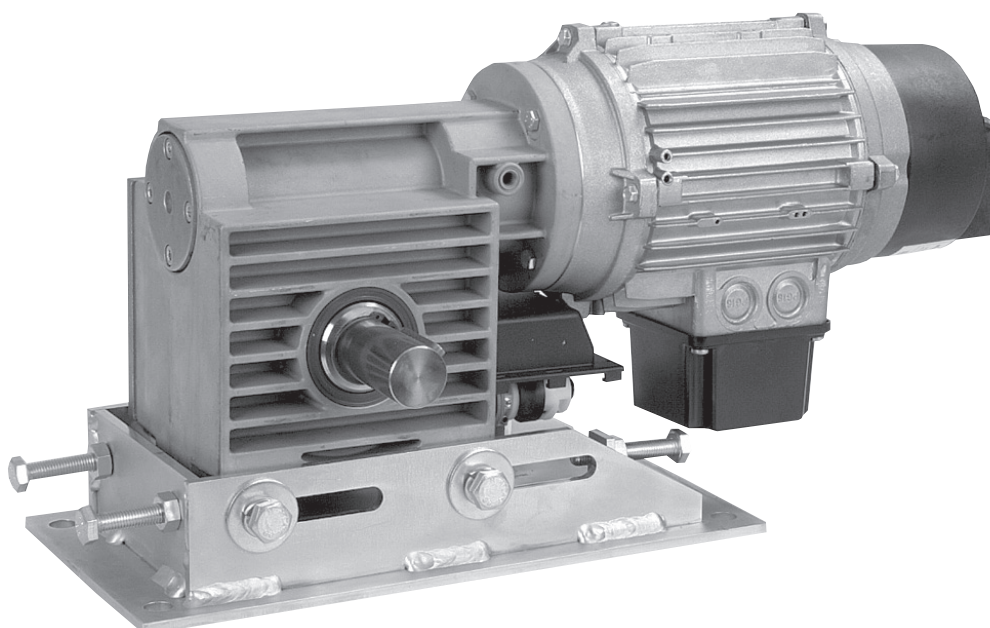




# Chain wheel rolling door drives DKM 170, 250, 350, 500 and 750 WKM 170



## Assembly instructions (translation)








**For the safety of persons it is important to follow these assembly instructions!  
Keep the assembly instructions in a safe place!**

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# 1. Safety instructions

## 1.1 Structure of the safety instructions


	Signal word
	Type and source of danger
	Possible effect(s) of the danger
	Accident prevention measures

	Signal word	Meaning	Result if disregarded
 General danger	<b>WARNING!</b>	Potentially dangerous situation	Death or serious bodily injury.
 Electrocution	<b>CAUTION!</b>	Potentially dangerous situation	Slight bodily injury
	<b>STOP!</b>	Possible damage to property	Damage of the drive or its surroundings
	<b>NOTICE!</b>	Useful tips Simplify the handling of the drive	

## 1.2 Exclusion of liability

Following the assembly instructions is the basic requirement for the safe operation of rolling door drives and for the achievement of various product characteristics and performance features.

elero GmbH assumes no liability for personal injuries, property damages and financial losses that arise from non-observance of the operating instructions. Liability for material defects is excluded in such cases.

	STOP!
	<p><b>Observance of the assembly instructions is the prerequisite for disturbance-free operation and fulfilment of any claims related to defects.</b></p> <ul style="list-style-type: none"> <li>• Therefore, first read the assembly instructions before you use the device!</li> <li>• Ensure that the assembly instructions are always available to the user in legible form.</li> <li>• This device is not intended to be used by persons (including children) with impaired physical, sensory or mental abilities or lack of experience and/or knowledge, unless they are supervised by a person who is responsible for their safety or they are instructed by that person on how the device is to be used.</li> <li>• The operator must ensure that the basic safety instructions are observed and fulfilled.</li> <li>• Make sure that these assembly instructions are kept to hand and can be found near the door.</li> <li>• The operator must have completely read and understood the assembly instructions.</li> <li>• The following safety and installation instructions solely refer to the drive and not the accessories, regulation and control equipment.</li> </ul>

# 1. Safety instructions

## 1.3 Safety function

Doors which are fitted with an elero rolling door drive and operated with an elero control system, have to have the legally prescribed accessories for safe operation (e.g. opto-electric door-edge security systems, wind-up protection systems, light barriers, etc.).

This higher-level safety system guarantees additional personal and property protection.

## 1.4 Transport

If the drive arrives in a damaged condition despite proper packaging, then it must not be commissioned. Immediately complain about the damage to the transport company. Repair notes can be found on page 14.

In case of unauthorised removal of the necessary covers, improper use, incorrect installation or operation, there is a danger of severe injury to persons and substantial damage to property.

## 1.5 Target group

All installation, initial operation and troubleshooting work must be carried out by an electrician.

(Please observe IEC 60364 and/or CENELEC HD 384 or DIN VDE 0100 and IEC 60664 or DIN VDE 0110 and national accident prevention regulations).

An electrician in the sense of these general safety instructions is a person acquainted with the assembly, installation and initial operation of the product with appropriate qualifications.

All work in the other areas, for example operation and disposal, must be carried out by suitably instructed persons.

## 1.6 Intended use

Rolling door drives are solely intended for rolling doors and roller grilles.

Vertically moved doors must be equipped with a separate safety brake to protect them against falling.

The drive chain must have at least safety factor 6.

Commissioning (i.e. beginning of intended operation) is only allowed if the valid EMC guidelines (2004/108/EU) are observed.

The technical data and the information on connection conditions can be found on the type plate and in this documentation and must be strictly adhered to.

