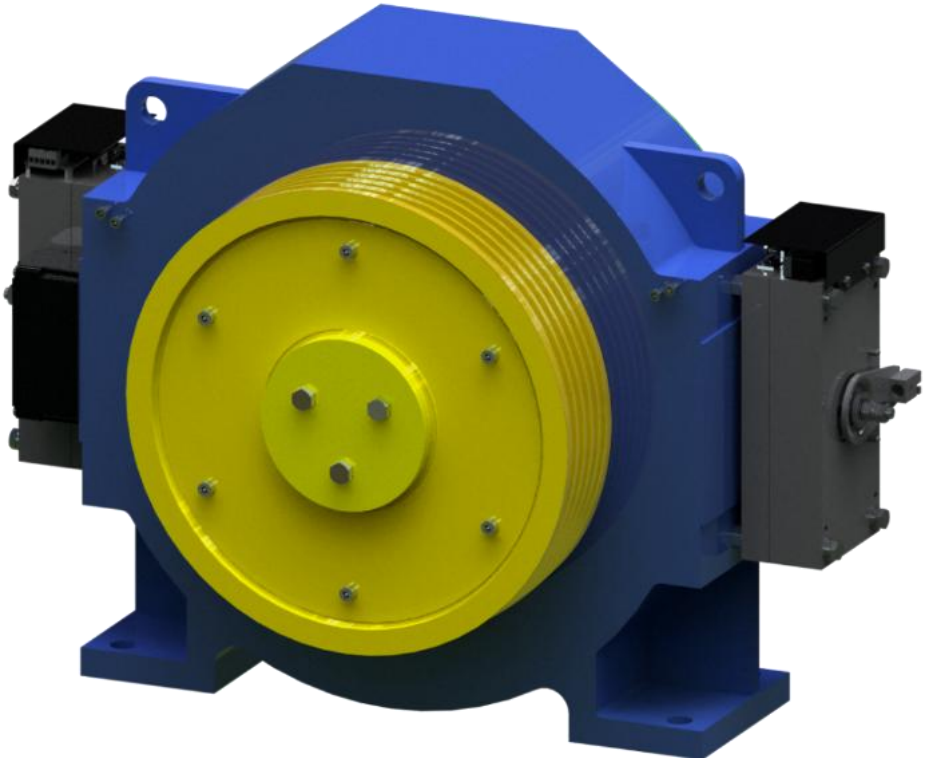
PMS Gearless Traction machines
Lift Machines
MWx.x-xxx-xxx & MWLx.x-xxx-xxx



MARGA Lift Machine
TECHNOLOGY Co., Ltd

MARGA Lift Machine Technology reserves the right to make changes in the information and pictures contained in these operating instructions without prior notice.

These operating instructions are applicable to lift machines:

MWX.X-XXX-XXX & MWLX.X-XXX-XXX

with block brake

MARGA Lift Machines Technology reserves the right to correct or change the contents of this manual and these product details without prior notice.
We expressly reserve the right to make technical changes which improve the lift machines or their safety standards without prior notice.
No liability can be accepted for damage, injuries or expense arising therefrom.
We cannot guarantee the correctness and complete- ness of the details.

MARGA Lift Machines

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GEARLESS SYNCHRONOUS TRACTION MACHINES **Version: English**

(Lift Machines) **Date: 3.27.2020**

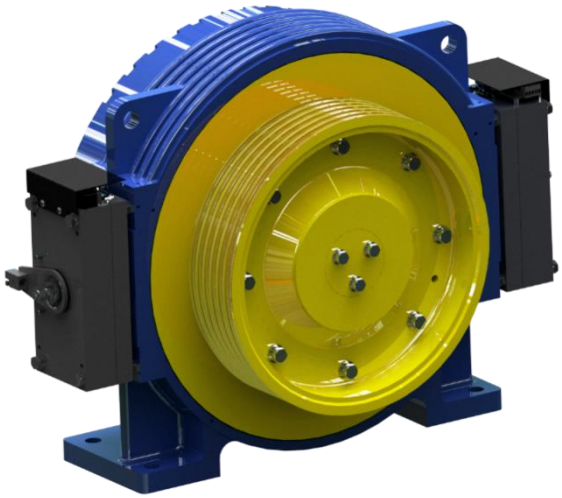
Operating and maintenance manual
Introduction

We sincerely appreciate your choice in our products and are committed to providing you with excellent service. Our permanent magnet synchronous gearless traction machine (also called lifting machine) incorporates advanced design concepts and manufacturing technologies. Our products are characterized by compact structure, small size, light weight, low energy consumption, low noise, and high efficiency according to the following two frames (Bevel Design & Corner Design).

The design and production of our elevator machine is in accordance with the safety standards set out in "GB7588-2003 - Safety code for the construction and installation of elevators", "EN 81-1: 1998 - Safety rules for the construction and installation of elevators" and "GB/ T24478-2009 - Elevator tractor.

Corner Design

Type: MWx.x-xxx-xxx



Bevel Design

Type: MWLx.x-xxx-xxx

Please note that both designs maintain identical quality and material composition.

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GEARLESS SYNCHRONOUS TRACTION MACHINES **Version: English**

(Lift Machines) **Date: 3.27.2020**

Operating and maintenance manual

1. General safety instructions

Explanation of symbols used in these instructions.

means that death or serious injury to persons or serious damage to property will occur unless the appropriate precautions are taken.

Danger

means that death or serious injury to persons or serious damage to property may occur unless the appropriate precautions are taken.

Warning

means that injuries to persons or damage to property may occur unless the appropriate precautions are taken.

Caution

points out important information and operating instructions. If these are not observed, damage, hazards or faults may result.

Not

Intended use.

The MWXX.X-XXX lift machines have been manufactured in compliance with the latest state of the art and recognized safety regulations. They may only be used for the purpose for which they are intended, and with all safety devices in proper working order.

The MWXX.X-XXX may only be used for driving lifts. "Intend- ed use" also requires that the instructions contained in the documentation supplied with the machine and the commissioning instructions be observed, and that the specified inspection and maintenance work be carried out.

Warranty and liability

Our "Conditions of Sale and Delivery" shall apply for all our supplies and services. The warranty is 18 months.
We do not accept any warranty or liability claims for per- Sonal injury or property damage resulting from one or more of the following causes:

- Improper use of the MWXX.X-XXX lift machine.
- Improper installation, commissioning, operation, or maintenance
- Operation of the MWXX.X-XXX with defective and/or inoperative safety or protective devices
- Non-compliance with the instructions contained in the operating instructions or other documentation supplied.
- Unauthorized construction modifications to the MWX.X-X
- Insufficient monitoring of parts subject to wear.
- Repairs carried out improperly.
- Emergencies caused by external forces or force majeure.

Safety precautions

Only qualified personnel are authorized to perform any planning, installation, or maintenance work, and this must be done in accordance with the relevant instructions.

The personnel must be trained for the job and must be familiar with the installation, assembly, commissioning, and operation of the product.

The MWXX.X-XXX lift machines are intended for use in an enclosed, lockable machine room or shaft to which only qualified personnel and personnel authorized by the customer have access.

Danger

- The instructions given in this manual, or any other instructions supplied must always be observed to avoid danger or damage.
- MWXX.X-XXX lift machines are not ready-to-use products; they may only be operated after they have been installed in lift systems and their safe operation has been ensured by taking the appropriate measures.
- Check the proper functioning of the motor and the brake after installing the machine.
- Repairs may only be carried out by the manufacturer or an authorized repair agency. Unauthorized opening and tempering may result in injuries to persons and property.
- The machines are not designed for direct connection to the three-phase system but are to be operated via an electronic frequency converter. Direct connection to the mains may destroy the motor.
- The machines can only be installed by vertical direction.

Warning

- High surface temperatures may occur on the external parts of the machine. Therefore, no temperature-sensitive parts may be in contact with these parts or attached to them. Protection against accidental contact should be provided, if required.
- High voltages are applied at the terminal connections during the operation of synchronous motors.

2. Product description

The gearless MWXX.X-XXX lift machines are designed by outer rotor for gearless traction lifts with or without a machine room. They are intended for operation with a 2:1 suspension and are distinguished by their high efficiency, extremely low noise, and excellent operating characteristics.

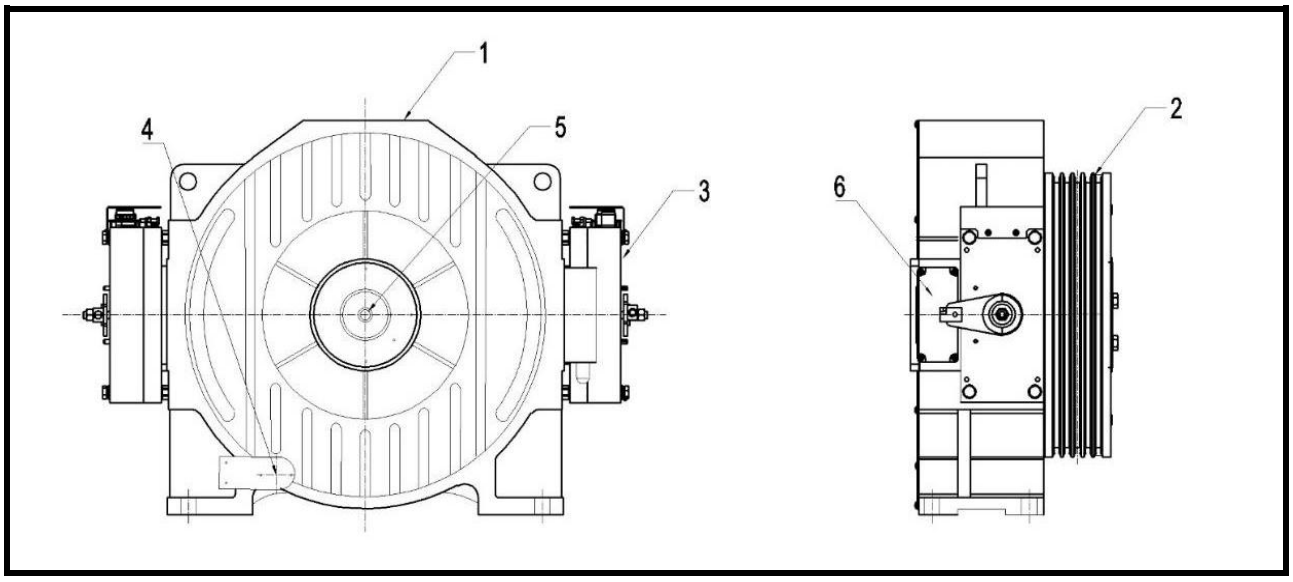
The MWXX.X-XXX gearless synchronous lift machines are designed solely for use with electronic frequency inverters. The synchronous motor has been designed for various rated torques. It can also be supplied for several rated speeds, which can then be further adapted to meet individual customer requirements.

It is composed by housing (1) motor; traction sheave (2) and block break (3). The rope slips off guard is designed to avoid the rope jumping out of the traction sheave.

At its bottom, there is a connection seat (4) which designed for mechanical evacuation.

The encoder system (5) is located within the center of the machine behind the ball bearing. The brakes are powered on by110V DC. The electrical connection of the motor is made in the terminal box (6) where the temperature monitoring device and brake contactor is also connected. The brakes are designed such that in the case of failure of one brake, there mining brakes are able to decelerate a car carrying a full payload. They are also able to be released manually.

MWXX.X-XXX series can be used in computer room or non-computer room.



3. Nameplate

The nameplate of the lift machine is on the motor.

