



# JUMBO-BV-VARIO Vacuum Kerb Stone Installation Machine

## JUMBO-BV-VARIO-B

Order-No.:  
5220.0011

**V2**

Serial-No.:



Bitte beachten Sie, dass das Produkt ohne vorliegende Betriebsanleitung in Landessprache nicht eingesetzt / in Betrieb gesetzt werden darf. Sollten Sie mit der Lieferung des Produkts keine Betriebsanleitung in Ihrer Landessprache erhalten haben, kontaktieren Sie uns bitte. In Länder der EU / EFTA senden wir Ihnen diese kostenlos nach. Für Länder außerhalb der EU / EFTA erstellen wir Ihnen gerne ein Angebot für eine Betriebsanleitung in Landessprache, falls die Übersetzung nicht durch den Händler/Importeur organisiert werden kann.

Please note that the product may not be used / put into operation without these operating instructions in the national language. If you did not receive operating instructions in your national language with the delivery of the product, please contact us. In countries of the EU / EFTA we will send them to you free of charge. For countries outside the EU / EFTA, we will be pleased to provide you with an offer for an operating manual in the national language if the translation cannot be organised by the dealer/importer.

## 1 Contents

<b>1</b>	<b>Contents .....</b>	<b>2</b>
<b>2</b>	<b>EC-Declaration of Conformity .....</b>	<b>4</b>
<b>3</b>	<b>General .....</b>	<b>8</b>
3.1	Authorized use .....	8
3.2	Survey and construction .....	9
3.3	Technical Data .....	10
<b>4</b>	<b>Safety .....</b>	<b>11</b>
4.1	Safety symbols .....	11
4.2	Safety Marking .....	11
4.3	Instructions for Installation, Maintenance and Operating Personnel .....	13
4.4	Safety at work .....	13
4.5	Requirements for the Installation Location .....	13
4.6	Special Hazards.....	14
4.7	Workplaces .....	14
4.8	Behaviour in Emergencies .....	14
4.9	Testing the Safety Devices.....	14
4.9.1	Inspecting the vacuum hoses and hose clamps.....	15
4.9.2	Testing the vacuum reservoir.....	15
4.10	Protective equipment .....	15
4.11	Behaviour in Emergencies .....	15
4.12	Checking the Safety Devices .....	15
4.13	Function Control .....	16
4.14	Unauthorized transportations.....	16
4.15	Unauthorized alterations .....	16
4.16	Damages of suction plate .....	17
4.17	Wheel loader .....	17
4.18	Safety procedures using wheel loader.....	18

<b>5</b>	<b>Installation .....</b>	<b>19</b>
5.1.1	Secure the hollow forks .....	19
5.2	Adjust the distance between the forks .....	19
5.3	Connection to wheel loader .....	20
5.4	Mast/crane boom (upwards/downwards) .....	21
5.5	Adjustment of the mast in the driving direction .....	23
5.6	Fixing the lifting hose unit .....	24
5.7	Fasten lifting hose unit .....	25
<b>6</b>	<b>Operating.....</b>	<b>26</b>
6.1	General.....	26
6.2	Start-up .....	26
6.3	Adjusting the hovering position .....	27
6.3.1	Adjusting the hovering position without load .....	27
6.3.2	Adjusting the hovering position with load.....	28
6.3.3	Valve tappet adjustment .....	30
6.4	Transport.....	35
<b>7</b>	<b>Maintenance.....</b>	<b>36</b>
7.1	General.....	36
7.2	Suction Plates and Sealing Lips.....	37
7.3	Troubleshooting .....	37
7.4	Repairs .....	38
7.5	Safety procedures .....	39
7.6	<i>Hints to the identification plate</i> .....	40
7.1	Hints to the renting/leasing of PROBST devices .....	40



## 2 EC-Declaration of Conformity

EG-Konformitätserklärung; EC-Declaration of conformity ;CE- Déclaration de Conformité;  
Certificato di conformità norme CE; CE-Declaración de conformidad

**DESCRIPTION:** JUMBO-BV-VARIO Vacuum Kerb Stone Installation **Machine**  
JUMBO BV VARIO-B

**Hersteller:** **PROBST GREIFTECHNIK VERLEGESYSTEME**

**Manufacturer:** Gottlieb-Daimlerstraße 6

**Fabricant:** 71729 Erdmannhausen

**Costruttore:** Probst Greiftechnik Verlegesysteme GmbH

**Fabricante:** [info@probst.eu](mailto:info@probst.eu) [www.probst.eu](http://www.probst.eu)

### Einschlägige Bestimmungen, denen die Maschine entspricht:

Complies with the following provisions applying to it:

Spécifications respectives qui sont conformes à la machine: Idée directrice

Definizione che sono conformi alla macchina:

Cumple con las siguientes provisiones aplicables a:

### 2006/42/EG (Maschinenrichtlinie)

EC-machinery directive 2006/42/EG

ECdokumne 2006/42/EG

EG-linea di Guida CE 2006/42/EG

Directrices de la CE 2006/42/EG

### Fundstellen der harmonisierten Normen:

Applied harmonized standards in particular:

Lieux de découverte des normes harmonisées:

Luogo di accertamento delle norme armonizzate

Aplicados en particular los siguientes estándares

**DIN EN 12100-1 2003**  
**(ISO 12100-1)**

### **Sicherheit von Maschinen, Grundbegriffe, allgemeine Gestaltungsleitsätze, Teil 1: Grundsätzliche Terminologie, Methodik.**

Safety of machinery; Basic concepts, general principles for design,  
Part 1: Basic terminology, methodology.

Sécurité des machines; notions fondamentales, principes  
généraux de conception, Partie 1: terminologie de base,  
méthodologie.

Sicurezza della macchina, nozioni fondamentali, verifica della  
struttura generale, Parte 1: terminologia di base, metodologia.

Seguridad de la maquinaria; conceptos básicos, principios  
generales de diseño, parte 1: terminología básica, metodología.

EN ISO 12100-2 2003 (ISO 12100-2)	<b>Sicherheit von Maschinen, Grundbegriffe, allgemeine Gestaltungsleitsätze, Teil 2: Technische Leitsätze und Spezifikationen.</b>
	Safety of machinery; basic concepts, general principles for design; Part 2: principles and specifications.
	Sécurité des machines; notions fondamentales, principes généraux de conception; Partie 2: Principes et spécifications techniques.
	Sicurezza della macchina, nozioni fondamentali, verifica della struttura generale; Parte 2: principi e specifiche tecniche.
	Seguridad de la maquinaria; conceptos básicos, principios generales de diseño, parte 2: principios y especificaciones.
DIN EN ISO 13857 2008	<b>Sicherheit von Maschinen - Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen u. unteren Gliedmaßen.</b>
	Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs
	Sécurité des machines — Distances de sécurité empêchant les membres supérieurs et inférieurs d'atteindre les zones dangereuses.
	Sicurezza della macchina — Distanza di sicurezza al fine di evitare pericolo di passaggio sotto e basso carichi sospesi.
	Seguridad de la maquinaria — Distancia de seguridad con el fin de evitar que las extremidades superiores y inferior del cuerpo alcancen las zonas de peligro.
DIN EN 349 1993 (ISO 13854) 1996	<b>Mindestabstände zur Vermeidung des Quetschens von Körperteilen.</b>
	Minimum distance to avoid squeezing any parts of the body.
	Distances minimum afin d'éviter une contusion des parties du corps.
	Distanza minima al fine di evitare contusioni di parti del corpo.
	Distancia mínima con el fin de evitar contusiones en cualquier parte del cuerpo.
DIN 45625 02.77 e	<b>Luftschallmessung, Hüllflächen-Verfahren; Verdichter inschl. Vakuumpumpen (Verdränger-, Turbo- und Strahlverdichter).</b>
	Airborne noise measurement; enveloping surface-procedure; compressor including vacuum pump.
	Repérage au son aérien, Méthode de surface couverte; Compresseur y compris Pompes à vide (Compresseur à suppression, à turbo et à jet).
	Misurazioni del suono acustico, compressore annesso alla Pompa del vacuu.
	Medición del sonido aéropropagado, procedimiento de superficies envolventescompresor incluyendo bombas de vacío (compresor de expulsión, de turbo, de reacción).

DIN 45635-13	02.77	<p><b>Geräuschemessung an Maschinen (Verdränger-, Turbo- und Strahlverdichter).</b></p> <p>Measurement of airborne noise emitted by machines (displacement-, turbo- and jet-compressors).</p> <p>Mesure sonore sur les machines (compresseur volumétrique, centrifuge et faisceau).</p> <p>Misurazioni del livello di rumorosità emesso dalle macchine (dislocazione-,turbo-e jet compressori)</p> <p>Medición de ruidos en maquinaria (Expulsadores-Turbos y Compresores de metal).</p>
DIN EN 1012-1	07.96	<p><b>Kompressoren und Vakuumpumpen; Sicherheitsanforderungen Teil 1 und 2.</b></p> <p>Compressors and vacuum pumps; Safety requirements part 1 and 2.</p> <p>Compresseurs et pompes a vide; Exigences en matière de sécurité Partie 1 et 2.</p> <p>Compressori e pompe vacuum .Requisiti di sicurezza parte 1 e 2.</p> <p>Compresores y bombas de vacio; requisitos de seguridad Parte 1 y 2.</p>
DIN EN 1012-2	07.96	
2006/95/EG (Niederspannungsrichtlinie)		2004/108/EG (Elektromagnetische Verträglichkeit)
2006/95/EG (Low voltage standard)		2004/108/EG (Electromagnetic compatibility)
2006/95/EG (Directive basse tension)		2004/108/EG (Electromagnétique Compatibilité)
2006/95/EG (Basso voltaggio standard)		2004/108/EG (Compatibilità elettromagnetica)
2006/95/EG (Voltaje de baja tensión común)		2004/108/EG (Compatibilidad electromagnética)
DIN EN 60204-1	1997	<p><b>Sicherheit von Maschinen, Elektrische Ausrüstung von Industriemaschinen. Teil 1: Allgemeine Anforderungen</b></p> <p>Safety of machinery, electrical equipment of industrial machines. Part 1: General requirements</p> <p>Sûreté de machines, équipement électrique de machines industrielles. Partie 1: Exigences générales</p> <p>Sicurezza della macchina, impianto elettrico a norme Parte 1: Requisiti generali</p> <p>Seguridad de máquinas, equipos eléctricos de máquinas industriales. Parte 1: Requisitos generales</p>
(IEC 60204-1)	1997	

DIN EN 55014-1 09.97

**Elektromagnetische Verträglichkeit –Anforderungen an Haushaltsgeräte, Elektrowerkzeuge u. ähnliche Elektrogeräte. Teil 1: Störaussendung**

Electromagnetic compatibility – Requirements for household appliances, electric tools, and similar apparatus.  
Part 1: Emission.

Exigences de compatibilité électromagnétique vis-à-vis des appareils ménagers, outils électriques et appareils électriques semblables.  
Partie 1: émission de brouillage

Compatibilità elettromagnetica – Requisiti per l'alloggiamento degli accessori,utensili elettrici e attrezzi simili.  
Parte 1 : Emissioni

Compatibilidad electromagnética-Requisitos a aparatos electrodomésticos, Herramientas eléctricas y aparatos eléctricos similares. Parte 1: Señal de fallos.

DIN EN 55014-2 10.97

**Elektromagnetische Verträglichkeit –Anforderungen an Haushaltsgeräte, Elektrowerkzeuge u. ähnliche Elektrogeräte. Teil 2: Störfestigkeit.**

Electromagnetic compatibility – Requirements for household appliances, electric tools, and similar apparatus.  
Part 2: Immunity.

Exigences de compatibilité électromagnétique vis-à-vis des appareils ménagers, outils électriques et appareils électriques semblables.  
Partie 2: immunité de brouillage

Compatibilità elettromagnetica- Requisiti per l'alloggiamento Degli accessori,utensili elettrici e attrezzi simili.  
Parte 2: Immunità

Compatibilidad electromagnética-Requisitos a aparatos electrodomésticos, Herramientas eléctricas y aparatos eléctricos similares. Parte 2: Inmunidad en contra de interferencias.

**Authorized person for EC-dokumentation:**

Name: J. Holderied

Address: Probst Greiftechnik•Verlegesysteme GmbH; Gottlieb-Daimler-Str. 6; D-71729 Erdmannhausen

**Signature:**

Erdmannhausen, 26.07.2016.....

(M. Probst, Managing director)

## EC-Declaration of Conformity / UKCA-Declaration of Conformity

Manufacturer: Probst GmbH  
Gottlieb-Daimler-Straße 6  
71729 Erdmannhausen, Germany  
info@probst-handling.de  
www.probst-handling.com



Importer: Probst Ltd  
Unit 2 Fletcher House  
Stafford Park 17  
Telford Shropshire TF3 3DG, United Kingdom  
www.probst-handling.co.uk  
sales@probst-handling.co.uk



The machine described above complies with the relevant requirements of the following EU directives:  
The object of the declaration described above is in conformity with the relevant UK-Regulations and UK-Guidelines:

**EC-machinery directive 2006/42/EC** (Reference: OJ L 157, 09.06.2006)

UK-Regulation: Supply of Machinery (Safety) Regulations 2008 (SI 2008 No. 1597)

The following standards and technical specifications were used:

### **DIN EN ISO 12100**

Safety of machinery - General principles for design - Risk assessment and risk reduction

UK-Regulation: BS EN ISO 12100-1:2003+A1:2009

### **DIN EN ISO 13857**

Safety of machinery - safety distances to prevent hazard zones being reached by upper and lower limbs.

UK-Regulation: BS EN ISO 13857:2019

### **2014/30/EU (Electromagnetic compatibility)** / (Reference: OJ L 96, 29.03.2014)

UK-Regulation: Electromagnetic Compatibility Regulations 2016 (SI 2016 No. 1091)

### **DIN EN 60204-1 (IEC 60204-1)**

Safety of machinery, electrical equipment of industrial machines. Part 1: General requirements.

UK-Regulation: BS EN 60204-1:2018

### **DIN EN 1012-1 / DIN EN 1012-2**

Compressors and vacuum pumps; Safety requirements part 1 and 2.

UK-Regulation: BS EN 1012-1:2010

### **Authorized person for EC-documentation:**

Name: Jean Holderied

Address: Probst GmbH; Gottlieb-Daimler-Straße 6; 71729 Erdmannhausen, Germany

### **Authorized person for UK-documentation:**

Name: Nigel Hughes

Address: Probst Ltd ; Unit 2 Fletcher House; Stafford Park 17; Telford Shropshire TF3 3DG, United Kingdom

Signature, information to the subscriber:

Erdmannhausen, 02.08.2021.....  
(Eric Wilhelm, Managing director)

### 3 General

#### 3.1 Authorized use

The device (JUMBO-BV-VARIO-B) must only be used for lifting kerbstones and non-porous stone slabs with a maximum weight of **150 kg** (330 lbs) and is suitable for attaching to any type of wheel loader with a fork-lift carrier.



Prohibition

**The use of the device (JUMBO-BV-VARIO-B) in closed areas or explosion and fire-endangered ranges is forbidden (due to the petrol engine)!**



Prohibition

- The device is only designed for the use specified in this documentation.
- Every other use is not authorized and is forbidden!
- All relevant safety regulations, especially regulations of the declaration of conformity, and additional local health and safety regulations have to be observed.



**Only suction plates of the manufacturer PROBST shall be used!!!**



- Some suction plates which can be mounted to the device will reduce its carrying capacity.  
*The maximum load is indicated on each suction plate.*



- Use only suction plates which are **approved** for this device!
- **Do not exceed** the maximum carrying capacity of the suction plates!!!  
**Danger: Load (stone slabs) will fall down!**

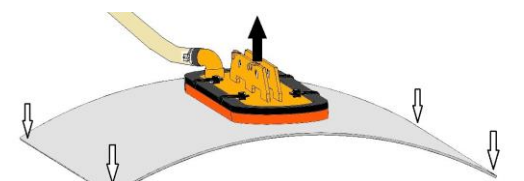
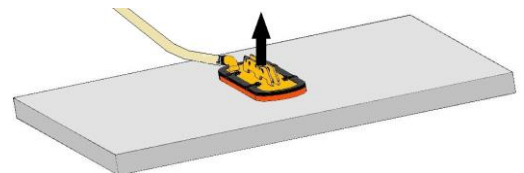


**The use of this device is only permitted in proximity to the ground.  
The Load must not be lifted above 1,8 m (70,8 inch)!**

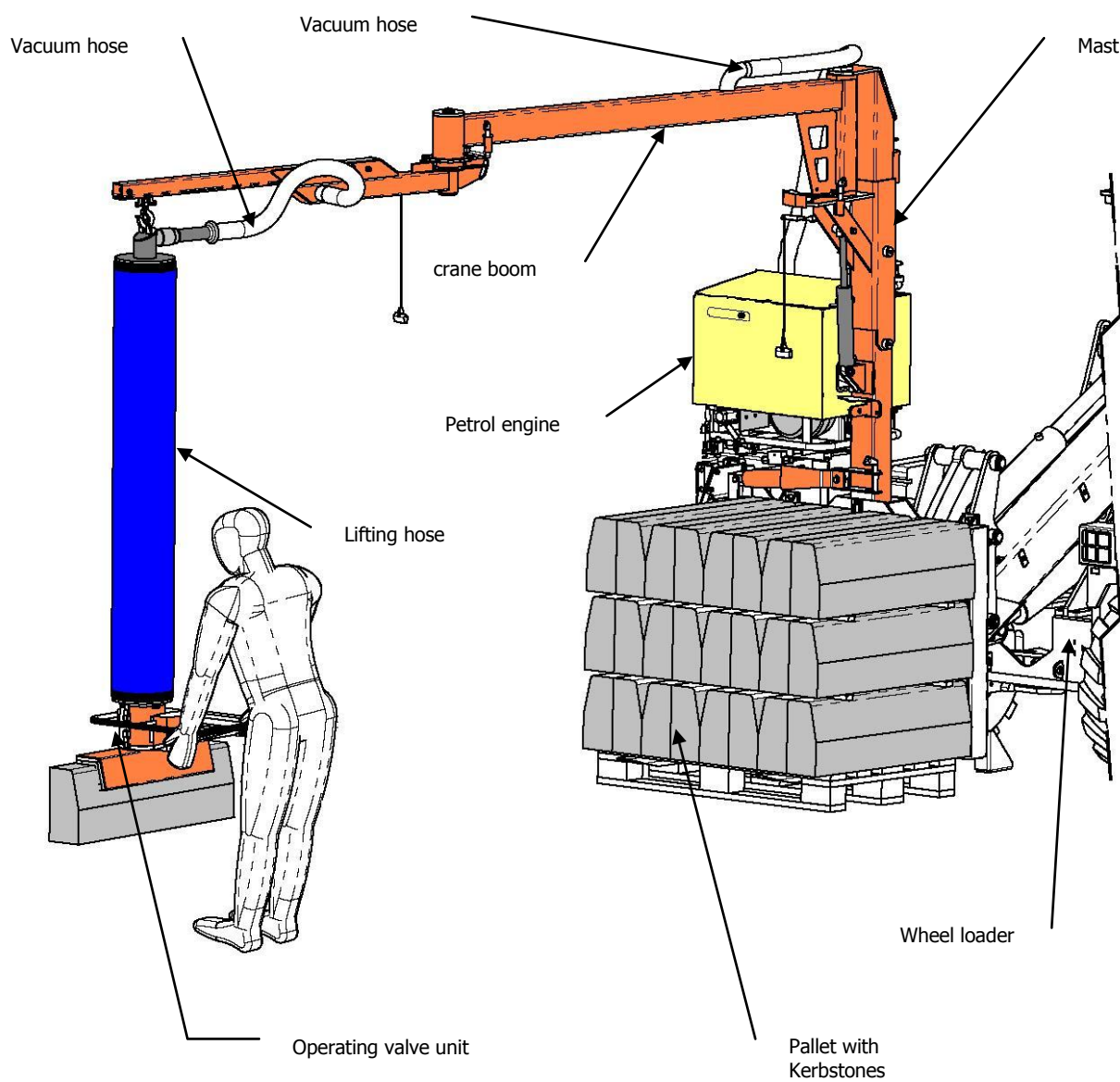


**The use of suction plates with a smaller carrying capacity than the lifting unit is forbidden!**  
**Danger: Load will fall down.**  
(It is permissible to use suction plates with a higher carrying capacity than the lifting unit)

- The load (stone slabs) which is to be sucked and transported, must have sufficient inherent stability, otherwise there is **risk of breakage** when lifting!
- Stone slabs **must not** be bend when lifting - especially take care with thin and large-sized stone slabs!
- Generally, the load (stones slab) is only to be sucked in the **middle**, otherwise the load hangs diagonally under the device and the load could break - especially when lifting large stone slabs with a small suction plate.
- Standard suction plates are not suitable for the transport of glass plates!



### 3.2 Survey and construction



### 3.3 Technical Data




Type:	JUMBO-BV-VARIO-B Vacuum kerbstone installation machine
Order-Number:	5220.0011
Operating-range:	3.500 mm (~ 138 “)
Carrying-capacity:	150 kg (330 lbs) *
Dead weight:	~520 kg (~ 1,150 lbs)
Lifting speed:	0 – 40 m/min
Single-Components:	Lifting hose unit Operating valve unit Hose cylinder extension Suction plates Vacuum compressor unit with silencer Vacuum Blower
Components pillar swing crane:	Hydraulic, vertical tilt capability diagonal in traveling direction. Capable of tilting in traveling direction via the pivotal cylinder of the loading bucket. Swing range of the crane jib approx. 360°. Height of the crane boom approx. 2.600 mm (~ 102 “). Jib/mast can be folded hydraulically and mechanically.

\* Carrying Capacity kg (lbs) depends on the vacuum lifting hose unit used.


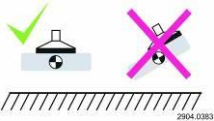





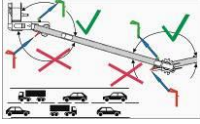
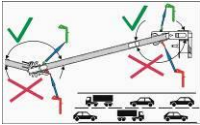

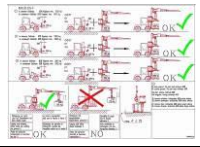
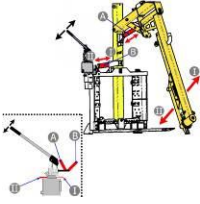
## 4 Safety

### 4.1 Safety symbols

 Danger	<b><u>Danger to life!</u></b> Identifies imminent hazard. If you do not avoid the hazard, death or severe injury will result.
 Attention	<b><u>Hazardous situation!</u></b> Identifies a potentially hazardous situation. If you do not avoid the situation, injury or damage to property can result.
 Prohibition	<b><u>Prohibition!</u></b> Identifies imminent a prohibition. If you do not avoid the prohibition, death and severe injury, or damage to property will result.

### 4.2 Safety Marking

WARNING SIGN			
Symbol	Meaning	Order-No.:	
	It is not allowed to be under hanging loads. <b>Danger to life!</b>	2904.0210 2904.0209 2904.0204	30 mm 50 mm 80 mm
	Do not lift any components off-centre.	2904.0383	
WARNING SIGN			
Symbol	Meaning	Order-No.:	Size:
	Danger of squeezing the hands.	2904.0221 2904.0220 2904.0107	30 mm 50 mm 80 mm
REGULATORY SIGN			
Symbol	Meaning	Order-No.:	Size:
	Each operator must have read and understood the operating instructions (and all safety instructions).	2904.0665 2904.0666	30 mm 50 mm

	Use ear protection	2904.0298	50 mm
	Swing range is only for the right area allowed (when working direct on roadways – <b>danger</b> of accidents with motorcars).	2904.0474	86x142
	Swing range is only for the lift area allowed (when working direct on roadways – <b>danger</b> of accidents with motorcars).	2904.0475	86x142
	ATTENTION! Clean filter <i>daily</i> with compressed air. <u>Do not</u> hit filter cartridge against any object!!! Exchange in case of much dirt.	2904.0687	Ø 50 mm
	on even ground → 80% tip over load → minimum xx kg on uneven ground → 60% tip over load → minimum xx kg	2904.0339	275x195
	Operating hand pump:  Red control lever (Pos. A) → control lever at pump I → Adjusting lever for mast orientation (right) → control lever at pump II → Adjusting lever for mast orientation (left)  Red control lever (Pos. B) → control lever at pump I → crane boom upwards → control lever at pump II → crane boom downwards	2904.0476	137x135

## 4.3 Instructions for Installation, Maintenance and Operating Personnel



The device must be installed and maintained by qualified personnel, mechanics and electricians.

Each person in your company involved in the installation, start-up, operation, maintenance, and repair of the device must have read and understood the operating instructions and especially the chapter "Safety" therein.



Your company must ensure by internal measures

- that the operators of the lifting device are properly trained,
- that they have read and understood the operating instructions,
- that the operating instructions will be available to them at any time.

The responsibilities for the tasks carried out with the device must be clearly organized and observed. There must be no ambiguity regarding responsibilities.

## 4.4 Safety at work



Danger



Prohibition



Prohibition



Prohibition



Prohibition

- The use of the vacuum lifting device is only permitted in proximity to the ground. Do not swing it over peoples heads.
- While using the vacuum lifting device is the stay of persons in the working area forbidden. Except it is indispensable. Caused of the way of using the vacuum lifting device , e.g. if the device must be leaded by hand.
- While using the vacuum lifting device be sure that there are no persons in the working area. Danger to Life!!
- The operator is not allowed to leave the control unit as long as the vacuum lifting device loaded with load. The load must always be in the range of vision of the operator.
- The manual guiding of is only allowed for vacuum lifting devices with handles.
- Do not use the vacuum lifting device to jerk seized set down load.
- Do not lift any components off-centre, because that could fall down.
- The vacuum lifting device should not be opened if the opening path of the gripping arm is blocked by a resistance (e.g. other concrete blocks or the like)!
- The capacity and the nominal width the vacuum lifting device are not allowed to cross over.
- Avoid quick or jerky movements with the vacuum lifting device. E.g. caused through driving fast over uneven grounds/site is forbidden. Because the gripping good could fall down.

## 4.5 Requirements for the Installation Location



Prohibition

- The lifting vacuum lifting device may not be used in explosion-risk rooms or areas.
- The ambient temperature may not exceed and 40 °C (if this temperature is exceeded, please consult the manufacturer before using the device).
- The vacuum lifting device must be connected to the electrical supply and the main switch of the crane from which it is suspended.  
Ensure, by means of internal instructions and regular inspections, that the area around the workplace is kept clean and tidy at all times.

## 4.6 Special Hazards



- The operating range have to be covered for unauthorized persons, especially children.
- The workplace have to be sufficiently illuminated.
- Take care handling wet, dirty and not solidified components.
- The working with the vacuum lifting device in case of atmospheric editions under 37,5° F is forbidden!  
Because the goods could be fall down caused by dampness or freezing.



- Take care in case of thunderstorm!
- Since the load is held on the suction plates of the unit by a vacuum, it will fall off as soon as this vacuum is lost.
- This can happen if the vacuum generator fails. An integrated vacuum reservoir maintains the vacuum for a short safety period whose duration depends on the porosity of the work piece surface.



- If the vacuum generator fails, lower the load immediately if this is possible. Otherwise, leave the danger area below the load immediately.



- The unit draws in large amounts of air and hair and items of clothing can be drawn into the air inlet. Do not look into the air inlet when the unit is running: it is even possible for your eyes to be drawn into the air inlet.

## 4.7 Workplaces

- The workplace of the operator is in front of the operator handle.
- The operator must stand so that he can see the vacuum gauge at all times.

## 4.8 Behaviour in Emergencies

An emergency situation exists when:

- power suddenly fails (unit switches off),
- the vacuum drops below -0.42 bar (red area of the pressure gauge).
- In such cases, lower the load immediately if this is possible. Otherwise, leave the danger area below the load immediately. The load will be dropped from the lifting device!



## 4.9 Testing the Safety Devices

The lifting device is equipped with following safety equipment:

- pressure gauge (with red danger zone display)
- alarm signal (audio)



Check this equipment

- at the beginning of each shift (when operating in shifts),
- once a week (when operating continually).
- Correct faults before operating the device. If faults occur during operation, switch the device off and correct the faults before continuing work with the device.

#### 4.9.1 Inspecting the vacuum hoses and hose clamps

- Check that all vacuum hoses and hose clamps are securely seated. Tighten any loose connections.

#### 4.9.2 Testing the vacuum reservoir



- See the sub-section "Leak test" in the section "Maintenance"
- Rectify any detected faults before using the lifting device. If a fault becomes apparent during, switch off the lifting device and rectify the fault.

#### 4.10 Protective equipment

The protective equipment must consist, according to the safety regulations of the following parts:

- Protective clothing
- Safety gloves
- Safety shoes
- Hearing protector

#### 4.11 Behaviour in Emergencies



An emergency situation exists when

- power suddenly fails (device switches off),
- the vacuum pressure drops below -0.42 bar to the red section on the scale of the vacuum gauge.

Lower the load immediately if possible. If this is not possible, immediately leave the dangerous area near the load, since it will be dropped from the device.

#### 4.12 Checking the Safety Devices

The lifting device is equipped with following safety devices:

- vacuum gauge with red danger zone
- warning device, audible

Check these devices at the beginning of each shift (when operating in shifts) or once a week (when operating continually).

##### Checking the Vacuum Gauge and the Warning Device



Attention

##### Warning device monitors the operating vacuum and power failure

⇒ Switch on the lifting device.

⇒ Place the lifting device on a stone slab or similar material and apply vacuum.

**Caution:** Simply apply vacuum to attach the suction pads to the stone slab. Do not lift the stone slab, since it may be dropped during the test!

⇒ When the vacuum has built up, lift the edge of a suction pad to create a leak.

⇒ **The reading on the vacuum gauge decreases. When the vacuum drops below -0.42 bar, the warning device must sound.**

##### Checking the Vacuum Hoses and Hose Clamps:

Check all vacuum hoses and clamps for proper mounting and tighten the clamps if necessary.

##### Checking the Vacuum Reservoir

See "Testing for Leaks" in chapter "Maintenance"

Correct any faults before using the device. If faults occur during operation, switch the device off and correct the faults before continuing work with the device.

#### 4.13 Function Control

- Before using the device check the functions and the working condition.
- Maintenance and lubrication are only permitted when device is shut down!
- Do not use the device, until all faults which can cause safety hazards are removed.
- If there are any cracks, splits or damaged parts on any parts of the device, **immediately** stop using it.
- The operating instructions must be available at the workplace every time.
- Do not remove the data-plates of the machine.
- Unrecognisable data-plates must be replaced.

#### 4.14 Unauthorized transportations



Prohibition

**All unauthorized transportations with the device are not allowed!**

- Transportation of people and animals.
- Transportation of other loads and material than described in this manual.

#### 4.15 Unauthorized alterations



Prohibition

All unauthorized alterations of the device and the use of any self-made additional equipment could cause danger and are therefore forbidden!!

#### 4.16 Damages of suction plate

##### Avoidance of damages:

To avoid damages of the rubber seal on the suction plate (chinks, abrasion) take notice, that:

during the operation (lifting, transporting and lowering) with the device, the suction plate does not brush or pump against other products or materials.

Otherwise the rubber seal on the suction plate could be damaged (danger of pressure loss).



Product could fall down. **Danger of accidents!**

#### 4.17 Wheel loader




- The hydraulic pressure of the wheel loader must be sufficient to lift the *Jumbo BV vario-b* (see chapter „technical Data“).
- Only authorized and trained personnel is allowed to operate the lifting equipment and have a valid driving-license.
- The wheel loader used with the *Jumbo BV vario-b* has to be in good working condition and in accordance to the StVO.




- All valid safety regulations for wheel loaders must be kept.
- If the wheel loader is used in public traffic, the *Jumbo BV vario-b* has to be noticed in the operation permission.
- Take care that the maximum carrying capacity is not exceeded.


#### 4.18 Safety procedures using wheel loader

- 


Prohibition

  - To prevent any injury and to reduce noise always close the silencer hood.
- 


Attention

  - **Never** set the wheel loader onto the forks.
- 


Danger

  - Never move the wheel loader with a kerb stone sucked up
  - Move the wheel loader only,
    - when the lifting unit is fixed with a chain,
    - when the boom is secured with socket pin against swing about.
- 


Prohibition

  - While using device Jumbo BV, be sure that there are no person in the working area. It is strictly forbidden to stay under hanging goods.
- 


Prohibition

  - **LIFE DANGER !!!**
  - The driver of the wheel loader have to stay on his seat as long as the *Jumbo BV vario-b* is carrying goods. and must always be able to see the load.
  - It is not allowed to put or drag kerb stones diagonally.
- 


Prohibition

  - Avoid quick or jerky movements with the device *Jumbo BV vario-b*.
- 


Danger

  - Do not use the device to jerk seized products.
- 

Danger

  - Only start the compressor, when the lever is on position „lower“ and the suction plate is not positioned over load.
- 

Danger

  - Never release the control lever, as long as a kerb stone is lifted.
- 

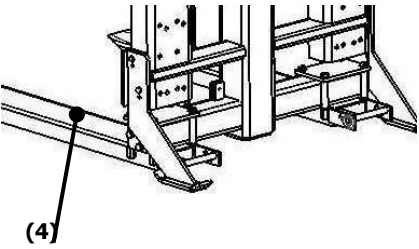
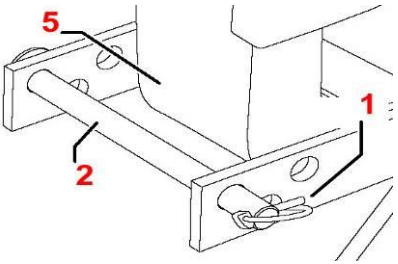
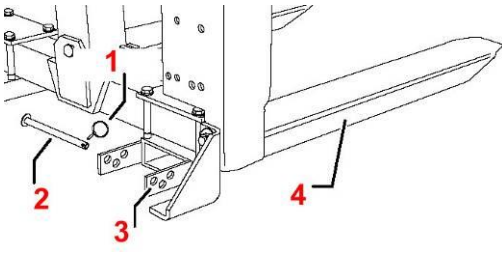
Danger

  - Switch off the vacuum blower with each work stoppage and deposit the kerb stone on the ground. **Never** make a work stoppage with lifted kerb stone, **danger** of overheating of the gear unit.
  - If the compressor should fail, switch the operating lever immediately to position „lift“. The remaining vacuum will ensure that the load will not fall down.



## 5 Installation

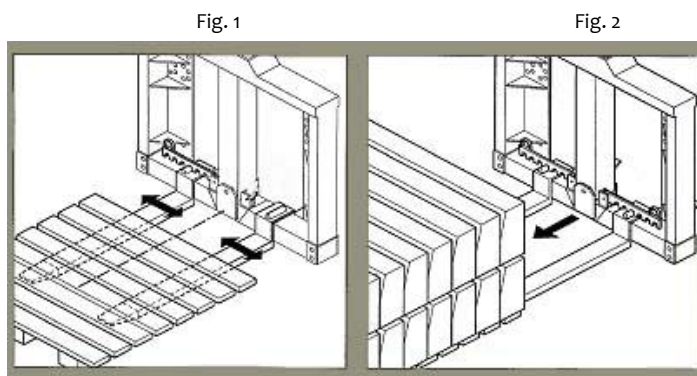
### 5.1.1 Secure the hollow forks

Picture 1	Picture 2	Picture 3
 <p>(4)</p>	 <p>5, 2, 1, 3</p>	 <p>1, 2, 3, 4, 5</p>
<ul style="list-style-type: none"> <li>The device can also be delivered custom-built with hollow forks (4) (instead with standard forks). Therefore the mounting of the lifting plate at the wheel loader is not more necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Remove safety clips (1) and socket pins (2) from the socket pin receiver (3).</li> <li>Slide in complete with the forks of the wheel loader (5) into the hollow forks (4).</li> </ul>	<ul style="list-style-type: none"> <li>Insert socket pins (2) again and secure with safety clips (1), to avoid that the forks (5) could not slide out of the hollow forks (4).</li> </ul>



If the JUMBO-BV-VARIO is to be mounted using the hollow forks on to a machine (wheel loader) that the forks are not fixed rigid, suitable measures should be taken to make sure it is secure and that the forks cannot flip up or move on one side. Otherwise there is the highest risk of accidents!

### 5.2 Adjust the distance between the forks

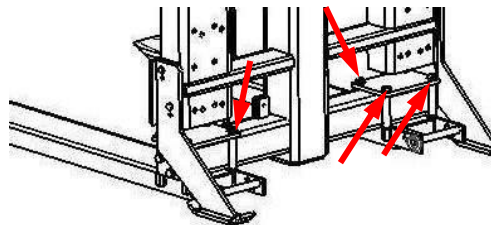


- Adjust the forks to the size of the pallet
- Move the forks **carefully** under the pallet.

