

JDN OPERATION MANUAL  
TROLLEYS



# JDN 行走小车操作手册



J.D. NEUHAUS  
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This manual, edition 4/2005, covers the  
operation of the following JDN Trolleys:  
这套操作手册，编辑于2005年4月，包括了以下

JDN行走小车的操作说明

- \_ manual trolleys 手动行走小车
- \_ reel chain trolleys 倒链行走小车
- \_ motorized trolleys 马达驱动行走小车
- \_ low headroom trolleys 低净空行走小车

and for the running gears of the following hoist  
systems: 以及以下提升系统的运转齿轮

- \_ synchronized hoists 同步提升
- \_ lifting and rotating units 提升和旋转单元
- \_ monorail hoists 单轨吊
- \_ ultra-low hoists 超低提升系统

Before operating any trolley, read the entire  
manual carefully. 在操作之前，一定要仔细阅读  
全部说明书

For trolleys with a built-in or suspended hoist,  
for motorized trolleys and for hoist systems,  
this manual is only valid together with the  
operation manual for the respective hoist.  
本手册适用于内置式和悬挂式行走小车，适用于  
马达驱动和其配套的提升系统。

Please enter the Fabr. No. of your JDN trolley  
here.  
请输入JDN行走小车的序列号\_\_\_\_\_



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**Please note:**

注意 :

Within the Federal Republic of Germany operators of air hoists must comply with trade association accident prevention regulations and rules, as well as state occupational safety regulations, in particular

在德意志联邦共和国 ,风动提升设备操作员必须遵守商务协会制定的相关事故保护法规及条例 ,并且遵守国家制定的安全条例 ,尤其是 :

\_ BGV A1 accident prevention regulations  
“Principles of Prevention”

\_ BGV D8 accident prevention regulations

“Winches,  
Lifting and Pulling Devices”

\_ BGR 258 trade association regulations

“Operation of  
Load-Carrying Devices Used with Lifting  
Equipment”

and, for air hoists installed in trolleys,  
additionally with

\_ BGV D6 “Accident Prevention Regulations  
for Cranes”

in the respective currently applicable version.

Operators must also initiate the prescribed  
tests (see

also “Principles for the Testing of Cranes”  
BGG 905

(ZH 1/27).

When operating air hoists in areas with explosive atmospheres, the operator must comply with the relevant explosion protection regulations, e.g.  
\_ BGR 104 “Explosion Protection Regulations” and  
\_ BGR 132 “Prevention of Ignition Hazards due to Electrostatic Charges”

In all other countries, the operator shall comply with local regulations as applicable. Special regulations may apply when incorporating air hoists into other installations or using air hoists under unusual conditions.

在其他国家 ,操作员需遵守当地的各项相关法规。风动提升设备在其他领域或者在特殊场合使用 ,也需要遵守一些特殊的规定。



## SAFETY INSTRUCTIONS 安全说明

### ORGANISATIONAL MEASURES 管理措施

JDN hoists are designed in accordance with current technological standards and accepted safety practice. Nonetheless, the use of an air hoist may be associated with risk of injury or fatality to the user or to third parties or with the risk of damage to the hoist or to other items, if safety rules are disregarded.

JDN风动提升装置是按照现有技术标准设计并经过安全实践检验的。虽然如此,如果不遵守安全措施的话,风动提升设备的使用还是会引起一些事故,导致操作员或第三人的受伤,或者损坏风动装置及其他装置。

All personnel charged with operating air hoists must have read and understood the operation manual, especially the section entitled "Rules for the safe operation of hoists", before commencing work. This is particularly important for personnel who only occasionally operate the hoist, e.g. for maintenance or retrofitting work.

任何风动提升工具操作员在开始工作前,都必须仔细阅读并理解操作手册,尤其是“安全操作规则”部分。这尤其对于偶尔操作风动提升装置的人,如维修或者翻新人员,是非常重要的。Operators of JDN hoists are also under obligation to ensure safe and hazard-free operation. This can be achieved through the following measures:

JDN风动提升设备操作员必须严格遵守和确保安全和无危险操作。可以通过实施以下措施来保证:

\_ keep the operation manuals available at the hoist operating site,

确保操作手册在操作现场

\_ carry out regular training,  
执行定期培训

\_ implement an inspection log and make regular entries,

实施检验日志做定期记录

\_ regularly check personnel for safety and hazard awareness during work

定期检查人员在工作中的安全和防范危险的能力。

### PERSONNEL SAFETY

#### 人员安全

Ensure that only properly trained personnel are entrusted with operation, maintenance, inspection and repair.

只授权那些受过设备培训的人员进行操作、维护和检修。

“Properly trained” in this case means that the operator has appropriate training and experience in working with hoists and is sufficiently versed in occupational safety and accident prevention regulations to be able to determine whether or not it is safe to operate the hoist.

正确、适时的培训在这里是指:操作员应当有适当的操作风动提升培训和经验,非常精通职业安全保护和事故保护规则,能够判断操作提升系统是否安全。

\_ Follow the operating instructions for your workplace.

在车间要严格执行操作指示

\_ Comply with the accident prevention regulations.

遵守事故保护规则

\_ Ensure that you are properly informed regarding working with hazardous materials.

确保如果有危险物品存在时,能够被提前通知。

\_ Follow the safety instructions set out in the operation manuals.

严格执行操作说明书里的安全指示

### PREVENTING PROPERTY DAMAGE

#### 性能损失的预防

Operators of JDN hoists are under obligation to ensure that entries in the accompanying inspection log are made properly and regularly.

JDN风动提升设备操作员有义务保证工作日志的定期和正确记录。

\_ Comply with the prescribed maintenance intervals.

按照指示做定期维护。

\_ Only use JDN hoists for work which is described as intended use.

严格按照JDN的设计用途来操作

\_ Observe the operating conditions for JDN hoists as described in this manual.

按照操作手册所描述的工作环境中使用。

### PRODUCT INFORMATION

#### 产品信息

### THE OPERATION MANUAL

#### 操作手册

This operation manual is intended to help the operator to learn about JDN trolleys and how to use them properly.

这本操作说明手册主要是帮助操作人员掌握JDN行走小车以及如何正确使用。



This operation manual contains important information for the safe, proper and efficient operation of JDN trolleys. By following this information, the risk of a safety hazard, repair costs and machinery downtime can be reduced and the service life of the JDN trolley can be extended.

手册包括安全、正确、有效的使用JDN行走小车的重要信息。通过这些信息，可以安全地使用本设备、并且可以使修理成本和设备停工时间大大减少，能够延长行走小车的使用寿命。Always keep the manual readily available at the location where the JDN trolley is being used.

要确保操作手册保存在工作地点，以便随手阅读。

All persons charged with operating, maintaining or repairing JDN trolleys must read and follow the instructions in this manual.

所以操作、维护和检修JDN行走小车的人员必须阅读和遵守操作手册所规定的内容：

## **WARNINGS AND SYMBOLS**

### **警告标志**

Safety warnings in this operation manual are classified in three categories:

安全警告标志在这本手册里分为三类：

#### **DANGER!**

Safety warnings, which if not followed can result in hazard to life and limb, are indicated by this symbol. The symbol indicates an immediate danger. The possible consequences of non-observance may be severe or even fatal injuries.

#### **危险！**

安全警告，如果不执行，可会导致生命、肢体的丧失。这个标志所指示的是即刻的危险。如果不注意遵守会导致致命的危险。

#### **WARNING!**

This symbol indicates potentially hazardous situations. Failure to follow the instructions could result in injuries.

#### **警告**

这个标志表示会有潜在的危险。如果不遵守手册所规定的条款，可能会导致伤残。

#### **CAUTION!**

This symbol indicates that failure to follow the relevant instructions may result in damage to the device or other equipment.

#### **小心**

这个标志表示如果不遵守操作手册，可能会导致

本设备或相关设备的损坏。



## IDENTIFICATION

The nameplate mounted on the side plate identifies the type of JDN trolley and contains important rating data.

If you have any questions concerning the operation of JDN trolleys which are not addressed in this operation manual, please contact us at the following address:

J.D. NEUHAUS GMBH & CO. KG Windenstraße 2-4 D-58455 Witten-Heven Germany

Phone +492302/208-0 Fax +492302/208-286 www.jdn.de e-mail: info@jdn.de

### 标牌

贴在行走小车上的标识牌标明了 J D N 行走小车种类，也包括相应的技术信息。

如果你有关于操作的问题，本书中并没有涉及到，请按照下列地址联系我们：

J.D. NEUHAUS GMBH & CO. KG  
Windenstraße  
D-58449 Witten-Heven  
电子邮箱：info@jdn.de

电话：+49-2302-2080  
传真：+49-2302-208286  
网址：//www.jdn.de



图 1 : 铭牌



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## MAIN COMPONENTS

JDN trolleys and running gears consist of the following main components:

- 1 side plates
- 2 rolling wheels
- 3 distance spacers
- 4 load bolts/clevis load bar
- 5 air motor drive, reel chain drive

exemption: no drive with manual trolleys

### 主要部件

1. 边板
2. 滚轮
3. 限位圈
4. 承载杆
5. 风动马达，倒链驱动

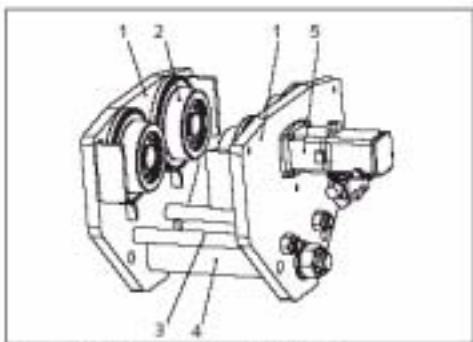


Figure 2: Main components of JDN trolleys  
(figure shows motorised trolley)

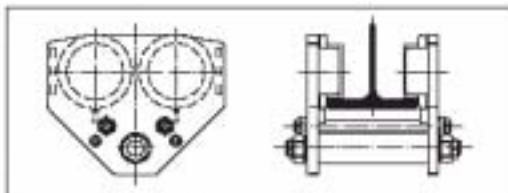


Figure 3: Manual trolley

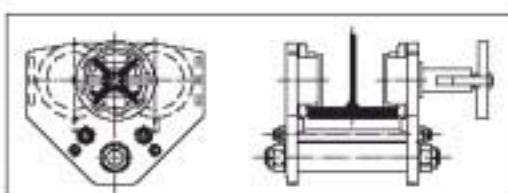


Figure 4: Reel chain trolley

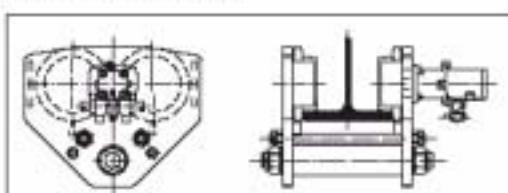


Figure 5: Motorised trolley

## Product description

To traverse loads, JDN air hoist can be suspended or built into JDN trolley. The air hoist is suspended with its upper hook in the load bolt or load eye of the trolley. Built-in means that the hoist is rigidly mounted into the trolley by means of a twist-proof load eye. JDN monorail hoists and low headroom trolleys have this rigid connection only.

JDN trolleys are moved according to their construction:

- Manual trolleys by pushing or pulling by hand (on hooks and/or load)
- Reel chain trolleys by alternatively unwinding the reel chain
- Motorized trolleys by actuating the control of the traversing motor. The operating pressure of the traversing motors is in accordance with the operating pressure of the corresponding hoist (see nameplate).

JDN trolleys are designed in accordance with DIN 15018 and correspond to stress group B 4, lifting group H 2. They are suitable for girders according to DIN 1025 or similar types of girder. The track width of the trolleys above 2 tons carrying capacity is adjusted to the girder profile given by you in the order sheet.

**Note:** The track width of some JDN trolleys can be adjusted within a certain range. If you want to use your trolley on a girder profile different to the original one, please contact us.

## 产品描述

为了水平运输，JDN 风动工具可以通过吊钩悬挂或者通过螺栓连接在行走小车上。内置式连接指的是提升工具被硬性地用扭绞螺丝嵌进行走小车上。JDN 单轨吊和低净空单轨吊都是同过螺栓的连接方式。她们的行走方式与它们各自的结构有关：

- 手动葫芦靠人工拉动（里作用在在吊钩上或重物上）
- 倒链葫芦靠拉动垂直的链条来实现行走。



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- 马达行走小车是靠控制行走马达实现行走的。

行走马达的压力和相应的提升工具的供风压力是一致的，JDN 提升工具的设计与 DIN15018 标准一致的，压力标准符合 B4，提升标准符合 H2。它们都适用于 DIN1025 的钢梁支架。两吨以上的钢梁的轨道宽度应该根据您定单上钢梁支架的宽度而定。

备注：一些 JDN 轨道宽度可在一定范围内调节，如果您想要用跟您的钢梁宽度不一致的轨道，请您与我们联系。

JDN trolleys are fitted with anti-climb and anti-drop devices.

JDN行走小车装有防爬行和防坠落装置。

These form-fitting devices are additional safety measures and prevent the trolley from falling down irrespective of the function of the running wheels and from climbing up the girder flange.

这些附加的措施，是用来不论行走轮是否起作用的情况下，防止行走小车滑落和防止其滑到横梁边缘上。

The possible curve radius can be seen in the attached technical data sheet.

在所附技术参数表中，可以看到相关适合的行走轨道曲线半径。

Special JDN trolley models can be delivered with:

JDN特殊类型行走小车可以包括以下功能：

\_ extra low height for low headroom trolley

-超低静空的超低净空行走小车。

\_ rack-and-pinion drive for form-fitting power transmission

-齿轮齿条的传动方式

\_ locking device for fixing in a certain position

-起吊固定于某一位置的锁闭装置

\_ two travel speeds

-可调的两级行走速度

\_ infinitely variable travel speed

-无级变速行走

\_ pneumatic end switches for limiting the movement

-行走限制的风动限位装置

\_ increased spark protection (as described below) in case of especially high requirements for explosion protection

-适用于对有较高防爆要求的增强型防火花功能

\_ cleaning of the exhaust air by filter silencers

-使用消音器可将废气清洁

\_ throttle control for reducing the maximum travel speed

-具有在最大行走速度下进行减速的节流控制阀

### Explosion protection

The basis for the following information is an expert statement by the DMT Gas & Fire Division on the use of JDN Hoists, Trolleys and Crane Systems in explosion hazardous areas, based upon European Guideline 94/9/EC1 ("ATEX 100a"). DMT is accredited with the testing of devices and protection systems for intended use in explosion-hazardous areas.

以下权威性声明是基于the DMT Gas & Fire Division 在非常易爆的条件下使用JDN提升工具，行走小车和提升系统，并且基于欧洲94/9/EC1 ("ATEX 100a") 标准。DMT有对适用于特殊的，易爆的装置和系统进行测试的权威。

### BASIC EXPLOSION PROTECTION FOR THE STANDARD VERSIONS (EXCLUDING MINI)

标准型（不含MINI型）完全具备所要求的防爆性能

Standard version JDN air hoists are category 2 devices (Guideline 94/9/EC, DIN EN 1127-12), for use in zone 1 and 2 for gases of explosion group IIA. (See also IEC 60079-123 and IEC 60079-204.) These devices are also suitable for use in zone 2, in the presence of gases of explosion group IIB, provided that the substances hydrogen sulphide and ethylene oxide can be excluded and additionally in zones 21 and 22 for dusts with glow temperatures above 210° C or ignition temperatures above 202° C, provided that no light metal or other impact-sensitive dusts are present. These devices are designated by: **Ex II 2 GD IIA T4(X) / II 3 GD IIB T4(X)** Additional marking "X", see page 10.

标准型JDN风动提升工具有两种类型（依照标准94/9/EC 和标准 DIN EN 1127-12），适用于IIA爆炸组



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风体存在的1区和2区；(请参见IEC60097-123 和IEC 60079-204)也适用于IIB爆炸组风体存在的2区，条件是不存在硫化氢和乙撑氧；适用于具有210 炽热温度或202 以上的燃烧温度粉尘的21区和22区，条件是没有细微金属或其他对撞击敏感的粉尘的存在。这些装置标识为

**II 2 GD IIA T4(X) / II 3 GD IIB T4(X)** , 附加标识“X”，见第11页。

#### **JDN HOISTS WITH INCREASED SPARK PROTECTION**

##### **具有加强型防火花功能的JDN提升机**

JDN hoists in the “with increased spark protection” version (FS), fulfil further explosion protection requirements. With the exception of carbon disulphide (temperature class T6), they can be used in the presence of all gases in zones 1 and 2 and dusts with glow temperatures above 210° C or ignition temperatures above 202° C in zones 21

and 22, and can be designated with **II 2 GD IIC T4(X)** for installation in a trolley, depending upon the trolley version (see below), but also with **II 2 GD IIB T4(X)** . For further operating conditions, see Instructions for safe operation (Notes **D** and **E** ).

具有增强型防火花功能 (FS) 的JDN提升工具，进一步满足了客户对防爆性能较高的要求。除了二硫化碳 (温度等级T6) 以外，该种产品可使用于1区和2区所列所有可燃风体存在的环境，并且适用于具有210 炽热温度的粉尘条件或具有202 燃烧温度的21区和22区。根据行走小车的类型 (见下述)，该加强功能指定要安装在 **II 2 GD IIC T4(X)** 行走小车中，也可用于 **II 2 GD IIB T4(X)** 。对于详细的操作条件，见安全操作说明书 (标注D和E)。

#### **JDN HOISTS FOR USE IN THE PRESENCE OF TEMPERATURE CLASS T6 GASES OR EXTREMELY EXPLOSIVE DUSTS**

##### **适用于存在极易爆粉尘或温度在T6级的环境中的JDN提升机**

Following separate tests, especially with regard to ambient temperatures and type of operation, use in the presence of carbon disulphide or dusts with particularly low glow or ignition temperatures may be possible with designation

**II 2 GD IIC T6(X)** , which includes the

additional marking “X” for special conditions (see Additional marking “X”). Please contact us with regard to these requirements.