MARGA LIFT MACHINE

Model/Type:	----------	Roping:	-------
Elv. Load:	------- kg	Elv Speed:	------- m/s
Rated Power:	------- kW	Rated Torque:	------- Nm
Rated Voltage:	------- V	Rated Current:	------- A
Rated Speed:	------- r/min	Rated Freq:	------- Hz
Pole:	------- P	Weigt	------- kg
Duty:	S5-40%ED	Starts Per Hour:	------- st/h
Protection	IP41	Insulation:	F
Ser.No:	M----------	Date:	---------

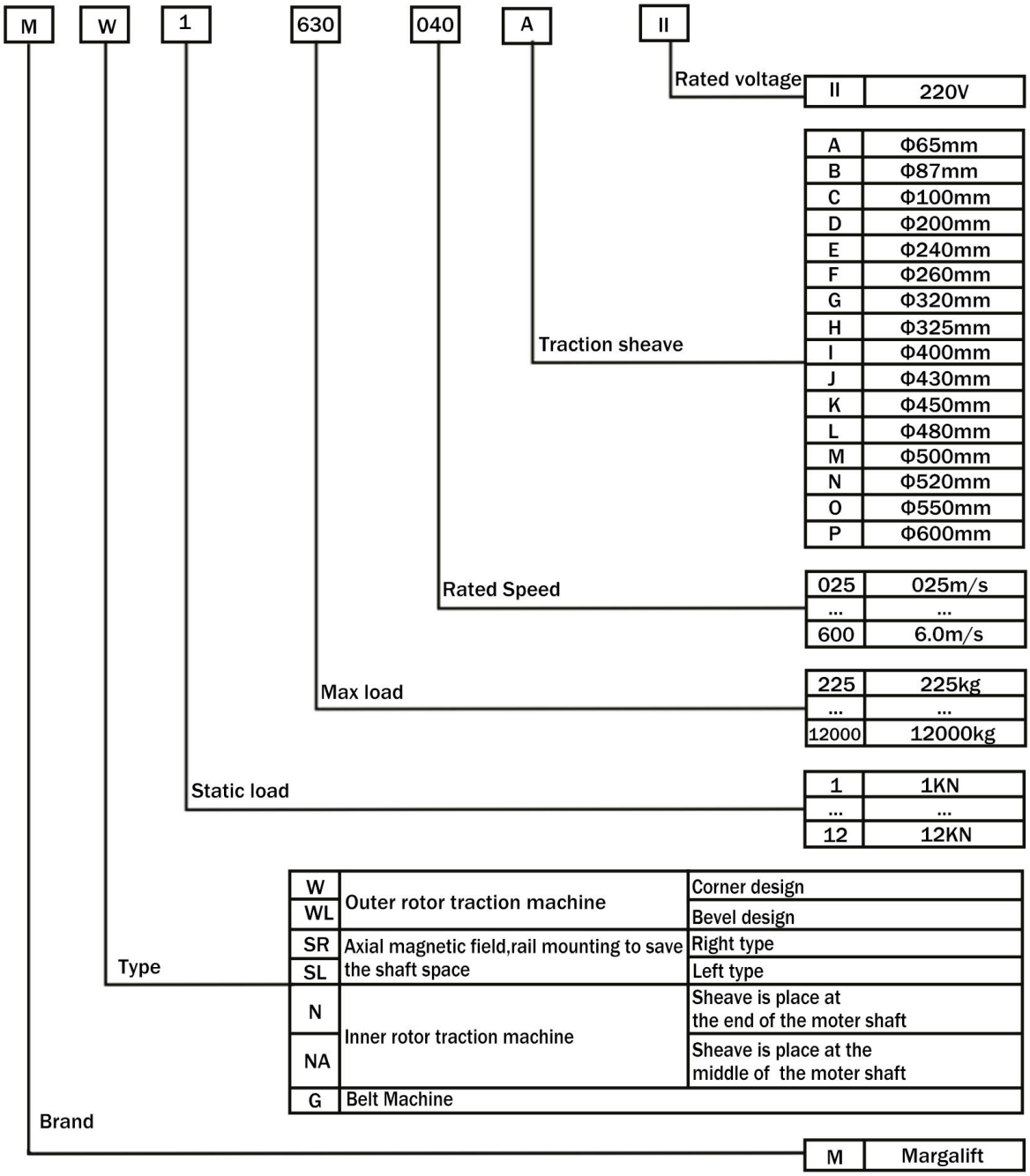
PMS GEARLESS TRACTION MACHINE

The nameplate of the brake is on the brake.

TRACTION MACHINE BRAKE

Model / Type:		Serial NO. :	
Holding Voltage:	110V DC	Brake Torque:	N.M
Pull In Voltage:	80V DC	Car Load:	Kg
Rated Current:	A	Brake Drum Diam:	mm
Duty Cycle:	S5-40% ED	Air Gap:	mm
Insulation Class:	F	Degree of Port:	IP43

4. Type code


M
W
1
630
040
A
II
Rated voltage
II 220V
A Φ65mm
B Φ87mm
C Φ100mm
D Φ200mm
E Φ240mm
F Φ260mm
G Φ320mm
H Φ325mm
I Φ400mm
J Φ430mm
K Φ450mm
L Φ480mm
M Φ500mm
N Φ520mm
O Φ550mm
P Φ600mm
Traction sheave
Rated Speed
025 025m/s
... ...
600 6.0m/s
Max load
225 225kg
... ...
12000 12000kg
Static load
1 1KN
... ...
12 12KN
Type
W Outer rotor traction machine Corner design
WL Bevel design
SR Axial magnetic field,rail mounting to save the shaft space Right type
SL Left type
N Inner rotor traction machine Sheave is place at the end of the moter shaft
NA Sheave is place at the middle of the moter shaft
G Belt Machine
Brand
M Margalift

5. Technical data

Model	MW2.5 & MWL2.5	MW4 & MWL4	MW6 & MWL6	MW10 & MWL10
Voltage	380V	380V	380V	380V
Roping	2:1	2:1	2:1	2:1
Wrap	Single	Single	Single	Single
Rated load	320-630kg	630-1150kg	1250-1600kg	1250-2500kg
Elevator speed	0.5-1.75m/s	0.5-2.5 m/s	0.5-2.5 m/s	0.5-3 m/s
Traction sheave diameter[mm]	240 mm 320 mm	320 mm 400 mm 450 mm	400 mm 480 mm	450 mm 480 mm 550 mm
Duty	S5-40%ED	S5-40%ED	S5-40%ED	S5-40%ED
Starts Per Hour	240st/h	240st/h	240st/h	240st/h
Max. Static Load	2500kg	4000kg	6000kg	10000kg
Weight	260~340kg	300~350kg	510~580kg	760~870kg
Incision angle	β =85°	β =90°	β =90°	β =90°
Brake*	DC110V 2×1.3A	DC110V 2×1.3A	DC110V 2×1.3A	DC110V 2×1.3A
IP Code	IP41	IP41	IP41	IP41
Ins. Class	F	F	F	F

* The voltage and current value of the brake is the combined voltage and current required for driving, and the AC 220V rectifier module for the control cabinet can be selected for the brake.

GEARLESS SYNCHRONOUS TRACTION MACHINES **Version: English**

(Lift Machines) **Date: 3.27.2020**

Operating and maintenance manual

MW2.5 320G

SPEC TABLE	Ratio	Elv load	Elv Speed	Motor							Sheave specification			
Specification				Voltage	Power	current	Freq	Poles	Speed	Torque	Sheave Diam	Groove	β	γ
		Kg	m/s	V	Kw	A	Hz	P	r/min	N.m	mm	type	degree	degree
MW2.5-320-050G	2:1	320	0.5	380	1.1	3	12	24	60	170	320	U	85	25
MW2.5-320-063G			0.63		1.3	3	15		75					
MW2.5-320-100G			1		2.1	5	23.8		119					
MW2.5-320-150G			1.5		3.2	8	35.8		179					
MW2.5-320-160G			1.6		3.4	8	38.2		191					
MW2.5-320-175G			1.75		3.7	8	41.8		209					
MW2.5-400-050G	2:1	400	0.5	380	1.4	4	12	24	60	220	320	U	85	25
MW2.5-400-063G			0.63		1.7	4	15		75					
MW2.5-400-100G			1		2.7	6	23.8		119					
MW2.5-400-150G			1.5		4.1	11	35.8		179					
MW2.5-400-160G			1.6		4.4	11	38.2		191					
MW2.5-400-175G			1.75		4.8	11	41.8		209					
MW2.5-450-050G	2:1	450	0.5	380	1.5	5	12	24	60	240	320	U	85	25
MW2.5-450-063G			0.63		1.9	5	15		75					
MW2.5-450-100G			1		3	7	23.8		119					
MW2.5-450-150G			1.5		4.5	12	35.8		179					
MW2.5-450-160G			1.6		4.8	12	38.2		191					
MW2.5-450-175G			1.75		5.3	12	41.8		209					
MW2.5-630-050G	2:1	630	0.5	380	2.1	7	12	24	60	340	320	U	85	25
MW2.5-630-063G			0.63		2.7	7	15		75					
MW2.5-630-100G			1		4.2	10	23.8		119					
MW2.5-630-150G			1.5		6.4	16	35.8		179					
MW2.5-630-160G			1.6		6.8	16	38.2		191					
MW2.5-630-175G			1.75		7.4	16	41.8		209					

SPEC TABLE	Ratio	Elv load	Elv Speed	motor							Sheave specification			
Specification				Voltage	Power	current	Freq	Poles	Speed	Torque	Sheave Diam	Groove	β	γ
		Kg	m/s	V	Kw	A	Hz	P	r/min	N.m	mm	type	degree	degree
MW4-630-050G	2:1	630	0.5	380	2.1	6	16	32	60	310	320	U	90	30
MW4-630-063G			0.63		2.7	6	20		75					
MW4-630-100G			1		4.2	11	31.7		119					
MW4-630-150G			1.5		6.4	16	47.7		179					
MW4-630-160G			1.6		6.8	16	50.9		191					
MW4-630-175G			1.75		7.4	16	55.7		209					
MW4-630-050I	2:1	630	0.5	380	2.2	6	12.8	32	48	430	400	U	90	30
MW4-630-063I			0.63		2.7	5.6	16		60					
MW4-630-100I			1		4.3	10	25.3		95					
MW4-630-150I			1.5		6.5	13.4	38.1		143					
MW4-630-160I			1.6		7	14.4	40.8		153					
MW4-630-175I			1.75		7.5	16	44.5		167					
MW4-630-200I			2		8.6	18	50.9		191					
MW4-630-250I			2.5		10.9	22.4	63.7		239					
MW4-800-050I	2:1	800	0.5	380	2.7	8	12.8	32	48	540	400	U	90	30
MW4-800-063I			0.63		3.4	7	16		60					
MW4-800-100I			1		5.4	12	25.3		95					
MW4-800-150I			1.5		8	16.4	38.1		143					
MW4-800-160I			1.6		8.6	17.7	40.8		153					
MW4-800-175I			1.75		9.4	20	44.5		167					
MW4-800-200I			2		10.8	23	50.9		191					
MW4-800-250I			2.5		13.5	28	63.7		239					
MW4-825-050I	2:1	825	0.5	380	2.7	8	12.8	32	48	540	400	U	90	30
MW4-825-063I			0.63		3.4	7	16		60					
MW4-825-100I			1		5.4	12	25.3		95					
MW4-825-150I			1.5		8	16.4	38.1		143					
MW4-825-160I			1.6		8.6	17.7	40.8		153					
MW4-825-175I			1.75		9.4	20	44.5		167					
MW4-825-200I			2		10.8	23	50.9		191					
MW4-825-250I			2.5		13.5	28	63.7		239					