**Never set the wheel loader onto the forks, because they might break!**

Control all 16 bolts (see ↗) on the hollow forks daily.

#### Hollow Forks



### 5.3 Connection to wheel loader

Fig. 1



Fig.2



Fig.3



- **Device must stand on plane ground.**
- Attach the correct size of paws (below – see arrows).
- Attach the lifting plate of the wheel loader (on lower paws)

Fig. 4

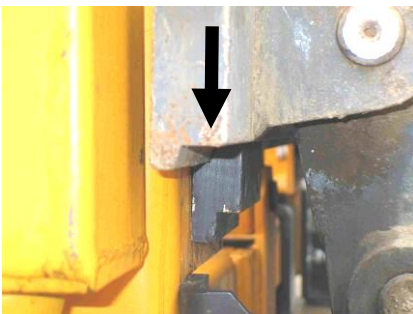


Fig. 5





Fig.6

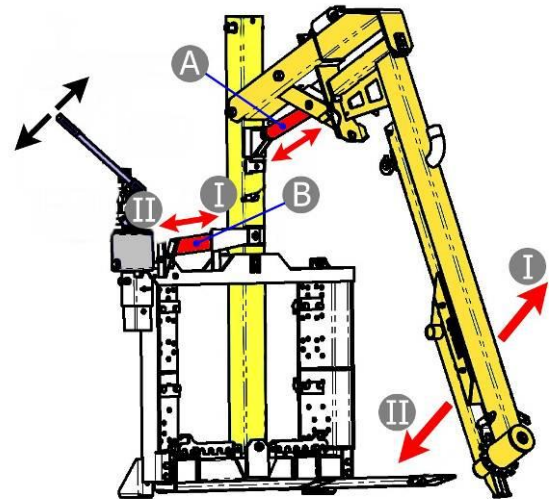
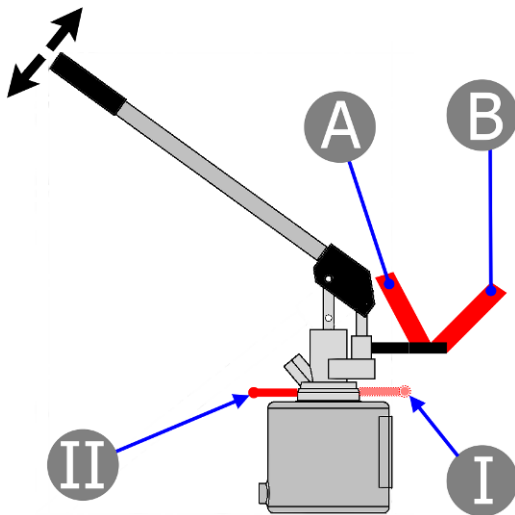


- Drive with wheel loader on block.
- Attach the correct size of paws (above).
- Tighten all screws on all 4 paws

**Check all screw-connections after several working hours and if necessary retighten!**

#### 5.4 Mast/crane boom (upwards/downwards)

 Attention	<p>The mast/crane boom may only put up, when the device (JBV vario-b) is mounted onto the wheel loader and stands with the fork tines on even ground!</p>
 Prohibition	<p>During the building up and dismantling of the mast/crane boom the stay of persons in the swing range is forbidden!</p>



Move the red lever in **Position A**



Move lever (at the hand pump) in **Position I**



Operate the lever at hand pump to move the mast upwards.



Move the red lever in **Position A**



Move lever (at the hand pump) in **Position II**.

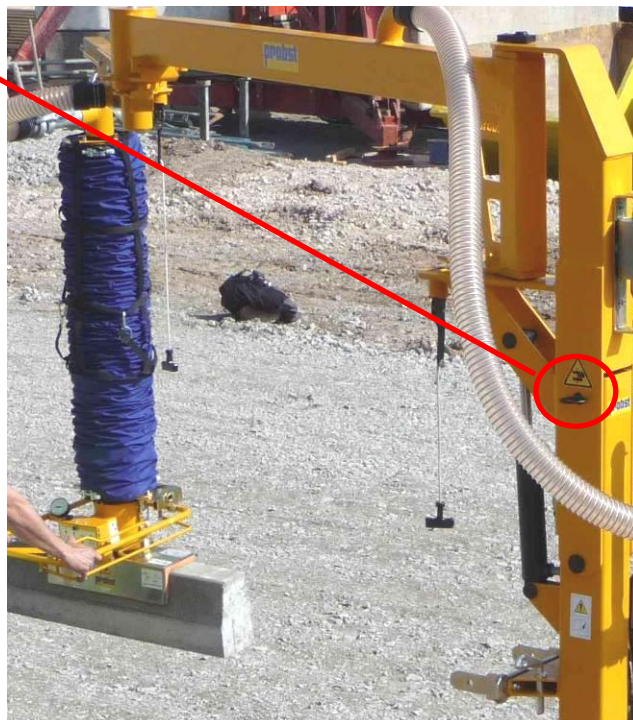


Operate the lever at hand pump to move the mast downwards.

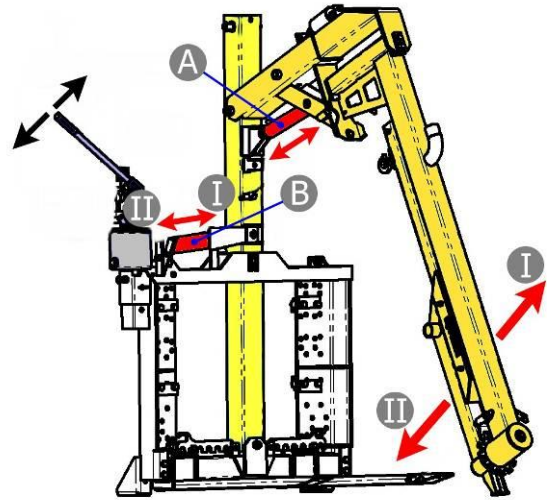
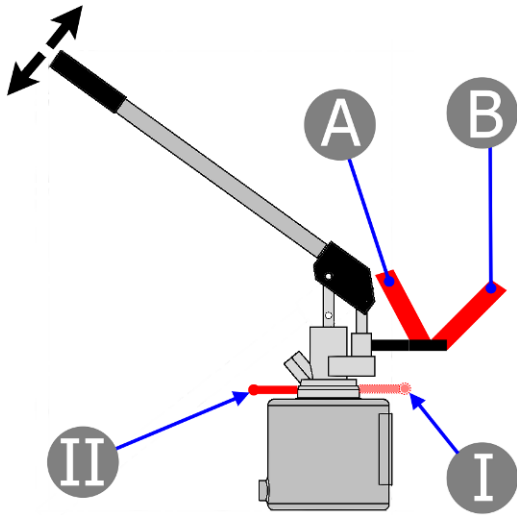


When the mast has reached the end position, fix the mast with the ring screw in these position

The adjustment of the mast in the driving direction takes place via the carriage plate of the carrier.



## 5.5 Adjustment of the mast in the driving direction



Move the red lever in **Position B**



Move lever (at the hand pump) in **Position I**



Operate the lever at hand pump to move the mast to the right.



Move the red lever in **Position B**



Move lever (at the hand pump) in **Position II.**



Operate the lever at hand pump to move the mast to the left.

- The mast is adjusted in the optimal position, when the plumb bob is in plump.



## 5.6 Fixing the lifting hose unit

Fig. 24

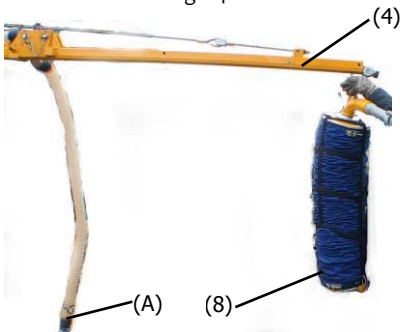


Fig.25

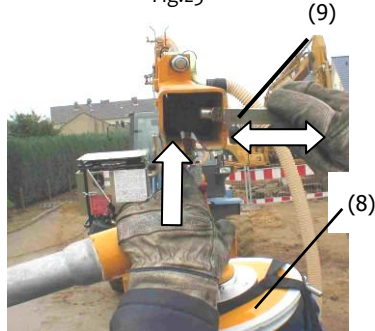


Fig. 26



- Insert lifting hose (8) at end of crane jib (4).
- Pull socket pin (9) on crane jib (4) back, insert lifting hose (8) and secure with socket pin (9).
- Connect vacuum hose (A) with lifting hose (8) and secure with clips.

Fig. 27



Fig. 28

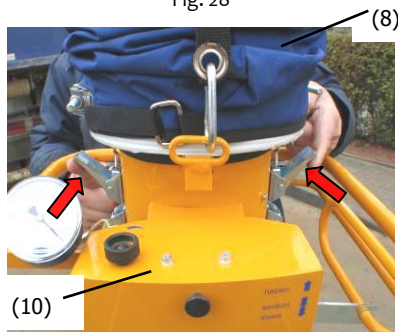


Fig.29



Connect operating valve unit with lifting hose.

- Connect lifting hose (8) with operating valve unit (10) and secure with clips.
- Connect operating valve unit (10) and suction plate and secure with clips. **Regard that the hooks are fit correct.**



## 5.7 Fasten lifting hose unit



Secure the *vacuum hose lifter unit* against swinging around before every driving with the wheel loader against swiveling by using the holder .Danger of injury!

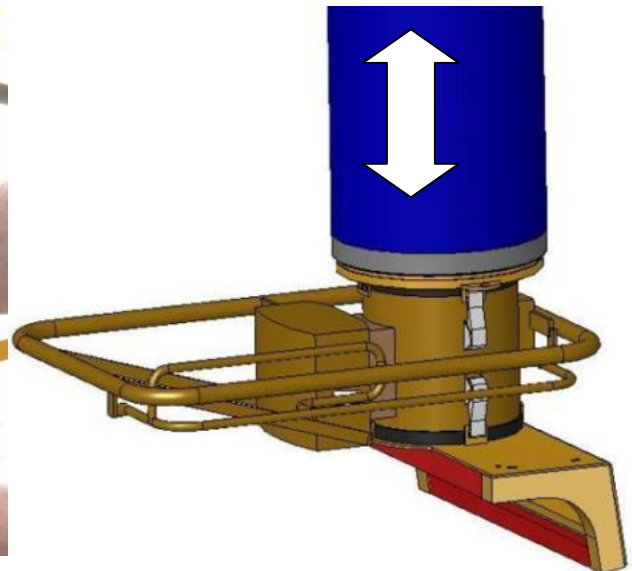
Engage both spring bolts, that the *vacuum hose lifter unit* can not slide out from the holder.



Open and remove both snap hooks off the vacuum hose corset in order to release the vacuum hose unit (for vacuum operation).



Vacuum hose is now released.



## 6 Operating

### 6.1 General

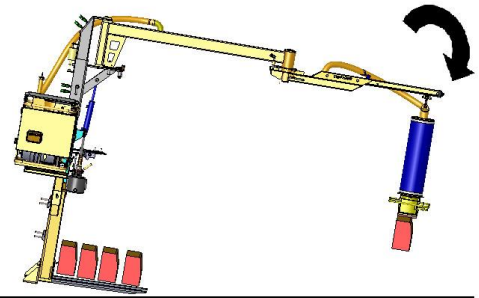


It is not allowed to lift any load (kerbstone) with the vacuum hose lifter unit, when the JUMBO-BV-VARIO is NOT attached on a wheel loader.

Danger of tilting (see Picture B)!!!



Picture A



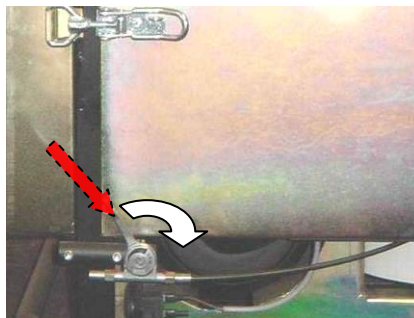
Picture B

### 6.2 Start-up

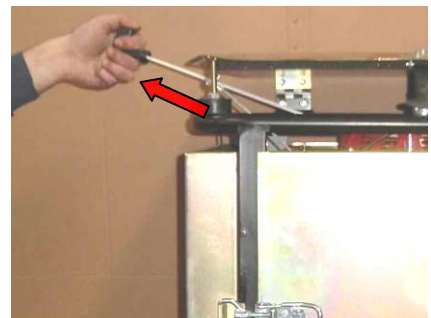
Picture 3



Picture 4



Picture 5

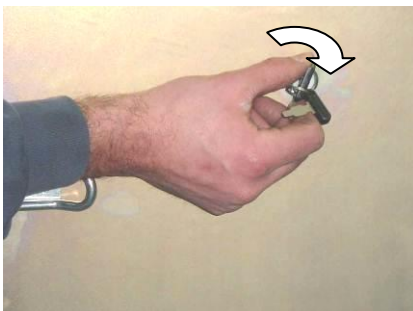


5

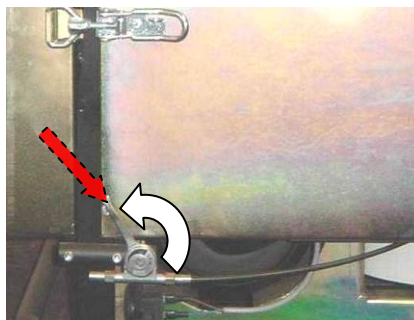
- Open petrol tap.
- Move start-/Stop lever complete on the right.
- Start the petrol engine by pulling (powerful) at the start grip. (VERSION I)

See operating instructions  
HONDA GXV 340

Picture 6



Picture 7



- Alternatively starting petrol engine at electro starter. (VERSION II)
- Then move start-/stop lever again a little on the left.



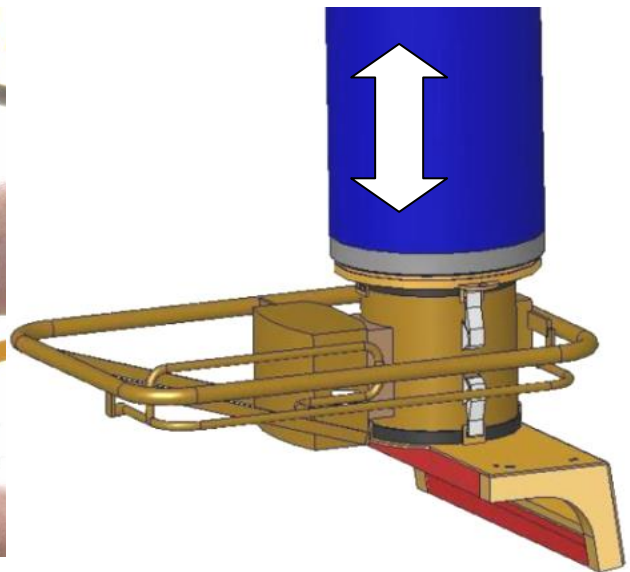
## 6.3 Adjusting the hovering position

### 6.3.1 Adjusting the hovering position without load

Open and remove both snap hooks off the vacuum hose corset in order to release the vacuum hose unit (for vacuum operation).



Vacuum hose is now released.



**The hovering position without load must be adjusted with each operation.**

The hovering position of the lifting device must be adapted to the weight of the vacuum head. A valve (2) in the tube support cylinder is used to adjust it.

When you apply the vacuum head to the load a valve is fully opened by a plunger and the valve rod in the vacuum head. The load can be sucked and lifted.

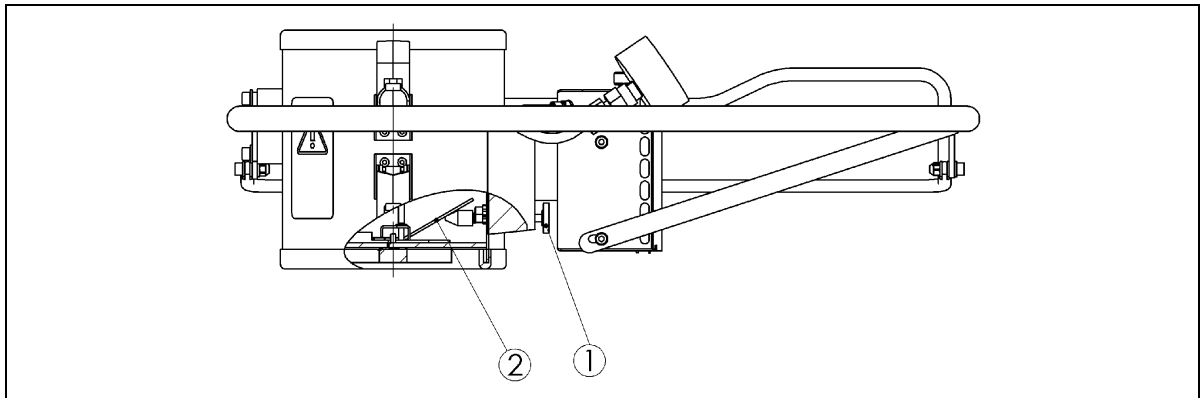
Adjustment:

- ⇒ Turn the adjustment screw (1) at the operating unit (accessible from the bottom).
  - Turn clockwise (direction of arrow) → Valve becomes opened.
  - Turn counter-clockwise → Valve becomes closed.

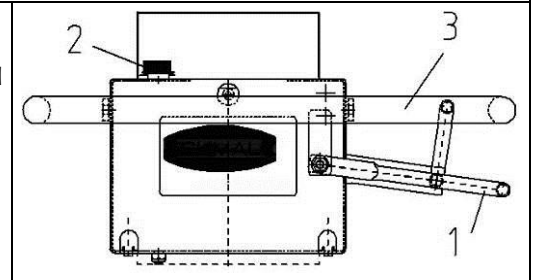
- ⇒ The farther the valve is opened the lower the device hovers.



**When the valve is closed totally the device bounce up abruptly as soon the blower is switched on!**



- Place the vacuum head directly above the load/kerb stone.
- Press the regulator lever (1) down. The lifting tube descends and the vacuum head lowers.
- Apply the vacuum head to the load. Distribute load evenly.
- Slowly push the regulator lever (1) upward. The device attaches to the load.



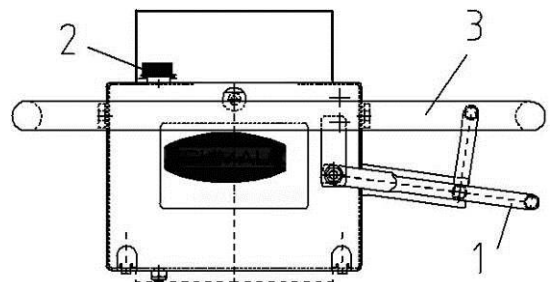
**Control lever (of operating valve unit) must not be on the position “Lift”, for more than 90 seconds. Because otherwise the blower could be damaged and fail, (all guarantee claims are void) and power is wasted unnecessarily.**

### 6.3.2 Adjusting the hovering position with load

Turn the adjusting screw (2) to adjust the hovering position with the load.

**Caution:** Do not confuse this adjustment with the hovering position without load.

- ⇒ Turn screw clockwise → the hovering position will be lower.
- ⇒ Turn screw counter-clockwise → the hovering position will be higher.



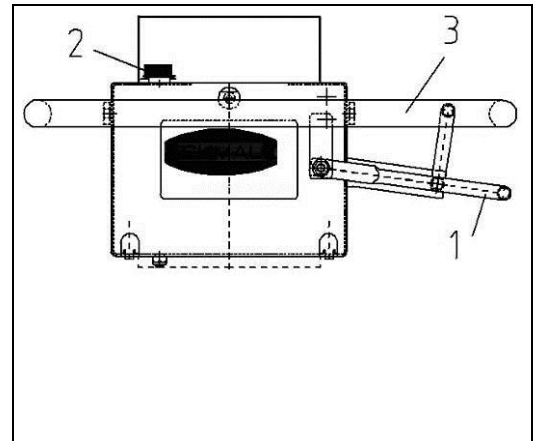
**Control lever (of operating valve unit) must not be on the position “Lift”, for more than 90 seconds. Because otherwise the blower could be damaged and fail, (all guarantee claims are void) and power is wasted unnecessarily.**



**The hovering position with load should not be adjusted to the highest position of the lifting hose unit because otherwise: the blower could be damaged and fail, (all guarantee claims are void) and power is wasted unnecessarily.**

- Slowly move the regulator lever (1) downward - "Lower". The lifting tube descends and the vacuum head lowers with the load.
- Do not operate the regulator lever control abruptly, while you firmly hold the handlebar (3), as this can cause the load to fall off, because the vacuum suddenly vanishes.
- Lower the load to the chosen position.
- To land the load push the regulator lever down all the way. Tip the valve control box a little and lift it off the load.

***For further details see the attached operating instruction. Operating valve unit/Lifting hose unit***



III. 15



III. 16



III. 17



### 6.3.3 Valve tappet adjustment

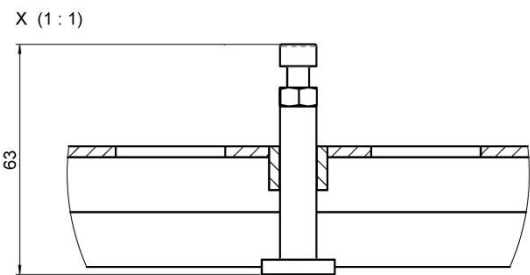
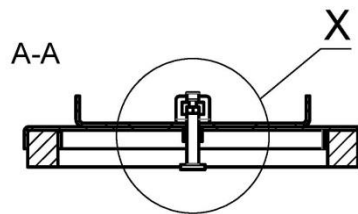
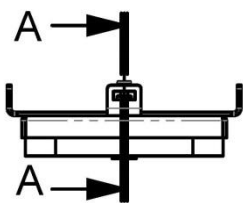
The distance of the tappet at the upper side of suction plate (mounting side operating valve unit) is adjusted to 63 mm (ex works) und secured with locknut.



Never change these distance, otherwise the load (kerb stone) could fall down. **Danger of accident!**

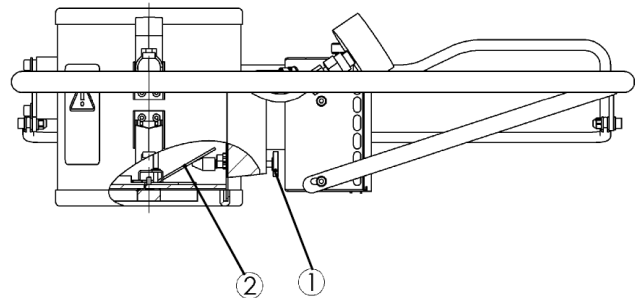
Mounting side operating valve unit

Tappet



While placing the suction plate on the load/kerbstone, the installed valve tappet will completely open the flap, which is used to adjust the hovering position without load.

As a result the suction will be easier. In addition to that a higher level of safety is achieved, while lifting up porous materials or pick up a load beyond the center of gravity.



If it happens often that the valve tappet gets jammed, while using very dusty, dirty kerbstones/plates/etc., you can continue work without the valve tappet.

Requirements for this are very airtight materials. But this needs to be tested by the user in each individual case. In case of doubt it is necessary to work **ALWAYS with valve tappet** and this needs to be **cleaned from time to time**.

When engine breakdown the load/kerb stones does not fall down (check valve).

Residual vacuum lowers the operating valve unit/lifting hose unit with the sucked in load/kerb stone slowly.

Do not use the device to jerk [sic!] seized loads/kerbstones!

No work stoppage (pause) with sucked load/kerb stone, danger of the overheating of the vacuum blower!!!

Adjust engine speed in such way that a minimum vacuum of -0.42 bar is present (see 🖱️ manometer at the operating valve unit).







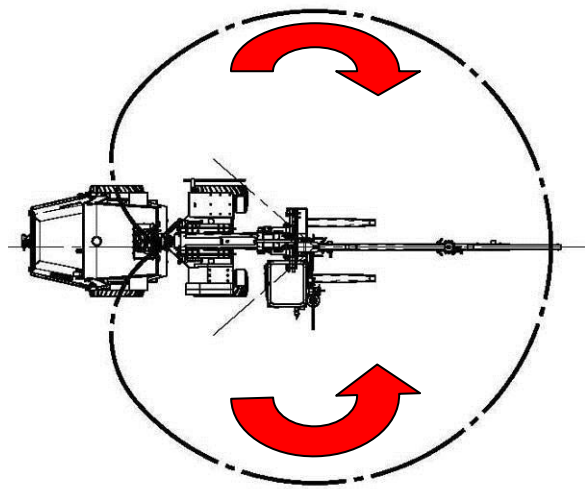
- Remove the operating valve unit from the holder (→).



- Remove both socket pins at the crane boom (↗) to swing the crane boom around 360°.



- Pull at the cord (↓) to release the locking lever at the gear ring (on the crane boom).



- Operating range of the crane boom around 360°.

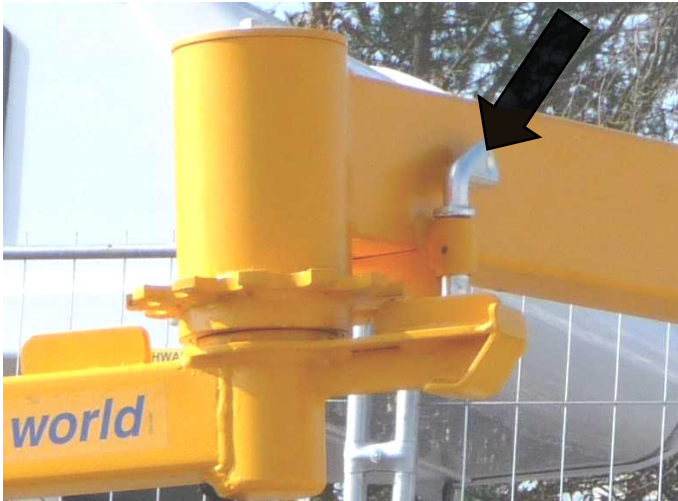


Prohibition

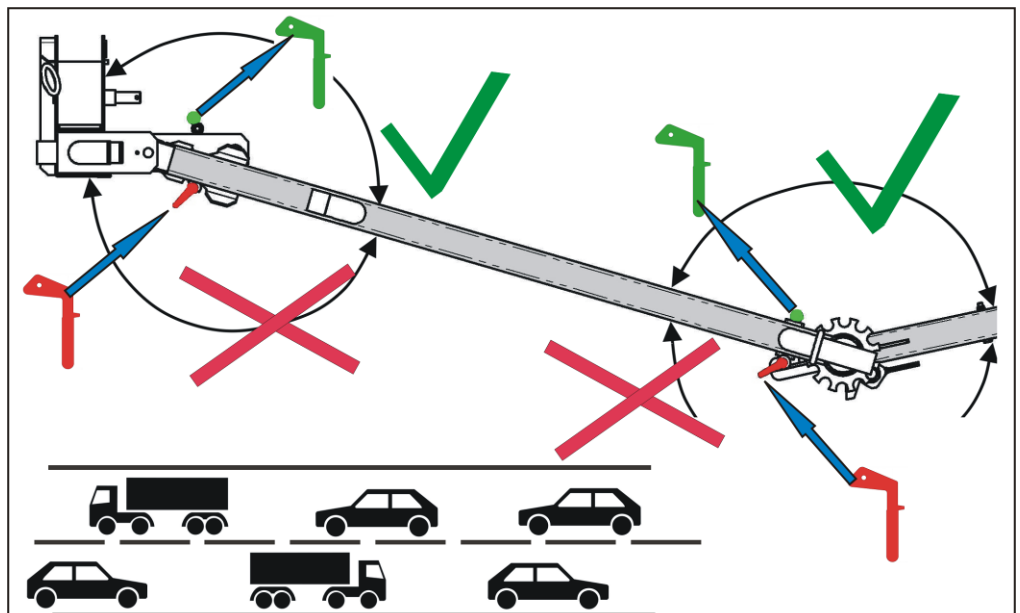
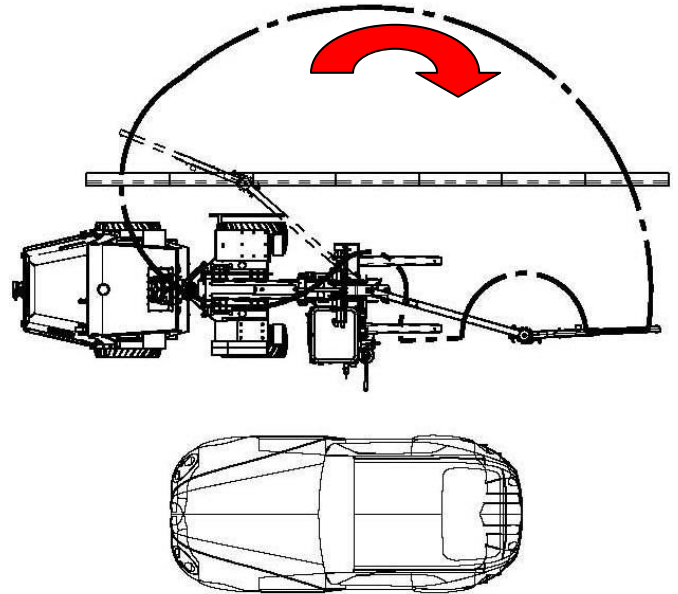
The using of the working range of the crane boom around 360° is strictly forbidden, when working direct on roadways – danger of accidents with motorcars, if vacuum lifting hose unit swings in to the roadway area!

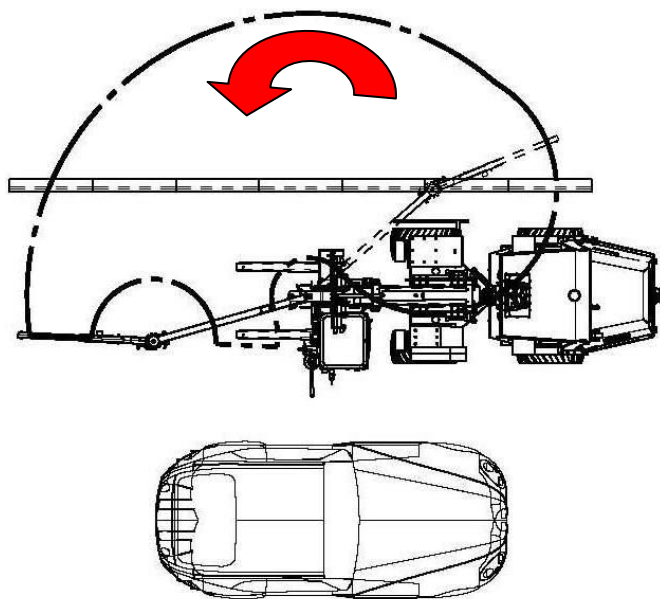


The swing area of the vacuum lifting hose must be limited for the dangerous area (trailing roadway). Therefore limit the swing area of the crane boom with the corresponding plug bolts.

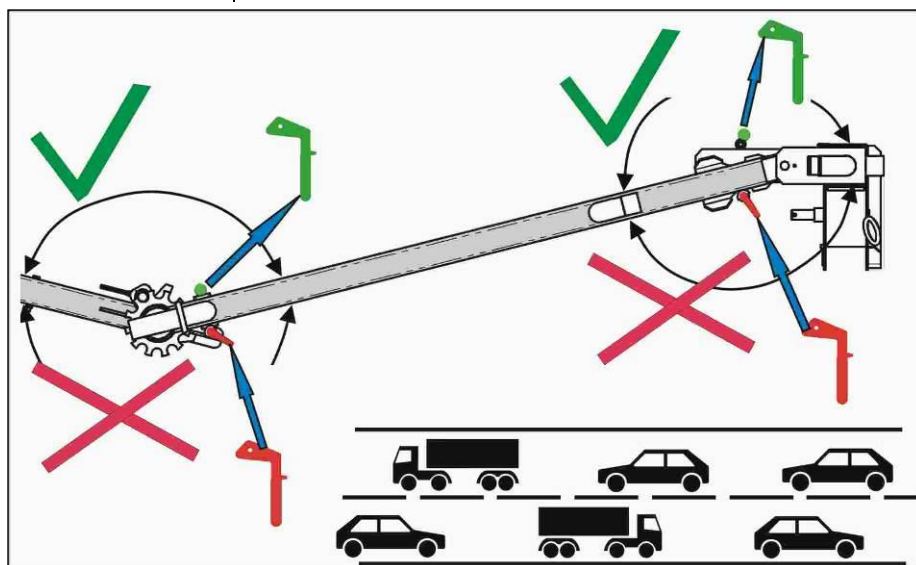


- Insert the corresponding 2 socket pins (right side in direction of travelling) at the crane boom (↗) to delimit the working range of the crane boom to the right.





- Insert the corresponding 2 socket pins (left side in direction of travelling) at the crane boom (👉) to delimit the working range of the crane boom to the left.



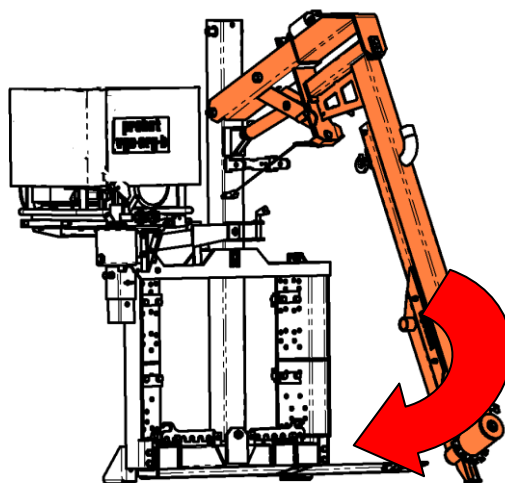


## 6.4 Transport

The device can be transported on a car trailer (considering the dimensions and allowable total weight).



The transport of the device *Jumbo BV vario-b* (e.g. on a trailer) with an unsecured crane boom is **strictly forbidden. Danger of accident!**  
Therefore fold up the crane boom unconditionally.



## 7 Maintenance

### 7.1 General



To ensure the correct function, safety and service life of the device the following points must be executed in the maintenance interval.

Used **only original spare parts**, otherwise the warranty expires.



**All operations may only be made in unpressurised, electro less and closed state of the device!**

- Only persons with the appropriate knowledge and ability are allowed to repair the device
- Before the device is used again, it has to be checked by an expert.

Service interval	Maintenance work
daily	<ul style="list-style-type: none"> <li>• Check engine oil level (see Honda operating instructions)</li> <li>• Clean air filter and blower (see fig. 1-3).</li> </ul>
After one week	<ul style="list-style-type: none"> <li>• Control and tighten all screws and connection</li> </ul>
After one month	<ul style="list-style-type: none"> <li>• Grease all joints, bolts, guidance's.</li> <li>• Grease all grease nipple every month</li> <li>• Oil change according to manufacturer data (HONDA) replacement (note the specifications).</li> </ul>
<b>Minimum 1x per year</b> (at rough conditions shorten the interval)	<ul style="list-style-type: none"> <li>• Check of all the suspension parts, bolts and straps. Check for corrosion and safety by an expert. (=&gt; BGR 500)</li> </ul>

## 7.2 Suction Plates and Sealing Lips

Clean the sealing lips with compressed air and/or water jet once per week to remove any objects and dirt such as sand, stone particles, dust etc. Clean slot in the sealing lip with a cloth and / or blow out with compressed air.

Damaged or worn sealing lips (cracks, holes, deformation) must be replaced immediately.

Use only cold solvent for cleaning the device. Do not use benzene or caustic liquids, since these will damage the hoses.

Fig. 1

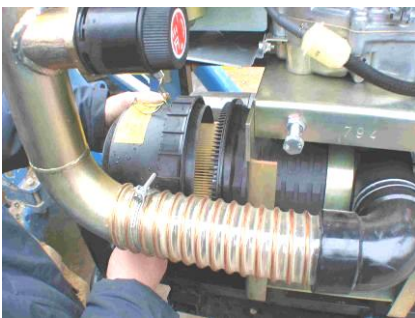
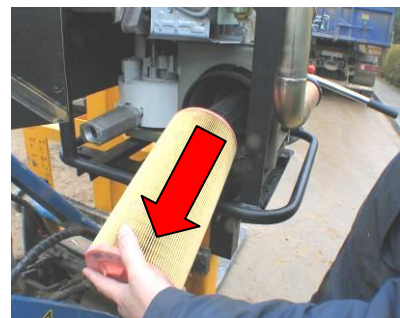


Fig.2



Fig.3



- Disassemble filter cap.
- Check seal and renew when damaged.
- Remove Filter and clean (compressed air), when necessary renew

## 7.3 Troubleshooting

Error	Cause	Repair
It is not possible to connect the Jumbo BV to the to the wheel loader.	wrong connectors (bracket)	Use the right connectors
It is not possible to pick up the stacks	The position of the forks is not correct	Adjust the forks to the stack
The boom is swinging to the wrong direction	The swinging range is not correctly set.	Adjust the swinging range.
Vacuum pressure does not reach -0,42 bar	Workpiece has cracks, openings or is porous	Workpiece is not suitable for suction
	Seal is damaged	Replace the seal
	Pressure gauge is defective	Replace the pressure gauge
	Vacuum hose is defective, connectors are not tight	Check, replace vacuum hose
Engine does not run	Fuel tank is empty	Refuel the tank
Engine does not run	Fuel valve is closed	Open the fuel valve

	Engine is defective	Check the engine/call customer service
Petrol engine goes out and immediate re-starting is not possible	Gasoline supply interrupted	Check gasoline lines and fuel level in tank.
	Ignition coil is defective	Check ignition coil and if necessary exchange.
Device just wont work/ or no Vacuum available	seal	Check the seal around baseplate, if possible remove the seal and clean around the edge of the plate, and in the groove of the seal, but do not glue the seal on.
	vacuum pipe	Check the fitting that interfaces the vacuum pipe to the plate and check that it is fully tightened and has not come loose.
	air filter and the fittings	Check the air filter and the fittings such as pipe clips etc, and make sure they are tightly sealed.
	pipes to the vacuum pumps	Check all pipes to the vacuum pumps are not damaged.
	foreign bodies	Check that there is a vacuum or pressure on the pumps and that they have not been damaged by the ingress of foreign bodies.
Load cannot be sucked. Prescribed negative pressure cannot be achieved no more. Negative pressure diminishes itself too fast, when switching the device off.	Leakage at vacuum plate by deposited dirt between rubber seal and suction plate.  Rubber seal wore or porously (aging after effect of UV radiation)	Remove rubber seal from suction plate. Clean suction plate and slot in rubber seal. Draw up and fasten rubber seal on suction plate again.  If necessary exchange rubber seal.

