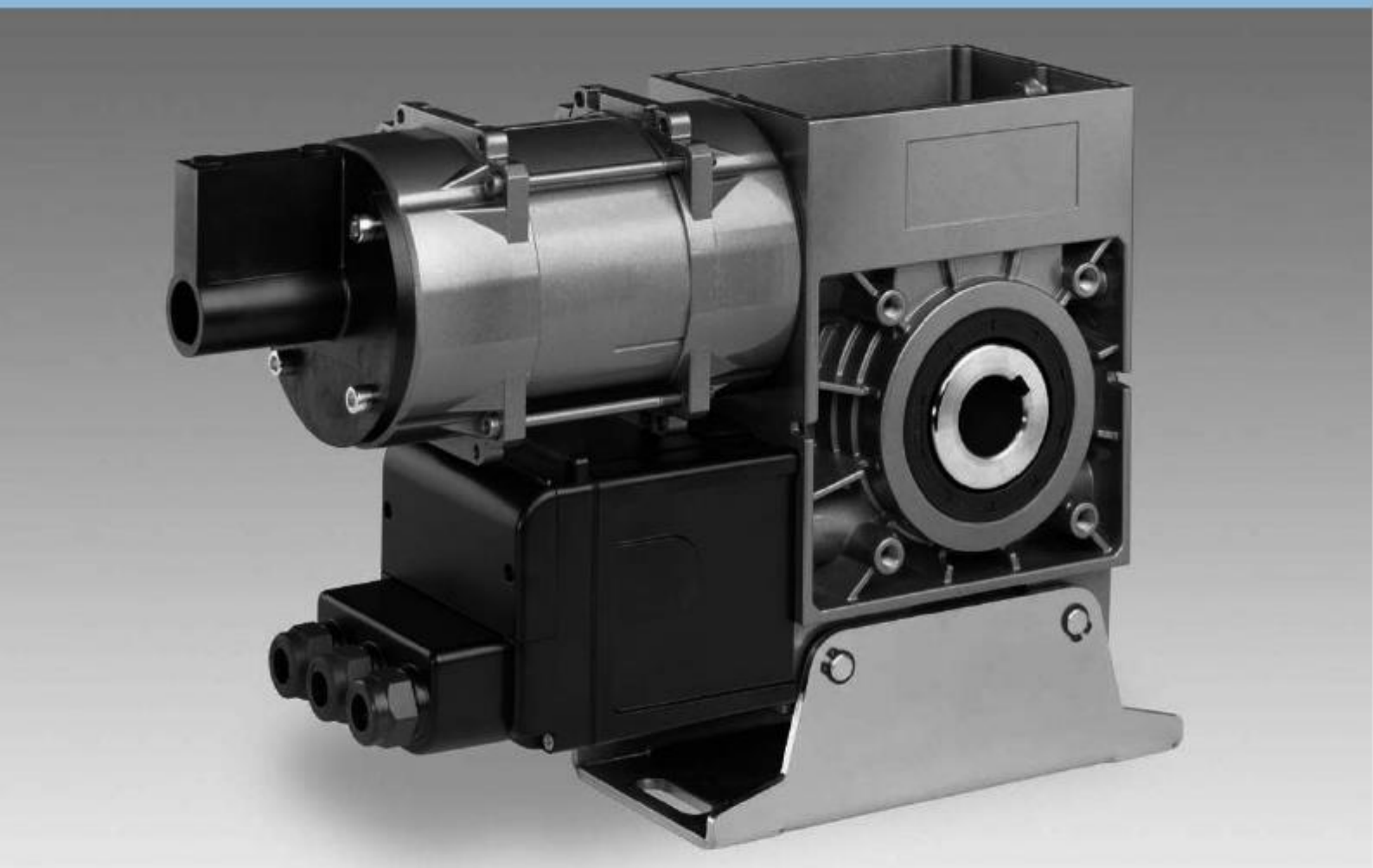
MFZ OVITOR

Operating Instructions for Roll-Up Door Operators / MDF

GB



MFZOVITOR

1. Contents

2. Key to symbols

Danger of personal injury!

The safety instructions must be observed!

Warning! Danger to property!

The safety instructions must be observed!

Information

Special information

OR

Reference to other sources of information

3. General safety instructions

Guarantee

The function and safety of the equipment is only guaranteed if the warning and safety instructions included in these operating instructions are adhered to.

MFZ Antriebe GmbH + Co.KG is not liable for any personal injury or damage to property that occurs as a result of the warning and safety instructions being disregarded.

MFZ does not accept any liability or warranty for damage due to the use of non-approved spare parts and accessories.

Using the equipment for its intended purpose

Operators of the MDF/MDFC range are designed exclusively for opening and closing roll-up doors, roller shutter grilles and springless or weight-counterbalanced sectional doors.

Target group

Only qualified and trained specialists are permitted to install and service the operator. Qualified and trained professionals fulfil the following requirements:

- knowledge of the general and specific safety and accident prevention regulations,
- Knowledge of the relevant regulations,
- trained in the use and care of appropriate safety equipment,
- Capable of recognising the dangers associated with installation.

Only qualified and trained electricians may connect the operator and carry out electrical maintenance.

Qualified and trained electricians fulfil the following requirements:

- knowledge of the general and specific safety and accident prevention regulations,
- knowledge of the relevant electrical regulations,
- trained in the use and care of appropriate safety equipment,
- capable of recognising the dangers associated with electricity.

Instructions for installation and connection

- The controls must be disconnected from the electricity supply before carrying out electrical works. It must be ensured that the electricity supply remains disconnected during the works.
- Local protective regulations must be complied with.
- Mains cables and control cables must be laid separately.

Regulations and bases for testing
For connecting, programming and servicing, the following regulations must be observed (the list is not exhaustive).

Construction product standards
- EN 13241-1 (Products without fire resistance or smoke control characteristics)
- EN 12445 (Safety in use of power operated doors - Test methods)
- EN 12453 (Safety in use of power operated doors - Requirements)
- EN 12635 (Industrial, commercial and garage doors and gates - Installation and use.)
- EN 12978 (Safety devices for power operated doors and gates - Requirements and test methods)

Electromagnetic compatibility
- EN 55014-1 (Radio disturbance, household appliances)
- EN 61000-3-2 (Disturbances in supply systems - harmonic currents)
- EN 61000-3-3 (Disturbances in supply systems - voltage fluctuations)
- EN 61000-6-2 (Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments)
- EN 61000-6-3 (Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments)

Machinery guidelines
- EN 60204-1 (Safety of machinery, electrical equipment of machines, part 1: general requirements)
- EN 12100-1 (Safety of machinery. Basic concepts, general principles for design. Basic terminology, methodology)

Low voltage
- EN 60335-1 (Household and similar electrical appliances - Safety)
- EN 60335-2-103 (Particular requirements for drives for gates, doors and windows)

Professional association (D)
- BGR 232 (Directive for Power-driven Windows, Doors and Gates)

4. Overview of products GB

4.1 Safety catch device as a safety feature

The MDF roll-up door operator is a slip-on drive with an incorporated safety catch device. The safety catch device is entrained load-free and wear-free.

If the drive unit fails, the safety catch device is automatically triggered. The load moved by the operator is then smoothly brought to a standstill in the position concerned. The power transmission between the motor and the door shaft is interrupted after the drive unit fails.
The operator is no longer usable after the safety catch device has been triggered and must be replaced.

The safety catch device is distinguished by the following features:
- Protection against worm shaft and worm gear failure
- Independent of the rotational speed
- Independent of the direction of rotation
- Can be mounted in any position
- Unsusceptible to vibrations
- Maintenance-free
- Self-controlling
- Excellent damping properties when safety catch device is triggered

4.2 Various options

The following package options are available for the MDF operator:
- MDF 05-10-15 KU
- MDF 05-14-12 KU

- MDF 05-10-15 KE
- MDF 05-14-12 KE

- MDF 20-22-12 KU
- MDF 20-15-17 KU
- MDF 20-15-12 100% KU
- MDF 20-10-17 100% KU

- MDF 20-22-12 KE
- MDF 20-15-17 KE
- MDF 20-15-12 100% KE
- MDF 20-10-17 100% KE

4. Overview of products

- MDF 30-30-12 KU
- MDF 30-42-12 KU
- MDF 30-29-17 KU
- MDF 30-27-12 100% KU
- MDF 30-19-17 100% KU
- MDF 30-50-12 KU

- MDF 30-30-12 KE
- MDF 30-42-12 KE
- MDF 30-29-17 KE
- MDF 30-27-12 100% KE
- MDF 30-19-17 100% KE
- MDF 30-50-12 KE

- MDF 50-65-10 KU
- MDF 50-75-10 KU

- MDF 50-65-10 KE
- MDF 50-75-10 KE

- MDF 6-100-9 KU
- MDF 6-100-9 KE

- MDF 6-100-9 100% KU

5. Installation

5.1 Preparation

Danger!

To avoid injury, the following points must be observed:

- *The operator must be installed free of any tension.*
- *The operator must not move on the shaft.*
- *The design and subsurface of all components must be suitable for the forces encountered.*

Warning!

