)

A permanently increasing EMDE product range has been developed by the latest technologies, future-orientation and a perfected, innovated team targeted to the requirements of its customers.

Powder filling unit, model DSM

DSM – high-preformance stationary filling unit controlled by a computer works with a fully automatical SPS-control system and has the distinction of:

» The filling of the extinguishers takes place out of a BIG-BAG or a silo through the DSM directly into the extinguisher
» An integrated highly wear-resistant digital scale guarantees filling accuracy beyond the required EN3-standard
» The filling time for the extinguisher is according to the filling quantity: 8 – 20 sec. (depending on powder quality!) e.g. 6 kg extinguisher with a filling time of 10 – 15 sec.
» Only one workman necessary
» Low space requirement
» Automatic filter cleaning
» Filling procedure absolutely dustfree
» Quick filling of extinguishers from 1 – 12 kg
» Transportable fire fighting appliances P25 – P250 as well as 1000 kg vehicles are filled dustfree by the DSM by means of filling adaptor

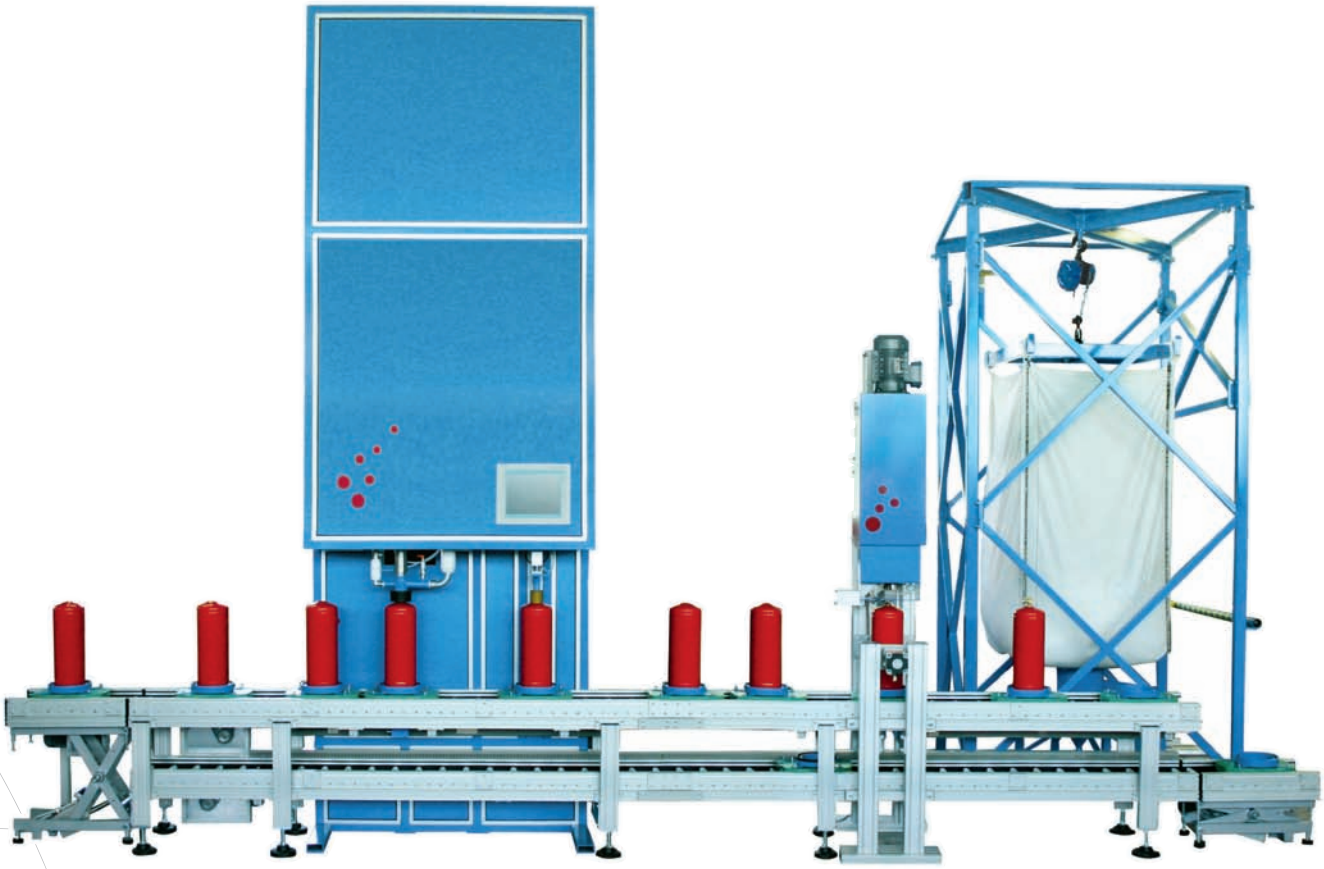
Operation of the DSM guided by menue, compact and easy to survey by Siemens-Touch PC.

TECHNICAL DATA

SPS-control:	SIEMENS-SIMATIC – EMDE-Software
Filter system:	Polyamid-filter self-cleaning, maintenance-free
Vacuum-pump:	nominal Filling capacity 160 m^3/h, air cooled 3 kW
	max. ultimate pressure 50 mbar
Control weighing:	calibrated digital scale
	60 kg / 10 g resolution
Motor:	three-phase current 230/400V, 50Hz
Compressed-air:	8 – 10 bar / 800 – 1000 l/min
Contruction:	aluminium
Dimensions (l x w x h):	approx. 1900 x 1400 x 3900 mm
Colour:	hammer finish painted blue or according to customer wish

Model DSM-NEB is a high-performance, computer controlled, stationary powder filling unit with the latest SPS-computer controlled technology. All adjustments can be made conveniently and easily by Siemens-Touch PC. The unit is equipped with powder suction which cleans the threads fo the extinguishers automatically.

The fully automatic, SPS-controlled belt has minimum space requirements due to the two transport levels. The material carrier is transported from one level to the other by a fully automatic lifting gear. Powder filling takes place out of a BIG-BAG.
The operation takes place menu-driven by a Siemens-Touch PC.



TECHNICAL DATA

DSM-NEB	Dimensions (l x w x h):	approx. 2000 x 2000 x 3950 mm
	Motor:	230/400 V, 50 Hz, 32 A
	Compressed-air:	6 – 8 bar
	Control-system:	SPS
	Construction:	steel frame with aluminium casing
	Colour:	hammer finish painted blue or silvergrey
Transport Belt	Dimensions (l x w x h):	approx. 6500 x 600 x 800 mm
	Construction:	aluminium
	Control-system:	SPS

The unit is equipped with integrated screwing unit, model AEAE (see page 8) and nitrogen Filling Units, model AN2BS (see page 9)

Accessories available at extra charge:
» BIG-BAG-support with charging hopper

Model DAYNER with belt and lifting system

SPS-controlled powder emptying and filling unit for the exact filling of portable extinguishers of all makes and sizes.
The powder is filled directly out of a silo or a BIG-BAG with charging hopper in contnous operation into the extinguisher with the requested weight.

The DAYNER is equipped with an electronic scale which switches off on reaching the preset filling weight. The scale can be programmed with filling weights. These weights can be activated according to weights required and are indicated on operating panel.

BIG-BAG cabine in open construction, expandable with transport belt.

TECHNICAL DATA

Filling capacity:	6 kg / 15 – 30 sec (according to powder quality)
Compressed-air:	8 bar
Motor:	1,5 kW
Control weighing:	calibrated digital scale; 60 kg / 10 g resolution
Motor:	three-phase current 400 V, 50 Hz, (optional 1 x 230 V, 50 Hz)
Dimensions (l x w x h):	approx. 1000 x 700 x 3500 mm
Colour:	hammer finish painted blue or silvergrey
Accessory:	BIG-BAG cabine in open or closed version with electrical chain pulley

The SPS-controlled fully automatic powder filling unit, model QUESTER is made for the filling of extinguishers from 1 – 12 kg as well as powder tanks of powder extinguisher units.

The unit operates within the filling tolerance indicated in the EN3 standards. Adjustment of the value of the filling weight has to be effected at the scale display; adjustment of the filling parameters depending on extinguisher type are effected by the text display. Height adjustment of the weighing platform takes place by screw-drive.

Admitted powder filling weight:
1 – 12 kg
(with an accuracy +/– 10 gramm)

Admitted dimensions of extinguisher:
» diameter: 80 – 360 mm
» total height: 200 – 900 mm

Powder filling takes place externally out of a silo (see page 50) or a BIG-BAG.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 1200 x 800 x 2100 mm
Current supply:	230/400 Volt, 50 Hz
Compressed-air:	6 – 8 bar, approx. 100 l/min
Total weight:	approx. 280 kg
Vacuum pump:	1.5 kW
Weighing accuracy:	+/– 20 Gramm
Filter cleaning:	self-cleaning, elektropneumatic
Filter package:	maintenance free
Colour:	hammer finish painted blue or silvergrey

The SPS-controlled fully automatic powder filling unit, model ALVIC is made for filling portable powder extinguisher from 1 kg to 12 kg.

With additional accessories the filling of movable fire fighting appliances is possible.
Filling is absolutely dust-free in vacuum procedure.

Construction of the unit – consisting of:

» Aluminium-pipeframe with aluminium casing
» Integrated powder tank with approx. 60 kg capacity
» Filling automatically by filling level sensors. Powder supply directly from the BIG-BAG through the charging hopper
» Integrated filter tank
» Automatic filter cleaning with reuse of powder residues
» Integrated weighing unit for filling according to the adjusted value
» Final weight is reached by fine dosing
» Pneumatic height adjustment by adaptation to the different extinguisher models
» SPS-controlled filling procedure

TECHNICAL DATA

Dimensions (l x w x h):	approx. 1200 x 1000 x 2200 mm
Capacity	approx. 800 pcs. within a shift of 8 hours (according to powder quality)
Drive:	230/400 V, 16 A, 50 Hz
Compressed-air:	8 – 10 bar

**The RAPID-N filling unit accomplishes the requirements of the EN3-norm by speed, precision, economy and cleanness.
The RAPID-N fills extinguishers from 1 – 12 kg and larger cylinders by means of special filling adaptor.**

The filling takes place by suction out of a silo, BIG-BAG or powder storage container (option – not included) directly into the fire extinguisher without any additional labour.

The filling is absolutely dust-free out of this powder storage directly into the extinguisher.

The precise filling is effected by a digital scale. The requested weight is sored at the scale and after reaching the filling quantity the scale stops automatically.

The height adjustment for different types of extinguisher result manual by pneumatic cylinder.

The RAPID-N can be used by manufacturers of extinguishers, airport-fire brigades, operating fire brigades and service offices.

The RAPID-N is convincing by its technology and shows the possibility within the filling of powder fire extinguisher.

TECHNICAL DATA

Motor-capacity:	2.2 kW
Pump-capacity:	25 kg/min (according to powder quality)
Drive:	230/400 V, 16 A, 50 Hz + N + PE
Compressed-air:	6 – 10 bar
Control:	SPS / Digital scale, precision +/- 10 g
Dimensions (l x w x h):	approx. 1100 x 1000 x 2300 mm
Construction:	steel / aluminium
Colour:	hammer finish painted blue or silver, laquer: powder coated

The PFF-SUMATIC-V100/50 is a movable machine for emptying and filling of portable and mobile fire extinguishers as well as powder fire trucks.

» Interstorage of max. 50 kg powder inside the machine hopper
» Appropriate for all types of powder (ABC, BC, etc.)
» Emptying and filling absolutely dust-free
» Height adjustment by pneumatic cylinder
» Easy and convenient handling
» Maintance free polythene filter package with pneumatic cleaning
» Construction: movable compact version (optional: stationary unit)
» Emptying of extinguisher hoses from 0.6 m to 5.0 m
» High quality, low noise vacuum pump Filling capacity: 30 kg/min (20 kg/min at a filling height of 5 m)
» two big windows for powder control

The unit is equipped with:
» abrasion-resistant suction hose, 3 m incl. connection coupling
» set with 4 suction lances 15, 20, 25 and 30 mm
» 4 wheels, 2 of them with locking brake
» robust ball valve on filling and vacuum valve
» universal rubber filling adaptor for all sizes and types of portable fire extinguisher
» diagonally positioned, removable sieve (420 mm long), which retains lumps and contamination

Optional available at extra charge:
Unit equipped with storage shelf on the back side; size of shelf (l x w x h): 250 x 750 x 300 mm

TECHNICAL DATA

Construction:	corrosion-free aluminium
Unit hopper:	steel
Motor:	three-phase current 380 V, 50 Hz, 16 A
Compressed-air:	6 – 8 bar
Filling capacity:	30 kg/min
Weight:	approx. 155 kg
Dimensions (l x w x h):	approx. 1100 x 900 x 2000 mm
Colour:	hammer finish painted blue or silvergrey

TOP-Selling Powder Filling Unit: PFF-SUMATIC-SV-100-W

SPS-controlled powder emptying and filling unit for the exact filling of portable extinguishers of all makes and sizes. Filling takes place out of a bag or a fire extinguisher as well as out of an EMDE storage tank (e.g. 250 kg – accessory). The extinguisher is filled directly through the powder filling unit in continuous operation on setting the requested weight.

The PFF-SUMATIC-SV-100-W is equipped with an electronic scale which switches off on reaching the preset filling weight. The scale can be programmed with filling weights which can be activated according to weight required.

The weights are indicated on operating panel. The filling of movable extinguishers is to be carried out with the help of a special filling adaptor.

The unit is equipped with:

» High-quality, self-cleaning filters
» Programmable digital scale, 10 g resolution for automatic cut-off on reaching the filling weight
» Powder tank for interstorage of extinguishing powder up to 30 kg
» Lockable ball valves
» Pneumatic height adjustment
» An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
» Window for powder control
» Powder suction hose 32 mm, length 2 m with couplings
» Connection for fluidisation to aerate the powder inside the storage silo
» Sound absorber for sound insulation
» Powerful, low-maintenance vacuum pump

SV-100-W with powder silos and filling rack for old powder

Optional available at extra charge:
» Silo 250 kg movable (No. 100 330)
» External floor scale with automatic cut-off feature for filling of movable extinguishers
» Unit with more silos for different types of powder with manifold and shut-off device

TECHNICAL DATA

Filling capacity:	6 kg / 15 – 30 sec (according to powder quality)
Compressed-air:	5 bar
Motor:	1.5 kW 400 V, 50 Hz (optional three-phase current 230 V, 50 Hz)
Filling capacity:	30 kg/min
Dimensions (l x w x h):	approx. 700 x 800 x 1800 mm
Work height:	max. 2250 mm, lift 4500 mm
Colour:	hammer finish painted blue or silvergrey

The filling rack, model ABF-1000 is for filling the old powder into BIG-BAGs or storage container in a dustless and fast way.

The unit is equipped with:
» a high quality self-cleaning filter package
» a powerful, low-maintenance vacuum pump
» a manually operated shutting flap
» four robust BIG-BAG loops- fastener
» High quality steel lance 1200 mm

The emptying of the extinguisher is effected manually directly into the tank by using a suction lance.

Demand for the sucking material:
The filter unit is only appropriate for totally dried and non-aggressive dusts and powder.

Optional available at extra charge:
» Equipped with pneumatic shutting flap
» Adaptor for filling of plastic material barrel
» High quality steel lance with earthed hose

TECHNICAL DATA

Construction:	aluminum construction
Hopper:	metallic glass
Voltage:	230/400 V, 50 Hz, 12 A
Capacity:	35 kg/min
Compressed-air:	6 – 8 bar
Weight:	approx. 390 kg
Dimensions (l x w x h):	approx. 2000 x 1100 x 2800 mm
Colour:	hammer finish painted blue or grey

The mobile filling rack, model AEE-1000-F is for filling the old powder into Big-Bags or storage container in a dustless and fast way.

The unit is equipped with:
» a high quality self-cleaning filter package
» four wheels
» by-pass channel with high suction capacity
» a manually operated shutting flap
» four robust BIG-BAG loops- fastener
» High quality steel lance 1200 mm

The emptying of the extinguisher is effected manually directly into the tank by using a suction lance.
Extinguisher under pressure can be emptying direct with a connection into the storage container.

Demand for the sucking material:
The filter unit is only appropriate for totally dried and non-aggressive dusts and powder.

Optional available at extra charge:
» Equipped with pneumatic shutting flap
» Adaptor for filling of plastic material barrel
» High quality steel lance with earthed hose
» a powerful, low-maintenance vacuum pump

TECHNICAL DATA

Construction:	aluminum construction
Hopper:	metallic glass
Voltage:	230/400 V, 50 Hz, 12 A
Capacity:	30 kg/min
Compressed-air:	6 – 8 bar
Weight:	approx. 300 kg
Dimensions (l x w x h):	approx. 1400 x 1600 x 2750 mm
Colour:	hammer finish painted blue or grey

Unit for disposal of old powder
The PFF-SUMATIC-SWS-600 is a powder suction unit with bag emptying to dispose old powder.

» Absolute dust free emptying
» Interstorage up to 100 kg powder
» Closable ball valve
» Inspection window for powder control
» Cleaning of the tank and the filter package effected electrically
» Guaranteed high capacity in continuous operation
» Height adjustment by rack worm drive with hand wheel for different dimensions of bags
» Manually operated butterfly valve

Accessories available at extra charge:
» Adaptor for filling of plastic material barrel
» High quality steel lance with earthed hose

Optional:
The PFF-SUMATIC-SWS-600-W is a powder suction unit with bag emptying to dispose old powder for wall installation.

PFF-SWS-600-W (No. 117 100)

TECHNICAL DATA

Dimensions (l x w x h):	approx. 1300 x 780 x 1800 mm
Motor:	230 V, 8 A, 50 Hz optional 400 V, 6 A
Max. height:	2500 mm
Weight:	approx. 79 kg
Operation:	WITHOUT any vibration
Filling capacity:	25 kg/min
Hopper:	metal
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

Unit for disposal of old powder
The PFF-SUMATIC-SWS-600-E is a ejector driven powder suction unit with bag emptying to dispose old powder.

» Absolute dust free emptying
» Interstorage up to 100 kg powder
» Closable ball valve
» Inspection window for powder control
» Cleaning of the tank and the filter package effected electrically
» Guaranteed high capacity in continuous operation
» Height adjustment by rack worm drive with hand wheel for different dimensions of bags
» Manually operated butterfly valve

Accessories available at extra charge:
» Adaptor for filling of plastic material barrel
» High quality steel lance with earthed hose

TECHNICAL DATA

Compressed-air:	7 bar
Dimensions (l x w x h):	approx. 1300 x 780 x 1800 mm max. height: 2500 mm
Weight:	approx. 55 kg
Operation:	WITHOUT any vibration
Filling capacity:	20 kg/min
Hopper:	metal
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

Model PFF-FLIPP-AIR-MATIC for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Emptying and filling absolutely dust-free in continuous operation
- » Interstorage of extinguishing powder up to 12 kg
- » Lockable ball valves
- » Window for powder control
- » Cleaning of fi lter package and hopper achieved automatically
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » Height adjustment by crank handle

TECHNICAL DATA

Dimensions (l x w x h):	approx. 500 x 500 x 1200 mm
Work height:	approx. 1600 mm
Diameter:	250 mm
Hopper:	metal
Weight:	approx. 30 kg
Operation:	WITHOUT any vibration
Filling capacity:	18 kg/min – 240 mbar
Motor:	230 V, 6 A, 50 Hz
Filter package:	maintenance-free
Filter cleaning:	automatically by AIR-MATIC feature
Colour:	hammer finish painted blue or silvergrey

The mobile powder filling machine model PFF-FLIPP-AIR-MATIC with movable powder storage tank, capacity 50 kg and filling adaptor P50-250N for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

The composition of this machine with accessories is sufficient to empty and fill all portable fire extinguishers from 1 kg up to 12 kg and additionally movable 50 kg fire fighting appliances. When using a bigger powder storage tank, it is possible to empty and refilling fire fighting appliances up to 250 kg.

The set is equipped with:
» 1 piece powder filling machine model PFF-FLIPP-AIR-MATIC
» 1 piece filling adaptor model P50-250N
» 1 piece suction hose 32 mm, length 2500 mm
» 1 piece suction hose 32 mm, length 1500 mm
» 1 set with 4 pieces suction lance, 16, 20, 25 and 32 mm, length 700 mm
» 1 piece suction lance 32 mm, length 1200 mm
» 1 piece powder storage container, movable, capacity 50 kg

Optional available at extra charge:
» Powder storage tank with higher capacity (100 kg, 250 kg)
» Powder storage tank tiltable
» Bag inlet for powder storage tank
» Floor scale

Model PFF-FLIPP-AIR-MATIC-E for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Emptying and filling absolutely dust-free in continuous operation
- » Interstorage of extinguishing powder up to 12 kg
- » Lockable ball valves
- » Window for powder control
- » Cleaning of filter package and hopper achieved automatically
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » Electrical height adjustment

TECHNICAL DATA

Dimensions (l x w x h):	approx. 500 x 500 x 1200 mm
Work height:	approx. 1600 mm
Hopper:	metal
Weight:	approx. 30 kg
Operation:	WITHOUT any vibration
Filling capacity:	18 kg/min
Motor:	230 V, 6 A, 50 Hz
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

Model PFF-FLIPP-EK for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Emptying and fi lling absolutely dust-free in continuous operation
- » Interstorage of extinguishing powder up to 12 kg
- » Lockable ball valves
- » Window for powder control
- » Cleaning of fi lter package and hopper achieved electrically
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » Motor integrated in a metal housing, which serves as a support during filling procedure

TECHNICAL DATA

Dimensions (l x w x h):	approx. 500 x 600 x 1600 mm
Work height:	approx. 2100 mm
Hopper:	metal
Weight:	approx. 69 kg
Operation:	WITHOUT any vibration
Filling capacity:	20 kg/min
Motor:	230 V, 6 A, 50 Hz, 1.1 kW
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

PFF-FLIPP-EK-N (No. 103 000)

- » Motor 1,5 kW
- » Interstorage of extinguishing powder up to 30 kg
- » Filling capacity 25 kg/min

Model PFF-FLIPP-EK(P) for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Emptying and filling absolutely dust-free in continuous operation
- » Interstorage of extinguishing powder up to 12 kg
- » Lockable ball valves
- » Window for powder control
- » Cleaning of filter package and hopper achieved electrically
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- « Motor integrated in a metal housing, which serves as a support during filling procedure
- » Height adjustment by pneumatic cylinder

TECHNICAL DATA

Dimensions (l x w x h):	approx. 540 x 600 x 1300 mm
Work height:	approx. 1600 mm, lift 300mm
Hopper:	metal
Weight:	approx. 74 kg
Operation:	WITHOUT any vibration
Filling capacity:	approx. 20 kg/minr
Motor:	230 V, 6 A, 50 Hz
Compressed-air:	approx. 6 – 8 bar
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

PFF-FLIPP-EK(P)-N (No. 109 000)

- » Motor 1,5 kW
- » Interstorage of extinguishing powder up to 30 kg
- » Filling capacity 25 kg/min

Model PFF-FLIPP-EK(W) is a low-noise, movable powder filling unit with transport trolley in compact construction.

- » Window for powder control
- » Interstorage of extinguishing powder up to 12 kg
- » Height adjustment by toothed rack worm drive with hand wheel
- » High-capacity exhauster
- » Cleaning of filter package electrically achieved during filling procedure
- » Motor 1,5 kW
- » Interstorage of extinguishing powder up to 30 kg

TECHNICAL DATA

Dimensions (l x w x h):	700 x 550 x 1200 mm
Work height:	approx. 1700 mm
Hopper:	metal
Weight:	approx. 72 kg
Noise level:	74 – 76 dB(A) (according to operation of unit)
Filling capacity:	20 kg/min
Motor:	230 V, 8 A, 50 Hz, 1.1 kW
Filter cleaning:	self-cleaning electrically
Filter package:	maintenance-free
Colour:	hammer finish painted blue or silvergrey

PFF-FLIPP-EK(W)-N (No. 105 000)

- » Motor 1,5 kW
- » Interstorage of extinguishing powder up to 30 kg
- » Filling capacity 25 kg/min

Model PFF-FLIPP-EK-(W)-NR is a very silent powder filling unit, for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Emptying and filling absolutely dust-free
- » Emptying and filling in continuous run
- **» Interstorage of extinguishing powder up to 30 kg**
- » Lockable ball valves
- » Window for powder control
- » Cleaning of filter package electrically activated

TECHNICAL DATA

Dimensions (l x w x h):	approx. 700 x 550 x 1200 mm
Operating height:	adjustable approx. 1600 mm
Hopper:	metal
Weight:	approx. 70 kg
Noise level:	74-78 dB(A)
Operation:	WITHOUT any vibration
Filling capacity:	20 kg/min - 125 mbar
Voltage:	400 V, 3-Phase, 50 Hz
Filter package:	maintenance-free
Filter cleaning:	electrically activated
Colour:	hammer finish painted blue

- » Maintenance free filter package
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » Motor integrated in a metal housing, which serves as a support during filling procedure
- » Emptying and refilling time of 6 kg dry chemical powder less than 1 minute
- » Castor with locking device

Model PFF-FLIPP-EK(H) for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes. Due to the low construction of the unit, it is very appropriate for a service vehicle.

» Emptying and fi lling absolutely dust-free in continuous operation
» Interstorage of extinguishing powder up to 12 kg
» Lockable ball valves
» Window for powder control
» Cleaning of fi lter package and hopper achieved electrically
» An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination

TECHNICAL DATA

Dimensions (l x w x h):	approx. 750 x 450 x 1170 mm
Hopper:	metal
Operation:	WITHOUT any vibration
Filling capacity:	20 kg/min
Motor:	230 V, 6 A, 50 Hz, 1.1 kW
Weight:	approx. 58 kg
Filter package:	maintenance-free
Filter cleaning:	self-cleaning electrically
Colour:	hammer finish painted blue or silvergrey

» Motor integrated in a metal housing
» Unit equipped with a vehicle support which enables comfortable working in front of the car

PFF-FLIPP-EK(H)-N (No. 107 000)
» Motor 1,5 kW
» Interstorage of extinguishing powder up to 30 kg
» Filling capacity 25 kg/min

Model PFF-II/E is an ejector driven powder filling unit, for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

- » Especially appropriate in continuous operation
- » Emptying and filling absolutely dust free
- » Lockable ball valves
- » Interstorage of extinguishing powder up to 30 kg
- » low noise
- » pneumatic cleaning of filter package
- » Window for powder control
- » Cleaning of filter package and hopper achieved by reversing circuit
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » Castor with locking device

TECHNICAL DATA

Motor:	compressed air 5 – 7 bar
Consumption:	approx. 1000 Nl/min
Filling capacity:	approx. 15 kg/min
Dimensions (l x w x h):	approx. 750 x 520 x 1000 mm
Filter cleaning:	self-cleaning pneumatic
Weight:	approx. 49 kg
Filter package:	maintenance-free
Hopper:	metal
Colour:	hammer finish painted blue or silvergrey

Model PFF-III/SWN for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

» Especially appropriate in continuous operation
» Emptying and fi lling absolutely dust-free
» Lockable ball valves
» Interstorage of extinguishing powder up to 30 kg
» Window for powder control
» Cleaning of fi lter package and hopper achieved by reversing circuit
» An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination

Optional available at extra charge:
» available with 3-phase motor model PFF PFF-III/SWD, motor: 380 V, 10 A, 50 Hz

TECHNICAL DATA

Motor:	230 V, 8 A, 50 Hz
Filling capacity:	25 kg/min
Dimensions (l x w x h):	approx. 1300 x 550 x 1400 mm
Filter cleaning:	self-cleaning electrically
Weight:	approx. 65 kg
Filter package:	maintenance-free
Hopper:	metal
Colour:	hammer finish painted blue or silvergrey

Model PFF-III/SWN-50 for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes as well as movable 50 kg powder extinguishers.

- » Especially appropriate in continuous operation
- » Emptying and filling absolutely dust-free
- » Lockable ball valves
- » Interstorage of extinguishing powder up to 30 kg
- » Window for powder control
- » Cleaning of filter package and hopper achieved by reversing circuit
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
- » available with 3-phase motor

TECHNICAL DATA

Motor:	230 V, 8 A, 50 Hz
Filling capacity:	approx. 1000 kg/h in continuous operation
Dimensions (l x w x h):	approx. 1300 x 850 x 1700 mm
Hopper:	metal
Filter cleaning:	self-cleaning electrically
Filter package:	maintenance-free
Weight:	approx. 65 kg
Colour:	hammer finish painted blue or silvergrey

Model PFF-III/SWN-50-ES for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes as well as movable 50 kg powder extinguishers made in high-grade steel (stainless steel).

