

# Betriebsanleitung

APT.Line Serie BD / ED / FD

Brutschränke  
Wärmeschränke  
Trockenschränke

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## **5. Installing**

### **5.1 Ambient conditions**

#### **Permissible temperature range**

Storage: -10°C ... 60 °C

Operation: 5°C ... 40 °C

Level: max. 2000m above sea level.

#### **Permissible humidity**

Operation and storage: 70 R.H.% non condensing

The ambient temperature should not be substantially higher than 32° C. The specified technical data relate to an ambient temperature of 22° C. The data may be modified in the case of different ambient conditions. Temperature fluctuations may occur in the case of excessively high room temperatures.

### **5.2 Unpacking and inspection**

After unpacking, please check the unit and its accessories for completeness and for possible transportation damage. If transportation damage has occurred, the carrier or railway company must be informed immediately. Please remove any transportation protection devices and adhesives in and on the unit.

### **5.3 Transport safety device**

- The unit has to be installed on a plain surface.
- The oven has to be fixed with transport straps in order to avoid that the unit is sliding or tilting.
- The oven may not be transported without packing.
- Roller-mounted units can be locked in place

### **5.4 Possibilities to installing of units**

The unit should, where possible, be installed on an even, non-flammable surface. In order to ensure optimum operation, the unit should be aligned with a spirit level. If several units of the same size are installed next to each other, a minimum distance of 160 mm must be ensured. Two devices with a construction size of up to 240 can be piled on top of each other. For this purpose rubber layers must put under all four feet of the upper chamber to prevent the device from slipping.



## **6. Safety instructions**

For operation of the units and its location, the guidelines for laboratories ZH 1/119 (for Germany) of the professional association concerned with occupational safety should be observed. The appliance must not be set up in unventilated niches.

No combustible or explosive materials must be introduced to the units. The units must not be used for drying or heat treatments in which combustible vapours are released which could form an explosive mixture with air. The unit are manufactured in accordance with the relevant VDE regulations and subjected to a routine check test in accordance with VDE 0113.

When installing the unit, please ensure that it is positioned on an even, non-flammable surface, so that it is level and vibration-free. The unit must not be lifted or transported using either the door handle or the door.



This symbol draws your attention to hot surfaces, which can lead to burnings upon contact.

## 7. Commissioning



### Danger of incorrect supply voltage connection values!

If the mains plug is connected to a socket which does not comply with the prescribed specifications, the unit may be damaged.

The following points must be noted when connecting to the electricity supply:

The supply voltage must be checked prior to connection and initial start-up. The actual values must be compared with the data on the type plate.

The regulations of the local electricity supply company and the VDE regulations (for Germany) must be observed.

- checking the power supply
- see nameplate for ratings
- Set on/off switch (a) in position I
- The green LED (G) indicates ready-to-operate-status

### 7.1 Temperature control adjustments

Figure (3) and Figure (4) shows the arrangement of the temperature R2 control. The safety device (B) must be reset every time the set point for temperature has been changed (see chap. 8). Only then can it be guaranteed that the unit will function correctly.

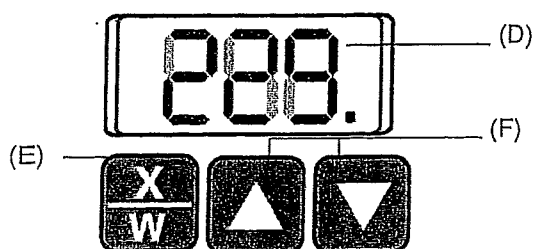


Fig 3: Temperature control R2 ED/FD  
(up to 300 °C)

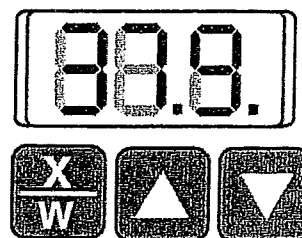





Fig 4: Temperature control R2 BD  
(up to 99,9 °C)

### 7.2 Entering set point

1. Press set point button  (E) once
2. Enter desired set point using the   buttons (F)

The right dot on the display is blinked if the unit is in condition "heating active". If a button is not pressed within 10 seconds, the display reverts automatically to the original current value. Each time the set point is changed the TWW safety device setting should be observed again (chapter 8)



Type ED/FD can be operated in an area temperature range of + 5°C above room temperature up to 300°C. The display has an accuracy of 1°C (see Fig. 3).

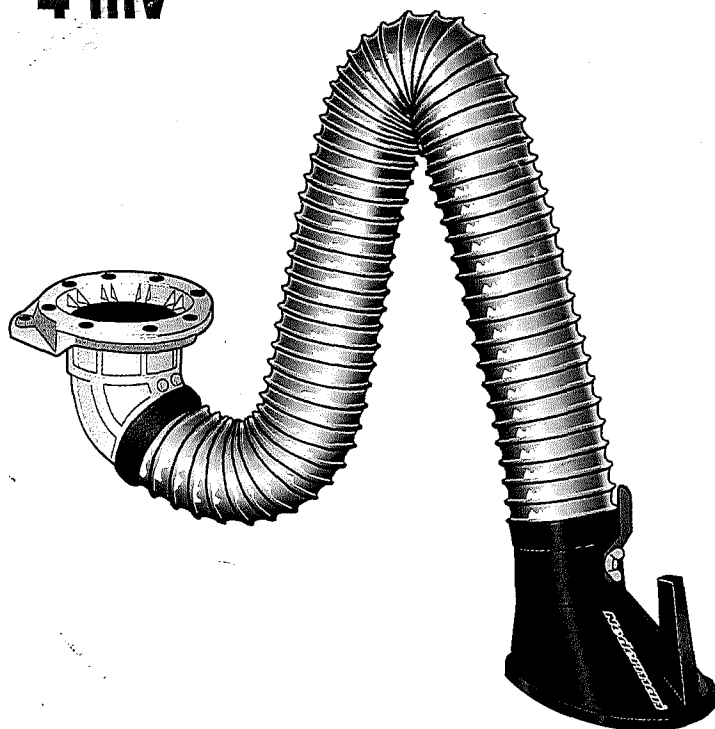


Type BD devices can be operated in an area temperature range of + 5°C above room temperature up to + 99,9°C. The display has an accuracy of 0,1°C (see Fig. 4).

# ORIGINAL

1.5 m  
2 m  
4 mV

**Nederman®**  
*improving your workspace*

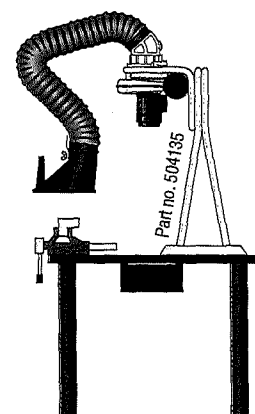
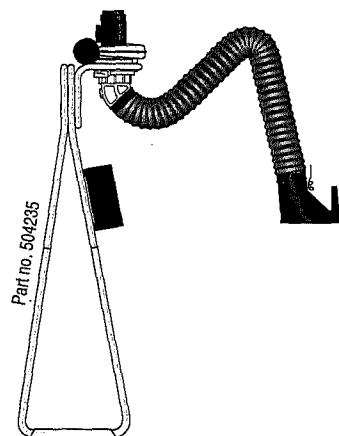
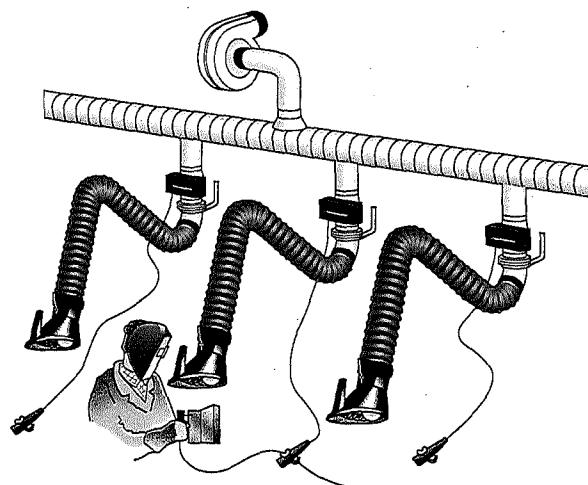
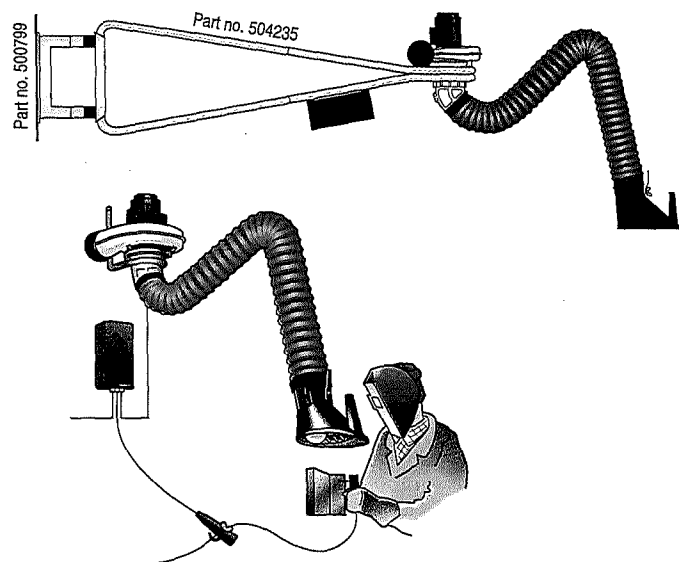


## SER. 535

INSTRUCTION MANUAL  
BEDIENUNGSANLEITUNG  
MANUEL D'INSTRUCTION  
ISTRUZIONE PER L'USO  
MANUALE DI ISTRUZIONE  
GEBRUIKSAANWIJZING  
ASENNUS JA KÄYTTÖOHJE  
INSTRUKTIONSMANUAL

No. 148161/00

Mounting examples  
Montagebeispiele  
Exemples de montage  
Ejemplo de montaje  
Esempi di montaggio  
Montagevoorbeelden  
Asennusesimerkkejä  
Montageexempel



**GB ENGLISH****User instructions**

The extractor arm can easily be positioned at any point within its working area. It can be rotated 180° when wall mounted and 360° when flange mounted. For best capture the hood should be positioned as near the fume or dust generating process as possible. The hood is equipped with a damper which can be adjusted with a lever. Recommended air flow: 800 m³/h (470 cfm).