To avoid damage to the operator and the door, the operator must only be fitted if

- *the operator is undamaged,*
- *the ambient temperature is -20 °C to +60 °C.,*
- *the altitude of the location does not exceed 1,000 m,*
- *a suitable protection type has been selected.*

☞ Before installation, ensure that

- the operator is not blocked,
- the operator has been newly prepared after a lengthy storage period,
- all connections have been carried out correctly,
- the direction of rotation of the drive motor is correct,
- all motor protective devices are active,
- no other sources of danger exist,
- the installation site has been cordoned off over a wide area.

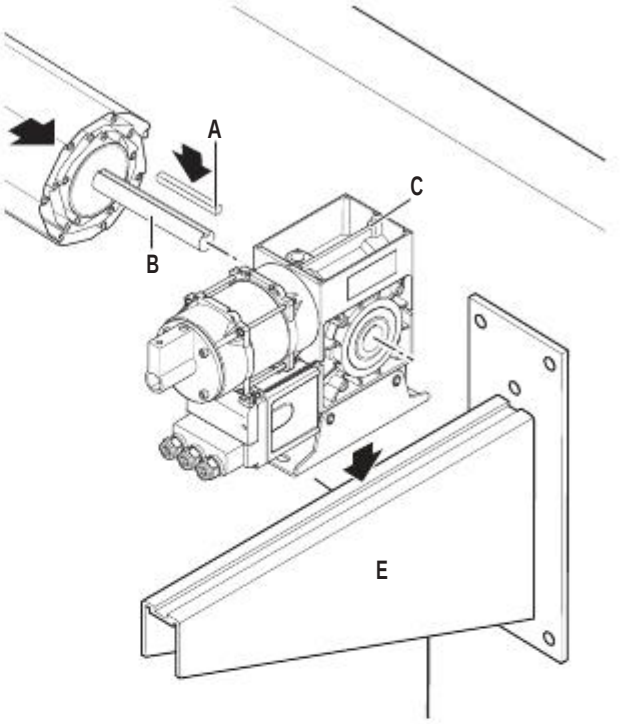
5.2 Slip-on assembly

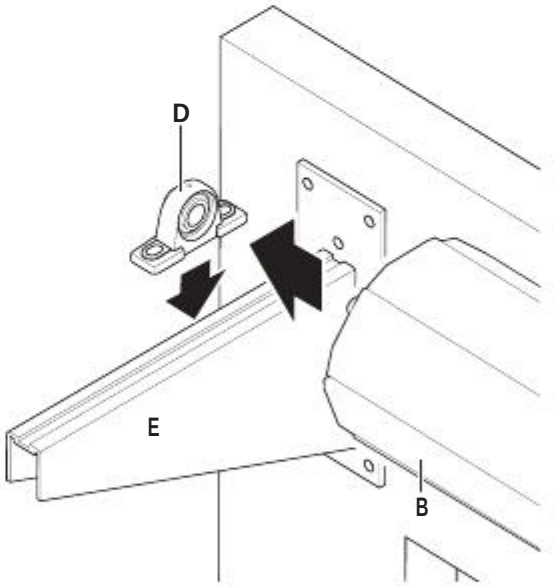
Warning!

To avoid damage to the operator and to the door, the operator must be mounted on a bracket with a pendulum foot or a torque support bracket so that it is vibration dampened.

Information:

The relevant instructions for the door must be observed when fitting the operator to the door.



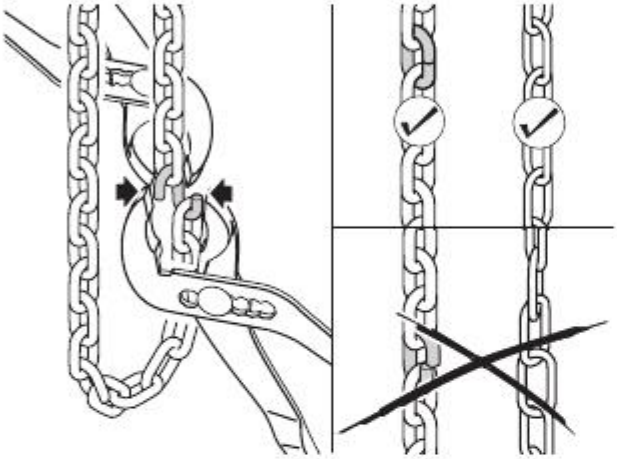


- ☞ Insert the feather key (A) into the shaft (B).
- ☞ Slide the operator (C) onto the shaft (B).
- ☞ Slide the counter bearing (D) onto the shaft (B).
- ☞ Fix the shaft (B) with the operator (C) and counter bearing (D) to the brackets (E).

5. Installation

5.3 Installation of the emergency hand chain (only for operators with emergency hand chain)

Information:
To ensure that they work correctly, the chain links must not be twisted.



☞ Join the ends of the emergency hand chain together with the chain connecting link.

Warning!
To avoid damage to the operator and the door, the emergency hand chain must be secured while the door is operated electrically.

6. Initial Operation

6.1 Preparation

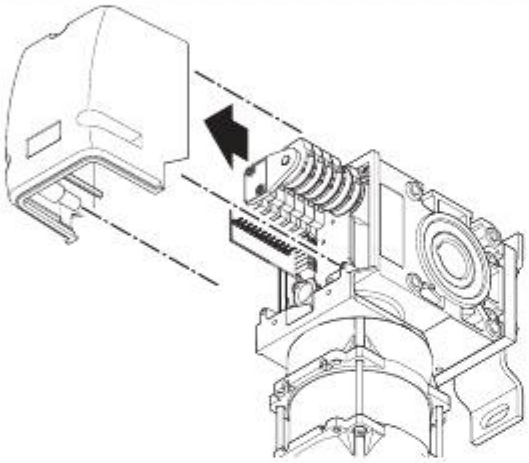
Warning!
To avoid damage to the operator, the following points must be observed:
- *The types of cable and their diameters must be selected according to current regulations.*
- *The nominal currents and the type of connection must correspond to those on the motor type plate.*
- *The drive details must agree with the connected loads.*

Information:
When operated with electronic control units, the corresponding start-up instructions and circuit diagrams must be complied with.

6.2 Connection of model MDF 05

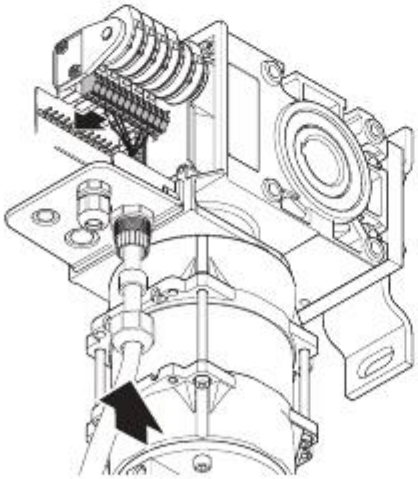
Open the operator

Danger!
To avoid injury, the system must be disconnected from the power supply during the cabling work. The system must be safeguarded against being unintentionally switched on again during the work.



☞ Remove the cover from the operator.

Attach the cable

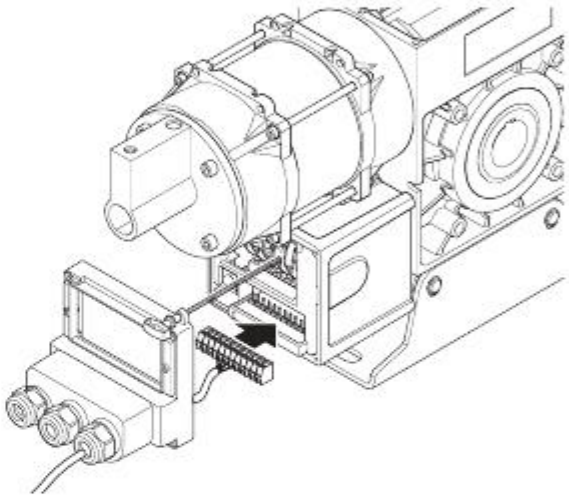


☞ Screw on the cable set holding plate.
☞ Insert the plug into the circuit board.
☞ Connect up the operator according to the electrical wiring diagrams below.
☞ Replace the cover over the operator.

6.3 Connection of model MDF 20 and subsequent models

Insert the cables

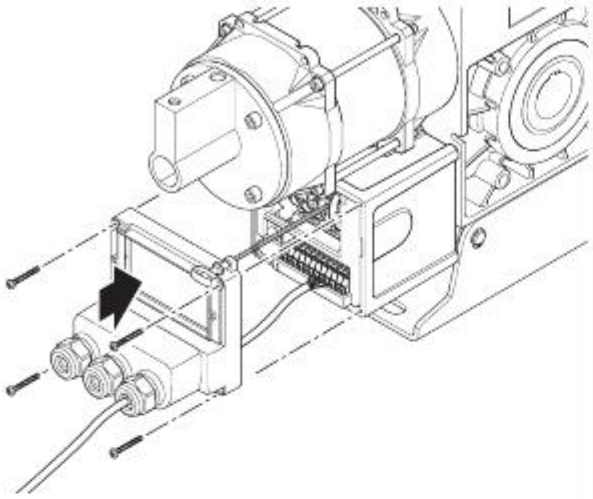
Danger!
To avoid injury, the system must be disconnected from the power supply during the cabling work. The system must be safeguarded against being unintentionally switched on again during the work.