MW4-1000-050I	2:1	1000	0.5	380	3.4	10	12.8	32	48	670	400	U	90	30
MW4-1000-063I			0.63		4.3	8.8	16		60					
MW4-1000-100I			1		6.7	15	25.3		95					
MW4-1000-150I			1.5		10.3	21.2	38.1		143					
MW4-1000-160I			1.6		10.9	22.4	40.8		153					
MW4-1000-175I			1.75		11.7	26	44.5		167					
MW4-1000-200I			2		13.4	28	50.9		191					
MW4-1000-250I			2.5		16.8	34	63.7		239					
MW4-1050-050I	2:1	1050	0.5	380	3.4	10	12.8	32	48	670	400	U	90	30
MW4-1050-063I			0.63		4.3	8.8	16		60					
MW4-1050-100I			1		6.7	15	25.3		95					
MW4-1050-150I			1.5		10.3	21.2	38.1		143					
MW4-1050-160I			1.6		10.9	22.4	40.8		153					
MW4-1050-175I			1.75		11.7	26	44.5		167					
MW4-1050-200I			2		13.4	28	50.9		191					
MW4-1050-250I			2.5		16.8	34	63.7		239					
MW4-1150-050I	2:1	1150	0.5	380	3.9	12	12.8	32	48	780	400	U	90	30
MW4-1150-063I			0.63		5	10.3	16		60					
MW4-1150-100I			1		7.8	17	25.3		95					
MW4-1150-150I			1.5		11.8	24.3	38.1		143					
MW4-1150-160I			1.6		12.6	25.9	40.8		153					
MW4-1150-175I			1.75		13.6	30	44.5		167					
MW4-1150-200I			2		15.6	33	50.9		191					
MW4-1150-250I			2.5		19.5	46	63.7		239					
MW4-630-050K	2:1	630	0.5	380	2.2	6	11.2	32	42	490	450	U	90	30
MW4-630-063K			0.63		2.7	5.6	14.1		53					
MW4-630-100K			1		4.3	10	22.7		85					
MW4-630-150K			1.5		6.5	13.4	33.9		127					
MW4-630-160K			1.6		7	14.4	36.3		136					
MW4-630-175K			1.75		7.5	16	39.7		149					
MW4-630-200K			2		8.6	18	45.3		170					
MW4-630-250K			2.5		10.9	22.4	56.5		212					
MW4-800-050K	2:1	800	0.5	380	2.7	8	11.2	32	42	600	450	U	90	30
MW4-800-063K			0.63		3.4	7	14.1		53					
MW4-800-100K			1		5.4	12	22.7		85					
MW4-800-150K			1.5		8	16.4	33.9		127					
MW4-800-160K			1.6		8.6	17.7	36.3		136					
MW4-800-175K			1.75		9.4	20	39.7		149					

MW4-800-200K			2		10.8	23	45.3		170					
MW4-800-250K			2.5		13.5	28	56.5		212					
MW4-825-050K	2:1	825	0.5	380	2.7	8	11.2	32	42	600	450	U	90	30
MW4-825-063K			0.63		3.4	7	14.1		53					
MW4-825-100K			1		5.4	12	22.7		85					
MW4-825-150K			1.5		8	16.4	33.9		127					
MW4-825-160K			1.6		8.6	17.7	36.3		136					
MW4-825-175K			1.75		9.4	20	39.7		149					
MW4-825-200K			2		10.8	23	45.3		170					
MW4-825-250K			2.5		13.5	28	56.5		212					
MW4-1000-050K	2:1	1000	0.5	380	3.4	10	11.2	32	42	750	450	U	90	30
MW4-1000-063K			0.63		4.3	8.8	14.1		53					
MW4-1000-100K			1		6.7	15	22.7		85					
MW4-1000-150K			1.5		10.3	21.2	33.9		127					
MW4-1000-160K			1.6		10.9	22.4	36.3		136					
MW4-1000-175K			1.75		11.7	26	39.7		149					
MW4-1000-200K			2		13.4	28	45.3		170					
MW4-1000-250K			2.5		16.8	34	56.5		212					
MW4-1050-050K	2:1	1050	0.5	380	3.4	10	11.2	32	42	750	450	U	90	30
MW4-1050-063K			0.63		4.3	8.8	14.1		53					
MW4-1050-100K			1		6.7	15	22.7		85					
MW4-1050-150K			1.5		10.3	21.2	33.9		127					
MW4-1050-160K			1.6		10.9	22.4	36.3		136					
MW4-1050-175K			1.75		11.7	26	39.7		149					
MW4-1050-200K			2		13.4	28	45.3		170					
MW4-1050-250K			2.5		16.8	34	56.5		212					
MW4-1150-050K	2:1	1150	0.5	380	3.9	12	11.2	32	42	890	450	U	90	30
MW4-1150-063K			0.63		5	10.3	14.1		53					
MW4-1150-100K			1		7.8	17	22.7		85					
MW4-1150-150K			1.5		11.8	24.3	33.9		127					
MW4-1150-160K			1.6		12.6	25.9	36.3		136					
MW4-1150-175K			1.75		13.6	30	39.7		149					
MW4-1150-200K			2		15.6	33	45.3		170					
MW4-1150-250K			2.5		19.5	46	56.5		212					

GEARLESS SYNCHRONOUS TRACTION MACHINES **Version: English**

(Lift Machines) **Date: 3.27.2020**

Operating and maintenance manual

MW6 400I-480L

SPEC TABLE	Ratio	Elv load	Elv Speed	motor							Sheave specification			
Specification				Voltage	Power	current	Freq	Poles	Speed	Torque	Sheave Diam	Groove	β	γ
		Kg	m/s	V	Kw	A	Hz	P	r/min	N.m	mm	type	degree	degree
MW6-1250-050I	2:1	1250	0.5	380	4.3	13	12.8	32	48	850	400	U	90	30
MW6-1250-063I			0.63		5.4	15	16		60					
MW6-1250-100I			1		8.5	20	25.3		95					
MW6-1250-150I			1.5		13	28.4	38.1		143					
MW6-1250-160I			1.6		13.8	30.2	40.8		153					
MW6-1250-175I			1.75		14.9	34	44.5		167					
MW6-1250-200I			2		17	38	50.9		191					
MW6-1250-250I			2.5		21.6	50	63.7		239					
MW6-1250-050L	2:1	1250	0.5	380	4.3	10	10.7	32	40	1020	400	U	90	30
MW6-1250-063L			0.63		5.4	13	13.3		50					
MW6-1250-100L			1		8.7	20	21.3		80					
MW6-1250-150L			1.5		13	28.4	31.7		119					
MW6-1250-160L			1.6		13.8	30.2	33.9		127					
MW6-1250-175L			1.75		15.1	35	37.1		139					
MW6-1250-200L			2		17.3	40	42.4		159					
MW6-1250-250L			2.5		21.3	45	53.1		199					
MW6-1350-050I	2:1	1350	0.5	380	4.6	14	12.8	32	48	920	400	U	90	30
MW6-1350-063I			0.63		5.9	12.9	16		60					
MW6-1350-100I			1		9.2	21	25.3		95					
MW6-1350-150I			1.5		14	30.6	38.1		143					
MW6-1350-160I			1.6		14.9	32,7	40.8		153					
MW6-1350-175I			1.75		16.1	36	44.5		167					
MW6-1350-200I			2		18.4	40	50.9		191					
MW6-1350-250I			2.5		23.4	54	63.7		239					
MW6-1350-050I	2:1	1350	0.5	380	4.7	11	10.7	32	40	1100	480	U	90	30
MW6-1350-063I			0.63		5.9	12.9	13.3		50					
MW6-1350-100I			1		9.3	22	21.3		80					
MW6-1350-150I			1.5		14	30.6	31.7		119					
MW6-1350-160I			1.6		14.9	32.7	33.9		127					

MW6-1350-175I			1.75		16.3	38	37.1		139				
MW6-1350-200I			2		18.7	43	42.4		159				
MW6-1350-250I			2.5		23.4	54	53.1		199				
MW6-1350-050L			0.5		5.6	18	12.8		48				
MW6-1350-063L			0.63		7	15.2	16		60				
MW6-1350-100L			1		11	26	25.3		95				
MW6-1350-150L	2:1	1600	1.5	380	16.6	36.2	38.1	32	143	1100	400	U	90	30
MW6-1350-160L			1.6		17.7	38.6	40.8		153				
MW6-1350-175L			1.75		19.4	41	44.5		167				
MW6-1350-200L			2		22.2	47	50.9		191				
MW6-1350-250L			2.5		27.8	64	63.7		239				
MW6-1600-050I			0.5		5.5	13	10.7		40				
MW6-1600-063I			0.63		7	15.2	13.3		50				
MW6-1600-100I			1		11.1	26	21.3		80				
MW6-1600-150I			1.5		16.6	36.2	31.7		119				
MW6-1600-160I	2:1	1600	1.6	380	17.7	38.6	33.9	32	127	1330	480	U	90	30
MW6-1600-175I			1.75		19.4	45	37.1		139				
MW6-1600-200I			2		22.1	51	42.4		159				
MW6-1600-250I			2.5		27.7	64	53.1		199				

GEARLESS SYNCHRONOUS TRACTION MACHINES **Version: English**

(Lift Machines) **Date: 3.27.2020**

Operating and maintenance manual

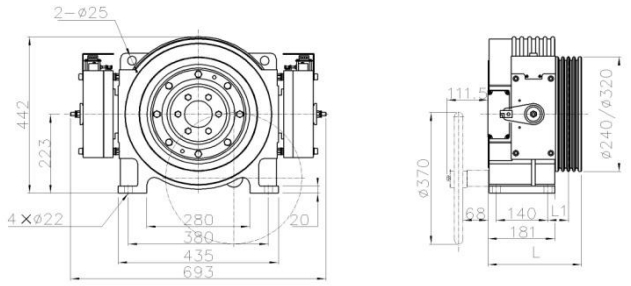
MW10 450K-550O

SPEC TABLE	Ratio	Elv load	Elv Speed	motor							Sheave specification			
Specification				Voltage	Power	current	Freq	Poles	Speed	Torque	Sheave Diam	Groove	β	γ
		Kg	m/s	V	Kw	A	Hz	P	r/min	N.m	mm	type	degree	degree
MW10-1250-100K	2:1	1250	1	380	8.2	18	22.7	32	85	919	450	U	90	30
MW10-1250-150K			1.5		12.3	27.3	33.9		127					
MW10-1250-175K			1.75		14.3	31.5	39.7		149					
MW10-1250-200K			2		16.3	35	45.3		170					
MW10-1250-250K			2.5		20.4	44	56.5		212					
MW10-1250-100O	2:1	1250	1	380	8.2	18.6	18.4	32	69	1123	550	U	90	30
MW10-1250-175O			1.75		14.3	30.5	32.5		122					
MW10-1250-200O			2.0		16.3	39.8	37.1		139					
MW10-1250-250O			2.5		20.4	42.5	46.4		174					
MW10-1350-100K	2:1	1350	1	380	8.8	19.5	22.7	32	85	992	450	U	90	30
MW10-1350-150K			1.5		13.2	29.5	33.9		127					
MW10-1350-175K			1.75		15.4	34	39.7		149					
MW10-1350-200K			2		17.6	38	45.3		170					
MW10-1350-250K			2.5		22.1	47.5	56.5		212					
MW10-1350-100O	2:1	1350	1	380	8.8	20.4	18.4	32	69	1213	550	U	90	30
MW10-1350-175O			1.75		15.4	33	32.5		122					
MW10-1350-200O			2.0		17.6	39.8	37.1		139					
MW10-1350-250O			2.5		22.1	46.2	46.4		174					
MW10-1600-100K	2:1	1600	1	380	10.5	23	22.7	32	85	1176	450	U	90	30
MW10-1600-150K			1.5		15.7	34.5	33.9		127					
MW10-1600-175K			1.75		18.3	39	39.7		149					
MW10-1600-200K			2		20.9	44	45.3		170					
MW10-1600-250K			2.5		26.1	55	56.5		212					
MW10-1600-100O	2:1	1600	1	380	10.5	23.1	18.4	32	69	1437	550	U	90	30
MW10-1600-150O			1.5		15.7	34.4	27.7		104					
MW10-1600-175O			1.75		18.3	39.6	32.5		122					
MW10-1600-200O			2		20.9	46	37.1		139					
MW10-1600-250O			2.5		26.1	55.9	46.4		174					
MW10-2000-050K	2:1	2000	0.5	380	6.7	16	42	32	11.2	1503	450	U	90	30
MW10-2000-063K			0.63		8.4	19	53		14.1					