在分别测试条件下，尤其考虑到周围温度和操作类型，在二硫化碳或具有较低炽热和燃烧温度的粉尘存在的条件下，应使用标识为 **II 2 GD IIC T6(X)** 的JDN提升工具。其包括了适用于特殊条件的标识“X” (见附加标识“X”)。具体到这些要求，请与我们联系。

#### **STANDARD JDN TROLLEY AND CRANE RUNNING GEAR**

##### **标准JDN行走小车和吊车的运行齿轮**

JDN trolleys and cranes can be used in zone 2 with standard running wheels (made of steel or cast metal) with all dusts and the presence of gases up to explosion group IIC. Due to the low running speeds, the possible friction velocities on the running wheels are less than 1 m/s, which means that standard running wheels can also be used in zone 1 up to explosion group IIB. The highest possible designation for these devices is:

**II 2 GD IIB T4(X) / II 3 GD IIC T4(X)** . Depending on the hoist version, designations

**II 2 GD IIA T4(X) / II 3 GD IIB T4(X)** or **II 2 GD IIB T4(X)** are also used. E D

具有标准行走小轮 (由钢或铸铁制成) 的JDN行走小车和提升工具，可使用于爆炸等级IIC的所有粉尘和风体存在的情况。由于行驶速度低，行走小轮的摩擦速率不到1米/秒，这意味着标准行走小轮也可使用于爆炸组IIB的1区。这些装置的最高标识为：**II 2 GD IIB T4(X) / II 3 GD IIC T4(X)** , 根据提升机类型，也使用标识：**II 2 GD IIA T4(X) / II 3 GD IIB T4(X)** 或者 **II 2 GD IIB T4(X)**

#### **JDN TROLLEY AND CRANE RUNNING GEAR WITH INCREASED SPARK PROTECTION**

##### **具有增强型防火花功能的JDN行走小车和吊车运行齿轮**

For use in zone 1 in the presence of gases in explosion group IIC, bronzed running wheels or running wheels made of bronze are also used. The highest possible designation for this version (FSR) is **II 2 GD IIC T4(X)** (the same as for JDN hoists “with increased spark protection”)

适用于爆炸组IIC中风体存在的1区内，也可使用铜制行走小轮。该类型产品 (FSR) 最高标识为



**J.D. NEUHAUS**  
powered by air

**II 2 GD IIC T4(X)** (同样适用于具有增强型防火花功能的JDN提升机)。

#### **JDN TROLLEY AND CRANE RUNNING GEAR FOR USE IN THE PRESENCE OF TEMPERATURE CLASS T6 GASES OR DUSTS**

**在温度等级为T6或粉尘存在的条件下使用的JDN行走小车和吊车运行小轮**

As is the case with JDN hoists “with increased spark protection”, temperature class T6 could also be possible in this case too in the event of a special investigation of applicability, so that the highest possible designation for

standard wheels and for bronzed or bronze wheels is **II 2 GD IIB T6(X)/II 3 GD IIC T6(X)** and

**II 2 GD IIC T6(X)** respectively, i.e. each including the additional designation “X” for special conditions.

如同具有增强型防火花功能的JDN提升工具，使用的特殊条件也包括在温度等级在T6的条件下的操作。因

此，标准小轮和铜制小轮的最高标识分别为 **II 2 GD IIB T6(X)/II 3 GD IIC T6(X)** 和

**II 2 GD IIC T6(X)**，每一标识含有附加的“X”，表示特殊条件。

#### **GENERAL NOTE ON DESIGNATION**

##### **总概述：**

The highest possible respective designations for lifting equipment and running gear are usually replaced by a designation which corresponds to the normal assembly of a compact complete device (trolley or crane system).

对于起吊设备和行走齿轮的最高标识，通常情况下可分别由整套装置的标识来替代（如行走小车或吊车系统）。

#### **ADDITIONAL MARKING X**

##### **附加标识 X**

This designation refers to explosion protection details in the operation manual.

操作手册中，指带防爆细节条件的标识。

**II 2 GD IIA T4(X)/II 3 GD IIB T4(X)** or

**II 3 GD IIA T4(X)** : This designation does not permit use in the presence of the extremely flammable substances hydrogen sulphide and ethylene oxide or in the presence of light metal or other impact-sensitive dusts, or in the presence of dusts with glow temperatures below 210° C or ignition temperatures below 202° C. The permissible ambient temperature range (Ta) extends from - 20° C to + 70° C.

At carrying capacities above 25 tons, continuous operation of the hoists is not permitted if the ambient temperature exceeds 50° C.

In these cases, cooling times must be observed in order not to exceed the permissible surface temperatures.

**II 2 GD IIA T4(X)/II 3 GD IIB T4(X)** 或者 **II 3 GD IIA T4(X)** : 此标识不允许使用在极度易燃的物质存在的情况下，如：硫化氢和乙撑氧；也不可使用在细微金属或对碰撞极敏感的，具有210 以下的炽热温度或202 以下的燃烧温度情况下。环境允许温度范围（钽）从- 20° C 到 + 70° C。在承重能力超过25吨的情况下，如果周围温度超过50 ，不允许连续操作提升机。此情况下，必须注意冷却时间，以防超过表面最大允许温度。

**II 2 GD IIC T4(X)** or **II 2 GD IIB T4(X)** : The permissible ambient temperature range (Ta) extends from - 20° C to + 70° C. At carrying capacities above 25 tons, continuous operation of the hoists is not permitted if the ambient temperature exceeds 50° C. In these cases, cooling times must be observed in order not to exceed the permissible surface temperatures.

**II 2 GD IIC T4(X)** or **II 2 GD IIB T4(X)** 环境允许温度范围（钽）从- 20° C 到 + 70° C。在承重能力超过25吨的情况下，如果周围温度超过50 ，不允许连续操作提升机。此情况下，必须注意冷却时间，以防超过表面最大允许温度。

**... IIC T6(X)** : This designation permits use in the presence of carbon disulphide or other temperature class T6 substances only under special conditions, which have been agreed with the manufacturer and which are described in the crane documentation and which stipulate the maximum surface temperatures for the device.

**... IIC T6(X)** 此标识允许使用在二硫化碳存在或特殊条件下，温度等级在T6的物质存在的情况下，此种



条件必须先得到生产商的认可，并且在吊车文件中予以说明，而且，规定了该设备的最大表面温度。

## USE IN MINING APPLICATIONS

### 在煤矿领域的应用：

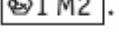
Standard versions of JDN hoists, trolleys and crane systems may generally also be used for underground mining operations as well as for the associated surface facilities, which are hazardous due to firedamp and/or combustible dusts. Within this equipment group I they belong to category M2.

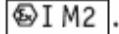
标准的JDN提升工具，行走小车和吊车系统完全可应用于煤矿井下作业，而且也适用于其相关地面设施上。该应用领域由于甲烷和易燃粉尘的存在而变得非常危险。在设备组I中，它们归类于M2。

They constitute devices that can be switched off in cases where an explosive atmosphere forms. They are equipped with protective measures offering a high degree of safety. The protective measures with which products of this category are equipped provide the necessary degree of safety for normal operation as well as operation under difficult conditions, in particular rough treatment and changing environmental influences.

当存在易爆气体时，本产品内置装置可以将系统关闭。产品经特殊防爆处理，具有很高的安全性。此类产品的防护措施可分为一般操作条件下的必要程度处理和具有高要求条件下的防护处理，尤其是操作条件恶劣和环境影响不断变化的情况。

For other difficult conditions in addition to explosion protection prevailing with regard to the general handling of the devices in mining applications, special mining hoists are available from J. D. NEUHAUS. The maximum permissible temperature of 150° C in accordance with EN 13463-15 for coal dust atmospheres is not reached. For

mining applications, the relevant designation for hoists, trolleys and crane systems is .

对于其他特殊条件，包括防爆等煤矿应用领域的通常处理，JDN 可以针对具体情况提供相应的煤矿用提升机。根据适用于煤粉条件下的标准 EN 13463-15，无须达到最大允许温度 150°。煤矿应用领域行走小车，提升机和吊车系统的标识为：.

## LOAD CHAIN

In order to guarantee the required degree of earthing, rusty chains must no longer be used in zones 1 and 21. This is due to the fact that, depending upon the degree of corrosion, the leakage capability of the chain may be impaired to a level that is no longer adequate.

### 承载链

为了保证要求的接地系数，在区域 1 和区域 21 不允许使用生锈的链条。由于腐蚀，链条漏电能力会减弱到不能使用的程度。

## COMPRESSED AIR HOSES

In zone 1, compressed air hoses must have a sufficiently low surface resistance of less than 109  $\Delta$  in order to prevent electrostatic ignition hazards. Otherwise (resistance  $> 109 \Delta$ ), for explosion groups I, IIA and IIB the hoses must be  $\delta 30$  mm and for explosion group IIC  $\delta 20$  mm, or proof must be provided that they cannot become dangerously charged.

### 供风软管

在区域 1，压缩空风软管必须有小于 109  $\Delta$  的足够低的表面电阻，以防止产生静电起火的危险。否则，要是表面电阻大于 109  $\Delta$ ，对于爆炸群 A 和 B，软管直径必须不大于 30MM；对于爆炸群 C，软管直径必须不大于 20MM，或者能够证明他们不会累计电荷从而带来危险。

关于乙炔和镀铜部件，当在有爆炸危险条件下运行 JDN 产品时，由于空风中弥漫有乙炔，必须保证镀铜部件保持干燥，防止铜部件被氧化以及水相的形成，因为和乙炔容易发生反应，会导致爆炸的产生。

## MATERIALS FOR FRICTION AND IMPACT HAZARDS

Friction and impacts can give rise to individual sparks presenting a danger of ignition in the presence of explosion group IIC gases, hydrogen sulphide, ethylene oxide, or light-metal or other impact-sensitive dusts. Accordingly, spark formation caused by mechanical influences must be prevented. The chain and load must always be moved in such a way that sliding and/or frictional contact with other plants or components is excluded. If circumstances do not permit this, it is necessary to ensure an absence of explosive atmospheres during operation. Impact between particular materials results in an increased ignition hazard. This does not apply to corrosion-resistant steel or cast iron against aluminium, magnesium or corresponding alloys. This applies in particular in the presence of rust or rust film. Rust (also rust film) formation is possible, especially on the chain and on the load hook, at the friction points. The following holds true for all zones: For the intended use of hoists it



must be ensured that no rust is present at the abovementioned friction points and that material combinations of the above-named light metals with steel (exceptions being stainless steel or cast iron) are not used in the working area of the hoists, at potential friction, impact or sliding points. It is thus possible to exclude sparking due to mechanical influences with these material combinations.

#### **物料的摩擦及碰撞所导致的危险**

在具有爆破列表组 IIC 中的气体，摩擦和碰撞所产生的火花亦能导致爆炸。在此种情况下我们在操作是必须注意防止物料的摩擦和碰撞，如无法防止，我们必须在在爆炸性气体浓度允许的情况下操作。

#### **EARTHING**

Electrostatic ignition hazards can be prevented by means of safe earthing. In zones 1 and 21, earthing of the hoists is required. This must be achieved via the load hook or the load eyes if the lifting equipment is connected to correspondingly earthed parts (earth leakage resistance less than  $10^6 \Omega$ ). This also applies to operation with trolleys or cranes. Their tracks must be earthed on site. Running wheels and rail surfaces must never be painted, as this can result in unacceptably high earth leakage resistance values. Earthing of the load hook is via the chain (see also **Load chain**). Loads must be earthed during transportation.

A separate earth is required, for example, when using non-conducting sling gear.

#### **接地**

通过接地可以降低静电点火的风险。在区域 1 和区域 21，需要把风动葫芦接地。如果起重设备连在相应接地部件上（接地泄漏电阻小于  $10^6 \Omega$ ），这必须通过承载钩和承载环来实现。这也适合于行走小车和起重机的操作。他们的铁轨必须接地。滚轮和铁轨表面不要油漆，因为这会造成很高的接地泄漏电阻值。承载钩的接地要通过链条（见下面关于承载链部分）。在运输中，负载必须接地。例如，当用非导的吊索装置时，需要单独接地。

#### **ACETYLENE AND COPPER**

When operating JDN products in explosion-hazardous areas, in which an acetylene-containing atmosphere can occur, it must be ensured that copper-plated parts are kept dry in order to exclude the possibility of oxidation of the metallic copper and the formation of an aqueous phase, which is capable of reacting with acetylene and which can result in an explosion hazard.

#### **乙炔和铜**

当 JDN 风动提升工具在具有乙炔气的环境中使用，我们必须确保铜制的表面干燥和没有氧化。如果有水的话会导致乙炔的剧烈反应，甚至爆炸。



瓦斯和蒸汽的爆炸分类和温度等级

爆 炸 类 别	温 度 等 级					
	T1	T2	T3	T4	T5	T6
	点 火 温 度					
	> 450	450-300	300-200	200-135	135-100	100-85
	运行设备的最大允许表面温度					
	450	300	200	135	100	85
A	丙 酮 氨, 氨水 苯 胺 不纯苯 氯 苯 1, 2-二氯(代) 苯 乙 酸 乙 烷 乙酸乙酯 氯乙烷 甲酚 甲烷 乙酸甲酯 甲醇 溴化甲烷 氯甲烷 萘 苯酚 丙烷 甲苯 二甲苯	普通酒精 ) 乙酸戊酯 丁烷 丁酸 丁烯 二氯乙烷 丙基醚 汽油 无水醋酸 丙酸 氯乙烯	戊 酸 苯 柴油机 燃料油 (正)己烷 喷风燃料	乙 醛		
B	氢氰酸 硝基苯 民用燃风	1, 3-丁二烯 二氧杂环乙烷 联乙烯 乙 烯 ** 乙撑氧 橡胶基质	二甲基乙炔 ** 硫酸	乙基醚 乙醚 麻醉剂 二乙醚		
C	** 氢	** 乙炔				** 二硫化 碳



## 用于爆炸区域的 JDN 风动葫芦选型标准

瓦斯和蒸汽的爆炸类别	区域	样式* 1		运转* 2	
A	2	A			
	1	A		D	
B (X) 除 了化氢和乙撑氧	2	A			
	1	A	FS	D	
B	2	A	FS	D	E
	1	A	FS	D	E
C/T4	2	A	FS	D	E
	1	A	FS	FSR	D E
C/T6 (X)	2	A	FS	D	E T
	1	A	FS	FSR	D E T
爆炸尘埃	区域	样式* 1		运转* 2	
普通工业粉尘	22	A			
	21	A		D	
轻金属和对撞击敏感尘埃	22	A	FS	D	
	21	A	FS	D	

### \*1: Version features (under the responsibility of the manufacturer):

A: The chain is made of zinc-plated steel; metal controls are conductively connected to the hoist. This is part of the standard equipment. For technological reasons, a zinc-plated version of chain size 31.5 x 90 is not available. This is only used for the extremely slow-running chain drives of large hoists, so that the sliding velocity for potential friction points between the chain and the surroundings remains well below 1 m/s.

FS: Hoists "with increased spark protection": Copper-plated load hook and bottom flange with brass safety catch. FSR: Running gear "with increased spark protection": Running wheels for trolleys and cranes are bronzed or are made of bronze.

### \*2: Instructions for safe operation (operator's responsibility):

: Ignition hazards are not to be expected if hoists or cranes are used in the normal manner. Friction and impacts in the working area of the chain, not resulting from intended use of the hoist or crane and which result in sparking, must be excluded, or an absence of gas in the operating area must be ensured. This means, for example, that the chain, the bottom flange and the load hook must be prevented from swinging against surrounding objects or that a gas-free environment must be ensured.

: Friction, impact and sliding points involving combinations of light metal and steel or cast iron must not be present in the hoist's operating area.

T : Ambient temperature and the type of operation must be examined separately.

E : Friction, impact and sliding points involving combinations of light metal and steel or cast iron must not be present in the hoist's operating area.

D : Ignition hazards are not to be expected if hoists or cranes are used in the normal manner. Friction and impacts in the working area of the chain, not resulting from intended use of the hoist or crane and which result in sparking, must be excluded, or an absence of gas in the operating area must be ensured. This means, for example, that the chain, the bottom flange and the load hook must be prevented from swinging against surrounding objects or that a gas-free environment must be ensured.

### TEMPERATURE LIMIT FOR EXPLOSION-HAZARDOUS DUSTS

In areas which are explosion-hazardous due to combustible dusts, the surface temperature must not exceed two-thirds of the ignition temperature in ° C of the dust/air mixture. The temperatures of surfaces on which hazardous deposits of combustible dusts can be formed, must not exceed the glow temperature of the relevant dust



minus 75K. Greater safety margins are required if the thickness of the dust layer exceeds 5 mm. The corresponding surface temperatures can be derived from the lowest values for glow and ignition temperatures of dusts specified in the HVBG/BIA Report 12/9710 "Combustion and explosion characteristics of dusts": Synthetic rubber, soot-containing: Glow temperature 220° C – 75° C = 145° C max. permissible surface temperature Stearic acid: Ignition 190° C x 2/3 = 126° C max. temperature temperature permissible surface.

\*1 特征：

A : 链条是有镀锌钢材制成的；金属控制器通过传导方式联结到风动葫芦上。这是标准设备的部分部件。由于技术原因，做不出来尺寸 31.5 x 90 的镀锌链条。这仅仅用在转速很慢的大风动葫芦驱动上，以致于滑行速度由于链条和周围环境的摩擦而保持在 1M/S 以下。

FS : 带有增强火花保护的风动葫芦：镀铜承载钩和带铜安全保险底座

FSR : 带有火花保护的驱动装置：行走小车和起重机的滚轮都是镀铜的或者是有铜制成的。

\*2 : 关于安全操作的注释

**D** : 行走小车和起重机在正常使用条件下，我们不希望有起火风险的存在。链条上的使用区域会产生摩擦和撞击，从而带来火花，这必须排除掉。这也适用于与轻金属和轻金属合金的接触中。（除了不锈钢）

**E** : 必须保证工作区域中不含有瓦斯和火花。这意味着，链条，底端锁块以及承载钩不能与周围物体发生撞击，必须确保环境中不含有瓦斯。

**T** : 周围温度和操作种类必须分类检查。

表面温度依赖于操作模式和环境温度。因此当运行温度级别是 T5, T6 时候，需要特殊检查。关于风动葫芦的温度等级基于最大环境温度 40°C。

## 粉尘爆炸的温度极限

存在易燃粉尘的爆炸危险区域，表面温度不能超出粉尘或空风混合物点火温度的三分之二。

会造成易燃粉尘堆积的表面温度，不应超出相关粉尘的发热温度—75°K。如果粉尘层的厚度超出 5MM，那么就会带来危险。表面温度会从粉尘发热和起火温度最小值增大，  
详细说明请见 HVBG/BIA Report 12/97<sup>10</sup> “粉尘的燃烧和爆炸特征”。

合成橡胶，煤灰

发热温度 220°C - 75°C = 145°C max 为最大的允许温度

硬脂酸

起火温度 190°C x 2/3 = 126°C max 为最大的允许温度

## INTENDED USE

JDN trolleys in combination with JDN air hoists are intended to be used exclusively for lifting and lowering loads and for their horizontal movement above floor. Any other use or use outside these stipulations is deemed to be impermissible. J.D. NEUHAUS GMBH & Co. KG cannot be held liable for any resultant damage. The entire risk is borne by the operator. Improper use includes, but is not limited to, any and all of the following: Exceeding the permitted load-carrying capacity. Oblique pulling of loads

Sliding loads

Detaching, dragging or pulling of loads

Catching of falling loads

Carrying people

Jog control over longer distances

Switching to the opposite direction with load in motion

Operational reaching of the end stop

See also **Rules for the safe operation of trolleys**, page 28. Intended use also includes observance of the operation manual and compliance with the inspection and maintenance conditions.