**WARNING!**

The arm must not be used in environments where static electricity could cause explosion.

**D DEUTSCH****Bedienungsanleitung**

Der Absaugarm kann leicht an jedem Punkt des Arbeitsbereichs positioniert werden. Der Arbeitsradius beträgt 180° bei Wandmontage und 360° bei Flanschmontage. Für optimale Absaugleistung sollte sich die Haube so nah an der Rauch-/Staubquelle wie möglich befinden. Die Haube hat eine mit Drehgriff einstellbare Drosselklappe. Empfohlene Luftströmung: ca. 800 m³/h.

**WARNUNG!** Der Arm darf nicht in einer Umgebung eingesetzt werden, in der durch statische Elektrizität eine Explosion verursacht werden kann.

**FR FRANÇAIS****Instructions d'utilisation**

Le bras extracteur peut facilement être positionné où que ce soit dans la limite de son rayon de travail. Il peut pivoter de 180° lorsqu'il est monté au mur et de 360° quand il est monté sur une bride. Pour optimiser l'extraction, positionner la hotte d'aspiration le plus près possible de la source des fumées et poussières. La hotte est pourvue d'un clapet réglable avec un levier. Débit d'air recommandé: env. 800 m³/h.

**ATTENTION!** Le bras ne doit pas être utilisé dans un environnement où l'électricité statique peut provoquer explosion.

**ES ESPAÑOL****Instrucciones de uso**

El brazo extractor puede ser fácilmente situado en cualquier punto del área de trabajo. Puede ser girado 180° al montarlo en pared y 360° en techo. Para mejor extracción, la campana debe ser situada lo más cerca posible de la fuente de origen del polvo/humo. La campana tiene un regulador de caudal que se ajusta con una palanca. Caudal de aire recomendado: 800 m³/h aprox.

**ATENCIÓN!**

El brazo no debe usarse en ambientes donde la electricidad estática pudiera causar riesgo de explosión.

**IT ITALIANO****Istruzione per l'uso**

Il braccio estrattore può essere facilmente posizionato in qualsiasi punto all'interno della sua area di lavoro. Esso può essere ruotato di 180° in caso di montaggio a muro e di 360° in caso di montaggio con flangia. Per ottimizzare l'aspirazione, la cappa deve essere posizionata il più vicino possibile alla fonte di fumo o polvere. La cappa è dotata di una serrandina regolabile con leva. Flusso di aria raccomandato: circa 800 m³/h.

**ATTENZIONE!**

Il braccio non deve essere utilizzato in ambienti in cui l'elettricità statica può causare rischi di esplosione.

**NL NEDERLANDS****Gebruiksaanwijzing**

De afzuigarm kan probleemloos overal binnen zijn werkbereik worden geplaatst. Hij kan 180° worden gedraaid bij montage op de muur en 360° bij montage op de flens. Voor een optimale afzuiging moet men de kap zo dicht mogelijk bij de rook- of stofbron plaatsen. De kap is voorzien van een demper die met een hendel instelbaar is. Aanbevolen luchtstroom: 800 m³/h.

**LET OP!**

De arm dient niet te worden gebruikt in werkomgevingen waar statische elektriciteit explosies kan veroorzaken.

**FI SUOMI****Käyttöohje**

Imuvartta voidaan säätää portaattomasti ja kääntää 180° seinäasennuksessa ja 360° laippaasennuksessa. Parhaan poistotehon aikaansaamiseksi on imukartio sijoitettava mahdollisimman lähelle savua tai pölyä tuottavaa prosessia. Imukartiossa on pelti, jota voidaan säätää vivulla. Suositeltava ilmamäärä: noin 800 m³/h.

**VAROITUS!**

Kohdepoistoletkustoa ei saa käyttää paikoissa, joissa staattisen sähköntakia on räjähdysvaara.

**SE DK NO****Bruksanvisning**

Utsugningsarmen är steglöst (trinløst) inställbar och kan vridas (drejes/vris) 180° vid väggmontage och 360° vid fläns(flange)montage. För bästa uppfångning skall huven (hætten) placeras så nära (nær) den rök- eller damm(støv)alstrande processen som möjligt. I huven sitter ett spjäll som kan ställas in med ett vridreglage (håndtag/spak). Rekommenderad luftmängd: ca. 800 m³/h.

**VARNING (ADVARSEL)!**

Utsugningsarmen får inte användas i miljöer där statisk elektricitet kan innebära risk för explosion.

### Instrucciones de montaje

El brazo extractor puede ser montado en pared con un soporte de pared, directamente en la brida o en otro producto Nederman. Compruebe que la superficie donde montará el brazo sea plana y utilice el soporte de pared a modo de plantilla. Usar tornillos y tuercas anti-vibración apropiados para el material de la pared donde va fijado el brazo. Los tornillos deben soportar cada uno una fuerza de torsión de 1700 N como mínimo.

### Nivel de ruido

Con ventilador montado, medido según ISO 11201: 65 - 70 dB(A).

**Peso** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg

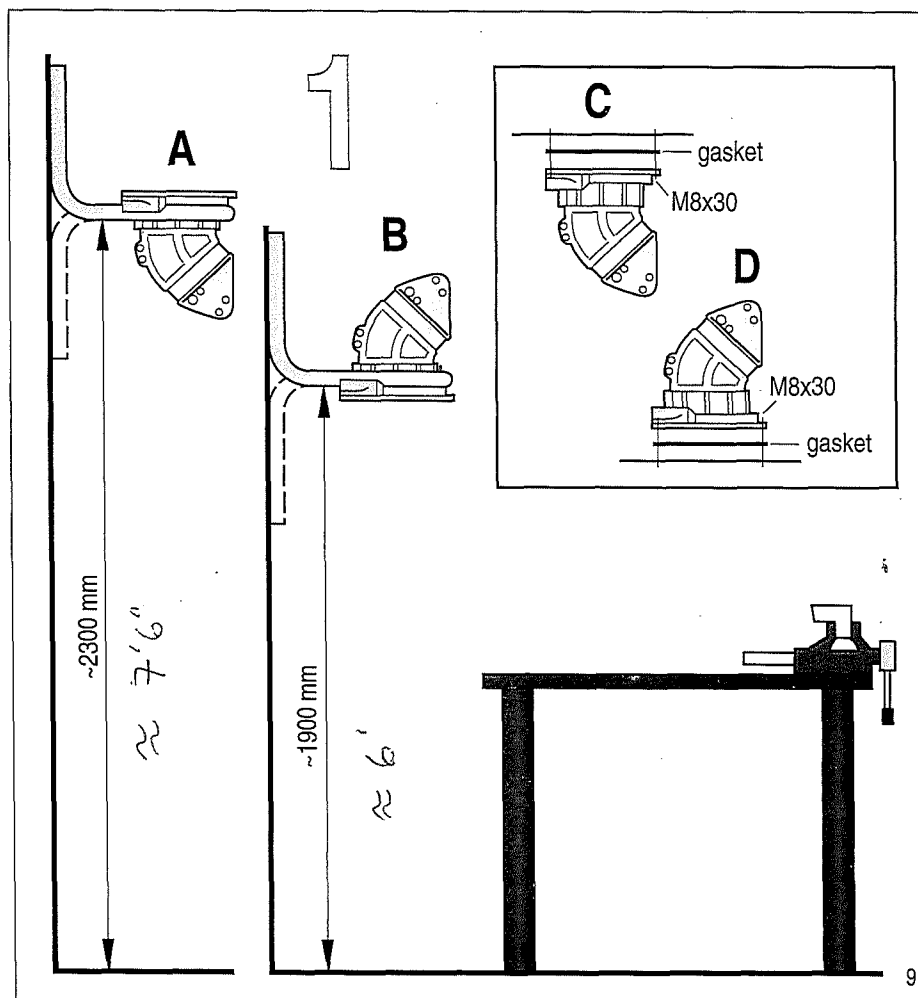
### Montageinstruktion

Utsugningsarmen kan monteras på vägg med stativ eller direkt i flänsen på t ex andra Nedermanprodukter. Se till (sørg for/påse) att underlaget är plant och märk upp håldelningen (hullerne) med hjälp av väggstativet (konsolen). Använd vibrationssäkra fästelement som passar underlaget. Fästbultarna skall vardera (hver især) klara en drag(træk)kraft på minst 1700 N.

### Ljudnivå

Med monterad Nederman fläkt (ventilator/vifte), 65 - 70 dB(A) mätt enligt (målt i henhold til) ISO 11201.