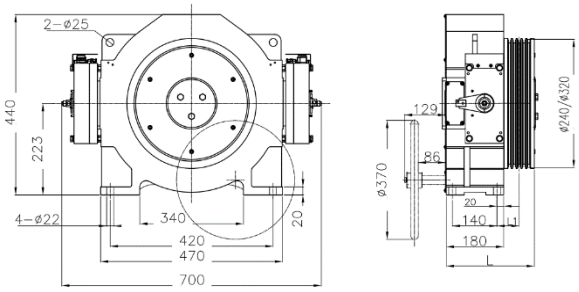
MW10-2000-100K			1		13.4	30	85		22.7				
MW10-2000-150K			1.5		20.1	43	127		33.9				
MW10-2000-160K			1.6		21.4	46	136		36.3				
MW10-2000-175K			1.75		23.4	50	149		39.7				
MW10-2000-200K			2		26.7	57	170		45.3				
MW10-2000-250K			2.5		33.4	71	212		56.5				
MW10-2000-300K			3		40.1	84	255		68				
MW10-2000-050L			0.5		6.7	16	40		10.7				
MW10-2000-063L			0.63		8.4	19	50		13.3				
MW10-2000-100L			1		13.4	30	80		21.3				
MW10-2000-150L			1.5		20.1	43	119		31.7				
MW10-2000-160L	2:1	2000	1.6	380	21.4	46	127	32	33.9	1604	480	U	90	30
MW10-2000-175L			1.75		23.4	50	139		37.1				
MW10-2000-200L			2		26.7	57	159		42.4				
MW10-2000-250L			2.5		33.4	71	100		53.1				
MW10-2000-300L			3		40.1	84	239		63.7				
MW10-2500-050K			0.5		8.4	19	42		11.2				
MW10-2500-063K			0.63		10.5	24	53		14.1				
MW10-2500-100K			1		16.7	36	85		22.7				
MW10-2500-150K			1.5		25.1	54	127		33.9				
MW10-2500-160K	2:1	2500	1.6	380	26.7	57	136	32	36.3	1879	450	U	90	30
MW10-2500-175K			1.75		29.2	62	149		39.7				
MW10-2500-200K			2		33.4	71	170		45.3				
MW10-2500-250K			2.5		41.8	88	212		56.5				
MW10-2500-300K			3		50.1	103	255		68				
MW10-2500-050L			0.5		8.4	19	40		10.7				
MW10-2500-063L			0.63		10.5	24	50		13.3				
MW10-2500-100L			1		16.7	36	80		21.3				
MW10-2500-150L			1.5		25.1	54	119		31.7				
MW10-2500-160L	2:1	2500	1.6	380	26.7	57	127	32	33.9	2005	480	U	90	30
MW10-2500-175L			1.75		29.2	62	139		37.1				
MW10-2500-200L			2		33.4	71	159		42.4				
MW10-2500-250L			2.5		41.8	88	100		53.1				
MW10-2500-300L			3		50.1	103	239		63.7				

6. Dimension drawing

MW2.5-XXX-XXX

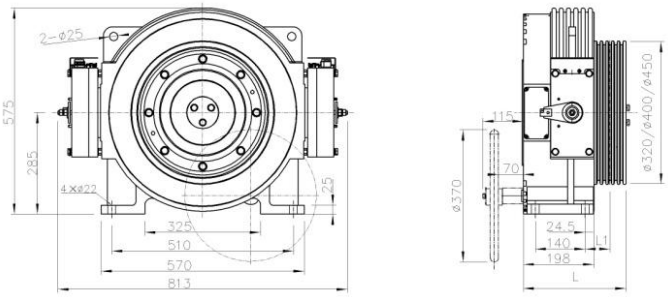


MWL2.5-XXX-XXX

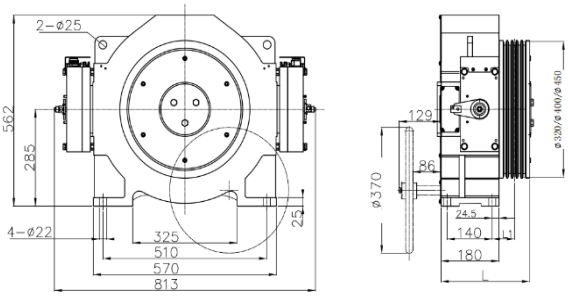


Position	MW2.5-XXX-XXX				MWL2.5-XXX-XXX			
	Grooves				Grooves			
	4		5		4		5	
Traction sheave Ø(mm)	E (240)	G (320)	E (240)	G (320)	E (240)	G (320)	E (240)	G (320)
L	246	246	246	246	245	245	245	245
L1	53	58	53	58	52	57	52	57

MW4-XXX-XXX

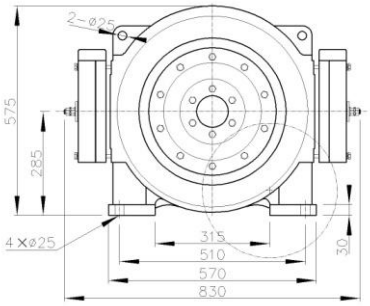


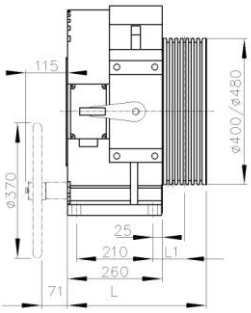
MWL4-XXX-XXX



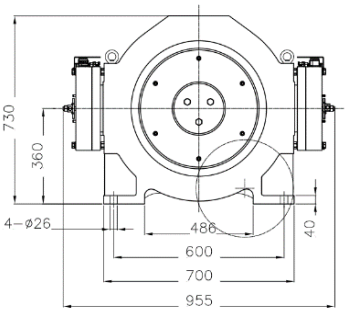
Position	MW4-XXX-XXX					MWL4-XXX-XXX				
	Grooves					Grooves				
	5			6		5			6	
Traction sheave Ø(mm)	G (320)	I (400)	K (450)	I (400)	K (450)	G (320)	I (400)	K (450)	I (400)	K (450)
L	281	288	288	288	288	263	270	270	270	270
L1	75	69.5	69.5	69.5	69.5	75	69.5	69.5	69.5	69.5

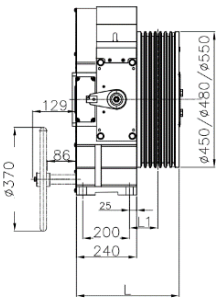
MW6-XXX-XXX





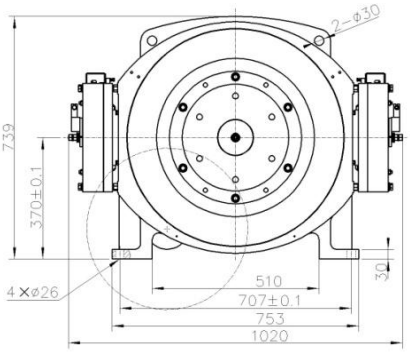
MWL6-XXX-XXX

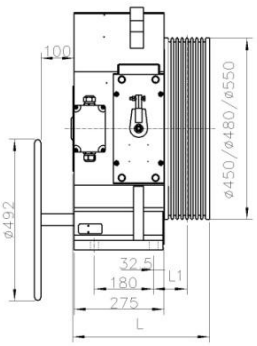




Position	MW6-XXX-XX						MWL6-XXX-XX					
	Grooves						Grooves					
	6		7		8		6		7		8	
Traction sheave Ø(mm)	I (400)	L (480)	I (400)	L (480)	I (400)	L (480)	I (400)	L (480)	I (400)	I (400)	L (480)	I (400)
L	381	381	381	381	381	381	381	381	381	381	381	381
L1	86	86	86	86	86	86	86	86	86	86	86	86

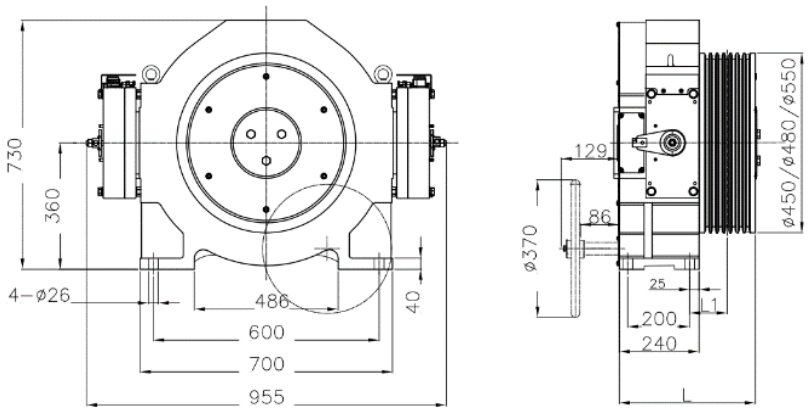
MW10-XXX-XXX





Position	MWL10-XXX-XX								
	Grooves								
	6			7			8		
Traction sheave Ø(mm)	K (450)	L (480)	O (550)	K (450)	L (480)	O (550)	K (450)	L (480)	O (550)
L	416.5	416.5	416.5	445	445	445	445	445	445
L1	102.5	10.25	102.5	108	108	108	108	108	108

MWL10-XXX-XXX



Position	MWL10-XXX-XX								
	Grooves								
	6			7			8		
Traction sheave Ø(mm)	K (450)	L (480)	O (550)	K (450)	L (480)	O (550)	K (450)	L (480)	O (550)
L	381.5	381.5	381.5	410	410	410	410	410	410
L1	95	95	95	115.5	115.5	115.5	115.5	115.5	115.5

7. Scope of supply

- Lift machine MWXX.X-XXX according to order specification
- Operating instructions
- Delivery note
- Manual release lever (for machine room solution)

Options:

- Mechanical evacuation
- Brake remote release system (for MRL solution)
- Encoder cables

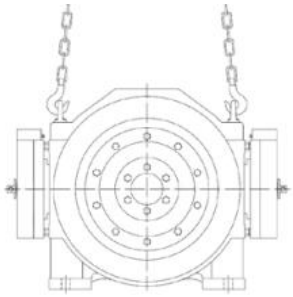
8. Transport and storage

The MWXX.X-XXX lift machines leave the factory in perfect condition after being tested.
Make a visual check for any external damage immediately upon their arrival on site. If any damage incurred in transit is found, make a notice of claim in the presence of the carrier. If necessary, do not put these machines into operation.

Transport

Warning

Observe the relevant safety regulations and take the center of gravity into account when handling the lift machines.



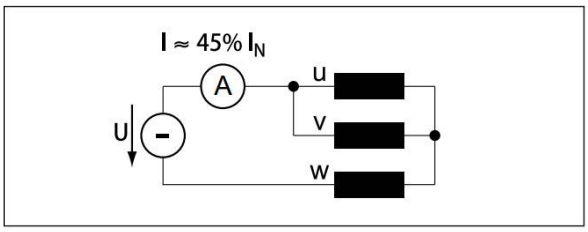
•When hoisting the tractor, please use the lifting rings or lifting holes on the tractor body.
•When lifting, be sure to lift vertically, and the included angle between the two hooks must be less than 90.