J.D. NEUHAUS  
powered by air

## EMISSIONS

The noise emission data can be found in the **Technical data** table, pages 43.

The noise pressure level of the measurement area at a distance of 1 m from the machine surface was measured in accordance with DIN 45 635, Part 20, at the operating air pressure specified by us. In the hall, the noise pressure level drops by approx. 3 dB (A) every time the distance is doubled.

If the device is operated with motor oil lubrication, small amounts of lubrication oil will be released into the environment with the outlet air.

Oil emissions can be prevented by using a filter silencer (see **Filter silencer** section, page 38). This also results in a reduction of the noise emission values.

## OPERATING CONDITIONS

JDN air hoists are extremely robust and require little maintenance. They are suitable for use in explosion hazardous areas, as well as in areas with increased concentrations of soot and dust, high humidity and at ambient temperatures of  $-20^{\circ}\text{C}$  up to approx.  $+70^{\circ}\text{C}$  if they are not heated above this level due to external influences. The thermal endurance of chains and hooks is  $+150^{\circ}\text{C}$ .

### **WARNING!**

When touching metallic hand controls which are colder than  $0^{\circ}\text{C}$ , the skin could freeze within a few seconds, and for temperatures above  $43^{\circ}\text{C}$ , burns can occur. As a protective measure, please wear suitable gloves. For stationary outdoor operation, hoists must be protected against weathering and the maintenance intervals must be shortened. Depending upon the version, JDN air hoists must be operated at a system pressure of 4 bar or 6 bar (see information on the nameplate). If the system pressure is too low, important functions of the hoist will be impaired:

– The brake will drag and is thus subject to a high degree of wear. An impermissibly high degree of warming could take place.

– The controls become noticeably less sensitive.

### **DANGER!**

#### **Warning against excessive system pressures**

Operating with excessive system pressures results in danger due to overloading.

Therefore, the pressure must be limited to that specified on the nameplate.

JDN air hoists must be operated with a sufficiently clean and dry air supply. The air supply must fulfil the following quality requirements:

– Particle size less than  $40\text{ }\mu\text{m}$   
– Particle density less than  $5\text{ mg/m}^3$

In order to provide adequate compressed air quality, operation with a service unit is recommended. Usually, an oiler is not required in the service unit, as the motor is provided with internal permanent lubrication. See also

**Lubricants**, page 25. Pressure dew point at least  $10^{\circ}\text{C}$  below the lowest expected ambient temperature **Do not operate JDN air hoists with other gases**. With moist air and ambient temperatures at or below  $0^{\circ}\text{C}$ , there is a danger of icing in the motor. Icing can be prevented by

– using an upstream air dryer or using a service unit with oiler,  
– adding anti-icing agent to the lubrication oil (depending upon moisture content of compressed air),  
– using compressed air oil (Art. no. 11900) with anti-icing agent for relevant temperatures.

## 使用条件

JDN 风动行走小车和风动提升工具，是专门设计为提升、下降和行走的工具。任何超出其使用范围的使用，且因此而造成的损失，JDN 公司概不负责。

非正确的操作包括如下：

- 一. 超过设备的承载能力
- 二. 倾斜拖拽
- 三. 分离、拖拽吊物
- 四. 捕抓掉落重物
- 五. 运输人员
- 六. 过长的运输距离



- 七 . 突然反向操作
- 八 . 行走到轨道边缘

参见行走小车操作安全规则。

正确的使用，同时也包含了操作手册所规定的其他安全、保养、维修规定。

## 排放

噪音的排放，请参看技术参数表。

噪音的测试值是按照德国 DIN45635 标准，在离设备一米的距离所获的数据，在大厅内测量德距离每远一倍，噪音就减低 3 分贝。

如果马达内有油润滑，会有少量的润滑油从出口排放到空气中。油的排放可被消音器吸收，同时也可减低风噪。

## 工作条件

JDN 风动葫芦很结实，基本上不需要维护。它们适合用在有爆炸危险的区域，经常暴露在煤烟，尘埃，潮湿的场合，最低使用温度是  $-20^{\circ}\text{C}$ ，最高使用温度大约是  $+70^{\circ}\text{C}$ 。链条和承载钩的安全使用温度是：从  $-40^{\circ}\text{C}$  到  $+150^{\circ}\text{C}$ 。

### 警告！



当接触金属手控杆的温度低于  $0^{\circ}\text{C}$ ，几秒钟内会造成皮肤冻伤。当温度高于  $55^{\circ}\text{C}$  时会造成烫手。保护措施：

使用合适的安全手套。

经常使用在户外的风动葫芦，必须受到保护，能够抵御天风的影响，另外要经常进行维护。

JDN 风动葫芦需要有 6 巴的风压供应。如果风压供应不够，那么风动葫芦就不能恰当运转，并会造成：

- 刹车制动无力，造成高磨损
- 控制的敏感度显著降低

### 危险！



工作风压大于 6 巴，可能会造成超负荷风险。因此工作压力必须控制在 6 巴。

JDN 风动葫芦必须在清洁干燥的空风下运转。空风供应必须满足下列条件：

- 夹杂的微粒尺寸小于  $40\mu\text{m}$
- 夹杂的微粒数量低于  $5 \text{ mg/m}^3$
- 露点比周围环境最低温度至少低  $10^{\circ}\text{C}$

不要试图在有瓦斯的场合运行 JDN 风动葫芦。

在环境湿度大和周围环境温度低（小于等于  $0^{\circ}\text{C}$ ）的场合，存在发动机结冰的风险。为了防止发动机结冰，依据供风的湿度，采取下列措施是适合的：

安装一个逆流的空风干燥器，在润滑油中加入抗冻物质，使用适合操作温度的抗冻润滑油。如果打算和行走小车一起使用风动葫芦，仔细阅读操作手册，以及相关的杜绝危险的规则。

## ENERGY REQUIREMENTS

For air pressure, air quantity and connections, see the table **Technical data**,

### AIR PRESSURE CONDITIONS IN OPERATION

The system pressure in the air line must correspond to the nominal pressure. Higher pressures must be reduced.

After switching on, the nominal pressure  $p_1$  drops to the actual pressure  $p_2$ .

The value of the actual pressure  $p_2$  at which the hoist is operated depends upon

the weight of the load and the direction of movement of the load. When lifting the nominal load (load-carrying



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capacity), the actual pressure  $p_2$  must not fall below a value of 10% below the specified nominal pressure of the hoist.

**Example:** A hoist with a nominal pressure of 6 bar lifts its nominal load at the specified lifting speed, at an actual pressure of 5.4 bar.

### 动力要求

空风压力、供风量及其接头，参看相关的技术数据表。

### 工作中的风压变动

发动机启动时，风源中的压力从额定压力  $P_1$  降到工作压力  $P_2$ 。工作压力  $P_2$  依赖：

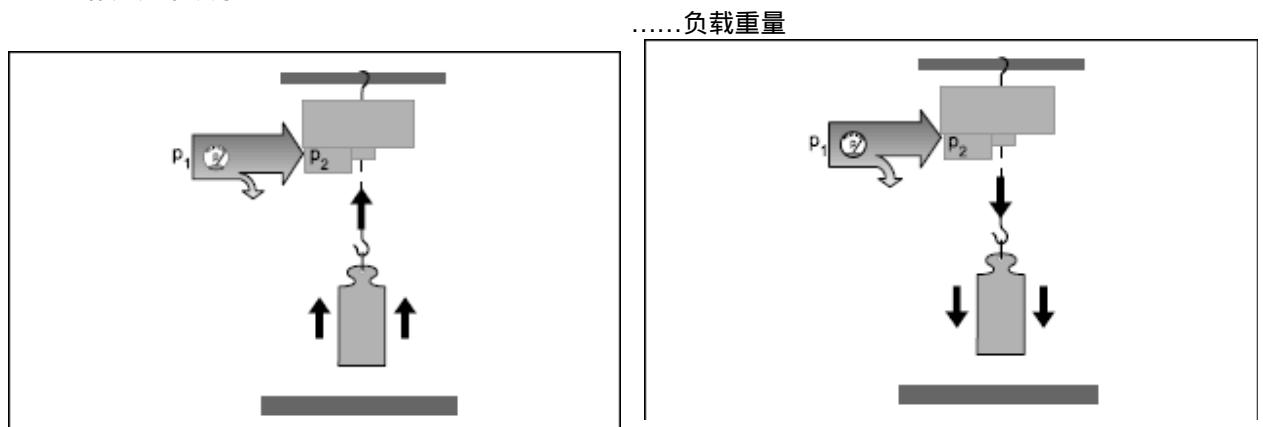
- ▶ 负载重量
- ▶ 负载运行方向

当提升最大额定负载时，工作压力不能低于风动葫芦额定压力的 10 %。

范例：额定压力为 6 巴的风动葫芦，在实际工作压力为 5.4 巴时能够全速提升最大额定负载量。



工作压力取决于.....



.....以及负载运动方向



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## PRINCIPLE OF OPERATION OF JDN AIR VANE MOTORS

The vane motor consists of a cylinder liner (1) with two side bearing plates and an internal rotor (2).

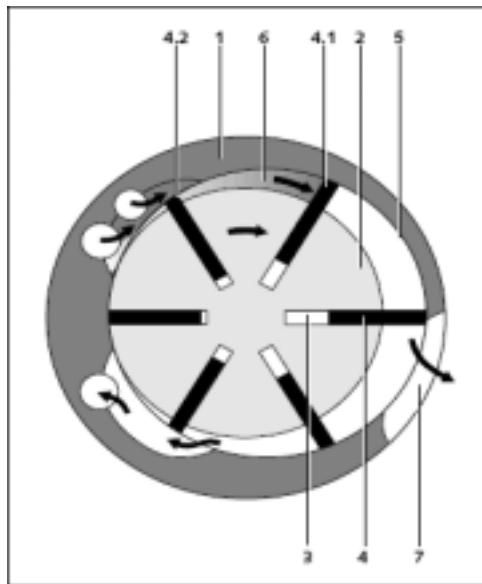
The rotor is mounted eccentrically in the cylinder liner and is provided with slots (3) for installation of the vanes (4).

The vanes can move freely and make contact with the inner wall (5) of the cylinder liner. Each chamber is formed by two vanes (6).

Due to the incoming compressed air, a greater force is created at the leading, larger vane surface (4.1) than that at the trailing, smaller vane surface (4.2). The difference in force generates the rotor torque.

As the chamber passes the outlet aperture (7), the compressed air can escape.

The arrows in the illustration indicate the direction of rotation of the rotor and the corresponding path of the compressed air.



### 叶轮发动机工作原理

叶轮发动机由缸套 1 (带两个侧板) 和转子 2 组成。转子安装在偏心缸套内，槽 3 用来容纳叶片 4。叶片能够在槽内自由移动，与缸套内壁 5，每两个相邻的叶轮形成一个小室 6。当小室内充满压缩空气时，第一个叶轮上的压力比较大，因为 4.1 处比 4.2 处有更大的表面积，由此产生的扭矩促使转子运转，转到排风口 7 时，压缩空风就被排出。图中箭头标明了转子的运动方向和空风的相应流动方向。

## OPERATION WITHOUT CHAIN BOX

### DANGER!

If JDN air hoists are operated without a chain box it must be ensured that the idle chain (unloaded chain end) running up or down at the chain sprocket does not present a hazard, e.g. due to catching, impacting or falling. Danger due to falling chain can also arise if the idle chain is first deposited on a load with a large surface and then slides off and drops.

### 没有链盒条件下运行



小心!

当在没有链盒条件下运行 JDN 风动葫芦时，必须注意，空载运行的链条进出链轮齿时不会造成危险。在提升过程中，空载链条首先安放到一个有较大面积的平台上，轻轻一抖，链条就滑落下来，在滑落过程中也会产生危险。

## OPERATION WITH SERVICE UNIT

JDN air hoists are provided with motor lubrication, which must be renewed when required, but every 5 years at the latest. Therefore, the service unit for filtration and pressure regulation of the compressed air can be installed without an oiler. If required, the service unit is also available with an oiler. Synthetic lubricants must not be used when operating with a service unit. Alcohols are not permitted for use as anti-icing agents.

### 服务包的操作

JDN 风动提升工具的马达中有润滑，但是每五年必须更换一次。因此服务包的作用是用来调压和过滤风源的。在必要时亦可安装润滑油混合气。但它不能使用合成润滑油，也不要使用酒精去防止结冰。



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## CERTIFICATION

Each JDN air hoist is delivered with a factory certificate.

### 证书

每一个 JDN 风动产品都有出厂合格证

### SPARE PARTS

ONLY USE ORIGINAL JDN SPARE PARTS. JD. NEUHAUS GMBH & CO. KG ACCEPTS NO LIABILITY FOR THE USE OF NON-ORIGINAL COMPONENTS AND /OR MODIFICATIONS BY UNAUTHORISED PERSONS

### 备件

只使用JDN公司原厂备件，对因用非原厂配件导致的事故，JDN公司概不负责

## TRANSPORT AND STORAGE

### SAFE TRANSPORTATION

If you wish to transport your JDN air hoist to another site, please observe the following points:

- Carefully dismount trolley.
- Set the entire hoist down carefully; do not allow it to drop. For weights see
- Lay control and supply hoses together in such a way that they are not kinked.
- Make sure that the controls are not damaged. Failure to do so could lead to malfunctions.
- Draw in the hoist's chain in such a way that loops cannot form and the chain cannot become twisted.
- Secure the chain.

### 运输与储存

#### 安全运输

当把风动葫芦运到一个新的地方时，请遵循下列规则：

- ▶ 轻轻拆下行走小车。
- ▶ 小心拆下风动葫芦，不允许其自由掉落。其重量参加技术参数。
- ▶ 将控制器和风管绕在一起，注意不要打结
- ▶ 确保控制器的完好性，谨防因此失效
- ▶ 小心绕盘链条，避免打结。

## STORAGE CONDITIONS

### BREAKS IN OPERATION

— In the case of longer operational breaks, coat the chain and hook with a light oil film.

— Motor conservation

If the motor lubrication is not renewed at the specified intervals, a protective coating must be applied to the motor. For this purpose, use a nonresinous and non-sticky conserving oil with a protection duration which corresponds to the length of the planned operational break.

### STORAGE

- Close off the air supply hose connection using adhesive tape or a suitable cap in order to prevent dirt ingress.
- Protect the air supply hose from being damaged.
- Store your JDN air hoist in a clean and dry place.

### 存储条件

#### 中断使用



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- ▶ 当需要把风动葫芦卸下来，长时间不使用时，请在链条和承载钩上涂一薄层油。
- ▶ 发动机内部有抵抗腐蚀的永久保护。

#### 存储

- ▶ 用胶带护住风源，或者给风源带上合适的套子，以防止被污染。  
把JDN风动葫芦存放在清洁，干燥的地方。

## SETTING UP

### 安装

## UNPACKING

### 拆装

#### WARNING!

When unpacking, take account of the weight of the hoist. See **Technical data** in the operation manual for the respective hoist.

警告，当拆开包装的时候，请充分考虑提升装置的重量。请见手册中各种型号提升装的技术参数。

#### CAUTION!

Do not kink the control lines. Kinked control lines can result in malfunctions.

不要是控制线打结。打结后的控制线会引起故障。

Keep the accompanying documents in the place provided, near the operating site.

保持手册在操作现场附近。

\_ Lift the hoist carefully out of the packaging.

小心从包装想吊起提升装置。

\_ Recycle packaging materials in accordance with local regulations.

根据当地规定回收包装物。

## ASSEMBLY

### 组装

As far as possible, JDN trolleys are delivered in fully assembled condition. If necessary, the filter silencer, chain box and/or control valves are supplied separately and have to be mounted on-site (see the section entitled **Connecting the controls**, page 24).

要尽可能的使JDN行走小车运到适合组装的地点。如必要的话，过滤消音器、链箱/控制阀可分别提供并且在现场安装。（“连接控制”部分）

## MOUNTING THE TROLLEY

#### DANGER! 危险

JDN trolleys must only be installed by qualified personnel. An incorrect installation can lead to serious injuries.

JDN行走小车的安装必须由合格操作员来完成。不正确的安装会导致严重伤害。

#### WARNING! 小心

The trolley girders for JDN trolleys must be able to safely withstand the expected forces. Reel chain and motorised trolleys for 3.2 tons carrying capacity have two anti-tipping devices at their rear side plates.

These have to be loosened and pushed downwards in the elongated hole before mounting. After mounting they have to be put back in the original position

行走小车的横梁必须要能够承受预期的力。卷筒链和马达驱动小车具有3.2吨的负载能力，在其后方配有防倾斜装置。在安装前先把其松动并且向下推到延伸孔里。安装完毕后，再把他们推回到原有的位置。

The calculation of the static and the selection of the girder profile are the responsibility of the operator. The carrying capacity of the suspended/built-in hoist must not be bigger than the capacity of the trolley.