For repair at the lifting hose unit, the operating valve unit, petrolengine see the references in the respective operating instructions.

## 7.4 Repairs

- Only persons with the appropriate knowledge and ability are allowed to repair the device
- Before the device is used again, it has to be checked by an expert.



**For all repairs the device must be completely shut down!**

## 7.5 Safety procedures



**The check by an expert must be proved!**

[illegible]

## 7.6 Hints to the identification plate



Type, serial-number and production year are very important for the identification of your device. If you need information to spare-parts, warranty or other specific details please refer to these information.

The max. carrying capacity is the maximum load which can be handled with the device. Do not exceed this carrying capacity.

If you use the device in combination with other lifting equipment (Crane, chain hoist, forklift truck, excavator) consider the deadweight of the device

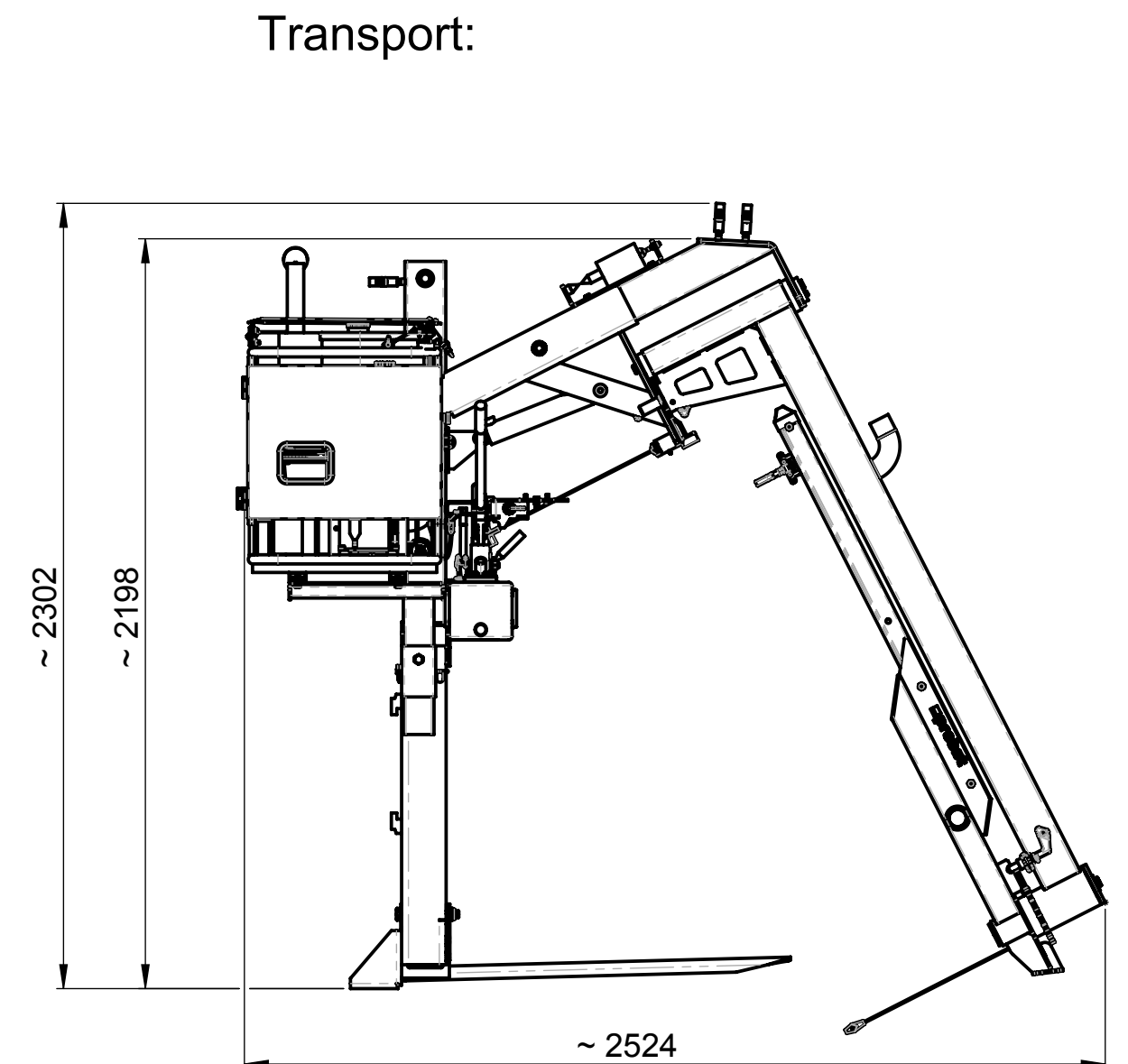
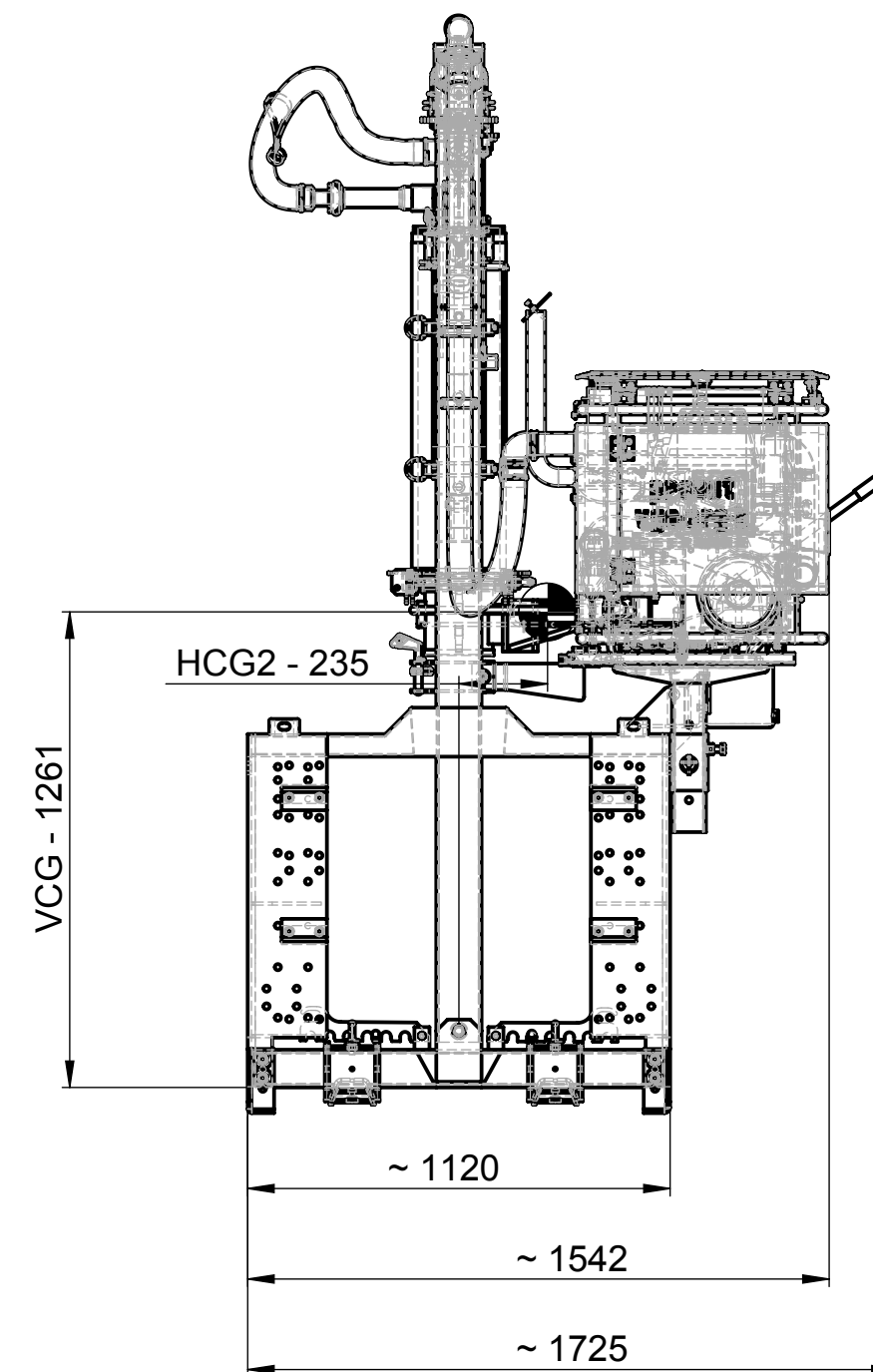
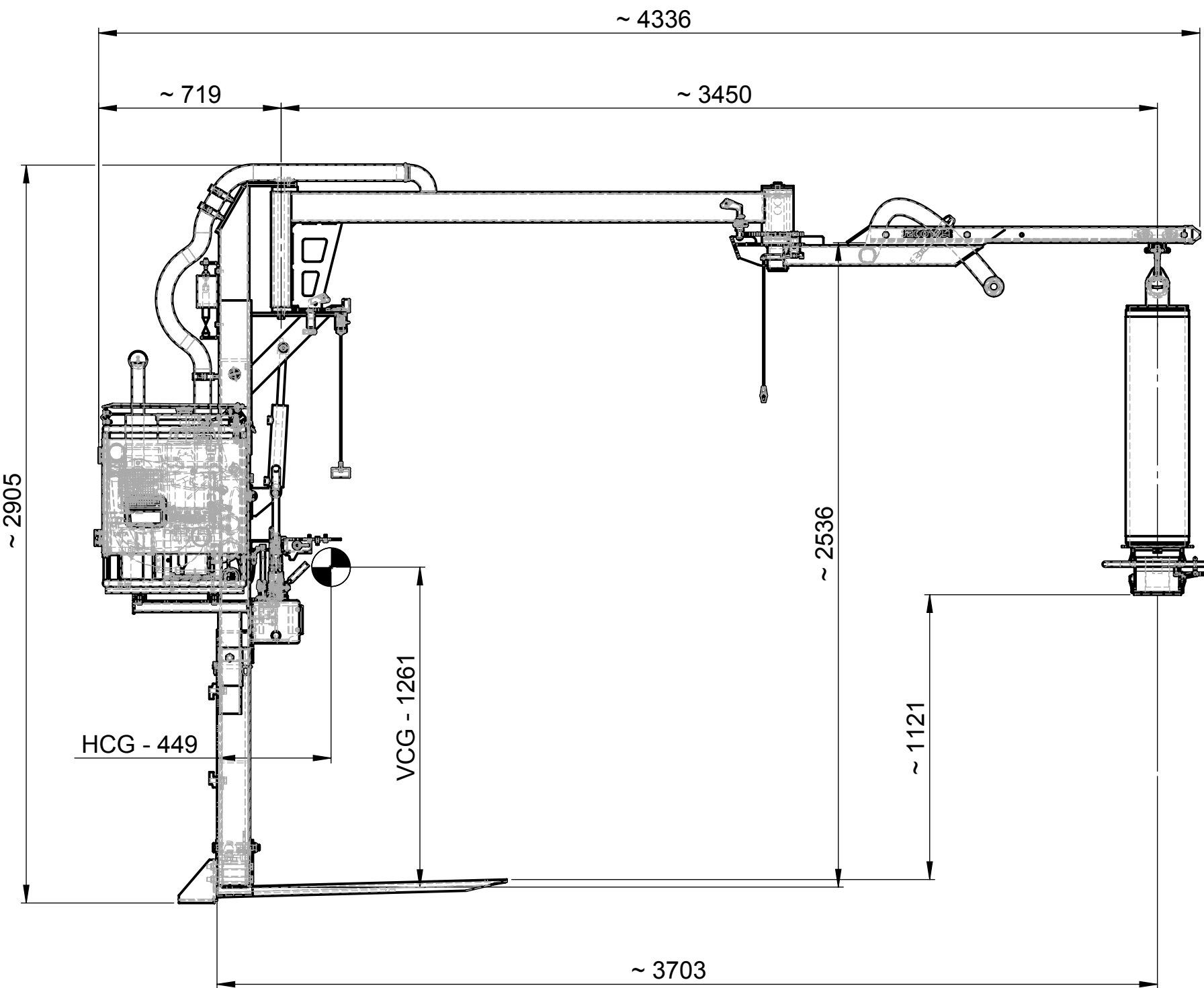


Example:

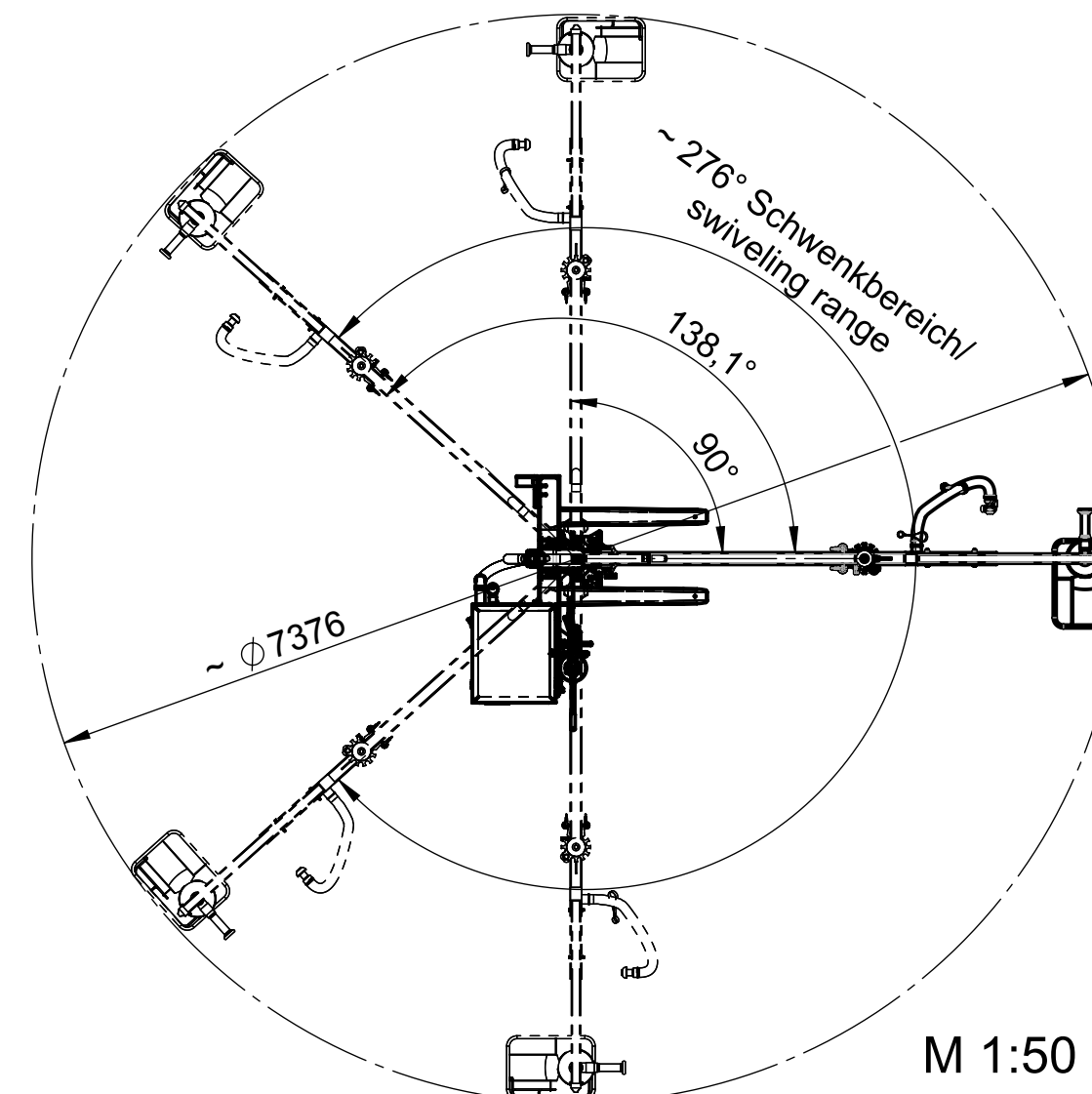
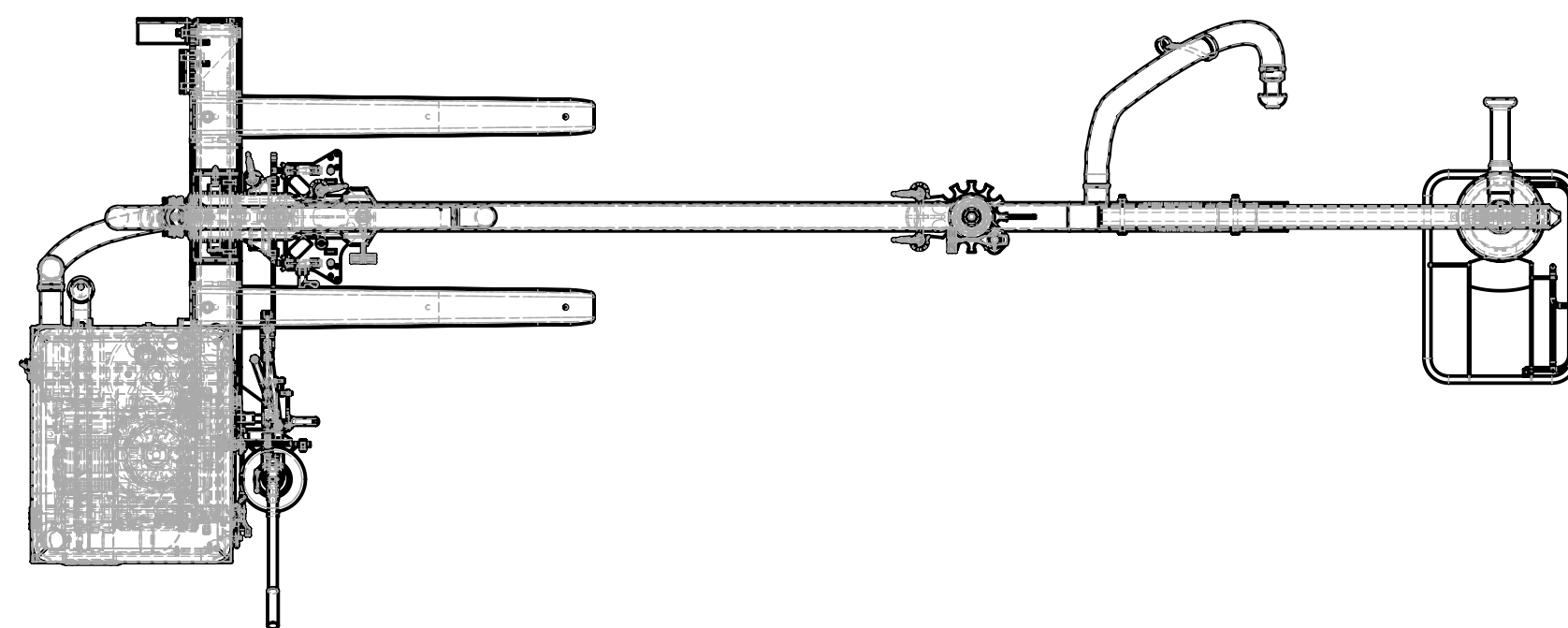
## 7.1 Hints to the renting/leasing of PROBST devices



With every renting/leasing of PROBST devices the original operating instructions must be included unconditionally (in deviation of the users country's language, the respective translations of the original operating instructions must be delivered additionally)!



Transport:



HCG = horizontal centre of gravity  
HCG2 = horizontal centre of gravity sideways  
VCG = vertical centre of gravity

Tragfähigkeit / Working Load Limit WLL:

150 kg / 330 lbs

Eigengewicht / Dead Weight:

590 kg / 1300 lbs

Product Name:

Vacuum kerbstone installation machine JUMBO-BV-VARIO-B

**probst**  
handling equipment

© all rights reserved conform to ISO 16016

Datum Name  
Erst. 11.8.2010 Ralf.Northe  
Gepr. 22.3.2019 R.Seidel

Benennung  
Jumbo BV Vario-b Vakuum-Bordstein-Verlegegerät, Benzinantrieb

Artikelnummer/Zeichnungsnummer

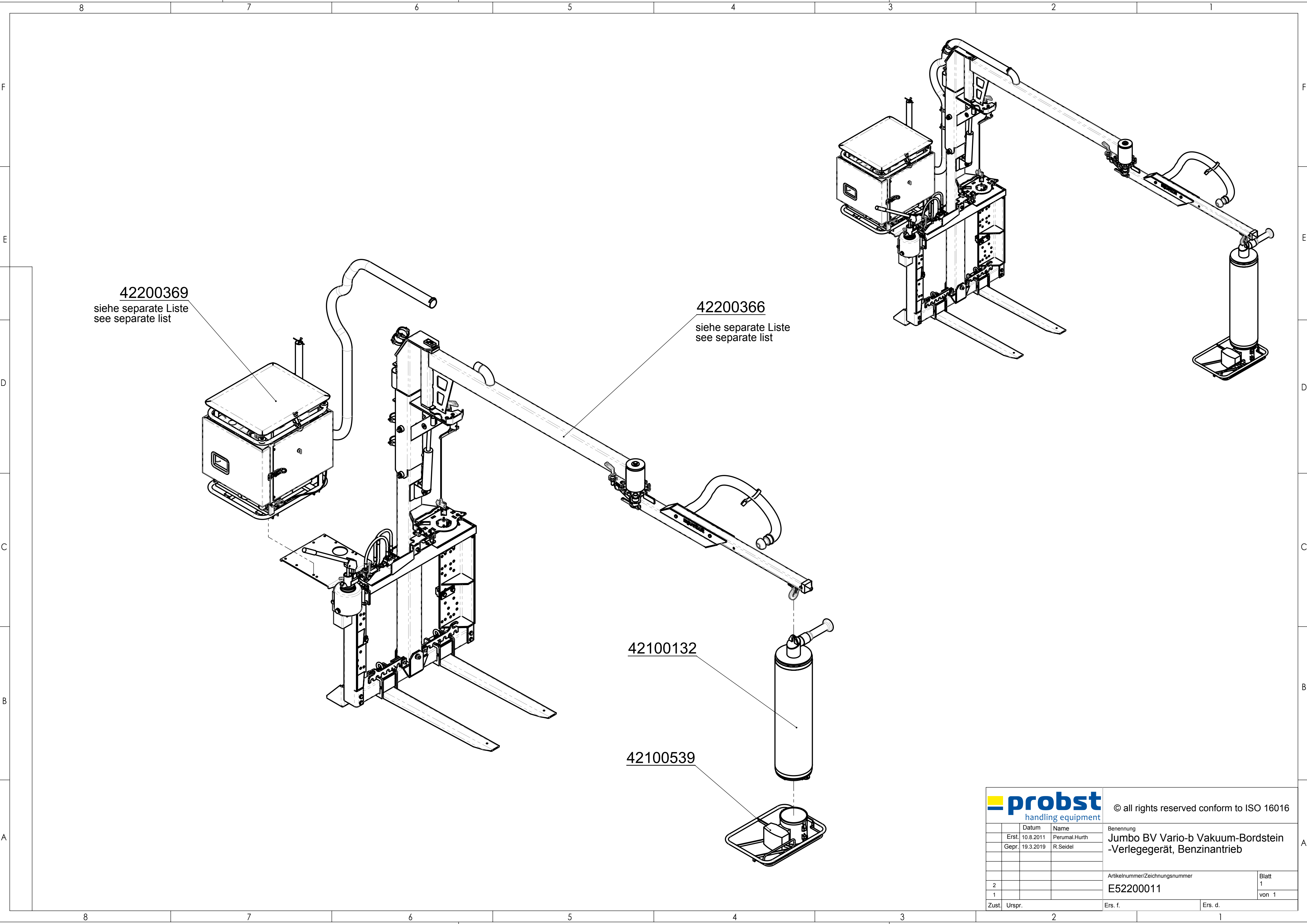
D52200011

Zust. Urspr.

Ers. f. Ers. d.

Blatt 1 von 1





42200369  
siehe separate Liste  
see separate list

42200366  
siehe separate Liste  
see separate list

42100132

42100539



© all rights reserved conform to ISO 16016

Datum	Name
Erst. 10.8.2011	Perumal.Hurth
Gepr. 19.3.2019	R.Seidel

Benennung  
**Jumbo BV Vario-b Vakuum-Bordstein-Verlegegerät, Benzinantrieb**

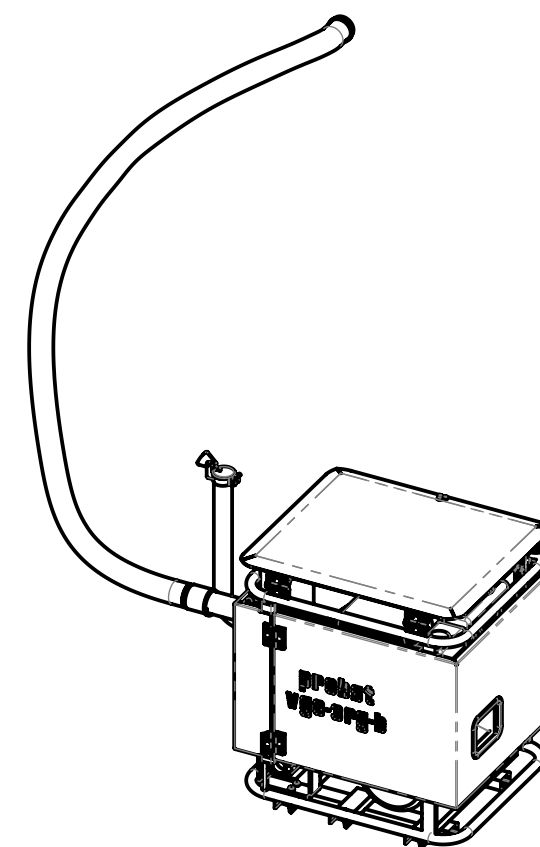
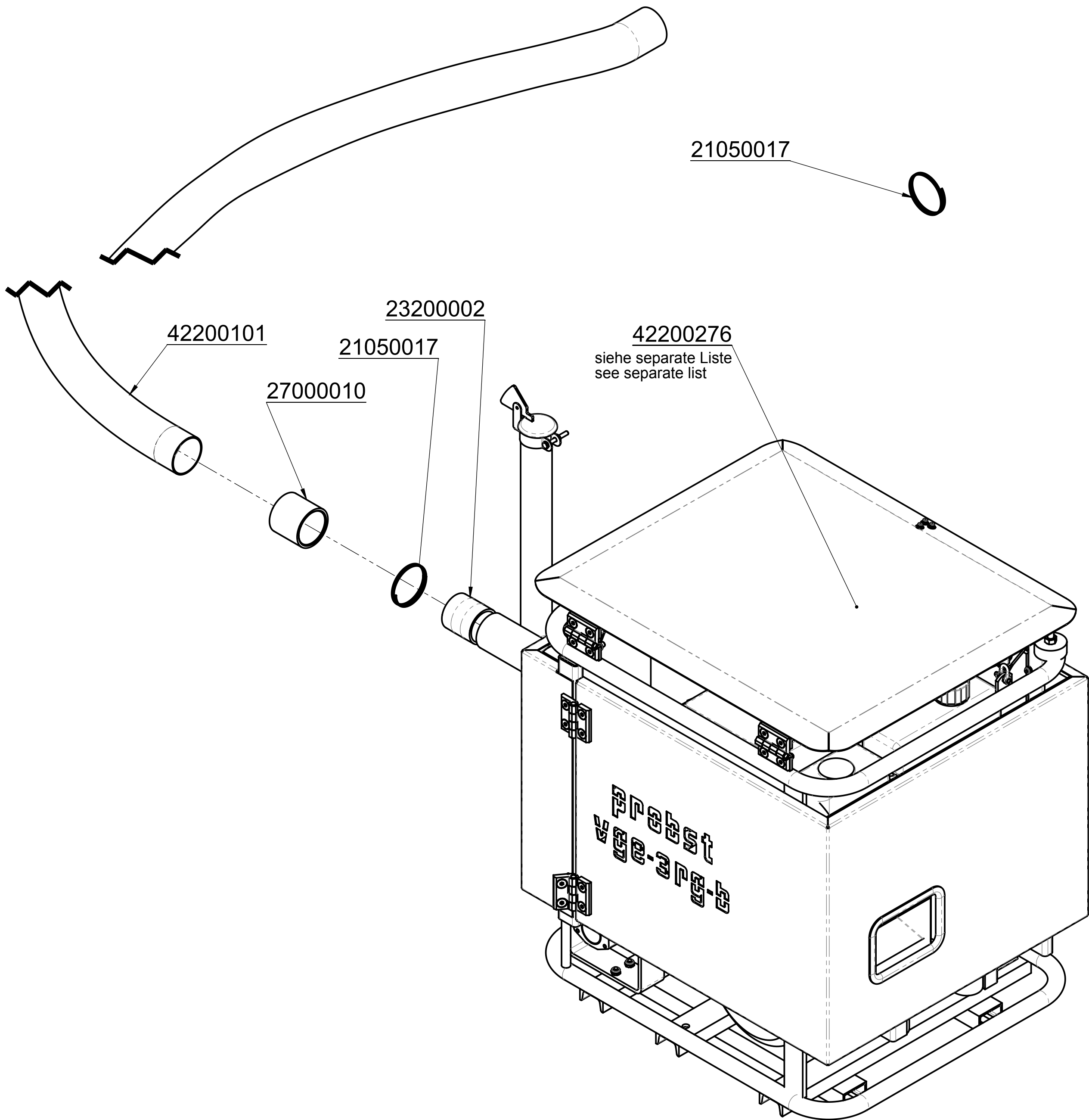
2	1
Zust.	Urspr.

Artikelnummer/Zeichnungsnummer		Blatt
E52200011		1
		von 1

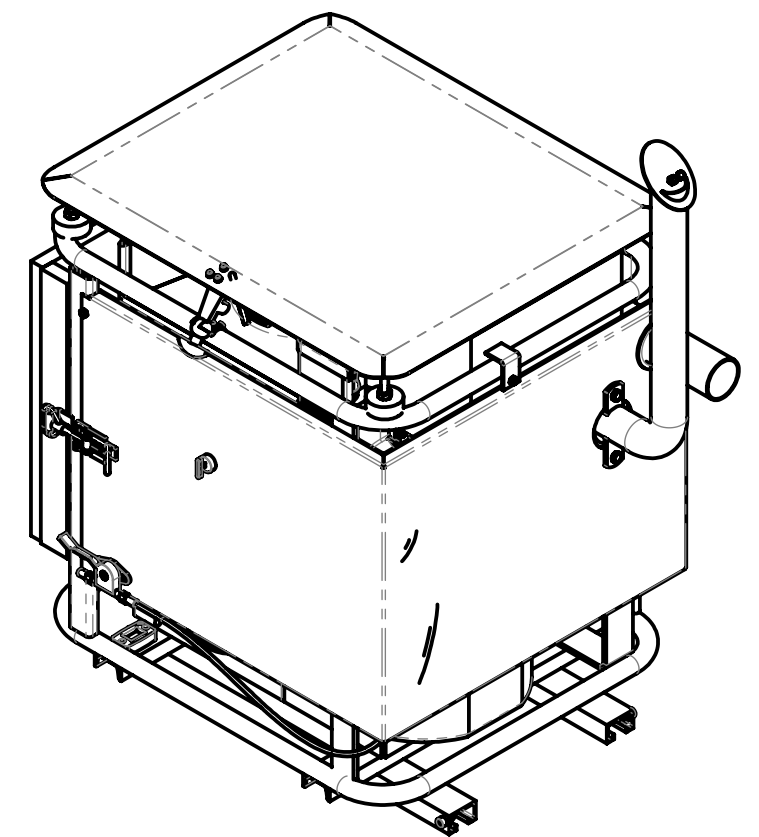
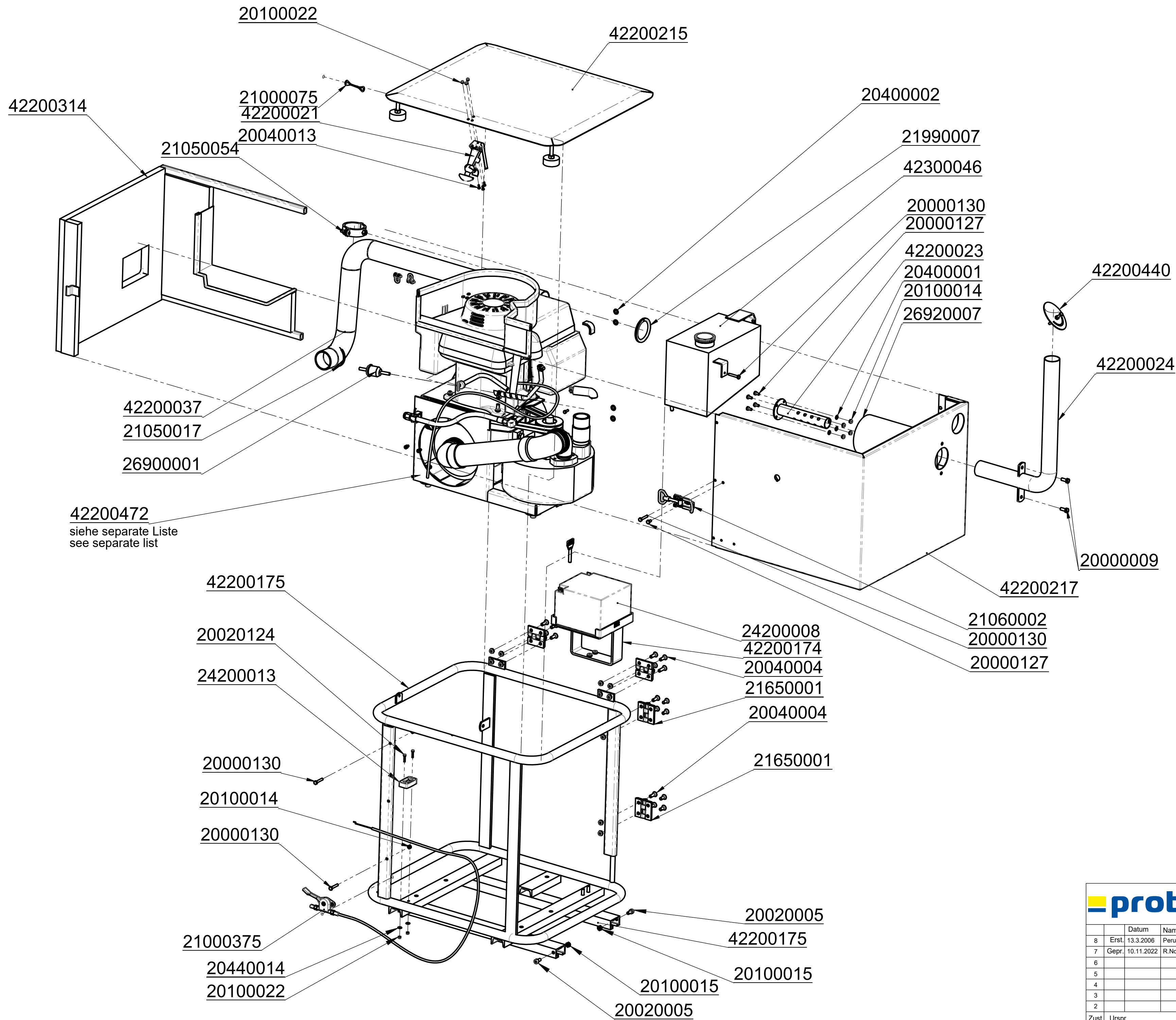
Ers. f.