**Vikt** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg



**Mounting instruction**

The extractor arm can be mounted on wall together with a wall bracket or directly in the flange on for instance other Nederman products. Ensure that the surface, on which to mount the arm, is level and use the wall bracket to mark the holes. Use vibration secured fixing bolts and nuts suitable for the wall material. The bolts must each stand a torque force of minimum 1700 N (380 lbs).

**Noise level**

With fan installed, measured according to ISO 11201: 65 - 70 dB(A).

**Weight** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg  
5 ft: 20 lbs, 7 ft: 24 lbs, 14 ftV: 35 lbs

**Istruzioni di montaggio**

Il braccio estrattore può essere montato a muro utilizzando c'apposita staffa oppure direttamente fissato flangiato su altri prodotti Nederman. Accertarsi che la superficie di montaggio sia piana e segnare i fori utilizzando la staffa. Utilizzare dadi e viti di fissaggio idonei al tipo di muro. I bulloni devono resistere ad un momento torcente minimo di 1700 N.

**Livello di rumorosità**

Con ventola montata, misurato secondo ISO 11201: 65 - 70 dB(A).

**Peso** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg

**Montageanleitung**

Der Absaugarm kann mit einer Wandkonsole an einer Wand oder mit Hilfe des Universal-Flansches an weitere Nederman-Produkte montiert werden. Die Auflagefläche des Absaugarmes muß horizontal ausgerichtet sein. Bohrungs-löcher mit der Wandkonsole markieren. Benutzen Sie vibrationsfeste Schrauben und Muttern, passend zum Wandaufbau. Anzugsmoment der Verschraubung beachten 1700 N/Bolz.

**Schalldruckpegel**

Mit montiertem Ventilator, gemessen nach ISO 11201: 65 - 70 dB(A).

**Gewicht** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg

**Montagehandleiding**

De afzuigarm kan worden gemonteerd op de muur met een beugel of rechtstreeks op de flens van bijvoorbeeld andere Nederman producten. Zorg ervoor dat het oppervlak waarop u de arm monteert effen is en gebruik de muurbeugel om de gaten te markeren. Maak gebruik van trillingsbestendige bevestigingsbouten en moeren die zijn afgestemd op het wandmateriaal. De schroeven moeten elk een belasting van 1700 N aankunnen.

**Geluidsniveau**

Met gemonteerde ventilator, gemeten volgens ISO 11201: 65 - 70 dB(A).

**Gewicht** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg

**Instructions de montage**

Le bras extracteur peut être monté sur un mur à l'aide d'une fixation murale ou directement à l'aide de la bride sur d'autres produits Nederman. Vérifier que la surface sur laquelle le bras est monté soit bien plane et utiliser les fixations murales pour marquer les trous. Utiliser des boulons et écrous anti-vibratoires convenant à la structure du mur. Les boulons devront tolérer un couple de torsion de 1700 N.

**Niveau sonore**

Avec ventilateur monté, mesuré suivant ISO 11201: 65 - 70 dB(A).

**Poids** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg

**Asennusohje**

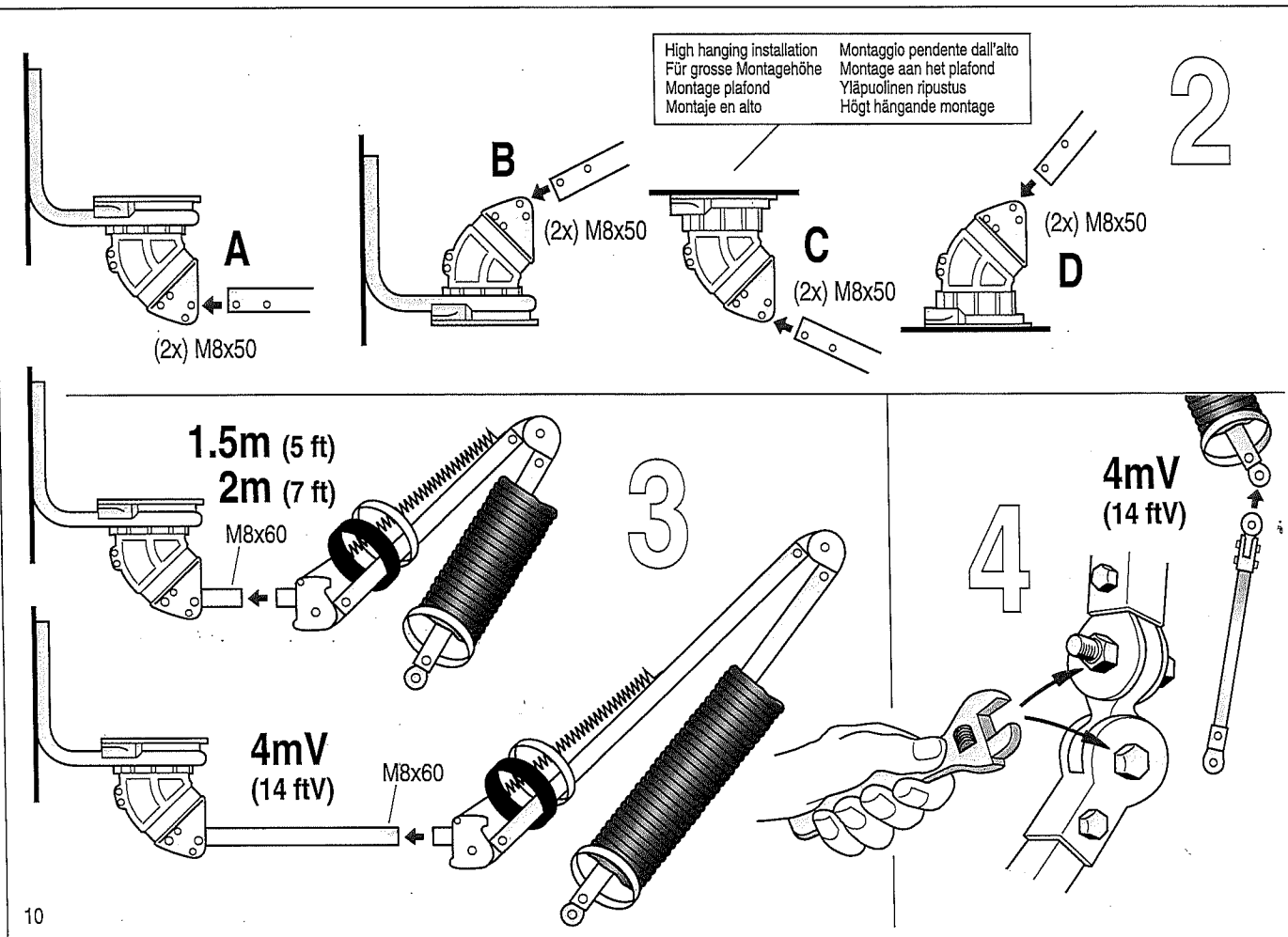
Imuvarsi voidaan asentaa seinään kiinnikkeellä tai suoraan laipastaan esim. muihin Nederman-tuotteisiin. Varmista, että alusta on sileä ja merkitse reiät seinäkiinnikkeen avulla. Käytä värinänkestäviä, kiinnityspintaan sopivia kiinnityspultteja. Kaikkien pulttien on kestävä vähintään 1700 N:n rasitus.

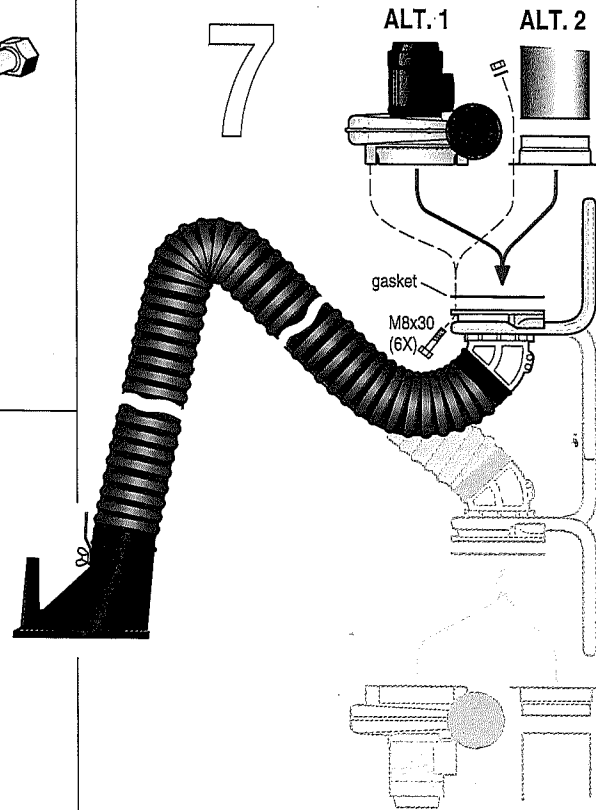
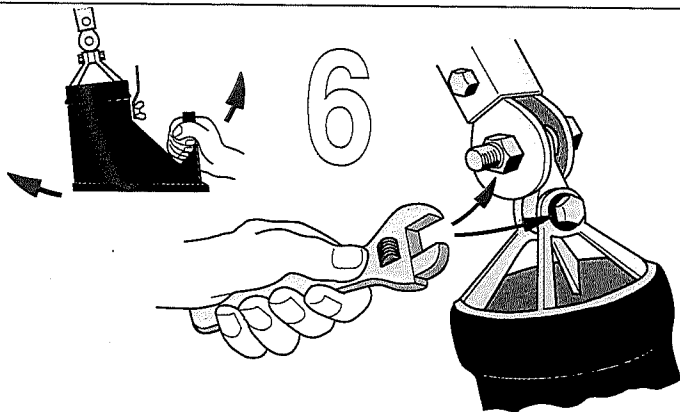
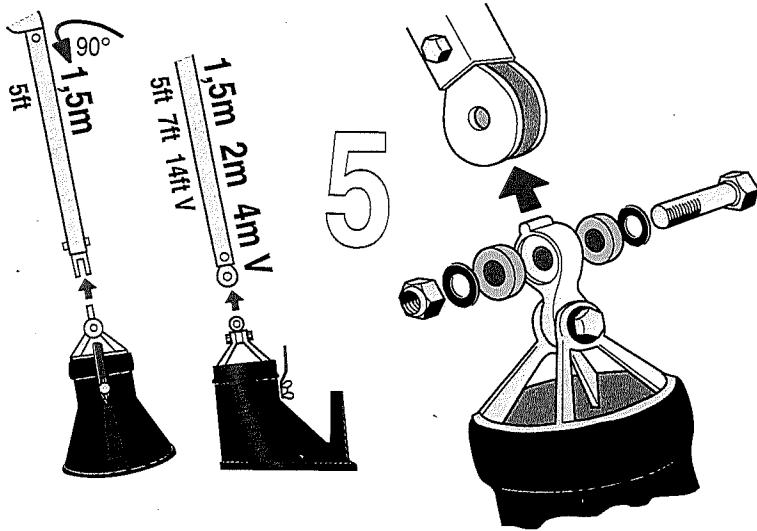
**Äänitaso**