## 1.7 Important safety instructions



### WARNING!

**Observe the following safety instructions**

**Failure to observe them can lead to bodily injuries!**

#### General

- The assembler must check that the ambient temperature range stated on the drive is suitable for the installation site.
- Never install or commission devices which are damaged.
- Never hammer the drive as this will damage the bearings and housings.
- Only use unmodified original **elero**® parts.
- If the device is opened without permission or used in an improper manner, or if it is incorrectly installed or operated, there is a risk of damage to persons and property.
- The device contains small parts which can be swallowed.

#### Installation

- All installation work must be carried out by a electrician.
- The place of installation must be cordoned off due to the danger of falling objects.
- This electrician must be suitably qualified.
- Observe any country-specific conditions when installing the device.
- The device may only be used by persons who have read and understood the operating instructions.

#### Operation

- Only use indoors (please observe the stated degree of protection).
- If the rolling door drive is used outdoors, then the connecting cable has to be laid properly in a shield tube and the stated degree of protection followed.
- If one or more transmitters are used for controlling the system, its operating range must stay visible during operation.
- Keep people away from the system until it is at standstill.
- Keep children away from the (remote) control units.
- Ensure that there are no children within the door's operating range.
- Observe the control documentation.

# 1. Safety instructions

## 2. Scope of supply

### 1.8 Manufacturing note

The rolling door drives are made as per the following guidelines:

- **DIN EN 12453** (Industrial, commercial and garage doors and gates - Safety in use of power operated doors);
- **DIN EN 12604** (Industrial, commercial and garage doors and gates - Mechanical aspects);
- **DIN EN 60335-1** (Household and similar electrical appliances - Safety);
- **DIN EN 60335-2-103** (Particular requirements for drives for doors, gates and windows)



All the rolling door drives are all subject to testing by elero before delivery.

### 1.9 Testing and maintenance

According to EN 12635 "DOORS – Installation and use" the door system has to be checked for safety by an expert before initial operation and after regular maintenance. The door manufacturer defines the frequency for maintenance and inspections. The execution of the testing has to be documented in a log book.

**Important:** The system may not be operated when repairs, maintenance or adjustments are being carried out!

### 1.10 Safety instructions for the electrical connection

 	<b>CAUTION!</b>
	<p><b>Observe the following safety instructions.</b>  <b>Failure to observe them can lead to bodily injuries!</b></p> <p><b>Risk of injury due to electrocution.</b></p> <ul style="list-style-type: none"> <li>• The connections to the 230 V/400 V mains <b>must</b> be made by an electrician.</li> <li>• Use only unmodified <b>elero®</b> original parts and original <b>elero®</b> control units.</li> <li>• Before accessing the connection terminals all mains circuits must be switched off. Check that there is no power.</li> <li>• The regulations of the local energy supply company as well as the regulations for wet and damp rooms according to VDE 0100 must be followed when making the connections.</li> <li>• Check the system (gates and doors) regularly for wear or damage to connection cable, fixing devices and safety equipment.</li> <li>• When working on the system (servicing, cleaning), always separate it from the mains supply.</li> </ul>

### 2. Scope of supply

Rolling door drives are delivered without mounting angles/brackets.


The door installer must mount appropriate angles or brackets that are matched to the door and the drive.

Drive design	DKM-NHK WKM-NHK	DKM-SHK WKM-SHK
Plug-in shaft $\varnothing$ 30 with key A8x7x40 (size 170-350)	●	●
Plug-in shaft $\varnothing$ 40 with key A12x8x40 (size 500-750)	●	●
Bracket with tensioning rail and clamping bolts	●	●
Adjusting tool A/F 2.5 mm	●	●
1 emergency crank handle with attachments	●	
3 m round steel chain DIN 766 A4 x 16 Wall mounted chain holder (approx. 1.4 m. suspended)		●
Operating instructions	●	●

## 3. Installation

### Safety instructions

#### 3.1 Safety instructions for installation

	<b>CAUTION!</b>
	<p><b>Observe the following safety instructions.</b>  <b>Failure to observe them can lead to bodily injuries!</b></p> <ul style="list-style-type: none"> <li>• Rated torque, speed, voltage, operating time, protection class and degree of protection must be adapted to the requirements of the driven product.</li> <li>• It must be ensured that an entrapment between the driven part and the surrounding fixed parts due to the movement of the driven part is prevented.</li> <li>• Before installing the drive, it is necessary to check whether the driven part is in good mechanical condition, its weight is balanced and it can be opened and closed easily.</li> <li>• Always use a suitable aid for a drive that weighs more than 20 kg. A hole is available for this in the gearbox casing.</li> <li>• The drive must be installed at a height of at least 2.50 m above the floor or any other access height.</li> <li>• If the drive is controlled by a pushbutton (jogging mode/dead-man's safety system), then this actuator must be installed at a height above 1.5 m and be separated from moving parts.</li> <li>• The operating range of the system must always be visible during operation.</li> <li>• After installation, check that the security system and manual mode are working properly.</li> </ul>

## 3. Installation

### Technical data

#### 3.2 Technical data

Type		WK. 170/14	DK. 170/12,5	DK. 250/12,5	DK. 250/27	DK. 350/13,5	DK. 500/11	DK. 500/31	DK. 750/11
Rated voltage	V	230	3 ~ 230/400						
Rated frequency	Hz	50							
Rated current	A	6,7	3,2/1,85	4,5/2,6	5,2/3,0	4,2/2,4	5,7/3,3	10,0/6,0	6,9/4,0
cos φ	0,92	0,58	0,45	0,8	0,6	0,74	0,8	0,68	
Insulation class		H							
Rated power consumption	kW	1,4	0,75	0,80	1,1	1,0	1,7	2,2	1,9
Rated torque <sup>5)</sup>	Nm	170	170	250	250	350	500	500	750
Degree of protection	IP	54							
Rated operating time	S3	4 min	60%	40%	40%	40%	60%	60%	40%
Max. torque for rolling door operation <sup>3)</sup>									
RTB 80%	Nm	–	170	200	200	300	500	500	650
RTB 100%	Nm	–	150	170	170	250	400	400	550
Coil temperature limiter	C°/F°	130/266							
Door cycles per hour <sup>4)</sup>	f h <sup>-1</sup>	10	35	30	45	34	28	50	24
Permitted temperature range	C°/F°	–10 °C to +40° C/–14 °F to 104 °F							
Continuous sound pressure level	db (A)	< 70	< 60						
Electromagnetic brake		●			●	●	●	●	●
Rated speed n2	min <sup>-1</sup>	14	12,5	12,5	27	13,5	11	31	11
Mechanical limit switch range <sup>2)</sup> (centrally set at 9 revs.)	II	18 revs.							
Shaft ø	mm	30					40		
Key width	mm	8					12		
VDE checked			●	●		●	●		●
VDE-EMC			●	●	●	●	●		●
Drive weight	approx. kg	19	21	21	21	22	31	31	31

