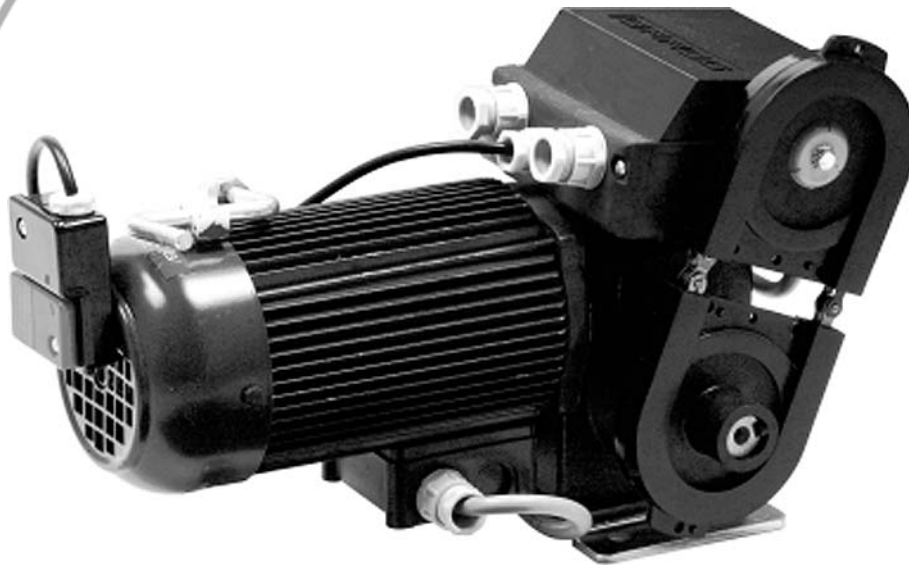


OPERATING MANUAL

INDUSTRIAL DOOR DRIVES

CHAMBERLAIN™
GAROG®
HUBKRAFT MIT PRÄZISION



D-SERIES

Serial nummer:

(see motor gearbox)

Installed on:

Switchgear standart:

2 YEAR WARRANTY

CE

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IMPORTANT SAFETY INFORMATION

Before installation, operation or maintenance of this door drive, this operating manual must be read through carefully and all the safety advice must be followed.



This symbol means "Caution" and stands in front of safety advice intended to avoid personal injury or material damage. Please read such advice carefully. The door drive is of course designed and tested for safe operation. It is however only possible to guarantee this if the following safety instructions are accurately followed during installation and operation.



This symbol is intended to advise that if the respective instruction is not followed serious personal injury or material damage can occur.



The door should be counterbalanced. If this is not done then additional measures must be taken, such as unwinding protection, to guarantee proper operation. Non-movable or stuck doors must be repaired. Doors, door springs, cables, pulleys, retainers and rails are under extreme tension in such situations and this can lead to serious injuries.



Do not attempt to loosen, move or realign the door yourself. Contact your maintenance service.



Suitable protective clothing should be worn during maintenance or installation of the door opener. This includes safety glasses, back supporting belt, and protective gloves. When installing or maintaining a door opener **no** jewellery, watches or loose clothing may be worn. When working from ladders or on extended platforms the corresponding safety procedures must be followed.



To avoid serious injuries resulting from getting tangled or caught in the mechanisms, **all ropes and chains, which are connected to the door, must be removed before installing the door opener.**



During installation and connection of the electrical supply the local building and electrical regulations must be followed. Power cables may only be connected to a properly earthed network. **This system must not be installed in damp or wet rooms.**



Work on the door opener may only be carried out by one (1) person working on his own.



When working on the door opener all the local safety regulations must be observed. Installation of this device must be done according to EN12453.



The force on the closing door edge must not exceed 150 N(15kg). If the closing force is set to more than 150N then the corresponding additional safety accessories must be installed (see "Installation of safety applications"). The force must never be set to move a stuck door.



Too high a force leads to faults in the proper operation of the reversing system or to damage to the door.



To remind all operators of the safety procedures the corresponding warning sign should be attached beside the operating control unit.



To avoid damage to the door all the blocking devices should be deactivated. If however the blocking devices must remain in operation an unlatching switch can be installed.



The three-switch block, main disconnecting switch and all other control devices must be installed within view of the door and out of reach of children. Children should not be allowed to operate switches or the remote controller. Misuse of the door opener can lead to serious injuries.



The door opener may only be operated if the operator can see the whole door area, if it is free from obstacles and the door opener is properly adjusted. No one may pass through the door while it is moving and children must not be allowed to play in the vicinity of the door.



Before carrying out repairs or removing the covers on the door opener, it is essential to ensure that no one can inadvertently start the drive by installing a lockout device or disconnecting the cables.

WICHTIGE SICHERHEITSHINWEISE



Live and moving parts of electrical machines can cause serious or fatal injuries. The installation, connection and starting up, as well as maintenance and repair work may only be carried out by qualified specialist personnel.



To avoid damage to the door or the drive, all the locking devices must be put out of operation. Set locking device(s) to the "Open" position. If a lock is to remain in operation an unlatching switch must be installed.

Please find the technical data for the geared motor from the type plate or from the attached documents.

In doing so you should also follow:

- The instructions in this manual
- All other project planning documents for the drive
- The start-up instructions and circuit diagrams
- The currently-valid national regulations (safety and accident prevention)

Guarantee, storage

It is essential to follow these instructions and advice since they are the basis for trouble-free operation as well as for any guarantee claims. Check the delivery immediately after receipt for any transport damage. Report any damage immediately to the transport company as well as to the supplier. If you do not install the geared motor straight away you should store it in a dry, dust-free, low-vibration room at temperatures between 0 and +40°C.

Zustand bei Auslieferung

Delivered condition

Every geared motor is manufactured according to the valid technical documentation and subjected to a test run at Chamberlain. We retain the right to make changes to technical data and design, which are in the interests of progress. Dispatch takes place in the appropriate packaging.

GENERAL INFORMATION

We thank you for purchasing our product.

If you still have questions on the installation then please contact:



Chamberlain GmbH, Alfred-Nobel-Str. 4,
66793 Saarwellingen Germany
Tel: (0049)(0)6838-907222
Fax: (0049)(0)6838-907179
e-mail: info@garog-service.de
Internet: www.garog-service.de

PREPARATORY MEASURES

The drive may only be installed:



- If the details on the rating plate on the drive correspond with the mains voltage.
- If the drive is undamaged
- If the ambient temperature is between 0 and 40°C
- If the installation height is not more than 1000m above sea level
- If the type of protection has been appropriately selected.

Output shafts and mounting surfaces are to be thoroughly cleaned to remove the corrosion protection agent (use standard commercial solvent). To avoid material damage the solvent must not get onto the sealing edges of the rotary shaft seals. Abrasive agents must not be used.

To avoid shaft breakages and hence serious or fatal injuries it is essential to note the following during mounting:

The precondition for suitable dimensioning of the shaft with respect to its fatigue strength is stress-free installation and an immovable bearing device for the gearbox support as well as any additional or essential supporting bearings in each direction as supplied by the user.

The machine frame and force introduction points are to be designed with respect to construction and strength according to the bearing forces which arise. The gearbox housing with two bearings and all the other bearing points are located on a common, stable framework on which the bearing surfaces have been machined in one operation. Thereby the installer must ensure that any deformation of the frame under load will not have any negative influences on the shaft load. The screws may only be fully tightened once the gearbox has been accurately aligned. Installation in damp rooms or in the open air is only permitted following agreement with the manufacturer. If the drives are stored for a lengthy period of time it is also necessary to discuss this with the manufacturer.

INSTALLATION ADVICE

Before starting the installation work make sure that all the necessary safety measures have been implemented.