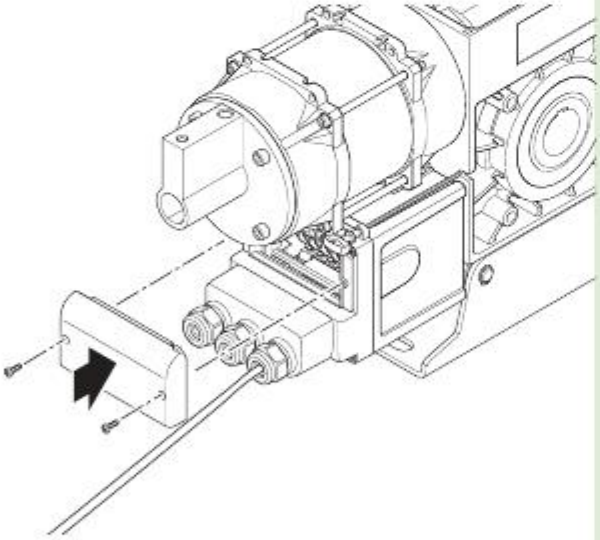
☞ Insert the cable set plug into the limit switch circuit board.
☞ Connect up the operator according to the electrical wiring diagrams below.

6. Initial Operation

Close the operator



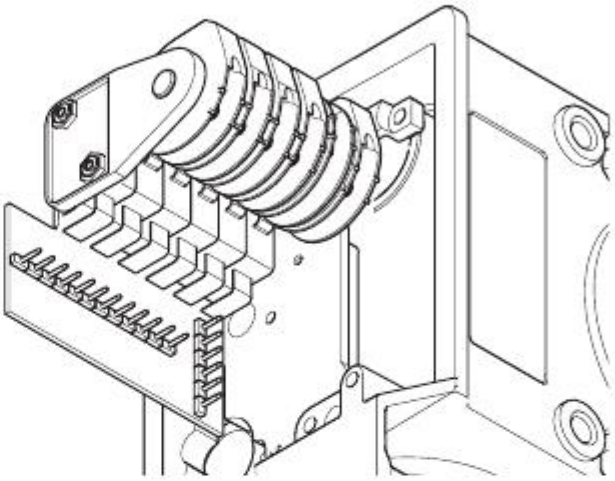
☞ Place the cap on the operator.
☞ Screw the cap on tightly.

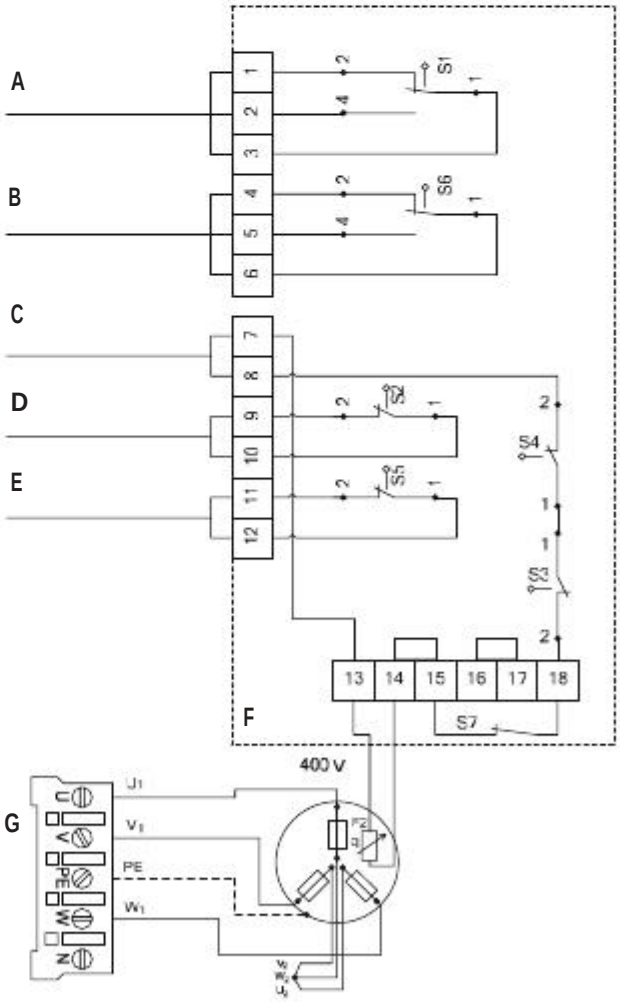


☞ Place the cover over the cap.
☞ Screw the cover on tightly.

3 x 400 V star connection
(standard, pluggable)

The motor is factory-wired for connection to a 3 x 400 V mains supply in star connection.





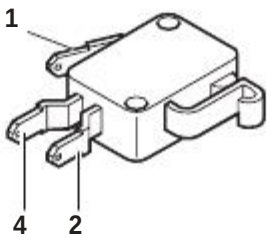
☞ Connect all the cables required.

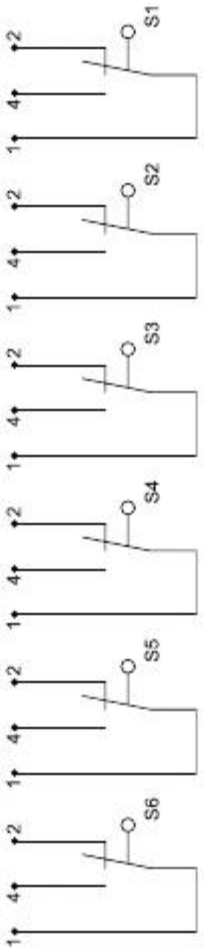
Identification of wires

U1	Red
V1	Blue
W1	White
V2	Black
W2	Brown
U2	Green

A	Potential-free connection OPEN
B	Potential-free connection CLOSE
C	Switch off safety circuit
D	Switch off OPEN end position
E	Switch off CLOSED end position
F	Internal safety circuit
G	Operator
S1	Additional limit switch, OPEN (standard only for operators without integrated control unit)
S2	Limit switch, OPEN
S3	Safety limit switch, OPEN
S4	Safety limit switch, CLOSED
S5	Limit switch, CLOSED
S6	Additional limit switch, CLOSED (standard only for operators without integrated control unit)
S7	Safety limit switch for emergency manual operation
F2	Thermal overload protection for motor

3 x 400 V star connection





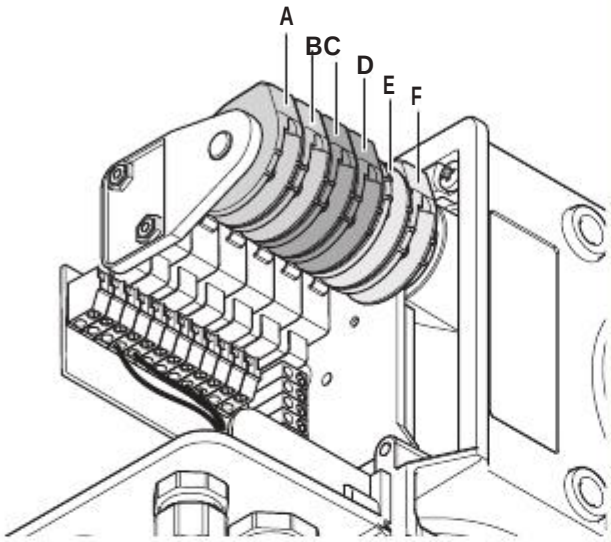
S1	OPEN additional limit switch (standard only in the case of operators without integrated control unit)
S2	Limit switch, OPEN
S3	Safety limit switch, OPEN
S4	Safety limit switch, CLOSE
S5	Limit switch CLOSED
S6	CLOSED additional limit switch (standard only in the case of operators without integrated control unit)

3 x 230 V delta connection

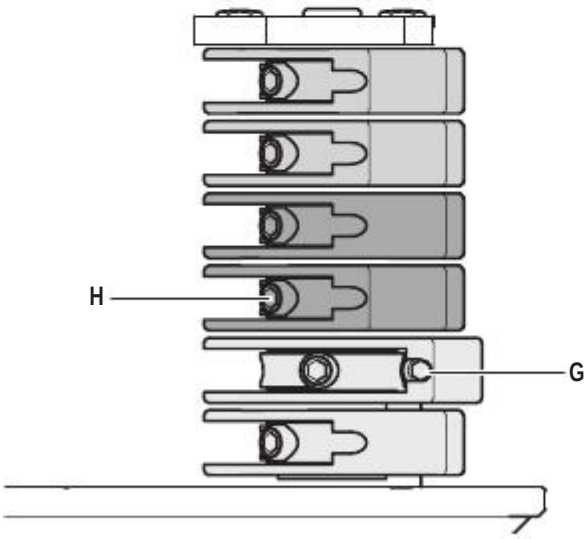
To connect the operator to a 3 x 230 V mains supply, please consult the manufacturer.