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Dynamic tractive forces have to be considered JDN trolleys are designed for running girder profiles in accordance with DIN 1025 or similar profiles. There must be sufficient room for the trolley to move freely along the whole of the track. For example there should be no screw heads, clamping plates, web plates or other similar items in the way. Please bear in mind that the side plates of our trolleys could extend over the upper edge of the girder, especially if the girder is particularly small. If this is the case, the girders must be suspended or mounted so that they are self-supporting in order not to interfere with the movement of the trolley. Unhindered movement of the attached energy supply system must be ensured along the trolley's path. Please supply adequate working tools. Please look for a safe place for the mounting personnel. The control hoses on the motor side leading to the control valve should only be connected after having mounted the trolley in order to avoid damage (see the section Connecting the control hoses, page 24).

横梁外形数据及选择的计算由操作员来决定。悬吊能力必须大于行走小车的负载能力。.应该考虑动态牵引力。JDN行走小车所需要的横梁使符合DIN1025标准的。必须为行走小车留出足够的空间，使其可沿着轨道自由移动。举例来说，在这个方向不应该有螺栓头，加紧盘或其它类似的物品。如果横梁特别小的话，请一定牢记，小车的边缘可能延伸到横梁的上边。如果出现这种情况，横梁必须要悬挂或装好，让其可以自支撑。这样就不会妨碍小车的运行。动力提供系统沿着小车轨迹的运动必须保证畅通。请提供足够的工作工具。安装人员要确保位于安全的位置。为了避免损坏，马达与控制阀之间的控制软管需要在小车安装完毕后才可连接。

## **MOUNTING MOTORISED TROLLEYS (LM), REEL CHAIN TROLLEYS (LH) AND MANUAL TROLLEYS (LN) WITH CLEVIS LOAD BAR (UP TO 2 TONS CARRYING CAPACITY)**

### **安装马达驱动行走小车，盘链行走小车，手动行走小车配有挡片（负载能力大于 2 吨）**

Screw the clevis load bar with the end marked with an "L" (left-handed thread) approx. 3 mm into the side plate also marked with "L" in the case of LN (for LM and LH, use the one with motor or reel chain drive (front plate)). Screw the second side plate without motor (rear plate) approx. 3 mm onto the other end of the clevis load bar as well. Following this, the clevis load bar is turned further into the side plates until both ends are visible at the outer sides of the side plates.

拧紧标有 "L" 的承重杆到边板(标有 L, 有时会标有 LN)内大约 3mm，并且连接马达和盘链。拧紧第二各边板到承重杆的另一边大约 3mm 处。这样，两端无论是在外部边板还是边板都是可视的。承重杆也会被旋转到边板里。

## **MOUNTING TROLLEYS WITH CLEVIS LOAD BAR INTO GIRDERS WITH OPEN ENDS**

### **安装小车和承重杆到横梁上**

By screwing in the clevis load bar, both side plates are brought to a distance that is approx. 28 mm larger than the bottom flange width of the girder for manual trolleys and approx. 36 mm larger for motorized and reel chain trolleys.

拧紧承重杆时，对于手动行走小车来说，两边的边板之间有 28mm 大于横梁底轮缘的宽度，对盘链小车来说，为 36mm。

The running gear can now be mounted into the track girder by pushing the running gear onto the girder so that the running wheels roll on the bottom flange.

After mounting, the clearance between the outer edge of the bottom flange of the girder and the wheel flange must be between 1 and 1.5 mm on either side.

运动齿轮现在可以安装在横梁上，通过推动齿轮到横梁，可以使滑动轮沿着底面轮缘滚动。安装完毕后，横梁底轮缘与滑动轮轮缘外部边缘的距离需要保持在1.5到1mm在每一边。



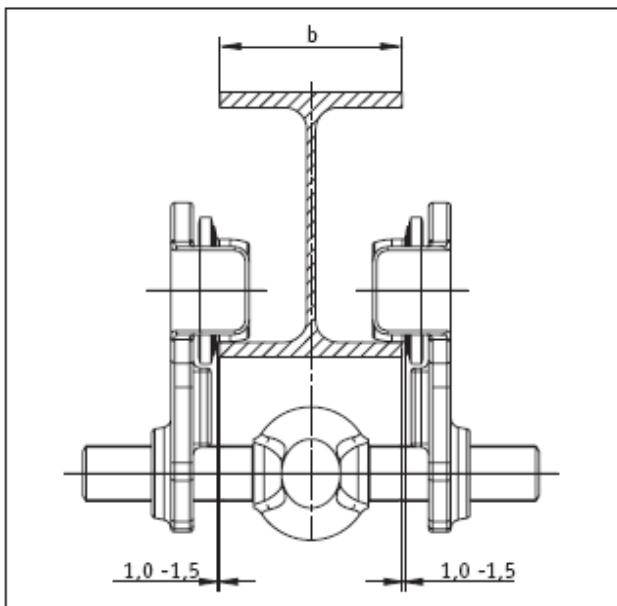


Figure 6: Correct position of clevis load bar and clearance of wheel flanges  
 图 6：承重杆与轮轮缘距离的正确位置。

**DANGER!**

危险：

At the largest girder width, the clevis load bar must be at least flush with both side plates on the outside.

在横联的最宽处，承重杆要至少要嵌入两个边板之间。

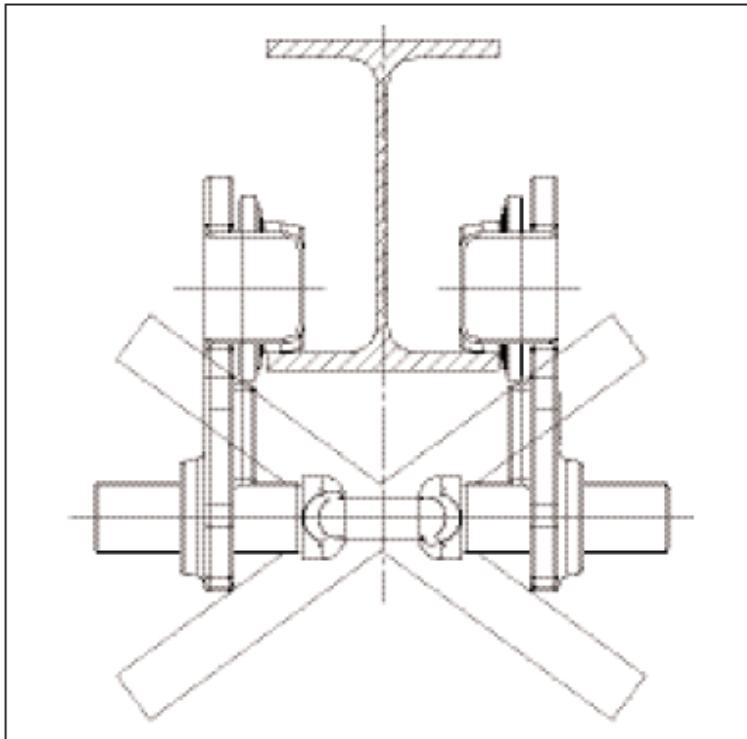
**MOUNTING TROLLEYS WITH CLEVIS LOAD BAR  
 INTO GIRDERS WITH CLOSED ENDS**

**安装小车和承重杆到横梁并紧固**

By turning the clevis load bar, a readjustment takes place to mount the trolley onto the bottom flange of the girder. The trolley is first pushed onto one end with two wheels and then adjusted by turning the clevis load bar so that the opposite wheels are also placed on the bottom flange. After mounting the trolley, the clearance between the outside edge of the bottom flange of the girder and the wheel flange should be set to between 1 and 1.5 mm on either side.  
 随着承重杆转动，横梁底轮缘上的小车会被重新调整。小车开始被安装到两个轮上，然后通过转动承重杆来调整，然后对面的轮子也会安装到底面轮缘上。安装完毕后，横梁底轮缘与滑动轮轮缘外部边缘的距离需要保持在1.5到1mm在每一边



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.Figure 7: Incorrect position of the clevis load bar  
图7：承重杆不正确的安装位置。

## DANGER!

### 危险

Incorrect suspension/loading of the load bar, i.e. over the flat cross-section, causes danger of fracture and is therefore not permissible.

承重杆不正确的悬吊或负载，也就是说，超过扁平十字部分，会引起断裂，因此，是不允许的。

Correct: 正确

After the running gear width has been adjusted, the clevis of the load bar must be positioned to the girder as shown in figure 6. The load hook of the lifting equipment can now be attached to the clevis.

运动齿轮的宽度调整后，承重杆必须安装在横梁上如图6。提升吊钩现在可安装在承重杆上。

DANGER! 危险

Do not drop lifting equipment; equipment should always be placed properly onto the floor. 不要提升设备，设备应该被正确的放在地面。

### Optional:

**Anti-twist device for clevis load bar (for motorized and reel chain trolleys up to 2 tons and 2-ton manual trolleys)**

**选项：承重杆防扭曲装置 (仅对负载大于2吨的马达和盘链行走小车，以及2吨的手动小车。)**

In order to prevent twisting of the side plates on the clevis load bar when mounting and removing the trolleys, the clevis load bar can be counter held by means of two nuts with threadlocking. After the side plates of the trolley have been adjusted on the relevant girder, a nut with threadlocking is screwed on each side from the outside against the side plates on the clevis load bar. These are screwed against the side plate and tightened to a torque of 100 Nm (corresponds to hand tightening with a force of 30 kg with a spanner length of 33 cm).



为了防止安装或移动小车时承重杆边板的扭曲，承重杆需要被两个自锁螺母锁紧。挡相关横梁上小车的边板调整后，自锁螺母要拧紧在承重杆的每一边。这些要拧在边板上并且用100NM的力矩拧紧（相当于33厘米长手动扳手拧紧30公斤的力）

## MOUNTING TROLLEYS WITH LOAD BOLT (OVER 2 TONS CARRYING CAPACITY) INTO GIRDERS WITH OPEN ENDS

安装小车到两边开放的横梁上，使用负载螺栓（负载能力大于2吨）

\_ Mount the trolley at one open end of the girder.

在横梁的一边安装小车

\_ Secure both ends of the girder with end stops to prevent the trolley from falling. They must be designed for the impact load occurring in the event of a collision, with full load and full speed.

确保横梁的两端封闭防止小车掉落。必须确保其设计抗冲击能力能够承受突发满负载和最大速度的碰撞。

\_ The end stops have to be equipped with a buffer. We recommend our clamping buffers.

封闭的两端需要安装缓冲器。推荐使用JDN的加紧缓冲装置。

## MOUNTING TROLLEYS WITH LOAD BOLT INTO GIRDERS WITH CLOSED ENDS

安装小车到封闭横梁，使用负载螺栓。

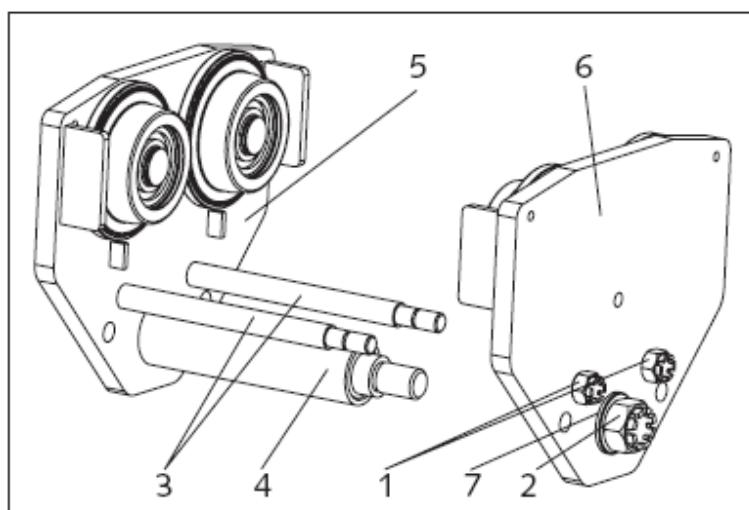


Figure 8: Mounting into girders with closed ends

图8：安装到两端封闭的横梁

\_ The hexagonal nuts (1,2) of the distance spacers (3) and the load bolt (4) at the rear side plate (6) have to be loosened so far that the trolley can be pushed over the bottom flange of the girder. If necessary, the rear side plate including the outer distance washers (7) have to be completely dismantled.

后部边板（...6）的六角螺母（1，2）距离间隔装置（3）负载螺栓（4），需要松开，这样就可以把小车推倒横梁的底轮缘里。如果需要的话，后部边板包括外距离垫圈（7）也需要全部拆开。

\_ In the case of running gears without distance spacers, the retaining rings must first be removed from the hexagonal nuts (2) of the load bolts and the hexagonal nuts (2) at the rear side section must be loosened so far that the trolley can be pushed over the bottom flange of the girder. If necessary, the rear side plate must be completely dismantled.

如果运动齿轮没有配有距离间隔装置，六角螺母上（2）的垫圈需要先拆开。后部边板上的六角螺母也需要松开，这样才可使小车安装到横梁的底轮缘上。如果需要的话，后部边板包括外距离垫圈也需要全部拆开

\_ Position the trolley (possibly including the hoist) with the running wheels of the front side plate on the bottom flange of the girder.

用横梁底轮缘上前边板的运动齿轮来定位小车（包括提升装置）

\_ Thread on and tighten the rear side plate using



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washer sets (see the section Screw retainers and torques, page 41).

拧紧后部边板使用垫圈

**CAUTION! 小心**

Please pay attention to the position and number of the locking rings and distance washers.

请注意自锁垫圈和距离间隔装置的数量。

\_ Connecting the controls (see the section Connecting the controls, page 24).

连接控制部分 (见图24)

After mounting please check

安装完毕后请检查：

the clearance between the outer edge of the girder flange and the wheel flange. It should be between 2 and 3 mm on either side.

横梁轮缘和滑轮轮缘外部边缘的间隙。每一边应该在2 - 3毫米。

the position of the anti-tipping device on the rear plate. It should have a clearance of approx. 1 mm to the underside of the girder.

后部板抗倾斜装置的位置。它应该有1mm的间隙在横梁下面。

\_ the fit and position of the end stops.

两边封闭装置的位置和安装。

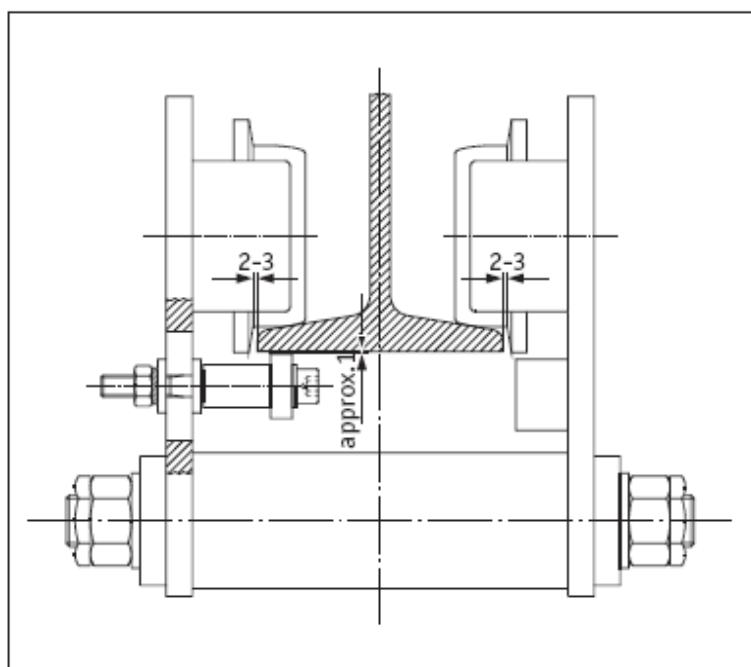


Figure 9: Clearance for the wheel flanges and antitipping device  
图9：滑轮轮缘和抗倾斜装置的间隙。

## CONNECTING THE CONTROLS

连接控制部分

## CONNECTING THE CONTROL HOSES

连接控制软管



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In case the control device is delivered separately, for your guidance short hose pieces have been put into the plug-in connections at the factory. Their colour or numbering corresponds to that of the hoses to be connected, enabling you to connect the hoses one after the other.

如果控制装置是单独发运的，短软管部分应该已经插到工厂的连接装置上。它们的颜色和数量与需要连接的软管一致，使你能够一件一件的安装这些软管。

### REMOVING THE HOSE PIECES去除软管部件

Press down the locking ring (1) with a suitable tool (for example screwdriver), pulling out the hose piece (2) at the same time.