Ers. d.





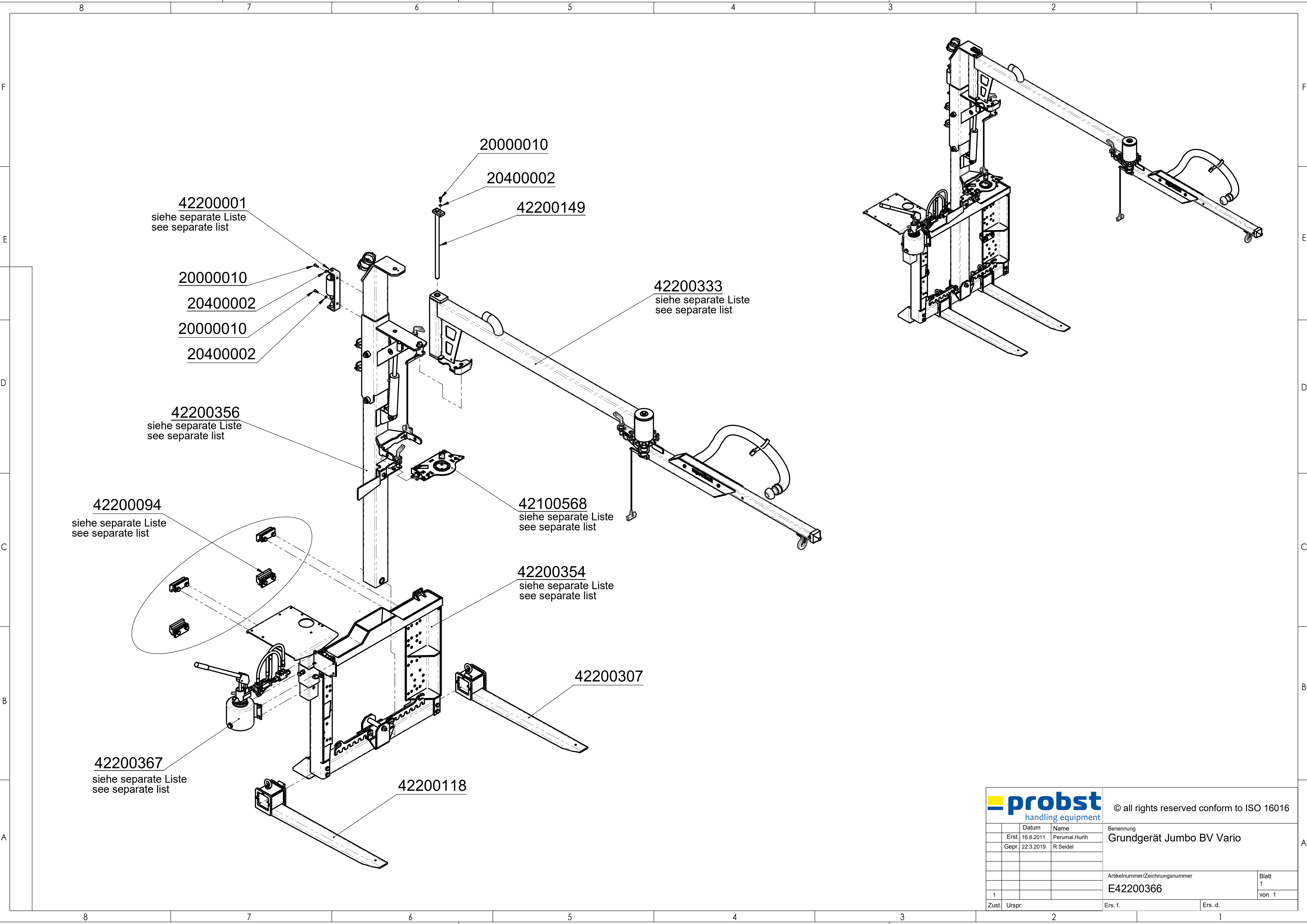
			© all rights reserved conform to ISO 16016		
	Datum	Name	Benennung		
Erst.	24.1.2014	Ralf Northe	Vakuum-Gebläseeinheit kpl. mit Anbauteilen für Jumbo BV-b mit E-Start, VGE-3RGB-E und Gehäuse Gebläse BV		
Gepr.	15.9.2016	I.Krasnikov			
			Artikelnummer/Zeichnungsnummer		Blatt
			E42200369		1
					von 1
Zust.	Urspr.		Ers. f.		Ers. d.



				© all rights reserved conform to ISO 16016			
				Benennung			
8	Erst.	13.3.2006	Perumal.Hurth	Vakuum-Gebläseeinheit für Jumbo BV-b mit E-Start, Gebläse VGE-3RGb-E, und Gehäuse (GXV 390)			
7	Gepr.	10.11.2022	R.Northe				
6							
5							
4							
3				Artikelnummer/Zeichnungsnummer			Blatt
2				E42200276			1
Zust.	Urspr.			Ers. f.		Ers. d.	von 2







© all rights reserved conform to ISO 16016

Datum	Name
Erst. 16.8.2011	Perumal.Hurth
Gepr. 22.3.2019	R.Seidel

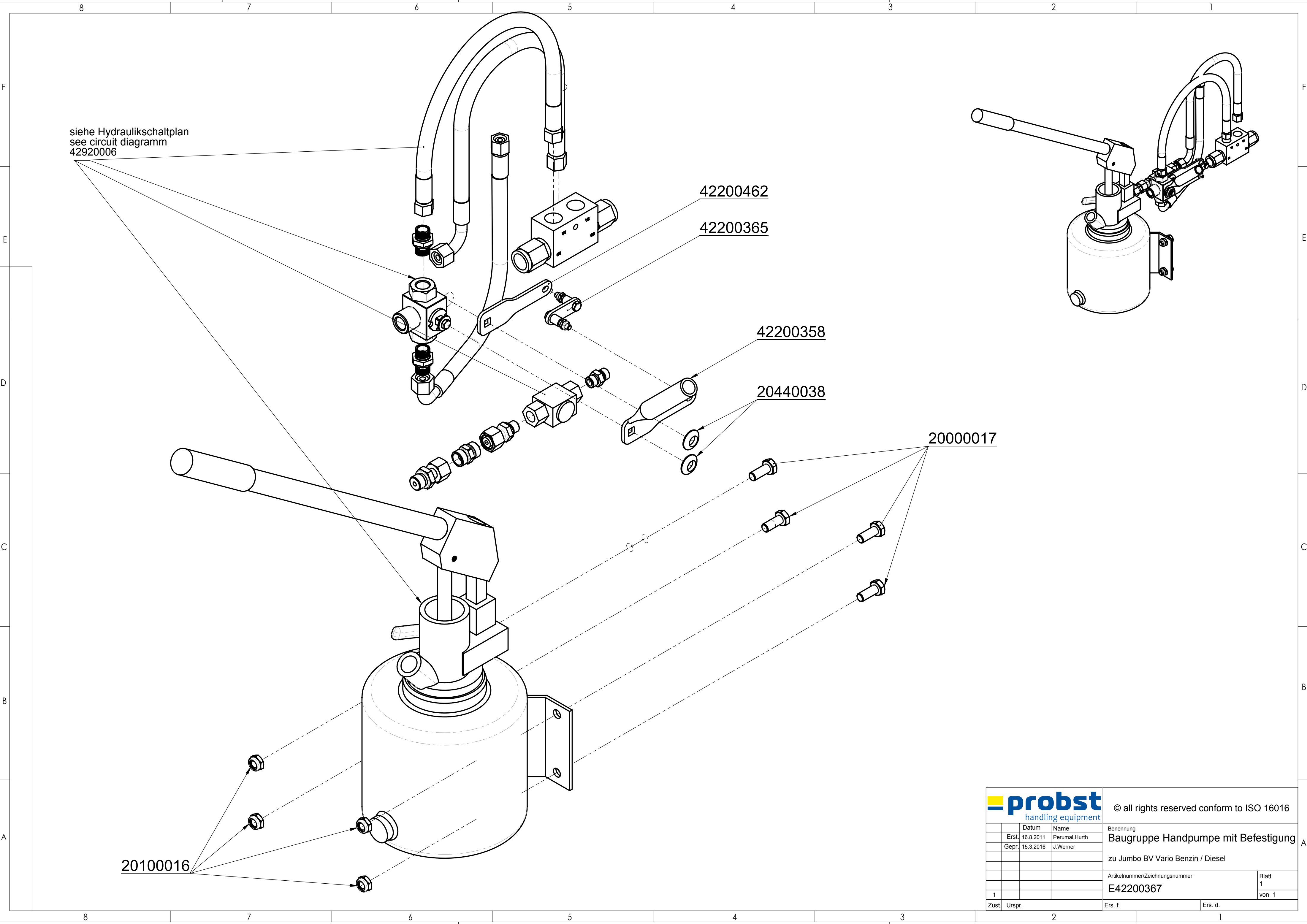
Benennung  
Grundgerät Jumbo BV Vario

Artikelnummer/Zeichnungsnummer
E42200366

Blatt
1
von
1

Zust.	Urspr.
-------	--------

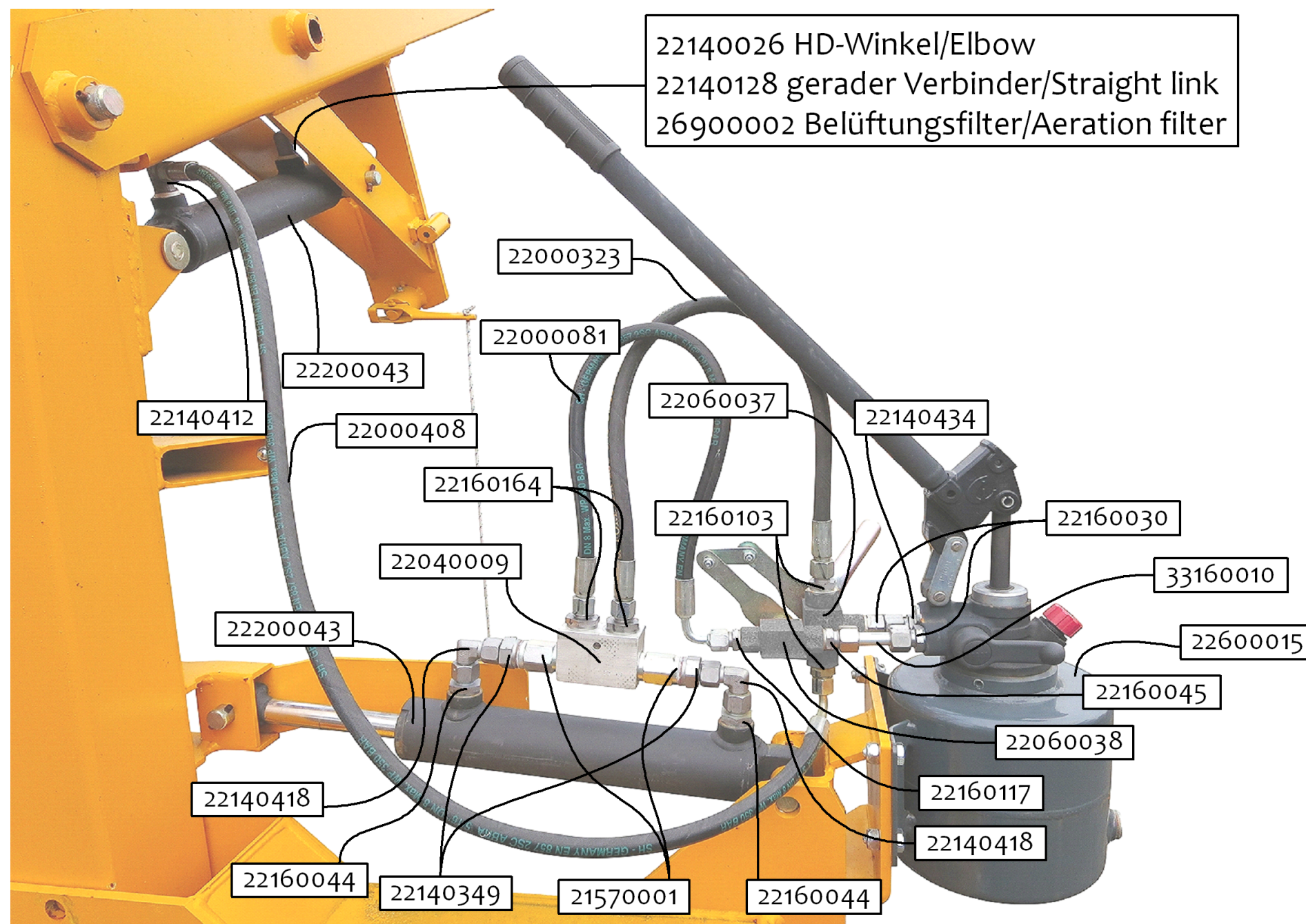
Ers. f.	Ers. d.
---------	---------



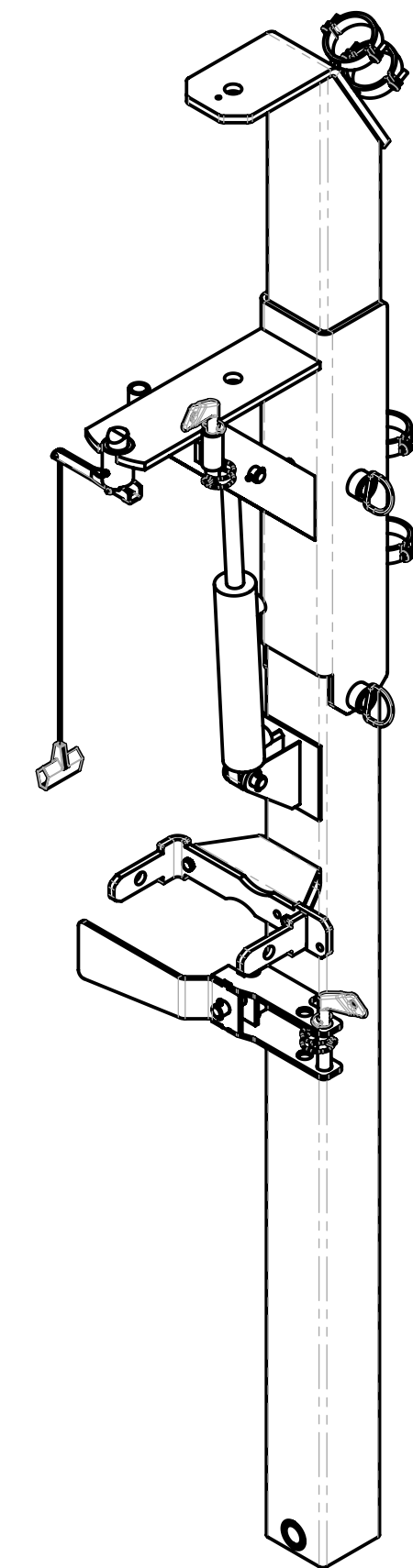
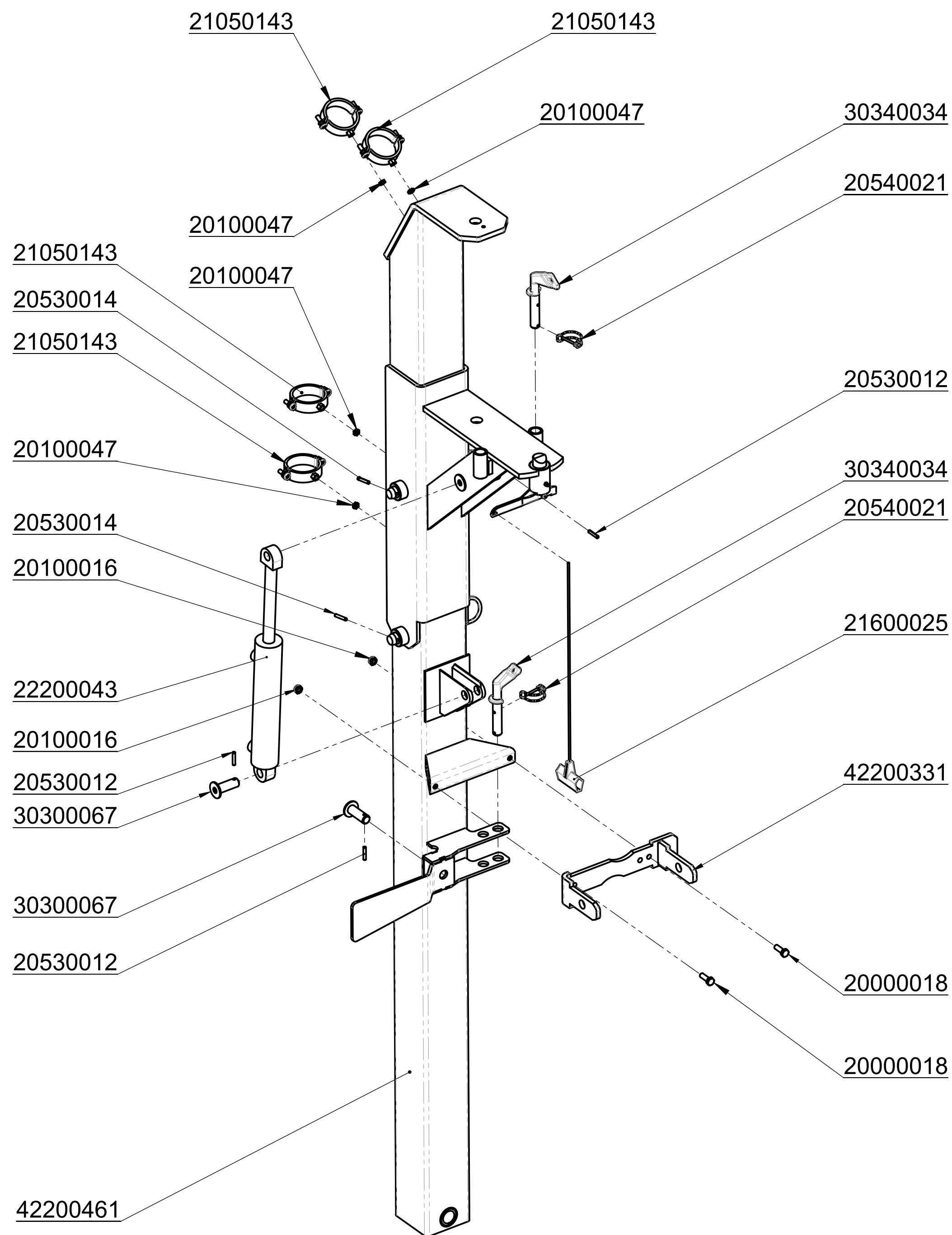
© all rights reserved conform to ISO 16016

			Benennung	
	Datum	Name	Baugruppe Handpumpe mit Befestigung zu Jumbo BV Vario Benzin / Diesel	
Erst.	16.8.2011	Perumal.Hurth		
Gepr.	15.3.2016	J.Werner		
			Artikelnummer/Zeichnungsnummer	
			E42200367	
1			Blatt 1 von 1	
Zust.	Urspr.		Ers. f.	Ers. d.

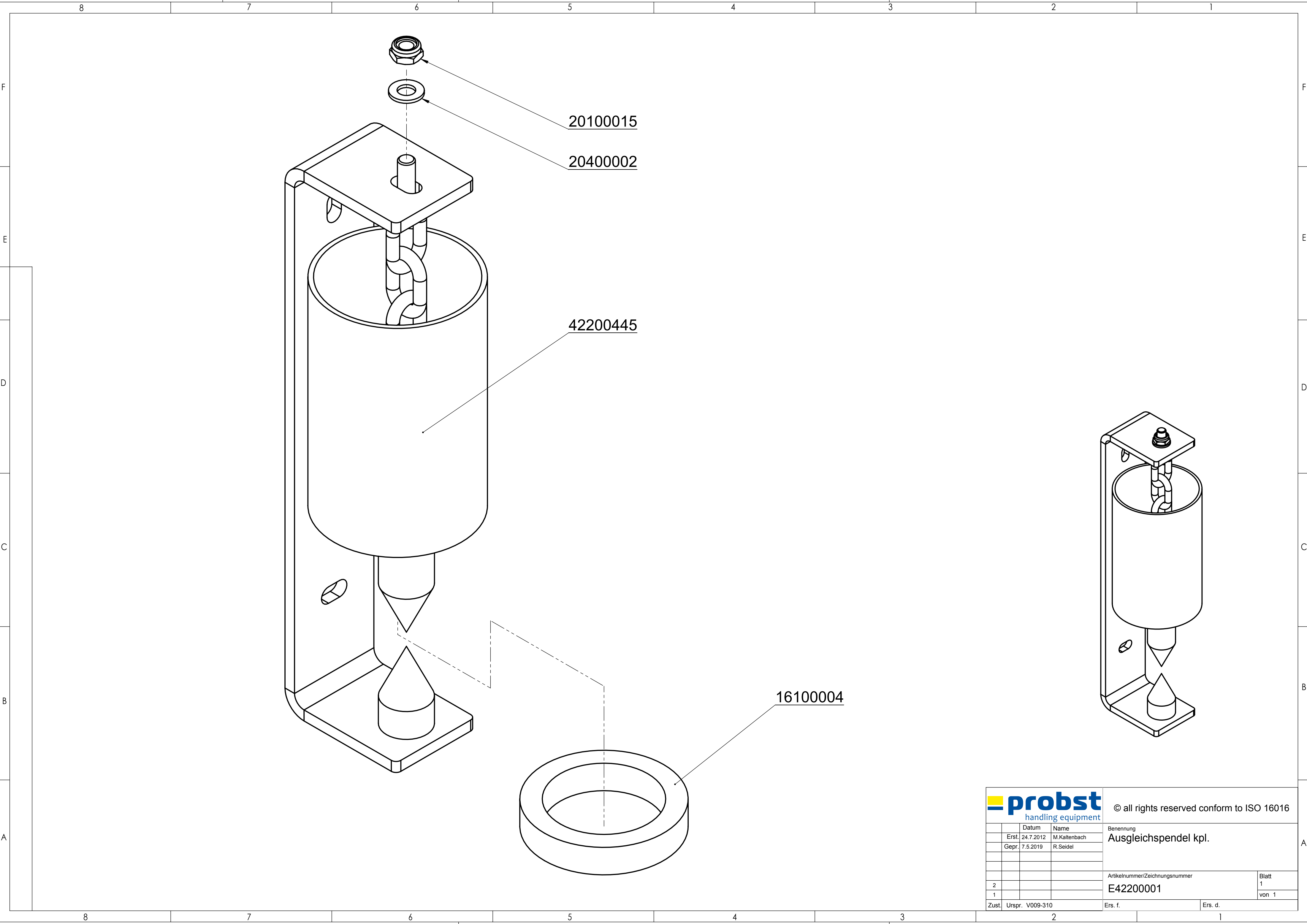




Allgemeintoleranzen nach ISO 2768-mk / Maße ISO 14405				Oberflächen nach DIN ISO 1302		allgemeiner Biegehalbmesser = Blechstärke	
				 Oberflächen- behandlung		Keine Änderungen ohne Rücksprache mit TB !	
						Stückliste nur zur Information, Pro Alpha Stückliste hat Priorität	
				Format	Maßstab: 1:1		Gewicht:
				A3	© all rights reserved conform to ISO 16016		
				Datum	Name		Benennung
				Erst. 12.4.2010	Perumal.Hurth		HD-Schaltplan
				Gepr. 24.11.2014	R.Northe		JUMBO-BV-VARIO-B/D/H
				Werkstoff:			
3	Zg. überarbeitet	24.11.2014	RN	Kunde:		Artikelnummer/Zeichnungsnummer	
2	Pos.27,36,38 geänd.	21.11.2014	RN			42920006	
1	mit Drossel 22060021	16.9.2016	RN	WA:			
Zust.	Änderungstext	Datum	von	Urspr.		Ers. f.	Ers. d.



			© all rights reserved conform to ISO 16016	
	Datum	Name	Benennung <b>Mast kompl. für BV Vario</b>	
	Erst. 13.10.2011	Perumal.Hurth		
	Gepr. 7.5.2019	R.Seidel		
			Artikelnummer/Zeichnungsnummer <b>E42200356</b>	
3				
2				
1				
Zust. Urspr.			Ers. f.	Ers. d.



© all rights reserved conform to ISO 16016

	Datum	Name
	Erst. 24.7.2012	M.Kaltenbach
	Gepr. 7.5.2019	R.Seidel
2		
1		
Zust.	Urspr. V009-310	

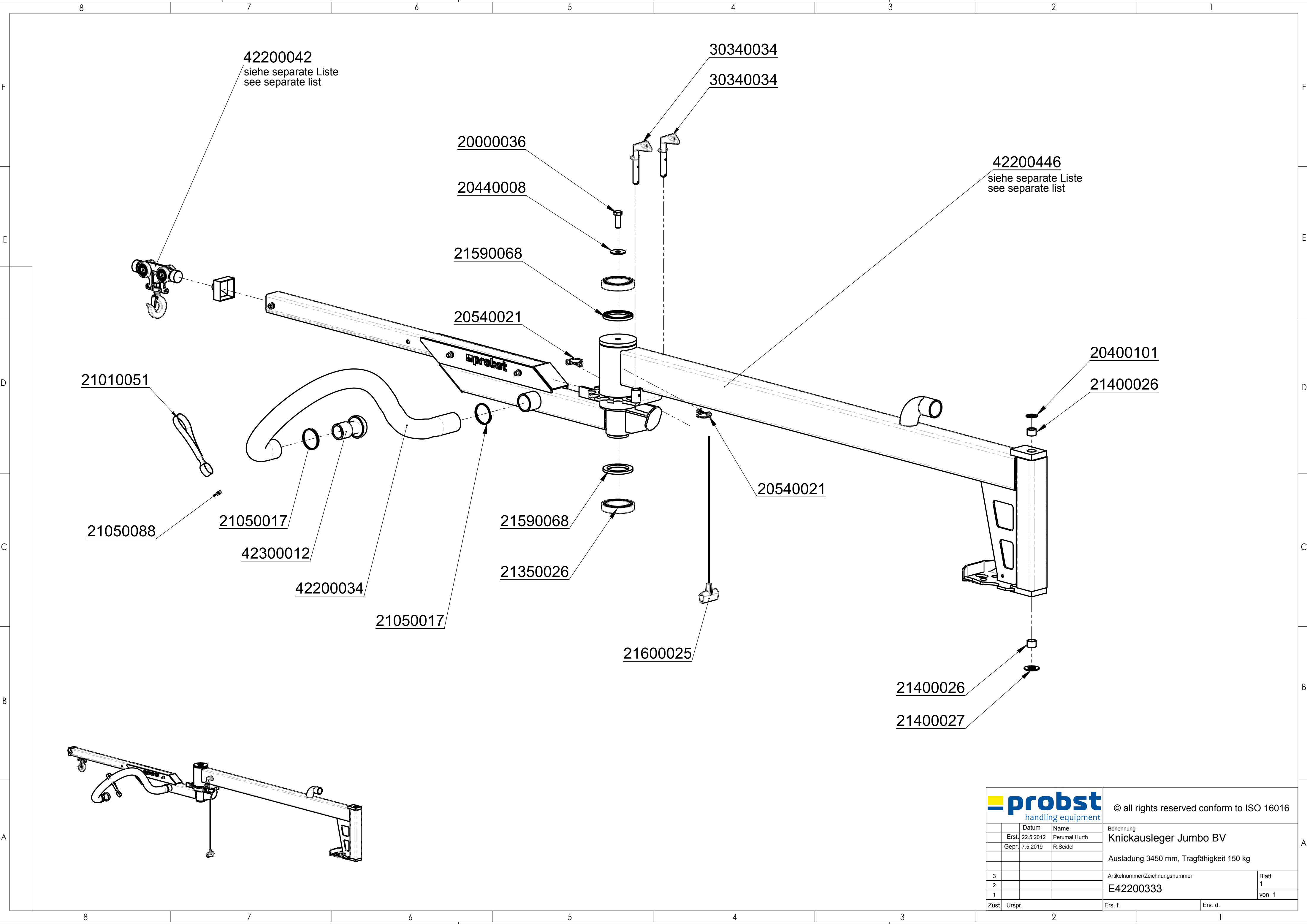
Benennung  
Ausgleichspendel kpl.

Artikelnummer/Zeichnungsnummer  
E42200001

Blatt  
1  
von 1

Ers. f.      Ers. d.





42200042  
siehe separate Liste  
see separate list

30340034  
30340034

42200446  
siehe separate Liste  
see separate list

20000036

20440008

21590068

20540021

20400101

21400026

21010051

21050088

21050017

42300012

42200034

21050017

21590068

21350026

20540021

21600025

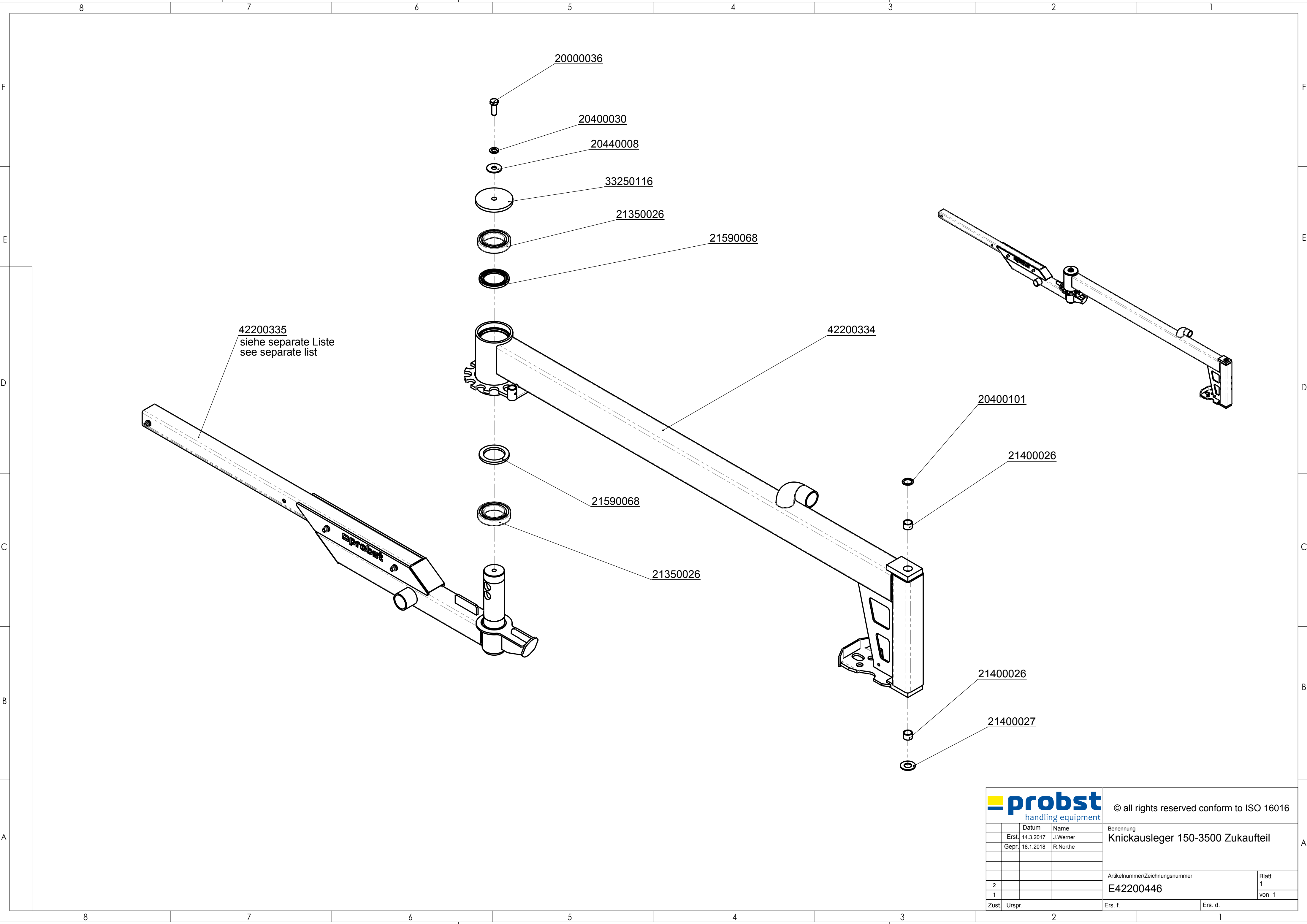
21400026

21400027



© all rights reserved conform to ISO 16016

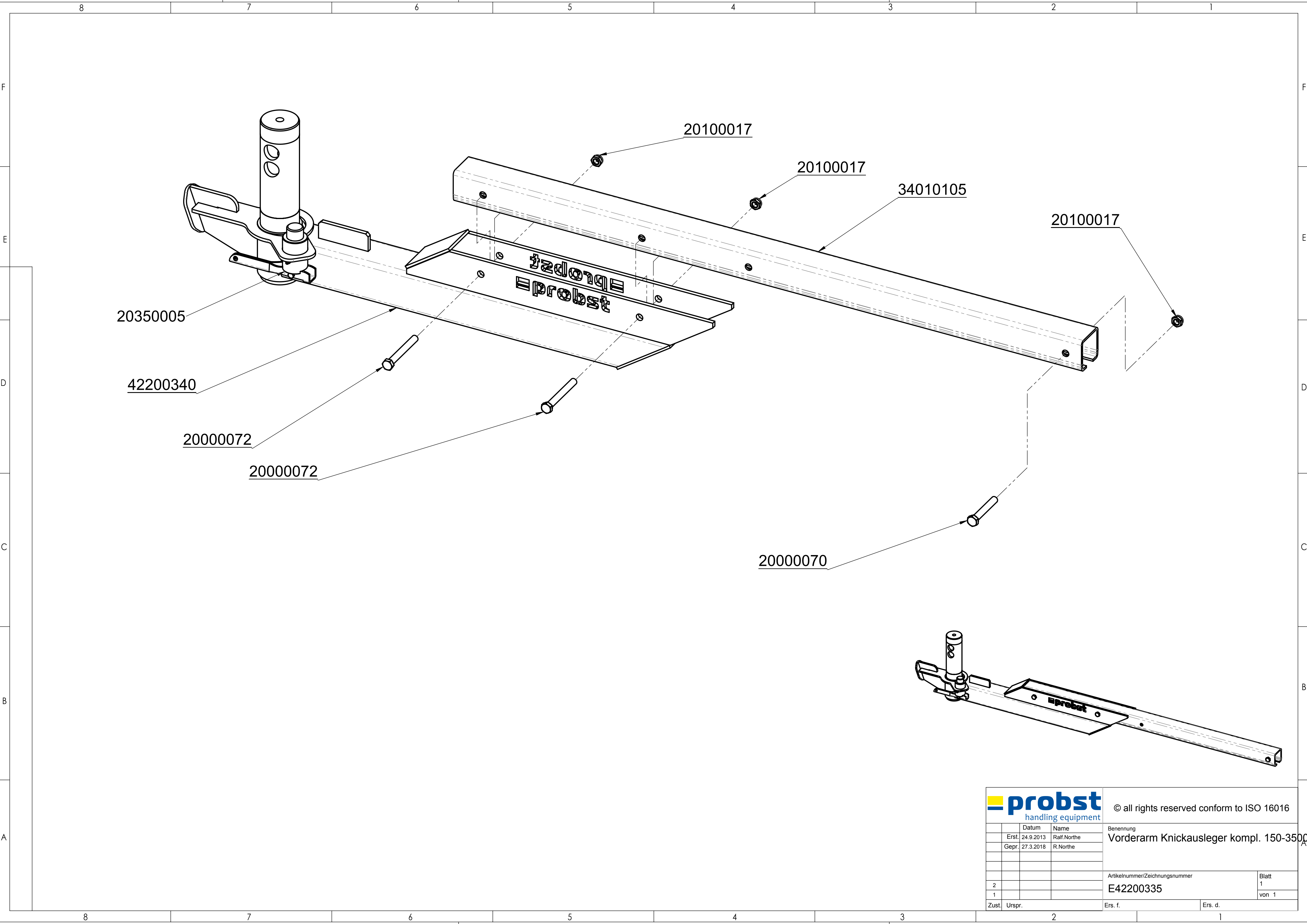
	Datum	Name	Benennung	
	Erst. 22.5.2012	Perumal.Hurth	Knickausleger Jumbo BV	
	Gepr. 7.5.2019	R.Seidel	Ausladung 3450 mm, Tragfähigkeit 150 kg	
3			Artikelnummer/Zeichnungsnummer	
2			E42200333	
1			Blatt 1 von 1	
Zust.	Urspr.		Ers. f.	Ers. d.



© all rights reserved conform to ISO 16016

	Datum	Name
Erst.	14.3.2017	J.Werner
Gepr.	18.1.2018	R.Northe
2		
1		
Zust.	Urspr.	

Benennung	
Knickausleger 150-3500 Zukaufteil	
Artikelnummer/Zeichnungsnummer	
E42200446	
Blatt	
1	
von 1	
Ers. f.	Ers. d.