Storage

Store the motors only in closed, dry, dust-free, well-ventilated, and vibration-free rooms (storage temperature: -20°C to 60°C). Do not store lift machines in the open air. Parts are not sufficiently preserved to withstand extended periods of exposure.
Avoid excessive storage periods (recommendation: max. one year).
After prolonged storage (>3 months), rotate the motor in both directions at a low speed (< 20 min 1) to allow the grease to distribute evenly in the bearings.
Measure the insulation resistance before initial operation of the machine. If the value has dropped below < 1 kΩ per volt of rated voltage, the winding needs to be dried (insulation meter voltage: 1,000 V DC).

This can be done, for instance, with heated air, in a drying oven, or by applying a d.c. voltage to the motor connections.
Make sure that the voltage selected does not exceed the values shown in the figure "Drying the winding".
Let the temperature rise to about 70 – 80°C and maintain it for several hours.

Drying the winding



Unpacking

Dispose of the packaging material in an environmentally friendly manner or reuse it.
Any special transport aids or shipping braces are left with the customer.

9. Installation

Be sure to check the base frame or foundation loads by calculation before installing the lift machine.

Danger

The lift machine may only be installed if the relevant safety precautions have been met. The machines can be used in lift systems with or without a machine room but only installed in vertical load case.

The machines may only be installed, electrically connected, and put into operation by trained specialist personnel.

The system-specie conditions and the requirements of the system manufacturer or plant constructor must be met.

Cover the machine and especially the brakes when doing any machining or dust- producing work in the shaft or machine room.

Warning

The measuring system is only accessible from the rear side.

Therefore, leave enough space (min.800mm) between the wall and the rear side of the machine or ensure that the machine can be moved away from the wall.

Note

Degree of protection

MWXX.X-XXX Lift machines are designed with a degree of protection IP 40. Make sure that the cable entries to the terminal boxes are sealed properly when making the electrical installation.

Ambient conditions

The following ambient conditions must be ensured on site:

- The permitted installation height must be based on the technical specifications listed on the device's plate and not exceed the permitted limit.
- Ambient temperature: 0 ... 40°C
- Max. rel. humidity: 90 % at 25°C (no moisture condensation)
- The diameter of the traction wire rope is ⩽ one fortieth of the diameter of the traction wheel, and the surface shall not be coated with lubricant and other sundries.
- The tractor must be powered by the control cabinet and controlled in a closed loop, and its rated parameters are subject to the nameplate of the tractor.
- The fluctuation of supply voltage of control cabinet and the deviation of rated value shall not exceed 7%.

Install the machine so that ventilation is not obstructed, i.e. sufficient heat dissipation by convection and radiation must be ensured.

Fastening the machine

Not

The machine or base frame should be mounted on rubber pads for vibration damping.
The machine is fastened using 4x M24 bolts (strength class8. 8 ;).

The permissible unevenness of the mounting surface is 0.1 mm. The mounting surface must be sufficiently distortion-resistant and stable to accommodate the forces occurring in the system.

Danger

After completing the adjusting work, tighten the 4 fastening bolts of the machine, using the specie ed torque.

Warning

No welding work may be performed on the lift machine; this could destroy the bearings and the magnets.

Lift machines are generally equipped with rope slip-off guards. After putting the ropes in place, adjust them so that the distance between the rope and the rope slip-off guard does not exceed 1 mm.

10. Electrical connection

10.1 General

Danger

The electrical connection may only be made by a qualified electrician. Before starting any work on the machines, ensure that the lift machine or system is properly insulated.

Before making any connections check that

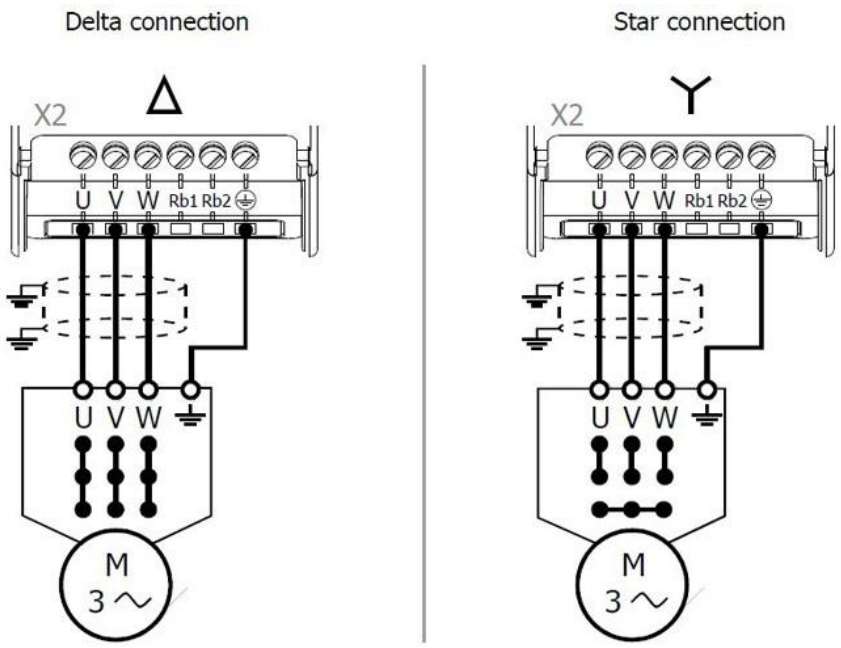
- the connecting cables are suitable for their specific application and for the relevant voltages and currents.
- the sufficiently dimensioned connecting cables and torsion, strain, and shear relief as well as anti-kink protection are provided.
- Proper earthing there are no foreign bodies, dirt, or moisture in the terminal boxes.
- cable entries not in use and the terminal box itself are tightly sealed to prevent the ingress of dust or water.

Not

The insulation system of the motors is designed such that they can be connected to a converter with a maximum d.c. link.

10.2 Motor connection / Winding protection

The internal wiring of the junction box includes three-phase power lines (U, V, W), grounding line and thermistor wiring. The power line is connected to the terminal block, the grounding line is connected to the grounding terminal, and the thermistor is connected by wire pressing cap.



Caution

Terminal box for motor connection
The motor cable must be shielded.
The motor phases U1, V1 and W1 must be connected correctly to the corresponding voltage Unlink max up to max. 620 Volt.

Note: Unlink max is the maximum value of the d.c. link voltage which is only transient and approximately equivalent to the inception voltage of the braking chopper or of the energy recovery unit.

The WAGO terminal strips are suitable for the following types of copper conductors:

	single-core conductor		fine-stranded compacted conductor
	stranded conductor		fine-stranded with ferrule conductor 1)
	fine-stranded conductor		fine-stranded with terminal pin conductor

Cable cross-section required.

Not

The currents specified under the machine data for the series MWXX.X-XXX refer to duty type S5- 40%.
This must be taken into account when selecting the cable cross section required.
The continuous Ir.m.s. value required for the selected cable is approxi- mated from:

$$I_{r.m.s.\ (cable)} = I_{N\ (motor,\ S3\text{-}40\%)} / 1.58$$

The following table gives the recommended values for the current carrying capacity of PVC cables at a maxi- mum ambient temperature of 40 °C:

Cable cross-section	Permissible max. current (r.m.s. value)	Permissible max. motor current IN (S5- 40%)
1.0 mm²	13.1 A	20.7 A
1.5 mm²	15.7 A	24.8 A
2.5 mm²	22.6 A	35.7 A
4.0 mm²	29.6 A	46.7 A
6.0 mm²	38.3 A	60.5 A

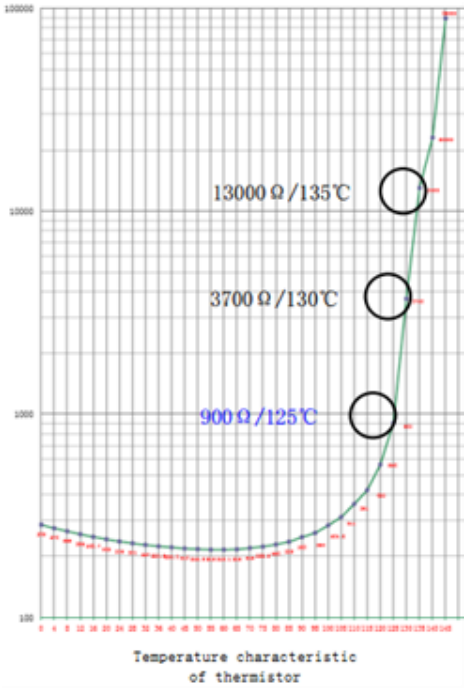
1) When using the nominal cross-sections with ferrules, the usable cable cross-section is reduced!

PTC-thermistor

Not

To protect the lift machine from overheating and burning, please connect the thermistor into the thermal protection circuit.

The temperature curve of PTC thermistor is shown in the right figure, and the resistance value is above 3700Ω at 130 degrees.
The operating voltage of the PTC thermistors is not allowed to exceed 25 V DC



Temperature characteristic of thermistor

Earthing

Warnin

For safety reasons, it is very important that the motor be properly and carefully earthed. It is essential to use the earthing terminal in the terminal box.

Short-circuiting

Not

The motor terminals of the synchronous lift machines, type MWXX.X-XXX, can be short circuited, if required, to break the lift machine faster.

This is, however, only permissible at speeds less than the rated speed of the respective motor.

10.3 Speed/Position measuring system

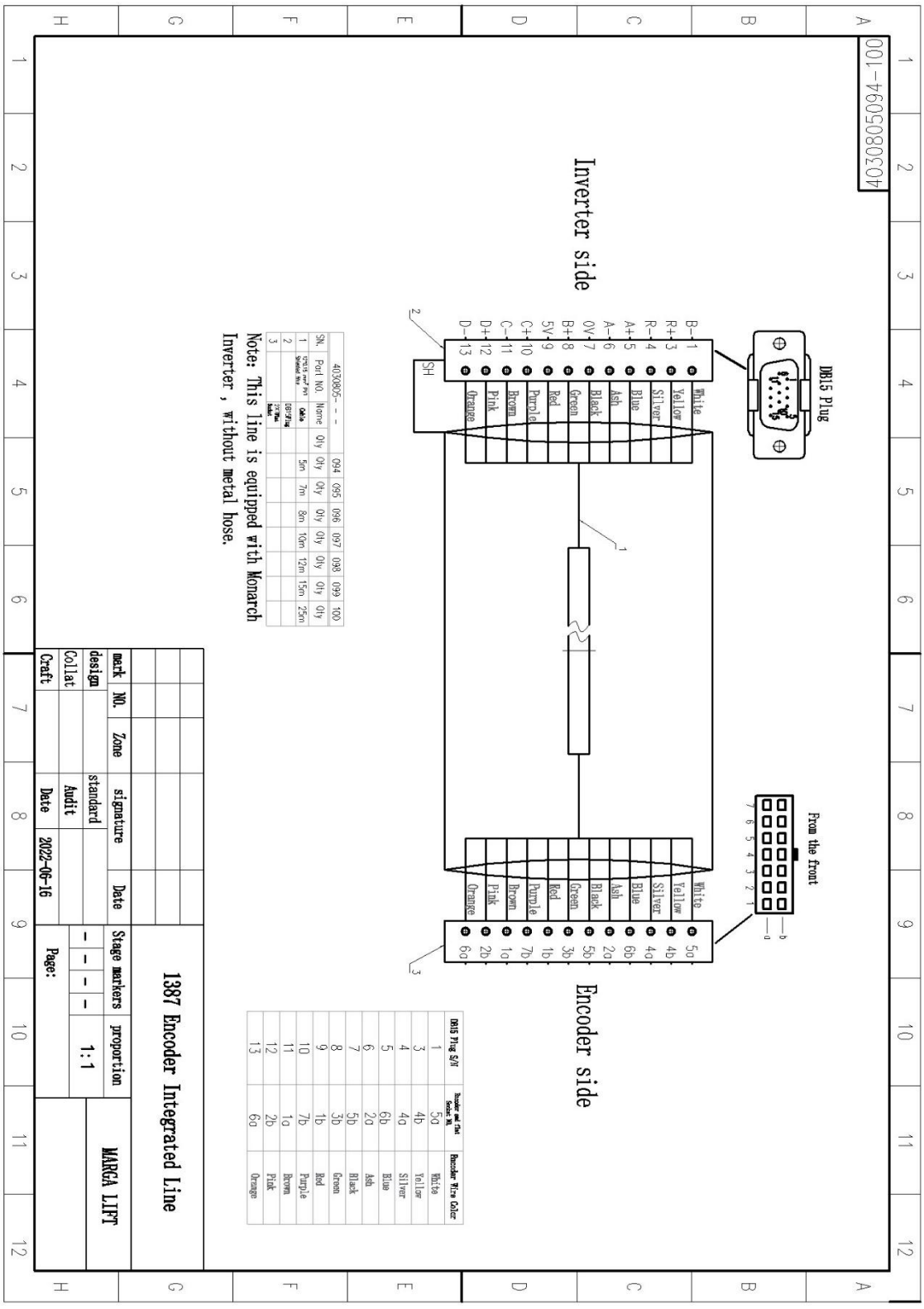
Lift machines of MWXX.X-XXX are equipped with ECN 1313 EnDat or ERN1387 encoder from Heidenhain GmbH.
ECN1313 EnDat is connected via a 12-pole signal coupling fitted to the motor.
ECN1387 EnDat is connected via a 14-pole signal coupling fitted to the motor.
We can also provide other measuring systems on request.
We recommend the use of an appropriate cable set to connect the measuring system to the converter system.
Cable sets can be supplied as accessories.