6. Initial Operation

6.4 Manual settings for model MDF 05



A Control cam for additional limit switch, OPEN (green)
B Control cam for limit switch, OPEN (green)
C Control cam for safety limit switch, OPEN (red)
D Control cam for safety limit switch, CLOSED (red)
E Control cam for limit switch, CLOSED (white)
F Control cam for additional limit switch, CLOSED (white)



G Fine adjustment screw
H Locking screw

Each control cam has a locking screw (H) and a fine adjustment screw (G).

The locking screw (H) is used to lock the corresponding control cam in the desired position. Finer adjustment can be made with the fine adjustment screw (G).

Set the CLOSED end position

- ☞ Drive the door to the CLOSED end position.
- ☞ Set the control cam so that the CLOSED limit switch (E) is actuated.
- ☞ Tighten the locking screw (H).

The CLOSED safety limit switch (D) must be set in such a way that it switches immediately when the CLOSED limit switch (E) is passed over.

- ☞ Adjust the CLOSED safety limit switch (D).

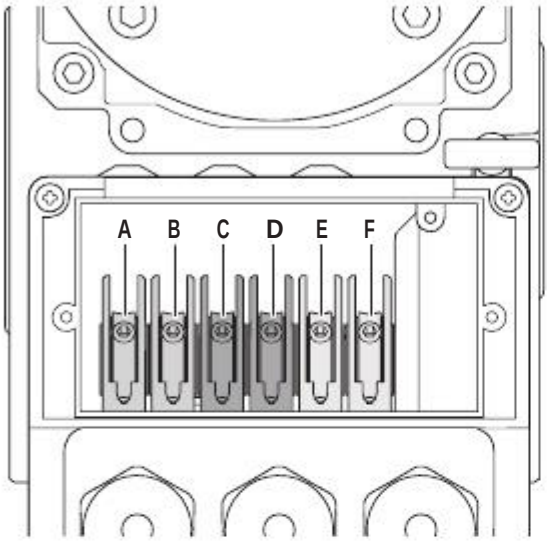
Set the OPEN end position

- ☞ Drive the door to the OPEN end position.
- ☞ Set the control cam so that the OPEN limit switch (B) is actuated.
- ☞ Tighten the locking screw (H).

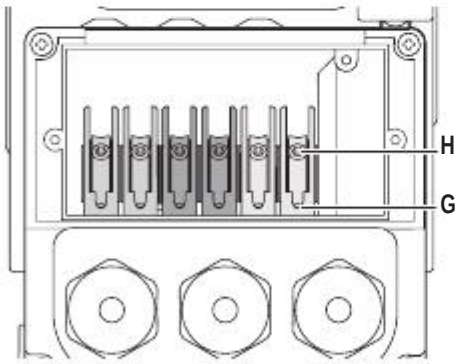
The OPEN safety limit switch (C) must be set in such a way that it switches immediately when the OPEN limit switch (B) is passed over.

- ☞ Adjust the OPEN safety limit switch (C).

6.5 Manual settings for model MDF 20 and subsequent models



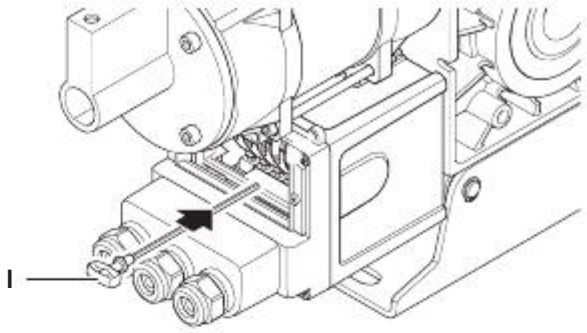
A Control cam for additional limit switch, OPEN (green)
B Control cam for limit switch, OPEN (green)
C Control cam for safety limit switch, OPEN (red)
D Control cam for safety limit switch, CLOSED (red)
E Control cam for limit switch, CLOSED (white)
F Control cam for additional limit switch, CLOSED (white)



G Fine adjustment screw
H Locking screw

Each control cam has a locking screw (H) and a fine adjustment screw (G).

The locking screw (H) is used to lock the corresponding control cam in the desired position. Finer adjustment can be made with the fine adjustment screw (G).



Use the adjusting tool (I) to tune the fine adjustment screw and the locking screw.

Set the CLOSED end position

- ☞ Drive the door to the CLOSED end position.
- ☞ Set the control cam so that the CLOSED limit switch (E) is actuated.
- ☞ Tighten the locking screw (H).

The CLOSED safety limit switch (D) must be set in such a way that it switches immediately when the CLOSED limit switch (E) is passed over.

- ☞ Adjust the CLOSED safety limit switch (D).

Set the OPEN end position

- ☞ Drive the door to the OPEN end position.
- ☞ Set the control cam so that the OPEN limit switch (B) is actuated.
- ☞ Tighten the locking screw (H).

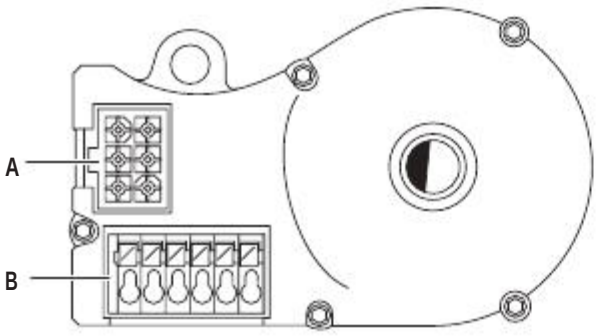
The OPEN safety limit switch (C) must be set in such a way that it switches immediately when the OPEN limit switch (B) is passed over.

- ☞ Adjust the OPEN safety limit switch (C).

6. Initial Operation

6.6 Digital settings– Limit switch and safety circuit for drive

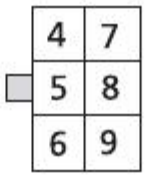
Electronic interface



A: AVE plug (absolute value encoder plug)
B: AVE plug terminal (absolute value encoder plug terminal)

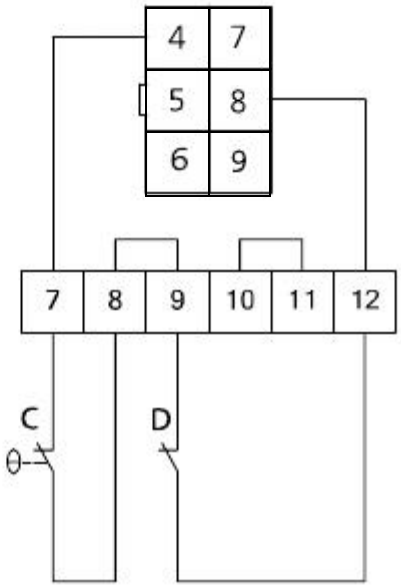
Information:
Please refer to the control unit operating manual for instructions on setting the end positions.

Wiring allocation,
AVE (absolute value encoder) plug



The numbers on the plug are also the wire-numbers.
4: Safety circuit input
5: RS 485 B
6: GND
7: RS485 A
8: Safety circuit output
9: 7...18V $_{DC}$

AVE (absolute value encoder) plug terminal (7-12)



C: Thermal element in the drive
D: Manual emergency control (emergency crank or emergency chain)

6.7 Check the system

Check the direction of travel

☞ Drive the door in the CLOSED direction.

The operator must close the door.

☞ Drive the door in the OPEN direction.

The operator must open the door.

Information:

If the direction of travel of the door does not correspond to the commands keyed in, then the direction of rotation must be changed. Instructions for changing the direction of rotation are given in the control unit operating manual.

After this the direction of travel must be checked again.

Check the limit switch settings

☞ Drive the door to the CLOSED end position.

The operator must stop in the desired position.

☞ Drive the door to the OPEN end position.

The operator must stop in the desired position.

☞ Check the seat of the fixing screws.

Check the mechanical functions

After assembling and installing all components the functions of the system must be checked.

☞ Check all the functions of the system.

☞ Check that the operator runs smoothly.

☞ Check whether the operator is leaking oil.

If the operator makes unusual noises or leaks oil:

- The operator must be taken out of service immediately,
- The customer service must be informed.

7. Emergency operation GB

Danger!

To avoid injury, the following points must be observed:

- *Emergency operation may only be carried out from a safe standing position.*
- *Emergency operation may only be carried out when the motor is stationary.*
- *The system must be disconnected from the power supply during emergency operation.*
- *Operators with a spring brake must be actuated against the closed brake when opening or closing the door.*
- *For safety reasons, brakes in doors without a weight counterbalance must only be vented in the closed door position for testing purposes.*
- *Accidental venting of the brake must be rendered impossible by preventive measures at the installation site.*

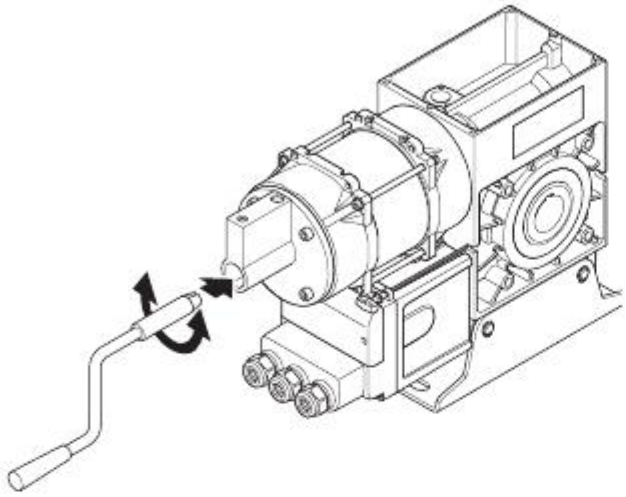
During maintenance works or in the case of an electrical fault, the door can be moved towards the OPEN or CLOSED positions with the help of the emergency operation equipment.