- » Especially appropriate in continuous operation
- » Emptying and filling absolutely dust-free
- » Lockable ball valves
- » Interstorage of extinguishing powder up to 30 kg
- » Window for powder control
- » Cleaning of filter package and hopper achieved by reversing circuit
- » An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination

TECHNICAL DATA

Motor:	230 V, 8 A, 50 Hz
Filling capacity:	25 kg/min
Dimensions (l x w x h):	approx. 1300 x 850 x 1700 mm
max. Work height:	approx. 2100 mm
Construction:	high-grade steel polished
Filter cleaning:	self-cleaning electrically
Filter package:	maintenance-free
Weight:	approx. 65 kg

Model PFF-SUMATIC-SWZ for emptying, filling and sieving procedures of fire extinguishers of all makes and sizes.

» Especially appropriate in continuous operation
» Emptying and filling absolutely dust-free
» Lockable ball valves
» Interstorage of extinguishing powder up to 30 kg
» Integrated clamping device with quick-action handle
» Window for powder control
» Cleaning of filter package and hopper achieved by reversing circuit
» An advantage is the diagonally positioned, removable sieve, which retains lumps and contamination
» Motor in metal case which serves as support for emptying and filling extinguishers in a comfortable operation height

TECHNICAL DATA

Motor:	230 V, 8 A, 50 Hz
Filling capacity:	25 kg/min
Dimensions (l x w x h):	approx. 550 x 900 x 1600 mm
Filter cleaning:	self-cleaning electrically
Filter package:	maintenance-free
Weight:	approx. 69 kg
Colour:	hammer finish painted blue or silvergrey

The Mobile Service Station model MSS-P-I is the perfect technical solution for all service workshops for fire extinguishers. All necessary units are combined using the space of an euro-pallet. It can be loaded and unloaded easily in a service vehicle by fork lifter.

The Mobile Service Station is equipped with the following components:

» Powder Filling Unit:
Filling capacity: 18 kg/min
electrical filter cleaning
internal hopper 15 kg
electrical height adjustment

» CO_2-Filling Unit:
Filling capacity: 3,5 kg/min
compressed air driven
(supply by internal compressor)
safety valve (130 bar)

» Compressed air compressor: 20 l
storage capacity max. 8 bar

» Powder Storage Container:
capacity: 100 kg

» Nitrogen-cylinder:
capacity: 10 l, 200 bar

» CO_2-cylinder:
capacity: 6 kg

» Pneumatic Clamping Device

» Cable drum: 20 m cable lenght

» Bench Vice:

» Nitrogen Quick Filling Adaptor:
N_2-QUICK

» Three tool drawers: with tool boxes, removable

» Digital Scale: 20 kg
resolution 1 g

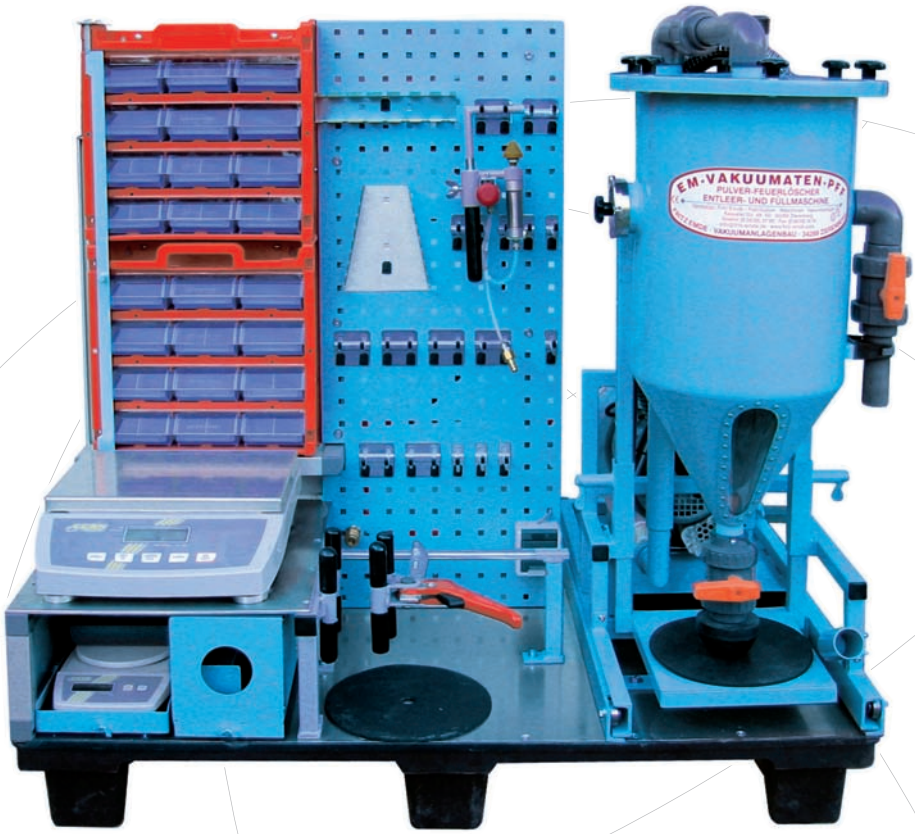
» Low Pressure Testing Unit: max. 40 bar test pressure connection with quick coupling

» Integrated Water Tank:
capacity 40 liter

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 1200 x 800 x 1300 mm
Motor:	230 V, 16 A, 50 Hz
Weight:	approx. 280 kg
Colour:	hammer finish painted blue or according to customer wish

The Mobile Service Station model MSS-P-II is the perfect technical solution for all service workshops for fire extinguishers. All necessary units are combined using the space of an euro-pallet. It can be loaded and unloaded easily in a service vehicle by fork lifter.



The Mobile Service Station is equipped with the following components:

» Powder Filling Unit:
Filling capacity: 25 kg/min
electrical filter cleaning
internal hopper: 30 kg
manual height adjustment

» Toolwall: perforated grid wall for tools dimensions (l x w):
approx. 500 x 340 mm

» Nitrogen-cylinder:
capacity: 10 l, 200 bar

» CO_2-cylinder:
capacity: 6 kg

» Manual clamping device:

» Boxes: 8 x 3 pcs. boxes for storage of accessory and spare parts dimensions (l x w x h): approx. 700 x 360 x 100 mm

» Nitrogen quick filling adaptor:
N_2-QUICK

» Hose testing unit: for pressure testing of fire extinguisher hoses and safety valves with gauge and safety cap

» Digital scale: 20 kg, resolution 1 g
dimensions (l x w):
approx. 300 x 310 mm

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Motor:	230 V, 16 A, 50 Hz
Weight:	approx. 230 kg
Colour:	hammer finish painted blue or according to customer wish

The Mobile Service Station model MSS-P-III is the perfect technical solution for all service workshops for fire extinguishers. All necessary units are combined using the space of an euro-pallet. It can be loaded and unloaded easily in a service vehicle by fork lifter.

The Mobile Service Station is equipped with the following components:

» Powder Filling Unit:
Filling capacity: 20 kg/min
electrical filter cleaning
internal hopper: 30 kg
manual height adjustment

» CO_2 Filling Unit:
Filling capacity: 3,5 kg/min
compressed air driven
(supply by internal compressor)
safety valve (130 bar)

» CO_2-Universal-Filling Rail: for filling of CO_2-cartridges of all sizes and makes

» Compressed air compressor:
tank volume: 20 l
pressure max.: 8 bar

» Powder storage container:
capacity: 50 kg

» Nitrogen-cylinder:
capacity: 10 l, 200 bar

» CO_2-cylinder: capacity: 6 kg

» Manual clamping device

» Boxes: 8 x 3 pcs. boxes for storage of accessory and spare parts dimensions (l x w x h): approx. 700 x 360 x 100 mm

» Nitrogen quick filling adaptor:
N_2-QUICK

» Hose testing unit: for pressure testing of fire extinguisher hoses and safety valves with gauge and safety cap

» Digital scale: 20 kg, resolution 1 g
dimension (l x w):
approx. 300 x 310 mm

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 1200 x 800 x 1300 mm
Motor:	230 V, 16 A, 50 Hz
Weight:	approx. 290 kg
Colour:	hammer finish painted blue or according to customer wish

Versions of equipment for the mobile service station Modell MSS-P

The equipment herewith can be combined with each other, however not in any order as the total surface of the mobile service station should not exceed the dimensions of a euro-pallet of 1200 x 800 mm. The height is variable according to the type of vechicle.

- Powder Filling Unit model FLIPP-E (electrical height adjustment)
- Powder Filling Unit model FLIPP-EK(W)-N
- CO_2 Filling Unit (electrical pump)
- Low Pressure Testing Unit 0 – 40 bar (compressed air driven)
- High Pressure Testing Unit 0 – 40 bar (compressed air driven)
- Compressed Air Compressor max. 10 bar, 20 l storage
- Hose & Safety Valve Testing Unit
- Universal Filling Rail for Filling of CO_2-cartridges
- Manuel Clamping Device
- Pneumatical Clamping Device
- Powder Storage Container 50 kg
- Water Storage Tank 20 l
- Nitrogen Cylinder 10 l, 200 bar
- CO_2-cylinder 6 kg
- Digital Scale 20 kg, 1 g Resolution
- 18 Boxes for storage of spare parts
- Perforated Grid Wall for tools
- Three tool drawers with tool boxes (removable)
- Bench Vice
- Cable Drum
- Nitrogen Filling Adaptor model N_2-QUICK
- CO_2 Filling Adaptor model CO_2-QUICK
- Compressed-air pistol incl. 1.5 m airhose
- P50-250 Adaptor for Filling of 50 kg Powder Extinguisher Trolleys
- Nitrogen Pressure Reducer incl. connecting Hose

The mobile workshop trolley model WWZ-EKWN is a perfect combination of a mobile working place of deposit and unit-supported working. It is equipped with a removable, manual quick-action clamping device and a powder filling unit with electric height adjustment.

TECHNICAL DATA

Motor:	230V+N+PE, 10 A, 50 Hz	
Dimensions (l x w x h):	with clamping device:	approx. 2100 x 500 x 1300 mm
	without clamping device:	approx. 1500 x 500 x 1300 mm
Work height:	max. 1500 mm	
Noise level:	74-76 dB(A)	
	(according to operation of the unit)	
Operation:	without any vibration	
Weight:	approx. 90 kg	
Filling capacity:	25 kg/min.	
Colour:	hammer finish painted blue	

Powder filling unit:
» Absolutely dust-free emptying and filling in continuous operation and interstorage of powder in a tank
» Appropriate for all types of powder (ABC, BC etc.)
» Interstorage of extinguishing powder up to 30 kg
» Big inspection glass for control of powder and filling level
» Electric height adjustment
» High-capacity exhauster with 1,5 kW
» Maintenance-free polyethylene filter package with electric filter cleaning during filling procedure
» Universal filling adaptor for all sizes and types of powder extinguishers
» Non-expendable filling and vacuum ball valves
» Big, removable, diagonally positioned powder sieve (275 mm length) which retains lumps and contamination

Trolley:
» 2 guide-brake rolls, 2 fixed rollers for heavy loads (Ø 125 mm)
» Place of deposit (l x w) approx. 700 x 450 mm
» Set with 4 suction lances Ø 15, 20, 25 and 32 mm, 700 mm length incl. lance support
» Abrasion-proof suction hose with connection 1500 mm length
» Corrosion-free aluminium profile construction
» Lockable doors

Optional available at extra charge:
» Equipped with bench vice

The mobile workshop trolley model WWZ-EKWN is a perfect combination of a mobile working place of deposit and unit-supported working. It is equipped with a removable, manual quick-action clamping device and a removable powder filling unit with manual height adjustment.

TECHNICAL DATA

Motor:	230 V, 6 A, 50 Hz
Dimensions (l x w x h):	with clamping device: approx. 2150 x 620 x 1350 mm without clamping device: approx. 1600 x 620 x 1350 mm
Work height:	max. 1800 mm
Operation:	without any vibration
Weight:	approx. 75 kg
Filling capacity:	18 kg/min.
Colour:	hammer finish painted blue

Powder filling unit:
» Absolutely dust-free emptying and filling in continuous operation and interstorage of powder in a tank
» Appropriate for all types of powder (ABC, BC etc.)
» Interstorage of extinguishing powder up to 12 kg
» Big inspection glass for control of powder and filling level
» Manual height adjustment
» High-capacity suction motor with 1200 W
» Maintenance-free polyethylene filter package with automatic filter cleaning during filling procedure by opening of AIR-MATIC flap
» Universal filling adaptor for all sizes and types of powder extinguishers
» Non-expendable filling and vacuum ball valves
» Big, removable, diagonally positioned powder sieve (240 mm length) which retains lumps and contamination
» Separate rack for powder filling unit is provided

Trolley:
» 2 guide-brake rolls, 2 fixed rollers for heavy loads (Ø 125 mm)
» Place of deposit (l x w) approx. 700 x 450 mm
» Set with 4 suction lances Ø 15, 20, 25 and 32 mm, 700 mm length incl. lance support
» Abrasion-proof suction hose with connection 1500 mm length
» Corrosion-free aluminium profile construction
» Lockable doors

Optional available at extra charge:
» Equipped with bench vice

The mobile workshop trolley SPANN-BOY serves the operator for comfortable assembly of fire extinguishers.

The trolley is equipped with an infinitely 360° rotatable manual quick-action clamping device. The exactly coordinated, ergonomic working height facilitates the handling of the extinguisher.
A large tool box is included and another one can be mounted at surcharge.
The robust construction ensures an additional stability of the trolley.

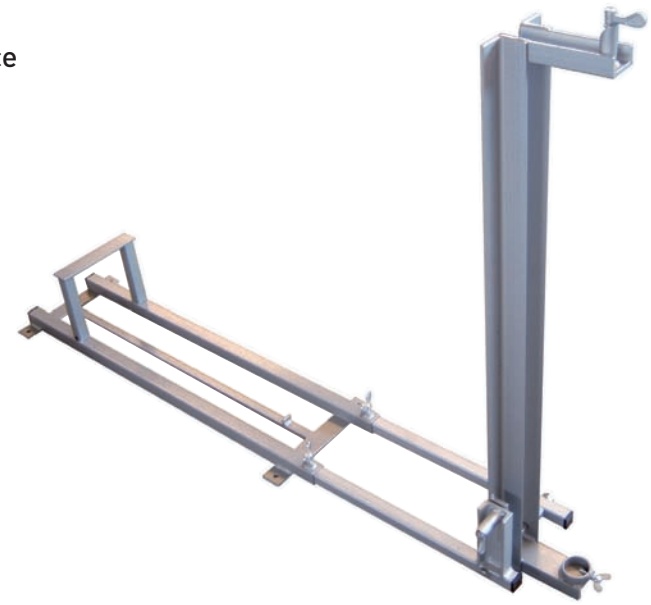
TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 600 x 450 x 1000 mm
Weight (empty):	approx. 9 kg
Colour:	hammer finish painted blue

Optional available at extra charge:
» Trolley equipped with stair rolls
» Additional support for tools

An efficient and handy working process are guaranteed with the different optional features in the service vehicle.

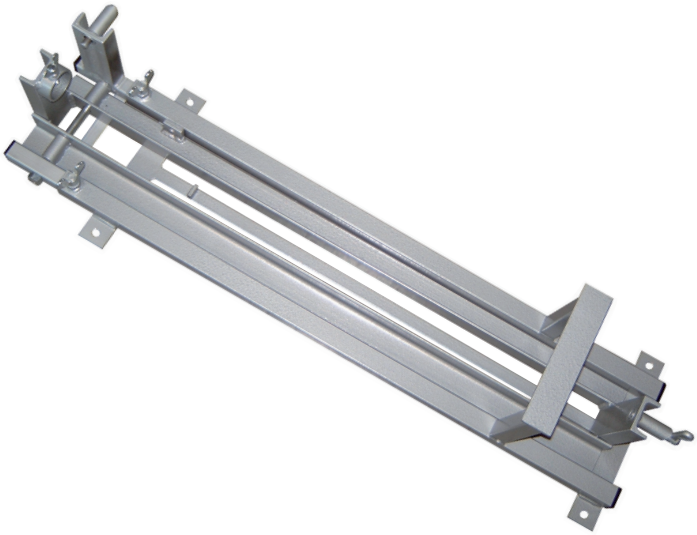
The pull-out about 90° tilting vehicle support is suitable for:
» PFF-FLIPP-AIR-MATIC
» PFF-II/E



TECHNICAL DATA

Dimensions (l x w x h):	350 x 200 x 900 mm
Weight:	10 kg
Colour:	hammer finish painted blue or silvergrey

The vehicle support located in transport position offers a sate and space, saving handling in the service vehicle.



Suitable for:
» PFF-FLIPP-AIR-MATIC
» PFF-II/E

Wall holder for PFF-FLIPP-AIR-MATIC and PFF-II/E **(No. 100 110)**

TECHNICAL DATA

Dimensions (l x w x h):	approx. 200 x 150 x 900 mm
Weight:	approx. 6 kg
Colour:	Hammer finish painted blue or silvergrey

BIG-BAG support with electric chain lift, model DM (No. 100 353)

Big-Bag support for efficient powder supply for automatic filling units. Appropriate for all types of powder.

Equipped with:
» 2 pieces BIG-BAG feed hoppers
» 2 pieces electric chain lifts, each 1,25 t bearing load
» 1 Y-distributor with ball valve
» Connection for fluidisation to aerate the powder
» 2 pieces connecting hose 32 mm, length 3 m with couplings

Optional available at extra charge:
» BIG-BAG twin support (No. 100 351)

BIG-BAG feed hopper, movable (No. 100 359)

TECHNICAL DATA

Construction:	steel construction
Dimensions (l x w x h):	4600 x 1800 x 4100 mm
Weight (empty):	approx. 1000 kg
Motor:	380 V, 50 Hz, 10 A
Colour:	hammer finish painted blue

BIG-BAG support with chain pulley, model S (No. 100 350)

Big-Bag support for efficient powder supply for automatic filling units. Appropriate for all types of powder.

Equipped with:
» BIG-BAG feed hopper
» Chain pulley, 1.25 t bearing load
» Connection for fluidisation to aerate the powder
» Connecting hose 32mm, length 3m with couplings

Optional available at extra charge:
» BIG-BAG twin support "D" (No. 100 351)
» Electric chain lift (No. 100 355)

TECHNICAL DATA

Construction:	steel construction
Dimensions (l x w x h):	1200 x 1200 x 3500 mm
Weight (empty):	approx. 285 kg
Colour:	hammer finish painted blue

Bag discharger (No. 100 357)

for the economic emptying of 25 kg and 50 kg powder bags. Appropriate for all types of powder.

Optional available at extra charge:
» additional dust cover

TECHNICAL DATA

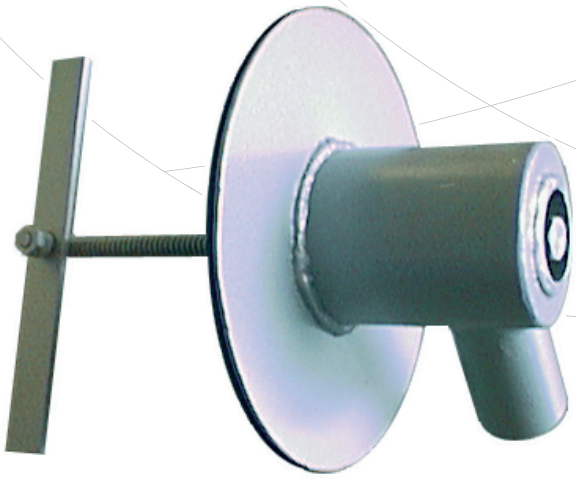
Construction:	steel construction
Dimensions (l x w x h):	700 x 700 x 1200 mm
Weight (empty):	approx. 50 kg
Colour:	hammer finish painted blue

P50-250N Filling Adaptor (No. 100 210)

for filling mobile fire fighting appliances from 50 kg up to 250 kg, consisting of adaptor, hose (2.5 m) and suction lance (1.2 m)

TECHNICAL DATA

Dimensions (l x w x h):	approx. 200 x 120 x 250 mm
Weight:	approx. 1 kg
Cylinder opening (Ø):	approx. 35 – 90 mm
Colour:	hammer finish painted blue or silvergrey



Adaptor P50-250A (No. 100 220)

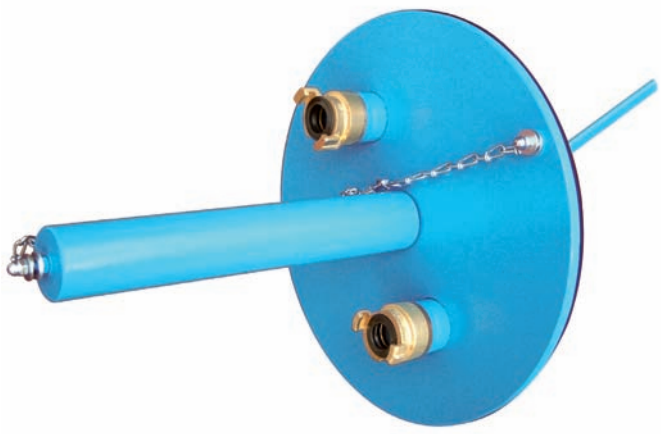
TECHNICAL DATA

Dimensions (l x w x h):	approx. 200 x 200 x 280 mm
Weight:	approx. 3 kg
Cylinder opening (Ø):	approx. 90 – 200 mm
Colour:	hammer finish painted blue or silvergrey

Adaptor P350 (No. 100 240)

TECHNICAL DATA

Dimensions (l x w x h):	approx. 350 x 350 x 650 mm
Weight:	approx. 8 kg
Cylinder opening (Ø):	approx. 100 – 350 mm
Colour:	hammer finish painted blue or silvergrey



Wheeled storage tank to interstore extinguishing powder

Appropriate for EMDE-powder filling units in connection with filling adaptor P50-250.

50 kg tank **(No. 100 310)**

TECHNICAL DATA

Dimensions (l x w x h):	approx. 600 x 750 x 800 mm
Weight:	approx. 32 kg (empty)
Capacity:	approx. 50 kg
Colour:	hammer finish painted blue or silvergrey

Wheeled storage tank to interstore extinguishing powder, tiltable and optional with inlet for bags

100 kg tank **(No. 100 320)**

TECHNICAL DATA

Dimensions (l x w x h):	approx. 600 x 750 x 800 mm
Weight:	approx. 36 kg (empty)
Capacity:	approx. 100 kg
Colour:	hammer finish painted blue or silvergrey

Wheeled powder silo to interstore 250 kg extinguishing powder

Incl. inspection window for powder control, lance support, powder sieve, fluidization and connections for powder removal and filling. **(No. 100 330)**

TECHNICAL DATA

Dimensions (l x w x h):	approx. 650 x 750 x 1900 mm
Weight:	approx. 65 kg (empty)
Capacity:	approx. 250 kg
Colour:	hammer finish painted blue or silvergrey

Model PT (No. 100 450)

Pneumatic clamping device for CO_2- and powder extinguishers with pneumatic clamping cylinder.

Optional available at extra charge:
» Equipped with adjustible clamping pressure (used for powder extinguisher)

TECHNICAL DATA

Dimensions (l x w x h):	approx. 300 x 850 x 1000 mm
Clamping surface (Ø):	80 – 220 mm
Compressed-air:	6 – 8 bar
Colour:	hammer finish painted blue or silvergrey

Model PW (No. 100 430)

Pneumatic clamping device for powder extinguishers to be mounted on a work bench.

Optional: tiltable 360°

TECHNICAL DATA

Dimensions (l x w x h):	approx. 350 x 750 x 280 mm
Clamping surfac (Ø):	80 – 220 mm
Compressed-air:	6 – 8 bar
Colour:	hammer finish painted blue or silvergrey

Model PW-D (No. 100 440)

Pneumatic clamping device for powder extinguishers to be mounted on a work bench.
The clamping device is tiltable of 360°.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 350 x 750 x 280 mm
Clamping surface (Ø):	80 – 220 mm
Compressed-air:	6 – 8 bar
Colour:	hammer finish painted blue or silvergrey

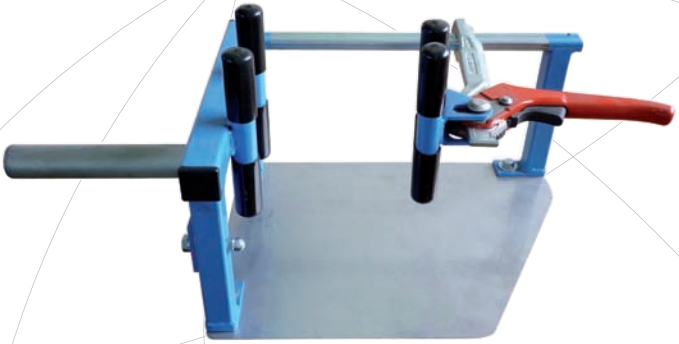
Model M (No. 100 410)

Quick-action clamping device; manual operation to be mounted on a work bench.

Optional: Tilting clamping Device 360°

TECHNICAL DATA

Dimensions (l x w x h):	approx. 400 x 300 x 240 mm
Clamping surface (Ø):	80 – 220 mm
Colour:	hammer finish painted blue or silvergrey



Model M-D (No. 100 420)

Quick-action clamping device; manual operation to be mounted on a work bench.

The clamping device is tiltable of 360°.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 400 x 400 x 280 mm
Clamping surface (Ø):	80 – 220 mm
Weight:	approx. 3kg
Colour:	hammer finish painted blue or silvergrey

Digital floor scale, model 36K 10 (No. 100 550)

Without automatic cut-off. Weighing board made from high quality steel.

TECHNICAL DATA

Weighing range:	36 kg
Resolution:	10 g
Dimensions:	315 x 305 mm

Digital floor scale, model 60K 20L (No. 100 540)

TECHNICAL DATA

Weighing range:	60 kg
Resolution:	20 g
Dimensions:	522 x 403 mm

Digital floor scale, model 150K 50 (No. 100 510)

TECHNICAL DATA

Weighing range:	150 kg
Resolution:	50 g
Dimensions:	315 x 305 mm

Digital floor scale, model 150K 50XL (No. 100 515)

TECHNICAL DATA

Weighing range:	150 kg
Resolution:	50 g
Dimensions:	650 x 500 mm

Digital floor scale, model BW150 20XL (No. 100 520)

With integrated cylinder support.

TECHNICAL DATA

Weighing range:	150 kg
Resolution:	20 g
Dimensions:	565 x 450 mm

Inspektion lamp

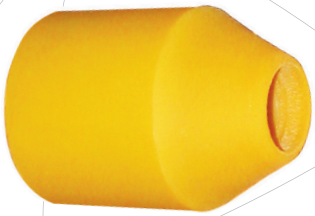
Inspection lamp is used for the internal control of all types of extinguisher.

Universal key

Universal key for opening alll types of extinguisher.

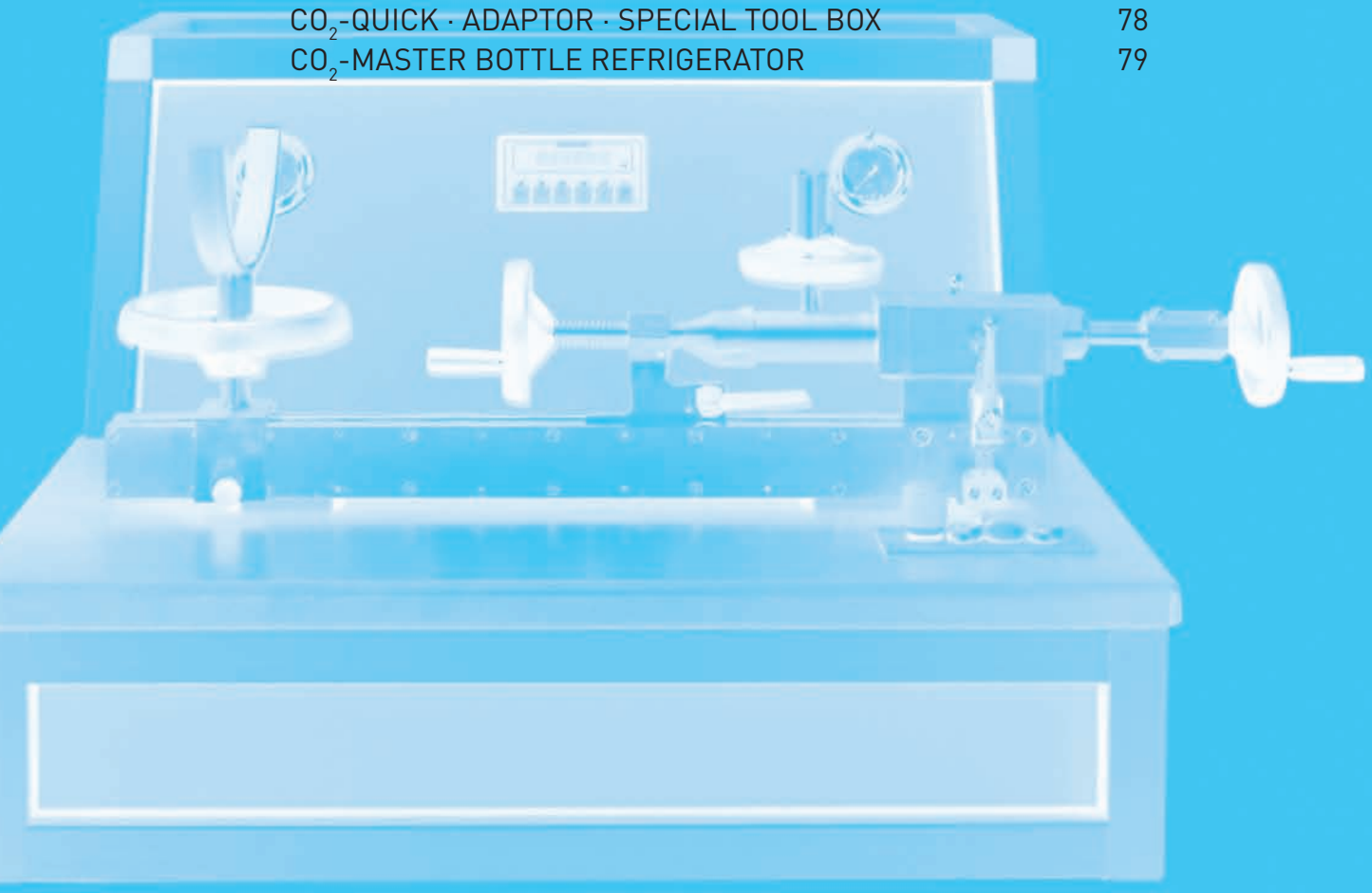
Special adaptor

for filling of portable fire extinguisher with an opening diameter up to 24 mm.