Puhallin asennettuna, mitattuna ISO 11201 mukaisesti: 65 - 70 dB(A).

**Paino** 1.5 m: 9 kg, 2 m: 11 kg, 4 mV: 16 kg







### Ajuste de las rotulas

Las rotulas A y B vienen ya fijadas de fábrica para una posición normal de trabajo. Ajustelas de acuerdo a sus necesidades.

### Mantenimiento

(se recomienda una vez al año)

- Verifique que la manguera esté intacta. Límpiela si está sucia. Cámbiela si es necesario.
- Ajuste las rotulas.
- Apriete todos los tornillos de fijación del brazo (\*).
- Chequear la sujeción del brazo en pared o brida.

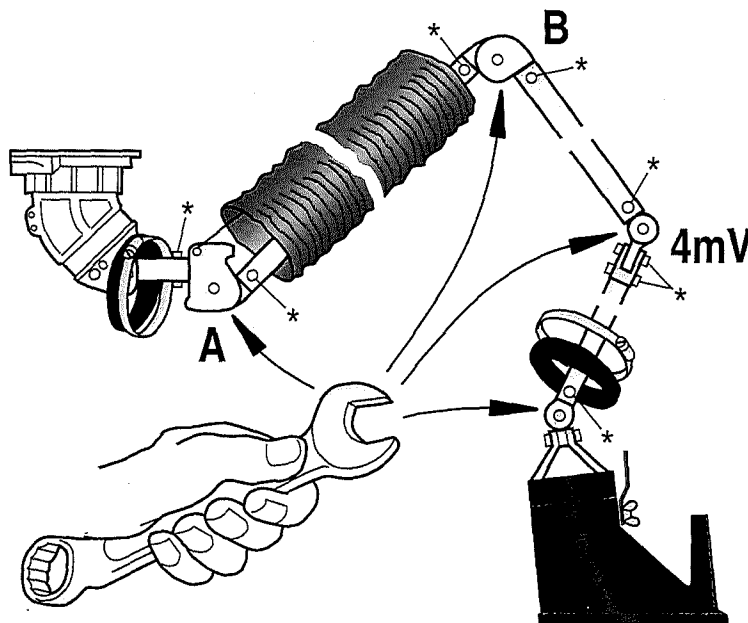
### Justering (indstilling) av leder

Lederna A och B är vid leverans inställda för normalt arbetsläge. Justera (tillpas) lederna vid andra behov (brug).

### Skötsel (vedligeholdelse)

(rekommenderas minst 1 gång per år)

- Kontrollera att slangen är hel. Rengör nedsmutsad (skitten) slang. Vid behov byt (skift) slang.
- Justera (indstil) lederna.
- Spänn (stram) armprofilernas fästbultar (\*).
- Kontrollera utsugningsarmens infästning på vägg eller i fläns.



**Adjusting the links**

The links A and B are factory set for the normal working position. These and other links may be adjusted to suit the users preference.

**Maintenance**

(is recommended at least once a year)

- Check that the hose is intact. Clean the hose if it is dirty. If necessary change the hose.
- Adjust the links.
- Tighten all the arm profile fixing bolts (\*).
- Check the mounting of the arm on wall or with flange.

**Regolazione degli snodi**

Gli snodi "A" e "B" sono pretensionati dalla casa. Provvedere a nuova regolazione, se necessario.

**Manutenzione**

(da eseguire almeno una volta all'anno)

- Controllare che il tubo sia intatto. Pulire il tubo nel caso in cui sia sporco. Sostituirlo se necessario.
- Regolare gli snodi.
- Serrare tutti i bulloni di fissaggio del braccio (\*).
- Controllare il montaggio del braccio sul muro o con la flangia.

**Gelenke einstellen**

Gelenke A und B sind bei der Lieferung für eine normale Arbeitsposition eingestellt. Falls nötig, können die Einstellungen Ihren Bedürfnissen anpaßt werden.

**Wartung**

(wird mind. einmal jährlich empfohlen)

- Kontrollieren, ob der Schlauch intakt ist. Schmutzigen Schlauch reinigen. Notfalls auswechseln.
- Gelenke justieren.
- Befestigungsschrauben der Armprofile anziehen (\*).
- Befestigung an Wand oder Flansch prüfen.

**De scharnierpunten aanpassen**

De scharnierpunten A en B zijn bij aflevering ingesteld op een normale werkpositie. Pas, indien nodig, de instelling aan uw wensen aan.

**Onderhoud**

(aanbevolen minstens één keer per jaar)

- Controleer of de slang intact is. Maak de slang schoon als ze vuil is. Vervang de slang zo nodig.
- Pas de scharnierpunten aan.
- Draai alle bevestigingsbouten van de arm aan (\*).
- Controleer de montage van de arm op de muur of op de flens.

**Réglage des articulations**

Les articulations A et B sont pré réglées pour une position de travail normale. Pour un positionnement différent du bras, régler les articulations suivant les besoins.

**Entretien**

(rec. au moins une fois par an)

- Vérifier que le tuyau est intact et le nettoyer s'il est encrassé. Le remplacer si nécessaire.
- Régler les articulations.
- Serrer tous les boulons de fixation de l'armature du bras (\*).
- Vérifier le montage du bras sur le mur ou avec la bride.

**Nivelien säätö**

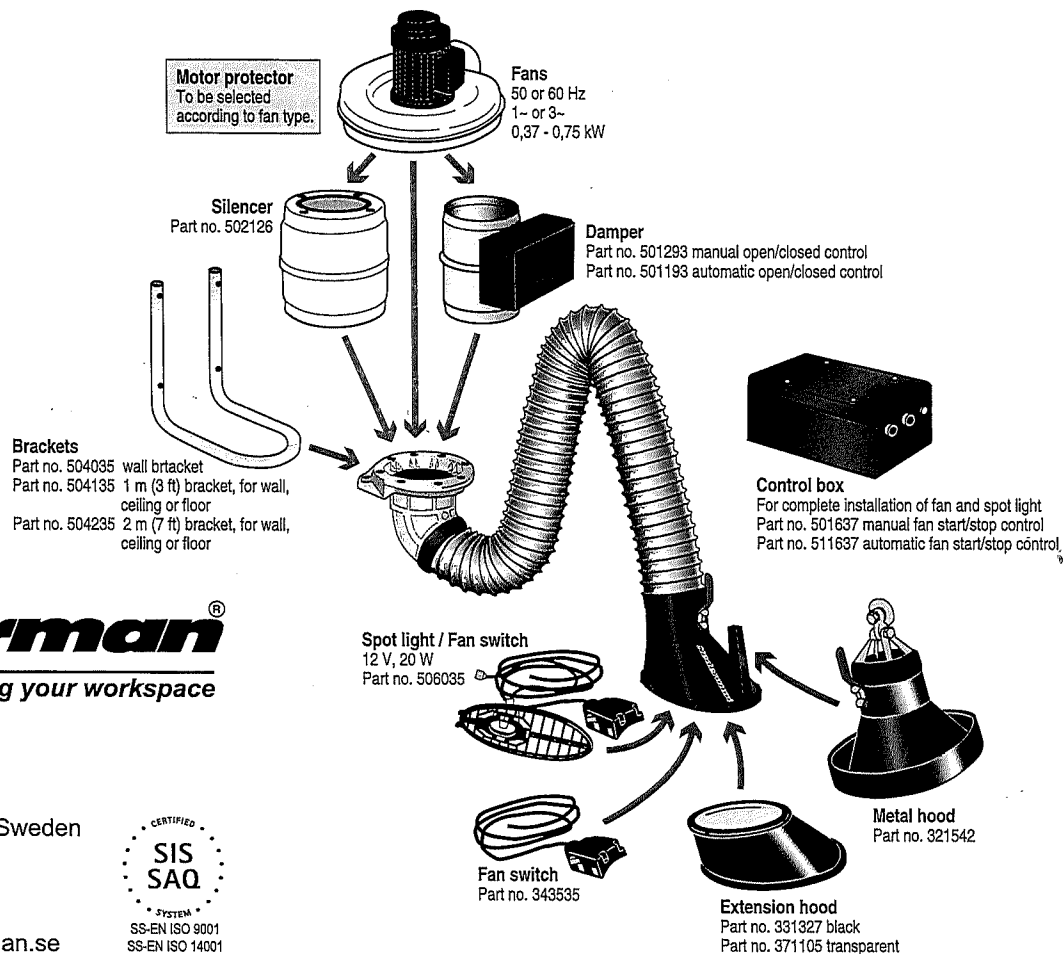
Nivelet A ja B on asetettu valmiiksi normaaliin työasentoon. Säädä tarvittaessa muun käyttötarpeen mukaan.