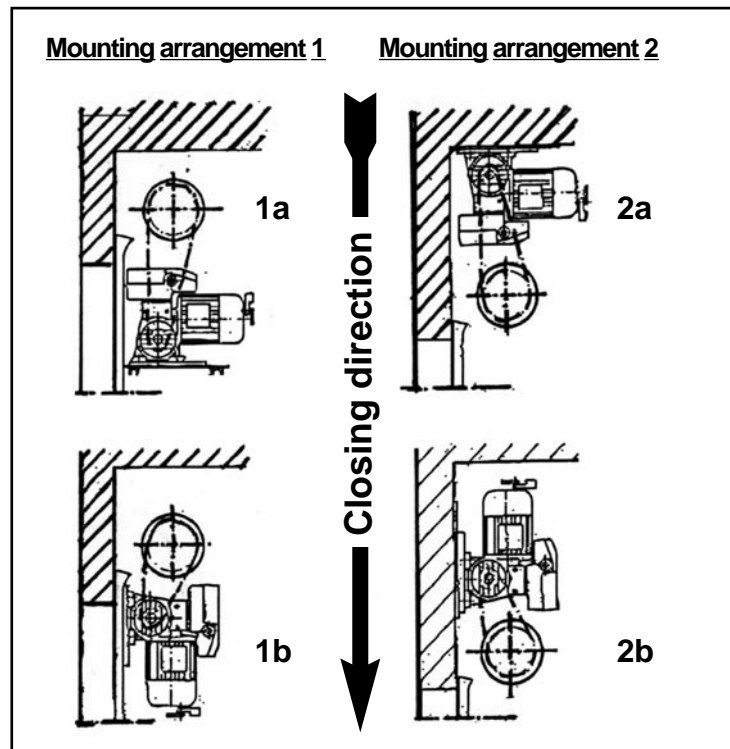
1. Installation

Place machine down on smooth mounting plate or aligned slide rails and tighten fixing screws uniformly.

Make sure beforehand that:

- ● The drive is not damaged or sticking
- ● The drive has been reprepared after a lengthy storage period
- ● The supply line is switched off and safeguarded against being switched on again (VDE regs.) (VDE = German assoc. of electronic engineers)
- ● The connections have been made properly
- ● The turning direction of the geared motor is correct
- ● All motor protection devices are active
- ● No other danger sources exist

MOUNTING ARRANGEMENT



INSTALLATION ADVICE

Electrical connection

The connections according to the circuit diagram and the maintenance of the electrical drive may **only** be carried out by **electrical specialist personnel**.



The corresponding accident prevention regulations must be followed. For switching the motor and the brake connections, switching contacts of utilization category AC-3 acc. to IEC 158 must be used.



The types of line and their cross-sections must be selected according to the relevant regulations. The nominal flows and the type of connection are given on the motor type plate. The drive details must agree with the connected values.



If operated with electronic control devices it is essential to take account of the corresponding start-up instructions and circuit diagrams.

Commissioning:

During commissioning check whether:

- The drive does not get excessively hot

In the event of **unusual running noises** the drive must be **stopped immediately** and Customer Services should be informed. If oil is lost Customer Services should be called, the oil level should be checked by means of the dipstick on the vent screw and the drive must also be switched off if the level falls below the minimum filling quantity.

To ensure efficient support in the event of a fault we require the following information:

- The data from the type plate on your drive unit
- The type and extent of the fault
- When and under what accompanying conditions the fault occurred.
- Whether the drive was subject to speed variations or other distinctive happenings

ELECTRICAL CONNECTION

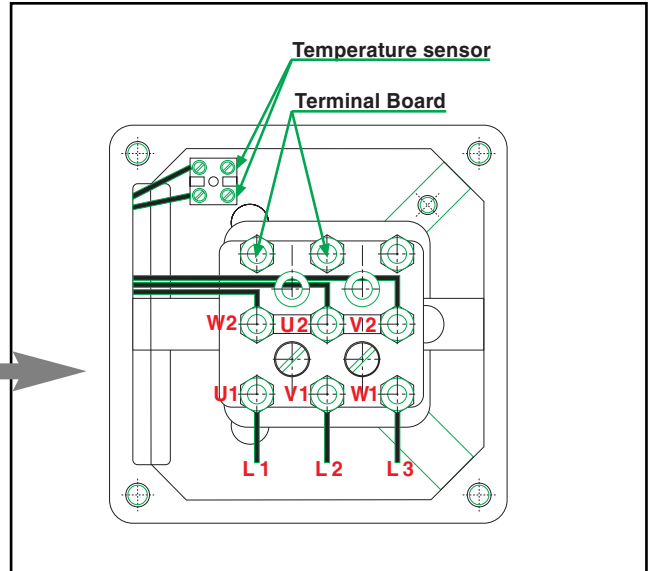
Connect motor:

1. According to circuit diagram; normally with star point in the case of delta/star connection of asynchronous machines.
2. Check cross-section of wires
3. Firmly tighten connections and PE conductor
4. Check terminal boxes and tighten if necessary

Six-pin terminal boards are normally used for three-phase motors

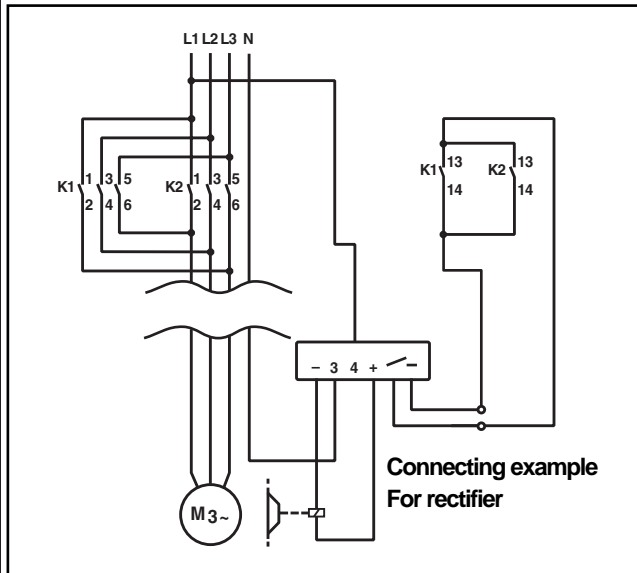
Display of a 9-pin terminal board with star connection (400V):

Motor terminal board 1

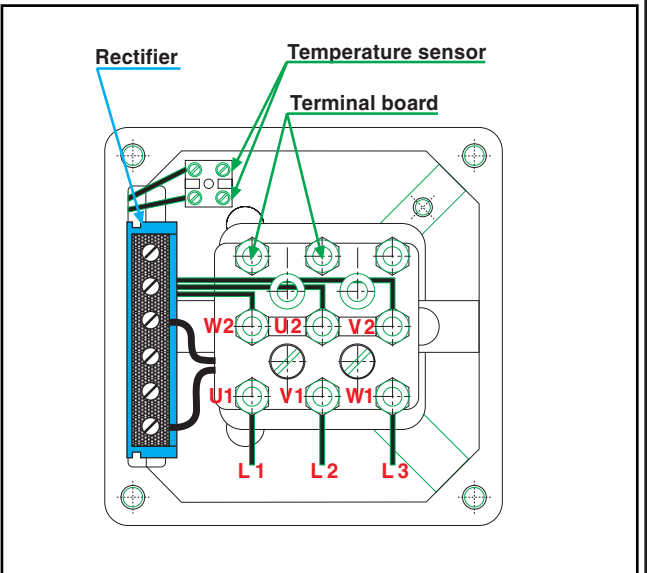


Only for D4000 - D7000

DC Brake



Motor terminal board 2



Thermostatic switch opens at 130°C

Corresponding connecting option for brake

To avoid burning out of the motor winding it is obligatory!

A motor circuit-breaker or a protective system with built-in overcurrent relay is required if no PTC thermistor or thermostats are provided.

Our guarantee for the winding lapses if the abovementioned motor protection is not provided.

ELECTRICAL CONNECTION



Before the installation of power cables and control devices it is essential to take note of all the following specifications and warnings. If they are not heeded serious injuries or damage to the drive can occur.



The control housing of the door drive may only be opened by trained "Chamberlain" specialist personnel. If necessary please contact your local Chamberlain dealer.



Before electrical installation or the starting up of the drive please study the circuit diagram carefully. The valid local regulations must be followed for all the electrical wiring work.



Before carrying out any maintenance work on the door drive it is first necessary to disconnect the power supply / power transmission at the main switch.



After completion of the maintenance work the danger zone must be cleared and secured again before restarting.

If you require additional accessories or spare parts
please contact your local **Chamberlain dealer**.