**Note:** If the drive is to be painted subsequently, then the shaft seals must remain free of paint.  
Other voltages and frequencies upon request.

2) Only for three-phase motors, custom manufactured  
Limit switch range 44 revolutions.

**Designation:** with additional D..X; only for cable application, etc.

3) Rolling door operation RTB: Rolling door drives with rolling doors are operated dynamically with fluctuating loads and the rated torque is only attained for a short period during the upward movement. In the downward movement the drive operates in braking mode. The operating mode in accordance with VDE, S 3 is checked at the rated torque based on 10 minutes operating time with the defined duty cycle in %.

4) One door cycle is: 5 revolutions OPEN – 30 s pause – CLOSE.

5) The rated torques of the drives are guaranteed  
from -20 °C to 60 °C / -4 °F to 140 °F.

#### Correction table for three-phase mains power supply with frequency of 60 Hz

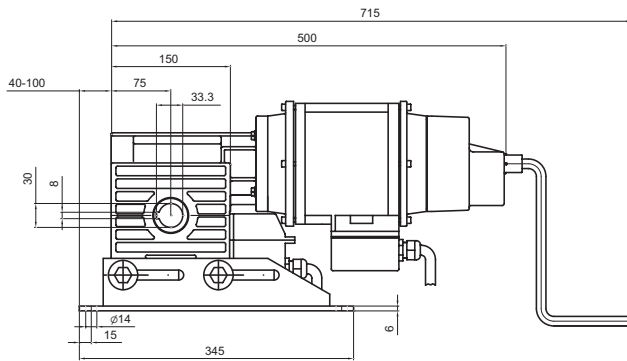
Motor designed for 50 Hz and	Operate with 60 Hz mains and	Speeds are increased by ...%	Rated torque and door weights are reduced by ....%.
3 ~ 230 V	230 V	20 %	23 %
3 ~ 400 V	400 V	20 %	20 %
	415 V	20 %	17 %
	440 V	20 %	12 %
	460 V	20 %	7 %

## 3. Installation

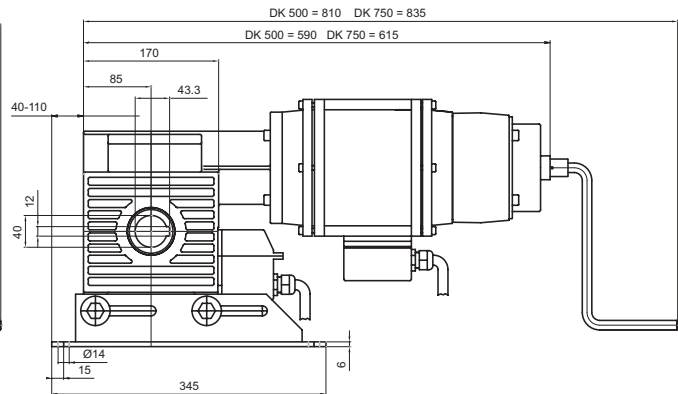
### Chain wheel rolling door drives

#### 3.3 Mounting dimensions

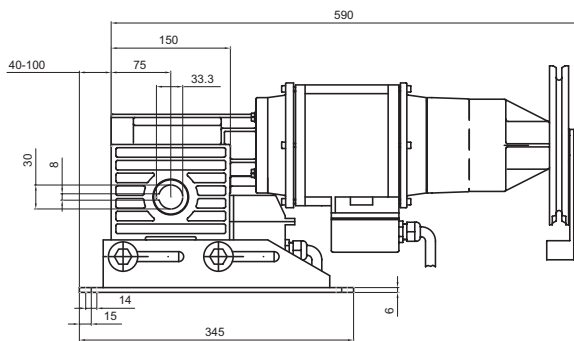
**DKM 170–350 NHK**  
**WKM 170 NHK\***



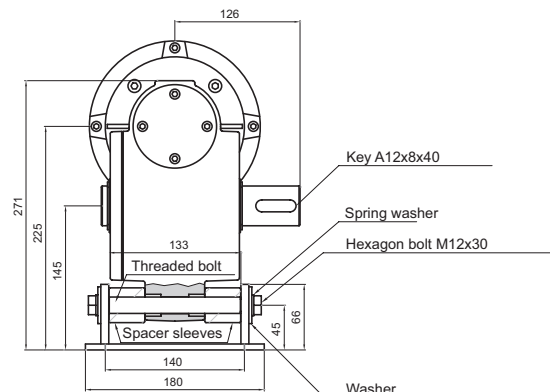
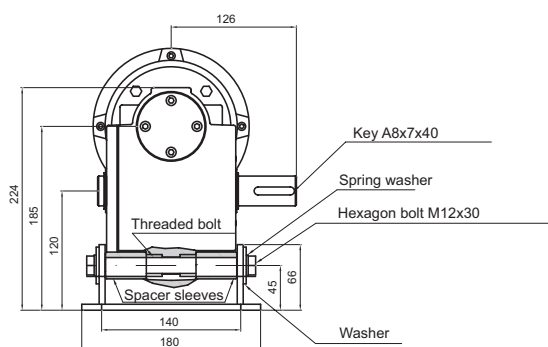
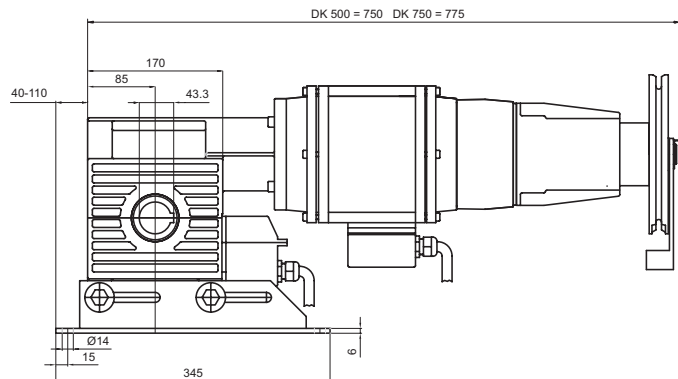
**DKM 500–750 NHK**