Information:

If the door is moved beyond the CLOSED or OPEN end positions, the operator can no longer be activated electrically.

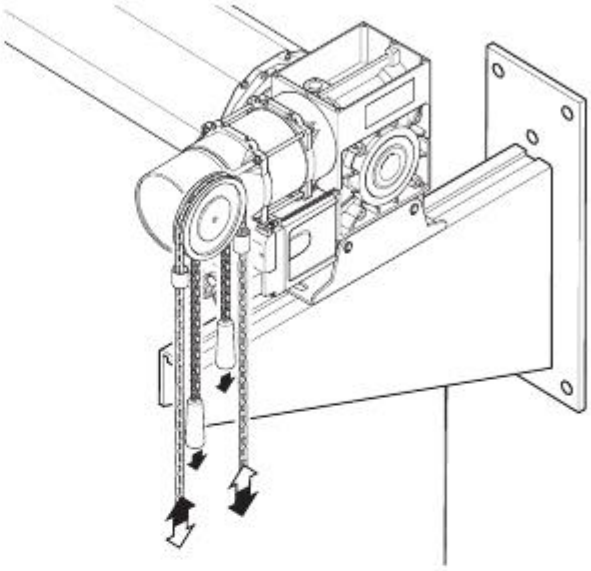
7. Emergency operation

Operation with emergency hand crank



- ☞ Push the emergency hand crank into the operator as far as it will go. The control voltage will be interrupted and the door can no longer be operated electrically.
- ☞ Move the door in the OPEN or CLOSE direction by turning the emergency hand crank.
- ☞ Remove the emergency hand crank from the operator after completing emergency manual operation. The control voltage will be switched on again and the door can be operated electrically.

Operation with emergency hand chain



Releasing

- ☞ Gently pull the chain with the red handle downwards as far as possible. The control voltage will be interrupted and the door can no longer be operated electrically.
- ☞ Release the emergency hand chain from its fixing.
- ☞ Move the door in the OPEN or CLOSE direction by pulling on the emergency hand chain on the side concerned.

Locking

- ☞ Gently pull the chain with the green handle downwards as far as possible. The control voltage will be switched on again and the door can be operated electrically.
- ☞ Attach the emergency hand chain to its fixing.
  The door can now be moved with the operator.

8. Maintenance

Warning!

To avoid damage to the operator and door, the following points must be observed:

- Maintenance must only be carried out by authorized persons.

- Directive BGR 232 must be complied with.

- Worn or faulty parts must be replaced.

- Only approved parts may be installed.

All maintenance work must be documented.

Information:

The drive unit has lifetime lubrication and is maintenance-free.

- ☞ Check that all mountings have been securely tightened.
- ☞ Check the brake (if available).
- ☞ Check the limit switches and safety switches.
- ☞ Check for noises and oil leaks.
- ☞ Check the mounting of the operator for corrosion.
- ☞ Check the housing for damage.

MFZ OVITOR

9. Technical data

Type (KU / KE):	MDF 05-10-15 KU MDF 05-10-15 KE MDF 05-14-12 KU MDF 05-14-12 KE	MDF 20-22-12 KU MDF 20-22-12 KE MDF 20-15-17 KU MDF 20-15-17 KE	MDF 20-15-12 KU 100% MDF 20-15-12 KE 100% MDF 20-10-17 KU 100% MDF 20-10-17 KE 100%
Driving torque (Nm):	100 / 140	220 / 150	150 / 100
Maximum safety catch torque (Nm):	692	1188	1188
Permissible torque (Nm):	151	259	259
Driving motor speed (min -1):	15 / 12	12 / 17	12 / 17
Motor output (kw):	0.37	0.75	0.55
Operating voltage (V):	400 / 3~	400 / 3~	400 / 3~
Mains frequency Hz:	50	50	50
Control voltage: (V):	24	24	24
Nominal motor current (A):	2.1	2.8 / 2.6	1,8 / 1.7
Motor duty cycle (%):	60	60	100
Cable on site (mm^2):	5 x 1.5	5 x 1.5	5 x 1.5
Fuse protection on site (A):	10.0	10.0	10.0
Protection type (IP)	54	54	54
Temperature range (°C):	-20 / +60	-20 / +60	-20 / +60
Continuous sound pressure level (dB (A)):	< 70	< 70	< 70
Weight per piece (kg):	22 / 25	20 / 23 / 20 / 23	22
Maximum number of revolutions of driven shaft:	13	18	18
Hollow shaft (mm):	30	30	30

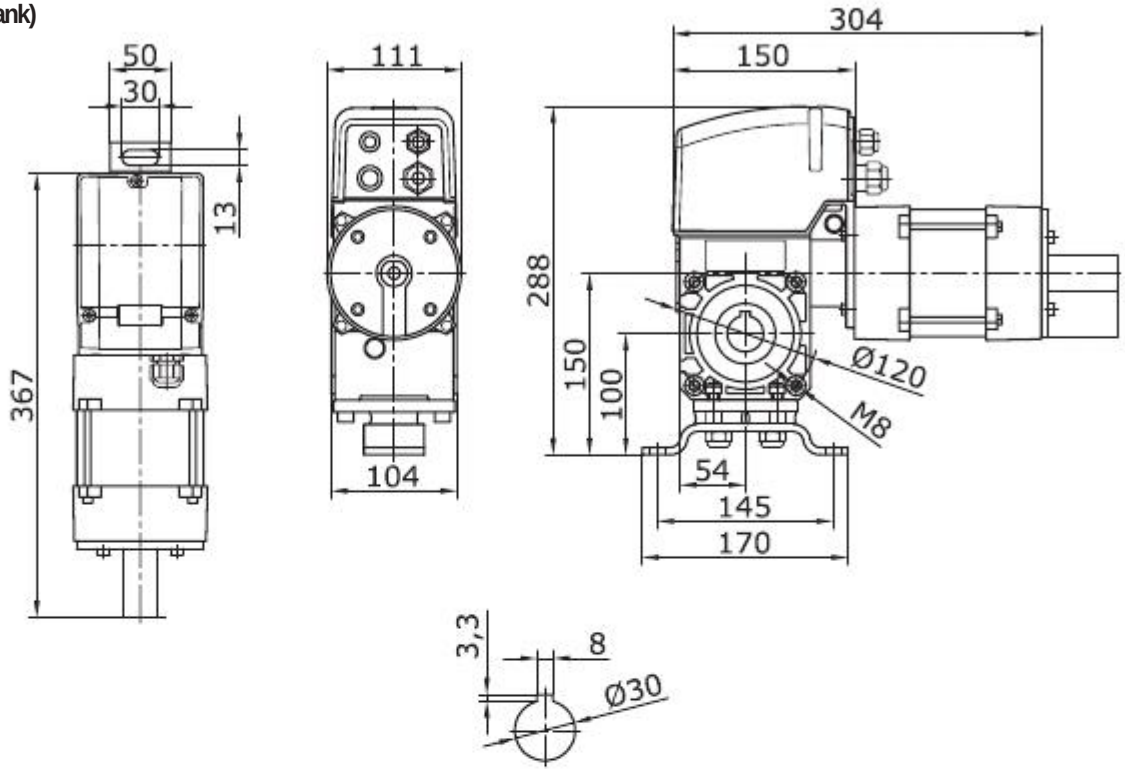
Type (KU / KE):	MDF 30-42-12 KU MDF 30-42-12 KE MDF 30-29-17 KU MDF 30-29-17 KE	MDF 30-27-12 KU 100% MDF 30-27-12 KE 100% MDF 30-19-17 KU 100% MDF 30-19-17 KE 100%	MDF 30-50-12 KU MDF 30-50-12 KE MDF 30-45-15 KU MDF 30-45-15 KE	MDF 30-30-12 KU MDF 30-30-12 KE
Driving torque (Nm):	420 / 290	270 / 190	500 / 450	300
Maximum safety catch torque (Nm):	1833	1833	1982	1188
Permissible torque (Nm):	432	432	503	432
Driving motor speed (min -1):	12 / 17	12 / 17	12 / 15	12
Motor output (kw):	1.1	0.75	1.1 / 1.3	1.1
Operating voltage (V):	400 / 3~	400 / 3~	400 / 3~	400/3~
Mains frequency Hz:	50	50	50	50
Control voltage: (V):	24	24	24	24
Nominal motor current (A):	5.1 / 3.3	2.1 / 1.9	4.5 / 4.3	3.6
Motor duty cycle (%):	60	100	60	60
Cable on site (mm^2):	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5
Fuse protection on site (A):	10.0	10.0	10.0	10.0
Protection type (IP)	54	54	54	54
Temperature range (°C):	-20 / +60	-20 / +60	-20 / +60	-20 / +60
Continuous sound pressure level (dB (A)):	< 70	< 70	< 70	< 70
Weight per piece (kg):	27 / 32 / 27 / 32	30 / 35 / 30 / 35	29 / 33	23 / 26
Maximum number of revolutions of driven shaft:	18	18	18	18
Hollow shaft (mm):	40	40	40	30