CO_2-FILLING UNITS

ACCESSORIES



The KUD1 is a small mobile CO_2-filling unit to fill CO_2 directly on the spot. For Filling CO_2-bottles from 150 g up to 45 kg in combination with a Digital Floor Scale (not included-optional). It is especially appropriate for service offices and service vehicles to fill CO_2 directly on-site.

The unit is equipped with:
» 1 compressed-air driven pump
» 2 pcs. CO_2-hose (160 bar)
» Pressure reducer
» Compressed-air hose

TECHNICAL DATA

KUD1 (No. 201 000)

Construction:	aluminium construction
Motor:	compressed-air-driven 8-10 bar
Capacity:	3.5 kg/min
Colour:	hammer finish painted blue

The KU3 is a compact, mobile CO_2-filling unit. It is especially appropriate for service offices and service vehicles to fill CO_2 directly on-site.

The unit is equipped with:
» 2 pcs. CO_2-hose (160 bar)
» Pressure gauge (160 bar)
» Electric cable 230 V

TECHNICAL DATA

KU3 (No. 251 000)

Construction:	steel construction with sheet casing
Pump:	3-piston-pump
Motor:	230 V, 16 A
Weight:	approx. 34 kg
Capacity:	max. 3.5 kg/min
Dimensions (l x w x h):	approx. 550 x 400 x 340 mm
Colour:	hammer finish painted blue or silvergrey

TECHNICAL DATA

KUD3 (air compressed) (No. 203 000)

Construction:	aluminium
Motor:	Compressed-air driven 8 – 10 bar
Weight:	approx. 25 kg
Capacity:	max. 3.5 kg/min
Dimensions (l x w x h):	approx. 550 x 400 x 340 mm
Colour:	hammer finish painted blue or silvergrey

TECHNICAL DATA

KUS3 (No. 231 000)

Construction:	aluminium
Pump:	3-piston-pump
Motor:	380 V, 12 A
Weight:	approx. 36 kg
Capacity:	max. 3.5 kg/min
Dimensions (l x w x h):	approx. 550 x 400 x 340 mm
Colour:	hammer finish painted blue or silvergrey

CO_2-filling unit, model KUD4 for filling CO_2-bottles from 150 g up to 45 kg.

Unit consists of:
» Steel casing
» Compressed-air driven pump
» Electrical switchboard
» Safety valve
» Wiring
» CO_2-filter

Control panel consists of:
» CO_2-inlet pressure gauge
» CO_2-outlet pressure gauge
» Relief ball valve
» CO_2-filling ball valve
» Control buttons

TECHNICAL DATA

KU4 (No. 203 000)

Capacity:	max. 4.5 kg/min
Motor:	230 V, 50 Hz
Dimensions (l x w x h):	approx. 500 x 700 x 1000 mm
Colour:	hammer finish painted blue or silvergrey
Weight:	approx. 59 kg

TECHNICAL DATA

KUD4 (No. 205 000)

Capacity:	max. 4.5 kg/min
Motor:	compressed-air driven 8 – 10 bar
Dimensions (l x w x h):	approx. 500 x 700 x 1000 mm
Colour:	hammer finish painted blue or silvergrey
Weight:	approx. 45 kg

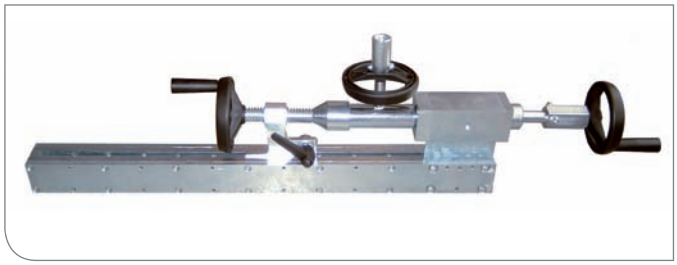
TECHNICAL DATA

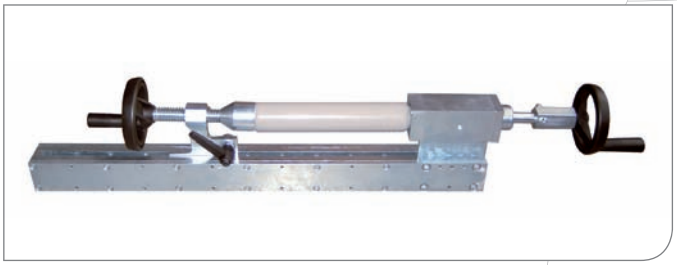
KUS4 (No. 233 000)

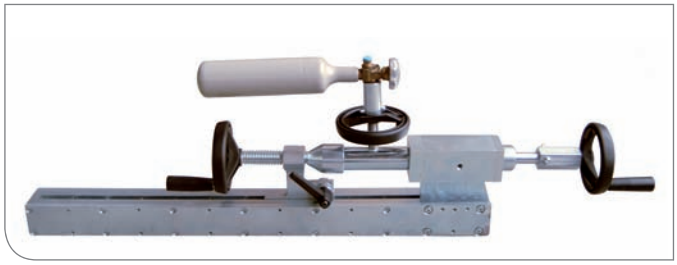
Capacity:	max. 4.5 kg/min
Motor:	3 phase, 400V, 50 Hz
Dimensions (l x w x h):	approx. 500 x 700 x 1000 mm
Colour:	hammer finish painted blue or silvergrey
Weight:	approx. 65 kg

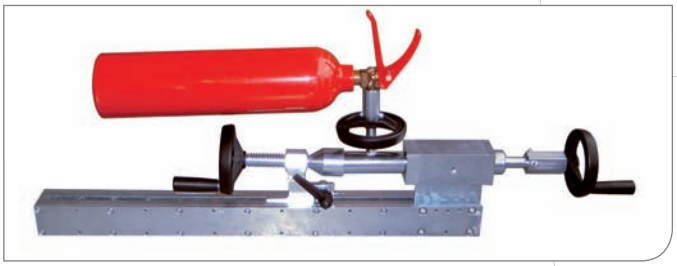
CO_2-filling unit KUD5Di suitable to fill any size, shape or make of CO_2-cartridges (from 20 g) and CO_2-bottles (up to 6 kg) with the universal filling head.

KUS5-LW (No. 235 100)









The unit is equipped with:
» Compressed-air driven CO_2-pump
» Integrated digital scale up to 30 kg weighing range with automatic cut-off feature. Resolution 10 g or optional
» Filling of large bottles more than 6 kg has to be carried out on a separate floor scale with automatic cut-off feature (optional accessory)

Optional available at extra charge:
» Equipped with mechanical sliding weight scale
» Electric supply with 230/380 V, 60 Hz
» Equipped with label printer

TECHNICAL DATA

KU5-DI (No. 255 000)

Motor:	230 V, 50 Hz
Dimensions (l x w x h):	approx. 900 x 700 x 600 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2 cartridges, 18 mm, 25 mm and 32 mm diameter » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-6 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2 steel filter

TECHNICAL DATA

KUD5-DI (No. 207 000)

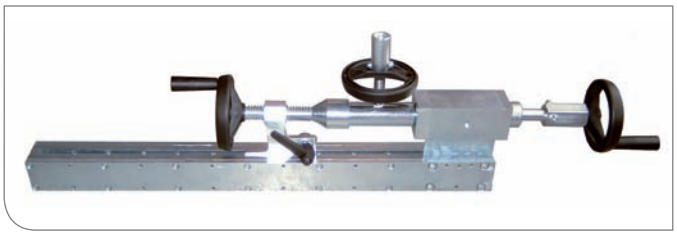
Motor:	compressed-air from 8 bar 800 ltr. air/min
Dimensions (l x w x h):	approx. 900 x 700 x 600 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2-cartridges, 18 mm, 25 mm and 32 mm diameter » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-5 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2-steel filter

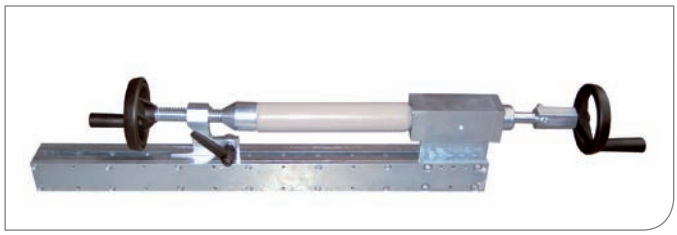
TECHNICAL DATA

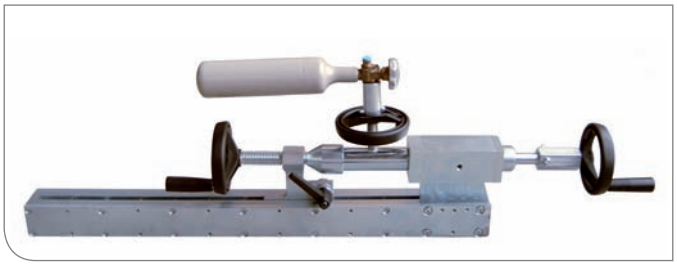
KUS5-DI (No. 235 000)

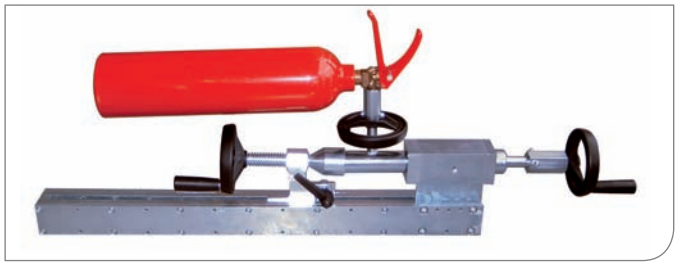
Motor:	380 V, 50 Hz
Dimensions (LxBxH):	ca. 900 x 700 x 600 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2-cartridges, 18 mm, 25 mm and 32 mm diameter » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-5 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2-steel filter

CO_2-filling unit KU6 suitable to fill any size, shape or make of CO_2-cartridges (from 20 g) and CO_2-bottles (up to 6 kg) with the universal filling head. CO_2-unit with integrated digital scale 30 kg in table form with 40 mm thick wooden board.









The unit is equipped with:
» Silent directly flanshed CO_2-pump
» Filling speed control for slow filling of cartridges and fast filling of large bottles
» Fine regulation for small cartridges
» Fast fi lling for large cylinders
» Digital scale (30 kg weighing range) with automatic cutoff feature – resolution 5 g or 10 g optional
» Operation by electrovalves
» Filling of large bottles more than 6 kg has to be carried out on a separate floor scale with automatic cut-off feature (scale not included)
» No pre-cooling system for CO_2 source bottle required
» Emptying of CO_2 master bottle up to 95%

Optional available at extra charge:
» Digital scale (30 kg weighing range) with automatic cut-off feature: resolution: 2 g or 5 g
» Electric supply with 230/380 V, 60 Hz
» Equipped with label printer

TECHNICAL DATA

KU6-DI (No. 256 000)

Capacity:	max. 5 kg/min
Operating pressure:	max. 130 bar
Safety valve:	130 bar
Motor:	AC 230 V, 50 Hz
Dimensions (l x w x h):	approx. 1000 x 750 x 850 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2-cartridges, Ø 18 mm, 25 mm and 32 mm » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-6 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2-steel filter

TECHNICAL DATA

KUD6-DI (No. 209 000)

Capacity:	max. 5 kg/min
Operating pressure:	max. 130 bar
Safety valve:	130 bar
Motor:	AC 230 V, 50 Hz
Air pressure:	8-10 bar 800 l/Air/min
Dimensions (l x w x h):	ca. 1000 x 750 x 850 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2-cartridges, Ø 18 mm, 25 mm and 32 mm » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-6 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2-steel filter

TECHNICAL DATA

KUS6-DI (No. 237 000)

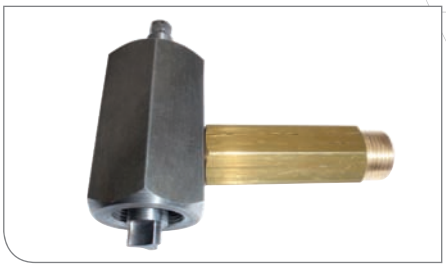
Capacity:	max. 5 kg/min
Operating pressure:	max. 130 bar
Safety valve:	130 bar
Motor:	3 phase 400 V, 50 Hz
Dimensions (l x w x h):	ca. 1000 x 750 x 850 mm
Colour:	hammer finish painted blue or silvergrey
Standard accessories:	» 3 adaptors for filling of CO_2-cartridges, Ø 18 mm, 25 mm and 32 mm » 1 CO_2 high-pressure hose, 2 m » 1 rotary filling valve "DF 1" to fill CO_2-bottles » 1 height adjustable support, KS-6 » 1 metal box incl. hexagonal sockets and tools, 10 – 32 mm » 1 set of sealings for filling adaptors » CO_2-steel filter

Combined filling unit for Carbon Dioxide (CO_2) and Nitrogen (N_2) for small cartridges fire extinguishers and cylinders of all makes and sizes with the FRITZ EMDE universal filling rail.

The unit is equipped with:
» digital scale (resolution 5 g) with automatic cut-off
» Compressed-air driven CO_2-pump
» Compressed-air driven N_2-pump
» Filling speed regulator
» Electrically relief valve
» Universal FRITZ EMDE filling rail
» CO_2-filter
» Safety valve (130 bar)

Standard accessory:
» 3 adaptors for CO_2-cartridges: 18 mm, 25 mm und 32 mm
» 1 CO_2-High-Pressure hose 2 m
» 1 DF1-adaptor for filling of CO_2-cylinders
» 1 KS 5 support
» 1 set of socket wrenchs, 10 – 32 mm
» 1 CO_2-steel filter

KUD6-DI-N_2 PROTECT (No. 263 000)



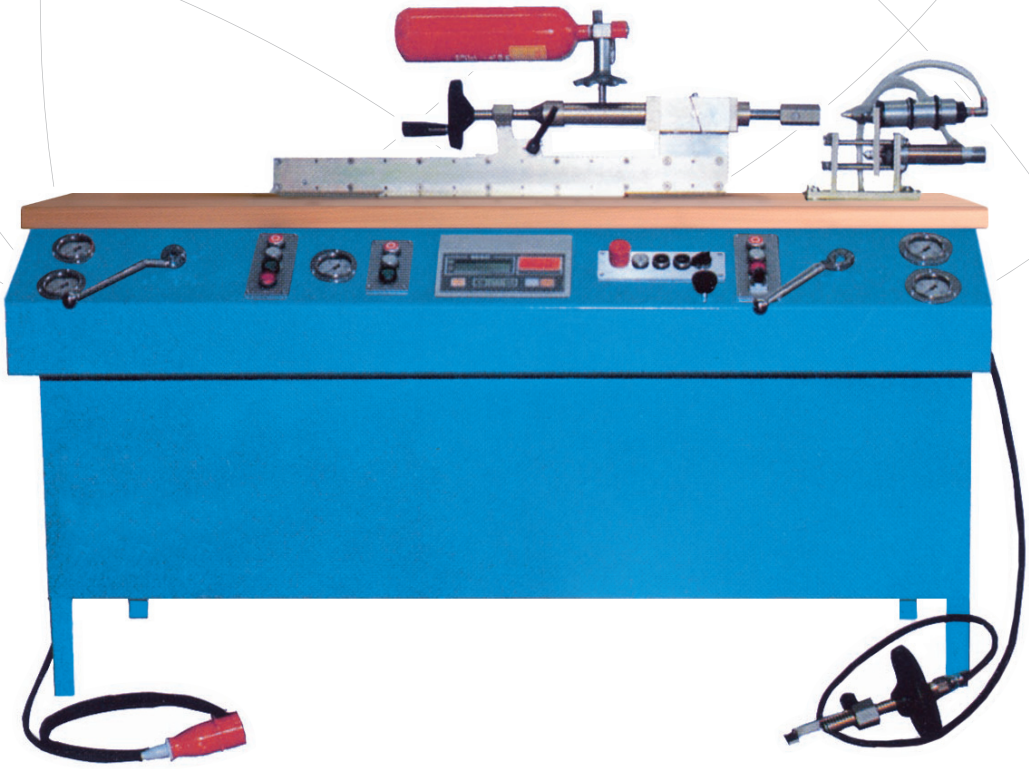
TECHNICAL DATA

Filling capacity CO_2:	max. 5 kg/min
Working pressure:	max. 130 bar
Safety valve:	130 bar
Motor:	230 V, 10 A, 50 Hz
Dimension (l x w x h):	approx. 1300 x 750 x 1250 mm
Working height:	850mm
Colour:	hammer finish painted blue

Accessories available at extra charge:
» Floor scale with automatic cut-off 200 kg, 20 g resolution display integrated in filling unit scale platform approx. 600 x 400 mm incl. cylinder bracket
» CO_2-QUICK fast filling adaptor
» Raisable safety guard for filling rail
» Label printer

Combined filling unit, model KU6/HF505RS to fill any size and type of CO2, Halon 1211 (BCF) and Halon 1301 (BTM-cartridges, -extinguishers and big bottles with the universal filling rail).

The unit is equipped with:
» Silent 3-piston dosing pump for CO_2
» Self-sucking Halon 1301 (BTM) fluid pump with an emptying capacity up to 85%
» Digital scale (30 kg with 10 g resolution) with automatic cut-off feature
» Filling of large bottles more than 6 kg has to be carried out on a separate floor scale with automatic cut-off feature (scale not included)
» No pre-cooling system for CO_2 source bottle required



TECHNICAL DATA

Capacity CO_2:	max. 4.2 kg/min
Operating pressure CO_2:	130 bar
Capacity Halon:	max. 20 kg/min
Operating pressure Halon:	40 bar
Motor:	AC 230 V, 16 A, 50 Hz
Dimensions (l x w x h):	approx. 1600 x 750 x 850 mm
Colour:	hammer finish painted blue or silvergrey

Accessories available at extra charge:
» Halon 1301 (BTM) gas pump for emptying capacity up to 98%
» Pneumatic screwer
» Digital scale with 5 g resolution
» Digital floor scale, 150 kg, 50 g resolution

The CO_2-control station, model CO_2-BS-2W is designed for quick, precise und economic filling of CO_2-cylinders out of a tank with cryogenic Carbon Dioxide.

The alternating use allows the user to fill the effective filling time of the cylinder with preparation and post-processing work. Therefore there are no unit down-times during the filling process. The control of the filling valves works automatically. The control station has to be used in combination with the CO_2-transfer pump EM-130 and the cryogenic Carbon Dioxide tank.

The unit is equipped with:

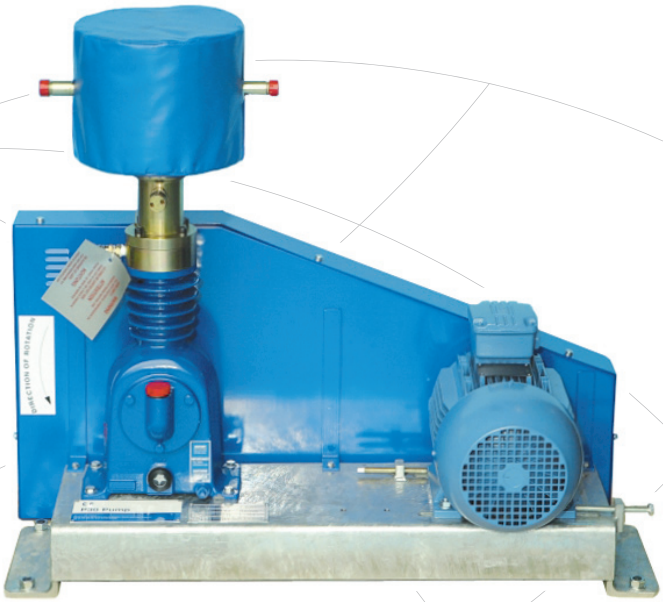
» 2 pcs. digital floor scales, 200 kg, 50 g resolution with automatic cut-off feature
» 2 pcs. pneumatic clamping devices for steel cylinders
» 2 pcs. isolated CO_2-filling hose, lenght 2000 mm
» 2 pcs. EMDE-CO_2-QUICK adaptors
» 1 pc. safety valve 103 bar
» 2 pcs. pressure gauges

TECHNICAL DATA

Dimension (l x w x h):	approx. 3000 x 600 x 1200 mm
Compressed-air:	6 bar
Motor:	230 V, 50 Hz, 5 A
Colour:	hammer finish painted blue

The EM130 is a CO_2-plunger pump designed to fill small and medium scale cylinder from bulk liquid CO_2 storage vessels or to transfer liquid CO_2 from one cylinder to another. Where a bulk liquid CO_2-tank is used as a supply source, refrigeration is required in the tank. It may also be used where a High-Pressure source of liquid CO_2 is required for a particular process.

The EM130 pump is CE marked to comply with European Unitry Directive 98/37/EC and low Voltage Directive 73/23/EC. Recharging Units comply with Pressure Equipment Directive 97/23/EC.

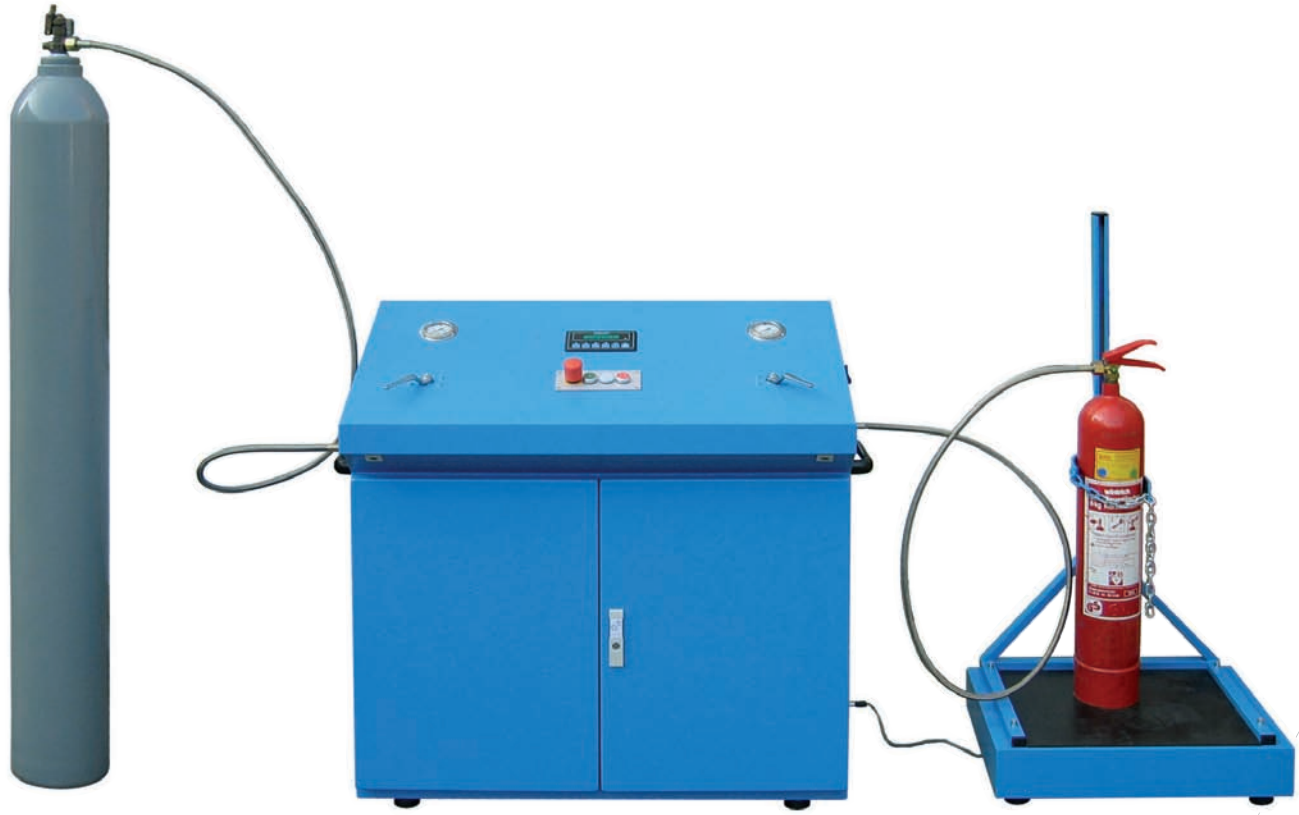


TECHNICAL DATA

CO_2 transfer capacity:	(fluid at -17°C) 300 kg/hr
Max. pressure:	103,5 bar
Suction connection:	R½
Pump speed:	400 rpm
Electric motor:	2.2 kW
Motor speed:	1420 rev/min
Electricity supply:	400 V AC 50 Hz 3 phase
Weight:	Net 91 kg / Gross 105 kg
Dimensions (l x w x h):	970 x 490 x 850 mm

The Kyoto Protocol of the United Nations Framework Convention on Climate Change is an amendment to the international treaty on climate change, assigning mandatory emission limitations for the reduction of greenhouse gas emissions to the signatory nations.

The reduction of greenhouse gas, particularly CO_2 will play a decisive role in the future. You have the change to make a contribution to our climate, by utilize the FRITZ EMDE CO_2-Recycling Unit, KR04 to reduce the greenhouse effect.



TECHNICAL DATA

Motor:	230 V, 50 Hz, 10 A
Filling capacity:	CO_2 fluid: approx. 15 l/min
	CO_2 gaseous: approx. 6 l/min
Compressed-air:	6 – 8 bar
Weight:	approx. 70 kg
Safety valve:	130 bar
Evacuation:	up to 7 bar
Dimension (l x w x h):	approx. 1000 x 500 x 1000 mm (without floor scale)
Colour:	hammer finish painted blue

The unit is equipped with:
» safety valve 130 bar
» CO_2-filter
» floor scale 200 kg with digital display
» manual ball valve for relief
» inlet and filling gauge
» CO_2-hoses 2 m each

Accessories available at extra charge:
» CO_2-QUICK adaptor
» CO_2-cartridge device fort he emptying of cartridges

When discharging of the cylinder 99% of the carbon dioxide is recaptured. Germany is precursor in the climate protection with the climate protection technology of FRITZ EMDE products.

„Made in Germany“

The CO_2-Recycling Unit, KR04 is used for the total discharging of CO_2 extinguisher, – cartridges and – cylinders up to a residual pressure under 7 bar. Therefore it is consequently guaranteed that no CO_2 disappears in the environment.

The CO_2-Recycling Unit, KR04 is used for refilling of extinguisher and cylinders along with a digital floor scale.

By achievement of the programming weight the KR04 cuts off automatically.

Digital floor scale, model 36K 10 (No. 100 550)

Without automatic cut-off. Weighing board made from high quality steel.

TECHNICAL DATA

Weighing range:	36 kg
Resolution:	10 g
Dimensions:	315 x 305 mm

Digital floor scale, model 60K 20L (No. 100 540)

TECHNICAL DATA

Weighing range:	60 kg
Resolution:	20 g
Dimensions:	522 x 403 mm

Digital floor scale, model 150K 50 (No. 100 510)

TECHNICAL DATA

Weighing range:	150 kg
Resolution:	50 g
Dimensions:	315 x 305 mm

Digital floor scale model 150K 50XL (No. 100 515)

TECHNICAL DATA

Weighing range:	150 kg
Resolution:	50 g
Dimensions:	650 x 500 mm

Digital floor scale, model BW150 20XL (No. 100 520)

With integrated cylinder support without automatic cut-off.

Accessories available at extra charge:
» Tool box
» CO_2-hose 2 m
» CO_2-QUICK Adaptor

TECHNICAL DATA

Weighing range::	150 kg
Resolution:	20 g
Dimensions:	565 x 450 mm

Digital floor scale, model BW200 50XL (No. 100 530)

With integrated cylinder support and automatic cut-off.