**Kunnossapito**

(vähintään kerran vuodessa)

- Tarkista, että letku on ehjä. Puhdista letku, jos se on likainen. Vaihda letku tarvittaessa.
- Säädä nivelet.
- Kiristä tukivarren kiinnityspultit (\*).
- Tarkista imuvarren kiinnitys seinään tai laippaan.

Accessories  
Zubehör  
Accessoires  
Accessorio  
Accessori  
Accessoires  
Tarvikkeet  
Tillbehör



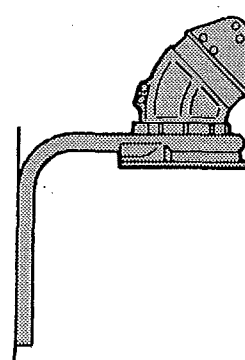
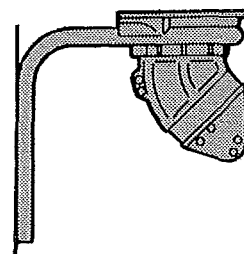
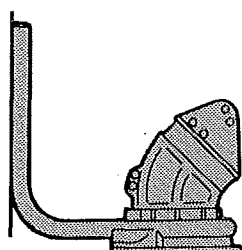
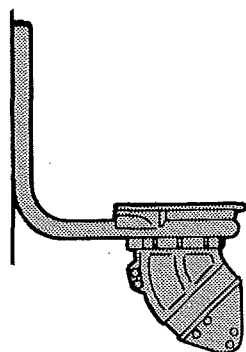
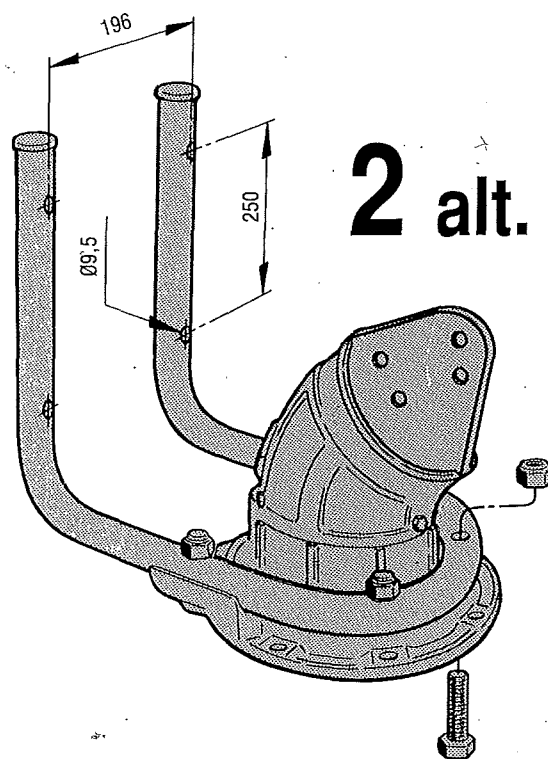
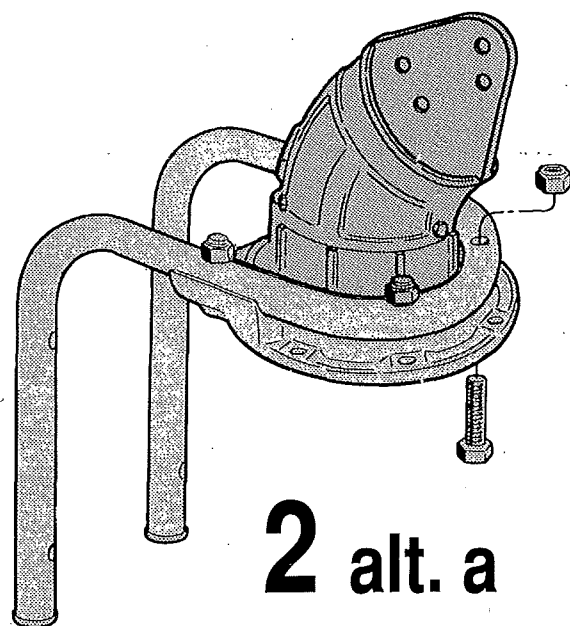
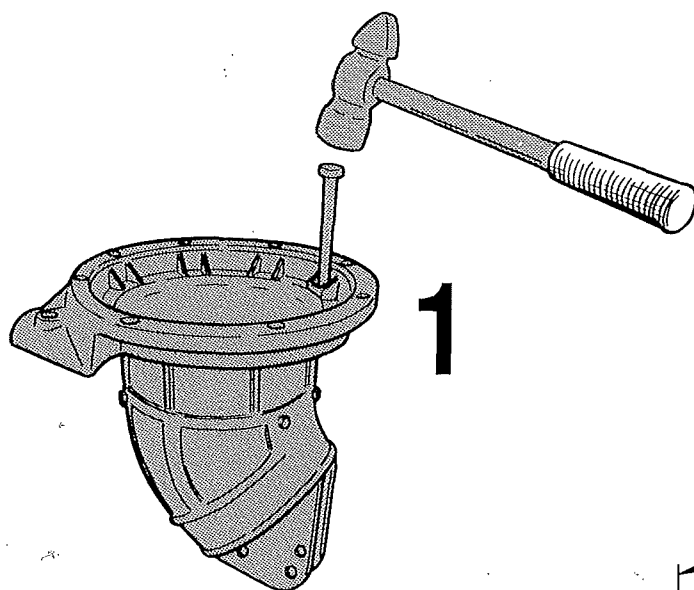
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Mounting instruction  
Montageanleitung  
Instruction de montage  
Instruccion de montaje  
Istruzione di montaggio  
Montagehandleiding  
Asennusohje  
Montageinstruktion



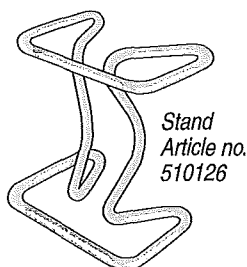
## GB ENGLISH

### Mounting

The fans can be mounted directly on following products: Fume Extractors, Electrostatic Filters, Filterboxes, Simple Exhaust Extractors and Exhaust Hose Reels.

A guard net should be mounted on the fan's outlet if the fan is not directly connected to a ducting system.

The fan can also be provided with a stand which can be bought as an accessory. It is a galvanised tubular steel frame and it is easily mounted to the fan. The stand serves the dual function of protecting the fan motor and enabling easy positioning and handling of the fan unit. Fan with stand can also be fixed mounted on wall, floor or ceiling. The stand is delivered together with guard nets which should be mounted on the inlet and outlet of the fan.



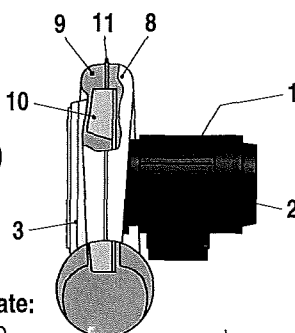
Stand  
Article no.  
510126

### Electrical installation

Check that the mains voltage is the same as on the fan's sign plate. Then connect the fan according to wiring diagram on the fan's junction box. On 3-phase fans it is recommended to check that the motor shaft rotates in the right direction (see rotation arrow on the motor). If the shaft rotates in the wrong direction, two of the phases must be reversed.

### Spare parts

1. Motor
2. Protection cover and cooling fan for motor
3. Connecting ring
4. Capacitor (only 1-phase fans)
8. Casing, motorside
9. Casing, inlet side
10. Impeller
11. Gasket



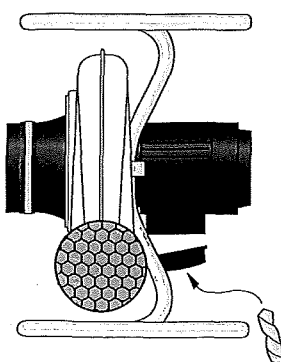
When ordering parts always state:

- A. The fan's article and control no.
- B. Description of the spare part.
- C. Quantity of required parts.

The sign plate on the fan's casing indicates article and control no.

### Draining instruction

If the fan shall be used without any protection outdoors or under other circumstances where moisture and condensation can appear, the motor should be provided with a draining hole. In these cases the fan, mounted on a stand, shall be placed with its junction box in downward direction according to picture. Unscrew the cover of the junction box and drill a hole, Ø 5 - 8 mm, in the cover.



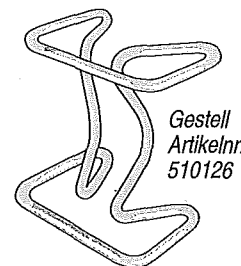
## D DEUTSCH

### Montage

Die Ventilatoren können in folgende Produkte angebaut werden: Absaugarme, Elektrostatische Filter, Filterbox, einfache Abgassaugvorrichtung und Abgasschlauchaufroller.