CHAMBERLAIN - GmbH

Alfred-Nobel-Str. 4
66793 Saarwellingen

ORDERING FAX NO: (0049)(0)6838-907179
TECHNICAL HOTLINE: (0049)(0)6838-907222

MATRIX FOR THE USE OF SAFETY EQUIPMENT

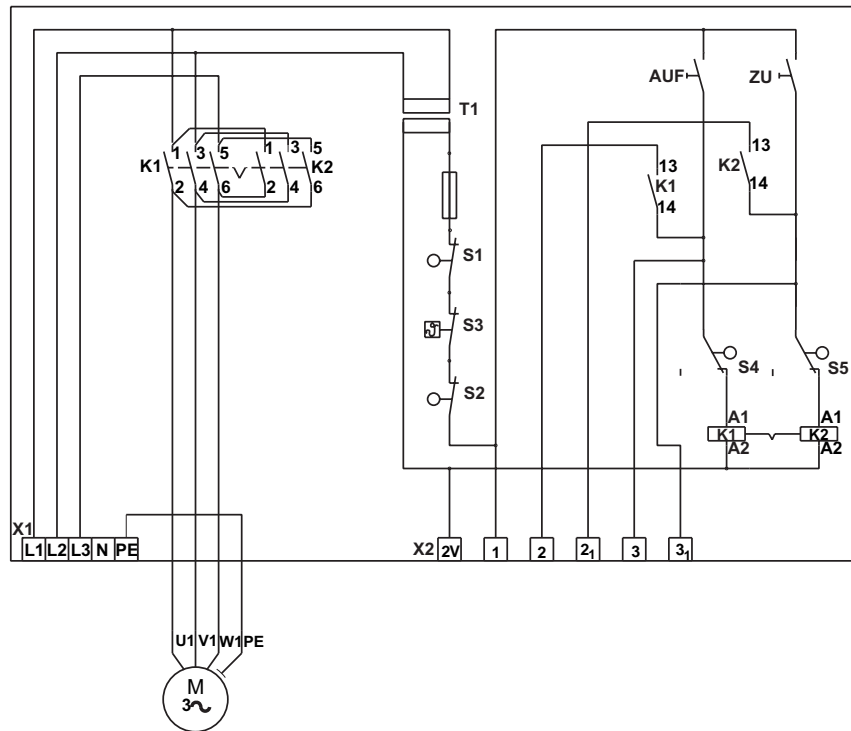
TYPE OF CONTROL	DOOR WILL BE USED BY		
	Trained people (inaccessible to the public) Group 1	Public area Group 2	(General public area) Group 3
Control by continuous switch operation	A	B	No info.
Pulse actuation within visual range of door	C	C and D	C and E
Automatic control	C and D	C and E	C and E

- I **A:** Pushbutton for control by holding down continuously
- I **B:** Keyswitch, or suchlike for controlling by means of continuous actuation
- I **C:** Limitation of driving force by force limiting (clutch) and protection devices (safety edge padding).
- I **D:** Device to detect people or obstacles which are on the ground on one side (inside) of the door leaf (infrared light barrier)
- I **E:** Device to detect people or obstacles which are on the ground on both sides (inside and outside) of the door leaf (infrared light barrier).

ADVICE: For more detailed information see EN12453.

CIRCUIT DIAGRAM: KSAT

KSAT 1/1 S



Reversing contactor with mechanical latching

Type	P [kW]	I [A]
ABB-VB6	2,5	7,5
Tele-LC2K12	5,5	12

- K1** Contactor UP
- K2** Contactor DOWN
- T1** Control transformer 400/24V-18VA
- F1** Control circuit fuse (1,6 AT, 5x20mm)
- S1** Safety limit switch
- S2** Safety limit switch, crank, emergency chain, wire rope socket
- S3** Temperature sensor - motor winding
- S4** Limit switch UP
- S5** Limit switch DOWN
- X1** Terminal strip - supply cable
- X2** Terminal strip - supply cable

WIRING

- PE conductor GREEN-YELLOW 1,5
- Main power circuit BLACK 1,5
- Control circuit AC RED 0,75
- Control circuit DC BLUE 0,75

The corresponding connection options can be found in the following figures A - G and the installation instructions in the appendix.

GENERAL ADVICE

Note mounting arrangement of drive

For the 24V AC supply 2V and 1V are available at the terminals. The available power from the control transformer is 6VA and is provided for the connection of a remote controller and a light barrier. Additional consumers may only be connected if the overall power of 6 VA is not exceeded.

1. The terminal markings for the control stations, light barriers and remote controllers can vary according to the manufacturer.
2. See the following pages with respect to the connection example F

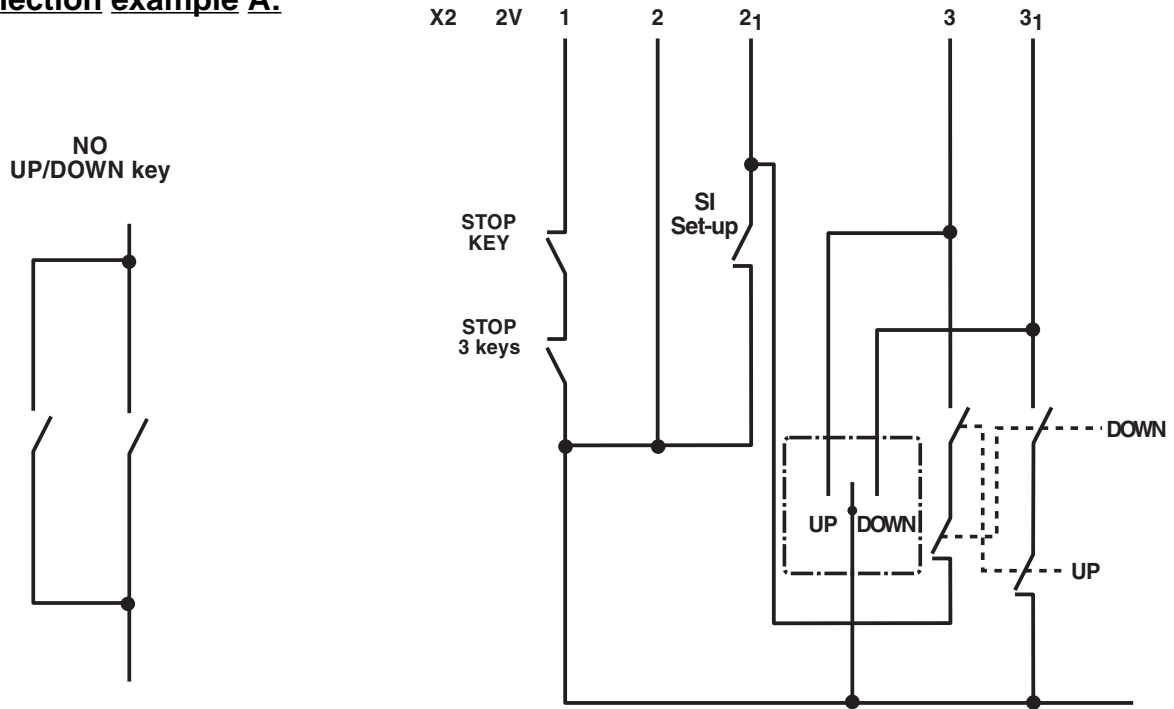
In the event of a defective contact strip or coiled cable the system will automatically switch over to "dead man operation". This type of circuit corresponds with EN 12354. It must be ensured by organizational means that only authorized personnel can actuate the switch. It must be possible to view the full danger zone from the control station.