MFZ OVITOR

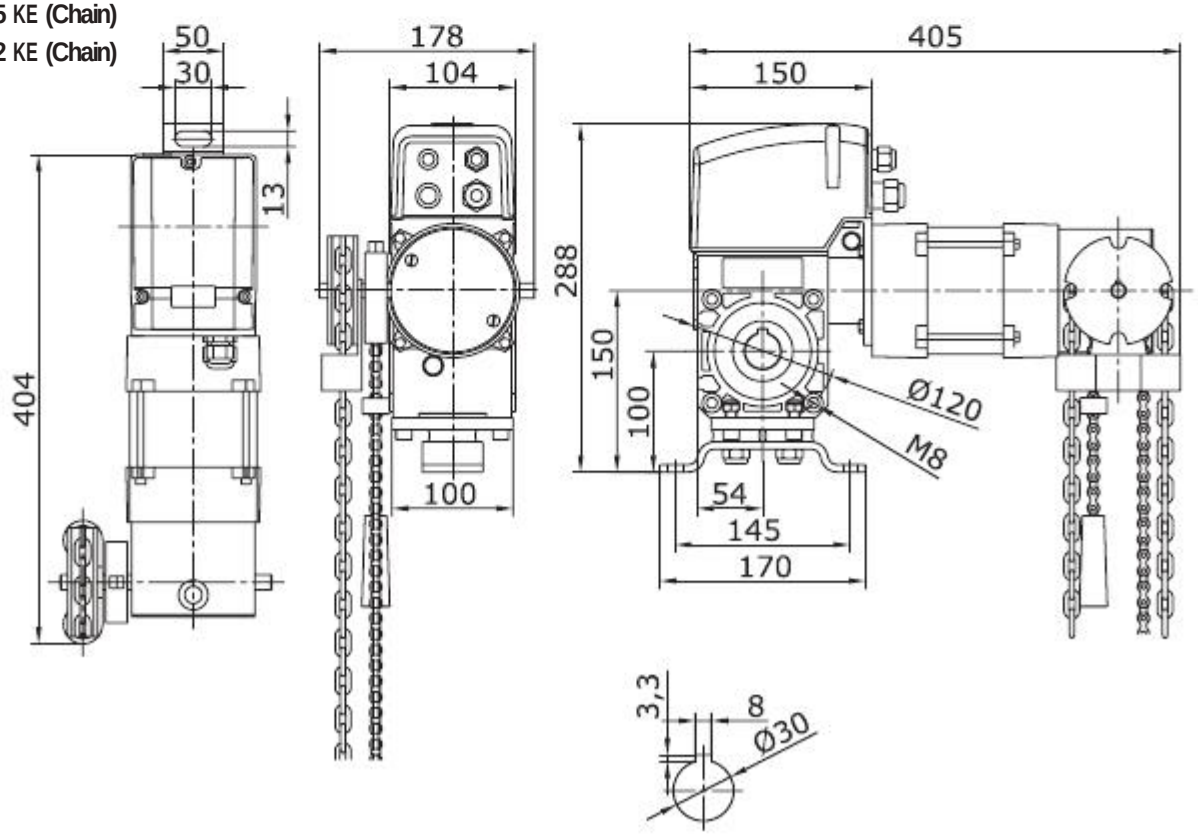
9. Technical data

Type (KU / KE):	MDF 50-65-10 KU MDF 50-65-10 KE	MDF 50-75-10 KU MDF 50-75-10 KE	MDF 6-100-9 KU MDF 6-100-9 KE	MDF 6-100-9 KU 100%
Driving torque (Nm):	650	750	1000	1000
Maximum safety catch torque (Nm):	3494	3494	5599	5599
Permissible torque (Nm):	763	763	1113	1113
Driving motor speed (min -1):	10 / 16	10 / 16	9	9
Motor output (kw):	1.2 / 1.8	1.4 / 2.1	1.5	1.5
Operating voltage (V):	400 / 3~	400 / 3~	400 / 3~	400 / 3~
Mains frequency Hz:	50	50	50	50
Control voltage: (V):	24	24	24	24
Nominal motor current (A):	4.2 / 4.0	5.8 / 5.6	6.1	6.1
Motor duty cycle (%):	60	60	60	60
Cable on site (mm^2):	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5
Fuse protection on site (A):	10.0	10.0	10.0	10.0
Protection type (IP)	54	54	54	54
Temperature range (°C):	-20 / +60	-20 / +60	-20 / +60	-20 / +60
Continuous sound pressure level (dB (A)):	< 70	< 70	< 70	< 70
Weight per piece (kg):	33 / 37	33 / 37	67 / 72	67 / 72
Maximum number of revolutions of driven shaft:	36	36	36	36
Hollow shaft (mm):	50	50	50	50

MDF 05-10-15 KU (Crank)
MDF 05-14-12 KU (Crank)

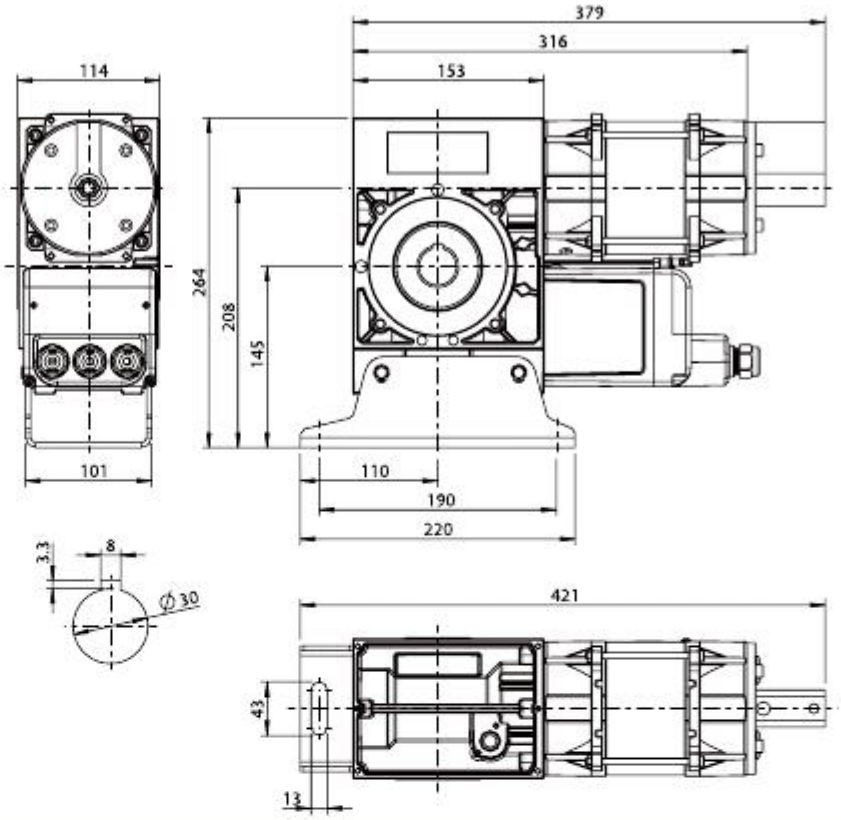


MDF 05-10-15 KE (Chain)
MDF 05-14-12 KE (Chain)