使用合适的工具（如螺丝刀）按下自锁垫圈（1），同时拔出软管部分。

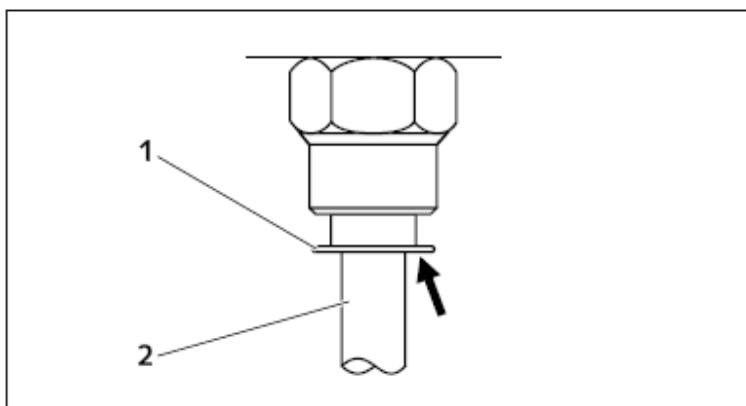


Figure 10: Plug-in connection

图10，插件连接

### MAKING CONNECTIONS

连接标志

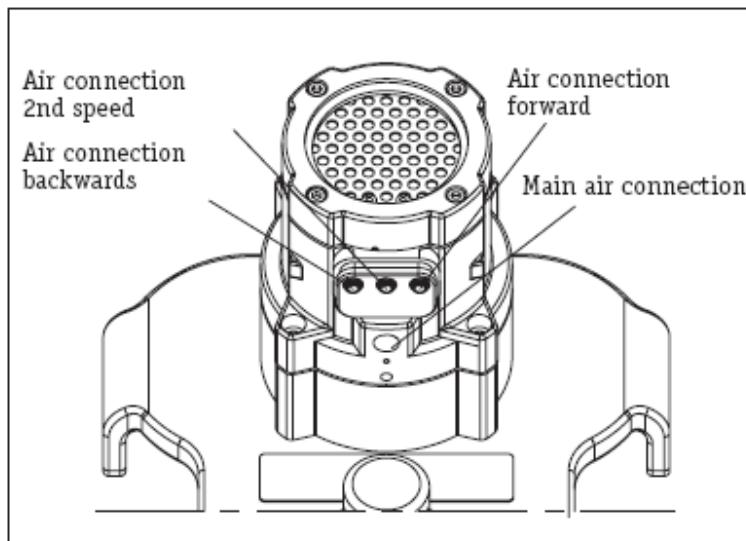


Figure 11: Motor side of the motorised trolleys

马达行走小车的马达边缘。



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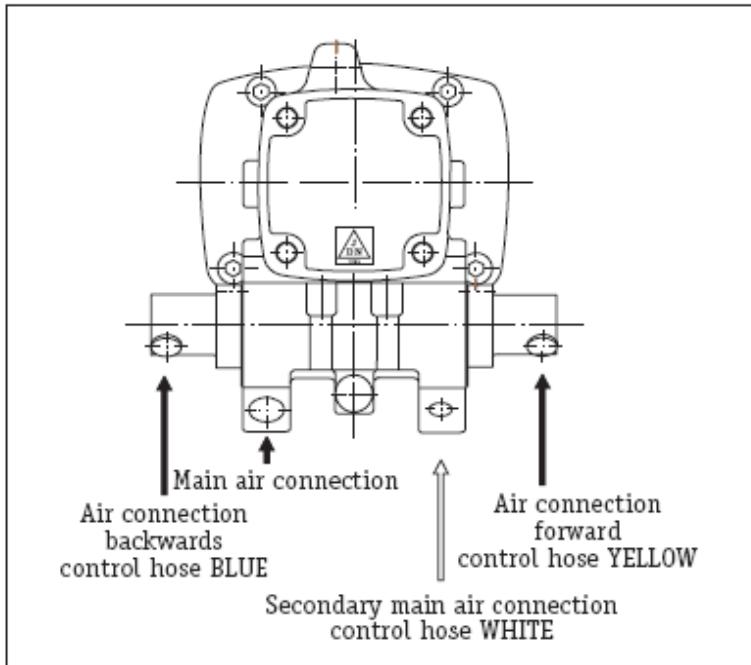


Figure 12: Motor side of the motorise trolleys

马达行走小车的马达边缘

**CAUTION!**

Please ensure that the hose is not bent when inserted.

请确保软管插入的时候部能弯曲。

\_ Put the loop of the strain relief (wire rope) into the existing eye bolt.

把出风冒口的回线（金属线）放入螺栓的出口孔。

- Put the end of the corresponding hose into the hole of the corresponding plug-in connection.  
把相应的软管插入相应的插头里。

\_ Push the hose in as far as the stop.

保持软管插入插头，直到停止。

\_ Check the connection by pulling on the hose.

通过拽拉软管检查连接。

If air escapes from the connection during operation, try to push the hose concerned even further in.  
在连接工程中，如果有空风泄漏，尽量使软管往插头的最里面插。

**CONNECTING TO THE MAIN AIR SUPPLY**

\_ Check air connection for contamination and clean if necessary.

检查连接是否有污染物，必要的话要进行清理。

\_ Blow through compressed air hose in order to remove foreign bodies.

利用压缩空风吹软管，来去除杂质。

\_ Attach the compressed air hose to the connection on the hoist or on the service unit. Tighten the union nut.

连接压缩空风软管装置到提升设备上或服务单元。拧紧螺母。

**LUBRICANTS**

**润滑**

The following lubricants are intended for normal environmental influences. If the trolley is operated under



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adverse conditions that induce increased wear, consult J.D. NEUHAUS for further information.  
以下润滑油使应用在普通环境下。如果用户的使用环境会产生更大的磨损，请咨询JDN公司来获得进一步的指导。

**WARNING!**

**警告！**

Oil and grease can cause skin irritation. Wear protective gloves at all times.  
润滑油和黄油会导致皮肤刺激过敏。操作时要使用保护手套。

**CAUTION!**

**小心**

Potential damage! Do not mix synthetic oils or greases with mineral oils, as the properties may be impaired.

潜在危险！请不要时合成油或黄油混在矿物油里，这样会导致油的性能产生变化。  
Also, never mix different types of lubricating grease within the synthetic or mineral lubricant groups.

而且，部要把不同型号的润滑黄油混合到合成或矿物润滑油里。

Synthetic lubricants must not be used when operating with oilers. Alcohols are not permitted for use as anti-icing agents.

在使用注油器时，禁止使用合成润滑油。酒精不能被用来做防冻物质。



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Application	Lubricant	应用	润滑
Motor lubrication - Applied in the factory - Operation with oiler	- JDN high-performance grease, article no. 11901 (1 kg) article no. 11902 (40 g) - Air motor oil type "D", kinematic viscosity approx. 30 mm <sup>2</sup> /s (cSt) at 40° C, anti-icing additive if required	马达润滑 - 工厂应用 - 使用注油器	- JDN 高性能润滑油 订货号 : 11901 (1 kg) 订货号 : 11902 (40 g) - 风动马达油, 型号 " D" 运动粘性大约 : 30 mm <sup>2</sup> /s (cSt) at 40° C, 如果需要, 可配防冻剂
Chain lubrication	Chain oil or motor vehicle engine oil, kinematic viscosity approx. 150 mm <sup>2</sup> /s (cSt) at 40° C, or special lubricant from J.D. NEUHAUS In areas with very high corrosion potential, e.g. offshore, a lubricant with extremely strong anticorrosion properties must be used.	链条润滑	链条油或车辆发动机油 : 运动粘性大约 : 150 mm <sup>2</sup> /s (cSt) at 40° C。或者 JDN 公司特殊乳化油。在高腐蚀环境下, 例如海边, 请使用含有强抗腐蚀元素的润滑油。
Motor preservation (not applicable when using JDN high-performance grease)	Non-resinous protective oil rated for the duration of the storage period	马达保护( 不适用于使用 JDN 高性能黄油的情况 )	非树脂保护油。适用用短期仓储时。
Motor cleaning (not applicable when using JDN high-performance grease)	Pure petroleum	马达清洁( ( 不适用于使用 JDN 高性能黄油的情况 )	纯汽油
Lubrication of bearings and gearboxes (also for exposed gears)	Saponified lithium grease, felting penetration 265-295 (0.1 mm), ground oil viscosity: 190 cSt (mm <sup>2</sup> /s) at 40° C, dripping point: 180° C, operating temperatures: - 20° C to + 120° C, designation according to DIN 51825: KP2K-20, active agents: corrosion protection	轴承及齿轮箱的润滑( 也可适用于表露齿轮 )	皂化脂肪含锂黄油。 渗透度 : 265-295 (0.1 mm) 表明粘性 : 190 cSt (mm <sup>2</sup> /s) at 40° C 油滴点 : 180° C 工作温度 : - 20° C to + 120° C 符合 DIN51825 标准 KP2K-20 介质, 防腐保护



A copy of the special publication "Recommended lubricants" is available on request.  
根据要求可提供特殊应用的“润滑油推荐表”

## **STARTING OPERATION**

### **开始操作**

If the trolley is operating with a hoist, the operation manual of the mounted hoist/monorail hoist has to be observed before putting into operation (see also the section Pre-start checks, page 26).

如果行走小车于提升装置一起工作，提升装置和单轨吊的操作说明应该提前放到视野可及的地方。

## **INSPECTION**

### **检验**

The inspections must be organised by the operator. The persons selected to carry out the inspections must comply with the relevant requirements, which are specified in the national safety regulations. The operator must provide all the documentation and assistance needed for the inspection.

检验必须由操作员来执行。被选中的执行检验的人员应该遵守相关的国家及其他法规条例。操作员应提供所有为检验而用的文件和协助。

The results of the inspection must be recorded in the inspection log.

检验结果必须记录在检验日志里。

## **PRE-START CHECKS**

### **预启动检查**

Hoists mounted into trolleys have to comply with the regulations for the prevention of accidents valid for cranes. Before beginning to use a crane for the first time and after any major modification before starting to work with it again, it has to be checked by a qualified person. See also ZH1/27 "Principles for the Testing of Cranes".

安装提升装置到行走小车，这必须遵守相关的规定，避免造成起吊事故。在开始第一次使用起重设备前，无论做了任何的改动，在工作前必须由合格人员来检查。请见ZH1/27 “起重设备测试原则”。

The test has to include the orderly erection, equipment and the readiness of service. The suitability of operation of the ready-to-operate equipment has to be safeguarded:

测试包括按顺序装配，服务和设备准备就绪。适当的准备就绪的设备，会使操作得到安全保障。

\_ by a dynamic test with 1.1 times the maximum carrying capacity under normal working conditions (lift load just above floor),

动态测试，在正常工作条件下（提升在地面以上），测试在最大负载能力1.1倍的负载。

\_ if necessary by a static test with 1.25 times the maximum carrying capacity (with motorized equipment).  
如果必要的话，用马达测试在最大负载能力1.25倍的负载

Note: The static test is not applicable for hand-operated cranes.

注意：以上操作不适用于手动起重。

During these tests, no permanent deformation (distortion), disturbances of performance or other failures may occur.

在这些测试中，设备的性能不会发生改变，也不会发生影响设备本身的事件。

As according to ZH 1/27, hoists delivered in trolleys do not represent a ready-to-use installation; the manufacturer only supplies a manufacturer's declaration. EC conformity cannot be issued until the ready-to-operate installation has been checked by an authorized person. See the section CE certification, page 19.



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根据AH1/27,提升装置发运时并没有与行走小车装配好；制造商仅提供说明。在欧盟，必须由授权人员检验准备就绪后的设备后，才可发布。请见19页CE证书

If necessary, further tests on the basis of national regulations have to be executed. In case of testing loads higher than those mentioned in this manual, please contact J.D. NEUHAUS.

如果必要的话，在国家相关规定下的测试以外还需进一步的测试。如果在测试负载能力大于此说明手册的情况下，请与JDN公司联系。

If the control circuit of the installation allows several movements at the same time, the dynamic test has to be executed with combined movements.

如果安装的控制回路运行同时进行多种操作时，应该在这多种操作进行动态测试。

For trolleys with rack-and-pinion drives, sufficient flank clearance (approx. 0.3 mm) must be set between the drive pinion and the rack, along the entire track. If the setting is too close, the drive pinion could be damaged or even break.

对于配有齿条和小齿轮驱动的行走小车，沿着整个轨道，在齿条和小齿轮之间应该留出足够的间隙（大约0.3毫米）。如果装配太紧的话，驱动小齿轮会损坏甚至破裂。

## **REGULAR INSPECTION**

### **定期检查**

See the section Inspection and maintenance work, page 31.

见31页检测及维护工作。

## **OPERATION**

### **操作**

## **RULES FOR THE SAFE OPERATION OF TROLLEYS**

### **安全操作行走小车的规定**

In addition to the rules listed in the operation manual for JDN air hoists and JDN monorail hoists, the following rules have to be observed:

除了列在JDN风动提升装置和JDN单轨吊上的规则外，还需遵守以下规则：

If several trolleys are working together, the customer has to set up the conditions for safe operation. 若多各行走小车一起工作时，用户需要设定安全操作条件。

If the local conditions or the work to be performed make it necessary, the customer has to define operating instructions.

若当地的工作条件使得必须完全执行这些规定，用户必须详细说明操作指示。

Maintenance and inspection work may only be performed once the people in charge are convinced that the trolley and the hoist/monorail hoist are cut off from

the energy supply and that measures have been taken to prevent the accidental supply of energy.

在进行维护和检测工作时，负责操作行走小车的操作员必须确保切断风源，已防止发生事故。

The same applies to maintenance work and any changes in case personnel in the working area of the trolley may be exposed to danger. 这同样应用在操作员在进行维护和其他工作时，在工作区域也许有危险。

If there is a danger that parts may fall down, the corresponding area has to be barricaded and protected by guards. 在如果有部件掉落的危险情况下，相应的区域应该设有路障并且有安全措施。Other risks from neighboring installations also have to be safeguarded against. 其他来自周围设备安装的危险也应当设施安全措施。Following completion of the work, operation may only recommence after release by the operator. 维护或检查工作结束后，操作员可指示开始工作。Before release, the operator has to be convinced that all work has finally been completed, that the whole trolley including hoist/monorail hoist is in a safe condition again, and that all personnel involved have cleared the installation. 在发出开始工作的



指示前，操作员应当确保所有的维护和检查工作已经完成，而且整个行走小车包括提升装置/单轨吊处于安全工作条件下，所有相关人员已经清理了整个安装现场。

See also "Rules for the safe operation of hoists" in the operation manual Air hoists/monorail hoists.  
可见风动提升/单轨吊操作说明中的“提升装置安全操作规则”

If components other than JDN components are used, danger may occur. Such an application can only be allowed after having received J.D. NEUHAUS agreement.

如果使用非JDN公司所认可的配件，会导致危险。只有经过JDN公司同意，才可使用其他公司配件。

## Controls

### 控制器

Together with the hoist/monorail hoist, JDN motorized trolleys can be operated with the following controls:

配有提升装置与单轨提升装置的JDN马达驱动行走小车可有以下控制器来操作

控制	敏感	
	Yes	No
ROPE 控制	X	
E 控制		x
F 控制	x 1)	x

1) Up to 20 t carrying capacity in special model  
20吨以上的需要特殊型号

### E AND F PUSHBUTTON CONTROLS

#### E型和F型控制按钮

With pushbutton controls E and F, lifting, lowering and traversing movements can be controlled via pushbuttons. The direction of movement of the load hook and the trolley are marked by arrows above the pushbuttons. All pushbuttons return to the zero position when released.

使用E型和F型控制按钮，可以通过按钮来操作提升、降落和横穿运动。在按钮上标有箭头，指示吊钩和行走下车运动的方向。当释放风压后，所有的按钮都可归零（回到原位）

### F PUSHBUTTON CONTROL WITH TWO TRAVEL SPEEDS

#### F型控制按钮（有两种运行速度）

\_ Low trolley speed: press down corresponding pushbutton halfway until noticing slight resistance.  
较低小车运动速度：按下相关的按钮一半的位置一直大遇到轻微的阻力。

\_ Quick trolley speed: press corresponding pushbutton further down.  
较快小车运动速度：一直把相关按钮按到底。

## EMERGENCY STOP

### 紧急制动

The E and F controls that are designed for the EU are fitted with an emergency stop button. The same design is available on demand for customers outside the EU.

为欧盟地区设计的E和F型控制装置配有紧急制动按钮。我们也可根据用户的要求为欧盟以外的用户设计。

The emergency stop button, when pressed, locks in the down position and halts the motion of the trolley.



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All other pushbuttons are then inoperable. The emergency stop can be released once the danger has been eliminated.

Operation of the trolley using the pushbuttons can only take place after this has been done.

当按下紧急制动按钮时，锁住了向下的位置，中断了行走小车的运动。所有别的按钮都步生效。当危险状况消除后，可释放紧急制动按钮。释放后，使用按钮操作的行走下车才可恢复操作。

\_ In the event of a hazard, press down firmly on the red emergency stop button.

遇到紧急危险情况，请紧按红色紧急制动按钮。

\_ Once the hazard has been removed, turn the emergency stop button slightly to the right to release it. It jumps back into place.

云淡危险解除后，可轻按制动按钮到右边位置来释放，它可跳回原位。

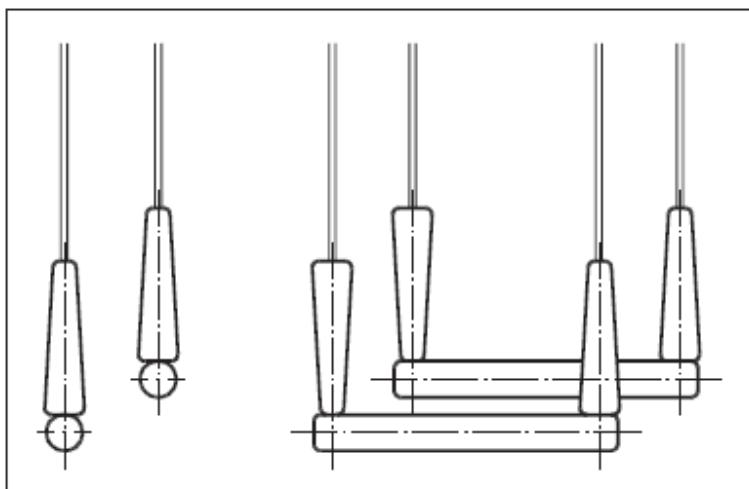


Figure 13: Rope control  
图13：Rope型 控制器

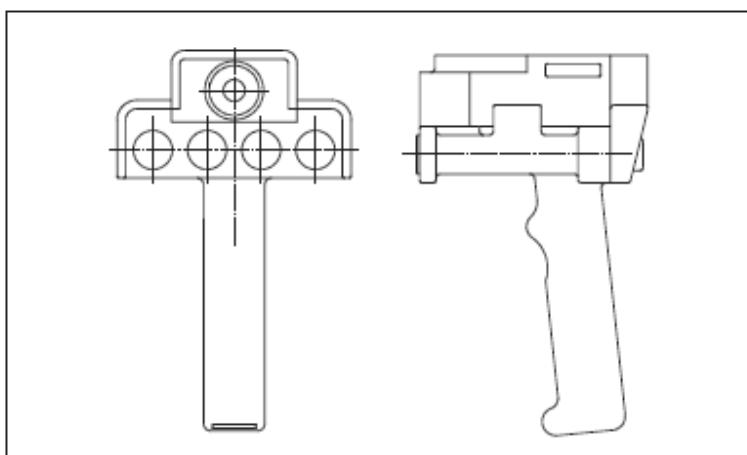


Figure : E 型14: E control  
图14控制器



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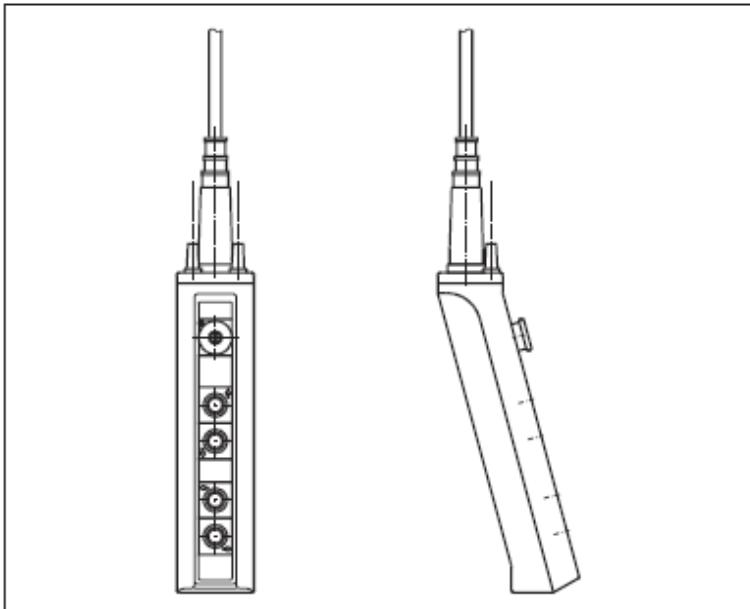


Figure 15: F control  
图15 :F型 control

### **TAKING THE TROLLEY OUT OF OPERATION**

**行走小车非工作状态**

### **PROLONGED SHUTDOWN**

#### **延长关闭**

If the hoist is to be taken out of operation for a longer period of time it must be protected against corrosion and dirt.