CONNECTION EXAMPLES



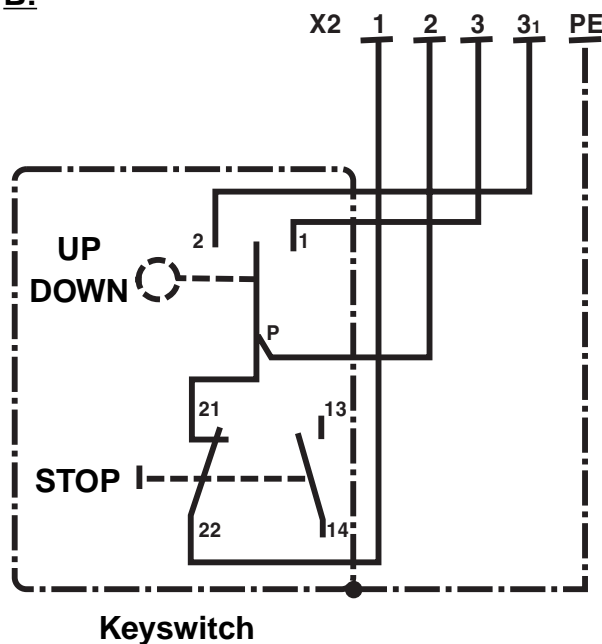
Single error protection devices are self-monitoring, i.e. they can detect an error within the circuit and in the device connections. Such types of protection require the use of self-monitoring sensing devices.

Connection example A:



Self-latching in both directions. In the event of a defective contact strip or coiled cable the closing movement can only be carried out from the keyswitch in the "dead man's circuit". This type of circuit corresponds with EN 12354.

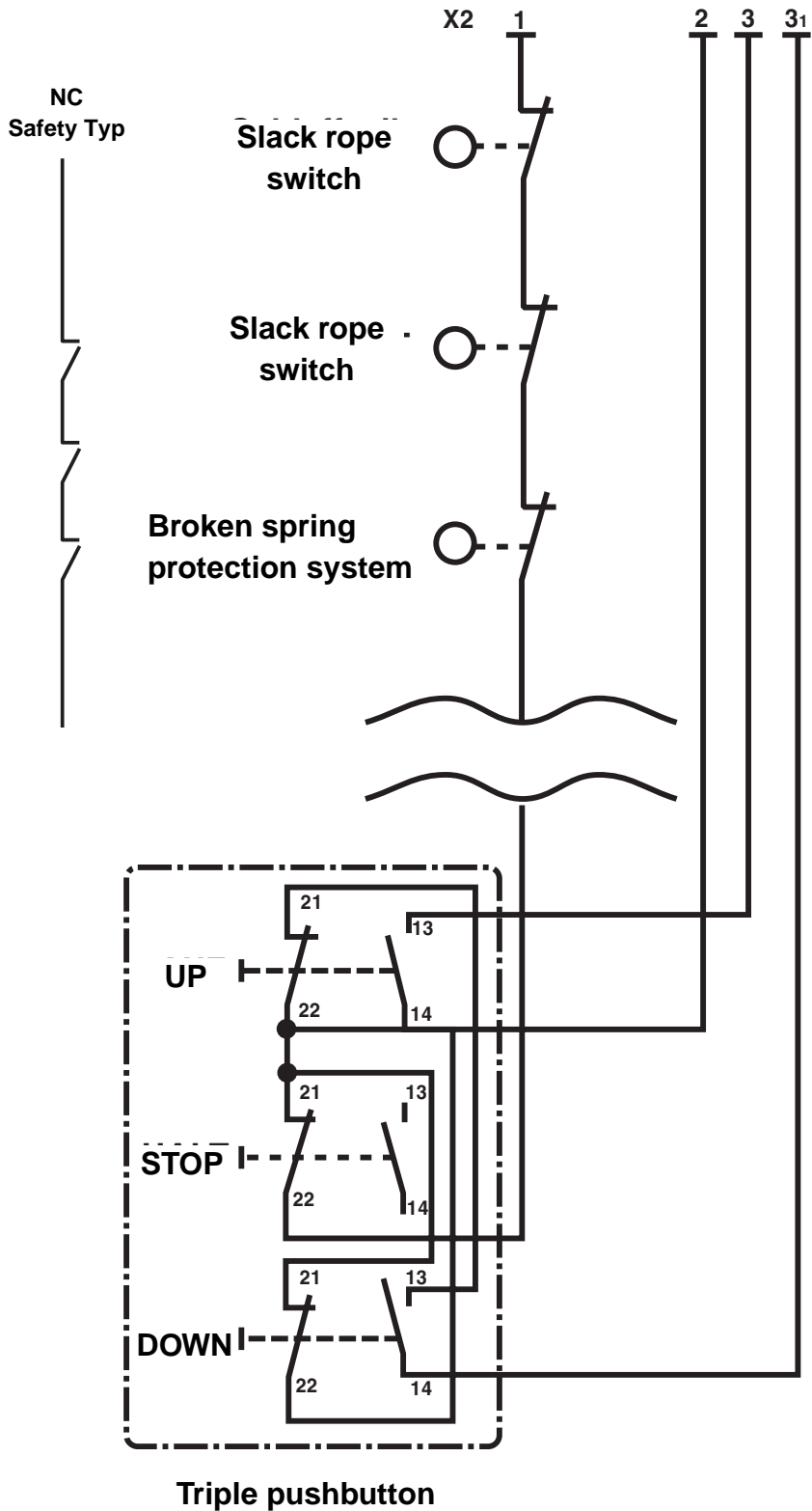
Connection example B:



UP in self-latching, DOWN in dead man's circuit.

CONNECTION EXAMPLES

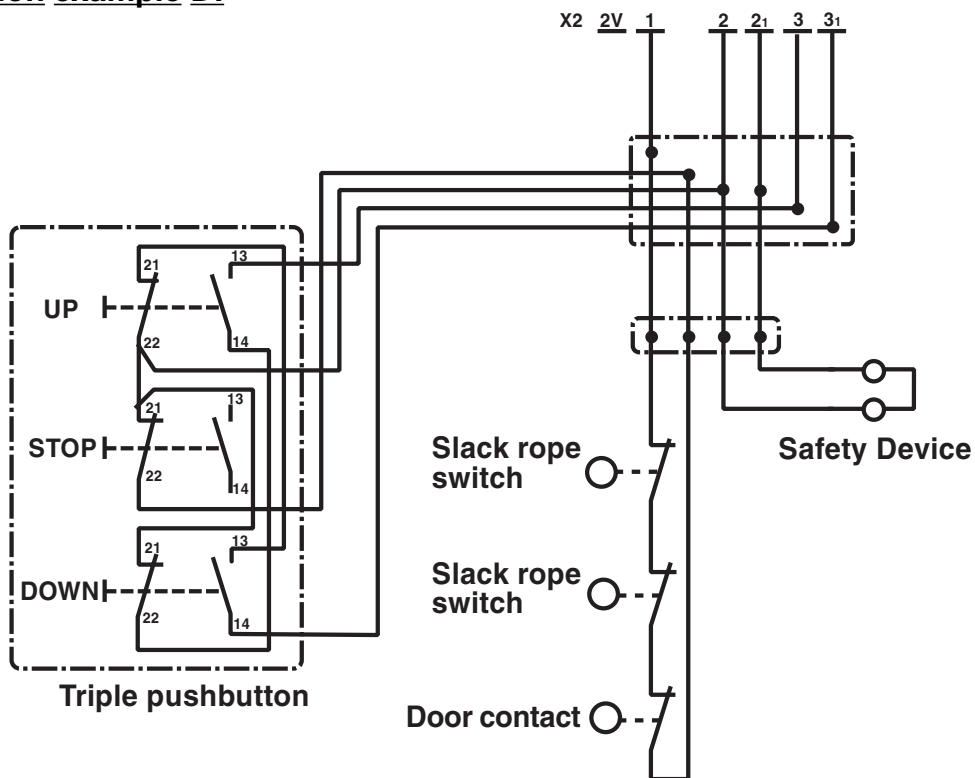
Connection example C:



UP in self-latching, DOWN in dead man's circuit.