**DKM 170–350 NHK**  
**WKM 170 SHK\***



**DKM 500–750 SHK**



\* The connected motor capacitor is attached to the side of gearbox casing.

#### Installation of the tensioning rail

1. Secure the tensioning rail to a suitable base.
2. Insert the threaded bolt through the hole in the housing.
3. Push the spacer sleeves on to the threaded bolt.
4. Push the spring washer and the plain washer on to the hexagon bolts M 12 x 30.
5. The drive is bolted on using the aligned hexagon bolts.  
For this insert the hexagon bolts in the elongated holes of the tensioning rail and in the thread of the threaded bolt.

**Note:** The chain wheels **must** be aligned and the two shafts must be parallel to each other.

6. Bolt the clamping bolts M 10 x 60 with hexagonal nuts into the tensioning rail and tension the chain.

**Note:** The slack on the non-driven chain length must be between 1-2% of the distance between the axes. After the tensioning process is complete lock the clamping bolts with hexagonal nuts..

7. Tighten up the hexagon bolts M 12 x 30.

### 3. Installation

#### Lifting capacity chart

##### 3.4 Lifting capacity chart for chain wheel drives in [kg]

Drives with rated torque	shafts up to $\varnothing$ mm	Chain wheel reduction 2 : 1						Chain wheel reduction 2,53 : 1						Chain wheel reduction 3,05 : 1					
		Nominal bar thickness up to 20 mm			Nominal bar thickness up to 30 mm			Nominal bar thickness up to 20 mm			Nominal bar thickness up to 30 mm			Nominal bar thickness up to 20 mm			Nominal bar thickness up to 30 mm		
		door height up to			door height up to			door height up to			door height up to			door height up to			door height up to		
		3 m	5 m	7 m	3 m	5 m	7 m	3 m	5 m	7 m	3 m	5 m	7 m	3 m	5 m	7 m	3 m	5 m	7 m
170 Nm	108	410	346	306	350	292	254	519	438	387	443	369	321	625	528	467	534	445	387
	133	372	326	292	328	278	244	471	412	369	415	352	309	567	497	445	500	424	372
	168	324	298	272	294	260	236	410	377	344	372	329	299	494	454	415	448	397	360
	193	284	272	256	276	248	224	359	344	324	349	314	283	433	415	390	421	378	342
	219	252	250	240	248	230	214	319	316	304	314	291	271	384	381	366	378	351	326
250 Nm	133	546	480	428	484	408	360	691	607	541	612	516	455	833	732	653	738	622	549
	168	478	438	400	432	382	346	605	554	506	546	483	438	729	668	610	659	583	528
	193	418	400	376	406	364	330	529	506	476	514	460	417	637	610	573	619	555	503
	219	372	370	352	364	338	314	471	468	445	460	428	397	567	564	537	555	515	479
350 Nm	133	764	672	600	676	572	504	966	850	759	855	724	638	1165	1025	915	1031	872	769
	168	668	614	560	606	536	486	845	777	708	767	678	615	1019	936	854	924	817	741
	193	586	562	526	568	510	462	741	711	665	719	645	584	894	857	802	866	778	705
	219	520	516	494	508	474	440	658	653	625	643	600	557	793	787	753	775	723	671
	273	420	420	420	414	414	392	531	531	531	524	524	496	641	641	641	631	631	598
	298	386	386	386	380	380	372	488	488	488	481	481	471	589	589	589	580	580	567
	323	358	358	358	352	352	352	453	453	453	445	445	445	546	546	546	537	537	537
500 Nm	168	956	878	802	866	766	694	1209	1111	1015	1095	969	878	1458	1339	1223	1321	1168	1058
	193	838	802	750	810	730	660	1060	1015	949	1025	923	835	1278	1223	1144	1235	1113	1007
	219	742	738	704	726	678	630	939	934	891	918	858	797	1132	1125	1074	1107	1034	961
	244	670	670	652	656	636	602	848	848	825	830	805	762	1022	1022	994	1000	970	918
	273	600	600	600	590	590	560	759	759	759	746	746	708	915	915	915	900	900	854
	298	552	552	552	544	544	530	698	698	698	688	688	670	842	842	842	830	830	808
	323	510	510	510	502	502	502	645	645	645	635	635	635	778	778	778	766	766	766
	355	466	466	466	460	460	460	589	589	589	582	582	582	711	711	711	702	702	702
750 Nm	168	1432	1316	1202	1298	1148	1040	1811	1665	1521	1642	1452	1316	2184	2007	1833	1979	1751	1586
	193	1256	1202	1126	1216	1094	988	1589	1521	1424	1538	1384	1250	1915	1833	1717	1854	1668	1507
	219	1114	1108	1056	1090	1016	944	1409	1402	1336	1379	1285	1194	1699	1690	1610	1662	1549	1440
	244	1004	1004	978	984	954	904	1270	1270	1237	1245	1207	1144	1531	1531	1491	1501	1455	1379
	273	902	902	902	886	886	842	1141	1141	1141	1121	1121	1065	1376	1376	1376	1351	1351	1284
	298	828	828	828	814	814	796	1047	1047	1047	1030	1030	1007	1263	1263	1263	1241	1241	1214
	323	766	766	766	754	754	754	969	969	969	954	954	954	1168	1168	1168	1150	1150	1150
	355	698	698	698	690	690	690	883	883	883	873	873	873	1064	1064	1064	1052	1052	1052

**For chain wheel reduction 1 :1 please take the values from the lifting capacity chart for shaft mounted drives**

**Note:** Note the maximum limit switch range of the drive!

These data relates to the complete door weight in kg.