© all rights reserved conform to ISO 16016

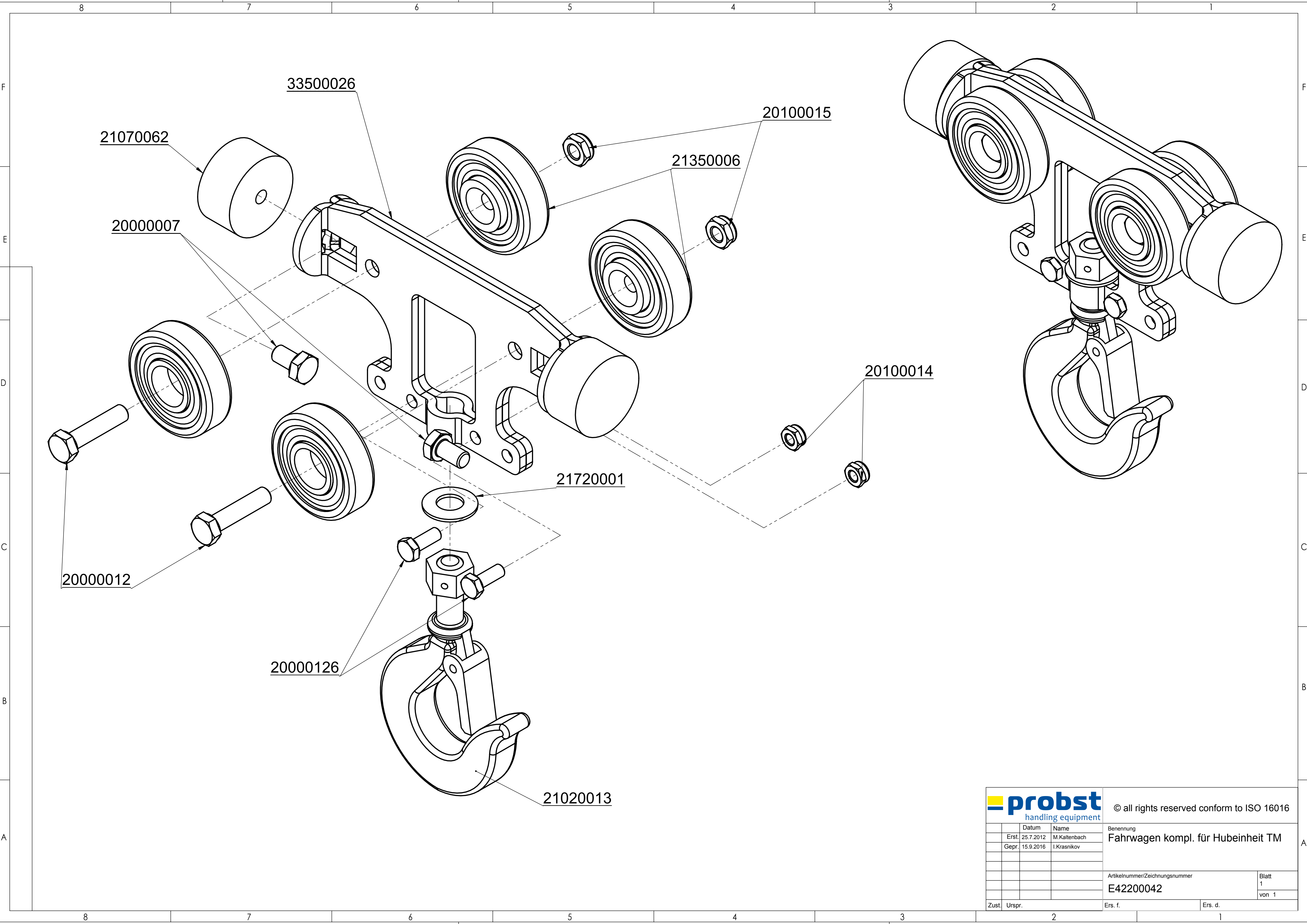
	Datum	Name
Erst.	24.9.2013	Ralf.Northe
Gepr.	27.3.2018	R.Northe

Benennung  
Vorderarm Knickausleger kompl. 150-3500

2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

Artikelnummer/Zeichnungsnummer  
E42200335

Blatt  
1  
von 1



© all rights reserved conform to ISO 16016

Datum	Name
Erst. 25.7.2012	M.Kaltenbach
Gepr. 15.9.2016	I.Krasnikov

Benennung  
Fahrwagen kompl. für Hubeinheit TM

Zust.	Urspr.
-------	--------

Artikelnummer/Zeichnungsnummer E42200042	Blatt 1 von 1
---------------------------------------------	---------------------

Ers. f.

Ers. d.



8 7 6 5 4 3 2 1

F

F

E

E

D

D

C

C

B

B

A

A

20540033

33501437

42100567

20020006



© all rights reserved conform to ISO 16016

Erst. 13.10.2011  
Gepr. 15.9.2016

Name  
Perumal.Hurth  
I.Krasnikov

Benennung  
Aufnahme für Bedieneinheit BE

Artikelnummer/Zeichnungsnummer  
E42100568

Blatt  
1  
von 1

Zust. Urspr.

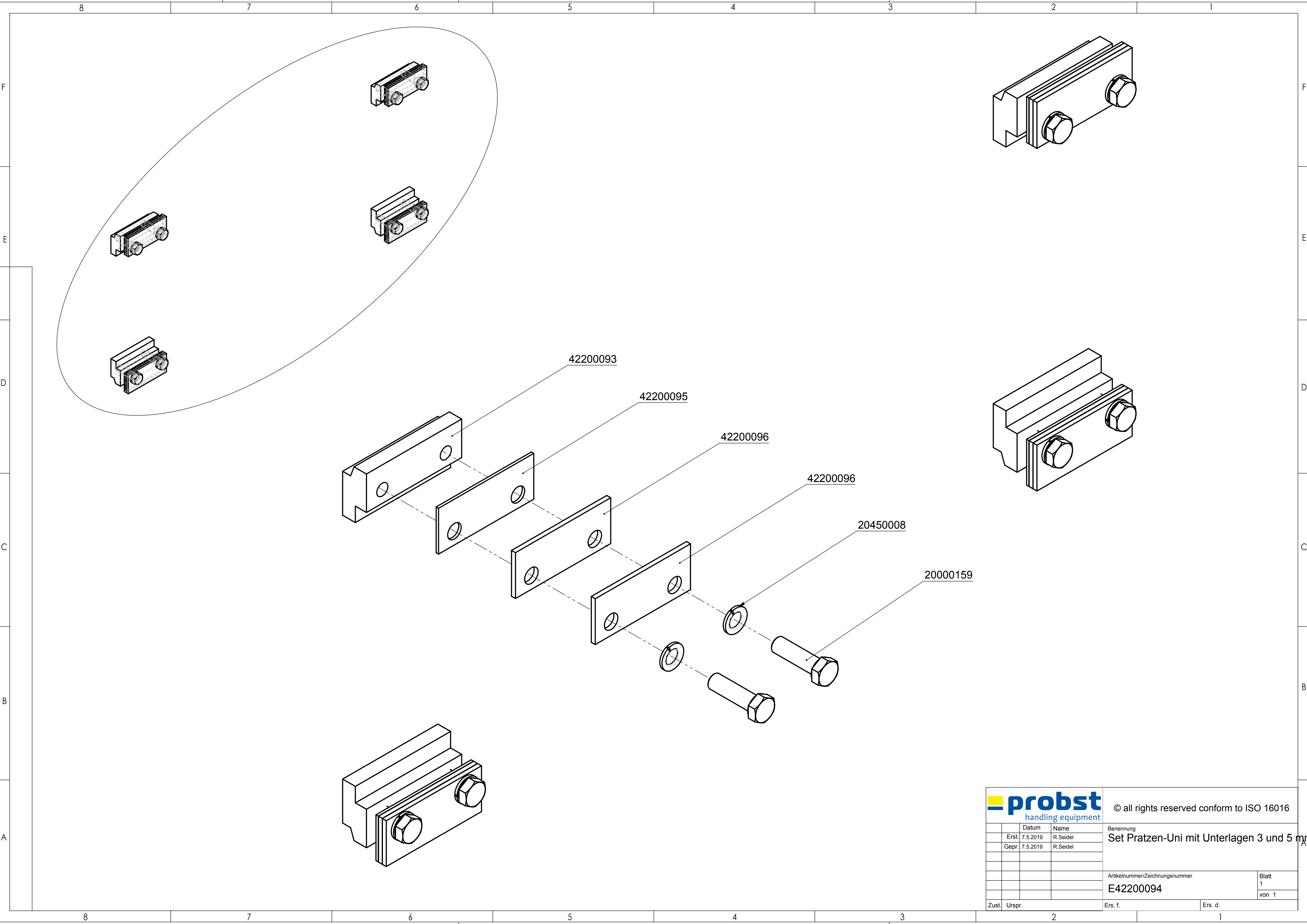
Ers. f.

Ers. d.

8 7 6 5 4 3 2 1







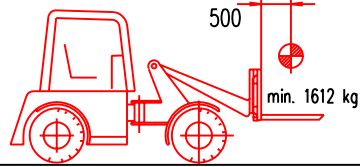
© all rights reserved conform to ISO 16016

		Datum	Name	Benennung	
	Erst.	7.5.2019	R.Seidel	Set Prätzen-Uni mit Unterlagen 3 und 5 mm	
	Gepr.	7.5.2019	R.Seidel		
Zust.	Urspr.			Ers. f.	Ers. d.

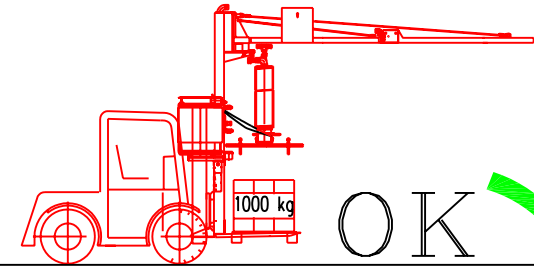
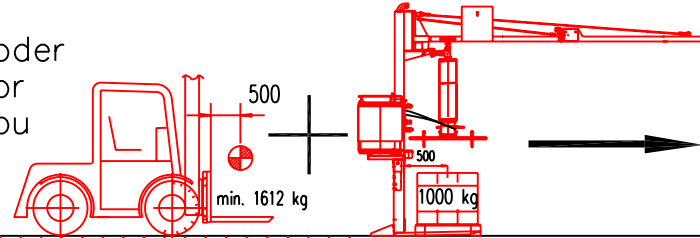
Artikelnummer/Zeichnungsnummer  
E42200094  
Blatt  
1  
von 1

Nach EN 474-3:

- ① In ebenem Gelände: 80% Kipplast min. 1612 kg  
In unebenem Gelände: 60% Kipplast min. 1612 kg



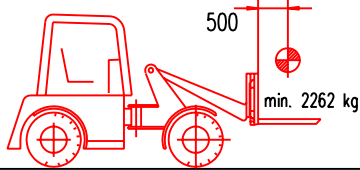
oder  
or  
ou



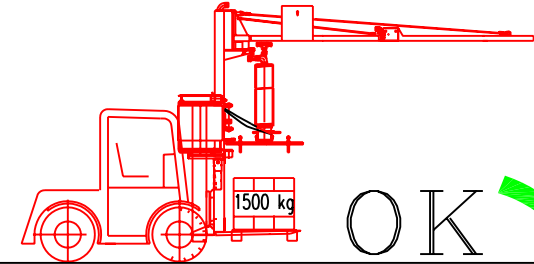
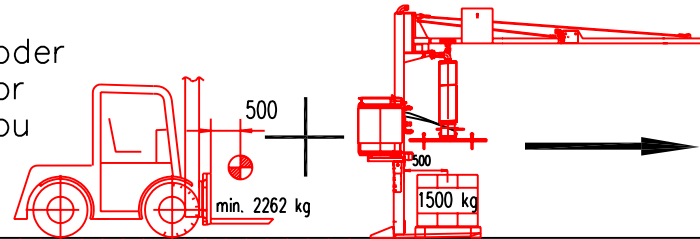
OK



- ① In ebenem Gelände: 80% Kipplast min. 2262 kg  
In unebenem Gelände: 60% Kipplast min. 2262 kg



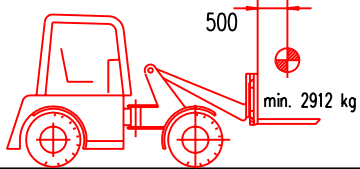
oder  
or  
ou



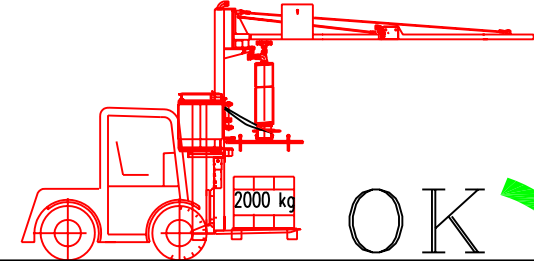
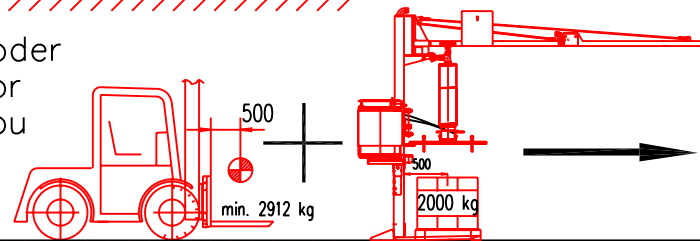
OK



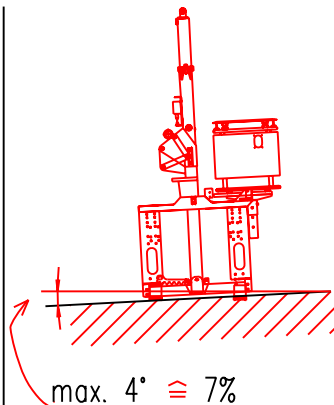
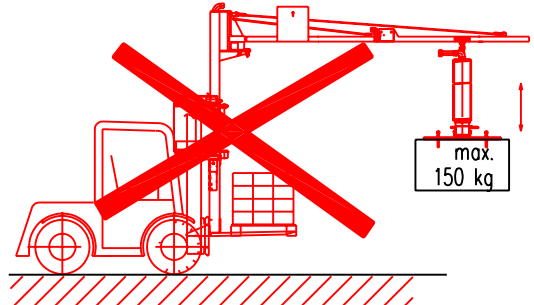
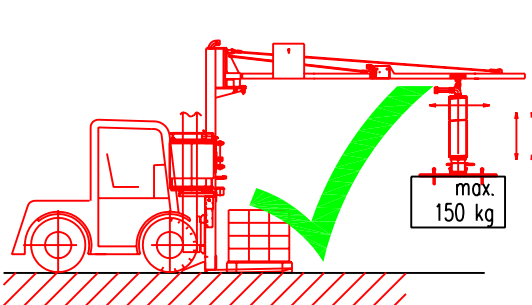
- ① In ebenem Gelände: 80% Kipplast min. 2912 kg  
In unebenem Gelände: 60% Kipplast min. 2912 kg



oder  
or  
ou



OK



①

On even ground: Tip over load minimum 80%  
On uneven ground: Tip over load minimum 60%

Sol plat: charge minimale 80%  
Sol irregulier: charge minimale 60%

Su terreno uniforme: inclinazione 80% carico minimo  
Su terreno sconnesso: inclinazione 60% carico minimo

En terreno llano: inclinacion 80% sobre carga minima  
En terreno abrupto: inclinacion 60% sobre carga minima

Verlegung nur wenn  
Last mit Gabelzinken auf  
dem Boden liegt!!

Laying only allowed,  
when forks are resting  
on ground !!

Pose de bordures  
uniquement si fourches  
au sol !!

La posa è consentita  
solo con le forche a terra !!

Solamente se permite la  
colocación cuando las  
horquillas están en el suelo !!

OK

Verlegung mit  
angehobenen  
Gabelzinken verboten !!

Laying with lifted  
forks forbidden !!

Pose de bordures  
interdit si fourches  
remontées !!

NO

E'proibita la posa  
con le forche  
sollevate !!

Esta prohibida la  
colocacion con las  
horquillas elevadas !!

PBI  
BIELLETTE PM ZN  
BICRO IND A

PMA  
Manette Alu PM Ind.C Pumpenkopf

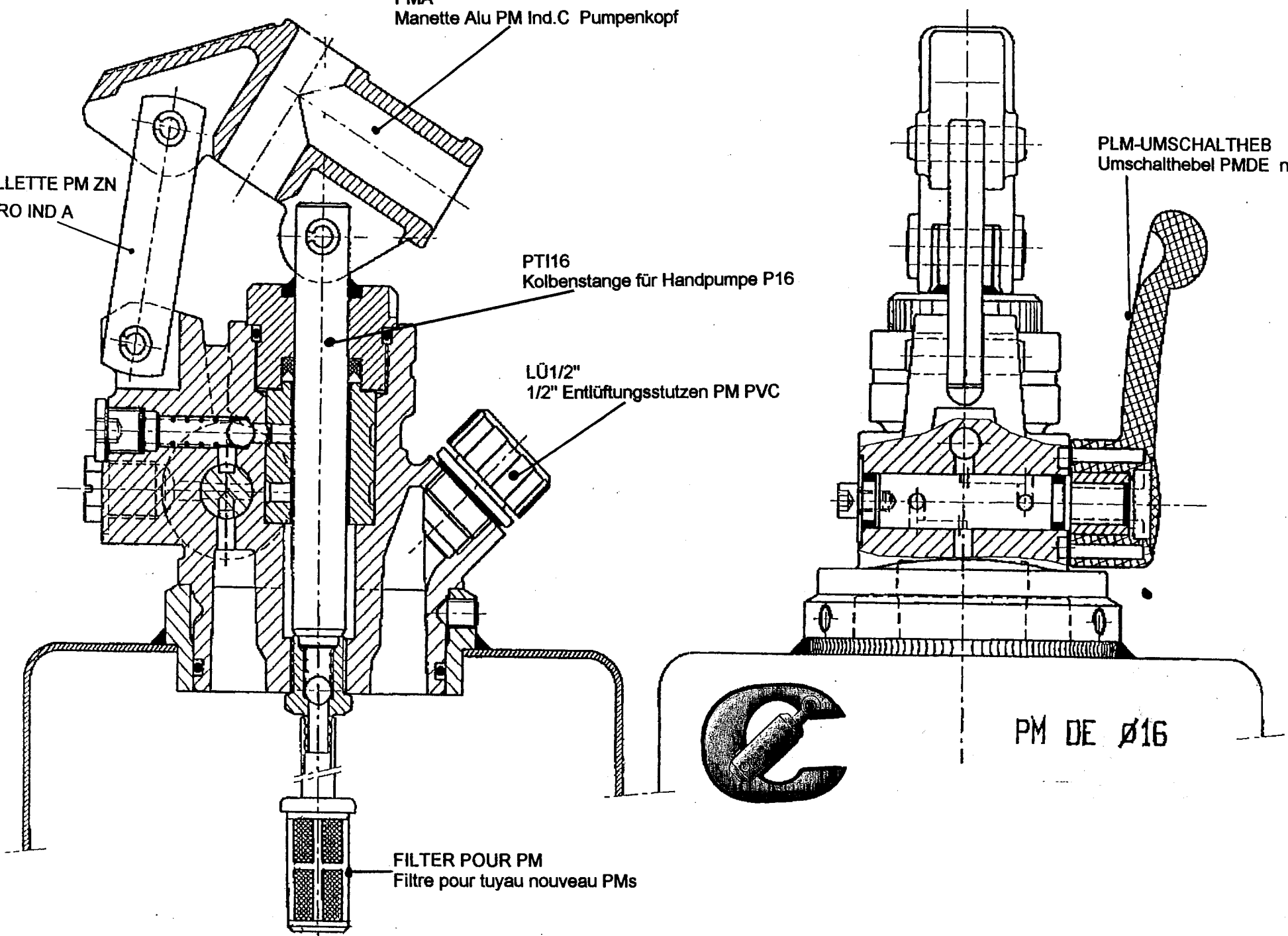
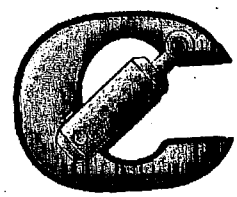
PTI16  
Kolbenstange für Handpumpe P16

LÜ1/2"  
1/2" Entlüftungsstutzen PM PVC

PLM-UMSCHALTHER  
Umschalthebel PMDE neues Model

FILTER POUR PM  
Filtre pour tuyau nouveau PMs

PM DE Ø16



## Filterübersicht / Filter overview

JUMBO-BV-B/-VARIO-B JUMBOMOBIL-B/-VARIO-B

25000008 Luftfilter Euro-Piclon für JM und BV inkl. Filterpatrone  
Air filter complete for JM and BV, incl. filter cartridge



25050010 Filtermatte für BE 174x111 mm  
Filter mat for BE 174x111 mm



26900001 Kraftstofffilter für BV-Tank (8 Liter) M&H Nr.: WK 31/4  
Fuel filter for BV-tank (8 litre) M&H No.: WK 31/4



26900021 Luftfiltermatte für GXV270 Typ:17218-ZE8-003 auch 17218  
Air filter mat for GXV270 Type:17218-ZE8-003 also 17218



42100085 Luftfilter-Patrone Micro Top Mann-C-15-300, für JM-Serie C  
Airfilter cartridge Micro Top Mann-C-15-300, for JM-Series C

Einzelteil von 25000008 / single part of 25000008



25000020 Luftfilter Einsatz für Honda-Benzinmotor GXV270  
Air filter cartridge for Honda petrol engine GXV270

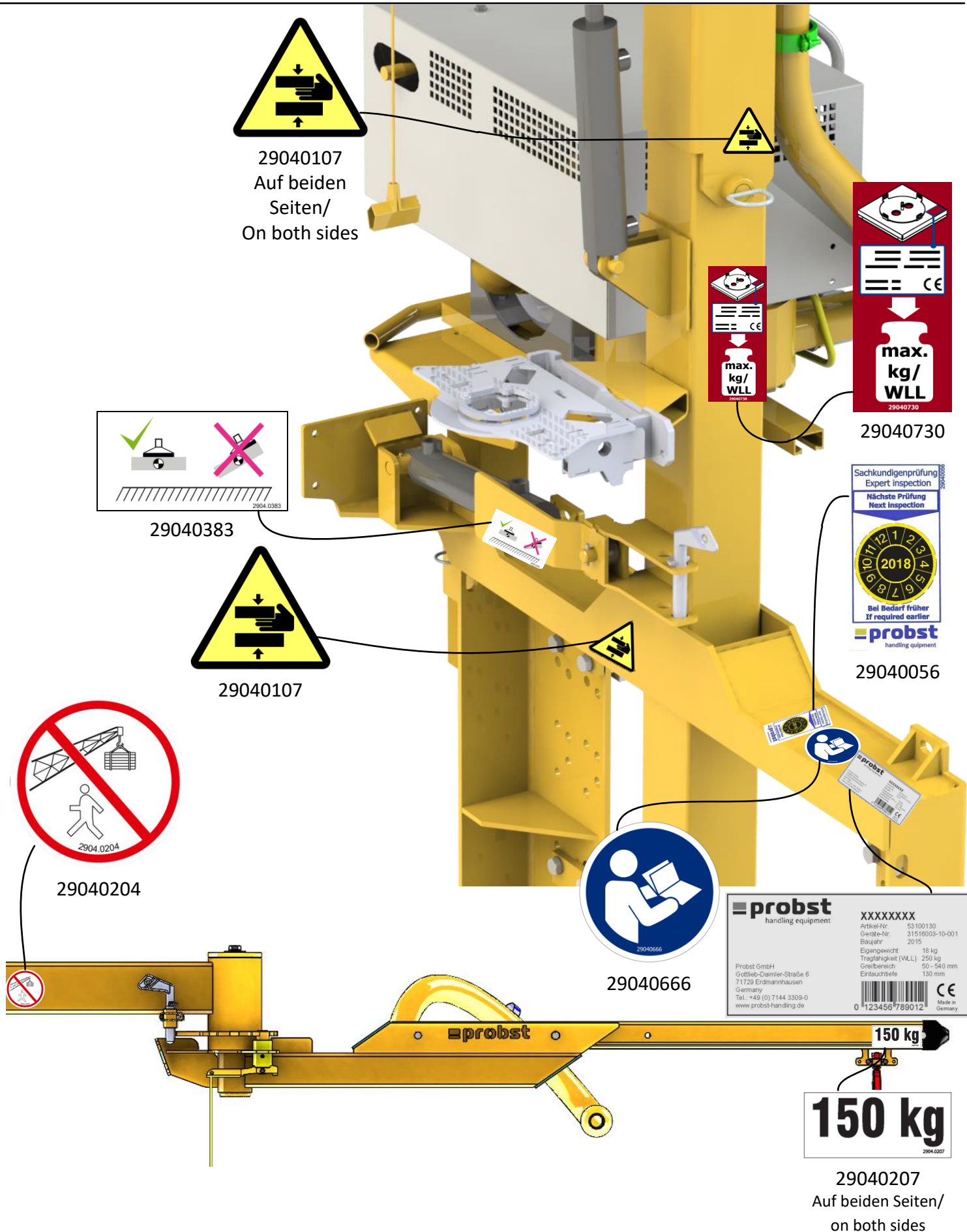


25000046 Luftfilter Einsatz für Honda-Benzinmotor GXV340  
Air filter cartridge for Honda petrol engine GXV340

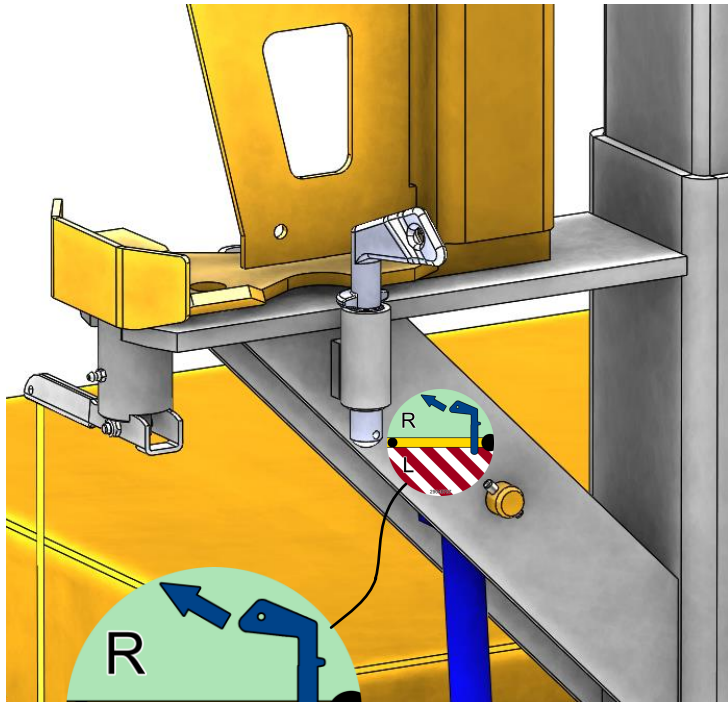




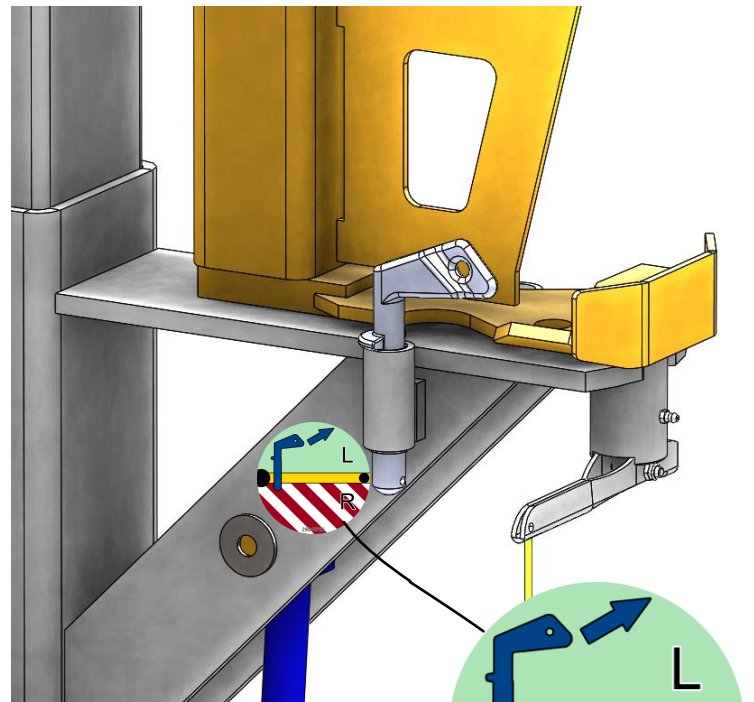
A52200011 JUMBO-BV-VARIO-B  
A52200012 JUMBO-BV-VARIO-H  
A52200013 JUMBO-BV-VARIO-D



Linke Seite der Maschine /  
left side of the machine



Rechte Seite der Maschine /  
right side of the machine

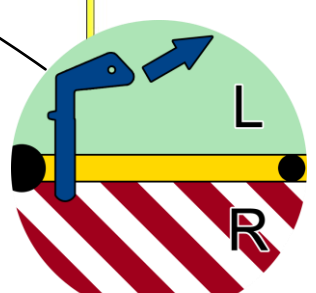


29040707

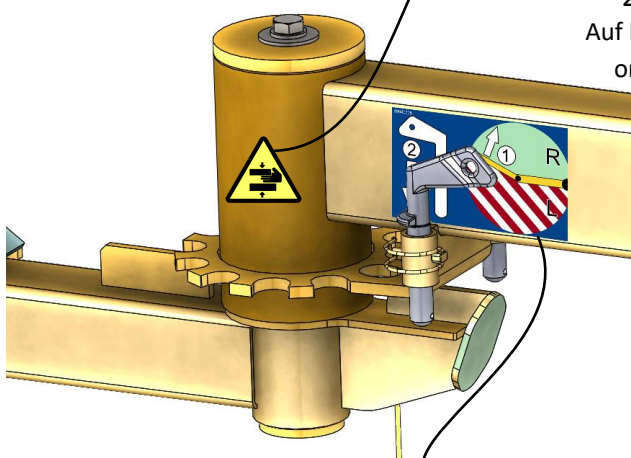


29040107

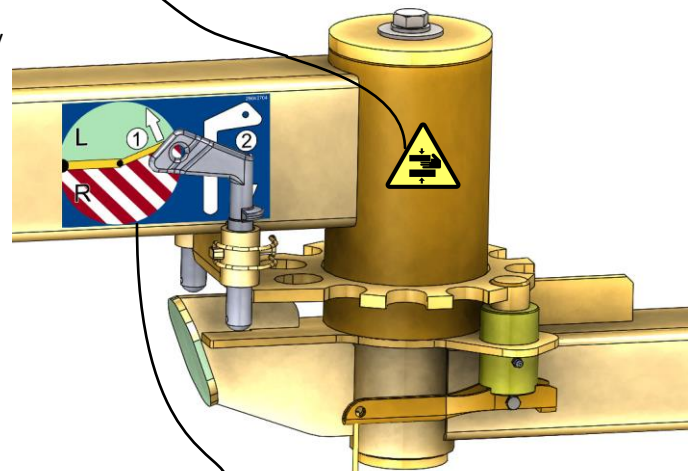
Auf beiden Seiten/  
on both sides



29040706



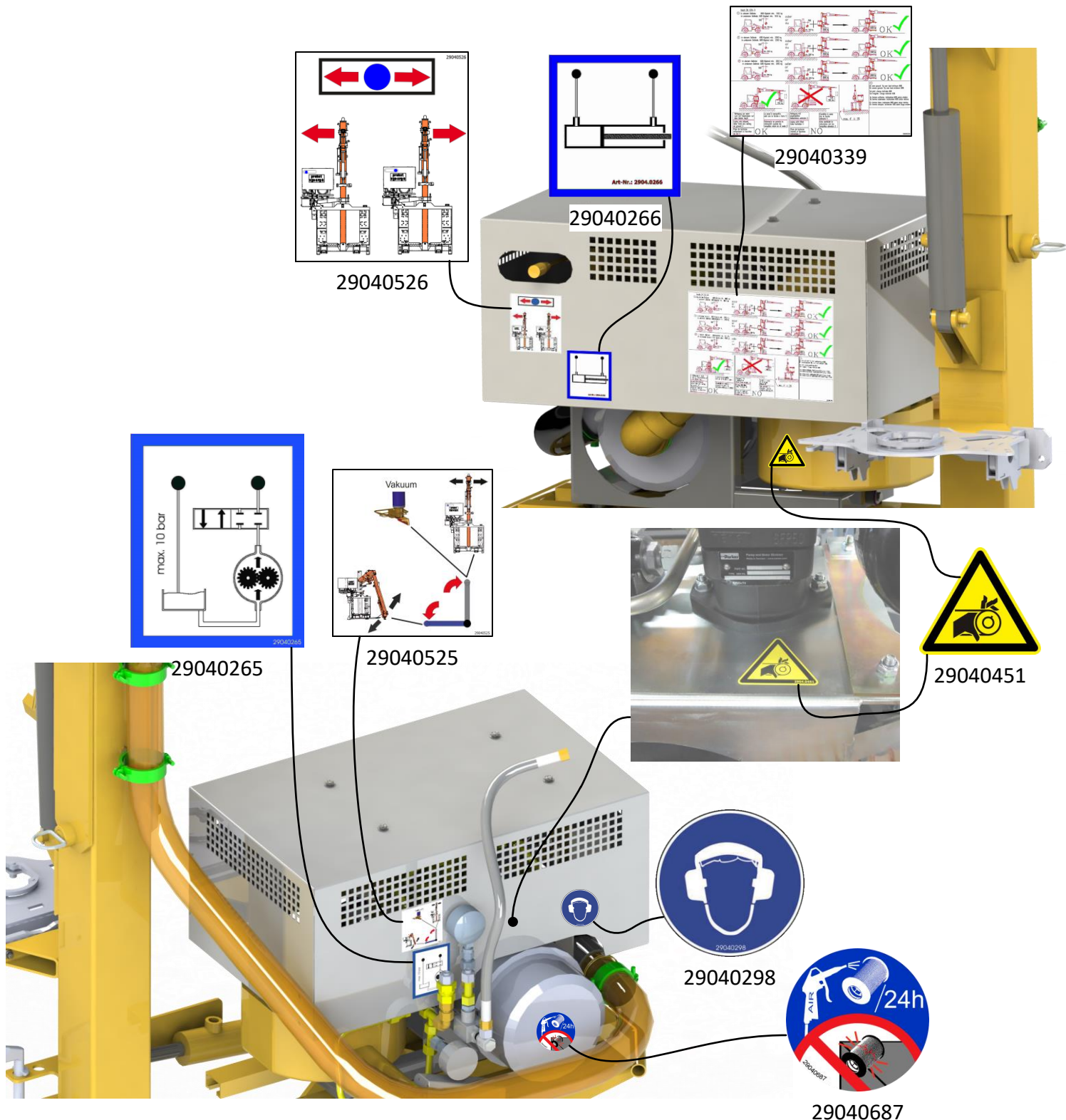
29040705



29040704

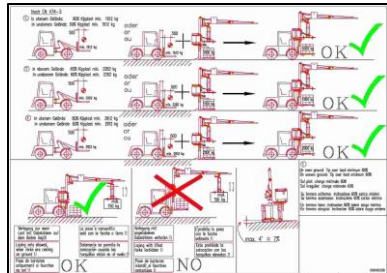


Gilt für/applies to:  
JUMBO-BV-VARIO-H | 52200012



# A52200011 JUMBO-BV-VARIO-B A52200012 JUMBO-BV-VARIO-H A52200013 JUMBO-BV-VARIO-D

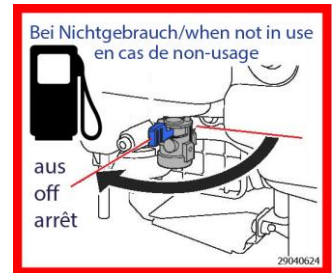
Gilt für/applies to:  
JUMBO-BV-VARIO-B | 52200011



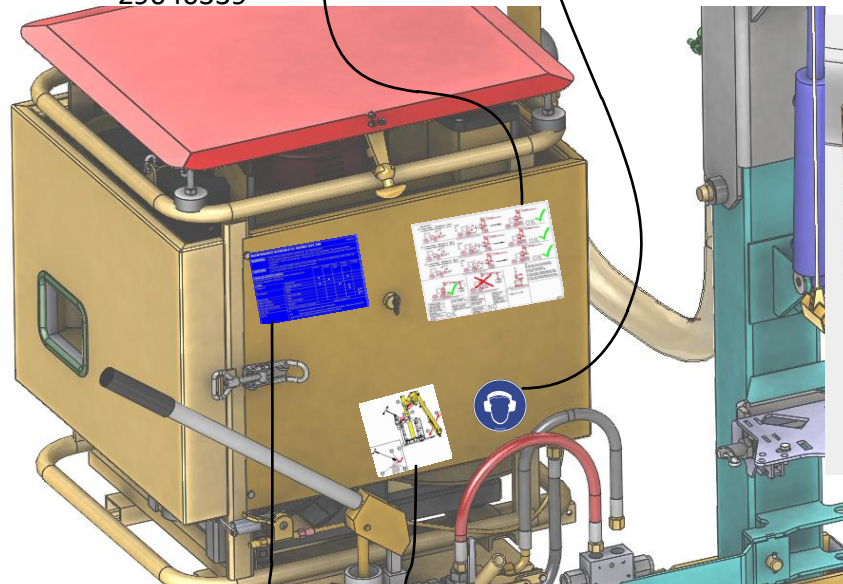
29040339



29040298



29040624



**MIN. 91 ROZ/RON**  
Nur bleifreies Benzin / Unleaded fuel only  
Carburant sans plomb / Solo bezina senza piombo  
Solo gasolina sin plomo

29040340

**MAINTENANCE SCHEDULE FOR HONDA GXV 340**

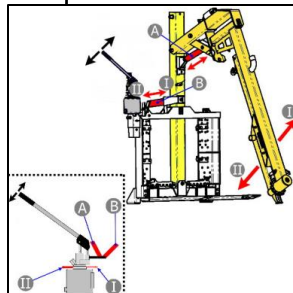
**WARNING:** Shut off the engine before performing any maintenance!!  
These engines must be run, while the oil is well heated, before the oil is changed. The oil must be changed at the intervals specified in the table below. Failure to do so may lead to engine damage.