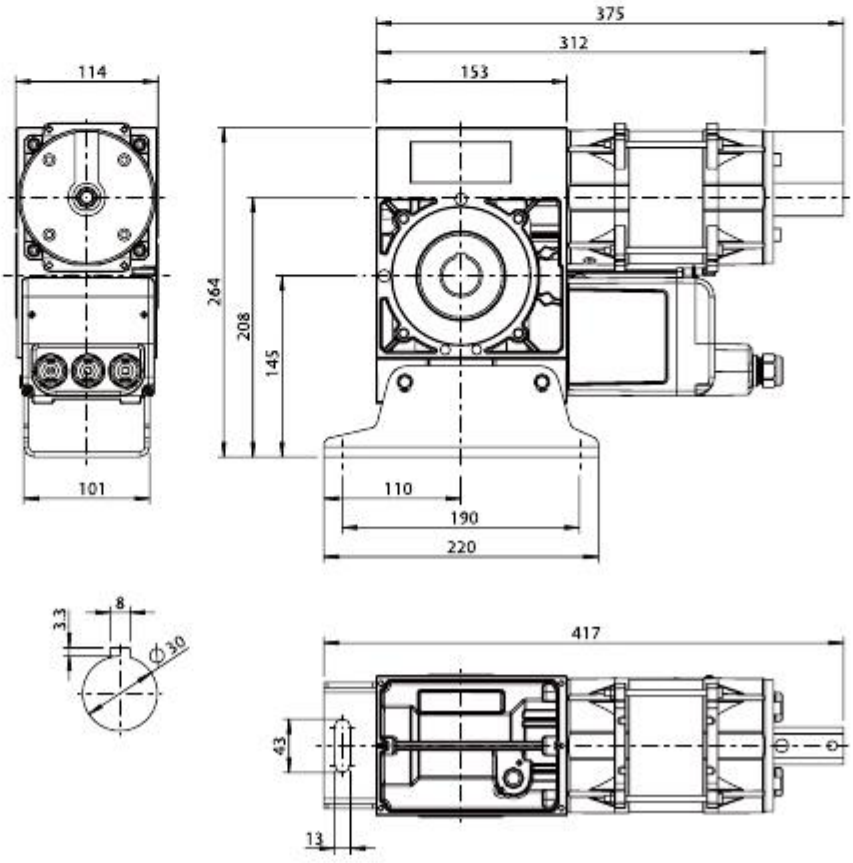


9. Technical data

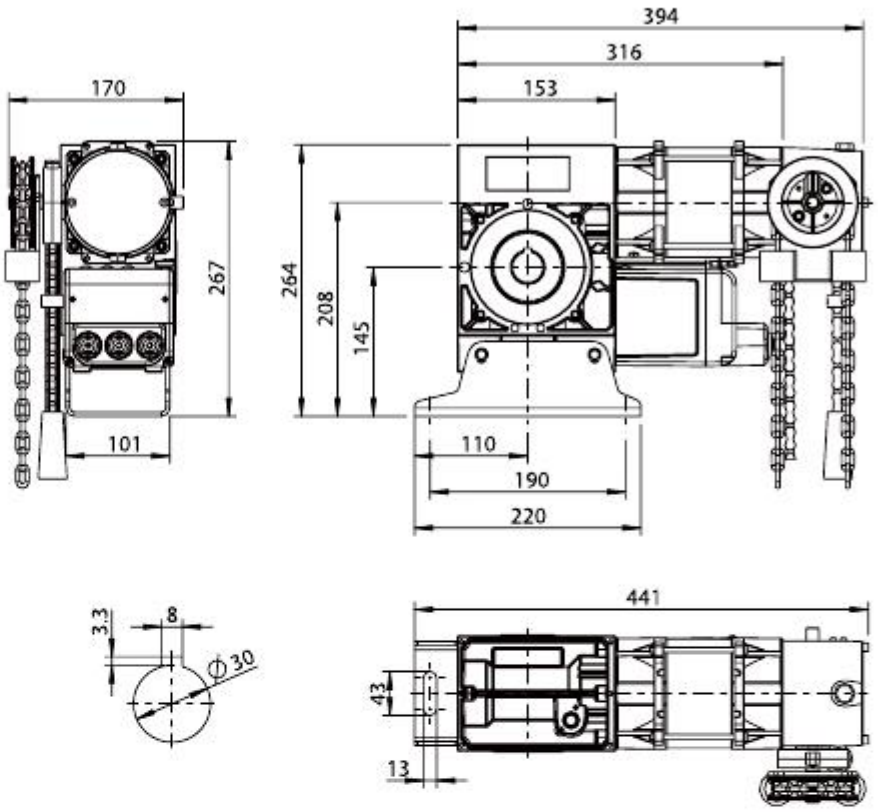
MDF 20-22-12 KU (Crank)



MDF 20-15-17 KU (Crank)



MDF 20-22-12 KE (Chain)



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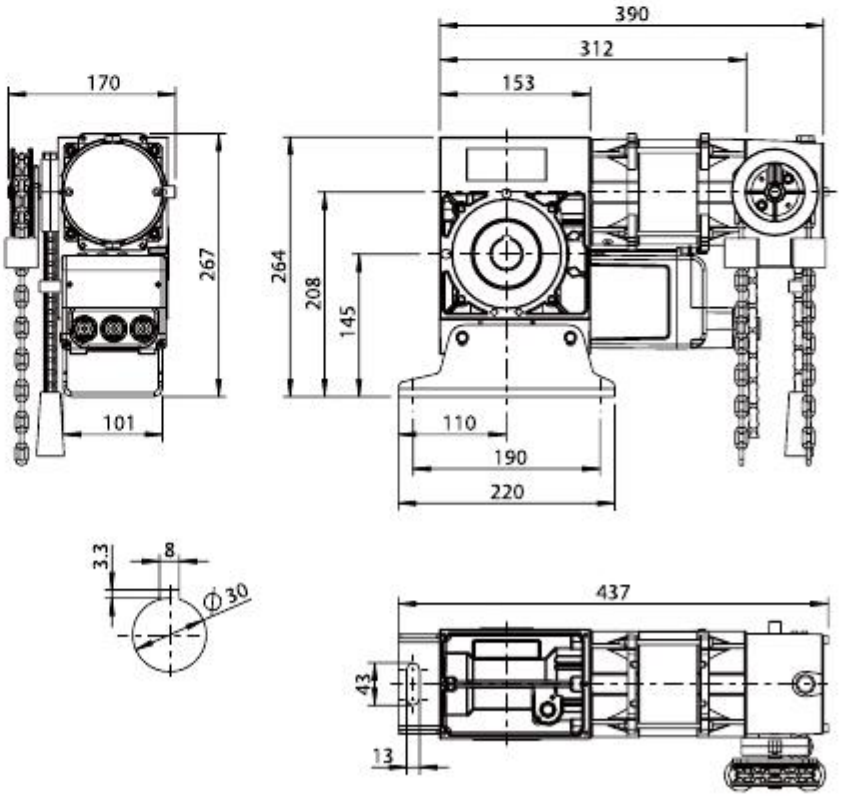
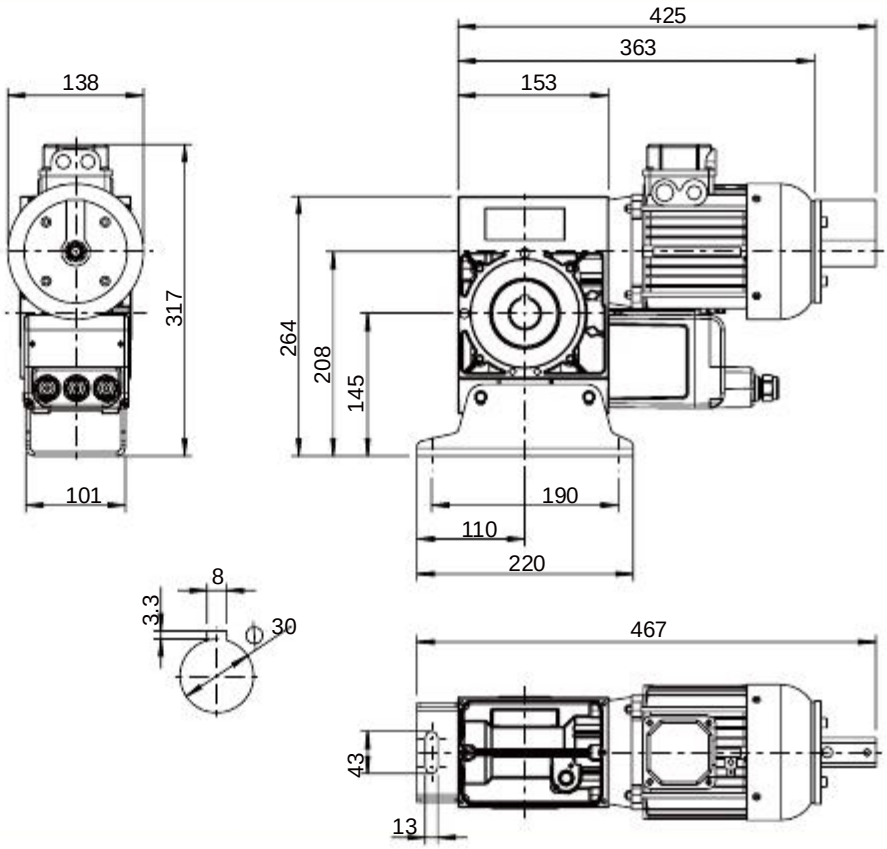
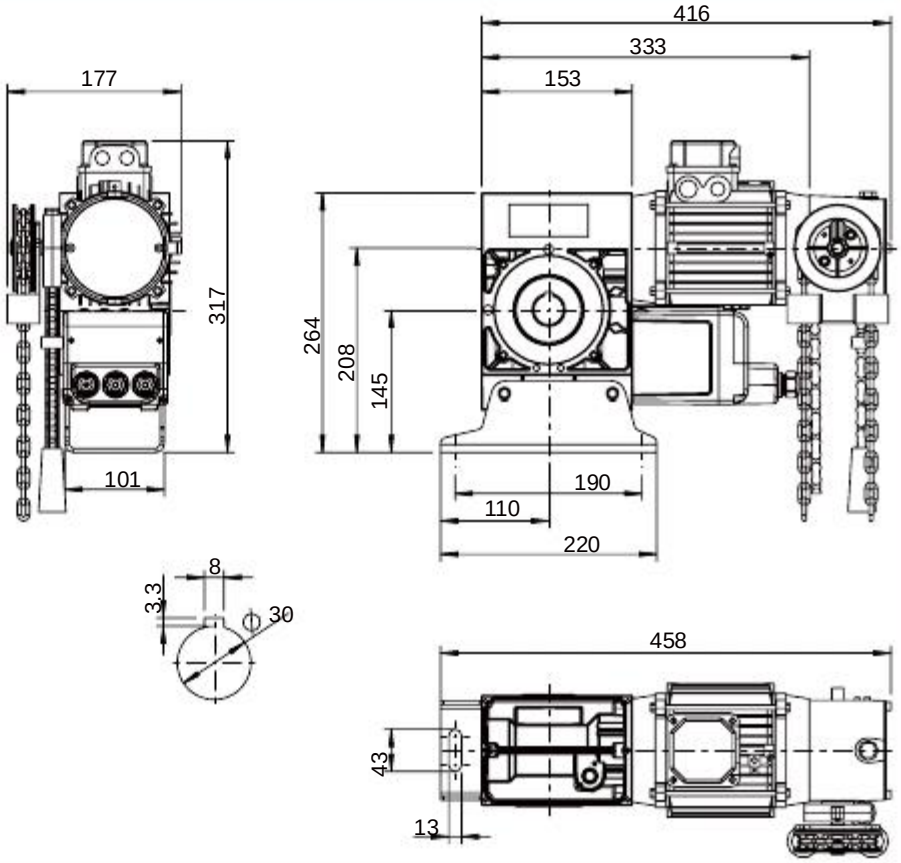