如果长时间不使用提升装置的话，必须要进行防腐和防尘处理。

- \_ Coat the chain and hook with a light oil film.  
在链及挂钩表面轻轻涂一层黄油。
- \_ Move the load hook out of the lifting area in order to avoid hazardous situations.  
把吊钩移到提升区域以外，防止发生危险。
- \_ Do not move against the lifting and lowering limiters/buffers (emergency end stop devices).  
不要拆除提升和降落限制块/缓冲器（紧急制动装置）
- \_ Depressurize the air line.  
使空风管路降压。

### **STORAGE**

#### **设备的保管**

(see section Storage conditions, page 20)

(仓储条件)

### **DISMANTLING**

#### **拆装**

##### **DANGER OF INJURY!**

**危险！容易受伤！**

JDN air hoists must only be dismantled by qualified personnel.

只有合格操作人员才可以进行JDN风动工具的拆装。

- \_ Depressurise the air line.  
使空风管路降压



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- \_ Provide a suitable working platform.  
提供一个合适的工作平台
- \_ Loosen the union nut and remove the air hose.  
松开结合螺母，卸掉空风软管。
- \_ Protect the air connection against the dirt ingress.  
避免灰尘进入软管连接处
- \_ Detach the control hoses from the hoist. Do not kink the control hoses.  
从提升装置上卸下控制软管。不要使软管打结。
- \_ Mark the connections.  
标记连接装置。
- \_ Detach the strain relief and hose carrier and remove the control device.  
卸下出风冒口和软管夹子，并拆除控制装置。
- \_ Carefully detach/dismount the hoist and remove.  
小心卸下提升装置
- \_ For trolleys, proceed in reverse order to that described in the section on mounting trolleys (in the trolley operation manual).  
对于行走小车，按照安装小车的程序反向操作即可（见小车操作说明）

## DISPOSAL

### 废物处理

JDN hoists contain a range of materials which, on expiry of the service life, must be disposed of or recycled where appropriate, in accordance with statutory regulations.

Please note the following list of materials used:

JDN提升装置包括很多配件，如果其中有过了使用期限的，必需根据当地法规丢弃或者回收。

## HOIST

### 提升装置

- \_ Ferrous materials
  - Steel
  - Nodular cast iron  
含铁材料，钢材，节状铸铁
- \_ Non-ferrous metals
  - Bronze  
不含铁材料
  - Copper  
青铜
- \_ Synthetic materials/plastics 合成材料/塑料
  - Polyethylene 聚乙烯
  - Polyurethane 聚亚安酯
  - Polyamide 聚酰胺
  - Rubber 橡胶
  - Epoxy resin 环氧树脂
  - Polyacetal 聚乙醛
  - Thermosetting casting 热硬化铸铁
  - (Brake liner, asbestos-free) 制动衬垫，不含石棉

## FILTER SILENCER/SERVICE UNIT:

### 过滤消音器/服务单元

- Zinc diecast 镀锌压铸件
- Brass 黄铜
- Nitrile rubber 丁腈橡胶
- Aluminium 铝
- Polypropylene聚丙烯



Polyurethane 聚亚安酯

Glass-fibre reinforced plastic 玻璃纤维加固塑料

Steel 钢

Polyacetal 聚乙醛

Polyethylene 聚乙烯

## MAINTENANCE

### MAINTENANCE AND INSPECTION INTERVALS

JDN trolleys are extremely robust and require little maintenance. JDN风动工具经久耐用几乎免维护。Compliance with maintenance and inspection intervals is of great importance, in order that the trolleys operate safely and reliably over a period of many years. 定期做检验和维护对于提高行走小车的寿命和可靠性起到很重要的作用。If the trolley is being operated in a harsh environment that leads to accelerated wear, then the intervals should be reduced. 如果行走小车工作环境非常苛刻，这样会加速磨损，需要缩短维护间隔的时间。

#### WARNING! 警告

Maintenance work on JDN trolleys must only be performed by trained and qualified personnel.

维护工作必须由经过培训和合格的操作人员来执行。

In the case of maintenance work exceeding normal service and maintenance, please contact J.D. NEUHAUS.

如果维护工作超出普通的服务及维护范围，请联系JDN公司。

For information regarding qualification of maintenance personnel, see the section Personnel safety, page 5.

关于维护人员的资格，请见个人安全部分，第5页。

### CLEANING AND CARE

#### 清洗及保养

If your JDN trolley has to work in dirty surroundings, remove coarse dirt from the trolley.

如果行走小车工作环境非常脏乱，请除掉小车上的脏物。

### SPARE PARTS

#### 备件

If, during repair work, the replacement of components is necessary, only original JDN spare parts may be installed.

在修理工作中，如果需要替换部件，只能使用JDN提供的备件。

### INSPECTION AND MAINTENANCE WORK

#### 检验及维护工作

##### REGULAR INSPECTION

###### 常规检验

Cranes must be inspected by a specialist in accordance with the application and operating conditions as required, but at least once a year. Furthermore, JDN trolleys have to be checked according to the maintenance and inspection list (see Inspection list, page 32).

起重设备必需根据要求能够符合想关应用及操作条件的专家来检验，但至少每年一次。除此之外，JDN行走小车必须严格按照维护及检验清单来执行（见检验清单，32页）

##### MAINTENANCE LIST

Maintenance measure	Interval	Comment	维护措施	间隔	意见
Checking controls	Daily	see page 36	检测控制部分	每天	见36页



Checking brake function	Daily	see page 36	检测制动功能	每天	见36页
Checking end switches (if fitted)	Daily	see page 36	检测尾部开关	每天	见36页
			(如果安装的话)		

检查表

检查方法	间隔	备注
检查行走梁及终端是否损坏	每年	
检查锁死装置是否损坏或其功能性	每年	必要时更换
检查侧板是否损坏或变形	每年	
检查滚轮，包括轴承是否损坏及其松紧程度	每年	
检查滚轮边的磨损	每年	必要时更换
检查牙轮的磨损及润滑	每年	必要时拧紧
检查连接螺栓的松紧程度	每年	必要时更换
检查承重杆的变形情况	每年	必要时更换
检查滚轮的螺栓是否变形	每年	必要时更换
检查制动性能	每年	
检查风动部件是否损坏，及其功能性	每年	必要时更换
检查控制器是否损坏及其功能性	每年	
检查软管的完好性及其密度	每年	必要时更换
检查过滤器	每年	
检查消音器	每年	
更换马达黄油	需要时	
更换转子黄油 (6吨以下)	需要时	

## TESTING THE BRAKE (MOTORIZED TROLLEYS)

Test the brake function daily. When the pushbuttons of the controls are released, the trolley may not keep running for an unusually long time.

### 马达式行走小车的检测

每天需要检查制动功能。当控制按钮释放后，行走小车能够正常停车。

#### CAUTION!

#### 注意！

If the trolley keeps running for an unusually long time after braking, the brake has to be repaired.

如果停车时间过长，制动器需要送去维修。

## REPLACING BRAKE DISC IN THE CASE OF MOTORIZED TROLLEYS OVER 6 TONSCARRYING CAPACITY

### 6吨以上行走小车制动片的更换

When the brake begins to noticeably lose its effect, it is time to replace the brake disc. Loosen the four hexagon socket screws (1) in the cover (2) of the motor housing and remove the cover.

如果制动效果明显失效，此时表明需要更换制动片。松掉端盖(2)上的四个内六角螺栓(1)，拆下端盖。

#### CAUTION!

#### 注意！

Take care to avoid damaging the brake assembly seals.

- Pry the brake assembly (4) out of the housing.
- Draw the brake disc (5) off the end of the rotor.
- The brake disc should have a thickness of at least 5.5 mm. Measure it, and replace if necessary.
- Ensure that all sealing rings of the brake assembly are correctly positioned in their grooves.
- Replace the brake assembly in the housing, pressing it firmly into position.



Place the O-ring (3) into position and fasten the cover using the four hexagon socket screws (see the section **Screw retainers and torques**, page 41).

注意不要损坏制动总成密封。

**检查制动总成 (4)**

将制动片从转子的末端拉出。

制动片的厚度至少应该达到5.5mm厚，必要时更换之。

确保制动总成的所有密封都在其凹槽内。

将制动总成紧紧的压入到马达壳体中

放好密封，最后用四条内六角螺栓将马达端盖拧紧。

**WARNING!**

Check the braking action of the trolley under load prior to initial operation.

**警告**

在正常操作前一定对行走小车在负荷的情况下做制动测试。

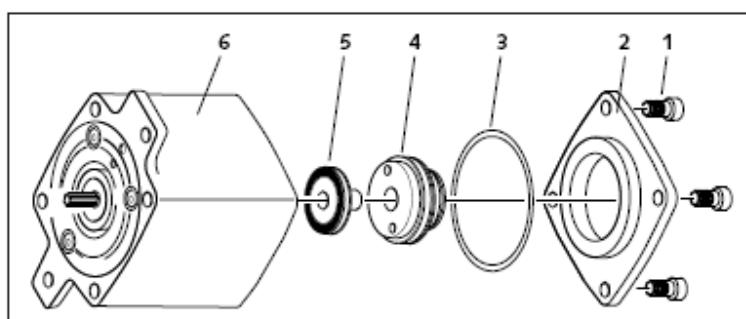


Figure 16: Remove the brake assembly from the housing and replace the brake disc if required  
图16：制动总成的拆卸及制动片的更换。

## REPLACING MOTOR VANES IN THE CASE OF MOTORISED TROLLEYS OVER 6 TONS CARRYING CAPACITY

**承载能力6吨以上的马达叶片的更换。**

When the vanes of the air motor become worn, the motor performs less well, reducing the load capacity of the JDN trolley. In such a case the vanes must be replaced.

当叶片已磨损，或者是马达的性能下降，或承载能力减弱，在这种情况下叶片必须更换。

**CAUTION!**

**注意**

Only trained technicians should be allowed to work on the air motor. Improper work procedures may damage the motor. Loosen the two hexagon socket screws that hold down the housing and carefully remove the motor. In doing so, keep track of the shaft coupling and seal.

Unscrew the brake cover, remove the brake assembly and the brake disc from the housing (see the section **Replacing the brake disc**, page 32).

只有经过严格培训的操作人员才能进行此项工作，非正常的操作会给马达带来很大的损伤。松开两条内六螺栓，小心的拆下马达，保持轴套和密封在其位置上

松开制动器盖，从马达壳体拆下其总成和制动片。（参见第32页制动片的更换部分）

Loosen the three hexagon socket screws (8) of the cover (7).

松开端盖上的三条内六角螺栓 (8)

Using a soft plastic hammer, carefully tap on the rotor (3) from the brake assembly side to drive it out. The vanes (2) and springs (1) will fall out. Inspect the rotor running surface to ensure that it is free from mechanical defects.

使用一把塑料锤子轻击其制动片端，直至转子 (3) 与叶片 (2) 及其弹簧 (1) 都被敲出为止。检查转子表面是否磨损。



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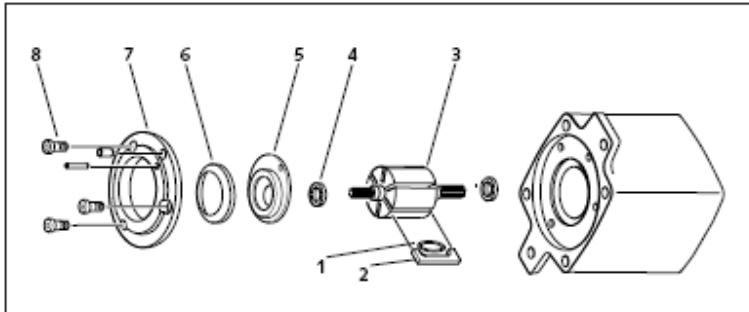


Figure 17: Drive the rotor out from the brake assembly side

图17从制动总成侧拔出转子。

### Renewing motor grease

### 更换马达黄油

Before mounting, lightly coat cylinder liner, rotor with slots, vanes and both bearing plates with JDN high-performance grease (part no. 11901).

在安装前轻涂一层黄油到刚体内壁，转子的插槽中，叶片和两边的承载片（参见零件号：11901）

– Set the motor housing on its end and replace the rotor in the housing.

把马达壳体竖立起来更换壳体内的转子

– Insert new vanes with their compressed springs into the rotor slots one at a time, always inserting the vanes at the point where the rotor/cylinder gap is largest (a special vane mounting tool is available from JDN).

在转子与刚体内壁间距最大时安装叶片及叶片弹簧，JDN公司有专门的安装工具。

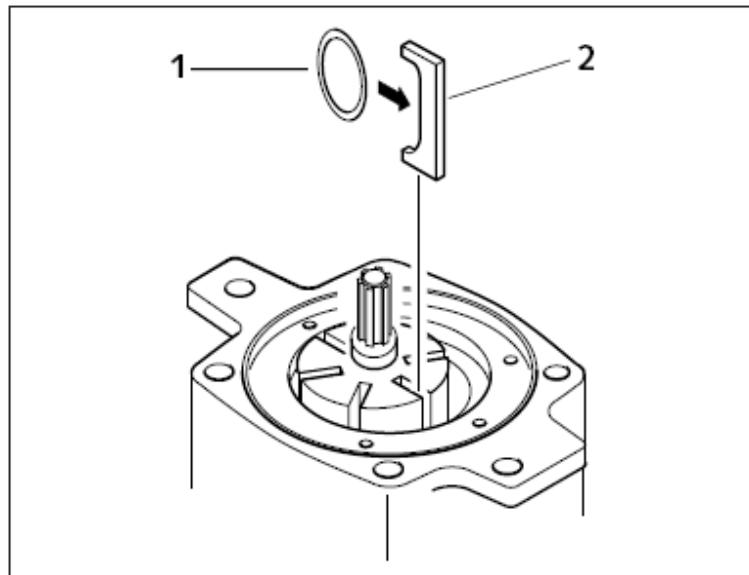


Figure 18: Insert the vanes into the slots where the gap is largest

图18：在转子与刚体内壁间距最大处安装叶片及其弹簧

– One at a time, place the spacer (4), the bearing disc (5), the plate spring (6) and the cover (7) over the end of the rotor (see Figure 19).

依次安上轴套（4），承重片（5），碟型弹簧（6）端盖（参见图19）

– Screw down the cover.

拆开端盖

– Mount the brake disc and brake assembly into the opposite end of the housing and close the housing with the brake cover, sealing ring and four hexagon socket screws (see Figure 18).



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安装制动片和制动总成到壳体的相反位置，装好密封，最后盖上端盖，拧紧四条内六角螺栓

\_ Place the seal into position.

装上密封

\_ Flange-mount the motor to the gearbox using two hexagon socket screws (torque 41 Nm).

马达与齿轮箱的连接是通过两条内六角螺栓连接的（扭矩为41NM）

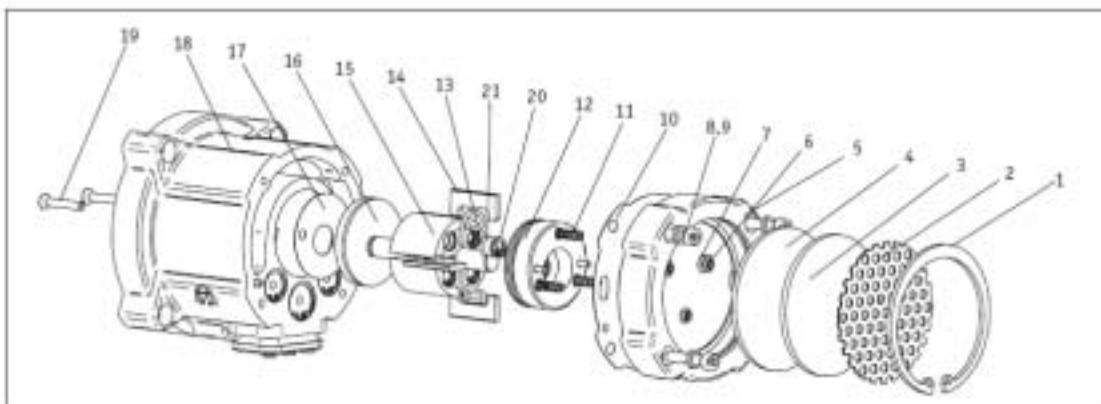


Figure 19: Replacing brake discs, brake piston and vanes/motor assembly for motorised trolleys up to 6 tons carrying capacity

图19：制动片的更换，六吨以下行走小车制动活塞和叶片马达的组装图

#### REPLACING BRAKE DISCS, BRAKE PISTON ANDVANES/MOTOR ASSEMBLY FOR MOTORIZED TROLLEYS UP TO 6 TONS CARRYING CAPACITY

制动片的更换，六吨以下行走小车制动活塞和叶片马达的组装图

#### Functional description:

#### 功能描述

The braking action is applied at the lateral surfaces of the rotor. The rotor is pressed via spring force from the cover side of the motor against a brake disc located on the opposite side by means of a brake piston.

制动力作用在转子的侧表面。端盖上的弹簧作用在转子上，与其对面的制动活塞紧靠在一起

#### ADJUSTING THE BRAKE

#### 制动的调整

\_ Remove the retaining ring (1) from the motor cover. \_ Remove the perforated metal plate (2), Vyon plate (3) and felt plate (4). \_ Release the lock nut (7) of the adjusting bolt (6) (3 screws).