**CAUTION:** Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.

**REGULAR SERVICE PERIODS:** Indicated at every indicated hour or operating hour. Intervals are shown in hours.

ITEM	Interval	1st Year	2nd Year	3rd Year	4th Year	5th Year
Oil change	100 hours	•	•	•	•	•
Check engine oil	100 hours	•	•	•	•	•
Check spark plug	100 hours	•	•	•	•	•
Check air filter	100 hours	•	•	•	•	•
Check valve clearance	100 hours	•	•	•	•	•
Check and adjust	100 hours	•	•	•	•	•
Check and replace if necessary	100 hours	•	•	•	•	•

**NOTE:**  
• Service items frequently used in daily work.  
• Please refer to the manual for detailed maintenance instructions. Refer to the manual for the proper maintenance procedure. Use for these items.

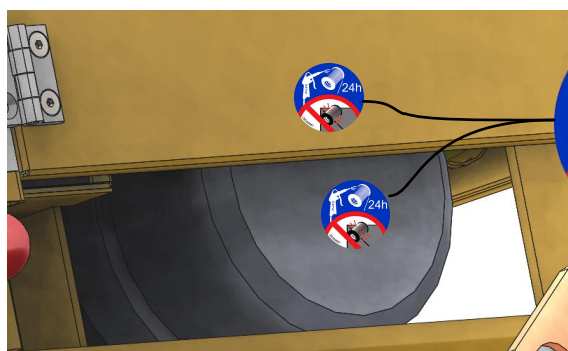


29040476

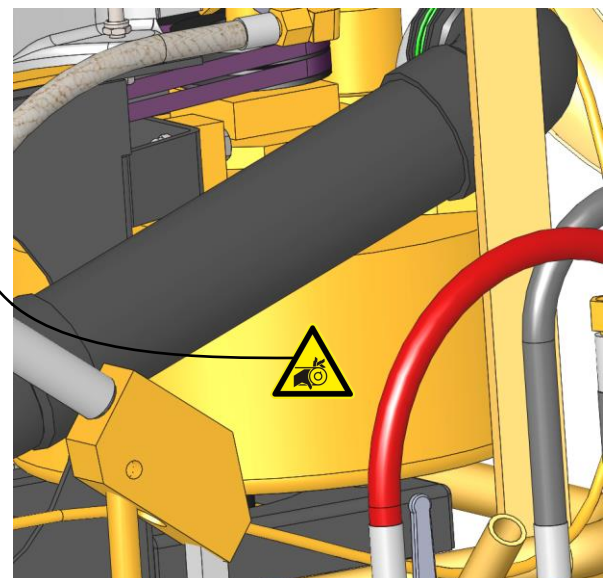


29040451

29040329 (DE)  
29040330 (GB)  
29040331 (FR)



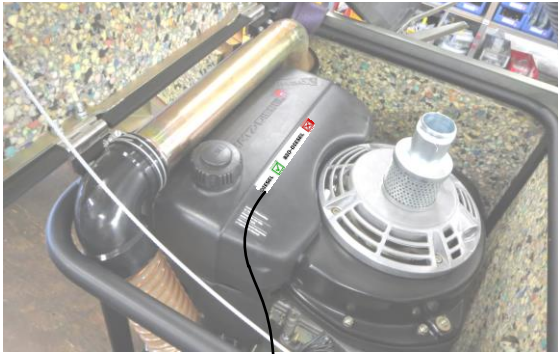
29040687





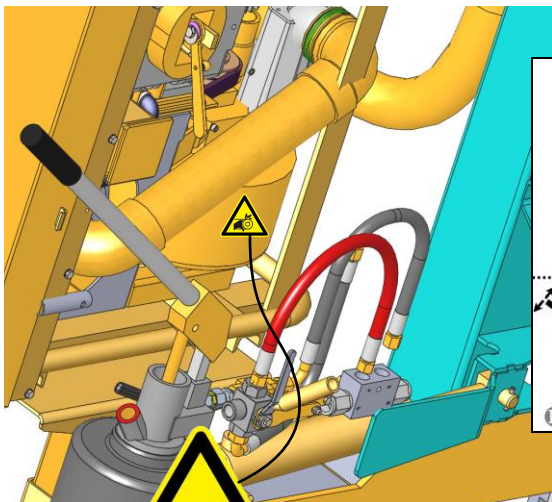
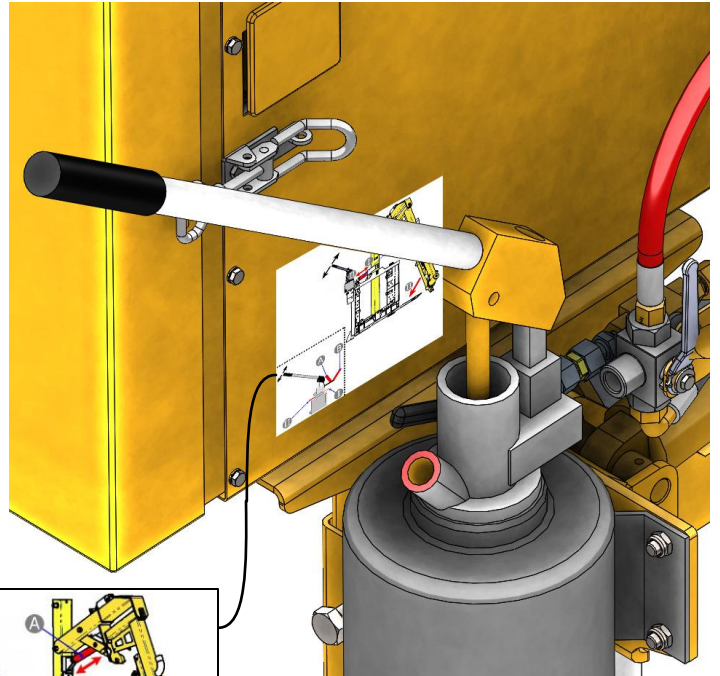
A52200011 JUMBO-BV-VARIO-B  
A52200012 JUMBO-BV-VARIO-H  
A52200013 JUMBO-BV-VARIO-D

Gilt für/applies to:  
JUMBO-BV-VARIO-D | 52200013

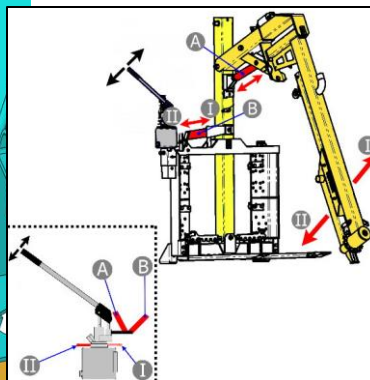


**DIESEL**  **BIO-DIESEL** 

29040483



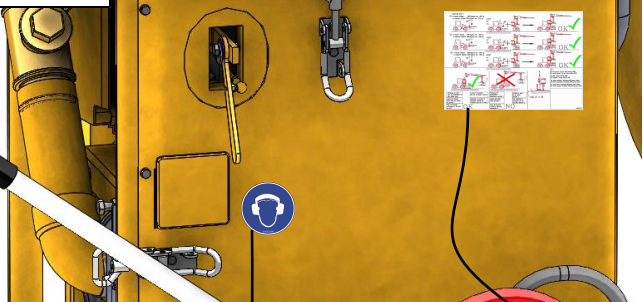
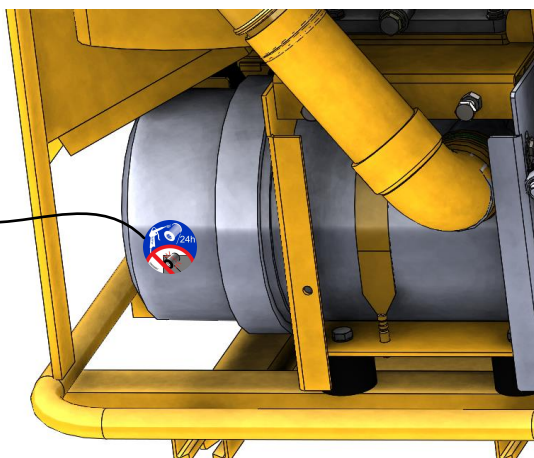
29040451



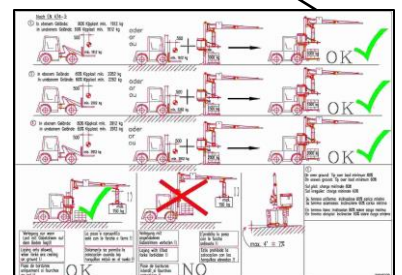
29040476



29040687



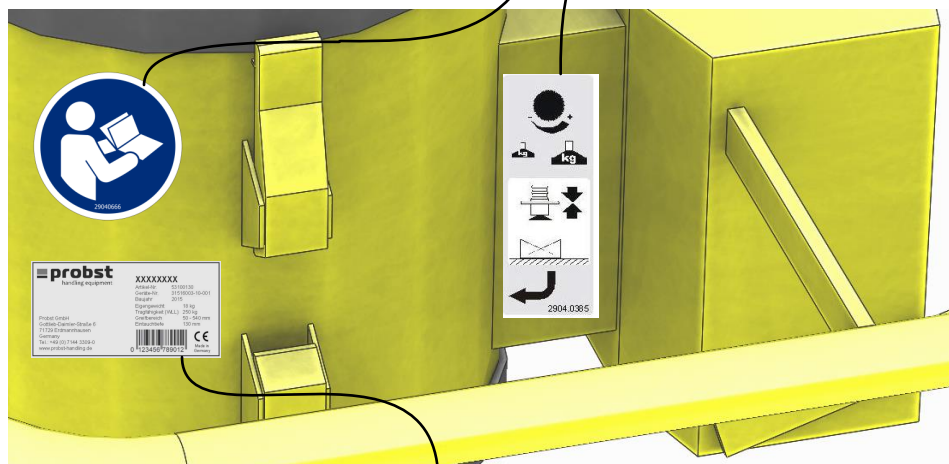
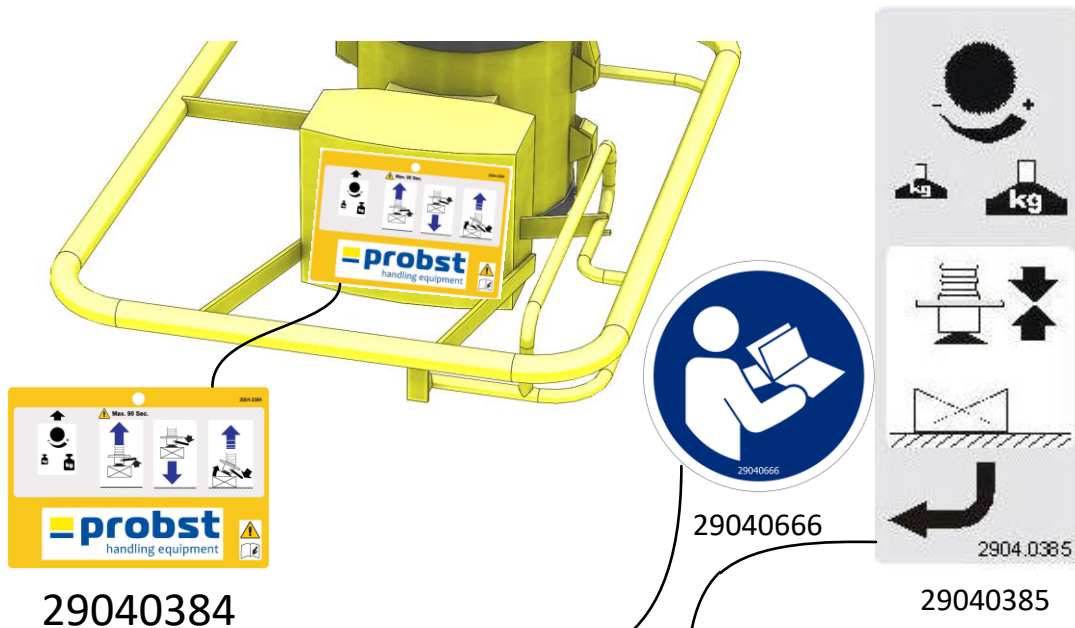
29040298



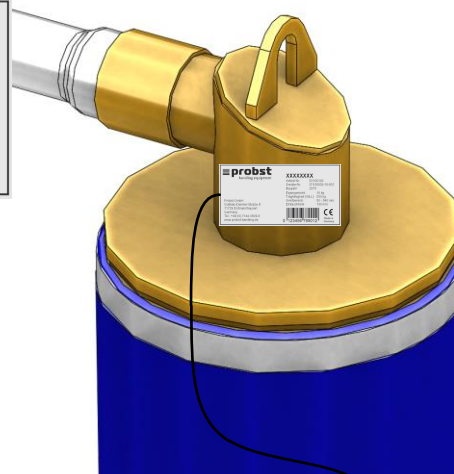
29040339



A52200011 JUMBO-BV-VARIO-B  
A52200012 JUMBO-BV-VARIO-H  
A52200013 JUMBO-BV-VARIO-D



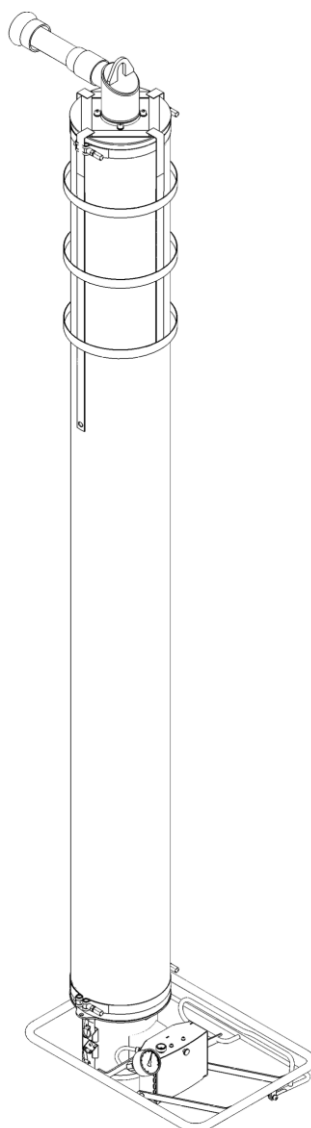
Typenschild Bedieneinheit



Typenschild Hubeinheit

# Vacuum Hose Lifter Components

## Lifting hose unit with Operating Valve Unit



*Keep these Operating Instructions for future use !*



## Table of Contents

### 1 Safety

- 1.1 Instructions for the Company
- 1.2 Instructions for the Installation, Maintenance and Operating Personnel
- 1.3 Hazard Alert Symbols in this Manual
- 1.4 Installation Site Requirements
- 1.5 Intended Use
- 1.6 Emissions
- 1.7 Special Hazards
- 1.8 Workplace
- 1.9 Instructions for the Operator
- 1.10 Equipment for Personal Protection
- 1.11 Behaviour in Emergencies
- 1.12 Checking the Guards

### 2 Technical Data

### 3 Description

- 3.1 Components of the *JUMBO*
- 3.2 Rotary Suction Fitting
- 3.3 Lifting Tube
- 3.4 Control Unit
- 3.5 Accessories

### 4 Installation

- 4.1 Installation Procedure
- 4.2 Adjusting the Hovering Position (without load)
- 4.3 Replacing the lifting tube

### 5 Operating

- 5.1 Safety Instructions
- 5.2 Lifting, Lowering and Landing Loads

### 6 Trouble Shooting

### 7 Maintenance

- 7.1 General Notes
- 7.2 Cleaning
- 7.3 Accident prevention rules
- 7.4 Service-Table

### 8 Notes on the Name Plate

### 9 Storage

### 10 Guarantee, spare and consumable parts

### Special Features

The unit is equipped with the following special feature(s):

---

---

---

---

---

(See the Appendix for special operating instructions and spare parts.)

If the special features require a separate list of spare parts or parts subject of consumption, the corresponding list in section "Spare parts" is invalid.

## 1 Safety

### 1.1 Instructions for the Company

The *Vacuum Hose Lifter* has been manufactured according to current technological standards and is safe. Still, it will present hazards

- ⇒ if the device is not operated by qualified or, at least trained staff,
- ⇒ if the device is used contrary to the approved applications (see 1.5).

Problems can arise:

- ⇒ for the health and life of operators and other persons,
- ⇒ for the lifting device and other valuable goods.

### 1.2 Instructions for the Installation, Maintenance and Operating Personnel

The *Vacuum Hose Lifter* must be installed and maintained by qualified personnel, mechanics and electricians. Any work on the electrical equipment may be carried out only by a qualified electrician.

Each person in your company involved in the installation, start-up, operation, maintenance, and repair of the device must have read and understood the operating instructions and especially the chapters "Safety" and "Operating" therein.

Your company must ensure by internal measures

- ⇒ that the operators of the lifting device are properly trained,
- ⇒ that they have read and understood the operating instructions,
- ⇒ that the operating instructions will be available to them at any time.

The responsibilities for the tasks carried out with the device must be clearly organized and observed. Ambiguity regarding responsibilities must not exist. We recommend that you protect the lifting device from unauthorized use, e. g. by a key-switch.

### 1.3 Hazard Alert Symbols in this Manual



**Danger**



**Caution**

The hazard alert messages in this manual are labelled as follows:

Identifies imminent hazard. If you do not avoid it, death or severe injury will result.

Identifies a potentially hazardous situation. If you do not avoid it, minor or moderate injury can result.

### 1.4 Installation Site Requirements

The lifting device must not be operated in rooms with explosive atmosphere. If desired, the *Vacuum Hose Lifter* can be supplied in explosion-protected version.

The ambient temperature must be between +0°C and 40 °C (if this temperature may be exceeded, consult the manufacturer).

Ensure by internal instructions and checks that the installation site is always clean and well organized.



### 1.5 Intended Use



The *Vacuum Hose Lifter* is designed to lift and transport items of all kinds. The maximum lifting capacity must not be exceeded, however. Observe the name plate!

The loads must be stable enough that they cannot be destroyed during raising! Transport of persons and animals with the load or the lifting device itself is forbidden!

Unauthorized alteration of the lifting device is forbidden for safety reasons!

**Only suction plates** of the manufacturer **PROBST** shall be used!!!

Some suction plates which can be mounted to the device will reduce its carrying capacity.

The maximum load is **indicated** on each suction plate.

Use only suction plates which are approved for this device!

**Do not exceed** the maximum carrying capacity of the suction plates!!!

**Danger:** Load (stone slabs) will fall down!

The use of suction plates with a smaller **carrying capacity** than the lifting unit is **forbidden!** **Danger:** Load will fall down.

(It is permissible to use suction plates with a higher carrying capacity than the lifting unit).

The use of this device is only permitted in proximity to the ground.

The Load **must not** be lifted above **1,8 m** (70,8 inch)!

### 1.6 Emissions

The equivalent continuous sound pressure level amount in operation (workpiece sucked on) is for the *Vacuum Hose Lifter* below 70 dB (A).

### 1.7 Special Hazards

The load is held at the suction head by underpressure. If there is a sudden interruption of the vacuum generator, the underpressure at the suction head decreases. As a result the lifting tube of the device descends and the load lowers.

This happens in a sudden power failure. A non-return valve in the rotary suction fitting ensures that the vacuum can escape only slowly. However, this will work only when the regulator lever is moved to "Lift".

When power fails, immediately put the load down if possible. If this is not possible, immediately leave the dangerous area near the load.

The device generates a very strong suction which can draw in hair and clothing. Do not look into the suction opening or place small objects close to suction openings when the device is switched on.

### 1.8 Workplace



The workplace of the operator is in front of the control unit.

Make sure, that there will be no unauthorized operating of the main switch from the lifting device (for example with a padlock at the main switch).

Never stand below the load.

### 1.9 Instructions for the Operator

As an operator of the lifting device you must be trained before start-up. You must have read and understood the operating instructions and especially the chapters "Safety" and "Operating".

Be sure, that only authorized persons use the device. You are responsible for others in the operating range of the equipment.

Local safety requirements are fully applicable. Safety instructions in this document are complementary to the rules in force and do not supersede the latter.

### 1.10 Equipment for Personal Protection

Wear safety shoes when operating the device.

Before transporting dangerous goods the appropriate safety clothes have to be put on.

### 1.11 Behaviour in Emergencies

As an example sudden power failure is an emergency (the device switches off invariably!).

Turn the control handle fully to position "Lift". The operating unit lowers itself slowly with the load.

### 1.12 Checking the Guards

A non-return valve is mounted inside the rotary suction fitting. It prevents the load from dropping off the vacuum head if there is a sudden power failure.

Check the function of this non-return valve at the beginning of each shift (when operating in shifts) or once a week (when operating continually).

During the check stay outside the dangerous area.

When power fails, immediately put the load down if possible. If this is not possible, immediately leave the dangerous area near the load.

Checking:

⇒ Switch on the lifting device.

⇒ Lift a load and turn the control handle fully to position "Lift".

⇒ Switch off the lifting device. The device must lower itself slowly with the load.

The load must not drop off at once.

Correct faults before operating the device. If faults occur during operation, switch the device off and correct the faults before continuing work with the device.

## 2 Technical Data

Ambient temperature	0 - 40 °C
Max. lifting stroke	approx. 1550 mm

# Vacuum Hose Lifter Components

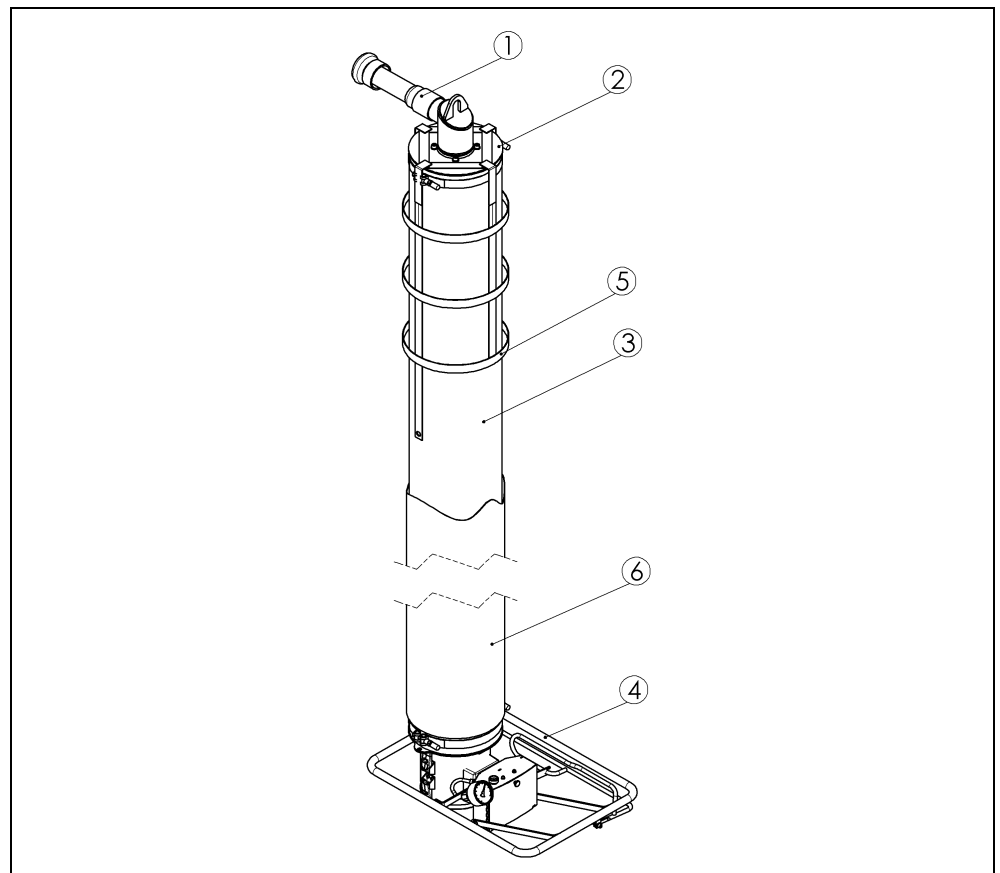
## Lifting hose unit with Operating Valve Unit

### 3 Description

#### 3.1 Components of the JUMBO

The *Vacuum Hose Lifter* consists essentially out of:

Pos.	Description	Remarks
1	Coupling	customer connection
2	Rotary suction fitting	customer connection
3	Lifting tube	customer connection
4	Operating unit	with regulator handle
5	Securing net	-
6	Covering for lifting tube	-



#### 3.2 Rotary Suction Fitting

The rotary suction fitting is connected to the suction hose of the blower and the lifting tube (3).

The lifting device is suspended on the rotary suction fitting.

The lifting device can be rotated endlessly.

#### 3.3 Lifting Tube

The lifting tube transmits the vacuum to the vacuum head(s) and realize the lifting movement of the lifting device.

#### 3.4 Control Unit

With the control unit the lifting and lowering of loads is controlled by changing the vacuum in the lifting device. It regulates the flow of outside air to the lifting unit.

The flow of outside air and therefore the vacuum is controlled by an orifice disc. It is operated by a regulator lever (Pos. 4.2). The load is lifted when the control opening is fully closed by the slider. The farther the control opening is open, the more outside air will be drawn in. The load will lower.

### 3.5 Accessories

#### Dust Filter

The installation of a dust filter is urgently recommended to protect the fan from all kinds of dirt (dust from surroundings, dirty loads etc.)

Observe the enclosed installation instructions for dust filter.

Note: If no dust filter is used, foreign objects must be excluded from the guarantee as a possible cause of failure.

#### Motor Overload switch

With this device, the blower can be switched on and off. An integrated overcurrent switch prevents the blower motor from being damaged by high current.

#### Tube cylinder Extension

The tube cylinder extension is designed for handle parts in high-sided boxes, crates, wire-mesh boxes, etc. The tube cylinder extension has to be mounted between the vacuum head and the control unit.

#### Vacuum gauge

The vacuum gauge indicates the underpressure at the vacuum head and thereby the status of operation of the lifting device. It is mounted at the control unit.

#### Protection Tube

The protection tube is a protective covering for the lifting tube.

#### Retaining net

The retaining net is for space-saving storage of the lifting device. The length of the lifting tube is reduced to a minimum.

## 4 Installation

### 4.1 Installation Procedure

The *Vacuum Hose Lifter* must be installed and maintained by qualified personnel, mechanics and electricians. Any work on the electrical equipment may be carried out only by a qualified electrician.

#### Blower Installation

⇒ Install the vacuum blower as described in the separate operating instructions.

#### Checking the Rotation Direction

Before commissioning, check that the blower rotation direction corresponds with that in the separate manual.



When mounting the suction hose, observe that the hose is hanged up spirally turned ( $\varnothing$  at least 800 mm). Its length has to be the 1.3 to 1.5 times the jib length. The suction hose must hang down freely. It must not lie flat, rub or catch on anything.



- ⇒ Mount the rotary suction fitting (7) to the transport trailer (5) of the crane. Fasten it safely! Insert the transport trailer into the crane jib (2).
- ⇒ Mount the end stop (6) at the end of the crane jib. Never work without an end stop on the crane jib, otherwise the lifting device can fall off.
- ⇒ Connect the suction hose to the rotary suction fitting (4) and secure it with a hose clamp.

If you install the suction hose, note that the hose contracts under the pressure of vacuum by approximately 10 to 15 %. Therefore, a loose installation with length compensation should be provided. Longer, linear distances can also be bridged with a plastic pipe. The overall length should not exceed 50 m. Long suction hoses reduce the capacity and the dynamics of the tube lifter.

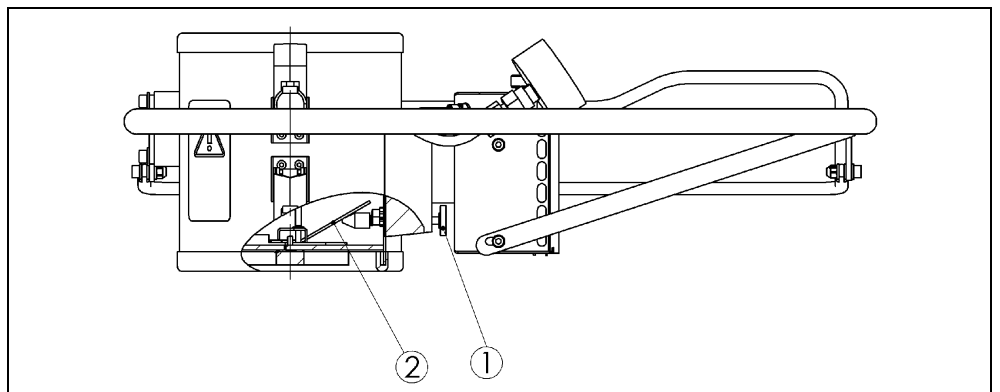
### 4.2 Adjusting the Hovering Position (without load)

The hovering position of the lifting device must be adapted to the weight of the vacuum head. A valve (2) in the tube support cylinder is used to adjust it. When you apply the vacuum head to the load a valve is fully opened by a plunger and the valve rod in the vacuum head. The load can be sucked and lifted.

Adjustment:

- ⇒ Turn the adjustment screw (1) at the operating unit (accessible from the bottom).
  - Turn clockwise (direction of arrow) → Valve becomes opened.
  - Turn counter-clockwise → Valve becomes closed.
- ⇒ The farther the valve is opened the lower the device hovers.

When the valve is closed totally the device bounce up abruptly as soon the blower is switched on!



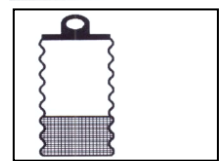


### 4.3 Replacing the lifting tube



The lifting tube can be replaced on-site.

The lifting tube must always be installed with the reinforced section at the bottom!



#### Procedure:

- ⇒ Clamp the rotary inlet in a vice, holding it by the screws of the tube holder (Fig. 1).
- ⇒ Remove the protective caps from the ends of the threads of the hose clamps.
- ⇒ Use a spanner to remove the hose clamps from the tube cylinder (Fig. 2) and the rotary inlet (Fig. 3).
- ⇒ Remove the adhesive tape from the old lifting tube.
- ⇒ Unscrew the old lifting tube from the tube mounting of the tube cylinder (Fig. 4).
- ⇒ Unscrew the lifting tube from the tube mounting of the rotary inlet (Fig. 5).
- ⇒ Lightly grease the threads of the tube mountings (Fig. 6).
- ⇒ Mount the new lifting tube with the reinforced section at the bottom!
- ⇒ Fully screw the new lifting tube onto the threads of the rotary inlet (Fig. 7).
- ⇒ Fully screw the new lifting tube onto the threads of the tube cylinder (Fig. 8).
- ⇒ Wind tow full turns of adhesive tape (Coroplast) around the ends of the lifting tube to seal it to the tube cylinder (Fig. 9) and the rotary inlet (Figs. 10, 11).
- ⇒ Place the hose clamps on the ends of the lifting tube and tighten them with a torque of 10 Nm, using a torque wrench (Fig. 12).
- ⇒ Fit the protective caps on the ends of the threads of the hose clamps.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12

Serial number →  
Lifting tube dimension →

Probst GmbH D-71729 Erdmannhausen www.probst-gmbh.de		<b>probst</b> Graphische Verlagssysteme
123166*		
230 x 2350	11.04.01.10178	

← Article number lifting tube

## 5 Operating

### 5.1 Safety Instructions

Local safety requirements are fully applicable. The following safety instructions are complimentary to the rules in force and do not supersede the latter:

- ⇒ Wear safety shoes.
- ⇒ Before transporting dangerous goods the corresponding safety clothes have to be put on.
- ⇒ Never exceed the maximum lifting capacity of the lifting device. Observe the name plate on the handle.
- ⇒ Do not stand below the load. Always keep clear of the load.
- ⇒ Never carry people or animals with the load or the lifting device itself !
- ⇒ Operate only when you can view the entire working area. Look out for other persons in the working area.
- ⇒ Never manoeuvre loads above people.
- ⇒ Never lean about lifted loads.
- ⇒ Do not let go of the handle whilst lifting a load.
- ⇒ Do not pull loads to the side or drag them along with the lifting device.
- ⇒ Do not rip loose loads that have become jammed.
- ⇒ If there is a power failure immediately turn the handle (**JUMBOERGO**) resp. push upwards the regulator lever (**JUMBOSPRINT**) fully to "Lift" to prevent the load from dropping off. The reserve vacuum will let the lifting device lower slowly with the load.
- ⇒ Apply suction and lift only to appropriate loads (check for stability and porosity).
- ⇒ The lifting device is mounted into the crane rails with rail end stops. While moving against the rail end stops, strong horizontal forces can occur. These forces can result in releasing the load.



**Danger**

**If the lifting unit (lifting tube) is not able to lift the vacuum-gripped load, never try to support the lifting of the load, it is possible that the gripper's holding force is inadequate.**

**The load could fall → risk of injury.**

### 5.2 Lifting, Lowering and Landing Loads

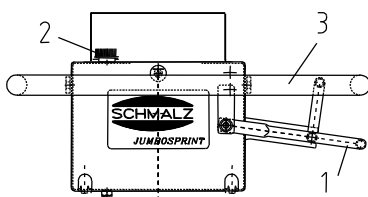
The following operating steps must be checked by a qualified mechanic prior to use of the device by the operating personnel. Correct faults before start-up.

The hovering position (without load) must be adjusted prior to start up, see 4.2.



**Danger**

**Lifting**



**Attention**

- ⇒ Place the vacuum head directly above the load.
  - ⇒ Press the regulator lever (1) down. The lifting tube descends and the vacuum head lowers.
  - ⇒ Apply the vacuum head to the load. Distribute load evenly.
  - ⇒ Slowly push the regulator lever (1) upward. The device attaches to the load.
- Attention:** the regulator lever must not be on the position "Lift" for more than 90 seconds because otherwise:
- ⇒ the blower could be damaged and fail, all guarantee claims are void!
  - ⇒ power is wasted unnecessarily.

### Adjusting the hovering position with load

Turn the adjusting screw (2) to adjust the hovering position with the load.

**Caution:** Do not confuse this adjustment with the hovering position without load.

- ⇒ Turn screw clockwise → the hovering position will be lower.
- ⇒ Turn screw counter-clockwise → the hovering position will be higher.



**Attention**

**Attention:** the hovering position with load should not be adjusted to the highest position of the control unit because otherwise:

- ⇒ the blower could be damaged and fail, all guarantee claims are void!
- ⇒ power is wasted unnecessarily.

### Lowering, Placing



**Danger**

- ⇒ Slowly move the regulator lever (1) downward - "Lower". The lifting tube descends and the vacuum head lowers with the load.

Do not operate the regulator lever control abruptly, while you firmly hold the handlebar (3), as this can cause the load to fall off, because the vacuum suddenly vanishes.

- ⇒ Lower the load to the chosen position.
- ⇒ To land the load push the regulator lever down all the way. Tip the valve control box a little and lift it off the load.

## 6 Trouble Shooting

The device must be installed and maintained by qualified personnel, mechanics and electricians. Any work on the electrical equipment may be carried out only by a qualified electrician.

After each repair or maintenance job check the guards as described in the Operating Manual "Safety".