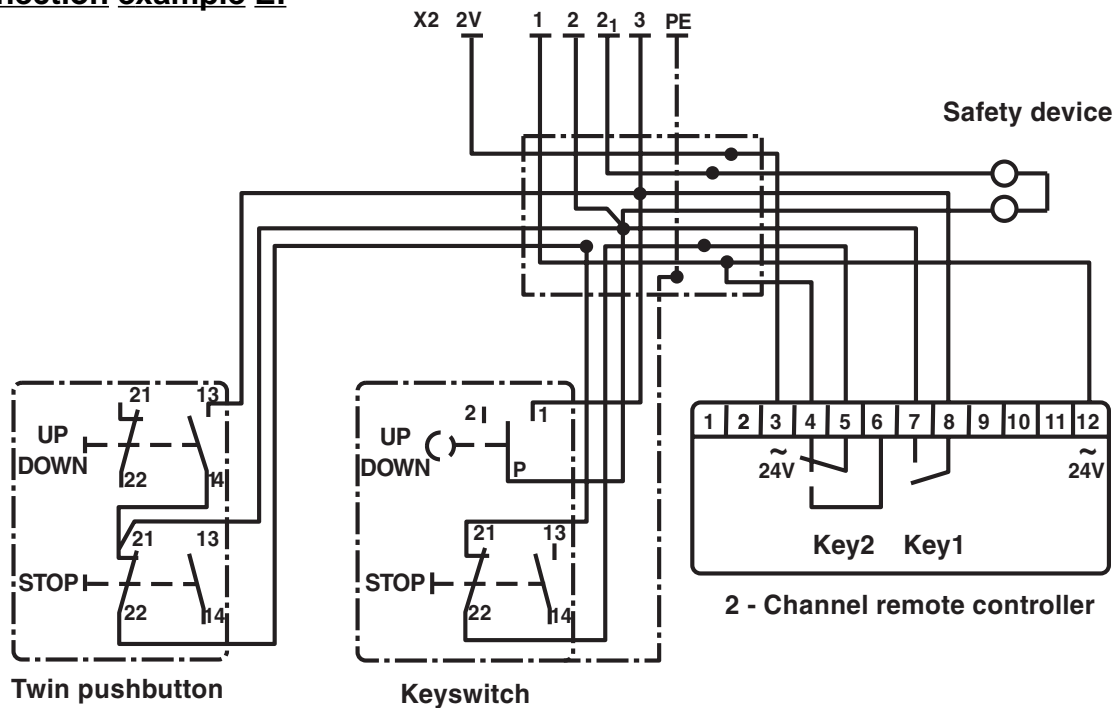
CONNECTION EXAMPLES

Connection example D:



Connection of slack rope switches and safety switch for door with common cable to door leaf.

Connection example E:

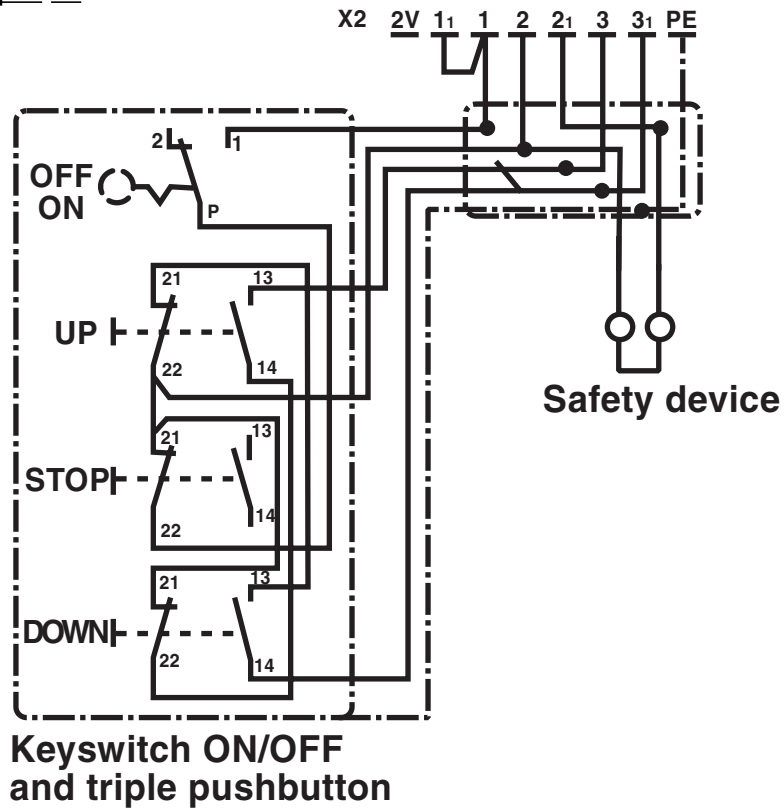


1 or 2-channel remote controller, UP and DOWN by one command. If the top limit switch has not been reached the door initially travels upwards if given a new command for safety reasons.

If the contact strip or light barrier is defective the door cannot be closed due to the missing circuit.

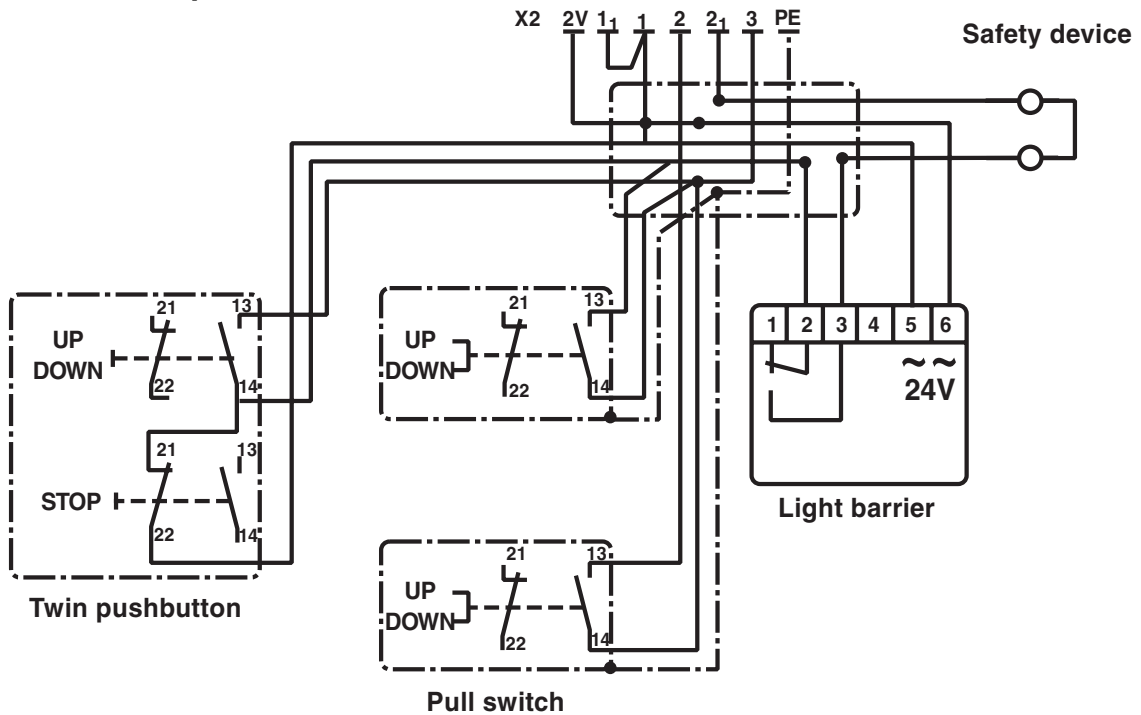
CONNECTION EXAMPLES

Connection example F:



Triple switch with integrated ON/OFF keyswitch to interrupt the control voltage.