15 % friction is taken into account. The friction can be greater due to additional door seals, wind loads etc. Carry out necessary corrections.

These values are guide values. No liability can be accepted.



## 3. Installation

### Electrical connection

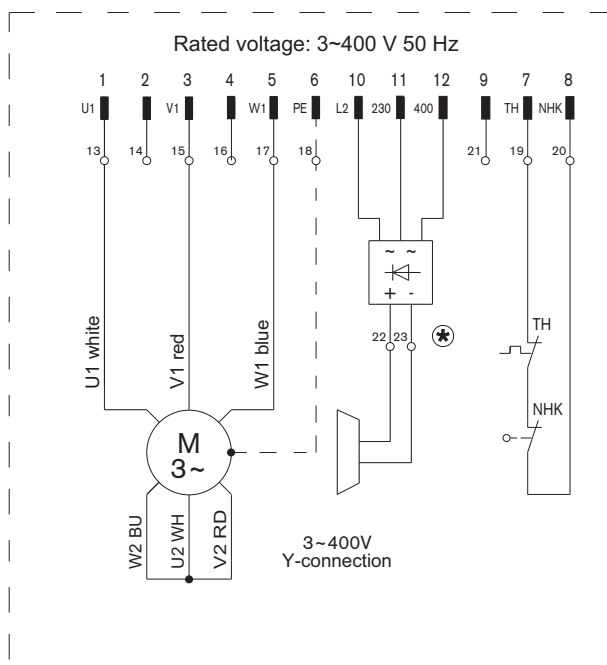
#### 3.6 Electrical connection



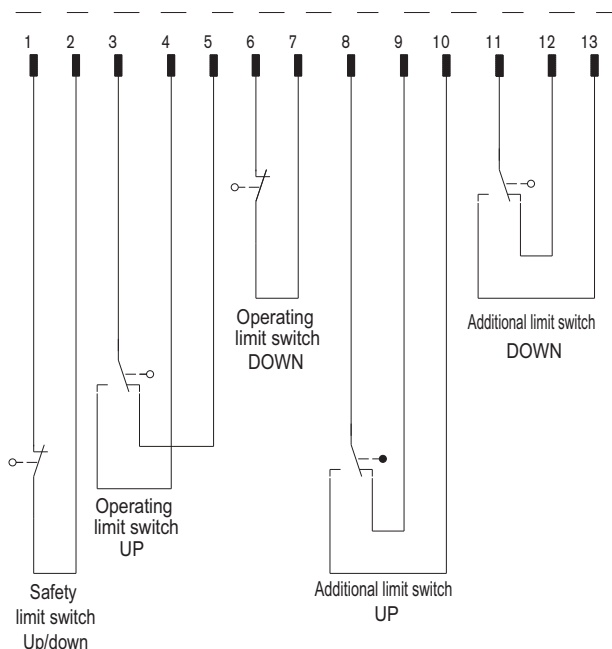
**Caution!**

- It is necessary to fix the strand with the star terminals in the clamps of the terminal or card cage, when making a 3~400 V Y-connection.
- The on-site control units that are from another manufacturer must be designed for **elero** drives. Responsibility for the guarantee is adopted by the control unit manufacturer (or the company that integrates the control system) as appropriate.
- The motor brake may **not** be connected **parallel** to the motor connection phase (U1; V1; W1) or to a motor phase and N.
- **Drive with electromagnetic brake may only be put into operation when the brake is connected.**
- Please adopt the elero control unit connections from the wiring diagrams for elero control units.
- Temperature limiters TH and NHK must be connected (terminals 7 & 8).

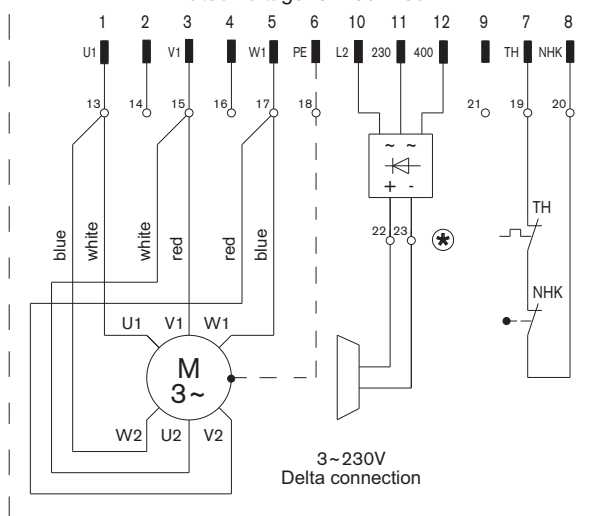
**DK. 170–750**



**Mechanical limit switch**

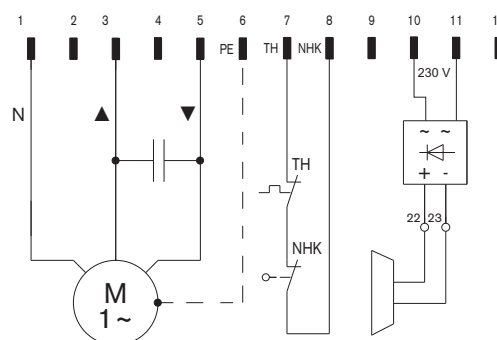


Rated voltage: 3~230 V 50 Hz



**WK. 170**

Rated voltage: 1~230 V 50 Hz



⊛  
Brake and brake rectifier  
→ see technical data

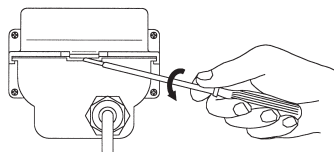
Brake connection:  
Nominal voltage 230 V: Assign to terminal 10/11  
Nominal voltage 400 V: Assign to terminal 10/12