Accessories against surcharge:
» Tool box
» CO_2-hose 2 m
» CO_2-QUICK Adaptor

TECHNICAL DATA

Weighing range:	200 kg
Resolution:	50 g
Dimensions:	600 x 400 mm

Digital floor scale, model BW60 5NL-F (No. 100 560)

With integrated universal filling rail fpr the filling of cartridges and extinguishers.

Accessories available at extra charge:
» Tool box
» CO_2-hose 2 m
» CO_2-QUICK Adaptor

TECHNICAL DATA

Weighing range:	60 kg
Resolution:	5 g
Dimensions:	510 x 405 mm

Digital floor scale, model DFW-OA (No. 100 570)

With integrated universal filling rail for the filling of cartridges and extinguishers.

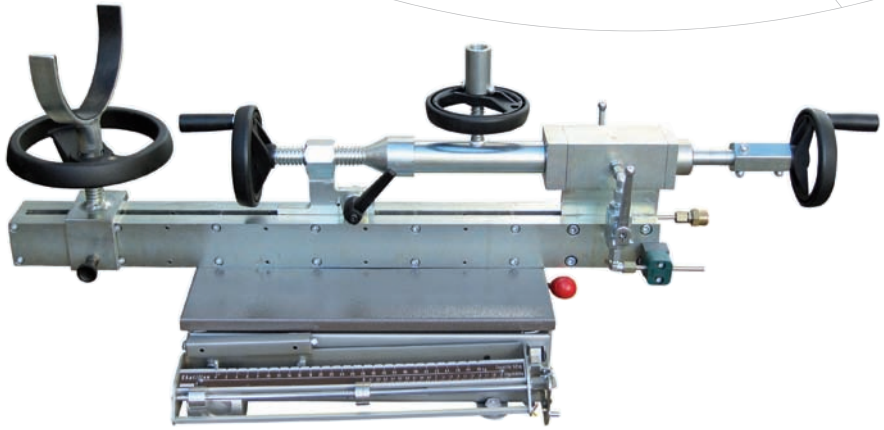
Accessories available at extra charge:
» Tool box
» CO_2-hose 2 m
» CO_2-QUICK Adaptor

TECHNICAL DATA

Weighing range:	100 kg
Resolution:	10 g
Dimensions:	600 x 410 mm

Sliding weight scale, model LW52 **(No. 100 590)**

Accessories available at extra charge:
» Tool box
» CO_2-hose 2 m
» CO_2-QUICK Adaptor



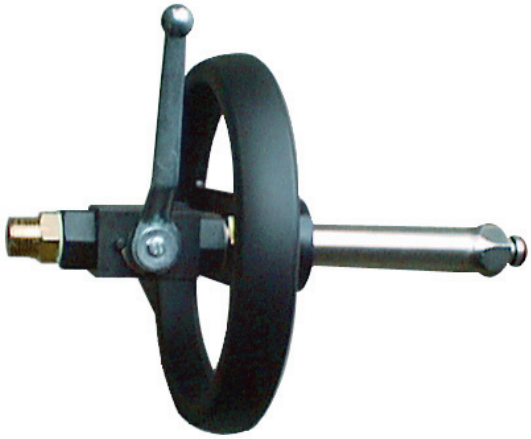
TECHNICAL DATA

Weighing range:	52 kg
Resolution:	2 g
Dimensions:	425 x 300 mm
Weight:	35 kg

The CO_2-filling connection with isolating and relief valve is for the filling of CO_2-fire extinguishers and CO_2-cylinders with a male thread (W 21,8 x 1/14")

The EMDE CO_2-filling connection guarantees a fast and economic CO_2-filling procedure. Less than 10 g CO_2 must be discharged, to depressurize the adaptor.

The unit is equipped with:
» Isolating ball valve
» CO_2-threated connection with handwheel



TECHNICAL DATA

Operating pressure:	max. 130 bar
Version:	» corrosion-resistant
	» sealings are CO_2-resistant
	» protection shell and relief outlet
Dimensions (lxw):	approx. 180 x 180 mm

ADAPTOR · SPECIAL TOOL BOX

ANSUL Adaptor **(No. 200 201)**

FAC Adaptor **(No. 200 205)**
Wrench size 5 or 6 mm

GLORIA Adaptor **(No. 200 209)**

Special tool box **(No. 200 200)**
for closing of CO_2-cartridges

The master bottle refrigerator is necessary by higher ambient temperature by more than 30°C. It is prepared to connect on master bottle and to storage up to 8 additionally master bottles with the maximum size of:

Max. height: approx. 1700 mm
Max. diameter: approx. 250 mm

The CO_2-cylinder cooling system is equipped with:
» CO_2-connection hose
» wall holder for two CO_2-cylinder
» lockable doors

Accessories available at extra charge:
» ramp
» additional wall holder
» additional CO_2-connection hose

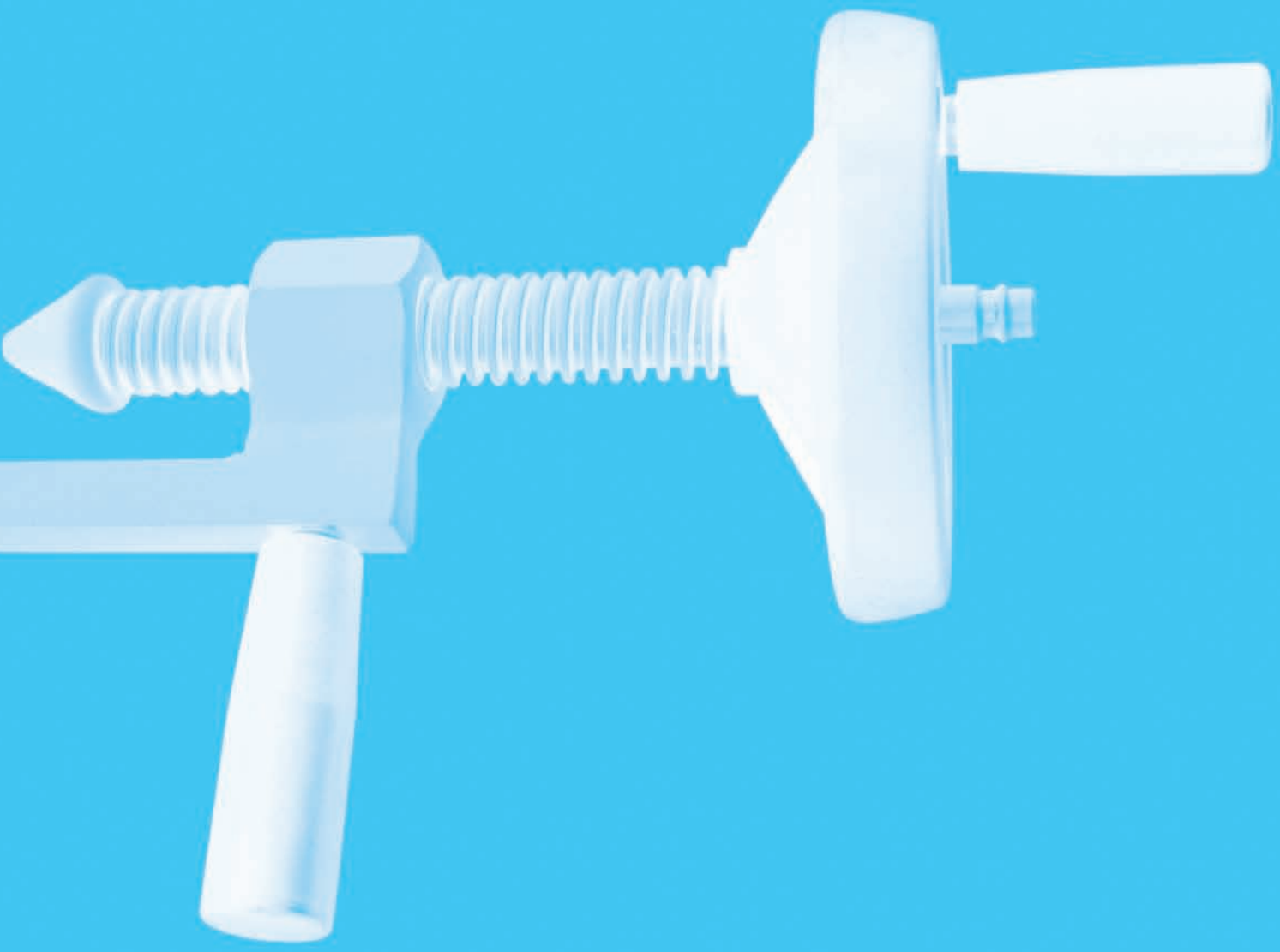
TECHNICAL DATA

Dimension (l x w x h):	approx. 1000 x 1000 x 2200 mm
Material:	aluminium
Motor:	230 V, 50 Hz, 10 A
Colour:	aluminium

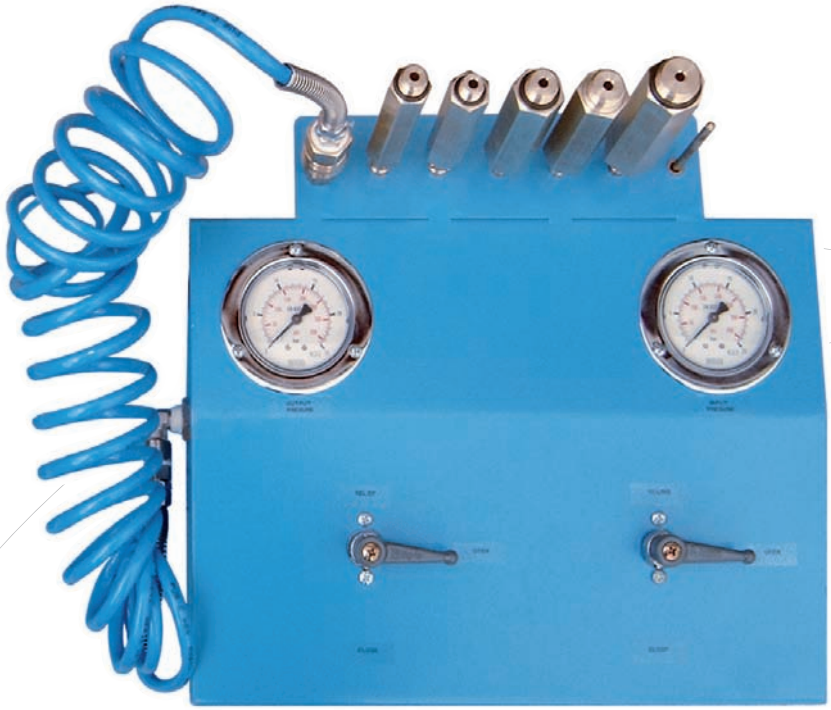
NITROGEN FILLING UNITS

FOAM FILLING UNITS

ACCESSORIES



Nitrogen filling unit for safe and exact pressurizing of extinguishers with nitrogen.



The unit consists of:
» Inlet pressure gauge
» Outlet pressure gauge
» Air hose 1 m
» Adaptor:
18 x 1.5 mm
22 x 1.5 mm

Accessories available at extra charge:
» Manual clamping device
» N_2-pressure reducer
» N_2-bottle
» N_2-hose
» Adaptors:
12 x 1.0 mm
12 x 1.5 mm
14 x 1.5 mm
16 x 1.5 mm
» Further sizes available on request

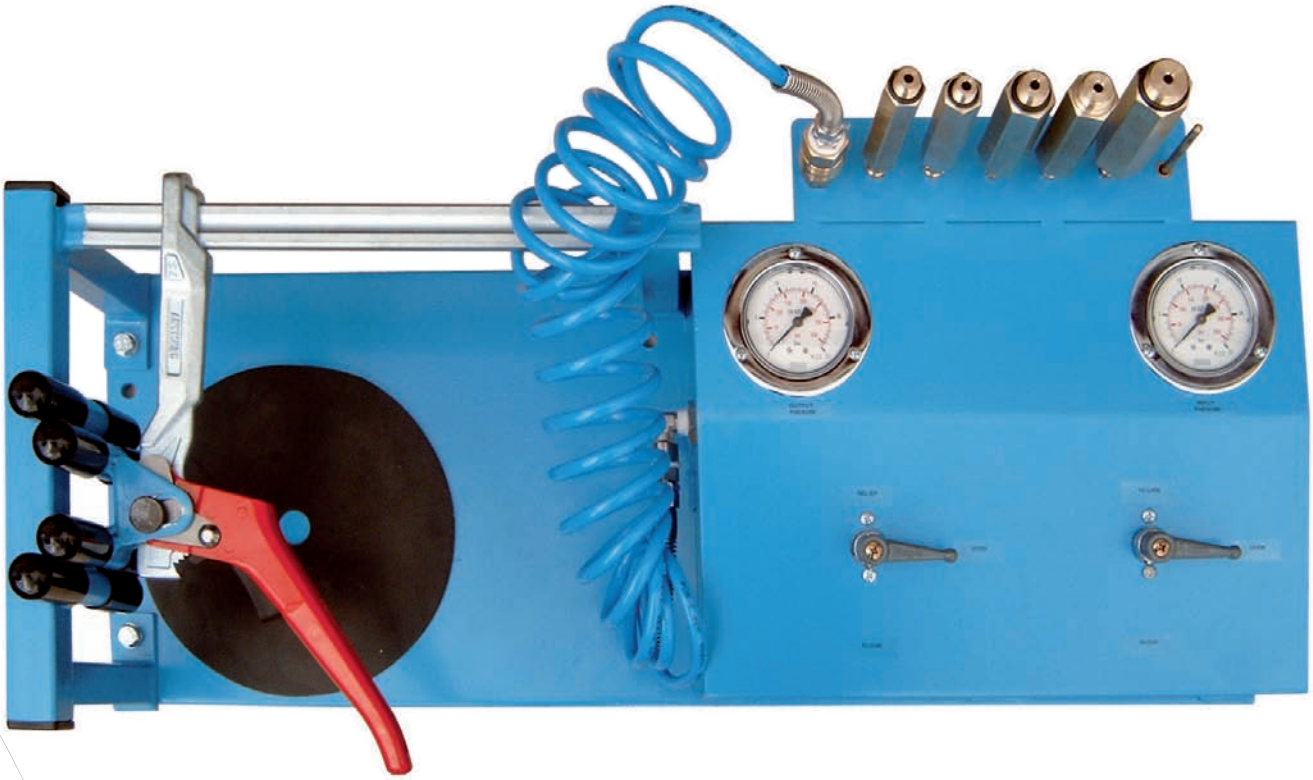
TECHNICAL DATA

Construction:	steel construction
Weight:	approx. 4.5 kg
Safety valve:	18 bar
Dimensions (l x w x h):	approx. 350 x 330 x 150 mm
Colour:	hammer finish painted blue or silvergrey

Nitrogen filling unit for safe and exact pressurizing of extinguishers with nitrogen.

The unit consists of:
» Inlet pressure gauge
» Outlet pressure gauge
» Air hose 1m
» Adaptor: 18 x1,5mm
22 x1,5mm
» Manual clamping device

Accessories available at extra charge:
» N_2-pressure reducer
» N_2-bottle
» N_2-hose
» Adaptor:
12x1,0mm
12x1,5mm
14x1,5mm
16x1,5mm
» Further sizes available on request



TECHNICAL DATA

Construction:	steel construction
Weight:	approx. 8,5 kg
Safety valve:	18 bar
Dimensions (l x w x h):	approx. 800 x 350 x 300 mm
Colour:	hammer finish painted blue or silvergrey

Foam filling unit AFF for filling of foam and water extinguishers from 1 to 12 liters. Exact filling according to EN-3 standard. The unit is suitable for foam extinguishers which are filled with water and foam concentrate.

The filling capacity depends on the size of the extinguisher and the quality of the foam concentrate.
To avoid the foaming inside the filled extinguisher, the filling takes part from the bottom up.
For example the complete filling of a 6 liter foam extinguisher with water and foam concentrate takes on average approximately 30 seconds.

The unit is equipped with:
» Digital scale 30 kg, resolution 10 g
» Automatic cut-off feature on reaching of the filling volume
» Valve for dosing of the foam concentrate
» 1000 liter PE tank for foam concentrate
» Different pipe diameters for bottom up filling
» Barrel pump for filling of the foam tank

Technical data barrel pump for foam tank:
» 230 V, 50 Hz
» Filling capacity 20 liters per minute
» Two speed switch
» Overload cut-out switch

TECHNICAL DATA

Voltage:	230 V, 50 Hz, 10 A.
Dimensions (l x w x h):	approx. 1200 x 1200 x 2900 mm
Weight (empty):	approx. 350 kg
Compressed-air:	8 – 10 bar
Water connection:	1/2" coupling or British Standard
Construction:	steel construction with aluminium casing
Colour:	hammer finish painted blue

The mobile and manual foam filling unit, model SUM-20 for filling of foam and water extinguishers from 1 to 12 liters.

To avoid the foaming inside the filled extinguisher, the filling takes part from the bottom up.

The unit is equipped with:

» A foam middle pump with two filling speeds
» A trolley with mounted 360° rotable clamping device
» A foam suction lance, 700 mm including coupling
» A tool box (tools not included in delivery)
» A foam/water reservoir, high quality steel, approx. 20 l capacity

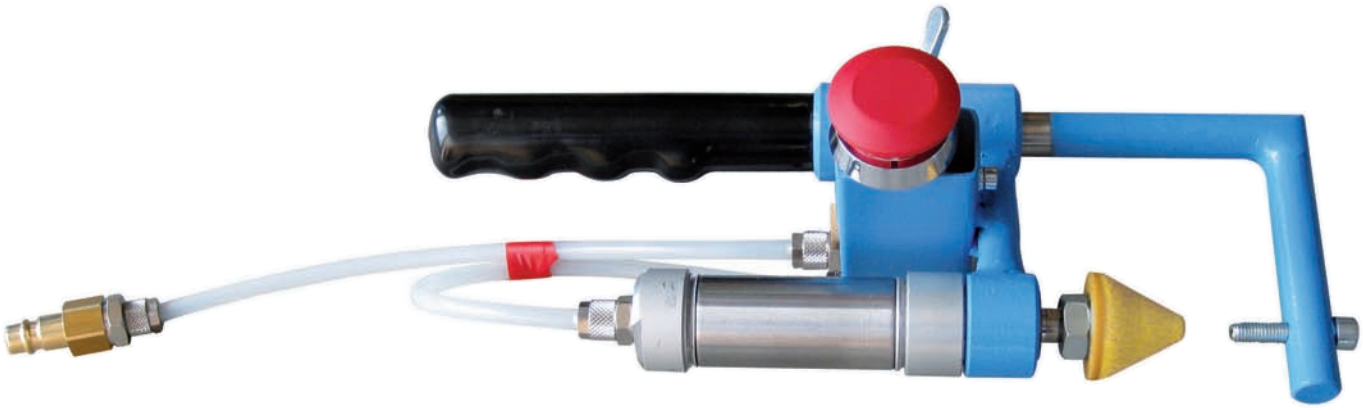
TECHNICAL DATA

Voltage:	230 V, 50 Hz, 10 A
Dimensions (l x w x h):	approx. 600 x 400 x 1000 mm
Weight (empty):	approx. 40 kg
Suction Capacity:	approx. 30 l/min
Construction:	aluminium construction
Colour:	hammer finish painted blue or grey

No. 300 150 · Accessories · N_2-QUICK

Nitrogen-Adaptor N_2-QUICK for fast nitrogen filling of stored pressure extinguisher.
The universal filling rubber for the filling of all established types of valves and makes.

Optional available at extra charge:
» Full-Set of:
N_2-QUICK filling adaptor with 2 m air hose
Nitrogen Pressure reducer 40 bar



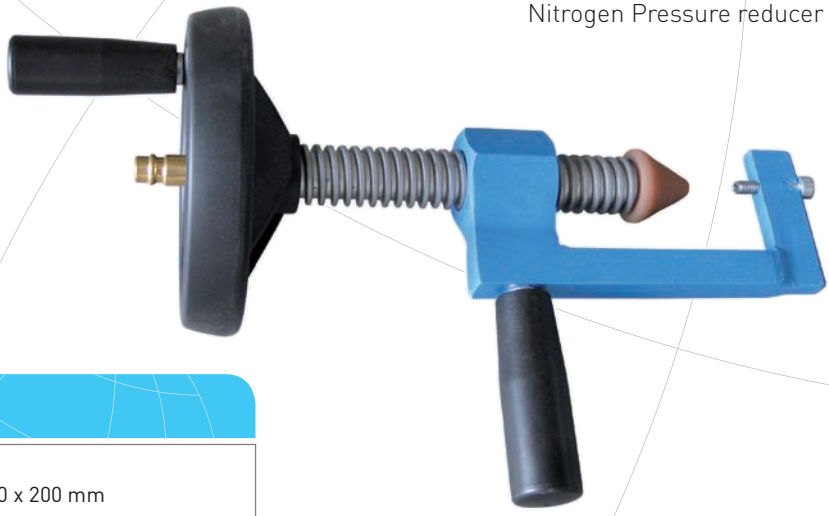
TECHNICAL DATA

Dimensions (l x w x h)	approx. 300 x 100 x 150 mm
Weight:	approx. 1.5 kg
Colour:	hammer finish painted blue or grey

No. 300 160 · Accessories · N_2-ADAPTOR

N_2-Adaptor with manual handling for fast nitrogen filling of stored pressure extinguisher.
The universal filling rubber for the filling of all established types of valves and makes.

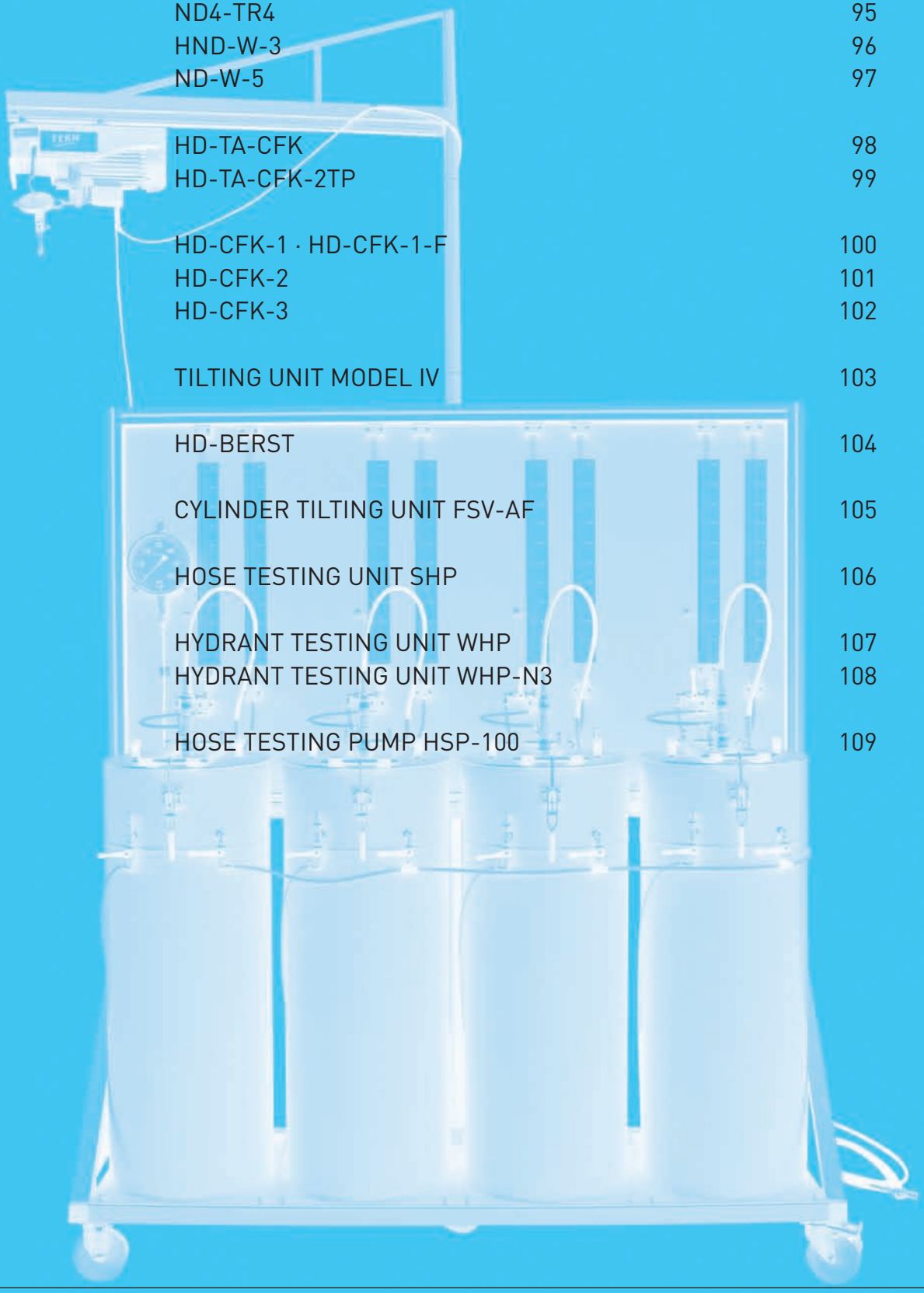
Optional available at extra charge:
» Full-Set of:
N_2-QUICK filling adaptor with 2 m air hose
Nitrogen Pressure reducer 40 bar



TECHNICAL DATA

Dimensions (l x w x h):	approx. 300 x 200 x 200 mm
Weight:	approx. 3 kg
Colour:	hammer finish painted blue or grey

HIGH- & LOW-PRESSURE UNITS



High-Pressure testing unit, model HD1+1

Combined stationary High-Pressure testing unit HD1+1 for testing of pressure cylinders.

Pressure test:

» Testing unit to test CO_2-extinguishers, steel bottles or similar with large conical CO_2 female thread (W21,8 x 1/14")
» max. diameter: 140 mm
» min. diameter: 60 mm
» max. admitted height: 1100 mm
» Two separate clamping positions, equipped with quick-adaptor. These are equipped with ascending pipes according to the size of the cylinder
» Adaptation of the cylinder at the quick-adaptor; the cylinder is placed head down on the adaptor
» Clamping of cylinder is effected pneumatically
» Control of the complete procedure by SPS
» Testing procedure is started manually by button, operation works automatically by SPS
» During pressure raise the testing area is protected by a sliding door. Water filling comes out of the water tank through the pressure line directly into the pressure tank
» Pressure build-up by compressed-air driven one piston pump (all parts getting in touch with water are made of special steel)
» Pressure indication by sensor which is shown on a digital display
» Disconnection at the preset pressure is automatically; indication of the present pressure at the display
» Control of pressure after adjusted stop period is automatically; signalling when pressure test has been unsuccessful
» In case of successful test, the cylinder is emptied automatically by compressed-air assistance. Water gets directly into the water tank
» Pressure test is effected on each cylinder separately
» Pressure test: High-Pressure 0 – 250 bar
» Pressure test is effected mutually
» Fast emptying of the cylinders by blowing the water out by compressed-air
» Illumination of the unit

Optional available at extra charge:

» Control system to memorize data by PC
» Possibility to adjust data of cylinder by keyboard
» Indication and printing of pressure course by software program with display

TECHNICAL DATA

Dimensions (l x w x h) switch box and control unit:	approx. 2200 x 2200 x 950 mm
Compressed-air:	1/2"
Connection for water supply of pressing pump:	1/2"
Connection for water emptying:	1"
Motor:	230 V, 50 Hz, 10 A
Filling pump:	230 V
Drive of High-Pressure pump:	max. 10 bar

Stationary High- and Low-Pressure testing unit, model HD-ND2+2

In High-Pressure with 2 testing connections to test: CO_2-bottles/-cartridges and -fire extinguishers, breathing air apparatus, diving bottles, gas-bottles.

High-Pressure test
Consisting of:
» 2 High-Pressure hoses (0.8 m)
» plug-in coupling and each with 2 plug-in adaptors with large or small conical CO_2-thread
» Lockable valves for individual testing
» Relief valve to relieve the testing line
» Pipework made of High-Pressure Ermetho pipes
» Compressed-air driven High-Pressure pump
» Disconnectable pressure display with pressure gauge (600 bar)
» Automatic disconnection when reaching the requested test pressure by pressure gauge

In Low-Pressure with 2 testing connections to test fire extinguishers as well as cylinders up to max. 30 bar.
The HD-ND2+2 High- and Low-Pressure testing unit with integrated water tank to fill extinguishers or cylinders by submergible pumps.

Low-Pressure test
Consisting of:
» 2 Low-Pressure hoses (0.8 m) with plug-in coupling
» 2 universal Low-Pressure adaptor
» Lockable valve for individual testing
» Relief valve to relieve the testing line
» Compressed-air driven Low-Pressure pump
» Disconnectable pressure display with pressure gauge (40 bar)
» Test pressure 0 – 40 bar
» Automatic disconnection when reaching the requested test pressure by pressure gauge

Optional available at extra charge:
» Digital gange
» Equipped with safety protection cover

TECHNICAL DATA

Dimensions (l x w x h):	approx. 450 x 1000 x 1900 mm
Dimensions of the cylinder to be tested:	max. height: 730 mm
	Ø max.: 210 mm
Connection for water supply of pressing pump:	1/2"
Motor:	230 V, 10 A, 50 Hz
Compressed-air:	8 – 10 bar
Colour:	hammer finish painted blue or silvergrey

Stationary High- and Low-Pressure testing unit, model HD-ND3+3

Combined stationary High- and Low-Pressure testing, model HD-ND3+3 for testing of extinguishers and pressure cylinders. The unit is made of aluminium with two areas each with a clamping-tilting support for 3 cylinders.