**If a load cannot be lifted**, check through the following list to find the problem and correct it.

Error	Remedy
Opposite direction of rotation	⇒ Transpose the phases of the blower connection.
The required vacuum is not reached	⇒ Check the suction hose and tube lifter for airtightness. ⇒ Check the mounting of the suction heads ⇒ Clean resp. replace the dust filter cartridge
The load is too heavy	Split the load, use other lifting device.
The load is too porous or of low bending strength	Load cannot be lifted, try using a different vacuum head.
Suction hose is damaged	Replace hose or cut out damaged piece and connect remaining hose with a tube and hose clamps
Vacuum lifting tube is damaged	Replace the vacuum lifting tube
Connection of the vacuum head is damaged	Check seal on the tube cylinder, replace it.
Vacuum head is damaged	Check seal on the vacuum head, replace it.
The load drop off when you lower it	Please contact the manufacturer
The vacuum is reached but the lifting device can not lift porous loads	Please contact the manufacturer
The control unit of the tube lifter hangs in the upper block position (with running blower) even without load and is not coming down by turning the handle or regulator lever	⇒ Turn the adjustment screw at the control unit clockwise ⇒ Clean or replace the dust filter of the control unit

## 7 Maintenance

### 7.1 General Notes

The *Vacuum Hose Lifter* may be installed and maintained only by qualified personnel such as mechanics and electricians.

After any repair or maintenance work, check the safety devices as described in the section "Safety".

### 7.2 Cleaning

The maintenance proceedings and intervals are described in the service-table. Use cleaning detergent to clean the device (do not use petrol (gasoline) or aggressive or corrosive fluids to clean the device. The vacuum lifting tube and the suction hose will otherwise become leaky or be destroyed).

Remove items and contaminations such as adhesives, glue, saw dust, dust etc. sticking to the vacuum heads at least once a week. Use glycerine to clean the seals. Immediately replace damaged vacuum heads (tears, holes, waves).

### 7.3 Accident prevention rules

Accident prevention rules require a yearly inspection of lifting device and crane by a qualified person.

### 7.4 Service-Table

	Interval				
	daily	weekly	monthly	1/2-yearly	yearly
<b>Tube Lifter</b>					
Is the lifting tube in good condition ( not porous, no scrubbing spots, no holes and with that tight)?			X		X
Is the fastening of the lifting tube correct (wire clips at the correct place, tightening )?					X
Can the rotary suction fitting be rotated easily itself?			X		X
Does the rotary handle resp. the control handle operates smooth?			X		X
Are all junctions fixed, hose band clips etc.?					X
Are the type- and the lifting- capacity label still on the machine?					X
Is the operating instruction still present and does the worker know of it?					X
Is the handle firm?					X
Is the filtermat still at the operator unit and is it cleaned?			X		X
Check supporting parts (such as the suspension of the device) on deformation, wear, rust or other damages.				X	
<b>Function</b>					
Can the device be lifted and lowered without weight easily ? (Adjusting the valve in the operating unit)			X		X
<b>JUMBOSPRINT:</b> Can the hovering position of the device with weight be adjusted easily ? (Adjusting the adjusting screw at the operating unit)					X
Does the non return valve work by power failure?			X		X
Check the general condition of the machine.					X



### 8 Notes on the Name Plate

On the nameplate the main data for the lifting device is indicated.  
The nameplate is firmly connected to the device.  
The nameplate contains the following information:



- ← Type
- ← Device number
- ← Order number
- ← Max. lifting capacity
- ← Weight of device



Type and number are vital for identification of the unit. Indicate these when ordering spares or filing claims and other inquiries.

The max. lifting capacity indicates for which maximum load the device can be used. The max. load must not be exceeded.

### 9 Storage

If you are not using the Jumbo Sprint vacuum hose lifter, you should store it correctly to best preserve the product quality. This entails the following:

- ⇒ Clean the product (see 7.2) and let it dry if wet
- ⇒ Store the product in a room that protects it from moisture and frost (recommendation: in the manufacturer's storage case)
- ⇒ Storage temperature: +0 – 40 °C

To start up the system again, refer to chapter 4, "Installation"

### 10 Guarantee, spare and consumable parts

This equipment is guaranteed in accordance with our General Conditions of Business. This also applies to spare parts where these are original parts supplied by us.

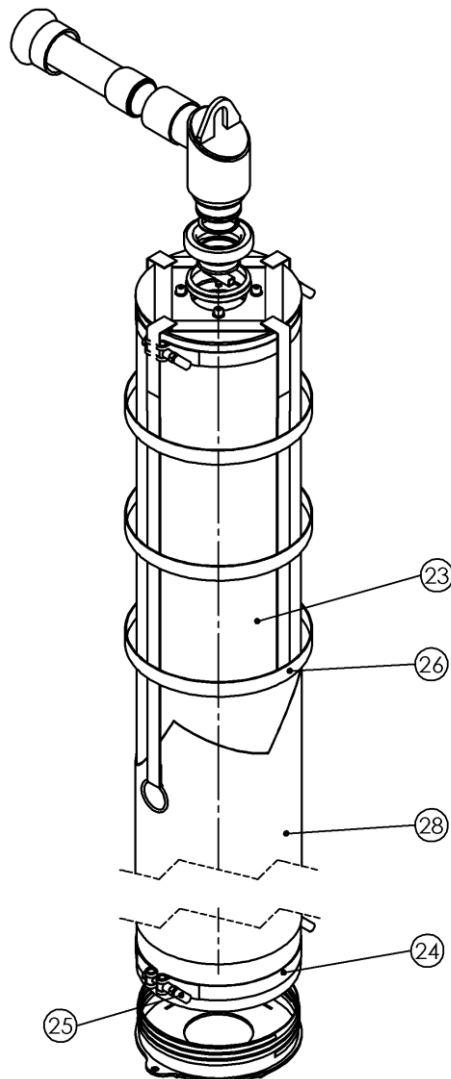
We will assume no liability for damage caused by the use of non-original spare parts and accessories.

Wear and consumable parts are not covered by the guarantee.

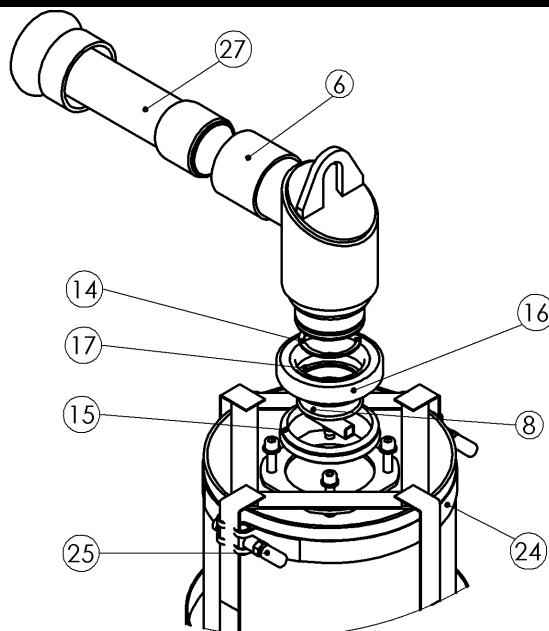
The most important spare and consumable parts are shown in the following list.

- Abbreviations:
- Spare part = **E**
  - Consumable part = **V**
  - Consumable-part assembly, contains consumable parts = **VB**

Hubeinheit / Lifting Hose Assy



Dreheinheit / Rotation Unit



# Hubeinheit mit Bedieneinheit

## Ersatzteile/ /Spare Parts

Hubeinheit / Lifting Hose Assy						
Pos.	Menge / Amount	Bezeichnung	Description	Abmessung / Dimension	Art. No.	Legende
6	1	G 2" - L 56 - D 66,3	G 2" - L 56 - D 66,3		2700.0007	E
8	1	Flachsauggreifer_PFG	Flat suction pad_PFG		4210.0610	V
14	1	DIN 472 - 54 x 2,0	DIN 472 - 54 x 2,0		2048.0025	E
15	1	V-Ring	V-ring		4210.0611	V
16	1	Kugellager	Bearing		2135.0022	E
17	1	DIN 471 - 65 x 2,5	DIN 471 - 65 x 2,5		2048.0026	E
23	1	Hubschlauch	Lifting hose	PVC	2527.0010	V
24	2	Schlauchschelle	Hose clamp	SSB	2105.0068	E
25	4	Kappe für SSB	Cap for SSB		2202.0042	E
26	1	Haltenetz	Securing net		2527.0005	V
27	1	Kupplung	Coupling		4200.0042	E
28	1	Schutzhülle	Covering for lifting tube		2529.0007	E

**E= Ersatzteil, V= Verschleißteil, VB= Verschleißteilbaugruppe, enthält Verschleißteile**

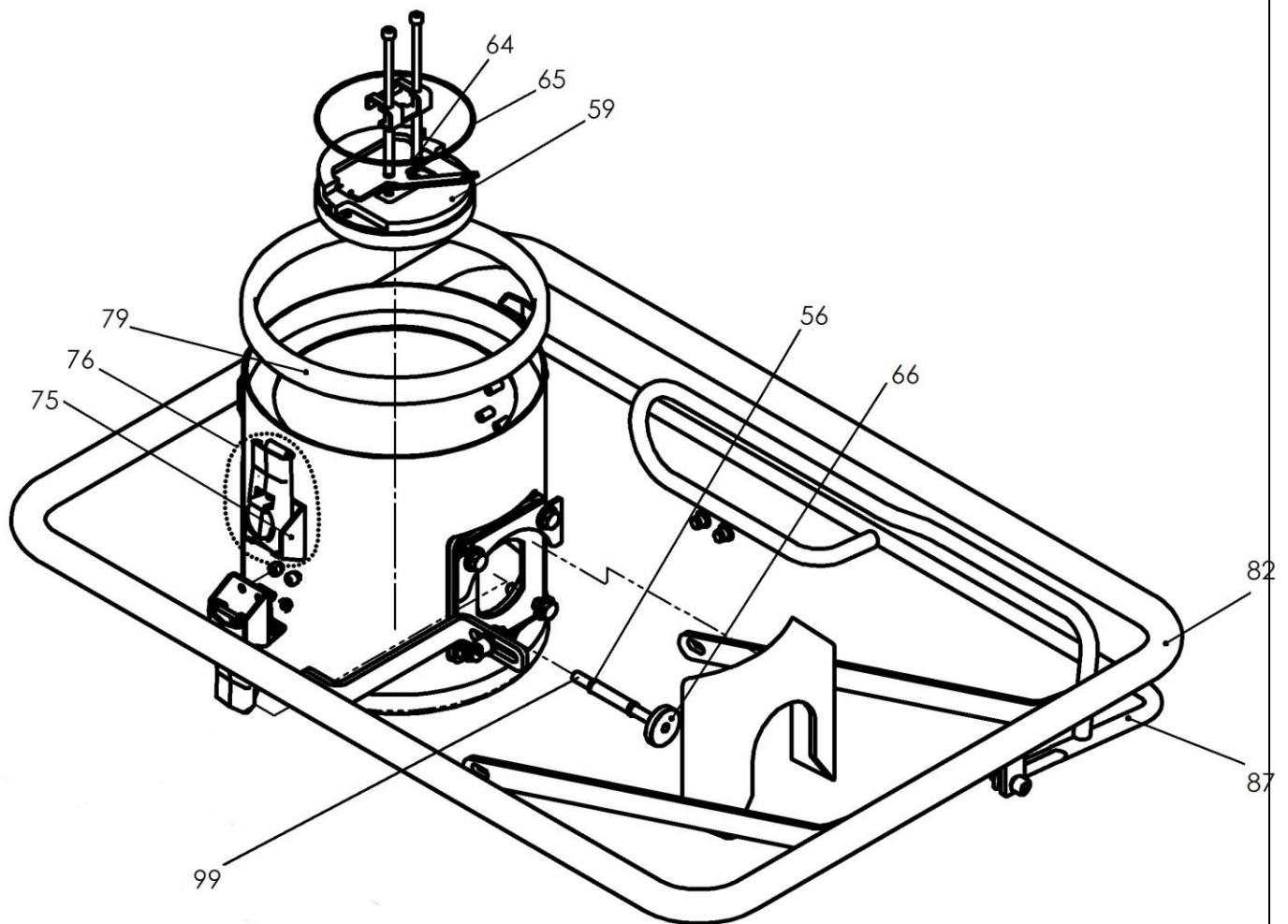
**E= Spare part, V= Consumable part, VB= Consumable-part assembly, contains consumable parts**

Hubeinheit / Lifting Hose Assy						
Pos.	HE 35-E/S-BP	HE 50-E/S-BP	HE 80-E/S-BP	HE 150-E/S-BP	HE 200-E/S-BP	HE 300-E/S-BP
23	11.04.01.10007	11.04.01.10028	11.04.01.10066	11.04.01.10178	11.04.01.10070	11.04.01.10129
24	10.07.10.00048	10.07.10.00049	10.07.10.00039	10.07.10.00046	10.07.10.00040	10.07.10.00065
26	11.01.12.10141	11.01.14.10058	11.01.05.10248	11.01.23.10043	11.01.25.10039	11.01.25.10084
28	11.04.01.10023	11.04.01.10018	11.04.01.10017	11.04.01.10132	11.04.01.10073	11.04.01.10127

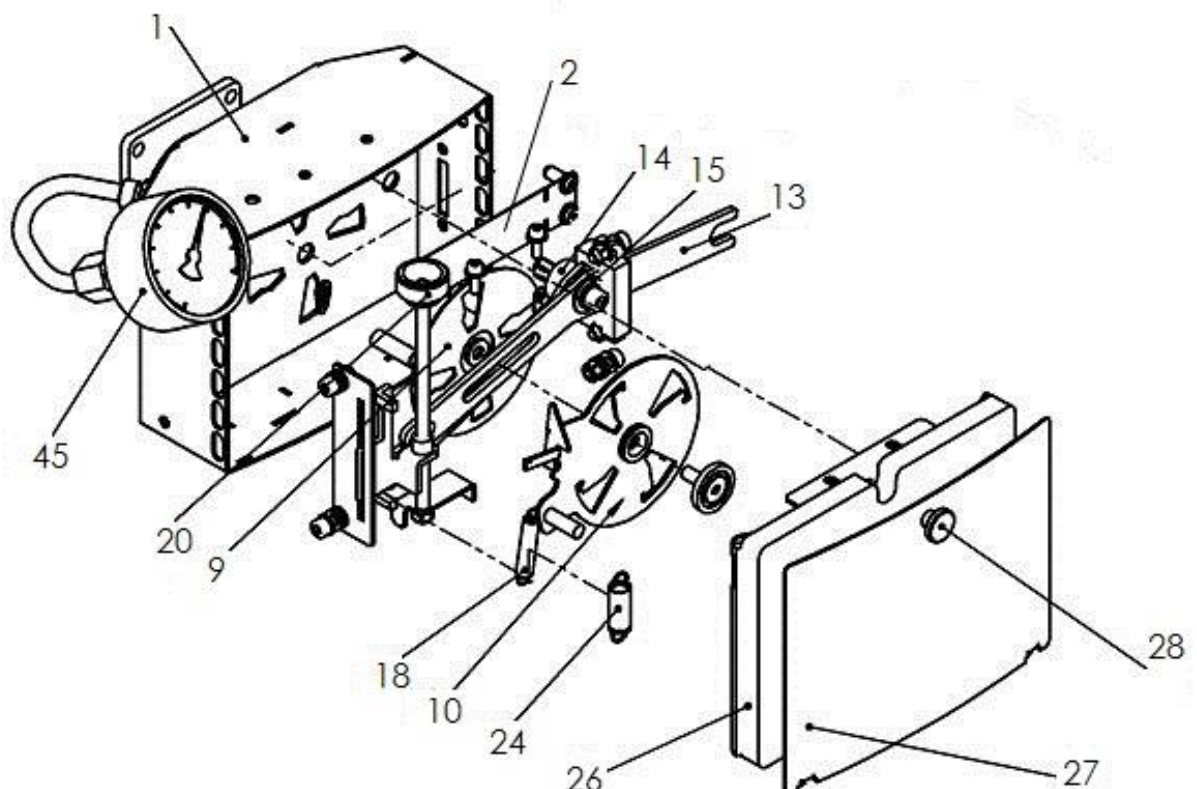
**E= Ersatzteil, V= Verschleißteil, VB= Verschleißteilbaugruppe, enthält Verschleißteile**

**E= Spare part, V= Consumable part, VB= Consumable-part assembly, contains consumable parts**

Ventileinheit, Bedieneinheit / Valve Unit, Operating handle



Ventileinheit / Valve Unit

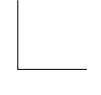


Ventileinheit, Bedieneinheit / Valve Unit, Operating handle						
Pos.	Menge / Amount	Bezeichnung	Description	Abmessung / Dimension	Art. No.	Legende
1	1	Ventilgehäuse kpl.	Valve casing compl.		4210.0612	E
2	1	Federklappe	Spring flap		4210.0608	E
9	1	Reibbelag	Friction lining		4210.0613	E
10	1	Scheibe	Disk		4210.0614	E
13	1	Schieber	Slide		4210.0401	E
14	1	Hülse	Socket for slide		4210.0535	E
15	1	Gleitlager	Bearing bush		4210.0536	E
18	1	Zugfeder	Tension spring	Z 066 OI	2171.0008	E
20	1	Stellschraube	Adjusting screw		4210.0403	E
24	1	Zugfeder	Tension spring	Z 081 HI	2171.0009	E
26	1	Filtermatte	Filter mat		2505.0010	V
27	1	Abdeckung f. Ventilklappe	Cover for valve unit		4210.0615	E
28	1	Rändelschraube	Knurled screw		2009.0038	E
45	1	Manometer VAM	Manometer VAM		2213.0007	E
56	1	Druckfeder	Spring (pressure)		2170.0044	E
59	1	Ventilklappe	Valve flap		4210.0558	E
64	2	Druckfeder	Spring (pressure)		2170.0045	E
65	1	O-Ring	O-ring seal		2155.0087	V
66	1	Rändelmutter	Knurled nut		2019.0021	E
75	4	Spannhaken für Spannverschluss	Tension hook		2106.0011	E
76	2	Spannverschluss	Tension lock		2106.0004	
79	2	Schlitzgummiring	Ruber seal		4210.0091	V
82	1	Haltebügel	Supporting strap		4210.0405	E
87	1	Reguliergriff	Control handle		4210.0406	E
99	1	Rundstab	Rod		4210.1051	E

**E= Ersatzteil, V= Verschleißteil, VB= Verschleißteilbaugruppe, enthält Verschleißteile**

**E= Spare part, V= Consumable part, VB= Consumable-part assembly, contains consumable parts**





INTRODUCTION

Thank you for purchasing a Honda engine. We want to help you to get the best results from your new engine and to operate it safely. This manual contains information on how to do that; please read it carefully before operating the engine. If a problem should arise, or if you have any questions about your engine, consult an authorized Honda servicing dealer.

All information in this publication is based on the latest product information available at the time of printing. Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation. No part of this publication may be reproduced without written permission.


This manual should be considered a permanent part of the engine and should remain with the engine if resold.

Review the instructions provided with the equipment powered by this engine for any additional information regarding engine startup, shutdown, operation, adjustments or any special maintenance instructions.



United States, Puerto Rico, and U.S. Virgin Islands:  
We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership. The warranty policy is a separate document that should have been given to you by your dealer.

SAFETY MESSAGES

Your safety and the safety of others is very important. We have provided important safety messages in this manual and on the engine. Please read these messages carefully.

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol  and one of three words, DANGER, WARNING, or CAUTION.

These signal words mean:


-  **DANGER** You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
-  **WARNING** You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
-  **CAUTION** You CAN be HURT if you don't follow instructions.

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury.

DAMAGE PREVENTION MESSAGES

You will also see other important messages that are preceded by the word NOTICE.

This word means:

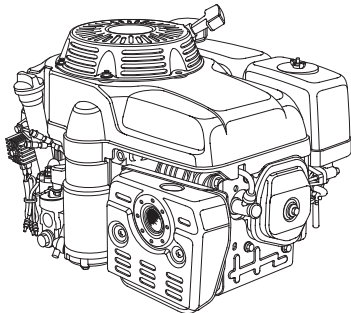
-  **NOTICE** Your engine or other property can be damaged if you don't follow instructions.



The purpose of these messages is to help prevent damage to your engine, other property, or the environment.

HONDA

OWNER'S MANUAL  
MANUEL DE L'UTILISATEUR  
MANUAL DEL PROPIETARIO  
GXV340 · GXV390

ENGLISH

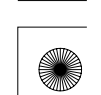


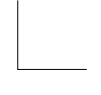
 **WARNING:** 

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

CONTENTS

INTRODUCTION .....	1	SPARK PLUG .....	10
SAFETY MESSAGES .....	1	SPARK ARRESTER .....	11
SAFETY INFORMATION .....	2	HELPFUL TIPS & SUGGESTIONS .....	11
SAFETY LABEL LOCATION .....	2	STORING YOUR ENGINE.....	11
COMPONENT & CONTROL LOCATION .....	2	TRANSPORTING .....	13
FEATURES .....	3	TAKING CARE OF UNEXPECTED PROBLEMS .....	13
BEFORE OPERATION CHECKS .....	3	TECHNICAL & CONSUMER INFORMATION .....	14
OPERATION .....	4	Serial Number Location .....	14
SAFE OPERATING PRECAUTIONS .....	4	Battery Connections for Electric Starter .....	14
STARTING THE ENGINE .....	4	Remote Control Linkage.....	14
STOPPING THE ENGINE .....	5	Carburetor Modifications for High Altitude Operation .....	14
SETTING ENGINE SPEED.....	6	Oxygenated Fuels.....	15
SERVICING YOUR ENGINE .....	7	Emission Control System Information .....	15
THE IMPORTANCE OF MAINTENANCE .....	7	Air Index.....	16
MAINTENANCE SAFETY.....	7	Specifications .....	16
SAFETY PRECAUTIONS.....	7	Tuneup Specifications.....	16
MAINTENANCE SCHEDULE .....	7	Quick Reference Information .....	17
REFUELING.....	8	Wiring Diagrams .....	17
ENGINE OIL.....	8	CONSUMER INFORMATION ..	18
Recommended Oil .....	8	Distributor/Dealer Locator Information .....	18
Oil Level Check.....	9	Customer Service Information .....	18
Oil Change.....	9		
AIR CLEANER.....	10		
Inspection .....	10		
Cleaning .....	10		





## SAFETY INFORMATION

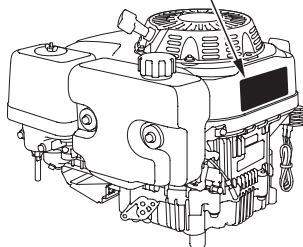
- Understand the operation of all controls and learn how to stop the engine quickly in case of emergency. Make sure the operator receives adequate instruction before operating the equipment.
- Do not allow children to operate the engine. Keep children and pets away from the area of operation.
- Your engine's exhaust contains poisonous carbon monoxide. Do not run the engine without adequate ventilation, and never run the engine indoors.
- The engine and exhaust become very hot during operation. Keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Keep flammable materials away, and do not place anything on the engine while it is running.

## SAFETY LABEL LOCATION

This label warns you of potential hazards that can cause serious injury. Read it carefully.  
If the label comes off or becomes hard to read, contact your Honda dealer for replacement.



For Canadian types only:  
French label comes with  
the engine.



Gasoline is highly flammable and explosive.  
Turn engine off and let cool before refueling.

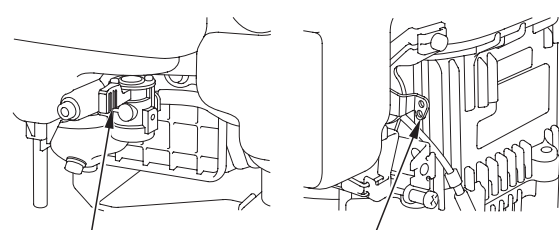
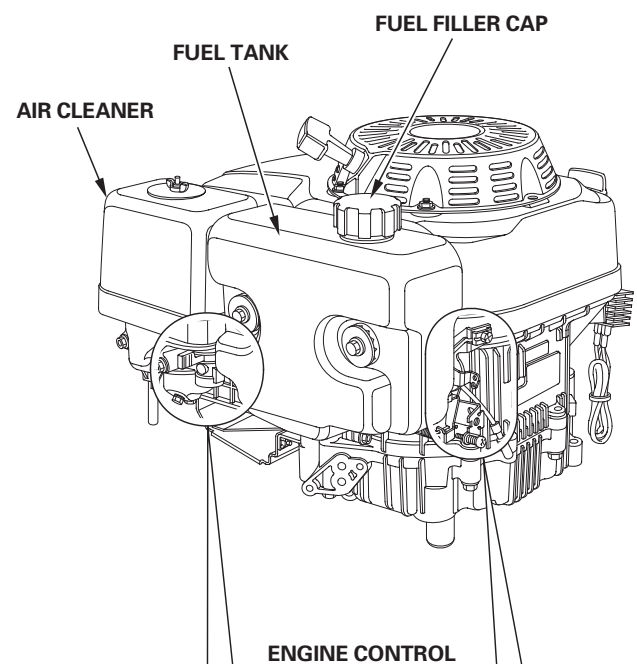
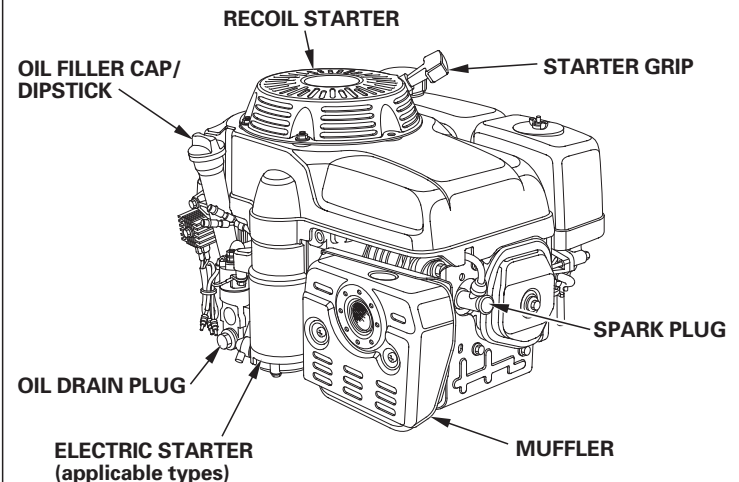


The engine emits toxic poisonous carbon  
monoxide gas. Do not run in an enclosed area.



Read Owner's Manual before operation.

## COMPONENT & CONTROL LOCATION



FUEL VALVE LEVER

CONTROL LEVER





FEATURES

OIL ALERT® SYSTEM (applicable types)

The Oil Alert® system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase can fall below a safe limit, the Oil Alert® system will sound a buzzer, warning you that oil needs to be added to the engine.

The Oil Alert® system is not designed to be used in place of checking the oil. Check the oil level prior to each use.

The “Oil Alert®” buzzer will arm you when engine oil needs to be added to the crankcase. If the buzzer sounds, stop the engine and add oil (see page 9).

NOTICE

*The buzzer indicates insufficient oil. Running the engine with insufficient oil can cause serious engine damage.*

BEFORE OPERATION CHECKS

IS YOUR ENGINE READY TO GO?

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the engine to check its condition. Be sure to take care of any problem you find, or have your servicing dealer correct it, before you operate the engine.

⚠ WARNING

Improperly maintaining this engine, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always perform a preoperation inspection before each operation, and correct any problem.

Before beginning your preoperation checks, be sure the engine is level and the engine switch is in the OFF position.

Always check the following items before you start the engine:

Check the General Condition of the Engine

- 1. Look around and underneath the engine for signs of oil or gasoline leaks.
- 2. Remove any excessive dirt or debris, especially around the muffler and recoil starter.
- 3. Look for signs of damage.
- 4. Check that all shields and covers are in place, and all nuts, bolts, and screws are tightened.

Check the Engine

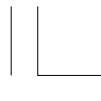
- 1. Check the fuel level (see page 8 ). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.
- 2. Check the engine oil level (see page 9 ). Running the engine with a low oil level can cause engine damage.

The “Oil Alert®” buzzer (applicable types) will warn you when engine oil needs to be added to the crankcase. If the buzzer sounds, stop the engine and add oil.

- 3. Check the air filter element (see page 10 ). A dirty air filter element will restrict air flow to the carburetor, reducing engine performance.
- 4. Check the equipment powered by this engine.

Review the instructions provided with the equipment powered by this engine for any precautions and procedures that should be followed before engine startup.





OPERATION

SAFE OPERATING PRECAUTIONS

Before operating the engine for the first time, please review the *SAFETY INFORMATION* section on page 2 and the *BEFORE OPERATION CHECKS* on page 3 .

**WARNING**  
  
Carbon monoxide gas is toxic. Breathing it can cause unconsciousness and even kill you.  
  
Avoid any areas or actions that expose you to carbon monoxide.

Review the instructions provided with the equipment powered by this engine for any safety precautions that should be observed with engine startup, shutdown or operation.

Control Lever

The control lever operates the engine switch, throttle, and choke.

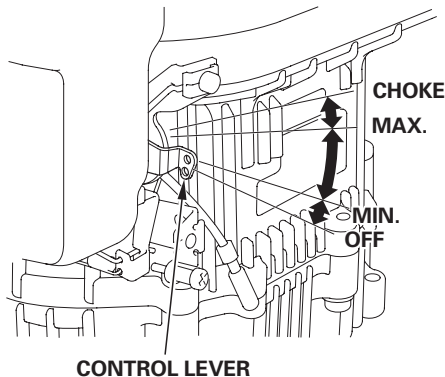
**OFF** -----Stop the engine by switching off the ignition system. All other control lever positions leave the ignition system switched on.

**MIN.** -----For running the engine at idle speed.

**MAX.** -----For restarting a warm engine, and for running the engine at maximum speed.

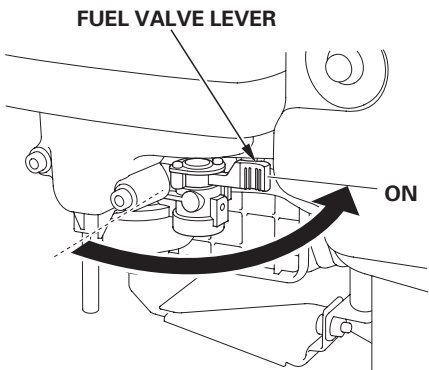
**CHOKE**-----Enriches the fuel mixture for starting a cold engine.

The control lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with that equipment for remote control information.

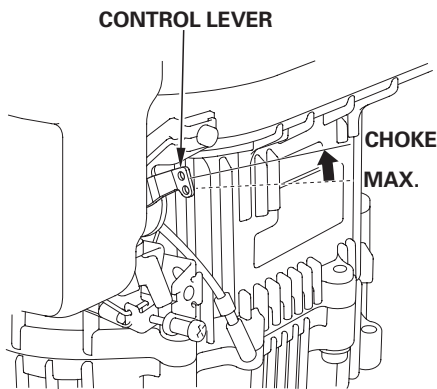


STARTING THE ENGINE

1. Move the fuel valve lever to the ON position.



2. To start a cold engine, move the control lever to the CHOKE position.



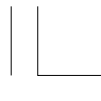
To restart a warm engine, leave the control lever in the MAX. position.

The control lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with that equipment for remote control information.

3. Turn the engine switch to the ON position.

There may be a remote engine switch mounted on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information.

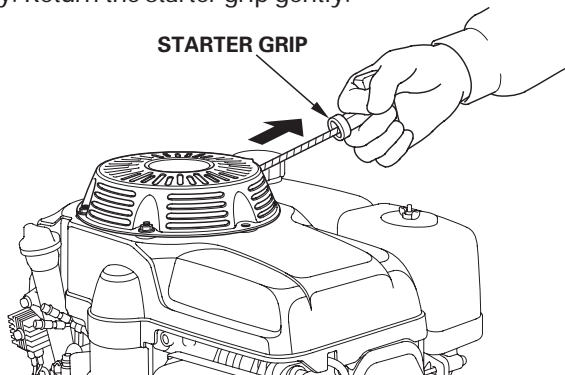




#### 4. Operate the starter.

##### RECOIL STARTER

Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.



##### NOTICE

*Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.*

##### ELECTRIC STARTER (applicable types):

The electric starter will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information.

Turn the engine switch key to the START position, and hold it there until the engine starts.

If the engine fails to start within 5 seconds, release the engine switch key, and wait at least 10 seconds before operating the starter again.

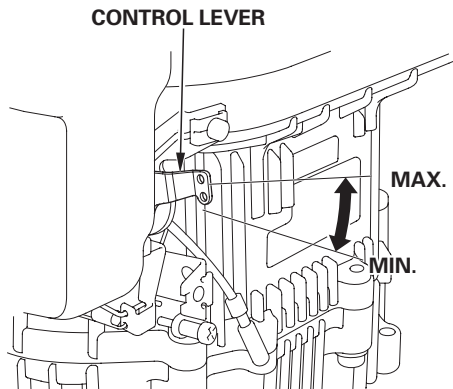
##### NOTICE

*Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.*

When the engine starts, release the engine switch key, allowing it to return to the ON position.

#### 5. If the control lever was moved to the CHOKE position to start the engine, gradually move it to the MAX. or MIN. position as the engine warms up.

The control lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with that equipment for remote control information.

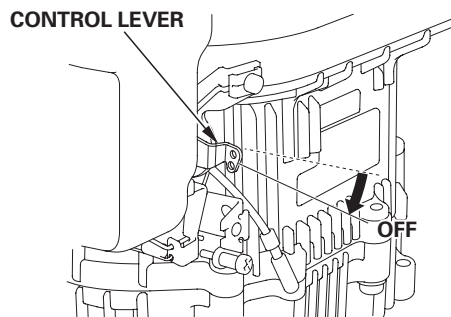


#### STOPPING THE ENGINE

To stop the engine in an emergency, simply move the control lever to the OFF position. Under normal conditions, use the following procedure.

##### 1. Move the control lever to the OFF position.

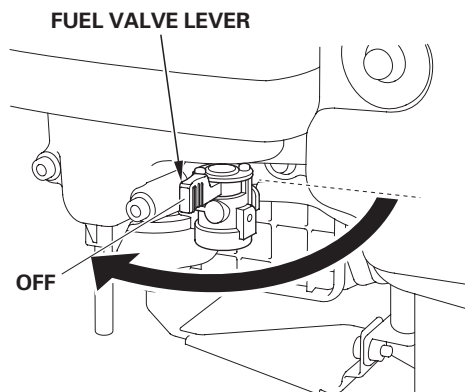
The control lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information.



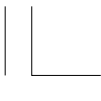
##### 2. Turn the engine switch to the OFF position.

There may be a remote engine switch mounted on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information.

##### 3. Turn the fuel valve lever to the OFF position.



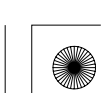
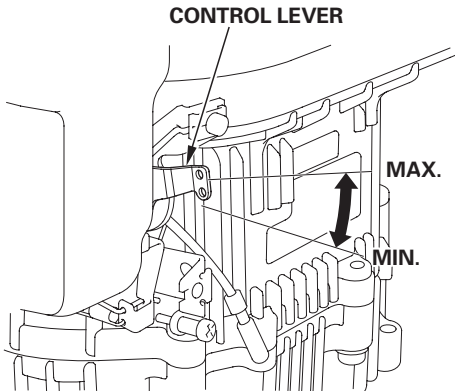




**SETTING ENGINE SPEED**

Position the control lever for the desired engine speed.

The control lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with that equipment for remote control information and engine speed recommendations.





SERVICING YOUR ENGINE

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical and trouble-free operation. It will also help reduce pollution.

**⚠ WARNING**

Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner’s manual.

To help you properly care for your engine, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a Honda technician or other qualified mechanic.

The maintenance schedule applies to normal operating conditions. If you operate your engine under severe conditions, such as sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

**Maintenance, replacement, or repair of the emission control devices and systems may be performed by any engine repair establishment or individual, using parts that are “certified” to EPA standards.**

MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

**⚠ WARNING**

Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in this owner’s manual.

SAFETY PRECAUTIONS

- Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:
  - **Carbon monoxide poisoning from engine exhaust.**  
Be sure there is adequate ventilation whenever you operate the engine.
  - **Burns from hot parts.**  
Let the engine and exhaust system cool before touching.
  - **Injury from moving parts.**  
Do not run the engine unless instructed to do so.
- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks and flames away from all fuel related parts.

Remember that an authorized Honda servicing dealer knows your engine best and is fully equipped to maintain and repair it. To ensure the best quality and reliability, use only new genuine Honda parts or their equivalents for repair and replacement.