## 3. Installation

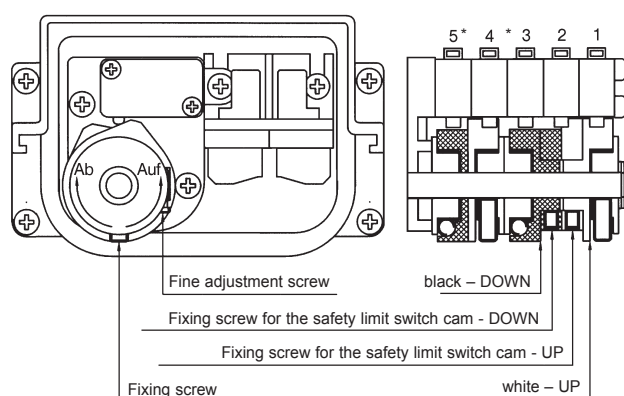
### Setting the end positions and ZE-additional functions

#### 3.7 Limit switch settings

Remove the cover from the limit switch housing using a screwdriver.



**Note:** To set, use the adjustment key supplied (A/F 2.5)  
• Tightening torque 40–60 Ncm for the fixing screws.

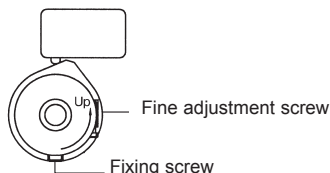


Switch 1 - Operating limit switch UP \*Switch 4 - Potential-free UP  
Switch 2 - Safety limit switch \*Switch 5 - Potential-free DOWN  
Switch 3 - Operating limit switch DOWN \*only with ZE configuration

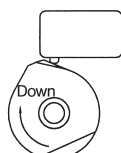
**Note:** To set, use the adjustment key supplied (A/F 2.5).  
• Tightening torque 40–60 Ncm for the fixing screws

#### 3.8 Adjusting the operating limit switch

1. Use the **UP** button to approach the door to the desired **upper** end position.
2. Turn the **white** control cam anticlockwise until it reaches the pin of the micro switch and fasten the fixing screw. Use the fine adjustment screw (black) to turn it for another max. 35° until the micro switch switches.



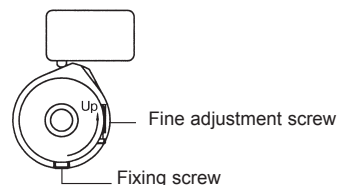
3. Approach the door to the desired **lower** end position.
4. Turn the **black** control cam clockwise until it reaches the pin of the micro switch and fasten the fixing screw. Use the fine adjustment screw (black) to turn it for another max. 35° until the micro switch switches off.



5. Run a test travel and if required make corrections using the fine adjustment screws.
6. Slide the cover onto the limit switch housing until it engages audibly.

#### 3.9 Set the winter mode (½ door opening)

1. Approach the door to the desired winter position.
2. Turn the **red** control cam anticlockwise until it reaches the pin of the micro switch and fasten the fixing screw. Use the fine adjustment screw (black) to turn it for another max. 35° until the micro switch switches off.

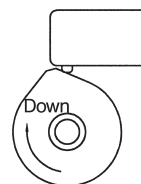


3. Run a test travel and if required make corrections using the fine adjustment screws.
4. Slide the cover onto the limit switch housing until it engages audibly.

#### 3.10 Set the “Lower” neutralisation

The neutralisation option is used to suppress the door-edge disconnection. The neutralisation limit switch can e.g. be set to a position 5 cm before the lower limit switch.

1. Move the door to approx. 5 cm above the lower door position.
2. Turn the **green** control cam clockwise until it reaches the pin of the micro switch and fasten the fixing screw. Use the fine adjustment screw (black) to turn it for another max. 35° until the micro switch switches off.



3. Run a test travel and if required make corrections using the fine adjustment screws.
4. Slide the cover onto the limit switch housing until it engages audibly.

#### 3.11. Setting the safety limit switch

##### Factory setting:

The safety limit switch is set automatically with the limit switch setting. The switching points are around 100° later on the winding shaft than the upper and lower end positions.

The safety limit switch can be corrected so that the drive comes to a standstill in the end positions, so that it remains in a safe condition and does not constitute a hazard.

For example: Inversion of the phase rotation direction or for reasons connected with the installation site. Release black (DOWN) or white (UP) safety limit switch cam (A/F 2), correct and re-tighten. Check the limit switch settings and correct if necessary.

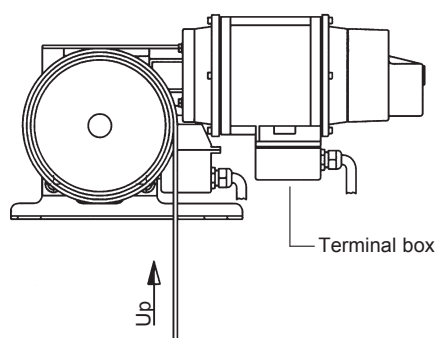
## 3. Installation

### Limit switch setting

#### 3.12 Left-hand roller

The drive is set up and wired in the factory as a right-hand roller (see sketch).