Pressure testing unit for powder extinguishers, CO_2-cylinders, steel bottles, breathing air apparatus etc. with the following dimensions:

» max. diameter: 80 – 200 mm
» max. admitted height: 730 mm

The water is collected inside the water collecting basin and transported by diving pump through a separate pipework for filling of the cylinder. Pressure test is effected separately for each area (right or left side).

High-Pressure test area: 0 – 450 bar
Low-Pressure test area: 0 – 30 bar

Optional available at extra charge:
» Numbers of testing connections according to customer concern
» Electric tilting device
» Pneumatic clamping device
» Integrated drying unit
» Pressure sensor with digital display

TECHNICAL DATA

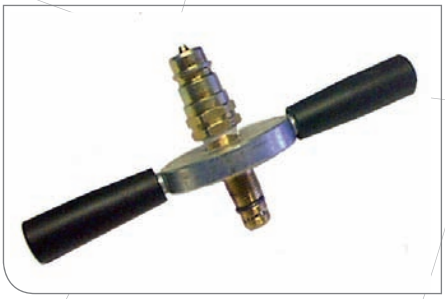
Dimensions (l x w x h):	approx. 2600 x 2200 x 900 mm
High-Pressure pump:	compressed-air driven, 600 bar
Low-Pressure pump:	compressed-air driven, 40 bar
Submergible pump:	0.25 kW, 230 V
Water basin:	2 pcs. – 300 ltr. capacity, aluminium
Compressed-air:	1/4"
Connection for water supply of pressing pump:	1/2"
Motor:	230/400 V, 10 Amp, 50 Hz
Colour:	according to customer wish
Accessory:	» 3 universal Low-Pressure adaptors » 3 screwed adaptors (small conical CO_2-thread) » 3 screwed adaptors (large conical CO_2-thread)
Optional:	Locking device: quick acting locking device/crank locking device

High-Pressure testing unit, model HD-ND5+5

Optional available at extra charge:
» High-Pressure testing adaptor, small conical; alternative: big conical

TECHNICAL DATA

Dimensions (l x w x h):	approx. 4000 x 1000 x 2000 mm
Compressed-air:	10 – 12 bar
Test pressure:	max. 450 bar
Motor:	230/400 V, 50 Hz, 10 A
Colour:	hammer finish painted blue or silvergrey



Low-Pressure testing unit with drying, model ND4-TR4

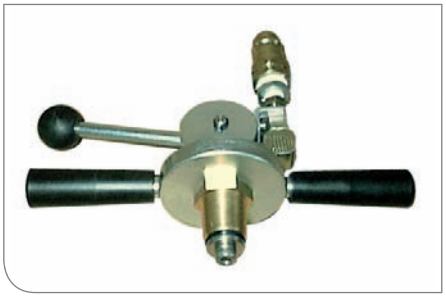
Stationary Low-Pressure testing unit to test and dry fire extinguishers as well as pressure cylinders of all types up to 40 bar.

The unit consists of four test stations with automatic cut-off and four drying staions.
The continuously adjustable drying fan creates up to 600°C.

Optional available at extra charge:
» High-Pressure testing adaptor, big conical with quick action clamping

TECHNICAL DATA

Dimensions (l x w x h):	approx. 2500 x 2500 x 2000 mm
Compressed-air:	min. 6 bar
Test pressure:	max. 40 bar
Motor:	3 x 380 V, 50 Hz, 18 A
Colour:	hammer finish painted blue or silvergrey



Combined stationary High- and Low-Pressure testing unit for wall assembly with 3 connections, model HND-W-3.

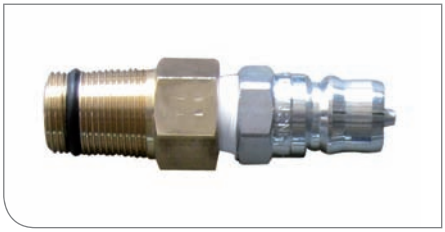
The High- and Low-Pressure testing unit, model HND-W-3 is a testing unit with 3 connections for wall assembly. It is suitable for testing of powder- and CO_2-fire extinguishes, CO_2 bottles, breathing air apparatus, diving bottles, N_2 cylinders etc. of all sizes, dimensions and types.

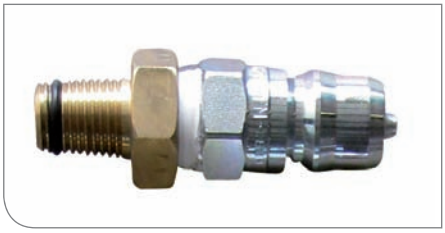
Unit consists of:

» 3 testing connections à 1,5 m equipped with quick-type coupling
» 3 plug-in adaptors large conical and 3 plug-in adaptors small conical) further adaptors with different sizes on demand as extra
» 3 universal Low-Pressure adaptors
» Lockable valves for separate test
» Relief valve
» High-Pressure Ermetho piping
» Compressed air driven High-Pressure pump
» Pressure gauge 0 – 600 bar (High-Pressure)

** available with any numbers of connections*

» Pressure gauge 0 – 60 bar (Low-Pressure)
» Safety valve 40 bar (Low-Pressure)





TECHNICAL DATA

Dimensions (l x w x h):	approx. 1600 x 400 x 2000 mm
Mounting height:	approx. 1700 mm
Water connection:	1/2"
Compressed-air:	8 – 9 bar (according to max. test pressure for High-Pressure)
Colour:	hammer finish painted blue or silvergrey

Optional available at extra charge:

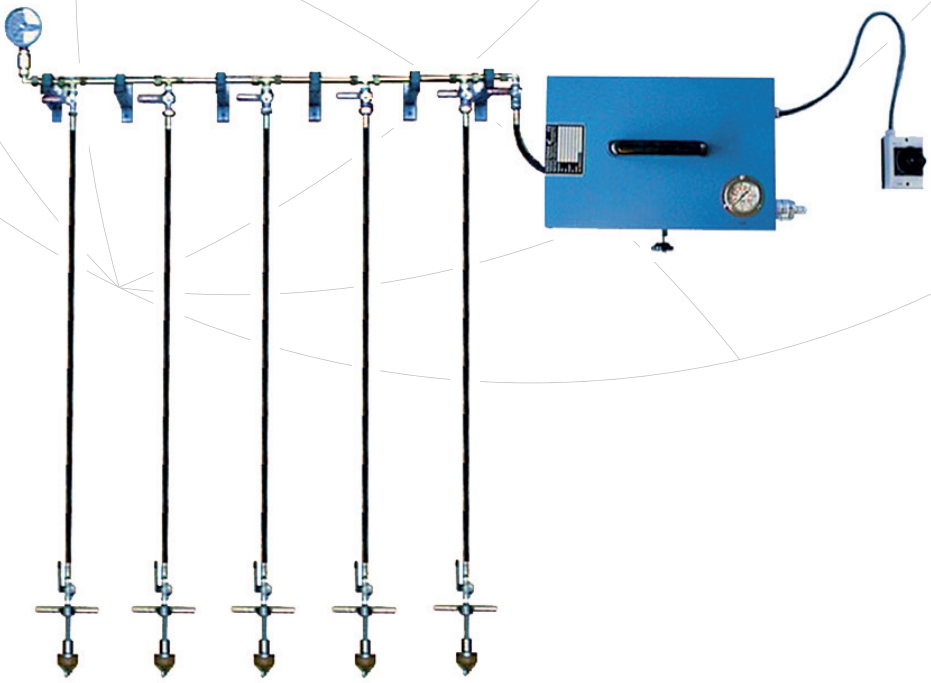
» Unit equipped with further testing connections according to customer need
» Water bassin
» Safety protection cover

Low-Pressure testing unit with 5 connections, model ND-W-5

** available with any numbers of connections*

Low-Pressure testing unit for the testing of fire extinguishers as well as pressure cylinders of any type up to 40 bar. The unit is prepared for wall mounting.

The unit consists of:
» Collecting pipe with 5 testing connections and universal adaptor for extinguishers and pressure cylinders
» Screwable testing adaptors for fire extinguishers and pressure cylinders
» Lockable valves for individual testing
» Control pressure gauge 60 bar
» Safety valve up to 40 bar
» Fine regulation for adjustment of the requested testing pressure
» Relief valve to relieve the testing line



TECHNICAL DATA

Testing pressure:	max. 40 bar
Motor:	230 V, 50 Hz, 16 A
Water connection:	1/2"
Weight:	approx. 50 kg
Dimensions (l x w x h):	approx. 1500 x 300 x 1200 mm
Colour:	hammer finish painted blue or silvergrey

Optional available at extra charge:
» Unit can be extended with additional testing connections according to requirements

The High-Pressure testing unit, model HD-TA-CFK is for the pressure test of CFK-bottles with a water volume up to 7 l and a test pressure up to 450 bar.

Pressure test is effected in water jacket method. This means the volumetric expansion of the tested cylinder is measured and indicated by a measuring tube.
The unit is equipped with a High-Pressure pump with automatic cut-off and an electrically operated pulley to put the bottles into the test chamber.

Maximum admitted dimensions of the pressure cylinders:

Max. diameter:	300 mm
Max. height:	600 mm
Max. volume:	18 l

(Other dimensions on request)

TECHNICAL DATA

Dimensions (l x w x h):	approx. 2600 x 1400 x 500 mm
Construction:	aluminium construction
Test chamber:	aluminium
Weight:	approx. 125 kg
Working pressure:	max. 450 bar
Water connection:	1/2" male thread

Automatic hydrotest unit for volumetric expansion of fibre carbon cylinders model HD-TA-CFK-2TP.

The unit HD-TA-CFK-2TP is designed for the High-Pressure test of fibre carbon cylinders, to show, record and save the result of the volumetric expansion.

The steady expansion of the tested cylinder will be shown in a diagramm and can be printed or saved. The testing unit can be used as mobile and is equipped with 4 wheels.

Maximum admitted dimensions of the pressure cylinders:

Max. diameter:	300 mm
Max. height:	600 mm
Max. volume:	18 l

(Other dimensions on request)

Unit consists of:

» 1 pc. Siemens computer with touchpad
» 1 pc. colour laser printer
» 2 pcs. aluminium test tubes
» 1 pc. digital flow meter

Accessories:

» 2 High-Pressure adaptor large conical
» 2 High-Pressure adaptor M18 x 1,5

Accessories available at extra charge:

» Electrically pulley to put the cylinders into the test tube
» Separate test tube for big steel cylinders

TECHNICAL DATA

Dimension (l x w x h):	approx. 1700 x 1000 x 2250 mm
Construction:	aluminium construction
Testtube:	2 pcs. aluminium
Dimension testtube:	Ø 400 mm, height 1000 mm
Weight (empty):	approx. 245 kg
Working pressure:	max. 450 bar
Compressed-air:	approx. 6 – 8 bar
Motor:	230 V, 16 A, 50 Hz
Colour:	hammer finish painted blue

High-Pressure test module for measuring the volumetric expansion of the cylinder made of composite, aluminium and steel.

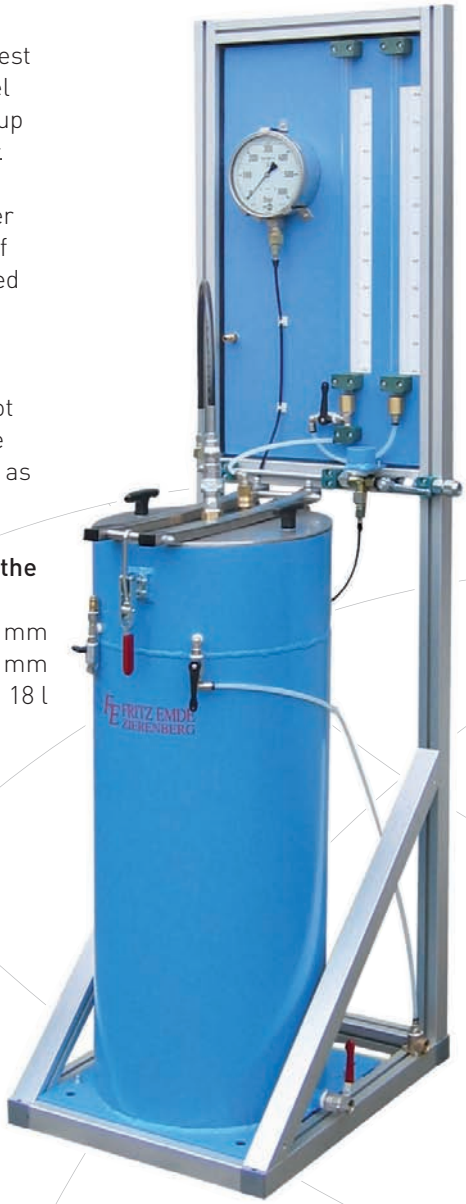
The movable High-Pressure test module HD-CFK-1 is for pressure test of cylinder made of composite, steel or aluminium with a water volume up to 9 l and a test pressure of 450 bar. The pressure test is effected with a volumetric expansion method (water jacket). The volumetric expansion of the cylinder to be tested is measured and indicated by a measuring tube.

Test pressure has to be made by an external pressure pump which is not included in delivery. The unit can be attached to all High-Pressure units as additional module.

Maximum admitted dimensions of the test cylinder:

Max. diameter:	300 mm
Max. height:	600 mm
Max. volume:	18 l

(Other dimensions on request)



The module is quipped with:
» Test chamber made of aluminium
» Cover with quick clamp device
» 2 pieces measuring tube up to 100 ml volume
» 1 piece screwed adaptor large conical
» 1 piece screwed adaptor M18x1,5

HD-CFK-1-F **(No. 401 100)**

TECHNICAL DATA

Dimensions (l x w x h):	approx. 500 x 600 x 2150 mm
Construction:	aluminium construction
Water connection:	1/2"
Weight (empty):	approx. 60 kg
Working pressure:	max. 450 bar
Colour:	hammer finish painted blue

Optional available at extra charge:
» Manual/ electric lift-integrated high-pressure pump (model HD-CFK-1P)
» The pressure module can be equipped with more or less test chambers
» Module stationary for wall mounting (model HD-CFK-1W)
» Screwed adaptor, e.g. small-conical, M25x2 etc.

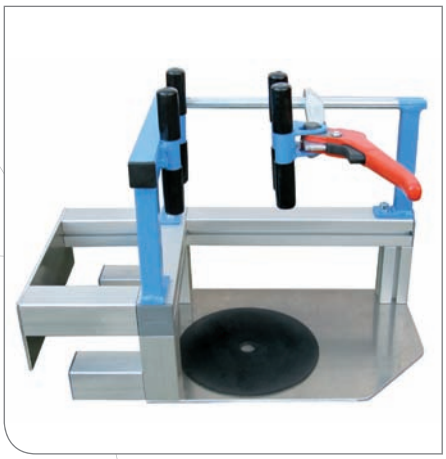
HD-CFK2 with two testing places for simultaneous test of five steel or composite cylinder with a water volume up to 7 l and a test pressure of 450 bar.

Test pressure has to be made by an external pressure pump which is not included in delivery. The unit can be attached to all High-Pressure units as additional module.

Maximum admitted dimensions of the test cylinder:

Max. diameter:	300 mm
Max. height:	600 mm
Max. volume:	18 l

(Other dimensions on request)



TECHNICAL DATA

Dimensions (l x w x h):	approx. 1150 x 650 x 2100 mm
Construction:	aluminium construction
Water connection:	1/2"
Weight (empty):	approx. 130 kg
Working pressure:	max. 450 bar
Colour:	hammer finish painted blue

Optional available at extra charge:

» Manual/ electric lift-integrated high-pressure pump (model HD-CFK-1P)
» The pressure module can be equipped with more or less test chambers
» Module stationary for wall mounting (model HD-CFK-1W)
» Screwed adaptor, e.g. small-conical, M25x2 etc.

Hydrotest unit for volumetric expansion of fibre carbon cylinders.

The mobile hydrotest unit model HD-CFK-3 with three testing tubes is designed for the simultaneous pressure test of three firbe carbon cylinders with up to 7 litres volume and up to the test pressure of 450 bar. The test procedure is the volumetric expansion test (Water Jacket). The steady volumetric expansion will be indicated by a measuring tube.

The pressure has to be made by an external pressure pump, which is not included in the scope of supply. The unit can be connected to all pressure testing units as an additional module.

Maximum admitted dimensions of the pressure cylinders:

Max. diameter:	300 mm
Max. height:	600 mm
Max. volume:	18 l

(Other dimensions on request)

Accessories:

» 3 High-Pressure adaptor large conical
» 3 High-Pressure adaptor M18 x 1,5

TECHNICAL DATA

Dimension (l x w x h):	approx. 1450 x 600 x 1250 mm
Construction:	aluminium construction
Water connection:	1/2"
Colour:	hammer finish painted blue

Optional available at extra charge:

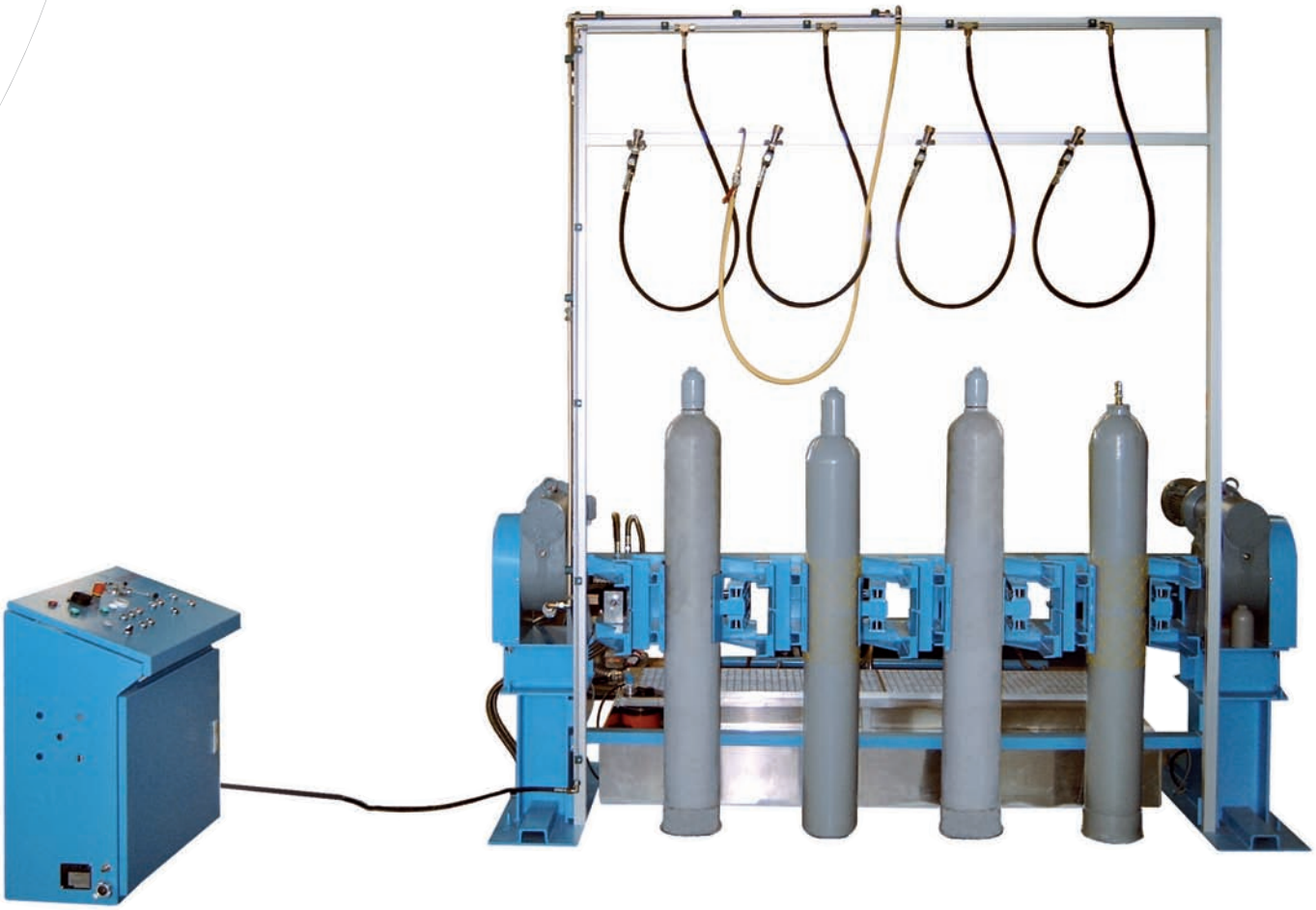
» Electrically operated pulley
» The hydrotest unit can be equipped with more or less Testing tubes according to the customer
» Stationary unit for wall installation
» Screwed adaptor, e.g. small-conical, M25x2 etc.

The tilting unit will be used in connection with a High-Pressure testing unit. It is for clamping and tilting of steel cylinders which have been emptied after the pressure test.

It is possible to tilt four cylinders at the same time. Each cylinder is clamped separately by hydraulic cylinder. Operation is effected with an operation panel. Tilting procedure can be effected up to max. 170°. Within this tilting area it can be stopped in every position.
The steel cylinder will be emptied in tilted position inside the basin. The basin is located behind the tilting unit.

QUICK adaptor for tilting unit model EM:

» Special adaptor with quick action lever for the High-Pressure test of CO_2-cylinder with the thread of W28,8 x1/14"
» Screwing adaptor equipped with quick coupling



TECHNICAL DATA

Dimensions(l x w x h) of tilting unit:	approx. 2000 x 3700 x 2200 mm
Dimensions(l x w x h) of control panel:	approx. 800 x 600 x 1000 mm
Dimensions of steel cylinders:	Ø 205 – 270 mm (further diameters on request)
Hydraulic aggregate:	3 kW
Motor:	3-phase 230/400 V, 50 Hz
Swivelling drive:	2 x 3 kW, 3-phase 230/400 V, 50 Hz

Optional available at extra charge:

» Water filling unit
» High-Pressure testing unit (for pressure test of steel cylinders up to 450 bar)
» Cylinder drying unit with drying lances
» Heated cistern (volume 500 l)

The High-Pressure testing unit model HD-BERST is for testing of all High- and Low-Pressure container with additional option to burst up to max. 1000 bar.

Max. admitted dimensions of the pressure container:

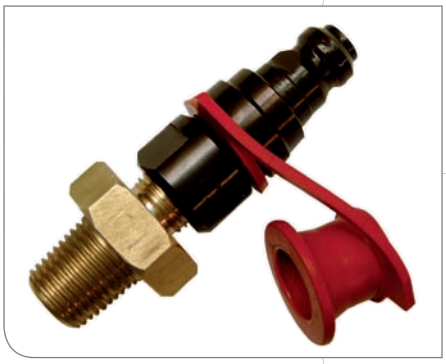
» Capacity:	max. 18 l
» Height:	max. 600 mm
» Diameter:	max. 280 mm

The unit is equipped with:

- » Pneumatically driven High-Pressure pump
- » Control panel with data recorder
- » Test-/ burst tank
- » Electrically operated chain pulley (bearing load max. 200 kg)
- » Adjustable pump speed
- » 1 piece High-Pressure burst adaptor
- » High-Pressure hose 3 m

TECHNICAL DATA

Dimensions (l x w x h):	approx. 500 x 900 x 1000 mm (control panel) approx. 500 x 500 x 3000 mm (test tank)
Weight:	approx. 200 kg
Water connection:	1/2" with 3-5 bar water pressure
Compressed-air:	10 bar
Motor:	230 V, 10 A, 50 Hz
Colour:	hammer finish painted blue



Cylinder tilting unit FSV-A

The cylinder tilting unit model FSV-A enables the lifting, turning, tilting and moving of large cylinder up to 80 l without any effort. The cylinder is safely fixed to the clamping prism by two tension belts (60 mm, 8 to tension) und lifted by worm gear drive.

The cylinder can be rotated 360° continuously and locked at a position of 180° in lifted state. The unit is made of corrosion-free aluminium and can be fixed to the floor by four screws. The cylinder tilting unit FSV-A facilitate the emptying of the cylinder after finished water pressure test according to the regulations for pressure tanks.

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 850 x 850 x 1600 mm
Weight (empty):	approx. 69 kg
Max. Ø bottle:	approx. 200 – 410 mm
Max. bottle height:	approx. 1200 – 1900 mm
Max. bottle weight:	approx. 300 kg

Optional available at extra charge:
» Mobile unit, equipped with two guide/brake and two fixed rollers for heavy loads (model FSV-AF)

The mobile hose testing unit, model SHP has been especially designed to make pressure test of hoses on-site.

The unit is equipped with a digital display with automatic cut-off (on request with manual pressure gauge with automatic cut-off), as well as C-coupling for fresh water and C-coupling for hose testing. Adaptor for different sizes are available optionally.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 800 x 500 x 900 mm
Max. working pressure:	approx. 40 bar
Motor:	230 V, 50 Hz, 8 A
Weight:	approx. 39 kg
Colour:	hammer finish painted blue or silvergrey

Hydrant testing unit, model WHP/WT/T

The WHP/WT/T hydrant testing unit is designed for the testing of hydrants according to DIN 14461 part 1 and DIN 14462.

Due to the compact construction, the WHP/WT/T can be operated easily and quickly.
The WHP/WT/T is equipped with a water tank, High-Pressure pump, hose drying installation and pressure gauge with switch-off feature. The pressure gauge switches off automatically on reaching the preadjusted testing pressure. The leakage testing of the piping, wall hydrants, hydrant fittings and hoses is indicated on the pressure gauge. The "WHP/WT/T" testing unit is reliable and precise.

Accessories of WHP/WT/T:
» 1 joint
» 1 nozzle 4 mm D
» 1 nozzle 9 mm C
» 1 transition piece C-D
» 1 transition piece B-C

Alternative:
» Hydrant testing unit, same model as described, however without drying installation

Optional available at extra charge:
» Flow meter

TECHNICAL DATA

Construction:	made of steel with sheet covering
Water tank capaity:	18 Ltr.
Max. working pressure:	25 bar
Motor:	230 V, 2.1 kW, 50 Hz
Heating:	adjustable from 0 – 600°C
Fan:	max. 2.2 m^3/min
Dimensions (l x w x h):	approx. 900 x 640 x 1000 mm
Weight:	approx. 100 kg

The movable hydrant testing unit, model WHP-N3 is designed for testing of hydrants and hoses.

Due to the pressure gauge at the adaptor, the flow pressure as well as the stand pressure (when ball valve is closed) can be measured. The unit is operated without any electricity.

The nitrogen bottle attached to the frame of the unit by quickaction lock ensures the requested test pressure by means of continuously adjustable pressure reducer. For testing different hose sizes, there are two transition pieces mounted to a quick-holder.