Connection example G:

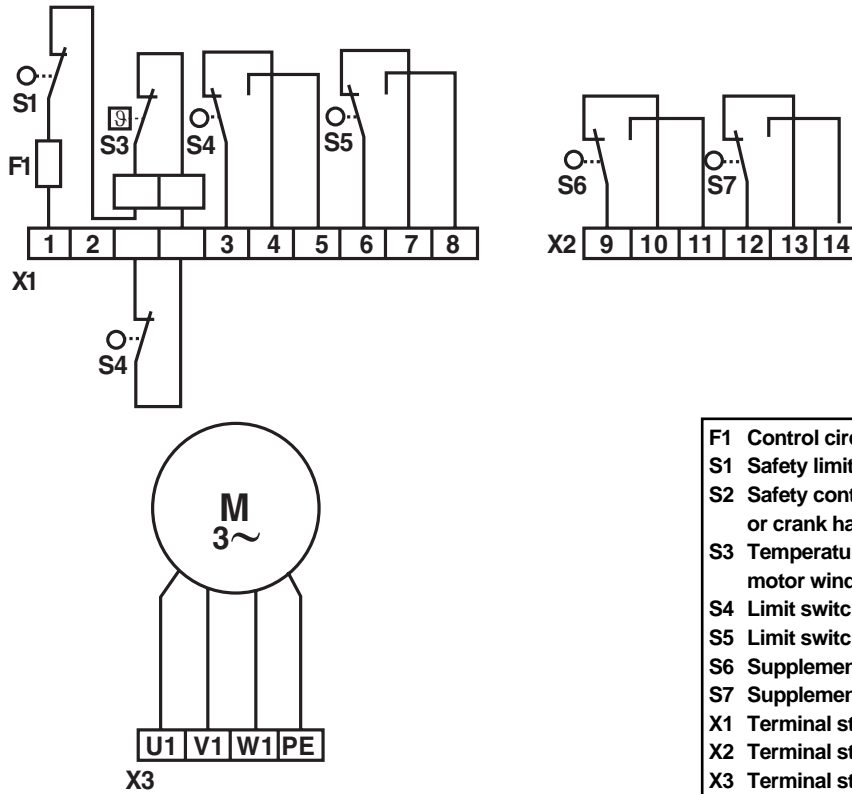


UP and DOWN movements can be triggered with the pull switch. If the top limit switch has not been reached the door initially travels upwards for safety reasons if given a new command.

If the contact strip or light barrier is defective the door cannot be closed due to the missing circuit.

CIRCUIT DIAGRAM: SEK

SEK 2/1 S



- F1 Control circuit fuse 1,6 A (5x20)
- S1 Safety limit switch
- S2 Safety contact for emergency chain or crank handle
- S3 Temperature sensor in motor winding
- S4 Limit switch UP
- S5 Limit switch DOWN
- S6 Supplementary limit switch UP
- S7 Supplementary limit switch DOWN
- X1 Terminal strip - limit switch
- X2 Terminal strip - suppl. limit switch
- X3 Terminal strip - motor

DIMENSIONAL DRAWING - DOOR DRIVE

Fig. 1

Assembly dimensions with circuit breaker in normal position

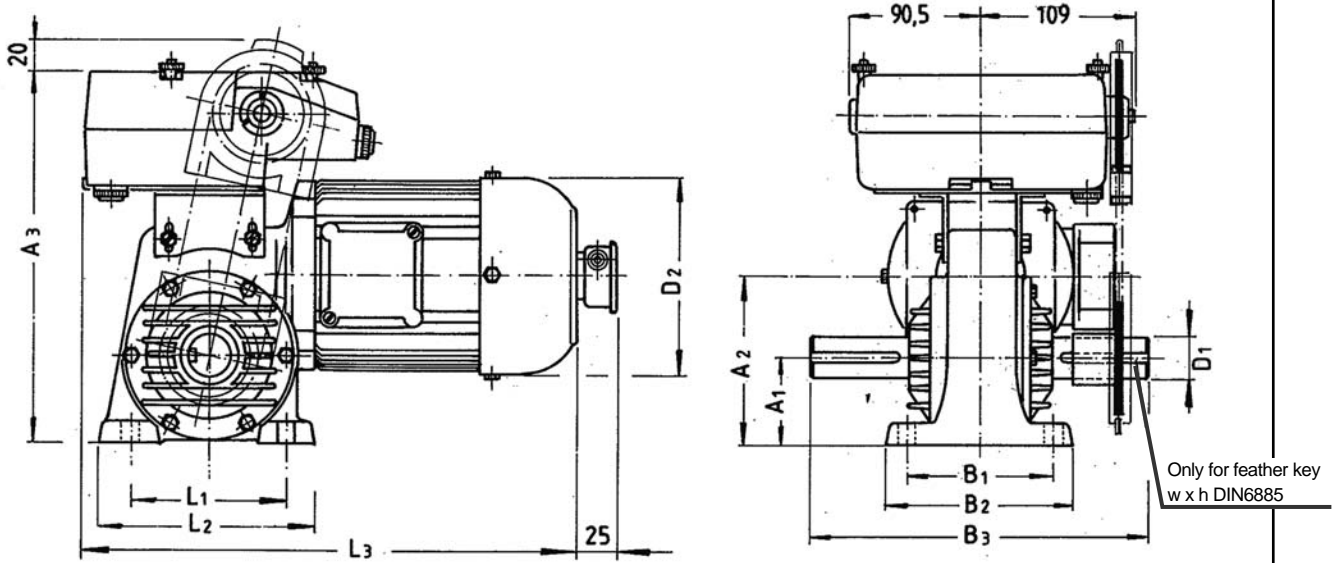
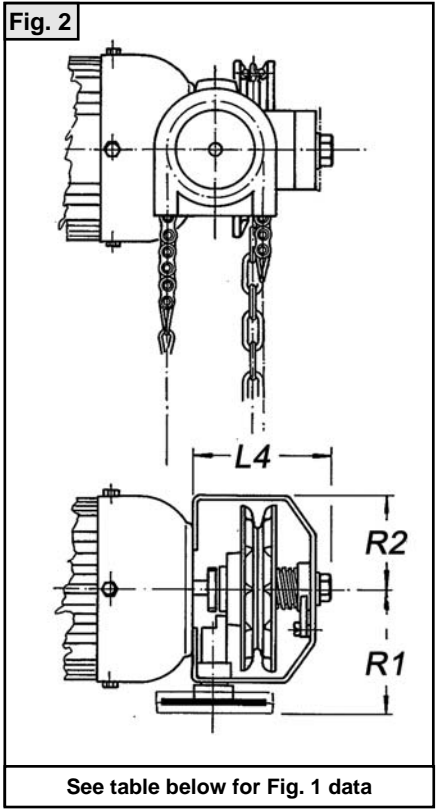


Fig. 2

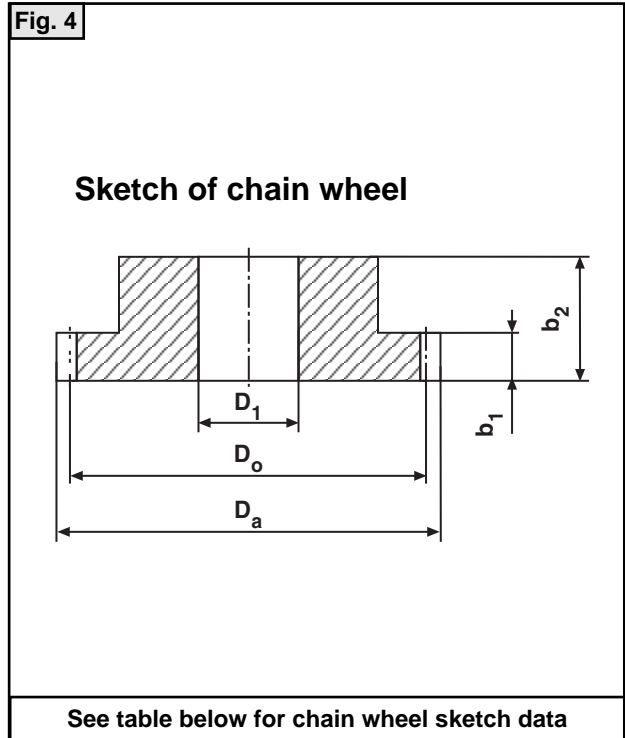
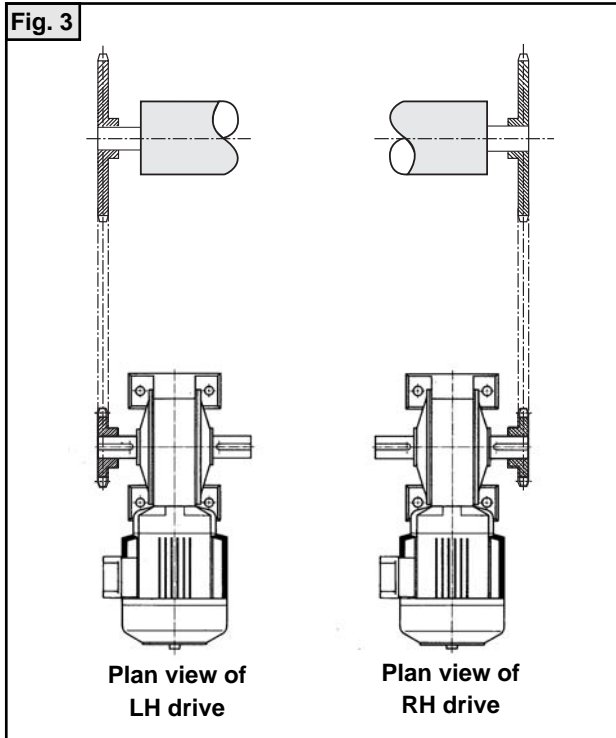