If the drive is to be set up as a left-hand roller (see sketch) the following **must** be reset:



1. Loosen the white safety limit switch cam (A/F 2), turn approx. 20° in anti-clockwise direction and tighten.

Right-hand roller



Left-hand roller



2. Loosen the black safety limit switch cam (A/F 2), turn approx. 20° in clockwise direction and tighten.

Right-hand roller



Left-hand roller



3. In the terminal box, change over the phases on terminals 3 and 5 for drives without electromagnetic brake or terminals 15 and 17 for drives with electromagnetic brake.
4. Set the end positions (see page 10).

### 3. Installation

#### Assembly of chain wheel rolling door drives

##### NOTICE!



- The winding shaft with blanks must be welded centrally in the winding shaft.
- Mount the drive correctly on a sufficiently strong bracket etc. using two bolts M 12 x.../strength class 8.
- Design the brackets for the winding shaft such that they can withstand the stop torques of the safety brake.
- Permanently secure the winding shaft on the plate / pedestal bearing against axial shift.
- Mount the chain wheel as closely as possible in the direction of the gearbox casing.
- Observe the breaking strength of the chain and the safety factor of 6!

#### 3.14 Installation

##### ADVICE!



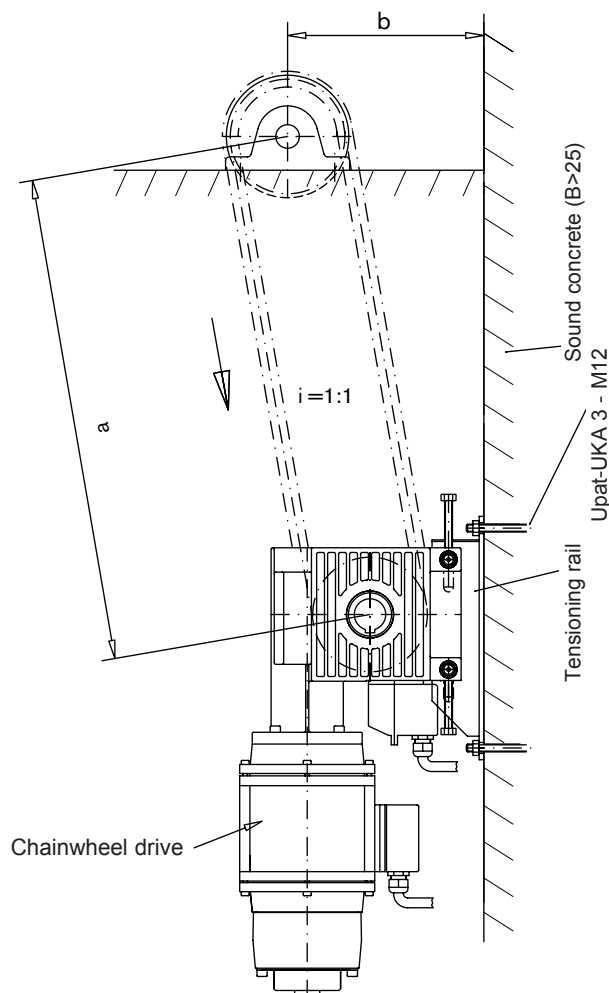
Please always observe the max. static loading for the bracket.

- The chainwheel **must** have at least 20 teeth for the DK 170-350 with a  $\frac{3}{4}$ " pitch, and for the DK 500-750 with a 1" pitch at least 18 teeth.
- The ideal distance between the shaft axes (a) is for the DK 170-350 = 570-950 mm and for the DK 500-750 = 760-1270 mm.
- The chainwheels **must** be aligned and the two shafts must be parallel to each other.
- The drive chainwheel **must** be secured as closely as possible to the gearbox casing and the shaft chainwheel as closely as possible to the support bearing.
- The chainwheels and the chains must run freely.
- The separation (b) is a maximum of 270 mm for the DK 170-350 and a maximum of 285 mm for the DK 500-750.
- The composite wall anchors (M 12) are to be installed in concrete (B>25) in accordance with the manufacturer's guidelines.
- **Chain tension:** The slack on the non-driven chain length must be between 1-2% of the distance between the axes.
- If the extension of the chain is greater than 2-3 % or the chainwheels are severely worn they **must** be replaced. It is recommended that the chain and chainwheels are always replaced at the same time.
- These figures are indicative values and given without liability.

##### Installation of the chainwheel drive


1. Install bracket, shaft and chainwheel drive.
2. Fix roller shutter curtain to the roller tube.
3. Install control box in the vicinity of the door.
4. Unscrew connection box cover on the motor, insert motor cable and then screw cover back in position.
5. Insert limit switch cable from the control unit in the limit switch casing of the drive! Do not push on cover yet.
6. Insert mains supply plug!
7. **Check the directions of rotation.**  
Press the **UP** button briefly. The door **must** run in upward direction. If this is not the case, disconnect the mains supply to the control unit and swap phases L1 and L2. After that insert mains supply.  
– Not applicable for WKM/WKE (AC drives)

##### Installation example: (chain drive downwards)




## 4. Manual operation

### 4.1 Opening/closing the limit switch cover

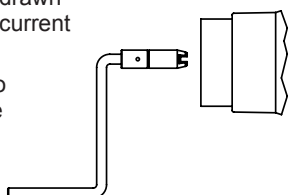
	<b>STOP!</b>
	<p><b>Observe the following instructions!</b>  <b>Non observation can lead to destruction of the drive!</b></p> <ul style="list-style-type: none"> <li>• Open the motor and limit switch cover.</li> <li>• Make sure than no objects etc. get into the connection area.</li> <li>• Plug in the connecting cables and set the limit switch.</li> <li>• Carefully close the motor and limit switch cover after the connections and adjustments are done.</li> <li>• Make sure that there is no dirt or damage on the sealing surfaces.</li> <li>• Close the motor and limit switch cover again and slide the limit switch cover so far up until it latches into place.</li> <li>• It is essential to seal the cable gland correctly.</li> </ul>