Accessories:
» Transition piece BC
» Transition piece CD
» 3 m hose with coupling Storz C
» N_2-pressure reducer continuously adjustable up to 20 bar
» 27/32 open-end wrench
» 3 l nitrogen bottle
(alternative against surcharge):
HP-hand operated pump 0 – 50 bar
» 1 m air hose with coupling
» Testing adaptor with pressure gauge
» T-piece with D-coupling
» 4 nozzles (4, 6, 9, 12 mm)

Optional available at extra charge:
» 10 l N_2 bottle

TECHNICAL DATA

Dimensions (l x w x h):	approx. 600 x 600 x 1050 mm
Tank:	stainless steel
Capacity:	approx. 100 l
Weight (empty):	approx. 39 kg
Colour:	hammer finish painted blue or silvergrey

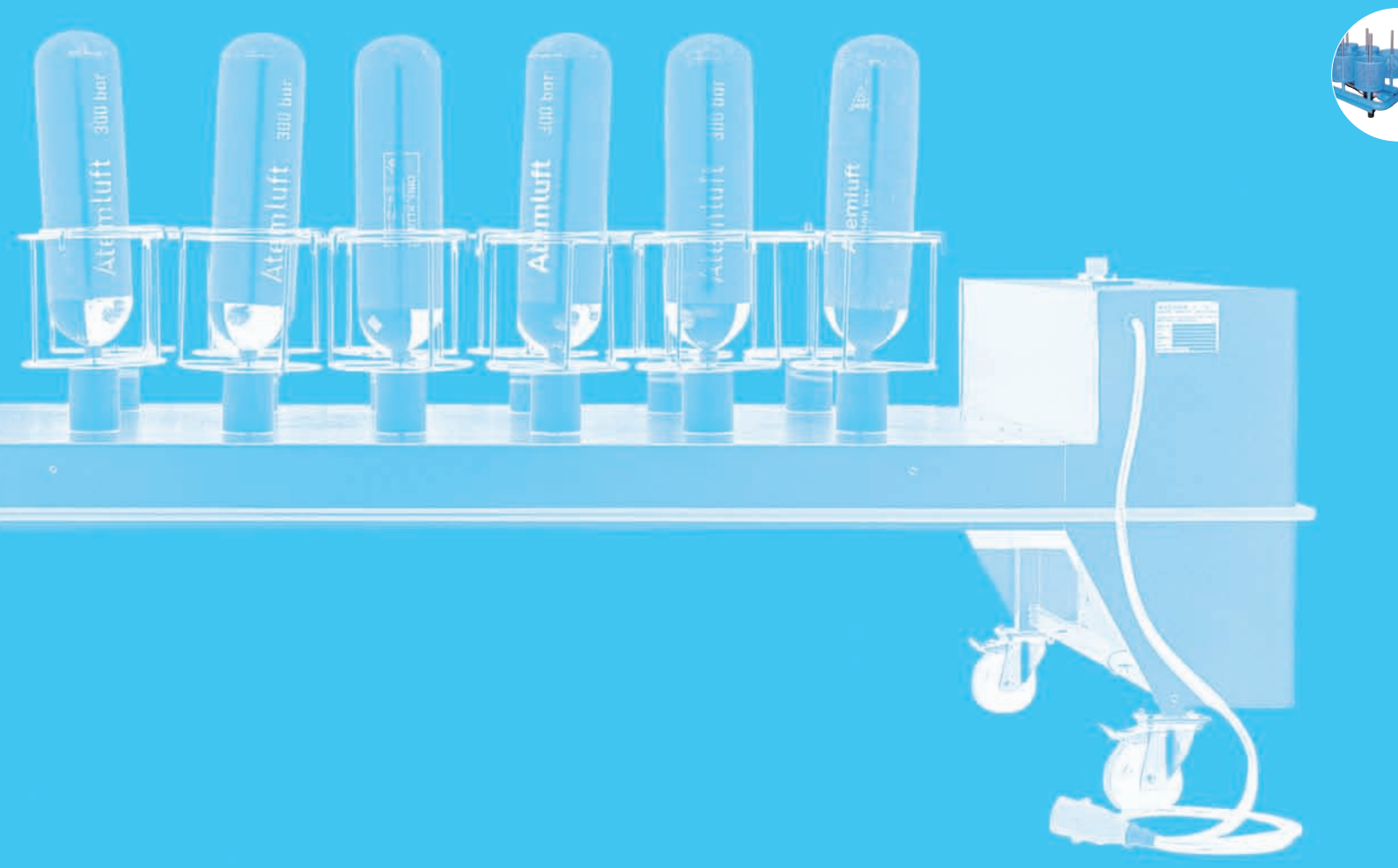
The hand operated hose testing pump is a manually operated pump for the testing of pressure hoses, hydrants and rising fire mains. It is especially appropriate for service-offices and for the use in larger buildings with several floors. It is easy to be operated and there is no need for any current supply.

Unit consists of:
» Coupling connections inlet / outlet C-52 Storz
» Pressure gauge

TECHNICAL DATA

Construction:	hot-dipped with laquered steel tank
Pump:	piston pump max. 100 bar
Stroke:	80 cm
Capacity:	approx. 35 l
Weight:	approx. 18 kg
Dimensions (l x w x h):	approx. 450 x 450 x 500 mm
Colour:	hammer finish painted blue or silvergrey

DRYING UNITS



The movable drying installaion is for drying pressure-tested hoses of different diameters and lengths. Adaptation has to be made to the STORZ solid fi re hose coupling C.

Furtheron, internal drying of steel cylinders and extinguishers of different sizes can be made by using optional accessory M3.

TR-F-1 Modul M3 (No. 501 100)

The unit consists of:

» Compact construction made of square metal pipe 25 x 25 mm with height adjustable handle
» Fan and heater are placed behind a sheet covering in a space saving and protected way
» Fan and blower are switched separately by two-stage switch. Therefore, the fan is always disconnected after the heater
» Heating up to max. 100°C, adjustable by potentiometer
» Electric connection by CEE reversing plug with 3 m cable

TECHNICAL DATA

Fan motor:	230 V AC, 1.1 kW
Heater:	230 V, max. 2200 W, 0°C – 100°C, continuously adjustable
Colour:	hammer finish painted blue or silvergrey
Dimensions (l x w x h):	approx. 420 x 380 x 500 mm
Transportation height:	approx. 865 mm
Weight:	approx. 34 kg

TECHNICAL DATA

The module M3 can be extended according to customer need by additional drying spikes (available at extra charge):

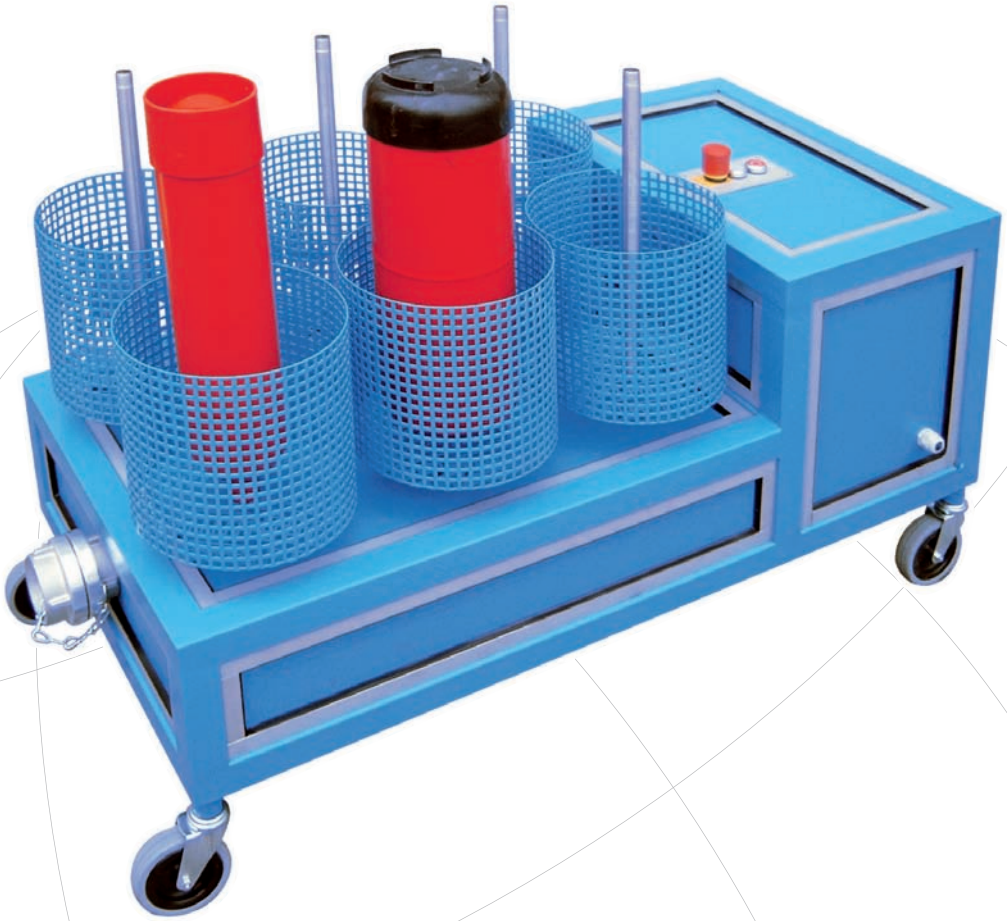
Dimensions (l x w x h):	approx. 700 x 400 x 650 mm
Weight:	approx. 10 kg
Colour:	hammer finish painted blue or silvergrey

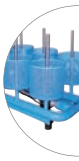
Mobile drying unit with six connections for cylinder drying and one connection for hose drying, model TR-F-6S.

The mobile drying unit TR-F-6S dries CO_2-cylinders, CO_2-extinguishers, breathing apparatus, diving bottles of all types and sizes as well as pressure hoses.

The unit consists of:

» Continuously adjustable heating blower up to max. 600°C
» Heating frame with six connections and six end caps
» Six metal baskets as supporting element
» A C-coupling connection with blind coupling





TECHNICAL DATA

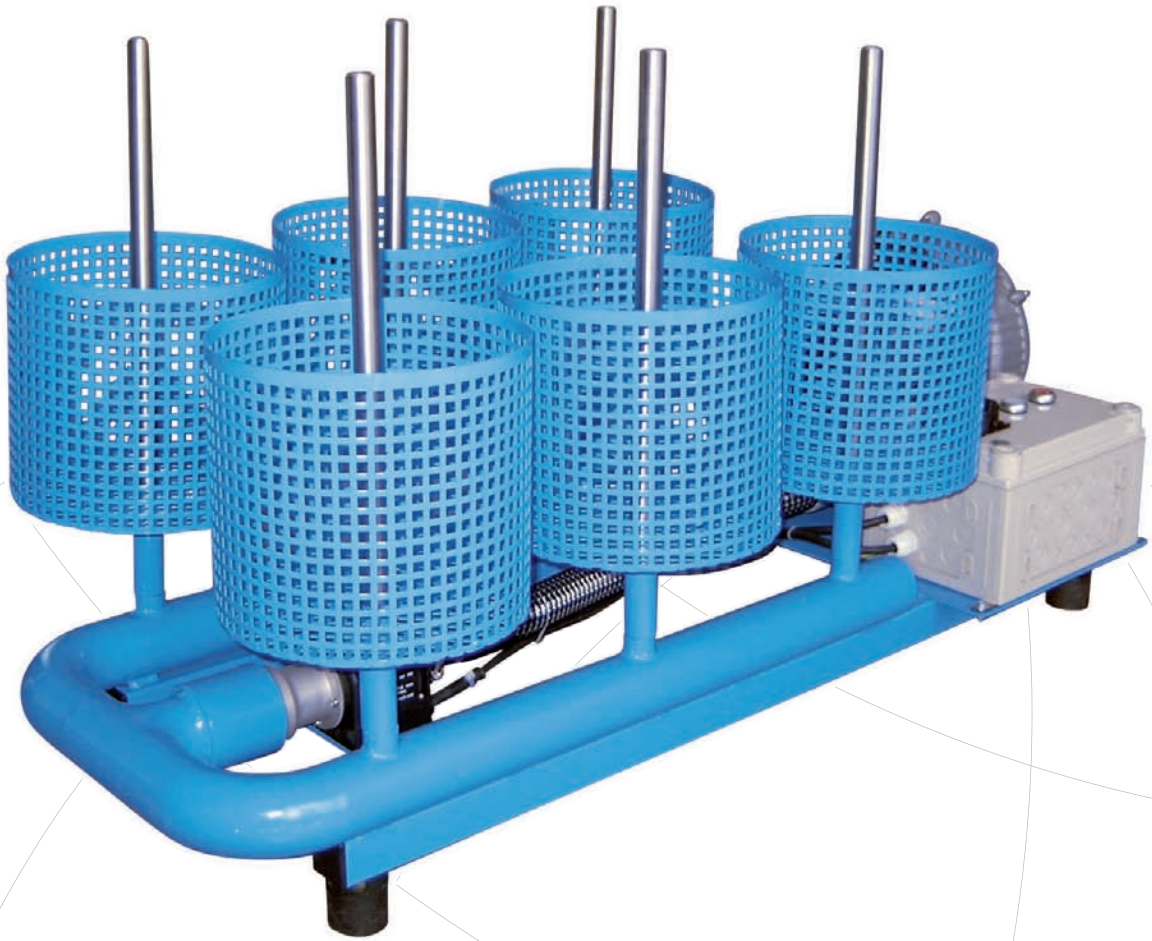
Current supply:	230 V, 16 A, 50 Hz
Heating:	adjustable 0°C – 600°C
Dimensions (l x w x h):	approx. 1100 x 550 x 780 mm
Weight:	approx. 69 kg
Colour:	hammer finish painted blue or silvergrey

Stationary drying unit with six connections, model TR-K-6

The stationary drying unit TR-K-6 dries CO_2-cylinders, CO_2-extinguishers, breathing apparatus and diving bottles of all sizes.

The unit consists of:

» Continuously adjustable heating blower up to max. 600°C
» Heating frame with six connections
» Six metal baskets as supporting element



TECHNICAL DATA

Current supply:	230 V, 16 A, 50 Hz
Heating:	adjustable from 0°C – 600°C
Dimensions (l x w x h):	approx. 1200 x 600 x 660 mm
Weight:	approx. 39 kg
Colour:	hammer finish painted blue or silvergrey

Drying unit for 12 cylinders, model TR-K-12

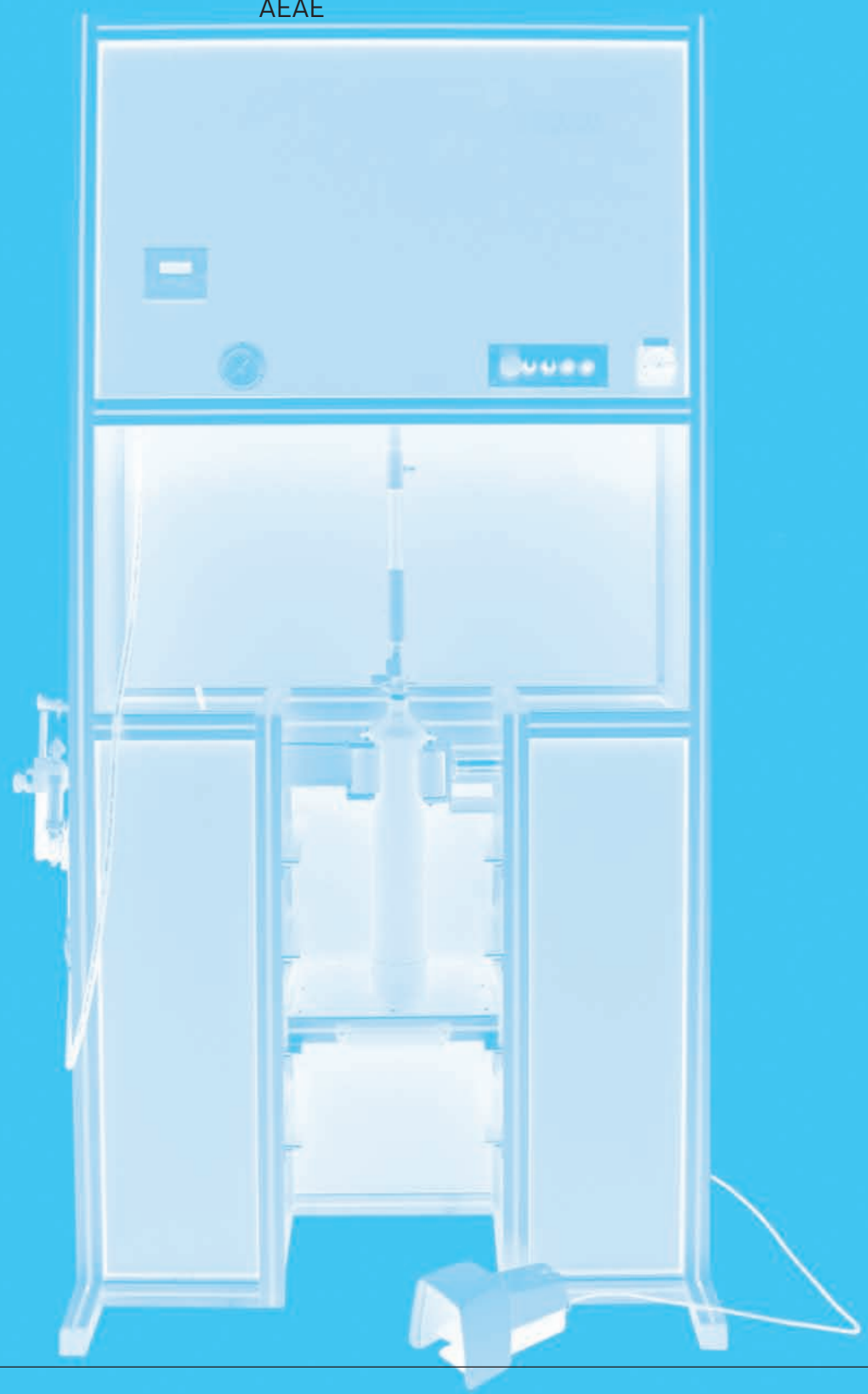
The drying unit consists of a stainless supporting structure which is equipped with two collecting pipes each with 6 drying connections. Each collecting pipe has 2 heating elements and 2 fans. Due to these two separate circuits, there can be different temperatures at the 2 collecting pipes. Drying time depends on the adjustment of temperature which can be selected between 20°C up to 500°C. The drying unit is equipped with four wheels. A drying spike has a diameter of 1/2" (further diameters available on request)

Optional available at extra charge:
» Drying unit for wall mounting
» With thermistor
» A different number of drying elements
» With silencer

TECHNICAL DATA

Dimensions (l x w x h):	approx. 2500 x 800 x 1000 mm
Electric connection:	heating: 4 pcs., each approx. 2.2 kW 230/400 V, 50 Hz fan: 4 pcs., each approx. 1.1 kW 230/400 V, 50 Hz, each max. 2.8 m^3/min
Motor:	three-phase 400 V, 32 A, 50 Hz
Noise level of fan:	66 dB (A) with silencer: 58 dB (A)
Weight:	approx. 190 kg
Colour:	hammer finish painted blue or silvergrey

VALVE SCREWING UNITS



Safe functioning and high capacity screwing unit to screw and unscrew bottles and bottle valves.

Appropriate for the sizes between 80 mm to 210 mm diameter. For further sizes you require optional accessories which have to be demanded for. The pneumatic pressure cylinder, 125 mm diameter, reaches a high pressure to loose tightly fitted valves.

Appropriate for:
» CO_2-bottles up to 10 kg
» CO_2-cartridges possible with optional parts
» CO_2-extinguishers
» Breathing air apparatus
» Diving bottles
» N_2-bottles up to 10 litre

The unit is equipped with:
» Special screwing adaptor
» Potentiometer to adjust the requested torque
» Height adjustment by a precise slideway

TECHNICAL DATA

Construction:	steel construction
Motor with gear:	380 V, 3-phase, 16 A, 50 Hz, 1.1 kW
Max. torque:	335 Nm
Speed:	0 – 30 U/min
Compressed-air:	5 – 10 bar
Dimensions (l x w x h):	approx. 1000 x 550 x 2500 mm
Colour:	hammer finish painted blue or silvergrey

Optional available at extra charge:
» Two-hand operating of the clamping device
» Equipped with connection for nitrogen and pressure gauge for nitrogen filling

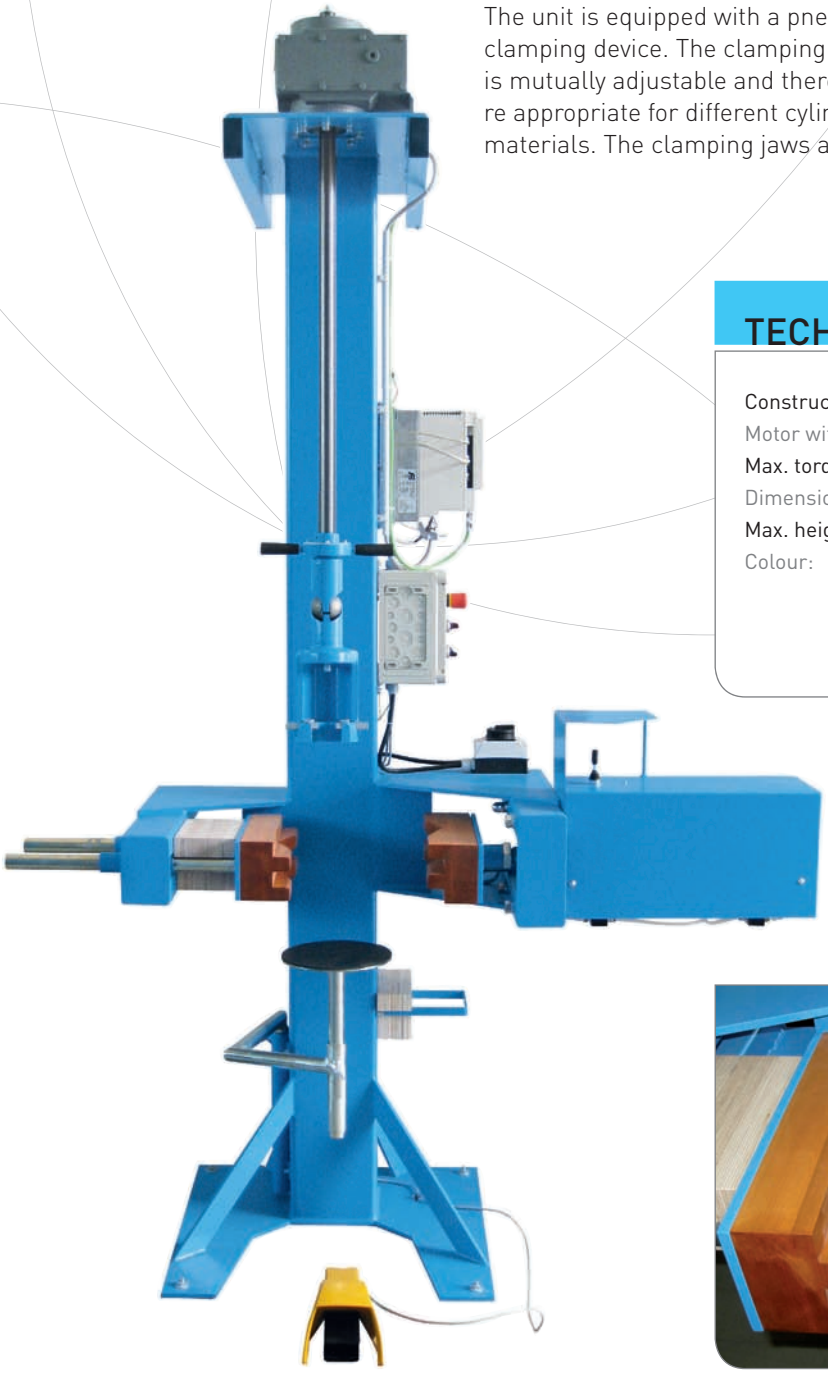
The screwing unit EA150 screws and unscrews bottle valves from pressure cylinders having a volume of up to 80 ltr.

The unit disposes of a torque adjustment (0 – 925 Nm) and speed regulation (0 – 30 rpm). Cutoff is effected by torque control.

» max. cylinder diameter: 350 mm
» max. cylinder heigt: 1800 mm

The unit is equipped with a pneumatic clamping device. The clamping force is mutually adjustable and therefore appropriate for different cylinder materials. The clamping jaws are made of softwood which makes sure that the paint of the cylinder is not defected. A height adjustable support provides a comfortable working height even for smaller cylinders. The support is covered with rubber plates to avoid any defect in paint work at the bottom of the cylinder. The robust construction of the unit makes sure that the appearing forces are disposed optimally while screwing and unscrewing.

All valves available on the market can be screwed and unscrewed due to the fully galvanized screwing bell.
The unit is operated easily by foot switch.



TECHNICAL DATA

Construction:	steel construction
Motor with gear:	3 x 400 V, 16 A, 50 Hz, 3 kW
Max. torque:	925 Nm
Dimensions (l x w x h):	approx. 1700 x 750 x 3100 mm
Max. height:	approx. 3800 mm
Colour:	hammer finish painted blue or silvergrey

Optional available at extra charge:
» Two-hand operating of the clamping device
» Extended shaft for cylinder height more than 1800 mm

The valve screwing an unscewing unit EA-150 PROTECT is designed to screw and unscrew pressure cylinder valves in cylinders with volumes of up to approx. 80 litres.

The unit has torque adjustment (0 – 925 Nm) and torque speed regulation (0 – 30 rpm). The automatic cut-off mechanism is implemented using torque control. The unit is equipped with a sliding guard door and a perforated grid protective wall at the rear.

The unit is equipped with a pneumatic clamping device. The gripping force of this device can be adjusted and is therefore suitable for use with cylinders made from a variety of different materials. The clamping jaws are made of softwood to prevent damage to cylinder paintwork. The height adjustable cylinder seat provides a comfortable working height even for small cylinders and is covered with a rubber plate to prevent damage to cylinder bases.
The robust steel girder construction ensures optimum distribution of the forces generated during the screwing in of valves and clamping.
The screw-in socket is fully zinc-plated and suitable for use with all valves available on the market.

The unit is easily controlled using a pedal switch.

Optional available at extra charge:
» Sliding guard door with pneumatic locking mechanism
» two-hand operating of the clamping device

TECHNICAL DATA

Construction:	steel construction
Voltage:	230/400 V, 50 Hz, 16 A
Compressed-air:	5 bar
Motor with gear:	3 kW
Weight:	approx. 390 kg
Max. torque:	925 Nm
Dimensions (l x w xh):	approx. 1700 x 750 x 3100 mm
Colour:	hammer finish painted blue or silvergrey

Automatic valve screwing station with nitrogen filling, model AEAE appropriate for permanent portable fire extinguishers from 1 kg up to 12 kg. Valve screwing for powder, foam and water extinguishers.

The unit is equipped with a torque regulator (0 – 335 Nm) and cut-off is effected by torque control system.

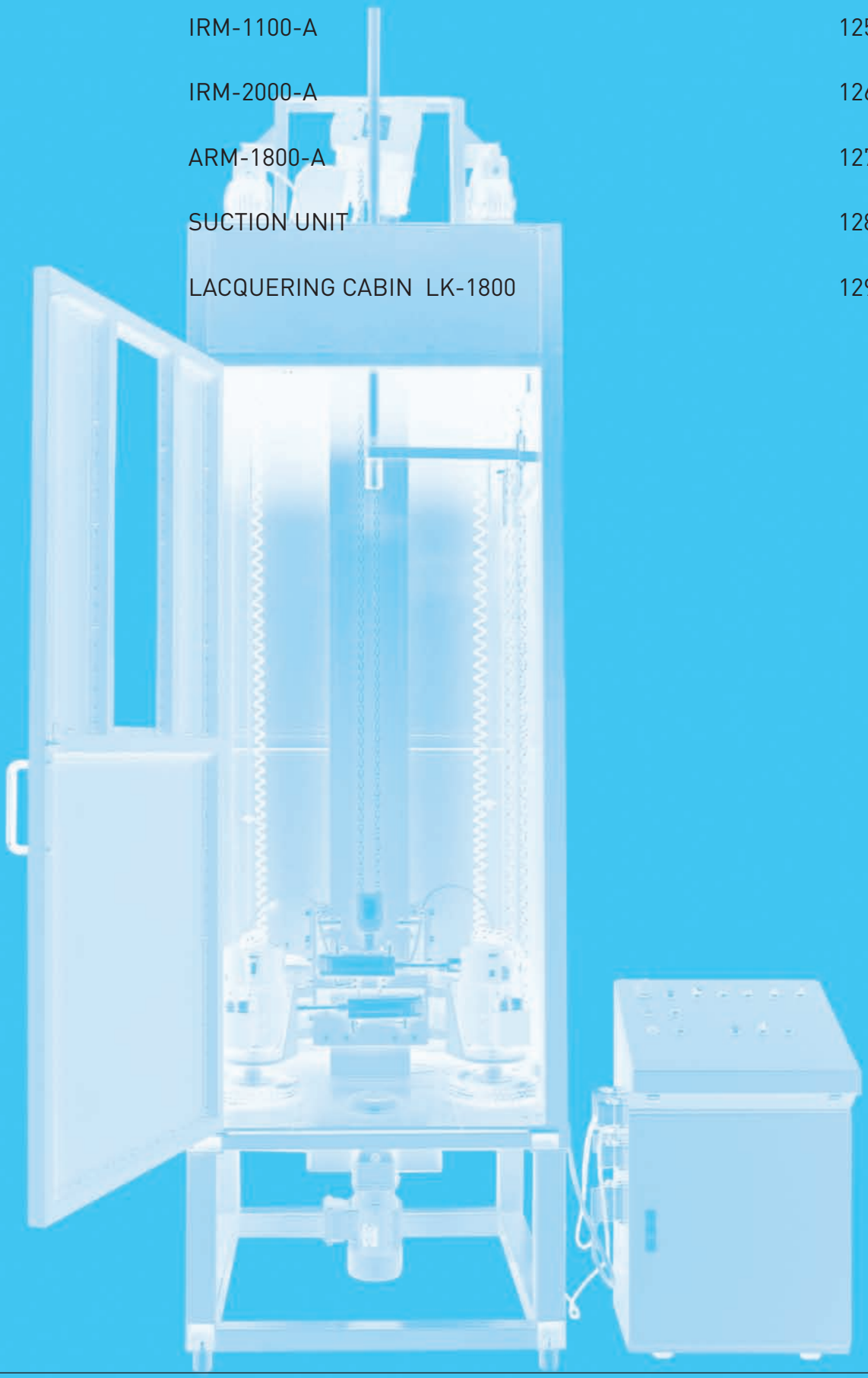
The unit is equipped with:
» Pneumatic clamping device with two-hand operating
» Adjustable clamping pressure
» Manual height adjustment
» Pressure sensor with automatic cut-off feature
» Safety valve 25 bar
» Precise screwing tool especially adjusted to the extinguisher valve
» Clockwise/ anticlockwise rotation

Optional available at extra charge:
» Macrolon safety screen
» Helium/Nitrogen inline inductor
» Additional screwing tools for different valves

TECHNICAL DATA

Construction:	aluminium/steel construction
Motor:	230 V, 50 Hz, 8 A
Max. torque:	335 Nm
Compressed-air:	4 – 6 bar
Dimensions (l x w x h):	approx. 1000 x 600 x 2500 mm
Weight:	approx. 200 kg
Colour:	hammer finish painted blue or silver grey

INTERNAL / EXTERNAL CLEANING UNITS



Internal cleaning unit for steel cylinders, model IRM-600-A

The manual internal cleaning unit model IRM-600-A is designed for cleaning the inside of steel cylinders, for example diving and breathing apparatus cylinders. With the special brush the inside of the cylinder will be cleaned very gently.