Not

Warning

The measuring system of the MWXX.X-XXX lift machines is matched to the associated converter. Do not change the adjustment as this may make it impossible to use the motor.

Position measuring system	Absolute ECN 1313	Incremental ERN 1387
Part number	768295-xx	749146-xx
Interface		~1 Vpp
Position values/revolution	8192 (13 bits)	Z1 track3
Electrically permissible speed/error	≤1500 rpm/±1 LSB & ≤12000 rpm/±50 LSB	-
Calculation time tcal Clock frequency	≤9 us /≤2 MHz	-
Incremental signals	~1 Vpp	~1Vpp
Line count/system accuracy	2048/±20"	
Cutoff frequency-3 dB	≥400 kHz	≥210 kHz
Electrical connection Via PCB connector	12-pin	14-pin
Voltage supply	DC 3.6V to 14V	DC 5V ±0.25V
Power consumption (maximum)	3.6V: s600 mW & 14V: s 700 mW	-
Current consumption	5V: 85 mA (typical, without load)	≤130 mA (without load)
Stator coupling	Plane-surface coupling	
Shaft	Taper shaft Ø 9.25 mm; taper 1:1	
Mech. permiss. speed n	≤2000 rpm	
Starting torque	≤0.01 Nm (at 20 °C)	
Moment of inertia of rotor	2.6 - 10-6kgm2	
Permissible axial motion of measured shaft	±1.5 mm	
Vibration 55 Hz to 2000 Ha Shock 6 ms	≤300 m/s26 (EN 60068-2-6) / ≤2000 m/s 2(EN 60068-2-27)	
Operating temperature	-40 ℃ to +115 ℃	-40°C to +120℃
Protection EN 60529	IP40 when mounted	
Mass	≈ 0.25 kg	


4030805094-100
Inverter side
DB15 Plug
B- 1
R+ 3
R- 4
A+ 5
A- 6
0V 7
B+ 8
5V 9
C+ 10
C- 11
D+ 12
D- 13
SH
White
Yellow
Silver
Blue
Ash
Black
Green
Red
Purple
Brown
Pink
Orange
Encoder side
From the front
5a 4b 6b 2a 7b 1b 3b 5b 2a 1a 7b 2b 6a
Note: This line is equipped with Monarch Inverter , without metal hose.
SN. Port NO. Name Qty
1 Shielded Wire 5m
2 7m
3 8m
10m
12m
15m
25m
4030805- - -
094 095 096 097 098 099 100
DB15 Plug S/N
Encoder Wire Color
1387 Encoder Integrated Line
MARGA LIFT
proportion 1:1
Stage markers
Date
signature
Zone
NO.
mark
design
standard
Collat
Craft
Audit
Date 2022-06-16
Page:

10.4 Brake

The brakes are supplied and held with 110V DC . 75-80V DC for holding voltage is preferred for best performances in temperature rise. The connecting contacts for the micro-switches which monitor the brakes are also accommodated in this terminal box.
The rectifier has to be prepared by the customer.

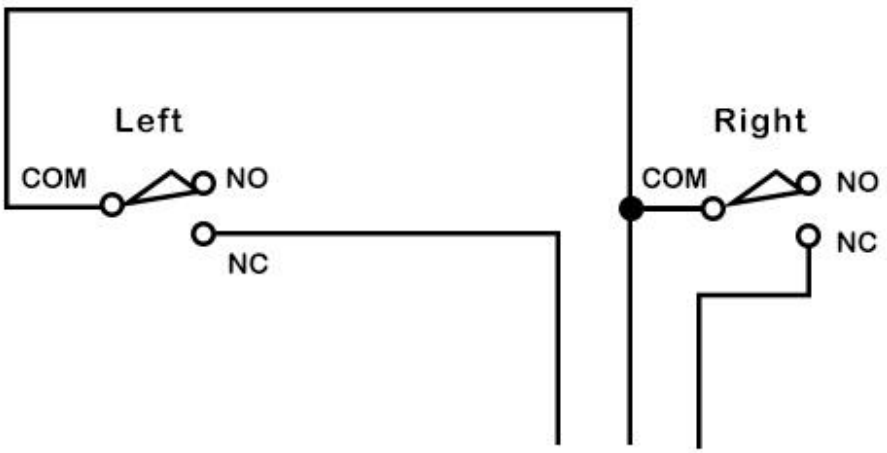
Note on the use of d.c. side switching.

There is a micro-switch on each side of the brake, and the micro-switch has two pairs of normally open/normally closed contacts for wiring. The standard configuration is normally closed, that is, when the micros-witch contact is closed, the side brake is also closed.

Not

To prevent the lift machine from running with the brake or the abnormal situation of the brake, please connect the brake micro-switch into the detection loop and connect the two sides in parallel.

Not



Wiring diagram of microswitch

Monitoring the brakes

The switching state of the brakes is monitored using dust-proof micro switches contacts. Both NC and NO contact is prepared in terminal box.

Danger

Manual brake release installation

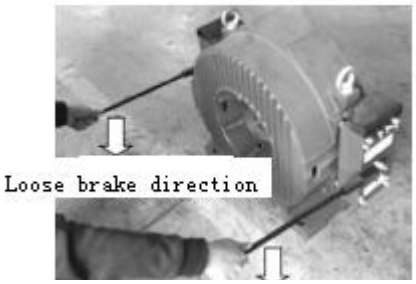
Not

The mechanical hand brake release device is only used in the case of elevator failure and power failure rescue.

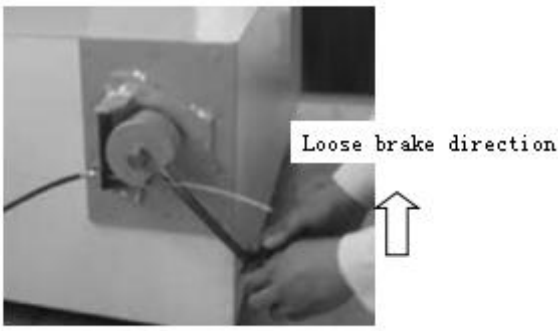
Please place the manual brake release in a place where ordinary people can't easily reach it, and it is strictly prohibited to use it in case of emergency.

Manual brake release can be divided into two types: machine room use, and machine room use.

There is a manual brake release in the machine room to screw the brake release handle in.



Please install and use the remote gate of the inorganic room as shown in the diagram.



11. Commissioning

The following points should be checked or completed:

- Remove all security, auxiliary and installation tools from the danger area.
- Check that the lift machine is used for its intended purpose and that the permissible ambient conditions are met.
- Check that the lift machine is properly fastened.
- Are all bolts tightened with the specified torque and secured?
- Check the motor connection, especially the earthing.
- Check that the temperature monitoring devices are properly connected and functioning.
- Check that the brakes are properly connected and that the brake monitoring switches are functioning properly.
- Is the measuring system properly connected?
- Check that the offset value indicated on the measuring system agrees with the value set on the converter.
- Check the proper functioning of the brake; perform a braking test using one partial brake
- Is the rope slip-off guard properly tightened and adjusted?
- Check the remote control of the brake using the Bow- den cable, if provided.

An initial functions test of the motor and the brake, together with the converter, should be performed before the ropes are put in place.

Not

12. Operation and maintenance

12.1 General

The regulations concerning operation, maintenance, and inspection in accordance with the applicable safety regulations in lift construction such as EN 81 "Safety rules for the construction and installation of lifts", Part 1:
"Electric lifts" and other relevant regulations are to be strictly observed.
The operator is responsible for the proper installation of the motor with regard to safety requirements as well as for its inspection and maintenance as specified in the applicable regulations.

Danger

The proper maintenance of gearless lift machines require adequately trained specialist personnel and specialized devices and tools.

Bolt/screw tightening torques

Warning

When doing any work on the machine or replacing parts, make sure that the specified bolt/screw strength class and the tightening torques are observed (see table).

Secure the bolts/screws with "omnifit 100" or a similar product against accidental loosening.

dimension	tightening torque [Nm]		
Strength class	8.8	10.9	12.9
M4	2.8	4.1	4.8
M5	5.5	8.1	9.5
M6	9.6	14	16
M8	23	34	40
M10	46	67	79
M12	79	115	135
M16	195	290	340
M20	395	560	660
M24	680	970	1150

12.2 Maintenance intervals

Maintenance, please check the contents shown in the following table periodically:

Check cycle	inspection item	criterion
Once a month.	Vibration of tractor body	No obvious jitter
	The sound of the tractor body	No mechanical abnormal noise and no accompanying mechanical vibration.
	Smell of tractor body	No abnormal smell
	Cleaning of tractor surface	No foreign matter and dust attached.
	Connection with mechanical equipment	No particularly loud vibration or sound.
	Brake wheel surface	No foreign matter and oil pollution
Once every three months	Braking system	Reliable action and reliable braking
	Brake clearance	No foreign matter, reliable opening and closing. Clearance < 0.1mm when it is closed, and 0.25~0.42mm when it is released.
	Brake thickness	Wear of brake shoe < 2mm
	The sound of the bearing	No continuous or abnormal sound.
	Temperature of lift machine and brake	The temperature is not too high or there is no big difference from the previous one.
	Operating current value	Nameplate rated current below
Once every six months	Traction sheave appearance	No looseness or damage.
	Traction sheave rope groove	No foreign matter, oil stain and serious wear.
	Anti-skipping rope and protective cover	No looseness or displacement.
	Screws at various parts of the tractor	No looseness
	Appearance of lead wire	No damage or aging.
	Ground wire terminal	No looseness
Once a year	Insulation resistance value of stator	0.5MΩ or more

12.3 Lubricating instructions

The bearing life design of our company has met the operation requirements. After the lift machine runs for a period of time (one year or as required), it is necessary to add grease, and it is not necessary to add or replace grease for sealed bearings.