Drive type:	R1	R2	w x h ¹⁾
D300	75	69	6x6
D500	75	69	8x7
D1000	75	69	8x7
D2500	75	69	10x8
D4000	—	—	14x9
D7000	—	—	14x9

¹⁾= Feather key dimensions acc. to DIN 6885, T1 width x height in mm

Drive type:	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	D1	D2	L1	L2	L3	L4	L5
D300	62	104	230	264	262	230	90	120	120	—	20	110	60	96	371	302	100
D500	69	118	260	295	266	235	105	135	218	121	25	138	80	105	322	297	100
D1000	62	120	266	304	261	245	105	136	240	156	30	138	110	155	395	—	100
D2500	88	167	325	—	303	287	125	168	300	—	35	176	145	209	505	—	100
D4000	105	208	358	—	365	340	140	174	330	—	45	194	200	262	627	—	200
D7000	140	282	448	—	443	420	150	200	330	—	50	218	270	348	677	—	200

DIMENSIONAL DRAWING - CHAIN WHEELS AND DRIVE



Drive-type	Hub wheel dim. In inches (") Pitch x width	Toothed-ring rows	Outside-diameter D_a mm	Pitch circle diameter D_0 mm	Inside diameter D_1 mm	Hub width b_2 mm	Toothed-ring width b_1 mm	Article-description-
D300	1/2 x 1/16"	12	53	49	20	16	4,4	G-N2-12
D500	1/2 x 5/16"	12	53	49	25	16	7	G-5N-12
D1000	5/8 x 3/8"	12	66,5	61,5	30	25	8,7	G-N10-12
D2500	1" x 17mm	10	90	82	35	35	15	G-N25-12
D4000	1" x 17mm	10	90	82	45	35	15	G-N40-12
D7000	1 1/4 x 3/4	10	112	103	50	40	18	G-N50-10

A-1

Type:		D300	D500	D1000	D2500	D4000	D7000
Motor power:	P [kW]	0,22	0,37	0,74	1,85	3,00	5,20
Torque:	M [Nm]	35	65	125	300	500	1100
Motor speed:	n1 [min-1]	1370					
Output speed:	n2 [min-1]	32	32	32	32	28	26
Duty factor:	Df	S3=60%					
Type of motor protect.:		IP54					
Operating voltage:	U [V]	400V (380-415), 3ph, 50Hz					
Nominal current (400V):	Inom[A]	0,9	1,7	2,9	4,6	9	13
Output shaft:	D [mm]	20	25	30	35	45	50
Weight:	[kg]	10,8	16	21,5	35	61	98
Equipment available for:		(A) (B)	(A) (B) (SK) (MS) (EK)	(A) (B) (MS) (EK)	(A) (B) (EK)	(A) (EK)	(A)
		(A) Emergency crank handle	(B) Emergency manual chain	(SK) Quick-action clutch	(MS) Motor clutch	(EK) Built-in clutch	

LIFTING FORCE TABLE

A-2

Lifting force in N with transmission ratio $I = 1:1$ ¹⁾								
Drive	torque	Drum / Roller diameter in mm:						
Type	M[Nm]	100	160	190	220	250	270	300
D300	35	560	350	295	255	224	207	187
D500	66	1.056	660	556	480	422	391	352
D1000	125	2.000	1.250	1.053	909	800	741	667
D2500	300	4.800	3.000	2.526	2.182	1.920	1.778	1.600
D4000	500	8.000	5.000	4.211	3.636	3.200	2.963	2.667
D7000	1.100	17.600	11.000	9.263	8.000	7.040	6.519	5.867

A-2.1

Lifting force in N with transmission ratio $I = 1: 2,5$ ¹⁾								
Drive	torque	Drum / Roller diameter in mm:						
Type	M [Nm]	100	160	190	220	250	270	300
D300	35	1.400	857	737	636	560	519	467
D500	66	2.640	1.650	1.389	1.200	1.056	978	880
D1000	125	5.000	3.125	2.632	2.273	2.000	1.852	1.667
D2500	300	12.000	7.500	6.316	5.455	4.800	4.444	4.000
D4000	500	20.000	12.500	10.526	9.091	8.000	7.407	6.667
D7000	1.100	44.000	27.500	23.158	20.000	17.600	16.296	14.667

A-2.2

Lifting force in N with transmission ratio $I = 1: 3$ ¹⁾								
Drive	torque	Drum / Roller diameter in mm:						
Type	M [Nm]	100	160	190	220	250	270	300
D300	35	1.680	1.050	884	764	672	622	560
D500	66	3.168	1.980	1.667	1.440	1.267	1.173	1.056
D1000	125	6.000	3.750	3.158	2.727	2.400	2.222	2.000
D2500	300	14.400	9.000	7.579	6.545	5.760	5.333	4.800
D4000	500	24.000	15.000	12.632	10.909	9.600	8.889	8.000
D7000	1.100	52.800	33.000	27.789	24.000	21.120	19.556	17.600

A-2.3

Lifting force in N with transmission ratio $I = 1: 4$ ¹⁾								
Drive	torque	Drum / Roller diameter in mm:						
Typ	M [Nm]	100	160	190	220	250	270	300
D300	35	2.240	1.400	1.179	1.018	896	830	747
D500	66	4.224	2.640	2.223	1.920	1.690	1.564	1.408
D1000	125	8.000	5.000	4.211	3.636	3.200	2.963	2.667
D2500	300	19.200	12.000	10.105	8.727	7.680	7.111	6.400
D4000	500	32.000	20.000	16.842	14.545	12.800	11.852	10.667
D7000	1.100	70.400	44.000	37.053	32.000	28.160	26.074	23.467

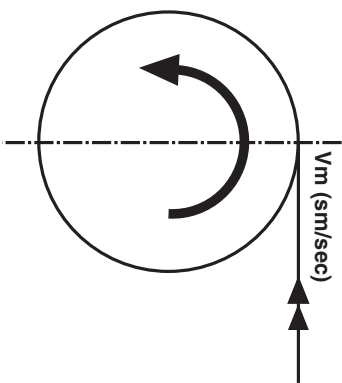
¹⁾ = Measured at the rotor shaft at an assumed friction loss in the door system of 20%
 "The thickness of the profile must be taken into account separately!"

CALCULATION OF LIFTING SPEED

Table for determination of the lifting speed in cm/sec.:

Bale diameter- [mm]	$n^2 = 32 \text{ rpm}^{-1}$					$n^2 = 28 \text{ rpm}^{-1}$				$n^2 = 26 \text{ rpm}^{-1}$			
	1:1	1:2	1:2,5	1:3	1:3,5	1:2	1:2,5	1:3	1:3,5	1:2	1:2,5	1:3	1:3,5
100	16,7	8,4	6,7	5,6	4,8	7,3	5,9	4,9	4,2	6,8	4,5	3,9	2,7
120	20,2	10,1	8,1	6,7	5,8	8,8	7,0	5,9	5,0	8,2	5,5	4,7	3,3
140	23,5	11,7	9,4	7,8	6,7	10,3	8,2	6,8	5,9	9,5	6,3	5,4	3,8
160	26,8	13,4	10,7	9,0	7,7	11,7	9,4	7,8	6,7	10,9	7,3	6,2	4,4
170	28,5	14,3	11,4	9,5	8,1	12,5	10,0	8,3	7,1	11,6	7,7	6,6	4,6
180	30,1	15,1	12,1	10,0	8,6	13,2	10,6	8,8	7,5	12,3	8,2	7,0	4,9
190	31,8	15,9	12,7	10,6	9,1	13,9	11,1	9,3	8,0	12,9	8,6	7,4	5,2
200	33,4	16,7	13,4	11,1	9,5	14,7	11,7	9,8	8,4	13,6	9,1	7,8	5,4
210	35,1	17,6	14,1	11,7	10,0	15,4	12,3	10,3	8,8	14,3	9,5	8,2	5,7
220	36,8	18,4	14,7	12,3	10,5	16,1	12,9	10,8	9,2	15,0	10,0	8,6	6,0
230	38,5	19,3	15,4	12,8	11,0	16,9	13,5	11,2	9,6	15,7	10,5	9,0	6,3
240	40,3	20,2	16,1	13,4	11,5	17,6	14,1	11,7	10,1	16,3	10,9	9,3	6,5
250	41,9	20,9	16,7	14,0	12,0	18,3	14,7	12,2	10,5	17,0	11,3	9,7	6,8
260	43,6	21,8	17,2	14,5	12,3	19,1	15,2	12,7	10,9	17,7	11,8	10,1	7,1
270	45,3	22,6	18,1	15,1	13,0	19,8	15,8	13,2	11,3	18,4	12,3	10,5	7,4
280	47,0	23,5	18,8	15,7	13,4	20,5	16,4	13,7	11,7	19,1	12,7	10,9	7,6
290	48,6	24,3	19,4	16,2	13,9	21,3	17,0	14,2	12,1	19,7	13,1	11,3	7,9
300	50,2	25,1	20,1	16,7	14,4	22,0	17,6	14,7	12,6	20,4	13,6	11,7	8,2
320	53,5	26,8	21,4	17,8	15,3	23,5	18,8	15,6	13,4	21,8	14,5	12,5	8,7
340	57,0	28,5	22,8	19,0	16,3	24,9	19,9	16,6	14,2	23,1	15,4	13,2	9,2
360	60,2	30,1	24,1	20,1	17,2	26,4	21,1	17,6	15,1	24,5	16,3	14,0	9,8
380	63,6	31,8	25,4	21,2	18,2	27,9	22,3	18,6	15,9	25,9	17,3	14,8	10,4
400	67,1	33,6	26,8	22,4	19,2	29,3	23,5	19,5	16,8	27,2	18,1	15,4	10,9
420	70,5	35,3	28,3	23,5	20,1	30,8	24,6	20,5	17,6	28,6	19,1	16,3	11,4
440	73,6	36,8	29,4	24,5	21,0	32,3	25,8	21,5	18,4	29,9	19,9	17,1	12,0
460	77,0	38,5	30,8	25,7	22,0	33,7	27,0	22,5	19,3	31,3	20,7	17,9	12,5
480	80,5	40,3	32,3	26,8	23,0	35,2	28,1	23,5	20,1	32,7	21,8	18,7	13,1
500	83,8	41,9	33,5	27,9	23,9	36,7	29,3	24,4	20,9	34,0	22,7	19,4	13,6

Formula for roller door speed calculation:



$$V_m = \frac{(D+d \times 3,14 \times n)}{2 \times 60} \text{ [cm/sec]}$$

V_m = Average lifting speed in cm/sec

D = Largest bale diameter in cm

d = Smallest bale diameter in cm

n = Nominal speed of drive in rpm

$3,14$ = Circle constant π

MAINTENANCE

Maintenance



All gearboxes are filled with lubricant in the factory. This lubricant is suitable for at least 1000 operating hours. After this time or at the very latest every 6 years it is advisable to renew the special oil. For this purpose only SHELL OMALA 460 should be used in the following filling quantities. The oil quantities for the different types of drive are as follows:

Drive	Filling quantity	Drive	Filling quantity
D300	60 cm ³	D2500	260 cm ³
D500	100 cm ³	D4000	500 cm ³
D1000	130 cm ³	D7000	1350 cm ³

In the case of low running times and favourable temperature conditions the lubricant may still be fit for use even after 6 years. In this case however we still recommend that about 1/3 of the given amount of lubricant is added.



If losses of lubricant take place it is necessary to top up with the special oil given above at the correct time.

Before starting up, a check should be made on whether all the internal and external conditions have been met so as to ensure perfect functioning.

MAINTENANCE PLAN



If for whatever reason your drive does not operate as desired or not as is described in the operating manual, please first check whether you have read and correctly followed all the instructions. If faults are still occurring please make contact with your local Chamberlain dealer who will be happy to support you in rectifying the fault.



Before carrying out any maintenance work on the door drive it is first necessary to disconnect the power supply / power transmission at the main/ emergency switch. All maintenance work may only be carried out by trained "Chamberlain" specialist personnel. If necessary please contact your local Chamberlain dealer.

Definition of qualified personnel

Within the meaning of the operating manual and the warning information concerning the product itself, these are people who are familiar with the setting out, installation, commissioning and operation of the product and have suitable qualifications for their work, such as:

- a. Training or instruction in, and authorization to connect up, switch on and off, earth and mark power circuits and devices according to the engineering safety standards.
- b. Training or instruction according to engineering safety standards in the care and use of the appropriate safety equipment.
- c. Training in first aid.

The fitting of drive elements

The fitting of drive elements such as rope pulleys, wheels etc is best done after previous warming of the respective part. The preheating temperature should be 100°C.

A precoating of a copper paste eases mounting and provides long-term protection from frictional corrosion.

To avoid damage to bearings, housings and shafts the drive elements must never be mounted on the end of the shaft by hammer blows.

The fitting of drive elements by means of pressure requires a force introduction surface (seating on output shaft).

Fitted transmission elements must be counterbalanced and must not cause any non-permitted radial or axial forces.

The corresponding tolerances must be observed during the fitting work (see dimension drawing).

SPARE PARTS

The spare parts kits obtainable for your drive are given in the following parts lists. If your drive already has optional modifications and/or accessories, certain parts can be added or removed from the list. Possibly individual parts of a kit are not obtainable - please contact a member of staff responsible for spare parts and maintenance. He will be happy to inform you about the availability of individual parts in the kits listed below.

You will find general information on ordering on page 24.

MOTOR / GEARBOX

D300/32
D500/32
D1000/32
D2500/32
D4000/28
D7000/26

LIMIT SWITCHES /CIRCUIT BREAKERS

041G -SEK2/1SL SEK2/1L - LH travelling nut limit switch
041G -SEK2/1SR SEK2/1R - RH travelling nut limit switch
041G -KSAT1/1S KSAT Circuit breaker

LIMIT SWITCHES /CIRCUIT BREAKERS

041G - KS KS Crank drive safety switch

MECHANICAL SPARE PARTS

041G-NHK-D300 Emergency manual crank handle D300
041G-NHK-D500 Emergency manual crank handle D500-1000
041G-NHK-D1500 Emergency manual crank handle D1500-2500
041G-NHKD3/6000 Emergency manual crank handle D3000-7000

Declaration of Conformity

The industrial door drive

corresponds to the applicable sections and standards

in accordance with the regulations and amendments

of EU Guidelines.....73/23EEC & 89/336/EEC

Manufacturer's Declaration

Provided that the **industrial door drive, Series D type** is installed and maintained in accordance with all the manufacturer's instructions in conjunction with an industrial door, which is also installed and maintained in accordance with all the manufacturer's instructions, it meets the regulations of **EU Guideline 89/239/EEC** in its amended form.

Chamberlain-GmbH
66793 Saarwellingen
August 2004



This is how to order:

When ordering spare parts or accessories we need
the following information from you:
Part number, description, model number

IN NORTH AMERICA

ADDRESS FOR ORDERS:
The Chamberlain Group Inc.
Electronic Parts and Service Department
2301 N. Forbes Blvd., Suite 104
Tucson, Arizona 85745 USA

TEL. NO. FOR ORDERS:
1-520-792-0511

FAX NO. FOR ORDERS:
1-520-884-0966

TECHNICAL HOTLINE:
1-800-528-2806

IN EUROPE

ADDRESS FOR ORDERS:
Chamberlain-GmbH
Alfred-Nobel-Str. 4
66793 Saarwellingen

TEL. NO. FOR ORDERS:
+(49) 6838-907222

FAX NO. FOR ORDERS:
+(49) 6838-907179

TECHNICAL HOTLINE:
+(49) 6838-907222

ONLINE-SERVICE:
www.garog-service.de