The rotation of the cleaning brush controlled by frequency converter is approximately 1450 rpm. The continously height adjustment by toothed rack worm drive with hand wheel has to be operated manually.

With different special brushes all cylinder diameters can be cleaned.

The maximum cylinder dimensions are max. 580 mm lenght and max. 220 mm diameter. (different sizes and diameters on request)

The unit is equipped with a Makrolon safety-glas and a manual clamping device.

The material grade of all components is made from aluminium or stainless steel, this guarantees the long-life cycle of all components.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 800 x 500 x 2000 mm
Motor:	230/400 V, 1.5 kW, 1480 U/min
Weight:	approx. 95 kg
Cleaning brush:	stainless steel
Clamping unit:	manual
Colour:	hammer finish painted blue

IRM-600-MP **(No. 703 000)**
incl. pneumatic clamping device

Internal cleaning unit for steel cylinders model IRM-1100-A
The SPS-controlled internal cleaning unit model IRM-1100-A is designed for cleaning the inside of steel cylinders, for example diving and breathing apparatus cylinders. With the special brush the inside of the cylinder will be cleaned very gently.

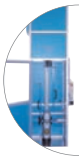
The rotation of the cleaning brush controlled by frequency converter is approximately 1450 rpm. Therefore we guarantee, that the inside of the steel cylinder will be cleaned completely from rusty deposits.

With different special brushes all cylinder diameters can be cleaned.
The maximum cylinder dimensions are max. 800 mm lenght and max. 220 mm diameter. (different sizes and diameters on request)

The continuous adjustment allows the user to change between diving cylinders, breathing apparatus cylinders or fire extinguisher cylinders with small conical, large conical or cylindrical threat with a only few work steps.

The unit is equipped with all safety-related components, like controlled door locking device, emergency stop button, automatic limit switch, etc.

The material grade of all components is made from aluminium or stainless steel, this guarantees the long-life cycle of all components.



TECHNICAL DATA

Dimensions (l x w x h):	approx. 1100 x 600 x 2500 mm
Motor:	230/400 V, 1.5 kW, 1480 U/min
Cleaning brush:	stainless steel
Clamping unit:	pneumatic
Cleaning time:	< 60 sek.

The SPS-controlled internal cleaning unit, model IRM-2000-A is designed for cleaning the inside of steel cylinders, for example diving and breathing apparatus cylinders. With the special brush the inside of the cylinder will be cleaned very gently.

The rotation of the cleaning brush controlled by frequency converter is approximately 1450 rpm. Therefore we guarantee, that the inside of the steel cylinder will be cleaned completely from rusty deposits.

With different special brushes all cylinder diameters can be cleaned.

The maximum cylinder dimensions are max. 2000 mm lenght and max. 300 mm diameter.
(different sizes and diameters on request)

The continuous adjustment allows the user to change between diving cylinders, breathing apparatus cylinders or fire extinguisher cylinders with small conical, large conical or cylindrical threat with a only few work steps.
The unit is equipped with all safety-related components, like controlled door locking device, emergency stop button, automatic limit switch, etc.

The material grade of all components is made from aluminium or stainless steel, this guarantees the long-life cycle of all components.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 1100 x 1000 x 5500 mm
Motor:	2.2 kW – 230/400 V, 1480 U/min
Pulley:	1.2 kW – 230/400 V (speed adjustable)
Cleaning brush:	stainless steel
Cleaning time:	1 – 2 min (depends on the adjusted speed)
Compressed-air:	2.5 – 4 bar (pneumatic clamping unit)

The machine for external cleaning, model ARM removes labels, stickers and varnishes from the top surface of steel bottles.

The machine is equipped with a soundproof cabine. The cleaning process of the steel bottles is effected by two rotating steel brushes. Due to the integrated height adjustment, steel bottles can be cleaned from 500 mm up to 1900 mm height. The diameter of the steel bottles can be 110 mm to 230 mm.

Through the inspection window on top of the front door, you are able to observe the whole cleaning process. Dust and abrasion will be extracted from the cabine with a separate suction feature.

The filter integrated in the suction feature is to eliminate the dust.
Filter cleaning is effected pneumatically.
Sucked materials are collected in a drawer.

TECHNICAL DATA

Construction:	steel construction with aluminium casing
Motor:	230/400 V, 32 A, 50 Hz
Compressed-air:	8 bar
Dimensions (l x w x h) plus control panel:	approx. 1200 x 1100 x 3200 mm
Max. working height:	4200 mm
Colour:	hammer finish painted blue

The suction unit is to suck dust and lacquering particles arising on brushing the steel cylinders.

The unit consists of:
» Manual filter cleaning
» Dust drawer
» Suction hose Ø 2 m

Optional available at extra charge:
» Equipped with pneumatic filter cleaning

TECHNICAL DATA

Dimensions (l x w x h):	approx. 700 x 900 x 1850 mm
Weight:	approx. 170 kg
Motor:	230/400 V, 50/60 Hz, 1,5 kW
Colour:	hammer finish painted blue

The lacquering cabin, model LK-1800 is an expandable extra module for lacquering single bottles in direct operation sequence after the external leaning. It offers a dustproof room and is the perfect addition to the liquid paint.

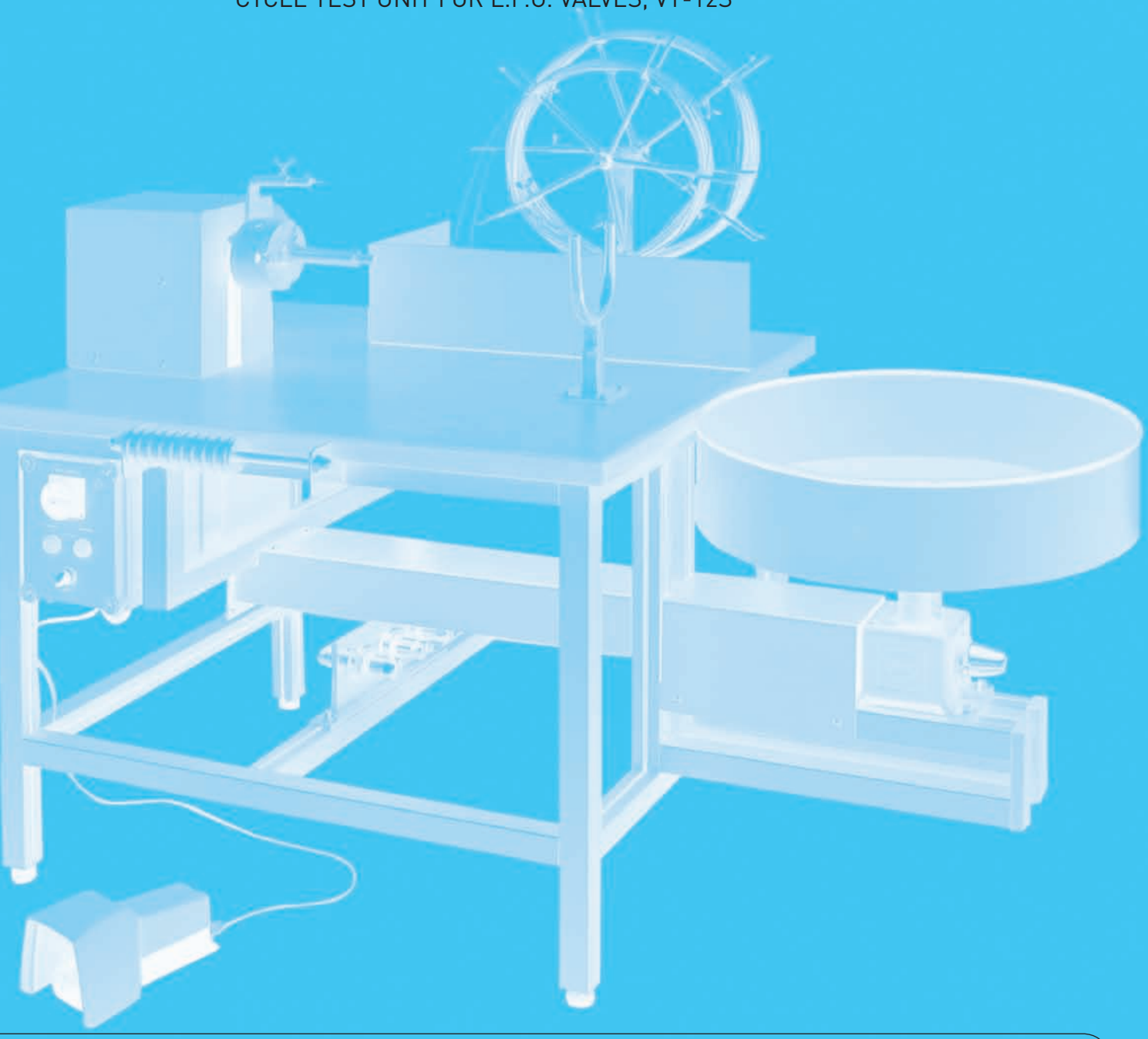
The unit consists of:
» Manually adjustable cylinder clamping
» Lockable door
» Electrically driven turn table

Optional available at extra charge:
» Equipped with more lacquering places
» Equipped with suction feature
» Appropriate for different cylinder height and diameter
» Screwed adaptor to remove the cylinders with different thread

TECHNICAL DATA

Construction:	aluminium
Dimensions (l x w x h):	approx. 1000 x 1000 x 2100 mm
Floor duct:	approx. 600 x 600 x 600 mm
Weight:	approx. 170 kg
Motor:	230/400 V, 50/60 Hz, 0,55 kW, 36 rpm
Colour:	hammer finish painted blue

SPECIAL PURPOSE UNITS



The universal hose- and safety valve testing unit is characterized by high efficiency, easy handling and effectiveness in LEAKAGE and PRESSURE testing.

Universal testing unit for the testing of:
» Fire extinguisher hoses with nozzle
» Fire extinguisher hoses without nozzle
» Safety valves

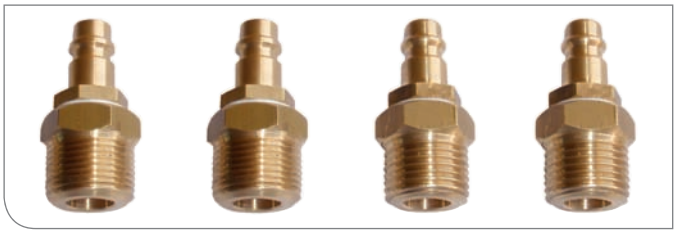
The leakage and pressure testing procedure of safety valves for extinguishers (6 – 250 kg) is carried out with the help of adaptors selected according to make and type of safety valve.
For testing hoses with nozzle, you only require a nitrogen bottle as accessory.

The unit consists of:
» Casing – steel construction
» Pressure reducer – 50 bar
» High-Pressure hose 2 m
» Cover – macrolone
» Safety control valve – Pressure is relieved when the cover is open
» Pressure hose 0 – 25 bar
» Fittings: 4 pcs.
1 x M 18,5 x 1,5
1 x 1/2"
1 x M 22 x 1,5
1 x M 22 x 1,5, konisch dichtend

Optional accessory:
for testing of safety valves, adaptors according to the type of extinguisher are necessary

TECHNICAL DATA

Dimensions (l x w x h):	approx. 800 x 200 x 400 mm
Weight:	approx. 8 kg
Colour:	hammer finish painted blue or silvergrey



The helium leak detection unit is for testing of pressurized extinguishers for any leakage.

Due to the fast automatic operation of the helium leak detection unit in connection with the accuracy of the helium detector, the operator is able to recognize immediately whether an extinguisher is leaky. The leak detection is effected according to the EN3 standards.

The two separate hoods guarantee a mutual test and insertion or removal and therefore, a rational functioning. The unit is made in a tubular steel construction and cased with aluminium streamline strut and aluminium sheets.

TECHNICAL DATA

Dimensions (l x w x h):	approx. 1700 x 1700 x 2100 mm
Max. working height:	approx. 2500 mm
Motor:	230/400 V, 32 A, 50 Hz
Compressed-air:	10 – 12 bar
Volume of chamber:	approx. 50 ltr.
Weight of the unit:	approx. 1500 kg
Colour:	hammer finish painted blue or silvergrey

Admitted dimension of extinguisher:

» Max. (l x w) (with all components): 240 mm

» Max. total height (with armature): 650 mm

The high-pressure extinguishing unit FIRE-KILL is a portable High-Pressure pump with integrated water tank.

The construction of the supporting frame correspond to DIN 14410 and therefore, can be placed inside the fi-re fi ghting vehicle. An extinction time of 7 minutes for fi ghting small and developing fi res or fi re of vehicles can be guaranteed by the water tank (100 l) with full pump capacity (14 l/min). This time can be extended unlimited-ly by an additional water connection (Storz C).
A large radius of action is given due to the length of hose of 50 m.
An efficient fire fighting is reached due to the atomization of water with up to 220 bar.
The high-pressure pump is driven by a 4-cycle-1-cylinder motor with 389 cm^3 (max. capacity 13 PS).

TECHNICAL DATA

Motor:

» Type:	4-cycle 1-cylinder motor
» Cylinder capacity:	389 cm^3
» Max. capacity:	9.6 kW (13 PS)/ 3600 rpm
» Max. torque:	26.5 Nm/2.500 m-1
» Fuel consumption:	258 g/kWh (190 g/PSh)
» Fuel content:	6.5 l, regular petrol non-lead
Pump:	3-piston-pump, 220 bar
Capacity:	14 l/min
Feed time:	for 100 liter 7.14 min with highest capacity
Pressure regulation:	0 – 200 bar by adjusting valve with pressure indicator (pressure gauge)
Water tank:	with tank ventilation
Tank filling:	through filling nozzle C with stopcock
Water tank content:	100 l
Weight:	empty 100 kg – filled 210 kg
HP-windlass:	with aquiferous axis and crank, 50 m high-pressure hose and a HP-nozzle 1000 mm with fan jet of 40°
Total length:	approx. 1000mm
Dimensions (l x w x h):	approx. 675 x 730 x 1000 mm

The hose binding unit binds couplings of pressure and suction hoses with a coupling internal diameter of 34 – 110 mm. (A-D)

The unit consists of:
» Three-jaw chuck
» Height adjustable wire windlass
» Wire guidance
» Height adjustable hose guidance
» Hose drum
» Binding motor

The hose binding unit binds couplings of suction and pressure hoses with a coupling internal diameter of 38 –110 mm.

TECHNICAL DATA

Motor:	230/400 V, 10 A, 50 Hz
Construction:	steel construction
Dimensions (l x w x h):	approx. 1750 x 1000 x 1550 mm
Weight:	approx. 80 kg
Colour:	hammer finish painted blue or silvergrey

Optional available at extra charge:
» Locking ring removal tool
» Hammer
» Pliers
» Special binding wire-in rings of (10 kg each) Ø 1.4 or 1.8 mm

Fire extinguisher performance test unit, model EPT-12/700

The fully automatic fire extinguisher performance test unit model EPT-12/700 tests the minimum functional duration of a portable powder extinguisher from 1 to 12 kg depending on the remaining quantity of dry powder. The unit works according to DIN EN3-7, absolutely dust-free and is appropriate for all types of powder.

The unit is equipped with:
» Siemens-Touch PC with colour laser printer
» Siemens SPS-control system
» FRITZ EMDE-software
» Digital scale, 30 kg with 5 g resolution
» Sound absorbing and high capacity vacuum pump mounted in a vibration-proof way
» Pressure sensor to determine the powder jet
» Internal powder storage tank with a capacity of 100 kg
» Manual quick-action clamping device
» Lockable door

The following parameters can be determined and indicated:
» Deletion time
» Time of full extinguisher
» Time of empty extinguisher
» Remaining powder quantity inside the extinguisher

Maximum size of the extinguishers:
Height: max. 700 mm
Diameter: max. 200 mm

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 2500 x 900 x 2150 mm
Compressed-air:	approx. 4 – 6 bar
Motor:	3-phase 400 V, 50 Hz, 12 A
Weight:	approx. 400 kg
Colour:	hammer finish painted blue

Optional available at extra charge:
» Pneumatic clamping device
» Automatic emptying of the powder storage tank
» Test standard according to US-standards or BS
» Further test units according to DIN EN 3 standard (densification, compression test, burst test, impact strength, ageing test)

Cycle test unit for L.P.G. valves, model VT-12S

The cycle test unit for L.P.G. valves model VT-12S tests gas valves for the durability and the internal/external impermeability according to DIN EN 13153/2001. The test pressure of the unit is 12 bar. The unit can be equipped manually in addition with a weight of 500 N to open and close the hand wheel under load. The number of cycles can be determined freely or test can be made according to DIN standards.

The unit is equipped with:
» Siemens-Touch PC with colour laser printer
» Adjustable rotation speed
» Adjustable dwell time for opening and closing
» Cycle counter
» Max. cycles 20000 pieces
» Clamping device for the valves to be tested
» Internal, sound absorbing air com pressor 16 bar

The following parameters can be determined and indicated:
» Total test time
» Exact thread stroke
» Density of the valve
» Operation hour counter

TECHNICAL DATA

Construction:	aluminium construction
Dimensions (l x w x h):	approx. 1600 x 800 x 2100 mm
Compressed-air:	16 bar (self-supply)
Motor:	3-phase 400 V, 50 Hz, 12 A
Weight:	approx. 220 kg
Colour:	hammer finish painted blue

Optional available at extra charge:
» Pneumatic clamping device for the valve
» Test standard according to US-standards or BS
» Further test units according to DIN EN 13153 standard (temperature test, impact test, water pressure test)

TROLLEYS

The EMDE FRAME TROLLEY FOR CYLINDERS, models RGW-15 and RGW-24 are used for the safe transportation of 15 or 24 air cylinders (up to 6.8 l) for use with breathing apparatus.

It is fitted with two steering/braking wheels and two fixed wheels. The wheels have plastic rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight. The single wheel load is 100 kg.

Model RGW-24 (No. 900 110)

TECHNICAL DATA

RGW-15 (No. 900 100)

Construction:	steel construction
Weight:	approx. 25 kg
Dimensions (l x w x h):	approx. 800 x 600 x 850 mm
Colour:	hammer finish painted blue or according to customer wishes

TECHNICAL DATA

RGW-24 (No. 900 110)

Construction:	steel construction
Weight:	approx. 29 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 850 mm
Colour:	hammer finish painted blue or according to customer wishes

The EMDE FRAME TROLLEY FOR CYLINDERS, models RGW-15-E and RGW-24-E are used for the safe transportation of 15 or 24 air cylinders (up to 6.8 l) for use with breathing apparatus. The frame trolley for cylinders is made completely from stainless steel.

It is fitted with two steering/braking wheels and two fixed wheels. The wheels have plastic rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight. The single wheel load is 100 kg.

Model RGW-24-E (No. 900 220)

TECHNICAL DATA

RGW-15-E (No. 900 120)

Construction:	stainless steel
Weight:	approx. 25 kg
Dimensions (l x w x h):	approx. 800 x 600 x 850 mm
Colour:	hammer finish painted blue or according to customer wishes

TECHNICAL DATA

RGW-24-E (No. 900 220)

Construction:	stainless steel
Weight:	approx. 29 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 850 mm
Colour:	hammer finish painted blue or according to customer wishes

The EMDE CYLINDER TROLLEY, model AT-28 is used for the storage and transportation of up to 28 steel cylinders of air for use with breathing apparatus. The cylinders (DIN 3171-1:2000-02) are stored in separate compartments.

The compartments are made from scratch-resistant plastic to guarantee good protection of the cylinders during storage. The trolley is fitted with 2 steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The 4 retaining rods are secured at both sides and prevent the air cylinders slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 28 compartments for the storage of air cylinders for breathing apparatus with max. diameter of 150 mm

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight:	approx. 72 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Rubberised shelf as work surface (No. 905 505)

Available on request:
Cylinder trolley with larger compartments for the storage of composite cylinders (in accordance with DIN 3171-2:2000-02)

The EMDE CYLINDER TROLLEY, model AT-24-C is used for the storage and transportation of up to 24 composite cylinders of air for use with breathing apparatus. The cylinders (DIN 3171-2:2000-02) are stored in separate compartments.

The compartments are made from scratch-resistant plastic to guarantee good protection of the cylinders during storage. The trolley is fitted with 2 steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The 4 retaining rods are secured at both sides and prevent the air cylinders slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 24 compartments for the storage of air cylinders for breathing apparatus with max. diameter of 180 mm

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services" (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 72 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1200 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Rubberised shelf as work surface (No. 905 505)

Available on request:
Cylinder trolley with larger compartments for the storage of composite cylinders (in accordance with DIN 3171-1:2000-02)

The EMDE TRANSPORT TROLLEY, model AG-8-7 is used for the safe transportation of up to 8 sets of breathing apparatus and 7 x 6 l replacement air cylinders. The compartments for the replacement air cylinders are made from scratch-resistant plastic to guarantee good protection of the cylinders during storage.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The 4 retaining rods are secured at both sides and prevent the air cylinders slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 7 compartments for replacement air cylinders

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 78 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:

» Kill switch	(No. 950 999)
» Rubberised shelf as work surface	(No. 905 505)

The EMDE TRANSPORT TROLLEY, model AG-4 is used for the safe transportation of up to 4 sets of breathing apparatus as a twin cylinder equipment.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The 2 retaining rods are secured at both sides and prevent the air cylinders slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 4 compartments for replacement air cylinders

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight:	approx. 70kg
Dimensions (l x w x h):	approx. 1200x 800 x 1150mm
Colour:	hammer finish painted blue or according to customer wishes

The EMDE BREATHING APPARATUS TROLLEY, model AG-9 is used for the safe transportation of up to 9 sets of breathing apparatus. The compartment partitions are made from scratch-resistant plastic to guarantee good protection of the apparatus during storage.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The end rods are secured at both sides and prevent the breathing apparatus slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 9 compartments for breathing apparatus

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 73 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1450 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Shelf area with rubber mat on the upper side (No. 905 505)
» Additional fold-out work surface at the side (No. 905 600)
Dimensions (l x w): approx. 700 x 800 mm
Working height: approx. 1000 mm

The EMDE BREATHING APPARATUS TROLLEY, model AG-12 is used for the safe transportation of up to 12 sets of breathing apparatus. The compartment partitions are made from scratch-resistant plastic to guarantee good protection of the apparatus during storage.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The end rods are secured at both sides and prevent the breathing apparatus slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 2 handles
» 12 compartments for breathing apparatus

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 75 kg
Dimensions (l x w x h):	approx. 1500 x 800 x 1450 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Shelf area with rubber mat on the upper side (No. 905 505)
» Additional fold-out work surface at the side (No. 905 600)
Dimensions (l x w): approx. 700 x 800 mm
Working height: approx. 1000 mm

The EMDE BREATHING APPARATUS TROLLEY, model AGM 6-6 is used for the safe transportation of up to 6 sets of breathing apparatus, 6 respirator masks and 7 x 6 l replacement air cylinders. The storage compartments for the replacement air cylinders are made from scratch-resistant plastic to guarantee good protection of the cylinders during storage. .

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The trolley doors can be locked. The end rods are secured at both sides and prevent the replacement air cylinders slipping during transportation.

The trolley is fitted with:
» Lockable doors
» 6 compartments for breathing apparatus
Compartment size (l x w):
approx. 300 x 360 mm
» 6 compartments for respirator masks
Compartment size (l x w):
approx. 170 x 360 mm
» Handle bar for pushing the trolley

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 78 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1450mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Shelf area with rubber mat on the upper side (No. 905 505)
» Additional fold-out work surface at the side (No. 905 600):
» Dimensions (l x w):
approx. 700 x 800 mm
Working height: approx. 1000 mm

The EMDE HOSE TROLLEY, model SF-500 is used for the storage and transportation of 500 metres of Type B fire hose in 5 separate bays.

It is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

The trolley is fitted with:
» 4 lifting eyes
» 2 handles
» 5 hose storage compartments

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services" (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 69 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Hose guide plate (No. 901 005)

The EMDE PORTABLE FIRE PUMP TROLLEY, model L2E-V is used for the storage and transportation of a portable fire pump, which is locked onto a rigid mounting. The trolley frame is zinc plated and has two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The lower compartment of the trolley can be used to stored 4 Type A suction hoses; in the upper section the trolley has space for the storage of petrol canisters, ropes, Type B hose, fire hydrant keys, 2 connector keys, as well as one Y-piece and one strainer.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	zinc plated steel construction
Weight (empty):	approx. 94 kg
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» TS8 mounting, rotating (No. 902 110)
» Additional mountings for other loads

The EMDE PORTABLE FIRE PUMP TROLLEY, model L2E-A is used for the storage and transportation of a portable fire pump, which is locked onto a rigid mounting. The trolley frame is zinc plated and has two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. The lower compartment of the trolley can be used to stored 4 Type A suction hoses; in the upper section the trolley has space for the storage of petrol canisters, ropes, Type B hose, fire hydrant keys, 2 connector keys, as well as one Y-piece and one strainer.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services" (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight :	approx. 89 kg
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» TS8 mounting, rotating (No. 902 110)
» Additional mountings for other loads

The EMDE TS PORTABLE FIRE PUMP TROLLEY, model K2E-V is used for the storage and transportation of a portable fire pump, which is locked onto a fixed mounting. The trolley frame is zinc plated and has two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. In the lower compartment of the portable fire pump trolley there is space for 2 plastic boxes, which can be used to store ropes, Type B hose, fire hydrant keys, 2 connector keys as well as one Y-piece and one strainer. The standpipe mounting is located under the sliding carriage of the portable fire pump, the fire hydrant key is stored under the trolley. In addition, a bracket for a 5 l petrol canister can be mounted in the lower level.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association)

TECHNICAL DATA

Construction:	zinc plated steel construction
Weight (empty):	approx. 59 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:

» Kill switch	(No. 950 999)
» Aluminium boxes	(No. 902 105)
» TS8 mounting, rotating	(No. 902 110)
» Trolley with Aluminium profile construction, model K2E-A	(No. 904 300)

The EMDE TS8 PORTABLE FIRE PUMP TROLLEY, model K2E-A is used for the storage and transportation of a portable fire pump, which is locked onto a fixed mounting. The trolley frame is made of Aluminium and has two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg. In the lower compartment of the portable fire pump trolley there is space for 2 plastic boxes (600 x 400mm), which can be used to store ropes, Type B hose, fire hydrant keys, 2 connector keys as well as one Y-piece and one strainer. The standpipe mounting is located under the sliding carriage of the portable fire pump, the fire hydrant key is stored under the trolley. In addition, a bracket for a 5 l petrol canister can be mounted in the lower level.

TECHNICAL DATA

Construction:	zinc plated steel construction
Weight (empty):	approx. 94 kg
Dimensions (l x w x h):	approx. 1700 x 850 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:

» Kill switch (No. 950 999)
» Aluminium boxes (No. 902 105)
» TS8 mounting, rotating (No. 902 110)

The EMDE POWER/LIGHTING EQUIPMENT TROLLEY, model S/L can be fitted with a pneumatic light mast and storage compartments on two levels. The upper level is used for the storage and transportation of a 6kVA generator, a petrol canister and control gear. The lower level can be used to store a portable telescopic tripod and other lighting equipment.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Licences and guidelines:

» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight:	approx. 39 kg (empty without light mast)
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Colour:	hammer finish painted blue

Options available at extra charge:

» Kill switch	(No. 950 999)
» Pneumatic light mast (Ø) 66 mm, retracted 1450 mm, extended 4500 mm, incl. hand pump	(No. 905 200)
» Electric cabling	(No. 905 250)
» Lighting unit BE-500	(No. 905 100)
» Lighting unit BE-1000	(No. 905 150)
» Trolley as model S/XL (Dimensions l x w x h: approx. 1600 x 800 x 1150 mm)	

The EMDE POWER/LIGHTING EQUIPMENT TROLLEY, model S/XL can be fitted with a pneumatic light mast and storage compartments on two levels.