Not

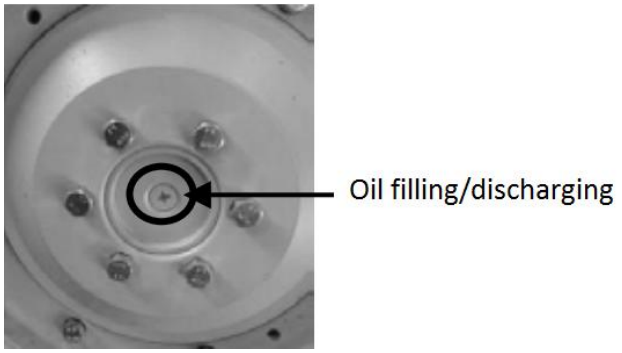
- please follow the following injection requirements:
- please inject Shell Grease Shell Jiadu S3 (V220C Grade 2)
- Please pay attention to the rotating parts of the motor when replenishing the bearing grease, and the elevator must be stopped when replenishing.
- When replenishing, please use a special grease replenishing gun and slowly inject it. Excessive replenishment will cause grease to leak out along the bearing surface.
- There will be a short-term bearing temperature rise phenomenon after the supply lift machine runs. (Please don't worry about the bearing temperature rise after a certain period of recovery.)

Oil filling method of •MW4＞1150kg main lift machine.

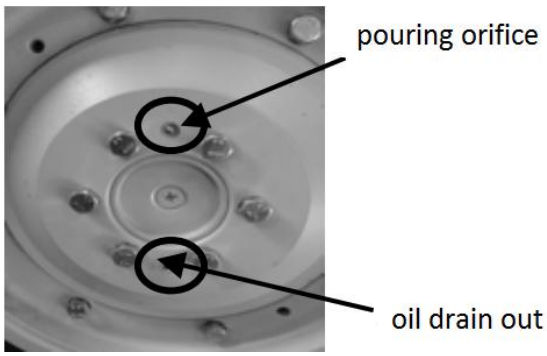
Caution

- Please remove the sealing screw before oiling.
- Remove the residual oil at the oil filling/discharging port.
- Slowly inject 10-20g of grease.
- Please reset the screw after the note is finished.
- Wipe away the waste oil spilled from the oil drain.
- After filling, reset the oil drain screw.

The supply position is in the center of the traction sheave. (Picture A)
The supply position is in front of the traction sheave. (Picture B)



Picture A



Picture B

12.4 Replacing the traction sheave

Danger

The traction sheave has to be replaced when a limited situation.

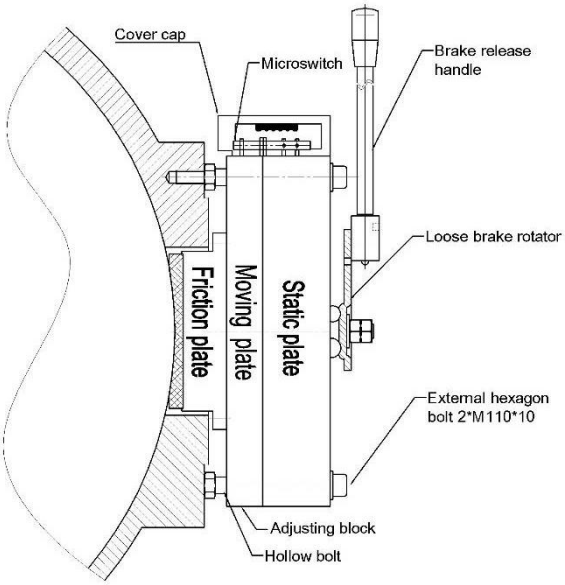
Disassembly

- Power off the system and safeguard against un-intentional reclosing.
- Secure the car and the counter-weight.
- Remove the rope slip-off guards and the rope guards, if provided.
- Relieve the load on the traction sheave; remove the ropes.
- Support the traction sheave by means of a hoisting gear.
- Remove the 12xM12 fastening bolts.
- Insert the M12x80-8.8 (or above) bolts into the two threaded forcing holes and force off the traction sheave.

Assembly

- Clean the traction sheave and the rotor flange.
- For better assembly heat up traction sheave.
- Slide the traction onto the rotor flange as far as possible.
- Insert the fastening bolts and tighten diagonally oppo- site bolts. Use "omni t 100" or a similar adhesive to secure the bolts. Tighten them along the bolt hole circle (MA = 79 Nm) with a torque spanner.
- Replace the ropes and reinstall the rope slip-off guard.

12.5 Brake



Brake structure diagram

- The braking system was preset before delivery, so please do not adjust it if it is unnecessary.
- Adjusting the brake must be carried out by professional and trained personnel.
- When the car is suspended, the brakes on both sides cannot be turned on at the same time.
- Pay attention to safety and ensure sufficient braking force when adjusting the brake.
- This chapter introduces the adjustment method, and it is forbidden to adjust the parts that are not specified.

Not

Brake clearance adjustment

In case the thickness of brake lining is less than 3mm or the noise of the brake higher than 75dbA, it must be readjusted or replaced.

Not

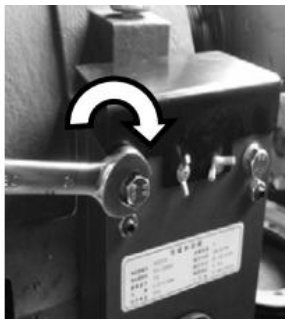
Power off the system and safeguard against un- intentional reclosing.
Secure the car and the counter-weight and make sure there's no loading on the traction sheave.

Danger

Adjust the brake clearance (the distance between the static plate and the moving plate) so that the brake clearance is < 0.1mm when it is engaged and about 0.25~0.4mm when it is released.
Check the corner air gap of the brake with a feeler gauge of 0.3.
When the air gap is less than ＞0.3mm, loosen the corner mounting bolt counterclockwise, then turn the hollow bolt clockwise at a small angle, and then lock the mounting bolt.
Check the corner air gap with a 0.35mm feeler gauge.

When the air gap is larger than ＞0.35mm, loosen the corner mounting bolt counterclockwise, then turn the hollow bolt counterclockwise at a small angle, and then lock the mounting bolt.
Adjust the clearance of all corners of the brake to ensure that the 0.3mm feeler gauge can pass, and the 0.35mm feeler gauge cannot pass.





Brake stroke adjustment

When the brake is engaged, use a 0.08mm feeler gauge to check the wheel surface clearance between the brake wheel and the brake pad. If the clearance is less than 0.08mm, repeat brake clearance adjustment again, and make fine adjustments to ensure that the wheel surface clearance is ⩾ 0.08mm.

Microswitch adjustment

Remove the cover from the top of the brake, and adjust the adjusting block of the microswitch, so that when the brake is turned on/off, the microswitch will turn on/off reliably. After adjustment, the cover will be reset.

Inorganic house remote brake release

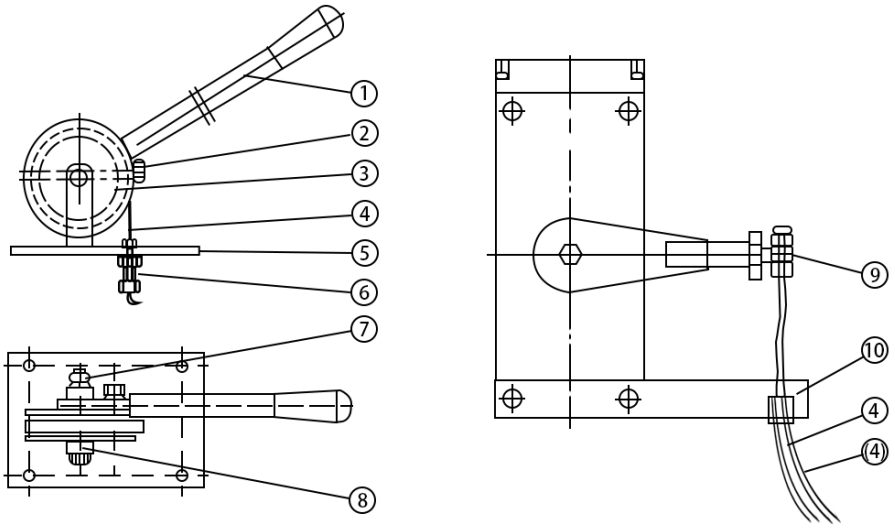
- Make sure to disconnect the main power supply before operation.
- Do not make any adjustment to the brake.
- Do not adjust the fixed brake release parts.
- The two ports of the brake cable and the protective sleeve must be parallel and can slide freely, so as to prevent the cable from being damaged by excessive friction at the bend angle.

Not

- When arranging the brake line, the radius of the wiring should be greater than 0.5m, and the reserved amount of the cable of the brake line can be appropriately adjusted according to the actual situation.
- When arranging the brake cable and using the device, it is forbidden to damage the protective sleeve of the brake cable, which may lead to the failure of the brake cable.
- When arranging the brake line, it is required to use a special line pressing piece to fix it, and it should not be over-tightened, otherwise it may lead to the movement failure caused by the tightening of the cable.
- After assembly, try to pull it several times to ensure that it can move flexibly and reset automatically. If there is any problem, it must be readjusted, otherwise it is forbidden to use it.

Inorganic house remote brake release

structural representation



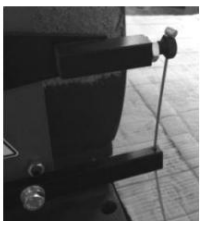
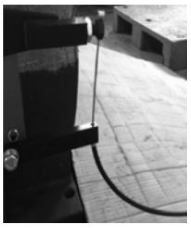
1- Handle.
2- Hold down bolts and washers.
3- Turntable
4- Brake line.
5- wear the bottom.
6- Threading screw.
7- Nut.
8- External hexagon bolts.
9- Remote fixing screws.
10- Remote fixing rod.

Assembly steps of brake release mechanism

Pull the brake wire out of the sheath, vertically and sequentially pass the brake wire through the holes of (9) remote fixing screw and (10) remote fixing rod, and tighten the brake wire. Re-thread the brake cable into the sheath, and one end of the sheath is pushed into the counterbore of the (10) remote fixing rod.

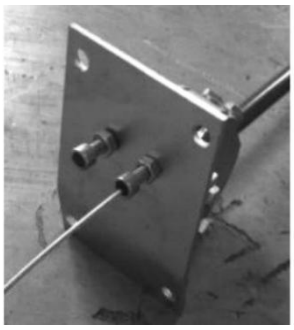


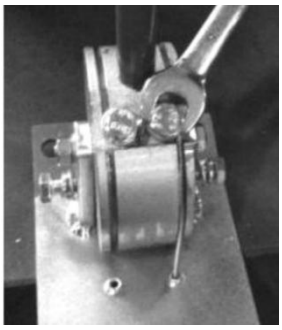


Assembly steps of control mechanism

Insert the end of the brake wire into the (6) threading nut, and bend the head of the steel wire rope for 180 degrees by 20-30mm with flat pliers. Use the 13# open-ended wrench to lock the (2) compression screw and washer to the elbow.

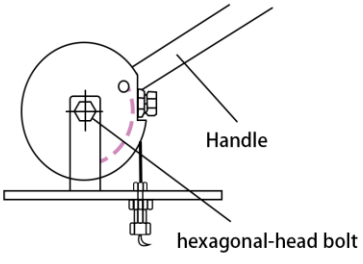


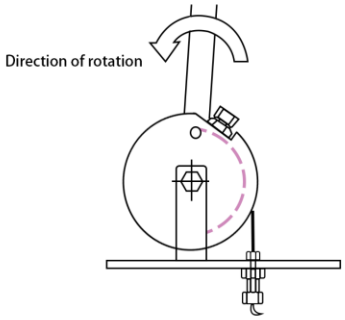


Install the remote release cable of the other brake in the same way. Finally, install the base to a suitable stress point.

Method of application

Use the brake release handle and rotate around the fulcrum (hexagon-head bolt) as shown in the figure below. At this time, the brake is turned on, and the brake release action is completed. When releasing the brake, pay attention to the speed of the car and the leveling of the bridge car. When leveling is completed, immediately release the handle to stop releasing the brake. After the brake release is completed, the handle and brake release line must be reset.