\_ Screw the adjusting bolt (6) to the stop in the cover; do not tighten.

\_ Then screw back the adjusting bolts (6) 45° from the stop, hold and lock with the nuts (7). For operation in areas with ambient temperatures exceeding 30° C, the adjustment has to be carried out with the motor warmed up accordingly. \_ Refit the felt plate (4), Vyon plate (3), perforated metal plate (2) and retaining ring (1).

从马达拆下卡簧（1），拆下有孔的金属板（2）合成材料片和毡片（4）松开锁紧三个调整螺栓（6）的螺栓（7）

拧动螺栓直到在端盖处，但不要拧紧。

然后向回拧45度角，拧紧锁紧螺栓（7）。在操作时这一部分时周围的温度要超过30度，在调整的时候，马达的温度与之相同。重新装上合成材料片（4）和毡片（3），有孔金属片，最后套上卡簧。

#### REMOVAL

Proceed as follows when removing the brake disc and brake piston:

\_ Disconnect the trolley from the main air supply.

\_ Remove the retaining ring (1) from the motor cover.

\_ Remove the perforated metal plate (2), Vyon plate (3) and felt plate (4).

\_ Release the lock nut (7) of the adjusting bolt (6) (3 screws)



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\_ Remove the cover bolts (8) and detach the cover (5) with its seal (10) (when the cover bolts are removed, brake spring tension (11) is fully released).

\_ Remove the springs (11).

\_ Remove the brake piston (12) from the internal cylinder integrated in the motor housing (18).

\_ Pull out the rotor (15), catching the vanes (14) and starting aids (13).

解体碟式制动器和制动活塞的步骤如下：

拆下行走小车的风管

拆下马达端盖上的卡簧 (1)

拆下有孔的金属板 (2) , 合成材料片 (3) 和毡片 (4)

松开锁紧螺栓 (7) , 调节调整螺栓 (6) 位置。

取下端盖螺栓 (8) , 拆下端盖 (5) 和密封 (10) , 此时制动弹簧处于松弛状态。

取下制动弹簧 (11) , 拆下马达壳体 (18) 内缸中的制动活塞 (12) , 拔出转子 (15) , 取下叶片 (14) 和叶片弹簧 (13) 。

#### Note

If you only wish to replace the vanes with the starting aids, please continue with the section "Checking for vane wear".

\_ After removing the countersunk screws (19), the brake disc (16) can be removed with its seal (17). The motor has to be disconnected from the gearbox in order to access the countersunk screws (19). Check the brake disc (16) and brake piston (12) for wear and damage, replace if necessary. The circular wear pattern must not be deeper than 0.2 mm. The extremely low-wear braking material will not reach the wear limit of 0.2 mm within the design-dependent service life of the trolley under intended use.

\_ Check vane wear (see illustration Checking vane wear). When the air motor vanes are worn, the motor power and consequently the travelling performance of the trolley are reduced (particularly when loaded). Replacing the vanes together with the starting aids.

## 注意事项：

如果您只是想更换叶片和叶片弹簧 , 请您注意 “ 检查叶片的磨损 ” 的章节部分。

拆下沉头螺栓后 (19) , 就可以把制动片 (16) 连同其密封 (17) 一同卸下。为了能够拆下沉头螺栓 , 必须先把马达和齿轮箱分离。检查制动片 (16) 和制动活塞 (12) 的磨损情况 , 在必要时更换。圆形的耐磨材料的磨损量不能超过其设计0.2毫米。

检查叶片磨损 (参见说明检查叶片磨损部分) , 当叶片磨损时其功率和行走性能都会明显下降 (尤其是在有负载时。 )



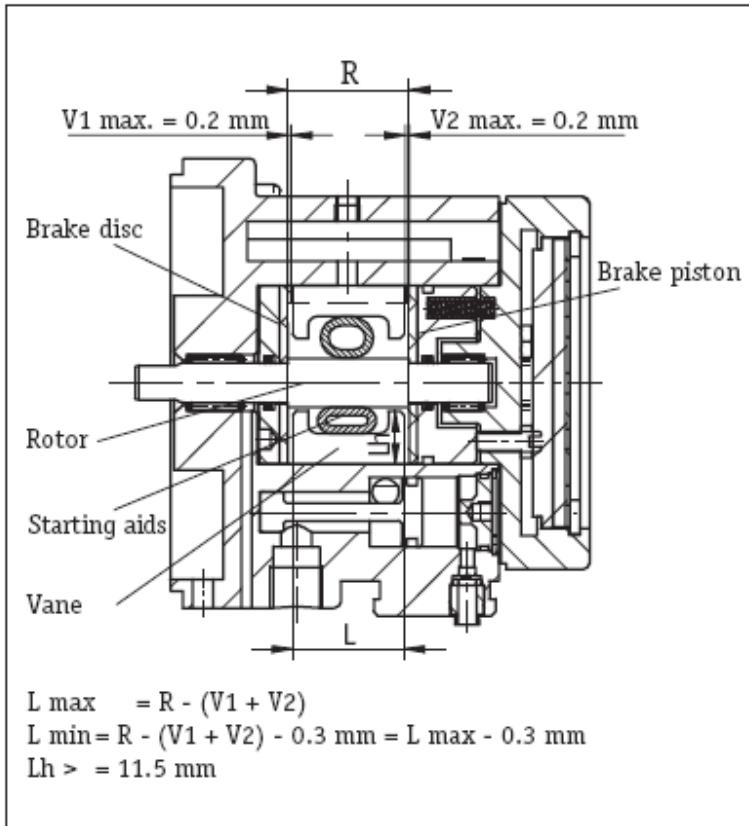


Figure 20: Checking vane wear

### 图20：叶片磨损的检查

### ASSEMBLY/MOTOR LUBRICATION

#### 装配/马达的润滑

Insert the brake disc (16) with its seal (17) into the motor housing (18) and bolt down using the countersunk screws (19) (torque 2 Nm); lightly coat the braking side of the brake disc with high-performance grease (JDN part no. 11901). Lightly coat the inside of the rotor contact surface of the motor housing (18) with high-performance grease. Lightly coat the vane slots, cylinder and end surfaces of the rotor (15) with high-performance grease and insert into the housing bearing with the clutch side first.

把制动片 (16) 和它的密封 (17) 装入到马达壳体 (18) 用2牛米的扭矩扭紧沉头螺栓；在制动片的边上轻涂一层黄油 (JDN零件号：11901)，在刚体的表面也需涂抹一层黄油，然后再先装入离合器侧的壳体轴承。

Lightly coat the vanes (14) with high-performance grease and insert into the rotor slots with the starting aids (13).

在叶片轻涂抹一层黄油，然后再将叶片和叶片弹簧装入转子槽内 (13)

Lightly coat the entire brake piston surface (12) including its seal with high-performance grease and push it into the motor housing (18) with the braking surface first; note the correct position of the eccentric bore.

在整个制动活塞上 (12) 轻涂一层黄油，包括其密封。然后将其推进已装入制动片的马达壳体内，标记好偏心孔的位置。

Lightly coat the outer rotor bearing (needle bush bearing point) (15) with high-performance grease as well.

轻轻的向转子外侧的轴承上涂抹黄油 (滚针轴承) (15)

If required, renew the grease packing in the rotor chambers (every 400 hours, at least every 5 years).



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Note: The rotor chambers are only emptied by approx. 60 %. In this condition, refilling must be performed. The retaining rings (20) and Vyon washers (21) behind them must be removed from the rotor in order to refill the chambers. Then fill the lubricant chambers with high-performance lubricant without forming cavities! Use new Vyon washers (21) to close off the lubricant chambers and secure these using retaining rings (20).

在必要时更换在刚体内的黄油 (每400小时, 最少每5年)

### 注意事项:

在转子室中只有60%的空腔时, 必须要加油。在其后面的卡簧和合成材料垫片都需先行拆下, 然后再添加润滑油, 注意添加时要添实, 再更换新的合成材料垫片 (21), 封闭润滑室, 最后把卡簧卡上。

Insert the brake springs (11) into the bores of the brake piston (12).

Install the cover (5) (torque 5 Nm), ensure correct seating of the brake springs (11) and locating pins to the motor housing (18) and brake piston. Screw back the adjusting bolts (6) beforehand.

Do not tighten the four adjusting bolts (6) after bolting the cover in place; only screw them in loosely to the stop in the cover (5). Screw back the lock nut (7) sufficiently beforehand.

Adjust the brake according to the section "Adjusting the brake" on page 31.

Refit the felt plate (4), Vyon plate (3), perforated metal plate (2) and retaining ring (1).

将制动弹簧 (11) 插入到制动活塞 (12) 的孔内。

用5牛米的力矩扭紧端盖, 确保制动弹簧 (11)、固定于马达壳体 (18) 的定位销和制动活塞的正确安装。先将四个调整螺栓松开。

不要拧紧这四个调整螺栓, 拧上锁紧螺栓, 再根据31页制动器的调整章节中的相关要求进行调节。

然后再在依次安装毡片 (4) 合成材料 (3) 有孔的金属板 (2), 最后是卡上卡簧。

### WARNING!

Check the braking action of the trolley under load prior to initial operation. Check the motor power at the same time. In the event of low motor power, regulate the adjusting bolts again.

### 警告

在初始的操作中事先检查行走小车在负载时的制动性能, 同时检查马达功率。如果马达功率过小需要重新调整制动片的间距。

## TESTING THE CONTROLS

### 控制器的检查。

(motorised trolleys)

马达式行走小车。

Check that the pushbuttons function without sticking, once a day. The pushbuttons must return to the zero position automatically after being released.

每天检查按钮是否能够自动立即回位。

### CAUTION!

### 注意

If a pushbutton is difficult to operate or remains in the pressed position, do not use the trolley. The controls must be repaired.

如果按钮不能正常回位, 此时应立即停用, 修理控制器。

## CHECKING THE SILENCER FOR PERMEABILITY

### 检查消音器的通透性

In addition to the scheduled inspection intervals, the silencer should be inspected and its flow resistance assessed whenever the trolley fails to reach the specified travel speed.

In the event of notably reduced values, the silencer elements must be cleaned or replaced.

除了按照保养列表的保养, 消音器也应该对它进行风流阻力检查, 评估它是否能够达到所规定的行走速度。

## CHECKING THE SERVICE UNIT



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## 检查服务单元

See also operation manual of the air hoist.

参见风动葫芦操作手册

## OIL DROP RATE

供油率

LM 2 t: 2 drops per minute LM 3.2 t to LM 16 t: 10 drops per minute

LM2T: 2滴每分钟 LM3.2T TO LM 16T: 10滴每分钟

## WHEEL FLANGE WEAR OF RUNNING WHEELS

行走小车滚轮的磨损。

When the limit dimensions at the wheel flanges are reached (see table), the running wheels have to be replaced. If necessary, the clearance between wheel flange and outer edge of the girder flange has to be readjusted before the limit dimension G at the wheel flanges is reached.

当行走小车的滚轮磨损已达到极限（见表），滚轮就必须要更换。如行走小车于行走轨道地底板间距过大，就必须重新调整间距。

Running wheel diameter	50	60	70*	80	84*	165	185	250
Limit dimension G at the wheel flanges	3	5	9	6	10	6	12	12

\*Wheel flanges with gears

Dimensions in mm

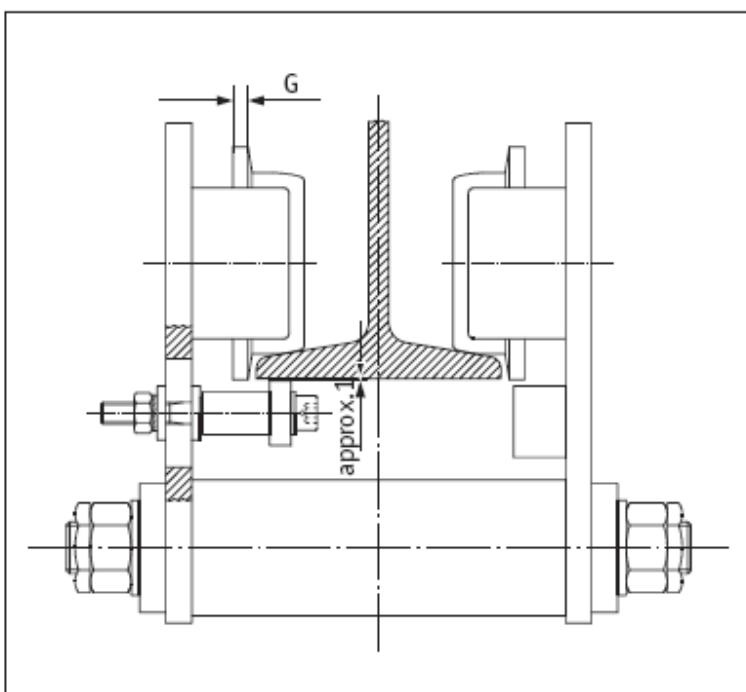


Figure 21: Limit dimension G at the wheel flanges



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## TROUBLESHOOTING GUIDE

故障排除表

Fault 故障	Possible cause 可能原因	Remedy 措施
Trolley cannot be moved 行走小车无动作	EMERGENCY STOP button pressed 紧急停车按扭未弹起	If there is no danger, release EMERGENCY STOP button 如果无危险，将其弹起。
	Motor run dry, rotor is stuck 马达干燥，转子被粘住	Repair the motor, check the service unit (fill with oil, remove water) or renew grease lubrication 维修马达，检查服务包（加油，排水或者重新加黄油）
Trolley can only be moved slowly or not at all 行走小车微动或不动	Defective control device 控制器损坏	Have control device repaired 修理控制器
	Control lines leaking or bent 控制管路泄露或打折	Have lines repaired 修理管路
	Motor vanes worn 马达叶片磨损	Replace motor vanes 更换叶片
	Control valve on motor faulty 马达控制阀损坏	Have control valve repaired 修理控制阀
	Two-way valve in the motor defective 马达两通阀失效	Have shuttle valve repaired 修理阀门
	Air pressure too low 风压过低	Increase air pressure or hose section 提高管路压力
	Plug-in connection of control lines not properly plugged in 快速连接头，连接不正确	Check plug-in connection (try to press hoses in further) 检查接口（向里用劲插入）
	Track of trolley too narrow 行走轨道过窄	Adjust the clearance between the wheel flange and the outside edge of the bottom flange of the trolley girder 调整行走小车边板间距
Trolley speed reduces when operated for a long period or the motor stops 行走小车长时间运转 后，速度减慢或停止	Brake piston setting too tight 制动活塞安装的太紧	Correct adjustment of brake piston. At high ambient temperatures, perform adjustment with the motor warmed up accordingly. 在高温的时候调整制动活塞的距离。
Trolley can only be moved slowly or not at all 行走小车微动或不动	Brake does not bleed fully Brake lining and/or brake piston worn 制动分离不彻底，和制动套或制动活 塞磨损。	Increase air pressure to 6 bar. Check brake seal for leaks and replace seal if required. Replace brake lining and/or brake piston. 提高管路压力，检查制动密封是否泄 露，必要时更换之。更换制动套或制动 活塞
Trolley is repeatedly blocked at the same place 行走小车在同一位置卡 住	Tracks are uneven or rail joint displaced	Rectify track faults
	Curve radius too narrow 弯道过窄	Increase curve radius 扩大轨道曲线半径。

## ACCESSORIES F CONTROL WITH TWO TRAVEL SPEEDS



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Apart from the standard speed, the F control in special model also offers a lower travel speed which is about 1/2 of the standard speed, thus enabling easier positioning of the trolley, for example.

## 附 件

### 两速 F 控制器

除了额定标准速度，处于特殊模式的 F 开关也能够提供比较低的行走速度，大约是标准速度的一半，能使行走小车精确定位。

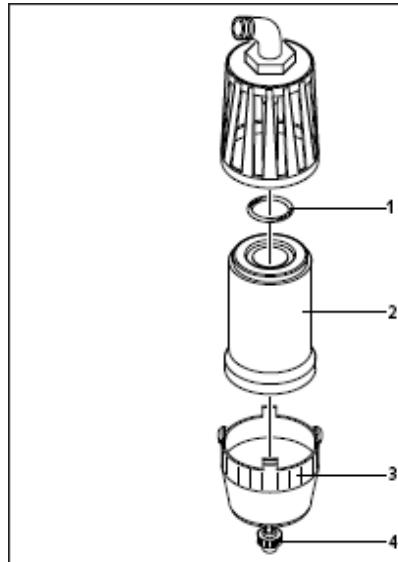
### FILTER SILENCER

Using a filter silencer improves both filtering and noise suppression: \_ 99.9 % of all oil aerosols from the motor lubrication are filtered out of the air by the filter elements. The noise insulation reduces noise levels by 3 to 4 dB (A) compared with the standard silencer (sinter plate).

### 消音器

使用过滤仪消音器能够显著改善过滤和消音性能：

- 1 润滑油中微粒的 99.9% 被过滤部件过滤掉了
- 2 与标准的消音器相比，隔音能够降低噪音到 3 之 4 分贝



### MAINTENANCE OF FILTER SILENCER

The emulsion that is filtered out of the air collects in the transparent cup (3). This cup must be emptied before the fluid level reaches the filter element (2).

- \_ Turn the drain valve(4) 90° and allow the fluid to drain out.
- \_ Close the drain valve. The filter must be replaced after approx. 2500 hours of operation.
- \_ Turn the collecting container (3) slightly and detach
- \_ Unscrew the filter element (2).
- \_ Insert a new filter element, with sealing ring (1) and push on collecting container until it engages.

### 消音器的维护

从空风中过滤掉的乳化液被收集到一个透明的杯子 3 里。当液面抵达过滤部件 2 时，必须倒空杯子。

- 旋转泄液阀 (4) 90°，排出液体



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► 关掉泄液阀

消声器工作时间超出 2500 小时后必须更换。

- 1 轻轻旋转积液容器 (3), 并拆除
- 2 旋开过滤部件 (2)
- 3 换上新的过滤部件 (2), 并加上密封圈 (1), 使其与积液容器紧紧咬住

## END STOP DEVICES

End stop devices are used in addition to track limiters (e.g. buffers) to limit the path of the motorised trolley (see Figure 23).