Am Ventilatorauslaß ist ein Schutzgitter zu montieren, wenn der Ventilator nicht direkt an das Kanalsystem angeschlossen wird. Der Ventilator kann auch mit einem Gestell versehen werden, das als Zubehör erhältlich ist. Es ist aus galvanisiertem Stahlrohr gefertigt und wird einfach an den Ventilator montiert. Das Gestell schützt den Ventilator und ermöglicht einen einfachen Transport.

Mit dem montierten Gestell kann der Ventilator wahlweise in 6 verschiedenen Positionen angebracht werden. Ventilatoren mit Gestell können an der Wand, auf dem Fußboden oder an der Decke fest montiert werden. Zum Gestell gehören Schutzgitter, die am Ein- bzw. Auslaß des Ventilators montiert werden.



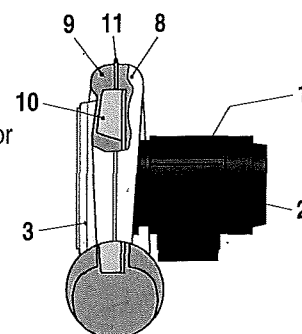
Gestell  
Artikelnr.  
510126

### Elektrische Installation

Überprüfen, ob die aktuelle Netzspannung mit der Nennspannung des Ventilators übereinstimmt. Danach Ventilator gemäß Anleitung an die Ventilatoranschlußdose anschließen. Bei 3-Phasen-Ventilatoren muß kontrolliert werden, ob die Motorwelle die richtige Drehrichtung hat (siehe Drehrichtungspfeil am Motor). Dreht sich die Motorwelle in die falsche Richtung, müssen zwei Phasen getauscht werden.

### Ersatzteile

1. Motor
2. Schutzabdeckung und Kühlventilator für den Motor
3. Anschlußring
4. Kondensator (nur 1-Phasen-Ventilator)
8. Gehäuse, Motorseite
9. Gehäuse, Ansaugseite
10. Laufrad
11. Dichtung



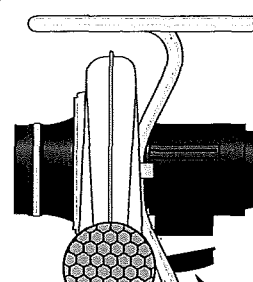
Bei der Bestellung von Ersatzteilen immer angeben:

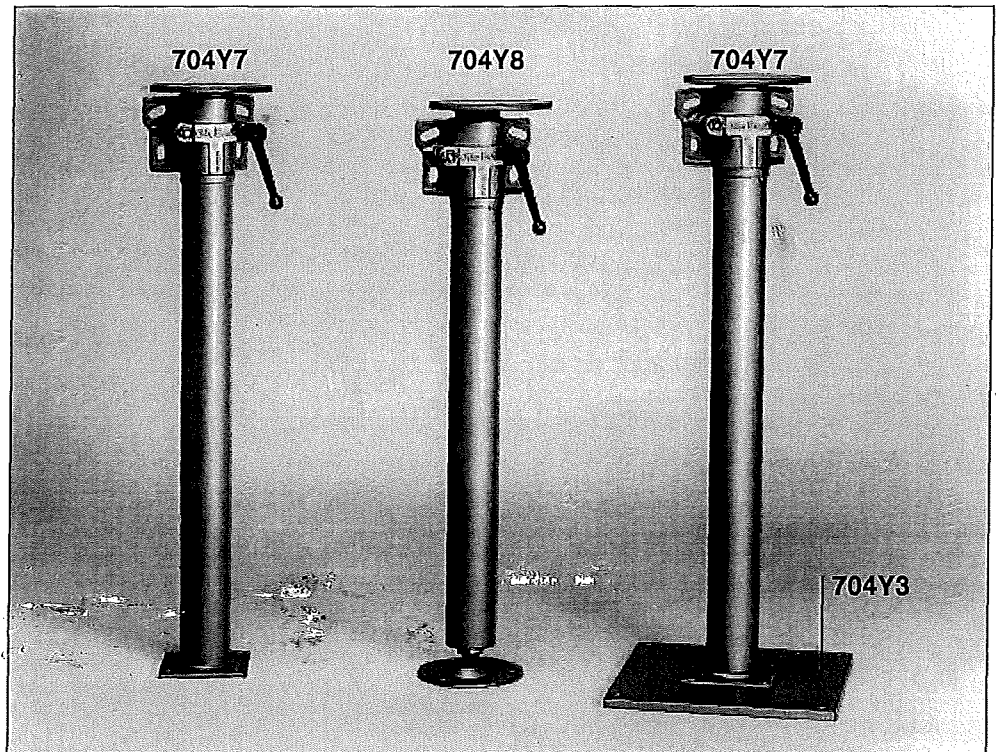
- A. Modell- und Prüfnummer des Ventilators
- B. Bezeichnung des Ersatzteils
- C. Anzahl erforderliche Ersatzteile

Auf dem Typenschild an der einen Ventilatorabdeckung ist die Modell- und Prüfnummer angegeben.

### Anleitung zur Entleerung

Wenn der Ventilator ungeschützt im Freien oder unter Bedingungen angewendet werden soll, wo Feuchtigkeit oder Kondens entstehen kann, muß der Motor mit einem Loch zur Entleerung versehen werden. Der auf einem Gestell montierte Ventilator muß in diesem Falle so angebracht werden, daß die Anschlußdose am Motor nach unten gerichtet





- Ⓓ *Montageanleitung für Otto Bock Spannlift*
- ⒼⒷ *Assembling Instruction for Otto Bock Vise Lift Assists*
- Ⓕ *Instructions de montage pour les élévateurs «Spannlift» Otto Bock*
- Ⓘ *Istruzioni di montaggio del dispositivo di regolazione per altezza morsa Otto Bock*
- Ⓔ *Instrucciones para el montaje de las bases-guías de Otto Bock*
- Ⓕ *Montageanvisning för Otto Bock skruvstädsmellandel*
- ⒶⒻ *Montageinstructie voor Otto Bock spanliften*

QUALITY FOR LIFE



**704Y7 Otto Bock Spannlift mit Bodensäule**

- 1.1 Spannlift mit Bodensäule an die Werkbank stellen und in zwei Ebenen ausrichten (Wasserwaage). Im Bereich der beiden schrägen Langlöcher die Werkbankplatte jeweils mittig vorbohren. Schrauben so eindrehen, daß sie nur leicht anliegen.
- 1.2 Das Bohrbild der Bodenplatte auf den Fußboden übertragen, bohren und dübeln. Schrauben eindrehen und leicht anziehen.
- 1.3 Befestigungswinkel mittels beigefügter Sechskantschrauben, Unterlegscheiben und Sechskantmutter am Gußkörper (senkrechte Langlöcher) vormontieren.
- 1.4 Bohrbild vom Befestigungswinkel auf Werkbankplattenunterseite übertragen, vorbohren, und Schrauben festziehen.
- 1.5 Alle anderen Schrauben festziehen.
- 1.6 Sicherheitsklemmhebel einrasten und langsam entgegen dem Uhrzeigersinn bewegen, damit sich die Klemmkraft ermäßigt. Eingebaute Gasfeder bewegt Einsatz nach oben. Nach Erreichen der vorgesehenen Position Sicherheitsklemmhebel wieder einrasten und im Uhrzeigersinn bewegen, damit die Klemmkraft zunimmt.
- 1.7 Der Schraubstock läßt sich durch Öffnen der Klemmung mit geringem Kraftaufwand (zur Überwindung der expandierenden Gasfeder) in tiefere Position drücken und um  $\pm 360^\circ$  drehen. Anschließend Klemmung wieder schließen.

**704Y8 Höhenverstellbarer Otto Bock Spannlift mit Bodensäule**

Spannlift mit Bodenplatte an die Werkbank stellen. Oberkante Werkbankplatte mit Oberkante Spannlift-Gußkörper durch Verdrehen der Spindel des runden Bodensäulentellers auf gleiche Höhe bringen. Gewindespindel mit Sechskantmutter kontern. Spannlift in zwei Ebenen ausrichten. Im Bereich der beiden schrägen Langlöcher die Werkbankplatte jeweils mittig vorbohren. Schrauben so eindrehen, daß sie nur leicht anliegen. Danach verfahren, wie ab 1.2 beschrieben.

**704Y7 Otto Bock Spannlift mit Bodensäule und 704Y3 Bodenplatte**

Das äußere Bohrbild der Bodenplatte 704Y3 auf den Fußboden übertragen, bohren und dübeln. Schrauben eindrehen und festziehen. Danach den Spannlift mit Bodensäule 704Y7 auf der Bodenplatte 704Y3 anschrauben. Gültig und zu beachten sind die Punkte 1.6 und 1.7.

**704Y7 Otto Bock Vise Lift Assist with Floor Stand**

- 1.1 Place Vise Lift Assist with Floor Stand at the workbench and adjust to two planes (bubble level). In the area of the two inclined long-holes pre-drill the holes in the benchtop center. Insert the screws and turn them only slightly.
- 1.2 Transfer the bore scheme of the floor mount plate to the floor; then drill and dowel. Tighten the screws only slightly.
- 1.3 Preassemble the attachment angle at the cast stand (vertical long-holes) using enclosed hexagon screws, washers and hexagon nuts.
- 1.4 Transfer the bore scheme of the attachment angle to the lower side of the workbench top, pre-drill the holes and tighten the screws.
- 1.5 Tighten all the other screws firmly.