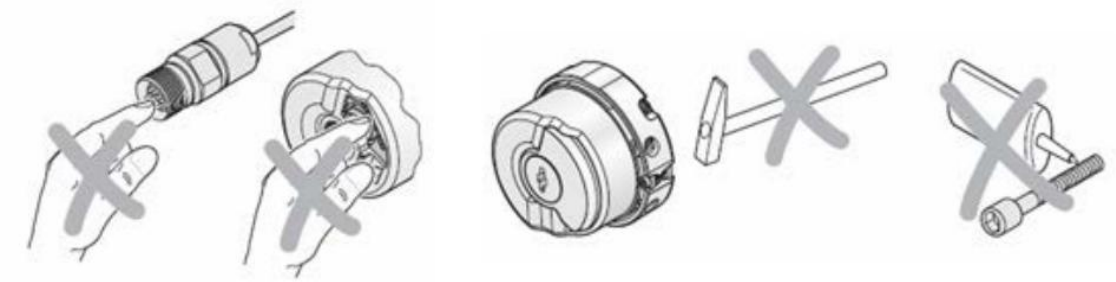
12.6 Replacing the measuring system

Not

the measuring system is only accessible from the rear side of the motor.

Warning

Disassemble the measuring system only if this is necessary because of a defect. Remember to readjust the offset value after reassembly (see the converter operating instructions)



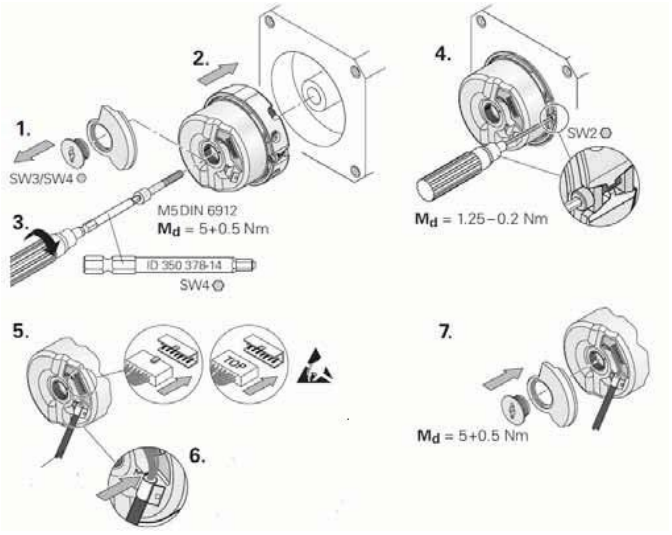
Not

Do not touch the exposed terminal of encoder directly with bare hands.
Do not knock, hammer, or impact the encoder body.

Do not screw the encoder mounting screws with thread glue.
After the encoder is replaced, self-learning should be re-implemented.

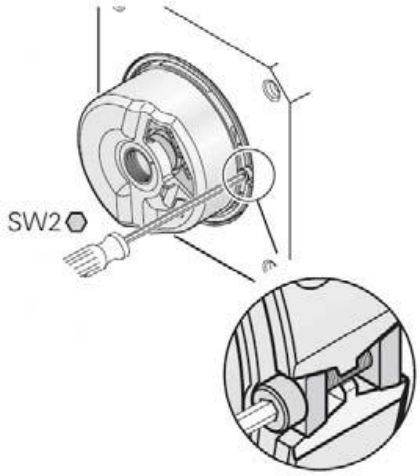
Assembly ECN 1313 EnDat and ERN138

- Remove the cable cover from the measuring system.
- Plug in the measuring system.
- Insert the M5x50 fastening screw in the hollow shaft and tighten the screw.
- Tighten the clamping ring on the measuring system.
- Insert the cable p.c.b. connector (observing the designation “TOP" or the guiding nose).
- Fasten the coupling using the clamp.
- Reinstall the cable cover.

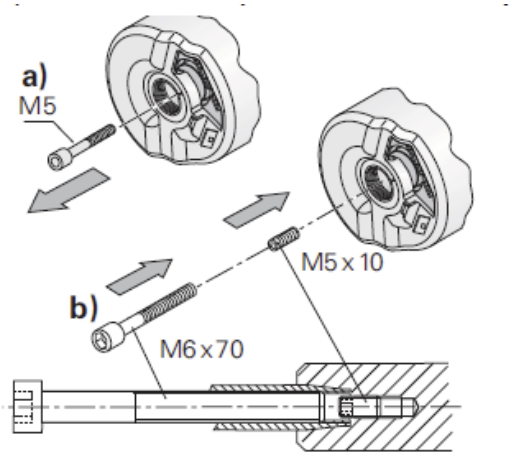


Disassembly

Remove the cable cover from the measuring system; pull out the cable p.c.b. connector.
Loosen the clamping ring on the measuring system (2mm Allen screw).



Remove the M5 fastening screw.



Insert the M5x10 setscrew to protect the thread (see figure) and remove the measuring system by means of the M6x70 forcing screw.

Not

Please take attention that ECN 1313 EnDat and ERN1387 andERN1387 requires difference encoder cable.

12.7 Trouble shooting

Fault	Possible cause	Remedy
Motor does not start, operates out of control or develops no torque	➢ Motor not connected in proper phase sequence. ➢ Measuring system not properly connected. ➢ Converter parametrization incorrect. ➢ EMC disturbance. ➢ Measuring system offset angle incorrectly set. ➢ Measuring system defective.	➢ Connect motor correctly. ➢ Connect measuring system correctly. ➢ Check converter parametrization. ➢ Carry out shielding and earthing measures as ➢ described by the converter manufacturer. ➢ Carry out shielding and earthing measures as ➢ described by the converter manufacturer. ➢ Replace measuring system.
Motor noise	➢ Bearing defective. ➢ Converter parametrization incorrect	➢ Notify customer service. ➢ Check converter parametrization
Braking system does not release	➢ The braking system is not supplied with voltage. ➢ Brake magnet voltage is too low. ➢ Brake mechanically blocked. ➢ Overexcitation recti er defective	➢ Check electrical connection. ➢ Check braking voltage supply voltage. ➢ Remove mechanical blocking. ➢ Replace overexcitation rectifier.
Delay in braking system release	➢ overexcitation recti er defective	➢ Replace overexcitation recti er
Braking system does not engage	➢ Brake shoe mechanically blocked	➢ Brake shoe mechanically blocked
Delay in engaging of braking system	➢ Brake defective	➢ Notify customer service
Notify customer service	➢ Brake air gap too large	➢ Adjust brake air gap
Braking torque too low	➢ Brake friction surface or brake lin- ings dirty. ➢ Foreign bodies between friction surface and brake lining. ➢ Brake friction surface or brake lin- ing have come ➢ into contact with oily or greasy materials. ➢ Load torque too high.	➢ Clean friction surface / brake linings. ➢ Remove foreign bodies. ➢ Replace brake lining, clean brake drum thoroughly. ➢ Reduce load torque.

12.8 Emergency relief

- Emergency rescue is carried out when the elevator fails or people are trapped by power failure. It must be carried out by specially trained personnel with elevator maintenance certificate.
- There are machine room facilities, and manual brake release and turning gear provided by our company can be used; Please use remote manual brake release device if there is no computer room facilities.
- Before emergency rescue, please cut off the main power supply of the elevator to prevent the elevator from starting unexpectedly but keep the car lighting and calm the trapped person's mood.

Not

- Confirm the position of the elevator car. When the elevator stops at a certain floor and there is more than 0.5m rescue space, you can directly open the car door to carry out rescue.
- When the car is in a position other than the above position, the car must be moved mechanically until there is a rescue space larger than 0.5m, and then the rescue is carried out.
- Install the turning handwheel, two people hold the turning handwheel, and the other person releases the brake manually. Release the brake will only make the brake invalid when the car moves, otherwise the action must be cancelled immediately. When the car does not exceed the top floor or the bottom floor, it can be moved in a more labor-saving direction.

  When it exceeds the top floor or the bottom floor, it should be moved in the opposite direction. If necessary, the car can be moved by turning the handwheel.

13.Accessories

13.1 Connecting cable for measuring systems.

Converter	Connection	Encoder	Order number
Emerson Unidrive Yaskawa-L1000		ECN1313 EnDat	Z320MW30010V0X
Schneider Altivar		ERN1387	Z320MW30006V0X
Monarch Meiden VT Xizitrust Micovert			Z320MW30008V0X
G11UD4C4/ Lift		ECN1313 EnDat	Z320MWS30009V0X
iAstar			Z320MWS30030V0X
iAstar		ERN1387	Z320MWS30032V0X
SIEI			Z320MWS30026V0X
KEB F5 Emerson CN7 Soder S9			Z320MWS30007V0X
Monarch			Z320MWS30031V0X

Others: V01=7m V02=10m

13.2 Connection cable for measuring systems.

Converter	Connection	Encoder	Order number
Schneider Altivar		TS5213N2503	Z320WSGS30073V0X
Monarch Meiden VT Xizitrust Micovert			Z320MWS30074V0X
iAstar			Z320MWS30079V0X
SIEI			Z320MWS30078V0X
KEB F5 Emerson CN7 Soder S9			Z320MWS30075V0X
Monarch			Z320MWS30076V0X

Others: V02=7m V03=10m

13.3 Mechanical evacuation

In urgent situation, like power off or emergency rescue, in case the system weight at car side equals to cwt side, the car cannot move naturally, then the qualified people is allowed insert to the hand wheel to mechanical Evacuation device to move the car by turning.

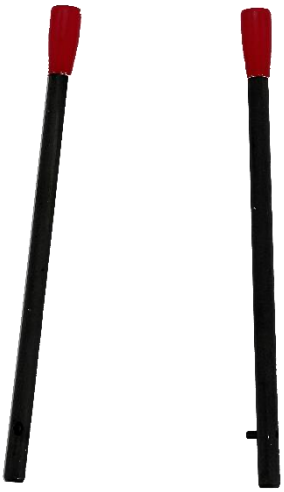
13.4 Brake remote release

In order to open the brake in the shaft, a remote brake release system has to be ordered.

13.5 Brake manual release

In order to open the brake in the shaft, a manual brake release is needed.

(In content of delivery if brake remote release is not ordered)



14.Spare parts

Spear Parts	Picture	Code number
Brake HEB-K1	 X2	Z320MWS10072(for remote) Z320MWS10069(for manual)
Brake HEB-K2		Z320MWS10073(for remote) Z320MWS10070 (for manual)
Brake HEBK3		Z320MWS10074 (for remote) Z320MWS10071 (for manual)
Remote release		Z320MWS10275V01(5m) Z320MWS10275V02(7m)
Manual release wrench		Z320MWS10067
Traction sheave (4 grooves)		Z320MWS10030V4E(Ø240mm) Z320MWS10030V4G(Ø320mm) Z320MWS10030V4I(Ø400mm)
Traction sheave (5 grooves)		Z320MWS10030V5E(Ø240mm) Z320MWS10030V5G(Ø320mm) Z320MWS10030V5I(Ø400mm) Z320MWS10030V5K(Ø450mm)
Traction sheave (6 grooves)		Z320MWS10030V6I(Ø400mm) Z320MWS10030V6K(Ø450mm) Z320MWS10030V6L(Ø480mm) Z320MWS10030V6O(Ø550mm)
Traction sheave (7 grooves)		Z320MWS10030V7I(Ø400mm) Z320MWS10030V7L(Ø480mm) Z320MWS10030V7O(Ø550mm)
Traction sheave (8 grooves)		Z320MWS10030V8I(Ø400mm) Z320MWS10030V8L(Ø480mm) Z320MWS10030V8O(Ø550mm)
Shaft with pinion		Z320MWS10052
Evacuation hand wheel		Z320MWS10055
Micro-switch		Z320MWS30011
Terminal box (Star & Delta)		Z320MWS10043V01
Terminal box (Star)		Z320MWS10043V02
Encoder cables		Please see accessories