The trolley is fitted with two steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight:	68 kg (empty without light mast)
Dimensions (l x w x h):	approx. 1600 x 800 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)
» Pneumatic light mast (Ø) 66 mm, retracted 1450 mm, extended 4500 mm, incl. hand pump (No. 905 200)
» Electric cabling (No. 905 250)
» Lighting unit BE-500 (No. 905 100)
» Lighting unit BE-1000 (No. 905 150)
» Trolley as model S/XL (Dimensions l x w xh: approx. 1600 x 800 x 1150 mm)

The EMDE MULTI-PURPOSE TANK TROLLEY, model T-600 is used for the safe transportation of max. 600 litres of liquid. The polyethylene tank is licensed for the dangerous goods classes 3, 5.1, 6.1 & 8. The trolley is fitted with two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Discharge:	3/4“ ball valve with Type C connector
Filling opening:	diameter approx. 160 mm
Construction:	zinc plated steel construction, powder coated
Weight (empty):	approx. 75 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)

The EMDE BIG BOX TROLLEY, model KU-K is used for the safe transportation of liquid and solid media up to a total weight of 500 kg. The trolley is fitted with two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Also available as the **model KU-KK with a flap gate at half height**. **(No. 902 600)**

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium substructure with HDPE box
Weight (empty):	approx. 45 kg
Load capacity:	approx. 500 kg
Volume:	approx. 530 l
Dimensions (l x w x h):	approx. 1200 x 800 x 950 mm
Colour:	grey

Options available at extra charge:

» Kill switch	(No. 950 999)
» Plastic lid	(No. 902 610)
» Ball valve outlet	(No. 902 615)

The CAGE TROLLEY is used for the safe transportation and storage of various materials. It is fitted with two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight. The single wheel load is 150 kg. The cage trolley has the same dimensions as a euro pallet and a total load capacity of 600 kg. The trolley is fitted with four lifting eyes, each with a single load capacity of 250 kg.

Version:

» Without flap gate (No. 903 100)
» Half flap gate, right (No. 903 000)
» Half flap gate, left (No. 903 001)
» Full flap gate, right (No. 903 200)
» Full flap gate, left (No. 903 201)
» Half flap gate, both sides (No. 903 400)
» Full flap gate, both sides (No. 903 401)

Licences and guidelines:

» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	steel construction
Paint:	powder coating
Weight (empty):	approx. 39 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1000 mm
Colour:	hammer finish painted blue

Options available at extra charge:

» Kill switch (No. 950 999)
» Rail-bound undercarriage DB (No. 903 150)
» Zinc plating (No. 903 500)
» Cage trolley tank (No. 903 010)

The zinc plated CAGE TROLLEY DB is used for the safe transportation and storage of various materials. It is fitted with two steering/ braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight. The single wheel load is 150 kg. The trolley has the same dimensions as a euro pallet, a total load capacity of approx. 600 kg and is also fitted with four lifting eyes.

The cage trolley DB is fitted with a rail-bound undercarriage suitable for use with the rails of the Deutsche Bahn network.

Versions:
» Cage trolley without flap gate
» Cage trolley with half side flap gate
» Cage trolley with full side flap gate

TECHNICAL DATA

Construction:	wire grating steel construction
Weight (empty):	approx. 87 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1100 mm
Colour:	hammer finish painted blue or zinc plated

Options available at extra charge:
» Kill switch
» Cage trolley tank made of polyethylene (130 l) (l x w x h: approx. 1190 x 770 x 175 mm)

Paint options:
» Powder coated
» Zinc plated

The EMDE FIREFIGHTING TROLLEY is used for storing fire fighting gear. The trolley can be supplied for any combination of equipment. The trolley is fitted with two steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

The standard equipment comprises:
» 3 x Type C fire hose baskets
» 3 x Type C nozzles
» 1 x Type B nozzle
» 1 x Divider
» 1 x Branchpipe holder

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium construction
Weight:	approx. 35 kg
Dimensions (l x w x h):	approx. 1000 x 800 x 950 mm
Colour:	hammer finish painted blue

Options available at extra charge:
» Kill switch (No. 950 999)

The EMDE BLOWER TROLLEY is used for the storage and transportation of a mobile blower and all its associated accessories (ducting, canisters and funnels). It is fitted with 2 steering/braking wheels and two fixed wheels.

The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services" (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	aluminium profile construction
Weight (empty):	approx. 29 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1150mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Kill switch (No. 950 999)

The EMDE WATER DAMAGE TROLLEY is used for the safe transportation of water suction equipment, sewage pumps, immersion pumps, cable drums, hoses and accessories.

The trolley is fitted with 2 steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

The trolley is fitted with:
» 1 intermediate shelf
» 1 completely removable long side element

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services“ (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

Construction:	zinc plated wire grating steel construction
Weight (empty):	approx. 85 kg
Load:	max. 500 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1850 mm

Options available at extra charge:
» Kill switch (No. 950 999)
» Brackets for storing additional equipment

The EMDE PLATFORM TROLLEY is used for the safe transportation of a wide variety of equipment.

The trolley is fitted with 2 steering/braking wheels and two fixed wheels. The wheels have Aluminium rims and solid rubber tyres to ensure the trolley has minimal rolling resistance and is easy to manoeuvre despite its weight even on rough ground. The single wheel load is 400 kg.

Licences and guidelines:
» Complies with GGVSE (German regulations for the transportation of dangerous goods by road and rail)
» Complies with „Guidelines for the design and use of non-powered trolleys by fire services" (Expert recommendation No. 2/2005 from the DFV (German Fire Service Association))

TECHNICAL DATA

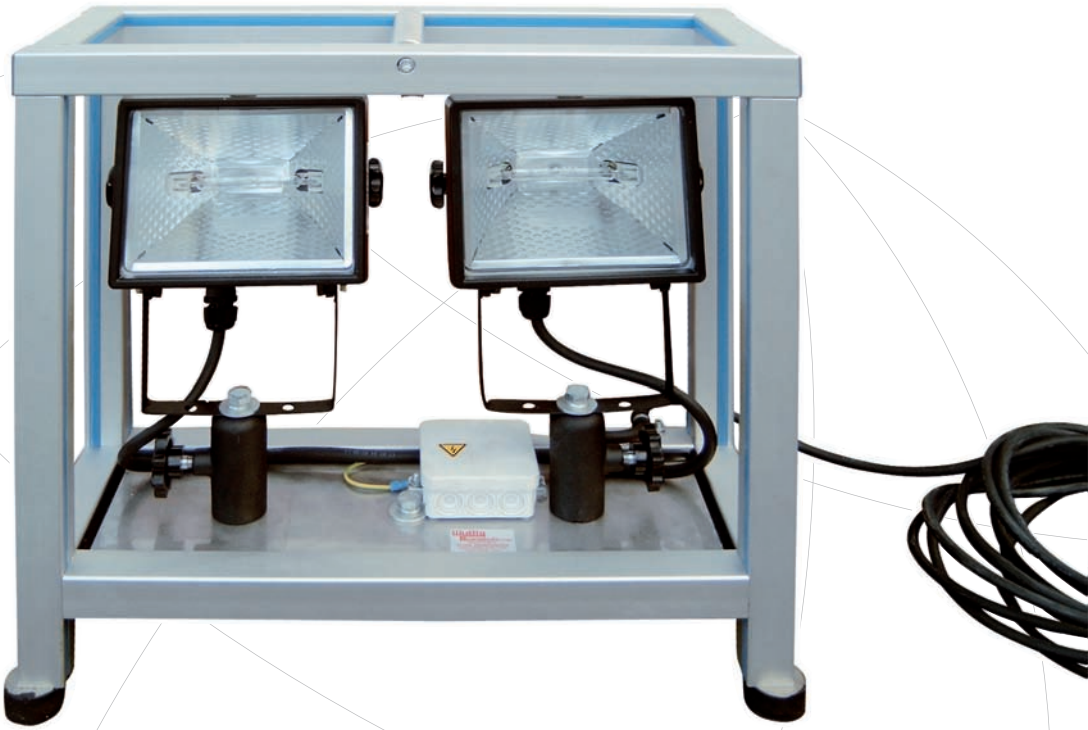
Construction:	aluminium profile construction
Weight (empty):	approx. 38 kg
Load:	max. 500 kg
Dimensions (l x w x h):	approx. 1200 x 800 x 1100 mm

Options available at extra charge:
» Kill switch (No. 950 999)
» Brackets for storing additional equipment
» Additional shelves
» Larger or smaller area (e.g. 800 x 600 mm)

The EMDE LIGHTING UNIT, model BE-500 is a portable lighting unit for rapid and efficient construction and dismantling of a lighting group. The unit has a DIN Aluminium bush for use on a tripod.

Also available as version **BE-1000 with 2 x 1000 W floodlights** **(No. 905 150)**

The unit is fitted with:
» 4 x rubber feet
» 2 x 500 W floodlights
» 10 m oil and acid resistant electrical cable
» Cable strain relief
» Safety plug DIN 49 443
» 2 x DIN standard adapters for mounting the floodlights



TECHNICAL DATA

Construction:	aluminium construction
Weight (empty):	approx. 3 kg
Dimensions (l x w x h):	approx. 515 x 200 x 480 mm
Colour:	hammer finish painted blue or according to customer wishes

Options available at extra charge:
» Polished stainless steel (No. 905 105)

1. Allgemeines

1.1 (Kollidierende Bedingungen, Schriftform) Für den Vertrag gelten ausschließlich diese AGB; andere Bedingungen werden nicht Vertragsinhalt, auch wenn ihnen nicht ausdrücklich widersprochen wurde. Auf Nebenabreden vor und bei Vertragsabschluß kann sich der Besteller nur bei unverzüglicher schriftlicher Bestätigung berufen.

1.2 (Angebote, Änderungsvorbehalt, Datenerfassung) Alle Angebote sind freibleibend. Technische Verbesserungen aller Erzeugnisse bleiben vorbehalten. Wichtige Daten des Bestellers können für die Vertragsabwicklung auf EDV verarbeitet und gespeichert werden.

1.3 (Aufrechnung, Zurückbehaltung) Aufrechnung oder Zurückbehaltung durch den Besteller sind außer mit unstrittigen oder rechtskräftig festgestellten Gegenforderungen unzulässig.

1.4 Teillieferungen sind zulässig, soweit sie dem Besteller zumutbar sind.

2. Gefahr, Versandkosten, Liefermengen, Abruf

2.1 Die Gefahr geht auf den Besteller über, wenn die Lieferung das Werksgelände Zierenberg verlassen hat und zwar auch dann, wenn Teillieferungen erfolgen oder noch andere Leistungen, z.B. die Versendung, Ausfuhr oder Aufstellung übernommen wurden. Der Besteller trägt Transport-, Verpackungs- und Versicherungskosten bis zum Lieferort, sofern nicht ausdrücklich andere Vereinbarungen getroffen wurden.

2.2 Bei Annahmeverzug kann die Lieferung unter Aufrechnung des Erfüllungsanspruchs auf Kosten des Bestellers in ein Lagerhaus einlagert oder nach vorheriger Androhung und Fristsetzung für Rechnung des Besteller anderweitig veräußert werden. Mehraufwendungen des erfolglosen Angebots sind mit 10 % des Lieferwertes zu vergüten; die Geltendmachung höherer Mehraufwendungen bleibt hiervon unberührt. Der Lieferer behält sich das Recht vor, den Nachweis zu führen, Mehraufwendungen seien nicht oder in geringerer Höhe als die Pauschale entstanden.

3. Lieferzeiten, Verzug

3.1 Lieferfristen beginnen mit dem Zugang der Auftragsbestätigungen, jedoch nicht vor Klärung aller bei Vertragsabschluss noch offenen technischen Fragen und Eingang der vom Besteller zu beschaffenden Unterlagen, Genehmigungen und Freigaben, sowie nicht vor Eingang der vereinbarten Anzahlungen. Die Lieferfrist ist eingehalten, wenn bis zu ihrem Ablauf der Liefergegenstand das Werksgelände Zierenberg verlassen hat oder die Lieferbereitschaft mitgeteilt ist.

3.2 Höhere Gewalt, z.B. Mobilmachung, Krieg, Aufruhr oder ähnliche Ereignisse, z.B. Streiks, Aussperrungen, Betriebsstörungen, Rohstoff- und Betriebsmittelmangel und verzögerte Belieferung oder Nichtbelieferung durch Vorlieferanten oder vom Besteller zusätzlich geforderte oder geänderte Leistungen verlängern die Lieferfristen entsprechend und befreien den Lieferer von der Einhaltung der Lieferfrist.

3.3 Die Haftung bezieht sich nur auf die durch Mitarbeiter oder Erfüllungsgehilfen der Firma Fritz Emde vorsätzlich oder grob fahrlässig verursachten Verspätungsschäden.

3.4 Kommt der Lieferer in Verzug, kann der Besteller, sofern er glaubhaft macht, dass ihm hieraus ein Schaden entstanden ist, eine Entschädigung für jede vollendete Woche des Verzuges von je 0,5% insgesamt jedoch höchstens 5% des Preises für den Teil der Lieferungen verlangen, der wegen des Verzuges nicht in zweckdienlichen Betrieb genommen werden konnte.

3.5 Entschädigungsansprüche des Bestellers, die über die in Nr. 3.4 genannten Grenzen hinausgehen, sind in allen Fällen verspäteter Leistung auch nach Ablauf einer dem Lieferer etwa gesetzten Nachfrist, ausgeschlossen. Das Recht des Bestellers zum Rücktritt nach fruchtlosem Ablauf einer dem Lieferer gesetzten Nachfrist bleibt unberührt.

4. Preise, Zahlungsbedingungen, Preisänderungen, Rücksendungen

4.1 Alle Preise gelten ab Werk Zierenberg, zuzüglich der jeweils geltenden gesetzlichen Umsatzsteuer; Kosten für Verpackung und Fracht gehen zu Lasten des Bestellers, sofern nicht ausdrücklich andere Vereinbarungen getroffen wurden. Rechnungen für Warenlieferungen sind ohne Abzug per Vorauskasse oder per Nachnahme bei Anlieferung fällig. Rechnungen über Leistungen, die überwiegend Lohnarbeiten sind, sind sofort nach Absendung der Rechnung fällig. Für Aufträge mit einem Nettowarenwert von weniger als EUR 75,00 wird eine Bearbeitungspauschale (Mindermengen) von EUR 10,00 in Rechnung gestellt. Zahlungen sind unter Angabe der Rechnungsnummer kosten- und spesenfrei in Euro auf eines der angegebenen Konten zu leisten. Schecks werden auf Kosten des Bestellers erfüllungshalber angenommen. Bei begründeten Zweifeln an der Bonität des Bestellers wird jede Einzellieferung von ihrer Vorausbezahlung in Höhe des Rechnungsbetrages abhängig gemacht.

4.2 Gesondert vereinbarte Skonti werden nicht gewährt, wenn der Besteller mit der Bezahlung früherer Lieferungen im Rückstand ist.

4.3 Liegen zwischen Vertragsabschluss und Lieferung mehr als vier Monate, ist der Lieferer berechtigt nach § 315 BGB einen Preisaufschlag zu verlangen, der der Kostensteigerung bis zu Lieferung angemessen entspricht. Ein entsprechender Preissenkungsanspruch steht dem Besteller zu, wenn er nachweist, dass die externen Kosten des Lieferers seit Abschluss des Vertrages gesunken sind. Bei mehr als 15% Abweichung kann der benachteiligte Vertragspartner zurücktreten. Für Abrufliefe-rungen gilt der Tagespreis.

4.4 Bei nicht vereinbarter Rücksendung mangelfreier oder unerheblich mangelhafter Ware ist vom Besteller eine Entschädigung in Höhe von 15% des Rechnungsbetrages an den Lieferer zu entrichten.

4.5 Bei Zahlungsverzug hat der Besteller vorbehaltlich weitergehender Schadensersatzansprüche Verzugszinsen in Höhe der üblichen Bankzinsen für Kredite zu vergüten, wenn er nicht einen geringeren Verzugsschaden nachweist. Dem Lieferer bleibt es vorbehalten, weitere Mahnkosten je Mahnstufe in Rechnung zu stellen.

4.6 Hat der Lieferer die Aufstellung oder Montage übernommen und ist nicht etwas anderes vereinbart, so trägt der Besteller neben der vereinbarten Vergütung alle erforderlichen Nebenkosten wie Reisekosten, Kosten für den Transport des Handwerkszeugs oder persönlichen Gepäcks, sowie Auslösungen.

5. Entgegennahme

5.1 Lieferungen sind auch wenn sie unerhebliche Mängel aufweisen, vom Besteller entgegenzunehmen.

6. Eigentumsvorbehaltsicherung

6.1 Die Lieferware bleibt bis zur Erfüllung sämtlicher ihm gegen den Besteller aus der Geschäftsbeziehung zustehenden Ansprüche und vollständiger, uneingeschränkter Bezahlung Eigentum des Lieferers.

6.2 Während des Bestehens des Eigentumsvorbehalts ist dem Besteller eine Verpfändung oder Sicherheitsübereignung untersagt und die Weiterveräußerung nur Wiederverkäufern im gewöhnlichen Geschäftsgang und nur unter der Bedingung gestattet, dass der Wiederverkäufer von seinem Kunden Bezahlung erhält oder den Vorbehalt macht, dass das Eigentum auf den Kunden erst übergeht, wenn dieser seine Zahlungsverpflichtung erfüllt hat.

6.3 Bei Pfändungen oder sonstigen Eingriffen Dritter hat der Besteller den Lieferer unverzüglich schriftlich zu benachrichtigen, damit der Lieferer Klage gem. § 771 ZPO erheben kann. Soweit der Dritte nicht in der Lage ist, dem Lieferer die gerichtlichen und außergerichtlichen Kosten einer Klage gem. § 771 ZPO zu erstatten, haftet der Besteller für den dem Lieferer entstandenen Ausfall.

6.4 Der Besteller ist berechtigt, die Kaufsache im ordentlichen Geschäftsgang weiter zu verkaufen; er tritt dem Lieferer jedoch dem Lieferer alle Forderungen in Höhe des Faktura-Endbetrages (einschließlich MwSt.) ab, die aus der Weiterveräußerung gegen seine Abnehmer oder Dritte erwachsen. Zur Einziehung dieser Forderung bleibt der Besteller auch nach der Abtretung ermächtigt. Die Befugnis des Lieferers die Forderung selbst einzuziehen bleibt hiervon unberührt.

7. Aufstellung, Montage

7.1 Für die Aufstellung und Montage gelten, soweit nichts anderes schriftlich vereinbart ist, folgende Bestimmungen. Der Besteller hat auf seine Kosten zu übernehmen und rechtzeitig zu stellen:

» alle Erd-, Bau- und sonstigen branchenfremden Nebenarbeiten einschließlich der dazu benötigten Fach- und Hilfskräfte, Baustoffe und Werkzeuge;
» die zur Montage und Inbetriebsetzung erforderlichen Bedarfsgegenstände und –stoffe, wie Gerüste, Hebezeug und andere Vorrichtungen, Brennstoffe und Schmiermittel;
» Energie und Wasser an der Verwendungsstelle einschließlich aller benötigten Anschlüsse, wie z.Bsp. Heizung Druckluft, Beleuchtung, usw.;
» bei der Montagestelle für die Aufbewahrung der Maschinenteile, Apparaturen, Materialien, Werkzeuge, usw. genügend große, geeignete trockene und verschließbare Räume und für das Montagepersonal angemessene Arbeits- und Aufenthaltsräume einschließlich den Umständen angemessener sanitärer Anlagen; im übrigen hat der Besteller zum Schutz des Besitzes des Lieferers und des Montagepersonals auf der Baustelle die Maßnahmen zu treffen, die er zum Schutz des eigenen Besitzes ergreifen würde;
» Schutzkleidung und Schutzvorrichtungen, die infolge besonderer Umstände der Montagestelle erforderlich sind;

7.2 Vor Beginn der Montagearbeiten hat der Besteller die nötigen Angaben über die Lage verdeckt geführter Strom-, Gas-, Wasserleitungen oder ähnlicher Anlagen sowie die erforderlichen statischen Angaben unaufgefordert zur Verfügung zu stellen.

7.3 Vor Beginn der Aufstellung oder Montage müssen sich die für die Aufnahme der Arbeiten erforderlichen Beistellungen und Gegenstände an der Aufstellungs- oder Montagestelle befinden und alle Vorarbeiten vor Beginn des Aufbaus so weit fortgeschritten sein, dass die Aufstellung oder Montage vereinbarungsgemäß begonnen und ohne Unterbrechung durchgeführt werden kann. Anfuhrwege und der Aufstellungs- oder Montageplatz müssen geebnet und geräumt sein.

7.4 Verzögern sich die Aufstellung, Montage oder Inbetriebnahme durch nicht vom Lieferer zu vertretende Umstände, so hat der Besteller in angemessenem Umfang die Kosten für Wartezeit und zusätzlich erforderliche Reisen des Lieferers oder des Montagepersonals zu tragen.

7.5 Nach Fertigstellung verlangt der Lieferer die Abnahme der Montage oder Aufstellung. Die Abnahme gilt gleichfalls als erfolgt, wenn die Lieferung – ggf. nach Abschluss einer schriftlich vereinbarten Testphase – in Gebrauch genommen worden ist.

8. Gewährleistung, Schadensersatz, Ersatzteilhaltung

8.1 Angaben in Werbeschriften oder sonstigen Beschreibungen, Bedienungsanleitungen oder Bezugnahme auf Normen begründen keine Eigenschaftszusicherungen oder Übernahme besonderer Einstandspflichten.
Benötigt der Besteller die Ware für besondere über den üblichen Einsatzbereich hinausgehende Zwecke, so muss er ihre spezielle Eignung für diese - auch hinsichtlich der Produktsicherheit - und ihre Übereinstimmung mit allen einschlägigen technischen, gesetzlichen und behördlichen Vorschriften vor ihrem Einsatz überprüfen. Die Haftung des Lieferers für durch eine ordnungsmäßige Prüfung vermeidbare Schäden des Bestellers ist ausgeschlossen. Bei Werkstoffvorschriften obliegt dem Besteller die Prüfung auf Eignung und Zulässigkeit der gewünschten Werkstoffe. Diese sind dem Lieferer unaufgefordert zur Verfügung zu stellen. Der Lieferer haftet nicht für den aus der Versäumnis o.a. Prüfung des Bestellers entstandenen Schaden.

8.2 Der Besteller hat die Ware unverzüglich nach Eintreffen auf Menge, Beschaffenheit und zugesicherte Eigenschaften zu untersuchen. Offen-

sichtliche Mängel hat er innerhalb einer Woche durch schriftliche Anzeige an den Lieferer zu rügen.
Bei berechtigten Beanstandungen erfolgt nach Wahl des Lieferers Nachbesserung der fehlerhaften Ware. Zur Mängelbeseitigung hat der Besteller dem Lieferer die nach billigem Ermessen erforderliche Zeit und Gelegenheit zu gewähren, insbesondere den beanstandeten Gegenstand oder Muster davon zur Verfügung zu stellen, anderenfalls entfällt die Gewährleistung.

8.3 Sachmängelansprüche beginnen mit dem Liefereingang der Ware beim Besteller und verjähren in 12 Monaten. Dies gilt nicht, soweit das Gesetz gemäß §§ 479 Abs. 1 (Rückgriffanspruch) BGB längere Fristen vorschreibt, sowie in Fällen der Verletzung des Lebens, des Körpers oder der Gesundheit, bei einer vorsätzlich oder grob fahrlässigen Pflichtverletzung des Lieferers oder bei arglistigen Verschweigens eines Mangels.

8.4 Mängelansprüche bestehen nicht bei nur unerheblicher Abweichung von der vereinbarten Beschaffenheit, bei nur unerheblicher Beeinträchtigung der Brauchbarkeit, bei natürlicher Abnutzung oder Schäden, die nach dem Gefahrenübergang infolge fehlerhafter oder nachlässiger Behandlung, übermäßiger Beanspruchung, ungeeigneter Betriebsmittel, mangelhafter Bauarbeiten, ungeeigneten Baugrunds oder aufgrund besonderer äußerer Einflüsse entstehen, die nach dem Vertrag nicht vorausgesetzt sind, sowie bei nicht reproduzierbaren Softwarefehlern. Werden vom Besteller oder von Dritten unsachgemäß Änderungen oder Instandsetzungsarbeiten vorgenommen, so bestehen für diese und die daraus entstehenden Folgen ebenfalls keine Mängelansprüche.

8.5 Gewährleistungen und Ersatzansprüche für Ersatzstücke und sonstige Mängelbeseitigungen richten sich ebenfalls nach diesen Bedingungen und verjähren mit dem Ende der für den ursprünglichen Gegenstand geltenden Fristen.

8.6 Bei Entwicklungsaufträgen haftet der Lieferer – nach Maßgabe der vorstehenden Bestimmungen – für den Entwicklungserfolg nur, wenn dieser dem Besteller ausdrücklich schriftlich zugesichert wurde.

9. Gewerbliche Schutzrechte, Werkzeuge, Geheimhaltung

9.1 Für alle vom Lieferer bereitgestellten Formen, Zeichnungen, Muster, Abbildungen, technische Unterlagen, Kostenvoranschläge oder Angebote behält sich der Verkäufer das Eigentum und alle gewerblichen Schutz- und Urheberrechte vor. Der Besteller darf sie nur in der vereinbarten Weise nutzen. Die Vertragsgegenstände darf der Besteller ohne schriftliche Zustimmung des Lieferers nicht selbst produzieren oder produzieren lassen.

9.2 Sofern Erzeugnisse nach den vom Besteller überlassenen Zeichnungen, Modellen und Mustern geliefert werden, haftet der Besteller dafür, dass durch ihre Herstellung und Lieferung keine gewerblichen Schutzrechte und sonstige Rechte Dritter verletzt werden und alle daraus durch Rechtsverletzungen resultierenden Schäden.

9.3 Vom Lieferer hergestellte oder bereitgestellte Zeichnungen, Formen, Werkzeuge oder sonstige Vorrichtungen bleiben Eigentum des Lieferers, auch wenn der Besteller die Kosten dafür ganz oder teilweise übernommen hat.

9.4 Sämtliches aus der Geschäftsverbindung erlangtes, nicht offenkundiges, Wissen hat der Besteller gegenüber Dritten geheim zu halten.

10. Erfüllungsort, Gerichtsstand, Anzuwendendes Recht

10.1 Für das Vertragsverhältnis findet ausschließlich deutsches Recht Anwendung unter Ausschluss des Übereinkommens der Vereinten Nationen über Verträge des internationalen Wareneinkauf (CISG).

10.2 Für alle aus dem Vertragsverhältnis entstehenden Streitigkeiten, einschließlich Scheck- und Wechselprozessen, gilt der Gerichtsstand des Lieferers als vereinbart.

10.3 Erfüllungsort für Leistungen beider Vertragsparteien ist Kassel.

10.4 Der Vertrag bleibt auch bei rechtlicher Unwirksamkeit einzelner Punkte in seinen übrigen Teilen verbindlich. Dies gilt nicht, wenn das Festhalten an dem Vertrag eine unzumutbare Härte für eine Partei darstellen würde.

Stand: 01. Januar 2010

Groupe of companies:

EMVAK – FRITZ EMDE, S.L.
Spain

Rambla Exposición, 101 Local 5
08800 Vilanova i La Geltrú (Barcelona)
España

Tel.: + 34 93 814 70 28
Fax: + 34 93 814 70 29
Móv.: + 34 670 379 994
E-Mail: emvak@emvak.com
Web: www.emvak.com

EMVAK – FRITZ EMDE, SARL
France

E-Mail: info@emvak.fr
Web: www.emvak.fr

Richard Wuttig – Feuerschutz GmbH
Germany

Kasseler Straße 61
34289 Zierenberg
Deutschland

Tel.: + 49 (56 06) 37 60, 13 06
Fax: + 49 (56 06) 15 74

E-Mail: info@wuttig-feuerschutz.de
Web: www.wuttig-feuerschutz.com

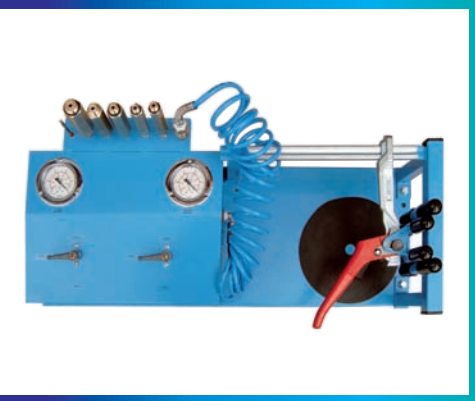
FRITZ EMDE

Mechanical and vacuum engineering

Kasseler Straße 48-50
34289 Zierenberg

Telefon + 49 (56 06) 20 44, 20 45
Telefax + 49 (56 06) 15 74

E-Mail: info@fritz-emde.de
Web: www.fritz-emde.com



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Mechanical and vacuum engineering

Kasseler Straße 48-50
34289 Zierenberg

Telefon + 49 (56 06) 20 44, 20 45
Telefax + 49 (56 06) 15 74

E-Mail: info@fritz-emde.de
Web: www.fritz-emde.com