- 1.6 Have the safety clamping lever engaged and slowly move counterclockwise, in order to reduce the clamping force. The installed gas cylinder moves the insert upwards. After reaching the determined position, re-engage the safety clamping lever and turn clockwise, in order to increase the clamping force.
- 1.7 By opening the clamping the vise can be easily pressed to a lower position and rotated  $\pm 360$  degrees. After that close the clamping again.

#### **704Y8 Otto Bock Vise Lift Assist – adjustable in height – with Floor Stand**

Place the Vise Lift Assist with floor mount plate at the workbench. Adjust the upper edge of the workbench top to the upper edge of the cast stand of the Vise Lift Assist by rotating the spindle of the round stand plate. Attach a counter nut to the threaded spindle. Adjust the Vise Lift Assist to two planes. In the area of the two inclined long-holes pre-drill the holes in the benchtop center. Attach the screws and turn them only slightly. Then proceed in the same way as described from 1.2.

#### **704Y7 Otto Bock Vise Lift Assist with Floor Stand and 704Y3 Floor Mount Plate**

Transfer the outer bore scheme of the 704Y3 Floor Mount Plate to the floor; then drill and dowel. Attach the screws and tighten them firmly. Screw the 704Y7 Vise Lift Assist with Floor Stand to the 704Y3 Floor Mount Plate. The points 1.6 and 1.7 should be followed.

#### **704Y7 Elévateur «Spannlift» Otto Bock sur colonne**

Français

- 1.1 Placer l'élévateur «Spannlift» sur colonne à côté de l'établi et l'aligner dans les 2 plans (niveau d'eau). Percer le bord du plateau de l'établi au milieu des deux trous ovales. Ne serrer que très légèrement les vis.
- 1.2 Tracer l'emplacement des trous de la plaque de base sur le sol, percer et enfoncer les chevilles. Ne serrer que très légèrement les vis.
- 1.3 Fixer l'équerre au corps de fonte de l'élévateur «Spannlift» (trous verticaux) au moyen des vis à 6 pans, des rondelles en U et des écrous joints à la livraison.
- 1.4 Reporter l'emplacement des trous de l'équerre sur le dessous du plateau de l'établi, percer et serrer les vis.
- 1.5 Serrer toutes les vis à bloc.
- 1.6 Enclencher le levier de serrage et le tourner lentement dans le sens inverse des aiguilles d'une montre pour réduire la force de serrage. Le ressort à air comprimé, intégré, fait monter l'élévateur. Après avoir atteint la hauteur souhaitée, enclencher à nouveau le levier et le pousser dans le sens des aiguilles d'une montre pour augmenter la force de serrage.
- 1.7 En desserrant le levier, l'étau se laisse pousser vers le bas et pivoter à  $\pm 360^\circ$  sans effort (pour surmonter la détention du ressort à air comprimé).

#### **704Y8 Elévateur «Spannlift» Otto Bock sur colonne, réglable en hauteur**

Placer l'élévateur «Spannlift», avec la plaque de base, à côté de l'établi. En tournant la broche se trouvant à la plaque de base ronde de la colonne, placer le bord supérieur du corps en fonte de l'élévateur au niveau du plateau de l'établi. Bloquer avec le contreécrou à 6 pans. Aligner l'élévateur dans les 2 plans. Percer le plateau de l'établi au centre des trous ovales de l'élévateur. Serrer légèrement les vis. Procéder ensuite comme décrit depuis le paragraphe 1.2.

# Otto Bock®



## 755E6=110 Otto Bock Vacuum Machine

For fabricating thin walled plastic laminates and for the vacuum forming of thermoplastics. Fully automatic, controlled through two contact pressure gauges. Two separately adjustable vacuum banks, each with three connections. Water trap with visual and audio control, uses 755Z20=2 Replaceable Filter.

### Basic accessories

One 709G9=17  
One 616R2=10x2

Spanner, 1.7 cm  
PVC-Hose, 10 m

### Technical Data

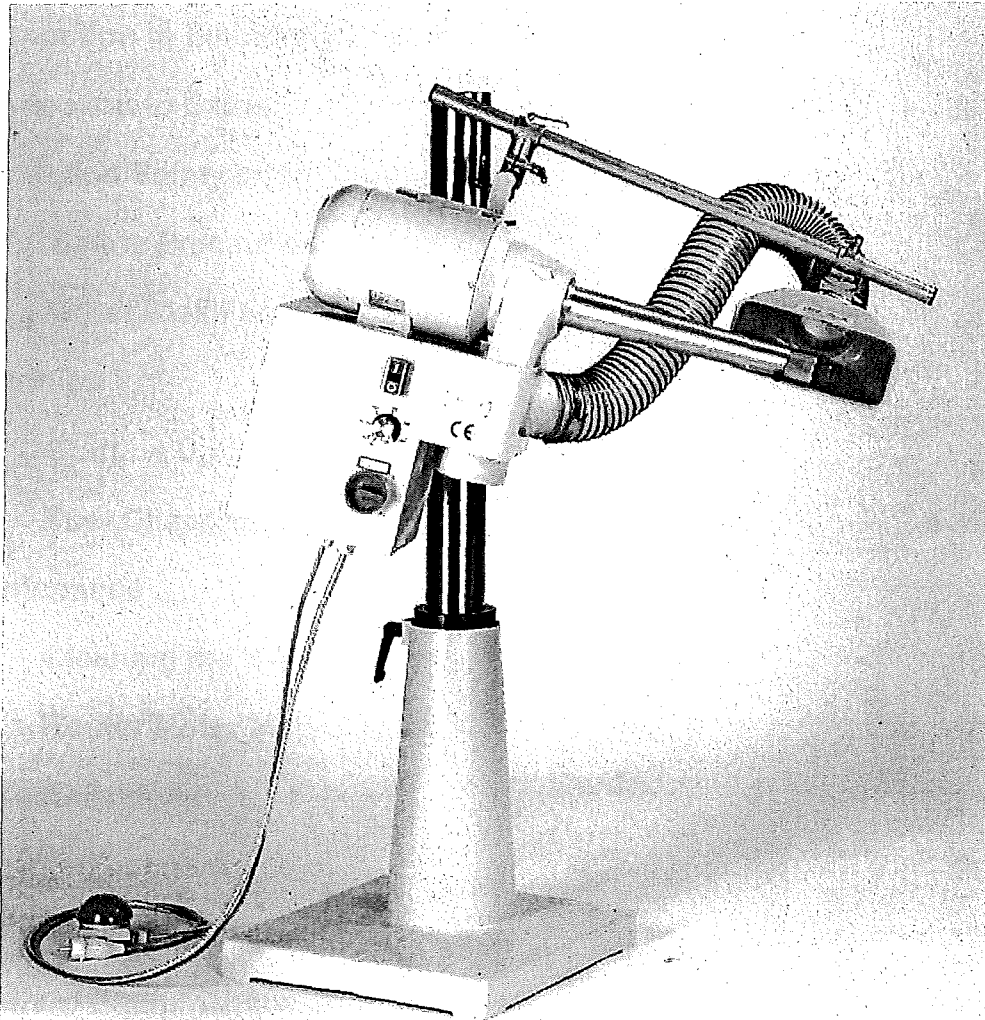
Power	110 V, 60 Hz, 0.11 kW, AC
Pressure, adjustable	220 mbar (=78 %)
Suction capacity	25 l/min
Dimensions	44 W x 23 H x 45 D cm
Vacuum Weight/Shipping Weight	17/19 kg
Color (fine detail lacquer)	gray beige (RAL 1019)

# Operating Instructions

701F20 OTTO BOCK Schleif- und Fräsmaschine „Elektronik“

701F20 OTTO BOCK Grinding and Milling Machine „Electronics“

701F20 OTTO BOCK Schuur- en Freesmachine



Stand: 27.4.2000

*Otto Bock*

FIRMENGRUPPE

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Telefon (05527) 848-1250 • Telefax (05527) 848-1450

K O M P E T E N Z   Z U   H E L F E N

## 2 Application

The OTTO BOCK Grinding & Milling Machine is suitable for use with all materials processed by OTTO BOCK, especially the woods and synthetics which are used in the field of orthopaedics. Various tools can be used to rough-cut, grind or polish. It must be noted, however, that only components which can be held and guided properly throughout processing may be used.

The use of the Machine for any other purposes will not be considered as use for which it was intended e.g. the processing of metal objects. OTTO BOCK will not accept liability for any damage which may arise if the machine is used in this way. For the machine to be used as intended, only OTTO BOCK tools may be used on it (see 8.2 and 15 below).

## 3 Description

The Grinding and Milling Machine consists of a cast stand (1) and a movable metal column (2) which can be fixed in position by means of a locking lever.

The Motor (3) and protective shaft housing are fitted onto a movable arm so that it can be positioned as required by the operator. The Locking Lever (5) is released to adjust the incline of the Motor.

The working height of the 701F20 Grinding and Milling Machine can be adjusted by turning the Hand Wheel (4).

There are two exhaust mountings on the junction box (6), one is 125 mm in diameter and the other is 100 mm in diameter. The lower mounting (125 mm) enables the machine to be connected to the central dust extraction system. The extraction shroud (7) is fitted onto the side connection and is also fixed to a rod (8) which can be adjusted by means of clamps to give exact positioning of the shroud.

Dust from the milling shaft is drawn through its protective housing (9). OTTO BOCK tools can be fixed onto the machine using the 5/8" Threaded Bolt (10) provided with the machine.