### TESTING THE END STOP DEVICES

To check the functions of the end switches, drive the trolley into the two end positions. The end switch must deactivate the movement. There must be sufficient distance to the track limit (e.g. buffer) behind the end switch to enable the trolley to run out.

## 制动装置

除了能够缓冲, 制动装置还能用于限制机动行走小车的路径。

测试制动装置

- 检查停止开关功能, 分别朝两端开动小车, 停止开关能够终止小车运行
- 停止开关终止小车后, 必须有足够的距离缓冲

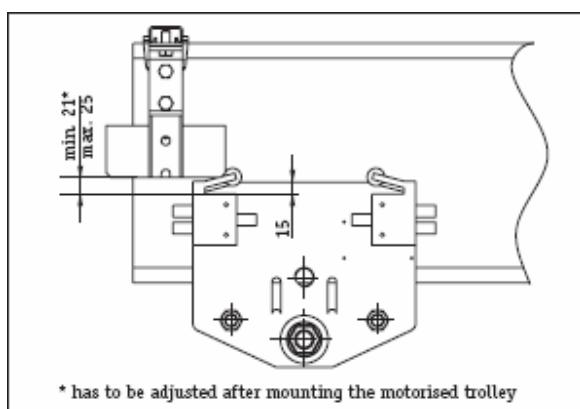


图 23 调整停止开关

## BOOSTER UNIT

In the event of a control hose length exceeding 10 m, the reaction times of the pushbutton controls increase significantly. Consequently, a booster unit is generally installed on the motor for controls E and F, reducing the reaction times.

## 增压装置

如果控制软管长度超出 10m, 按钮的反应时间显著增加。因此在 E 和 F 开关上, 要安装上助力器, 减少反应时间。

滚轮直径	50	60	70 !	80	84 !	165	185	250
轮缘G 限定尺寸	3	5	9	6	10	6	12	12

滚轮的轮缘

直径尺寸为 : MM



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## SPRING-LOADED PRESSURE ROLLERS

### 弹簧预紧滚轮

For special working conditions such as driving curves or other extraordinary tractive resistances, for example, JDN trolleys can be equipped with spring-loaded pressure rollers as an alternative to the rack-and-pinion drive, thus ensuring sufficient traction even in the unloaded condition. The necessary pressure is to be set after mounting the trolley on the girder (references in the spare parts list).

这种滚轮可使用在一些特殊的工作条件下如弯曲行走或受外来的牵引阻力时，例如，JDN的行走小车可以安装在弹簧预紧滚轮上来代替齿条 - 齿轮驱动，从而即使在无负荷的情况下也保证了足够的牵引力。将行走小车安装于梁之后必需保证一定的压力。（参考配件表）

### CLAMPING TROLLEY BUFFER

#### 行走小车缓冲器

#### WORKING CONDITIONS

#### 工作条件

The clamping trolley buffers are only suitable for the impact of the trolley wheel against the rubber element. The maximum running wheel diameter is 112 mm in version "A" and 160 mm in versions "B" and "C".

此缓冲器仅适用于行走小车齿轮与橡胶部件之间的缓冲。其运转轮最大尺寸在A系列中为112mm,在B与C系列中为160mm.

- The clamping trolley buffer is not suitable for limiting the travel way of trolleys transporting people (driver's cabin) or overhead cranes.

- 此缓冲器不适于限制载人（驾驶室）的行走小车或高架起重机的行走方式。

- The version "C" is limited to a maximum power of 15 kN in case of a crash hazard of the trolley.

- C系列最大驱动力不能超过15kN以防对行走小车的碰撞危险。

- A regular (normal working conditions) running foul is not allowed.

- (在正常工作条件下) 不允许违规操作。

- The clamping trolley buffers are suitable for use on parallel-flanged girders made of material S235/oil and grease-free.

此缓冲器适用于由材料S235/油制造且免润滑的并行凸缘的架梁。

- The rigid seating of the clamping trolley buffers must be checked regularly.

缓冲器的刚性坐套必需定期检查。

- The selection of the suitable clamping trolley buffers from the selecting table can only be made for J.D. NEUHAUS hoists. In special cases or in case of third party hoists, the selection is made with the help of the buffer characteristics below.

根据选型表来选择合适的缓冲器，这都是只针对J.DN产品的。在特殊情况或提升机的第三部分，下面的缓冲器性能可以帮助选型。

- The top temperature of the buffer element in permanent use is 80° C.

长期使用时缓冲部件的最高温度为80°。

- When driving the clamping buffer with a metal sheet running vertically to the trolley travel way instead of with the trolley running wheel, the maximum admissible buffer end power is reduced by 50 %. This is also valid for using the clamping buffers as a crash safety device (in this case the maximum buffer end power of version "C" is limited to 7.5 kN). Furthermore, it has to be ensured that damage to the buffer element is avoided.

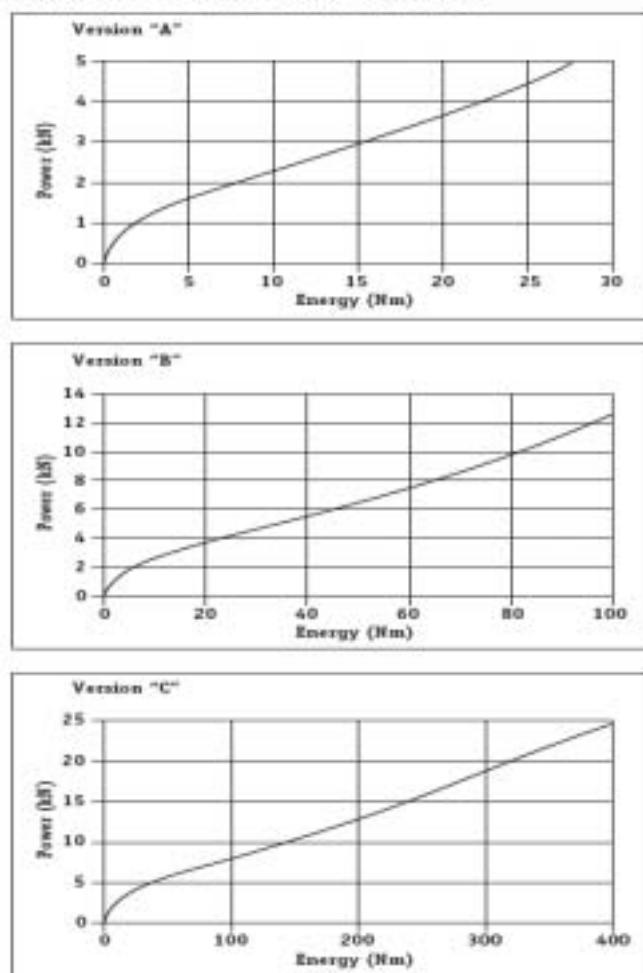
- 当用金属薄片代替行走小车运转轮垂直于行走小车运行路线运行的方式来驱动时，其允许的最大缓冲终端力值将减少50%。使用此缓冲器作为碰撞保护装置时也是这种情况（此种情形在C系列中其最大值不超过7.5 kN）。而且，必需保证避免对缓冲部件的损坏。

- It is also possible to use the clamping buffers on parallel-flanged girders made of material S355 when the maximum admissible buffer end power is reduced by 50 %.

### CLAMPING BUFFER CHARACTERISTICS



### CLAMPING BUFFER CHARACTERISTICS

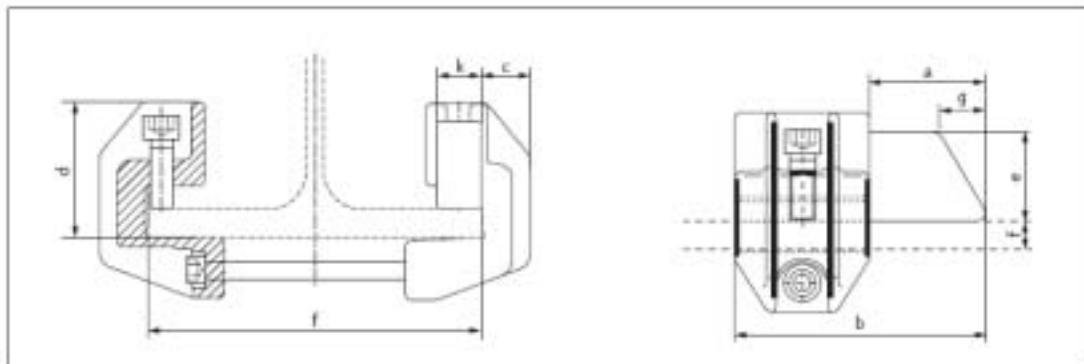


选型表

小车类型	最大负荷	代码	轮缘厚度 t[mm]	轮缘宽度 f[mm]	零件号码
所有类型	1.0	A	≤ 20.5	64 - 120 121 - 190 191 - 243 244 - 300	74570 74571 74572 74573
所有类型	3.5	B	13.0 - 30.0	110 - 160 161 - 230 231 - 283 284 - 340	74574 74575 74576 74577
除 UH12 之外 的类型	10.0 UH12 是 9.0	C	20.0 - 30.0	161 - 230 231 - 283 284 - 340	74578 74579 74580



## DIMENSIONS



Version	Dimensions [mm]							Weight [kg]
	a	b	c	d	e	g	k	
"A"	45	110	20	63	40	15	26	2.6
"B"	80	170	32	90	60	35	30	5.9
"C"	97	185	32	90	79	55	46	6.1

代码	尺寸【mm】							总量【kg】
	a	b	c	d	e	g	k	
A	45	110	20	63	40	15	26	2.6
B	80	170	32	90	60	35	30	5.9
C	97	185	32	90	79	55	46	6.1

## 附录

### SCREW RETAINERS AND TORQUES

#### 螺栓固定器和扭距

类型	LN 最大 2T	LM2T/LH2t	L3.2t	L6.3t	L10-16t/EH25
取间隔装置			螺栓	螺栓	螺栓
调节装置			无级变速	无级变速	无级变速
锁定装置			螺母 M16	螺母 M24	螺母 M24
扭距			60Nm	200Nm	200Nm
保护装置					
承重装置	承重杆	承重杆	螺杆		
调节装置	1.5mm 的逐步增量	1.5mm 的逐步增量	隔离碟片代码 1 )		
锁定装置			螺母 M24	槽形螺母 M48	螺母 M48
扭距			200Nm	1000...1500Nm	1700Nm
保护装置			锁紧螺母	涨紧销	锁紧螺母

1) 请注意代码描述

类型	EH10/EH16/EH20/EH25S	L20t/EH37/EH75	L25t/EH37s/EH50/EH100
取间隔装置	承重装置	螺杆	承重装置
调节装置		预置	
锁定装置		螺母 M30	
扭距		400Nm	



保护装置		锁紧螺母	
承重装置	螺杆	螺杆	螺杆
调节装置	预置	预置	预置
锁定装置	螺母 M64	螺母 M48	螺母 M100
扭距	手动拉紧	1700Nm	手动拉紧
保护装置	安全环	锁紧螺母	安全环

## TIGHTENING THE SAFETY NUTS

### 紧固安全螺母

Screw on nuts firmly by hand, then tighten them with a spanner by 1/4 to 1/2 turn.  
先用手拧紧螺母，再拿扳手旋转1/4到1/2来进一步紧固。

## UNSCREWING THE SAFETY NUTS

### 旋出安全螺母

Tighten the hexagon nut until the spring effect of the locking teeth has been released. The safety nut can then easily be removed.

按紧内六角螺母直到锁齿旋至松开，此时便可轻松拧出螺母。

## FITTING THE NUT WITH THREADLOCKING

### 用螺纹锁定工具安装螺母

The clevis load bar is secured against twisting by means of the side plates by screwing the nut with threadlocking with a torque of 100 Nm (corresponds to a hand force of 30 kg with a spanner length of 33 cm) against the inside of the side plate on both sides. In the case of trolley track girder widths under 100 mm, the locking nuts are screwed onto the ends of the clevis load bar after the side plates have been mounted so that they are screwed against the outside of the side plates with the torque of 100 Nm to secure them.

使用螺纹锁定工具（约100Nm的力距，等于使用33cm长的扳手产生30kg的扭力），朝边板内侧方向旋转其两侧螺母，从而是使承重杆得到固定。

当行走小车的轨道梁宽度小于100mm时，在边板安装之后，要以100 Nm扭距大小的力将锁紧螺母拧到承重杆的末端，这样保证他们的固定。



## TECHNICAL DATA 技术数据

行走小车的名称是根据起简写和载重量等，填写在表中，例如 LN1t

JDN PROFI系列	型号	025TI	05TI	1TI	2TI	3TI	6TI	10TI	16TI
LN小车载重	吨	0.5	1	2	3.2	6.3	10-16t		
LN和LM小车载重	吨	2		32		6.3		10-16t	
带行走小车的提升机载重	吨	0.25	0.5	1	2	3.2	6.3	10	16
手动行走小车的重量	公斤	7.7	10.5	18	26	117	120		
倒链重量	公斤	32		37	127		120		
马达式小车重量	公斤	26		33	124		130		
提升机标配重量	公斤	27	27	28	34	86	110	156	240
LN标准提升下总重	公斤	34.7	34.7	38.5	52	112	227	276	360
LH标准提升下总重	公斤	59	59	60	66	123	237	286	370
LM标准提升下总重	公斤	53	53	54	60	119	234	286	370
1米链条的重量	公斤			1		3.8		5.8	
按照DIN5684-8的链条	毫米			7 x 21		13 x 36		16 x 45	
链条数量			1		2	1	2	2	3
马达式小车的风压	巴				6				
名义承载下马达小车的风耗量	立方米/分				0.6			1.3	
名义承载下提升机的风耗量	立方米/分			1.5			5.5		
马达小车的功率	千瓦				0.2			0.7	
提升机的马达功率	千瓦			1			3.5		
带10米倒链的行走小车的行走距离	米				0.75			1.5	
名义承重下，马达小车的行走速度	米/分				9*/14			5*/12	
马达小车的风管				G1/2			G1		
LN小车最小曲线半径	米	0.9 #	1.0 #	1.2 #	0.5		1.0		
LH和LM的最小曲线半径	米			0.5			1.0		
LN最大底盘厚度	毫米	34		30	40		65		
LH和LM的最大底盘厚度	毫米			40			65		
LN最大底盘宽度	毫米		220		305		310		
LH和LM最大底盘宽度	毫米		300				310		
LN底盘最大宽度		50		58	66	54	125		
LH和LM底盘最大宽度			50			54	125		
马达小车噪音程度 §	分贝				80				

\*此数据为F控制器两种速度的第一速度

# 横梁中央测得值

横梁内缘测得值

§ 在1米距离处测得值



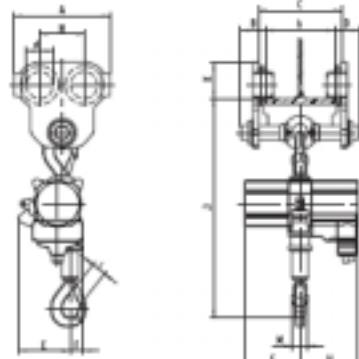
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## DIMENSIONS

### 尺寸

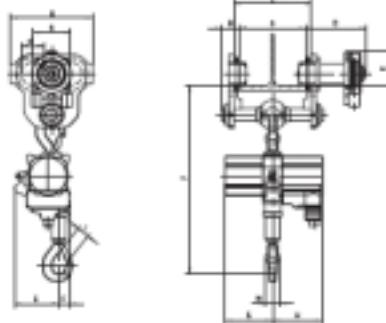
#### MANUAL TROLLEYS (LN)

JDN Air Hoist PROFI	Type	025 TI	05 TI	1 TI	2 TI	3 TI	6 TI	10 TI	16 TI
in trolley		LN 2t	LN 1t	LN 2t	LN 3,2t	LN 6,3t	LN 10-16t		
A		260		310	292	500	490		
B max.		119	122	162	113	141	146		
C			b + 28	b + 26	b + 60		b + 70		
d		55	68	80	84		105		
D max.		126		166	113	141	146		
E				137		154	197	199	
F					39	46	79	109	
G	mm					145		233	308 382
H						152		250	267 310
J* mounted						-	635	763	944 997
J* suspended						530	597	798	919 1131 1215
K						67,5	81,5	94	107
L						28		30	40 44 53
M						42		51	66 82
N						116	150	136	236



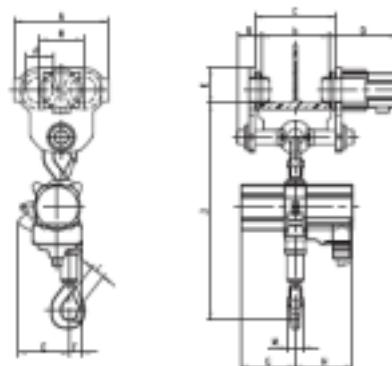
#### REEL CHAIN TROLLEYS (LH)

JDN Air Hoist PROFI	Type	025 TI	05 TI	1 TI	2 TI	3 TI	6 TI	10 TI	16 TI
in trolley		LN 2t	LN 1t	LN 2t	LN 3,2t	LN 6,3t	LN 10-16t		
A		250		292	500	490			
B max.		130		113	141	146			
C		b + 36		b + 60		b + 70			
d		70		84		105			
D max.		185		297	307		312		
E		137		187	154	197	199		
F	mm			39	46	79	109		
G				145		233	308	382	
H				152		250	267	310	
J* mounted				-	635	763	944	997	
J* suspended				563	611	798	919	1131	1216
K				103		110		198	
L				28		30	40	44	53
M				42		51	66	82	
N				116	150	136	236		



#### MOTORIZED TROLLEYS (LM)

JDN Air Hoist PROFI	Type	025 TI	05 TI	1 TI	2 TI	3 TI	6 TI	10 TI	16 TI
in trolley		LM 2t	LM 1t	LM 2t	LM 3,2t	LM 6,3t	LM 10-16t		
A		250		292	500	490			
B max.		130		113	141	146			
C		b + 36		b + 60		b + 70			
d		70		84		105			
D max.		185		191	205		312		
E		137		187	154	197	199		
F	mm			39	46	79	109		
G				145		233	308	382	
H				152		250	267	310	
J* mounted				-	635	763	944	997	
J* suspended				563	611	798	919	1131	1216
K				95		107		215	
L				28		30	40	42	53
M				42		51	66	82	
N				116	150	136	236		



\* Without chain box



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