### 4.2 Safety instructions for manual operation

	<b>CAUTION!</b>
	<p><b>Observe the following safety instructions.</b>  <b>Failure to observe them can lead to bodily injuries!</b></p> <ul style="list-style-type: none"> <li>• Manual operation is exclusively suitable for operating the door in the event of an emergency. e.g.: a mains failure. Operation of NHK or SHK drives with a drill, etc. is forbidden.</li> <li>• Keep the crank handle in the immediate vicinity of the door so that it is easily accessible at all times.</li> <li>• Switch off the circuit breaker (main switch) before manual operation.</li> <li>• No more travel commands must be present or given.</li> <li>• Manual operation may only be made with the motor stopped and switched off.</li> <li>• Manual operation may only be made from a safe position.</li> <li>• Do not move the door beyond its end positions during manual operation.</li> <li>• Install the supplied wall chain holder so that the reel chain is not hanging in the moving area and does not represent a danger to persons or animals.</li> </ul>

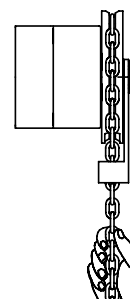
### 4.3 Using the crank handle

1. Remove the plug from the crankcase of the drive.
2. Insert the crank handle by pushing and turning slightly until it engages.  
The control current is switched off.  
The door can be opened or closed.
3. The crank handle must be withdrawn after operation and the control current is switched on again.
4. Fix the plug to the crankcase to ensure compliance with degree of protection IP 54/65.  
The door can now again be operated electrically.



### 4.4 Operation with the haul chain

1. Pull the reel chain lightly up to the stop, the control current is switched off.
2. Then open or close the door.
3. After operating the reel chain, turn the reel wheel lightly back to its central position until the emergency crank handle switch switches the control current on again.  
The door can now again be operated electrically.





### Changing the reel chain (round steel chain)

1. Open the reel chain on the closing link.
2. Remove some chain links.  
**or**  
Insert another round steel chain DIN 766 A4 x 16.
3. Close the closing link carefully.

The reel chain must not be twisted and **must** run easily on the reel wheel.

## 5. Service

### 5. Service

 	<b>CAUTION!</b>
	<p>Observe the following safety instructions. Failure to observe them can lead to bodily injuries!</p> <p><b>Risk of injury due to electrocution.</b></p> <ul style="list-style-type: none"><li>• Switch off the drive for cleaning and maintenance.</li><li>• Do not open the device housing.</li></ul>

### 5.1 Fault table

Design				
..M	..E	Fault	Cause	Remedy
•	•	Drive does not run	No voltage	Check the mains connection
•	•	Mains ok. Drive does not run	Operating limit switch overrun	Move manually inside the safety limit switch boundaries. Check the phase sequence
•	•	Safety limit switch ok. Drive does not run.	Emergency operation still active	Remove NHK – crank Pull SHK chain into a neutral position.
•	•	Drive is hot and does not run.	Temperature limiter is off	After cooling down the temperature limiter switches on again automatically.
•	•	End position is passed or not reached.	End position not set	Set end positions.

### 5.2 Notes on repair

Please contact us if you are unable to eliminate a problem.  
When contacting our service team, please always state the article name and number from the type plate.

When sending in the device for repair, please state the following:

- Item number
- Item description
- Application site of the drive
- Name of the connected controller
- Type of fault
- Accompanying conditions
- Own presumption
- Previously occurring unusual events

### Repair address:

**elero GmbH**  
Antriebstechnik  
Linsenhofer Straße 59–63  
D-72660 Beuren  
Phone (0 70 25) 13-01  
Fax (0 70 25) 13-212  
[www.elero.com](http://www.elero.com)

Please visit us on the Internet if you require a contact outside Germany.

### 5.3 Disposal

Please observe the current national regulations.  
Dispose of according to the condition and existing regulations.  
e.g. as:

- Electrical scrap (PCB)
- Plastic (Housing parts)
- Sheet metal
- Copper



## 6. Declaration of incorporation

# DECLARATION OF INCORPORATION

Declaration of incorporation for installation partly completed machinery in accordance with the Machinery Directive 2006/42/EC

We hereby declare that the following mentioned product/s meet/s the standards of the European Community.

Product designation:

### Chain wheel rolling door drive

- DKM (-ZE) 170, 250, 350, 400, 500, 750 with NHK / SHK
- WKM (-ZE) 170 with NHK / SHK

Description:

Shaft mounted drive for operation of rolling doors with elero control units

The conformity of the above mentioned products with the relevant health and safety requirements is taken into account by the following directives and standards:

- EMC-Directive 2004/108/EC
  - DIN EN 61000-3-2 (VDE 0838-2):2006
  - DIN EN 61000-3-3 (VDE 0838-3):1995
  - DIN EN 55014-1 (VDE 0875-14-1):2006
  - DIN EN 55014-2 (VDE 0875-14-2):1997
- Low Voltage Directive 2006/95/EC
  - DIN EN 60335-1 (VDE 0700-1):2007
  - DIN EN 60335-1/A13 (VDE 0700-1/A13):2009
  - DIN EN 60335-2-103 (VDE 0700 Teil 103):2003
  - DIN EN 62233 (VDE 0700-366):2008
  - DIN EN 62233 (VDE 0700-366 Ber. 1):2009
- RoHS-Directive 2006/95/EC
- DIN EN 12453:2001
- DIN EN 12604:2000

We also declare that specific technical documentation in accordance with Annex II B regarding partly completed machinery has been created and is stored appropriately. The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the directive, where appropriate.

Beuren, 15.03.2011



Ulrich Seeker

-CE-Manager-, -Representative documentation-