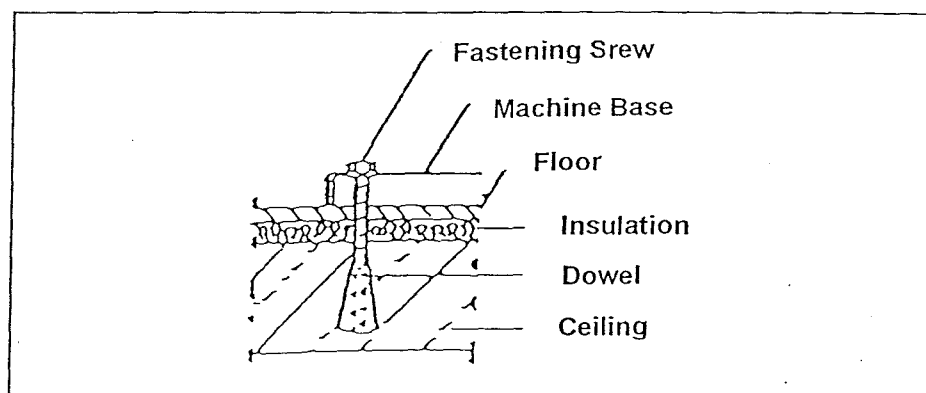
The development and manufacture of this product meet the requirements of Standard ISO 9001 in accordance with our certified Quality Management System, registration number 72779-01.

## 4 Transportation and Installation

When it is delivered, the Grinding and Milling Machine will be bolted to a wooden pallet and needs to be transported by means of a stacker or fork lift truck. The machines should only be installed in an area normally used for orthopaedics.

When the OTTO BOCK Grinding and Milling Machine has been installed and fixed to the floor, it must be checked to ensure that the arm of the machine can be adjusted vertically, horizontally and rotated by 360° about the milling column. Failure to do this could lead to the machine tipping over and somebody being injured.

The machine must be installed in a place where there is sufficient room for the arm to be rotated. The fasteners provided in the floor fastening set must be used to fix the machine to the floor.



## 5 Connection to Electrical Supply (to be carried out by skilled personnel only)

The Grinding and Milling Machine needs a 16 A<sub>K</sub> fuse protection. Electrical connection of the Grinding and Milling Machine must be provided via **fixed mains supply**. Using solely the residual current operated device for operation of the machine is not allowed. The machine can only be protected by using a FI\* safety switch of latest design complying with DIN\*\* VDE\*\*\* 0664, Section 10.85.

\*FI: German Term for Residual Current Operated Switch

\*\*DIN: German Industrial Standard

\*\*\*VDE: Association of German Electrical Engineers

The standard design OTTO BOCK Grinding and Milling Machine is equipped to take 220 V/ 50 Hz or 60 Hz.

Motors with other voltages and frequencies are available on request.

## 6 Connection to the Extraction System

The machine's dust and swarf collection elements are set out in such a way as to ensure that if the machine is being used properly and if regulations with regard to extraction are being adhered to, wood dust levels will fall far below the permitted levels.

## 6 Connection to the Extraction System

In order to achieve this, the collection elements of the machine must be used in conjunction with a central dust collection system which has a minimum air velocity of 20 m/s. The diameter of the collection system mount is 100 mm and there is a negative pressure of 771 Pa at the extraction connection.

The Grinding and Milling Machine can only be operated if the extraction system is turned on. An induction coil can be used, for instance, so that the extraction system is automatically switched on at the same time as the machine.

An automatic ventilator switch is available on request.

If flexible hoses are used to connect the machine to the extraction system, it must be ensured that they are not flammable.

## 7 Health and Safety Information

Make sure that the machine is turned off at the mains before any repairs or maintenance work is carried out!

The OTTO BOCK Grinding and Milling Machine must only be operated by skilled personnel who have been properly trained in the use of the machine!

Closely fitting clothing and a hairnet must be worn whilst operating the machine! The wearing of jewellery, such as rings and chains etc., is forbidden and all jewellery must be removed before operating the machine!

Use only OTTO BOCK grinding, milling and polishing tools on the machine as they have limited cut depth and they come with positive blade fastenings. Do not use damaged grinding, milling or polishing tools!

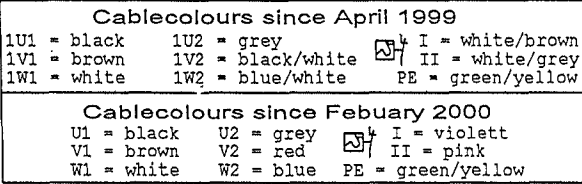
Make sure that the blades of tools are fastened securely onto the shaft. **Failure to do so could result in injury. OTTO BOCK Grinding and Milling tools can only be used at between 2800 and 3800 Rpm, otherwise recoil could occur.**

Make sure that the extraction shroud is kept as close as possible to the grinding, milling and polishing tools.

### 7.1 Precautions Against Possible Dangers

The followings risks could arise during the operation of a 701F20 Grinding and Milling Machine:

1. Spindle Breakage
2. Tool Breakage
3. Component Recoil
4. Contact with Tool.



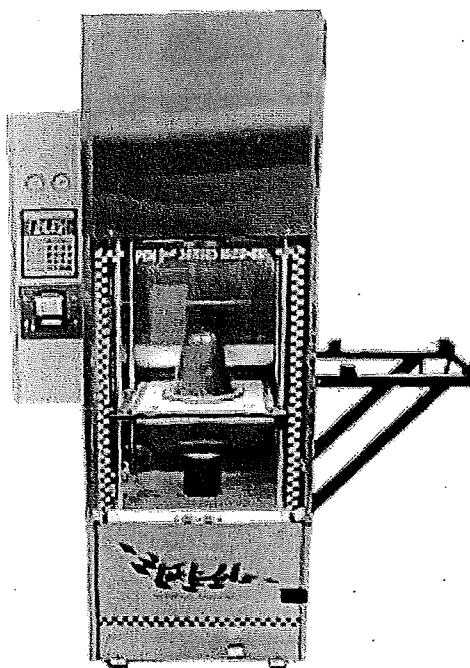
1	V 1.0	11.02.00	Kreis	Datum	03.05.99	701F20 ab Apr. 1999			Copyright by Otto Bock Schutzvermerke nach DIN 34 beachten	Otto Bock Orthopädische Industrie 37115 DUDERSTADT Germany	230V 1P/N/PE 50/60Hz		=
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PROSTHETIC DESIGN, INC.

*Pro* SERIES  
1625-TC  
Socket  
Manufacturing  
Unit



Operating  
Instructions  
Ver. 2.1

## Pro SERIES

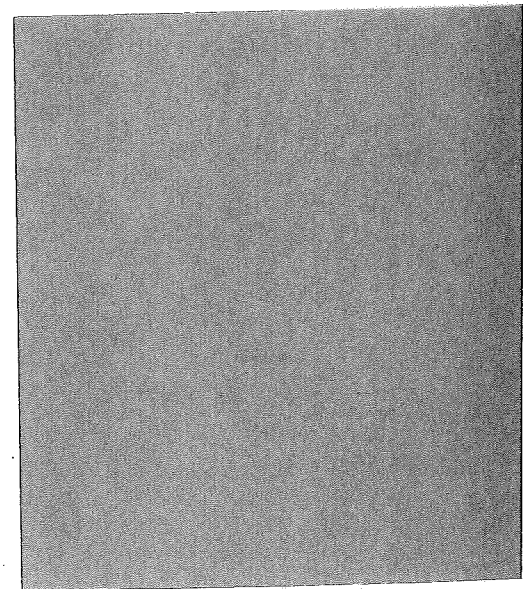
**Introduction:** The 1625-TC is an automated device designed to thermoform preformed plastic cones over foam or plaster models. The 1625-TC; or Socket Manufacturing Unit (SMU) operates within 2 cycles; a heat cycle and a vacuum forming cycle. The vacuum forming cycle lasts from 5-7 minutes and occurs after the heat cycle, which can last as long as 30 minutes, depending on operator input with respect to specific plastic parameters. The Operator also may interrupt the either cycle at any time.

The SMU also provides the operator with a printed record of the thermoforming cycle which includes the date and time, plastic heating and vacuum times, heating temperature, fan direction, plastic part and batch number, and the names of the operator, facility and patient.

**Description:** (See figures 1 and 2 on pg. 1) The SMU is 81" tall and 45" wide and 34" deep and weighs approximately 950 Lbs. It is constructed primarily of steel, and is encased in stainless steel panels. Two doors separate the operator from the carriage travel path. 2 proximity switches are located along the carriage travel path in critical locations. A vacuum table sits at the low end of the carriage travel path. The upper section of the SMU contains the heating elements and the heat distribution fan. The lower section, below the carriage travel path, contains the vacuum system, which consists of a pump, a filter, tubing, solenoid valves and a surge tank. An enclosure on the upper left side of the SMU houses the electronic control components, as well as the on/off switch. The front of the enclosure serves as the operator control panel. The SMU operates on 220VAC, single phase power, and draws an average current of 12 amps.

**Accessories:** (See figure 2 on pg. 1) Included with the SMU are specially sized platens, and vacuum table adapter disks to accommodate thermoplastic cones of 16, 18, and 25cm base diameters. A work station fixture is mounted on the right side of the smu. PDI heat deflectors are also included.

**Safety Configuration:** The SMU carriage motor will not operate while the doors, or the lower right maintenance access panel is open. The SMU is also equipped with fuses designed to protect the facility power and the SMU components in the event of current overload.



PRO SERIES