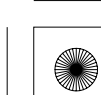
MAINTENANCE SCHEDULE

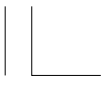
REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.		Each Use	First Month or 20 Hrs	Every 3 Months or 50 Hrs	Every 6 Months or 100 Hrs	Every Year or 300 Hrs	Refer to Page
ITEM							
Engine oil	Check level	○					9
	Change		○		○		9
Air filter	Check	○					10
	Clean			○ (1)			
	Replace					○ *	
Spark plug	Check-adjust				○		10
	Replace					○	
Spark arrester (applicable types)	Clean				○		11
Idle speed	Check-adjust					○ (2)	Shop manual
Valve clearance	Check-adjust					○ (2)	Shop manual
Combustion chamber	Clean	After every 250 Hrs. (2)					Shop manual
Fuel tank & filter	Clean					○ (2)	Shop manual
Fuel tube	Check	Every 2 years (Replace if necessary) (2)					Shop manual

\* Replace paper element type only.

- (1) Service more frequently when used in dusty areas.
- (2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to Honda shop manual for service procedures.
- (3) For commercial use, log hours of operation to determine proper maintenance intervals.

Failure to follow this maintenance schedule could result in non-warrantable failures.





REFUELING

Recommended Fuel

Unleaded gasoline		
U.S.	Pump octane rating 86 or higher	
Except U.S.	Research octane rating 91 or higher	
	Pump octane rating 86 or higher	

This engine is certified to operate on unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

⚠ WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when refueling.

- Stop engine and keep heat, sparks, and flame away.
- Refuel only outdoors.
- Wipe up spills immediately.

NOTICE

Fuel can damage paint and some types of plastic. Be careful not to spill fuel when filling your fuel tank. Damage caused by spilled fuel is not covered under the Distributor's Limited Warranty.

Never use stale or contaminated gasoline or oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

Occasionally you may hear a light “spark knock” or “pinging” (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

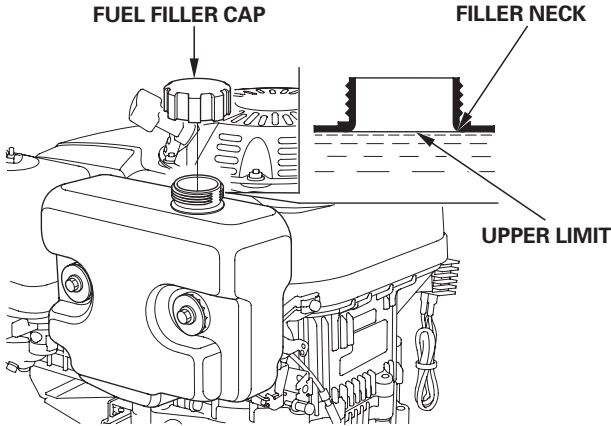
If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized Honda servicing dealer.

NOTICE

Running the engine with persistent spark knock or pinging can cause engine damage.

Running the engine with persistent spark knock or pinging is considered misuse, and the Distributor's Limited Warranty does not cover parts damaged by misuse.

1. With the engine stopped and on a level surface, remove the fuel filler cap and check the fuel level.
2. Refill the tank if the fuel level is low. Do not fill above the upper limit of the fuel tank. Wipe up spilled fuel before starting the engine.



Refuel in a well-ventilated area before starting the engine. If the engine has been running, allow it to cool. Refuel carefully to avoid spilling fuel. Do not fill the fuel tank completely. Fill tank to the upper limit level below the filler neck of the fuel tank to allow for fuel expansion. It may be necessary to lower the fuel level depending on operating conditions. After refueling, tighten the fuel filler cap securely.

Never refuel the engine inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

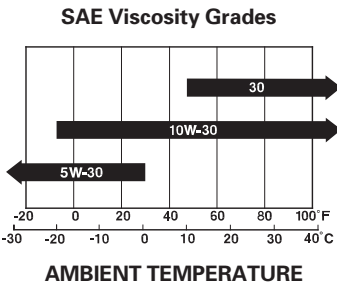
For information regarding oxygenated fuels, please refer to page 15.

ENGINE OIL

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

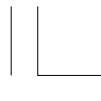
Recommended Oil

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SJ, SL, or equivalent. Always check the API service label on the oil container to be sure it includes the letters SJ, SL, or equivalent.



SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

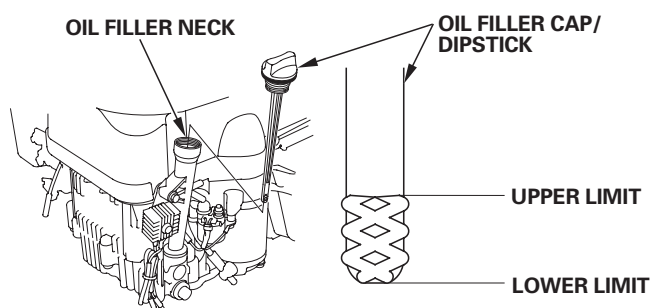




### Oil Level Check

Check the engine oil level with the engine stopped and in a level position.

1. Remove the oil filler cap/dipstick and wipe it clean.
2. Insert and remove the oil filler cap/dipstick without screwing it into the oil filler neck. Check the oil level shown on the dipstick.
3. If the oil level is near or below the lower limit mark on the dipstick, fill with the recommended oil (see page 8 ) to the upper limit mark. Do not overfill.
4. Screw in the filler cap/dipstick securely.



#### NOTICE

*Running the engine with a low oil level can cause engine damage.*

The "Oil Alert®" buzzer (applicable types) will warn you when engine oil needs to be added to the crankcase. If the buzzer sounds, stop the engine and add oil.

### Oil Change

Drain the used oil when the engine is warm. Warm oil drains quickly and completely.

1. Place a suitable container below the engine to catch the used oil, then remove the oil filler cap/dipstick, oil drain plug and washer.
2. Allow the used oil to drain completely, then reinstall the oil drain plug and new washer, and tighten the oil drain plug securely.

Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it on the ground, or down a drain.

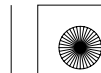
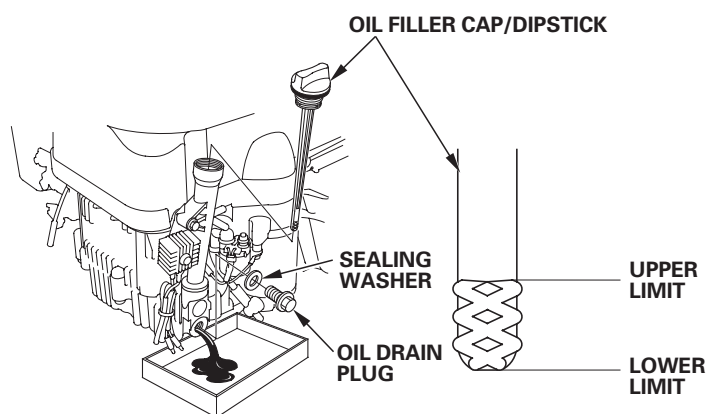
3. With the engine in a level position, fill to the upper limit mark on the dipstick with the recommended oil (see page 8 ).

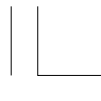
#### NOTICE

*Running the engine with a low oil level can cause engine damage.*

The "Oil Alert®" buzzer (applicable types) will warn you when engine oil needs to be added to the crankcase. If the buzzer sounds, stop the engine and add oil.

4. Screw in the oil filler cap/dipstick securely.





## AIR CLEANER

A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter more often than specified in the MAINTENANCE SCHEDULE.

### NOTICE

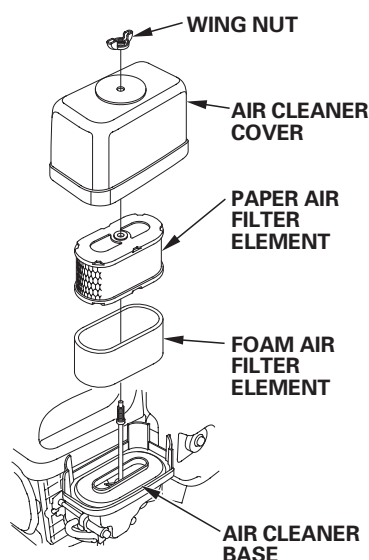
*Operating the engine without an air filter, or with a damaged air filter, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Distributor's Limited Warranty.*

### Inspection

Remove the air cleaner cover and inspect the filter elements. Clean or replace dirty filter elements. Always replace damaged filter elements.

### Cleaning

1. Remove the wing nut from the air cleaner cover, and remove the cover.
2. Remove the air filter elements.
3. Remove the foam air filter element from the paper air filter element.
4. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval (see page 7).



5. Clean the air filter elements if they are to be reused.

**Paper air filter element:** Tap the filter element several times on a hard surface to remove dirt, or blow compressed air [not exceeding 207 kPa (2.1 kgf/cm<sup>2</sup>, 30 psi)] through the filter element from the inside. Never try to brush off dirt; brushing will force dirt into the fibers.

**Foam air filter element:** Clean in warm soapy water, rinse, and allow to dry thoroughly. Or clean in nonflammable solvent and allow to dry. Dip the filter element in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam.

6. Wipe dirt from the inside of the air cleaner base and cover, using a moist rag. Be careful to prevent dirt from entering the air duct that leads to the carburetor.
7. Place the foam air filter element over the paper element, and reinstall the assembled air filter.
8. Install the air cleaner cover, and tighten the wing nut securely.

## SPARK PLUG

**Recommended Spark Plugs:** BPR5ES (NGK)  
W16EPR-U (DENSO)

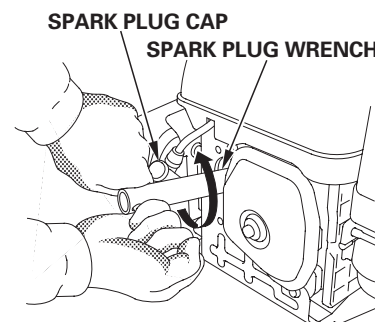
The recommended spark plug is the correct heat range for normal engine operating temperatures.

### NOTICE

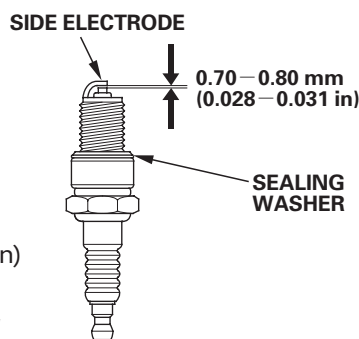
*An incorrect spark plug can cause engine damage.*

For good performance, the spark plug must be properly gapped and free of deposits.

1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if damaged, badly fouled, if the sealing washer is in poor condition, or if the electrode is worn.



4. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. The gap should be: 0.70–0.80 mm (0.028–0.031 in)
5. Install the spark plug carefully, by hand, to avoid cross-threading.



6. After the spark plug is seated, tighten with a 13/16-inch spark plug wrench to compress the sealing washer.
7. When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.
8. When reinstalling the original spark plug, tighten 1/8–1/4 turn after the spark plug seats to compress the washer.

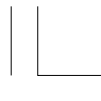
### NOTICE

*A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.*

9. Attach the spark plug cap to the spark plug.







### SPARK ARRESTER (applicable types)

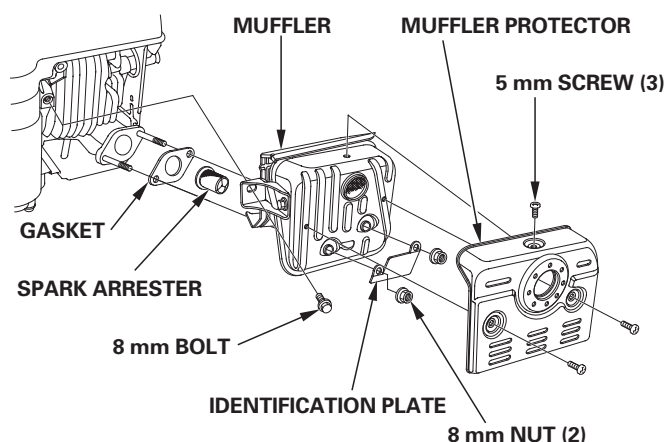
The spark arrester may be standard or an optional part, depending on the engine type. In some areas, it is illegal to operate an engine without a spark arrester. Check local laws and regulations. A spark arrester is available from authorized Honda servicing dealers.

The spark arrester must be serviced every 100 hours to keep it functioning as designed.

If the engine has been running, the muffler will be hot. Allow it to cool before servicing the spark arrester.

#### Spark Arrester Removal

1. Remove the three 5 mm screws from the muffler protector.
2. Remove the 8 mm bolt and the two 8 mm nuts, and remove the muffler protector, identification plate, muffler and gasket from the cylinder.
3. Remove the spark arrester from the muffler (take care not to damage the wire mesh).



#### Spark Arrester Cleaning & Inspection

1. Use a brush to remove carbon deposits from the spark arrester screen. Be careful not to damage the screen. Replace the spark arrester if it has breaks or holes.
2. Install the gasket, spark arrester, muffler, identification plate, and muffler protector in reverse order of removal.



## HELPFUL TIPS & SUGGESTIONS

### STORING YOUR ENGINE

#### Storage Preparation

Proper storage preparation is essential for keeping your engine trouble-free and looking good. The following steps will help to keep rust and corrosion from impairing your engine's function and appearance, and will make the engine easier to start when you use it again.

#### Cleaning

If the engine has been running, allow it to cool for at least half an hour before cleaning. Clean all exterior surfaces, touch up any damaged paint, and coat other areas that may rust with a light film of oil.

#### NOTICE

*Using a garden hose or pressure washing equipment can force water into the air cleaner or muffler opening. Water in the air cleaner will soak the air filter, and water that passes through the air filter or muffler can enter the cylinder, causing damage.*

#### Fuel

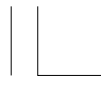
Gasoline will oxidize and deteriorate in storage. Deteriorated gasoline will cause hard starting, and it leaves gum deposits that clog the fuel system. If the gasoline in your engine deteriorates during storage, you may need to have the carburetor, and other fuel system components, serviced or replaced.

The length of time that gasoline can be left in your fuel tank and carburetor without causing functional problems will vary with such factors as gasoline blend, your storage temperatures, and whether the fuel tank is partially or completely filled. The air in a partially filled fuel tank promotes fuel deterioration. Very warm storage temperatures accelerate fuel deterioration. Fuel problems may occur within a few months, or even less if the gasoline was not fresh when you filled the fuel tank.

Fuel system damage or engine performance problems resulting from neglected storage preparation are not covered under the *Distributor's Limited Warranty*.

You can extend fuel storage life by adding a gasoline stabilizer that is formulated for that purpose, or you can avoid fuel deterioration problems by draining the fuel tank and carburetor.

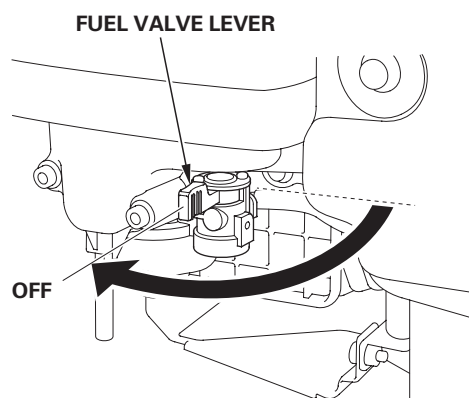




### Adding a Gasoline Stabilizer to Extend Fuel Storage Life

When adding a gasoline stabilizer, fill the fuel tank with fresh gasoline. If only partially filled, air in the tank will promote fuel deterioration during storage. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline.

1. Add gasoline stabilizer following the manufacturer's instructions.
2. After adding a gasoline stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.
3. Stop the engine, and move the fuel valve lever to the OFF position.



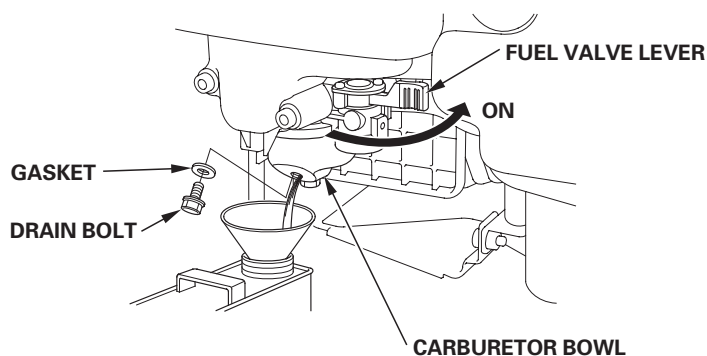
### Draining the Fuel Tank and Carburetor

#### ⚠ WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when handling fuel.

- Stop engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

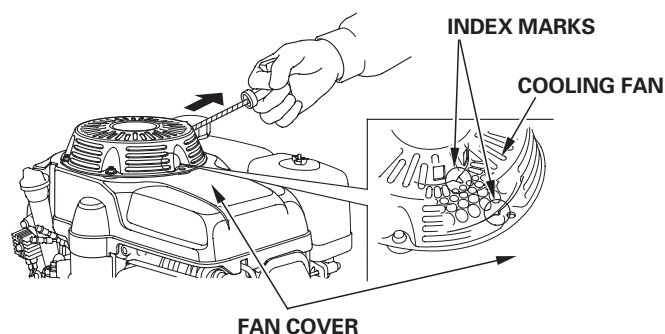
1. Place an approved gasoline container below the carburetor, and use a funnel to avoid spilling fuel.
2. Remove the drain bolt and gasket, and drain the carburetor bowl fuel into an approved gasoline container.
3. Move the fuel valve lever to the ON position. This will allow the fuel tank to drain through the carburetor bowl.



4. After draining the carburetor bowl and fuel tank, install the drain bolt and gasket and tighten securely.

### Engine Oil

1. Change the engine oil (see page 9).
2. Remove the spark plug (see page 10).
3. Pour a tablespoon 5 – 10 cm<sup>3</sup> (5 – 10 cc) of clean engine oil into the cylinder.
4. Pull the starter rope several times to distribute the oil in the cylinder.
5. Reinstall the spark plug.
6. Pull the starter rope slowly until resistance is felt. (At this time the index mark on the cooling fan aligns with the index mark on the fan cover). This will close the valves so moisture cannot enter the engine cylinder. Return the starter rope gently.



### Storage Precautions

If your engine will be stored with gasoline in the fuel tank and carburetor, it is important to reduce the hazard of gasoline vapor ignition. Select a well-ventilated storage area away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark-producing electric motor, or where power tools are operated.

If possible, avoid storage areas with high humidity, because that promotes rust and corrosion.

Unless all fuel has been drained from the fuel tank, leave the fuel valve lever in the OFF position to reduce the possibility of fuel leakage.

Position the equipment so the engine is level. Tilting can cause fuel or oil leakage.

With the engine and exhaust system cool, cover the engine to keep out dust. A hot engine and exhaust system can ignite or melt some materials. Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture around the engine, promoting rust and corrosion.

If equipped with a battery for electric starter types, recharge the battery once a month while the engine is in storage. This will help to extend the service life of the battery.





**Removal from Storage**

Check your engine as described in the *BEFORE OPERATION CHECKS* section of this manual (see page 3 ).

If the fuel was drained during storage preparation, fill the tank with fresh gasoline. If you keep a container of gasoline for refueling, be sure it contains only fresh gasoline. Gasoline oxidizes and deteriorates over time, causing hard starting.

If the cylinder was coated with oil during storage preparation, the engine will smoke briefly at startup. This is normal.

**TRANSPORTING**

If the engine has been running, allow it to cool for at least 15 minutes before loading the engine-powered equipment on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some materials.

Keep the engine level when transporting to reduce the possibility of fuel leakage. Turn the fuel valve to the OFF position (see page 5 ).

**TAKING CARE OF UNEXPECTED PROBLEMS**

ENGINE WILL NOT START	Possible Cause	Correction
1. Electric starting (applicable types): Check battery and fuse.	Battery discharged.	Recharge battery.
	Fuse burnt out.	Replace fuse.
2. Check control positions.	Fuel valve OFF.	Move lever to ON position.
	Choke open.	Move control lever to CHOKE position unless the engine is warm.
	Engine switch OFF. (if equipped)	Turn engine switch to ON position or move the throttle control away from the OFF position.
3. Check engine oil level.	Engine oil level low (Oil Alert types).	Fill with the recommended oil to the proper level (p. 9).
4. Check fuel.	Out of fuel.	Refuel (p. 8).
	Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p.12 ). Refuel with fresh gasoline (p. 8 ).
5. Remove and inspect spark plug.	Spark plug faulty, fouled, or improperly gapped.	Gap or replace spark plug (p.10 ).
	Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug. Start engine with control lever in MAX. position.
6. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

ENGINE LACKS POWER	Possible Cause	Correction
1. Check air filter.	Filter element(s) restricted.	Clean or replace filter element(s) (p.10 ).
2. Check fuel.	Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p.10 ). Refuel with fresh gasoline (p. 8 ).
3. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.



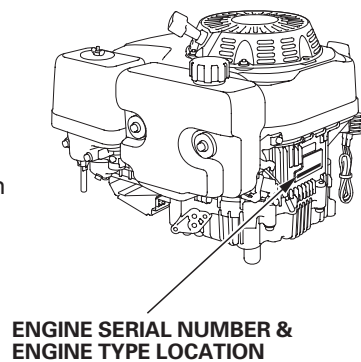


## TECHNICAL & CONSUMER INFORMATION

### TECHNICAL INFORMATION

#### Serial Number Location

Record the engine serial number, type and purchase date in the space below. You will need this information when ordering parts and when making technical or warranty inquiries.



Engine serial number: \_ \_ \_ \_ \_

Engine type: \_ \_ \_ \_ \_

Date Purchased: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

#### Battery Connections for Electric Starter(applicable types)

Use a 12-volt battery with an ampere-hour rating of at least 18 Ah.

Be careful not to connect the battery in reverse polarity, as this will short circuit the battery charging system. Always connect the positive (+) battery cable to the battery terminal before connecting the negative (–) battery cable, so your tools cannot cause a short circuit if they touch a grounded part while tightening the positive (+) battery cable end.

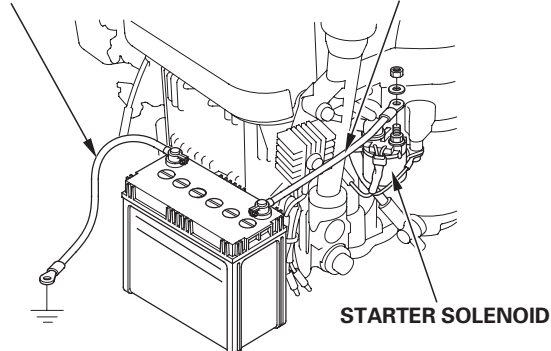
#### ⚠ WARNING

A battery can explode if you do not follow the correct procedure, seriously injuring anyone nearby.

Keep all sparks, open flames, and smoking materials away from the battery.

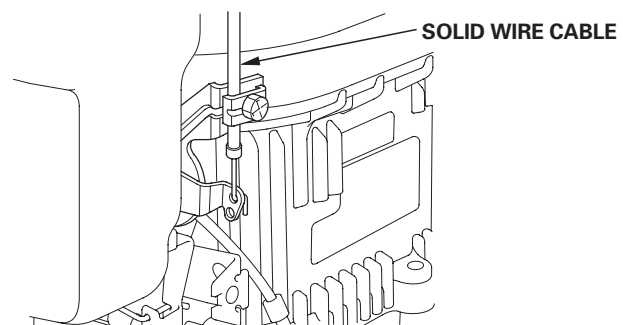
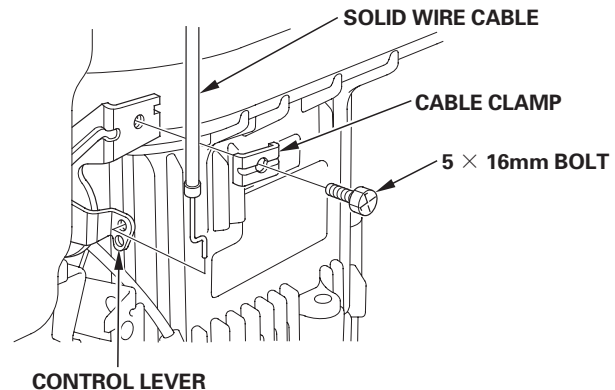
1. Connect the battery positive (+) cable to the starter solenoid terminal as shown.
2. Connect the battery negative (–) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.
3. Connect the battery positive (+) cable to the battery positive (+) terminal as shown.
4. Connect the battery negative (–) cable to the battery negative (–) terminal as shown.
5. Coat the terminals and cable ends with grease.

NEGATIVE (–) BATTERY CABLE      POSITIVE (+) BATTERY CABLE



#### Remote Control Linkage

The control is provided with a hole for cable attachment. Install a solid wire cable as shown below. Do not use braided wire cable.



#### Carburetor Modifications for High Altitude Operation

At high altitude, the standard carburetor air-fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your engine at altitudes above 1,500 meters (5,000 feet), have your servicing dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life.

Even with carburetor modification, engine horsepower will decrease about 3.5% for each 300-meter (1,000-foot) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

#### NOTICE

*When the carburetor has been modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use. Operation at altitudes below 1,500 meters (5,000 feet) with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your servicing dealer return the carburetor to original factory specifications.*



**Oxygenated Fuels**

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirements.

Before using an oxygenated fuel, try to confirm the fuel’s contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA approved percentages of oxygenates:

- ETHANOL

(ethyl or grain alcohol) 10% by volume  
You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name Gasohol.
- MTBE

(methyl tertiary butyl ether) 15% by volume  
You may use gasoline containing up to 15% MTBE by volume.
- METHANOL

(methyl or wood alcohol) 5% by volume  
You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline. Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under the *Distributor’s Limited Warranty*.

**Emission Control System Information**

**Source of Emissions**

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda utilizes lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

**The U.S., California Clean Air Acts and Environment Canada**

EPA, California and Canadian regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the emissions from your Honda engine within the emission standards.

**Tampering and Altering**

Tampering with or altering the emission control system may increase emissions beyond the legal limit. Among those acts that constitute tampering are:

- Removal or alteration of any part of the intake, fuel, or exhaust systems.
- Altering or defeating the governor linkage or speed-adjusting mechanism to cause the engine to operate outside its design parameters.

**Problems That May Affect Emissions**

If you are aware of any of the following symptoms, have your engine inspected and repaired by your servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

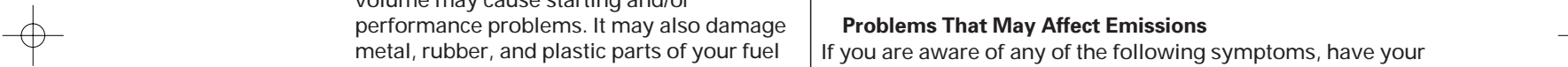
**Replacement Parts**

The emission control systems on your Honda engine were designed, built, and certified to conform with EPA, California and Canadian emission regulations. We recommend the use of genuine Honda parts whenever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

**Maintenance**

Follow the maintenance schedule on page 7 . Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, will require more frequent service.





Air Index

An Air Index Information hang tag/label is applied to engines certified to an emission durability time period in accordance with the requirements of the California Air Resources Board.

The bar graph is intended to provide you, our customer, the ability to compare the emissions performance of available engines. The lower the Air Index, the less pollution.

The durability description is intended to provide you with information relating the engine’s emission durability period. The descriptive term indicates the useful life period for the engine’s emission control system. See your *Emission Control System Warranty* for additional information.

Descriptive Term	Applicable to Emissions Durability Period
Moderate	50 hours [0–65 cm³ (0–65 cc)] 125 hours [greater than 65 cm³ (65 cc)]
Intermediate	125 hours [0–65 cm³ (0–65 cc)] 250 hours [greater than 65 cm³ (65 cc)]
Extended	300 hours [0–65 cm³ (0–65 cc)] 500 hours [greater than 65 cm³ (65 cc)]

The Air Index Information hang tag/label must remain on the engine until it is sold. Remove the hang tag before operating the engine.

Specifications

GXV340	
Length × Width × Height	433 × 382 × 406 mm (17.0 × 15.0 × 16.0 in)
Dry weight	31 kg (68 lbs)
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore × Stroke]	338 cm³ (20.6 cu-in) [82 × 64 mm (3.2 × 2.5 in)]
Max. output	6.6 kW (9.0 PS, 8.9 bhp) at 3,600 rpm
Max. torque	21.6 N·m (2.20 kgf·m, 15.9 lbf·ft) at 2,500 rpm
Engine oil capacity	1.10 ℓ (1.16 US qt , 0.97 Imp qt)
Fuel tank capacity	2.1 ℓ
Fuel consumption	2.3 ℓ/h at 3,000 rpm
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

GXV390	
Length × Width × Height	433 × 382 × 406 mm (17.0 × 15.0 × 16.0 in)
Dry weight	32 kg (71 lbs)
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore × Stroke]	389 cm³ (23.7 cu-in) [88 × 64 mm (3.5 × 2.5 in)]
Max. output	7.6 kW (10.3 PS, 10.2 bhp) at 3,600 rpm
Max. torque	24.2 N·m (2.47 kgf·m, 17.8 lbf·ft) at 2,500 rpm
Engine oil capacity	1.10 ℓ (1.16 US qt , 0.97 Imp qt)
Fuel tank capacity	2.1 ℓ
Fuel consumption	2.5 ℓ/h at 3,000 rpm
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

Tuneup Specifications		
ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.70–0.80 mm (0.028–0.031 in)	Refer to page: 10
Idle speed	1,400 ± 150 rpm	See your authorized Honda dealer
Valve clearance (cold)	IN: 0.15 ± 0.02 mm EX: 0.20 ± 0.02 mm	
Other specifications	No other adjustments needed.	

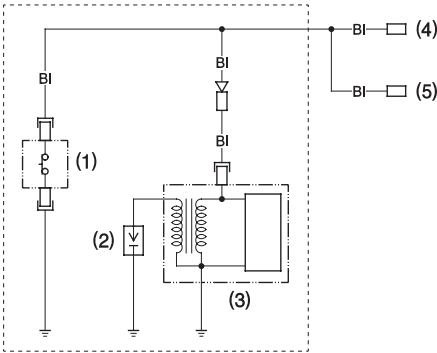


Quick Reference Information

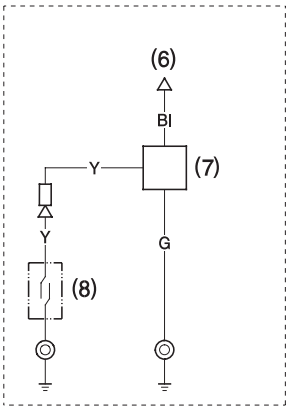
Fuel	Unleaded gasoline (Refer to page 8)	
	U.S.	Pump octane rating 86 or higher
	Except U.S.	Research octane rating 91 or higher
Engine oil	SAE 10W-30, API SJ or SL, for general use. Refer to page 8.	
Spark plug	BPR5ES (NGK) W16EPR-U (DENSO)	
Maintenance	Before each use: <ul style="list-style-type: none"><li>• Check engine oil level. Refer to page 9.</li><li>• Check air filter. Refer to page 10.</li></ul>	
	First 20 hours: Change engine oil. Refer to page 9.	
	Subsequent: Refer to the maintenance schedule on page 7.	

Wiring Diagrams

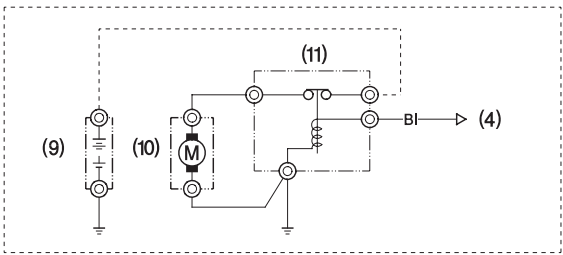
BASIC CIRCUIT



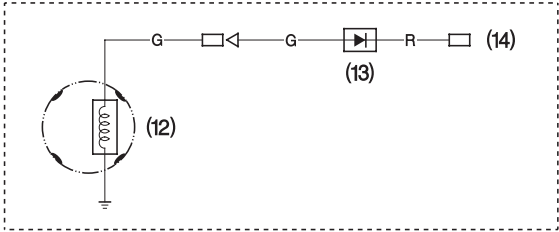
OIL ALERT CIRCUIT



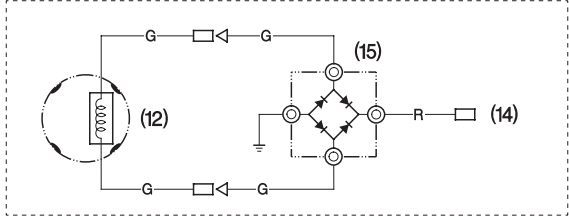
12V STARTER CIRCUIT



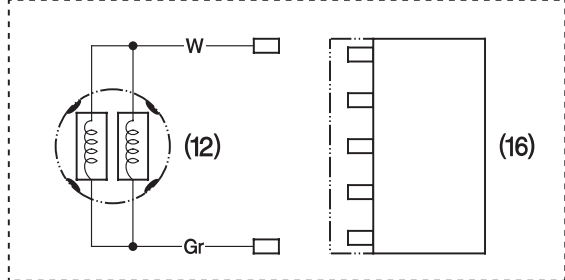
1A CHARGING SYSTEM



3A CHARGING SYSTEM

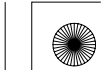


10A CHARGING SYSTEM



- |                           |                       |
|---------------------------|-----------------------|
| (1) ENGINE STOP SWITCH    | (9) BATTERY (12 V)    |
| (2) SPARK PLUG            | (10) STARTER MOTOR    |
| (3) IGNITION COIL         | (11) STARTER SOLENOID |
| (4) TO ENGINE SWITCH      | (12) CHARGING COIL    |
| (5) TO OIL ALERT CIRCUIT  | (13) DIODE            |
| (6) TO ENGINE STOP SWITCH | (14) TO LOAD          |
| (7) OIL ALERT BUZZER      | (15) RECTIFIER        |
| (8) OIL LEVEL SWITCH      | (16) REGULATOR        |

Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray





**CONSUMER INFORMATION**

**Distributor/Dealer Locator Information**

**United States, Puerto Rico, and U.S. Virgin Islands:**

Call (800) 426-7701  
or visit our website: [www.honda-engines.com](http://www.honda-engines.com)

**Canada:**

Call (888) 9HONDA9  
or visit our website: [www.honda.ca](http://www.honda.ca)

**For European Area:**

visit our website: <http://www.honda-engines-eu.com>

**Customer Service Information**

Servicing dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager, General Manager, or Owner can help. Almost all problems are solved in this way.

**United States, Puerto Rico, and U.S. Virgin Islands:**

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Regional Engine Distributor for your area.

If you are still dissatisfied after speaking with the Regional Engine Distributor, you may contact the Honda Office as shown.

**All Other Areas:**

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Office as shown.

**《Honda's Office》**

When you write or call, please provide this information:

- Equipment manufacturer's name and model number that the engine is mounted on
- Engine model, serial number, and type (see page 14 )
- Name of dealer who sold the engine to you
- Name, address, and contact person of the dealer who services your engine
- Date of purchase
- Your name, address and telephone number
- A detailed description of the problem

**United States, Puerto Rico, and U.S. Virgin Islands:**

**American Honda Motor Co., Inc.**

Power Equipment Division  
Customer Relations Office  
4900 Marconi Drive  
Alpharetta, GA 30005-8847

Or telephone: (770) 497-6400, 8:30 am - 8:00 pm EST

**Canada:**

**Honda Canada, Inc.**

715 Milner Avenue  
Toronto, ON  
M1B 2K8

Telephone:	(888) 9HONDA9 (888) 946-6329	Toll free
English:	(416) 299-3400	Local Toronto dialing area
French:	(416) 287-4776	Local Toronto dialing area
Facsimile:	(877) 939-0909 (416) 287-4776	Toll free Local Toronto dialing area

**Australia:**

**Honda Australia Motorcycle and Power Equipment Pty. Ltd.**

1954 – 1956 Hume Highway Campbellfield Victoria 3061

Telephone: (03) 9270 1111  
Facsimile: (03) 9270 1133

**For European Area:**

**Honda Europe NV.**

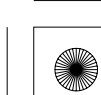
European Engine Center

<http://www.honda-engines-eu.com>

**All Other Areas:**

Please contact the Honda distributor in your area for assistance.

**HONDA**  
The Power of Dreams



# Proof of maintenance

Warranty claim for this machine only apply for performance of the mandatory maintenance works (by an authorised specialist workshop)! After each completed performance of a maintenance interval the included form must be fill out, stamped, signed and send back to us immediately <sup>1)</sup>.

1) via e-mail to [service@probst-handling.com](mailto:service@probst-handling.com) / via fax or post

Operator: \_\_\_\_\_

Device type: \_\_\_\_\_

Device-No.: \_\_\_\_\_

Article -No.: \_\_\_\_\_

Year of make: \_\_\_\_\_

## First inspection after 25 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		.....
		Name Signature

## All 50 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		.....
		Name Signature
		Company stamp
		.....
		Name Signature
		Company stamp
		.....
		Name Signature

## Minimum 1x per year

Date:	Maintenance work:	Inspection by company:
		Company stamp
		.....
		Name Signature
		Company stamp
		.....
		Name Signature