9. Technical data

MDF 20-15-12 KU 100% (Crank)
MDF 20-10-17 KU 100% (Crank)



MDF 20-15-12 KE 100% (Chain)
MDF 20-10-17 KE 100% (Chain)



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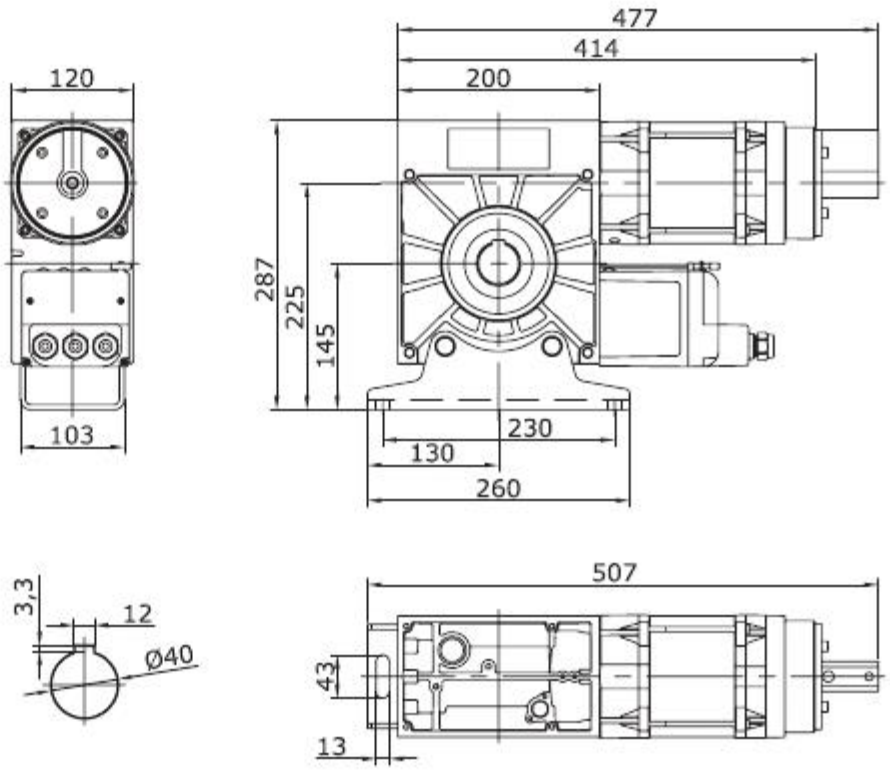
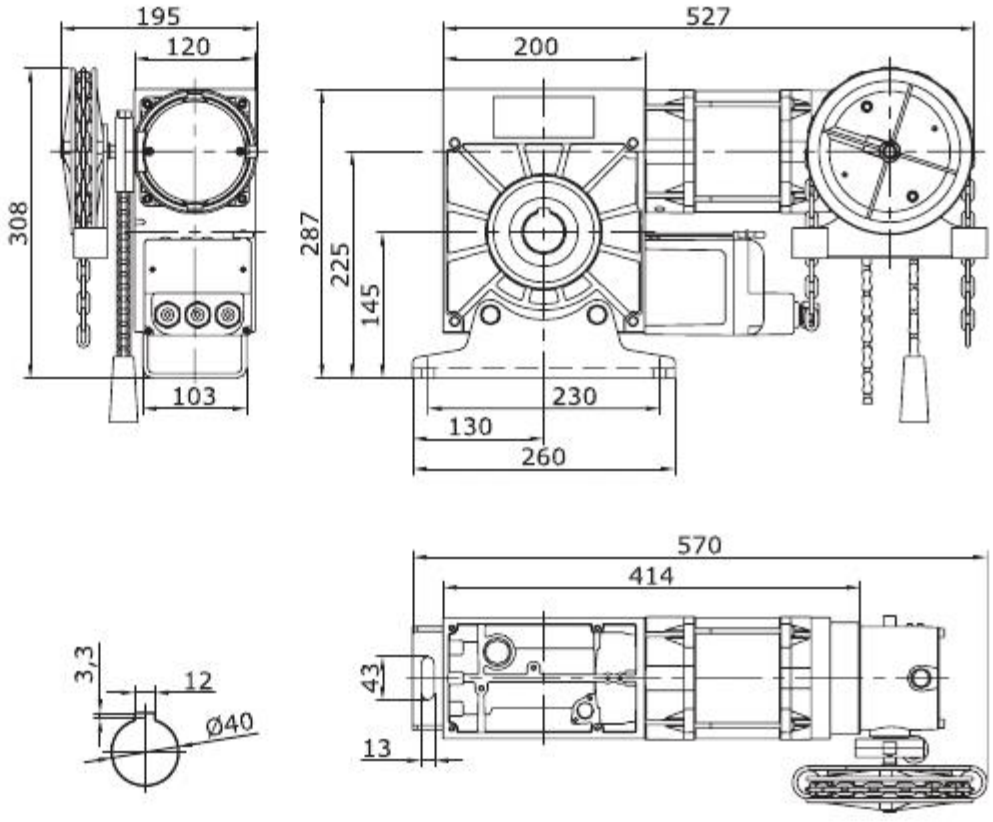
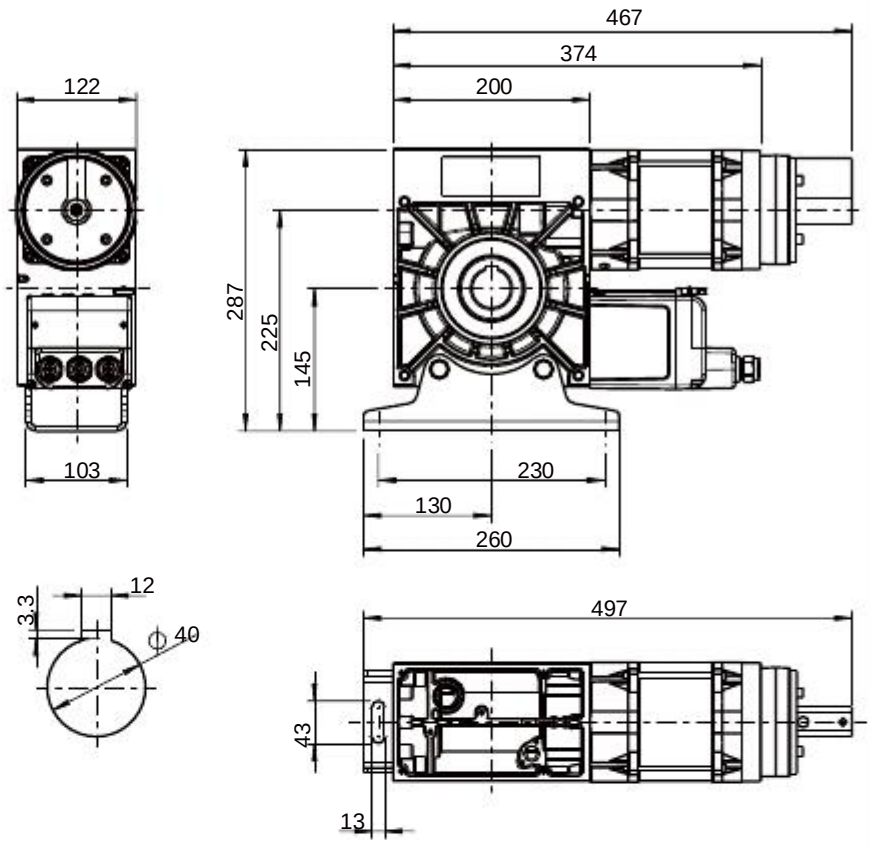


MDF 30-42-12 KE (Chain)

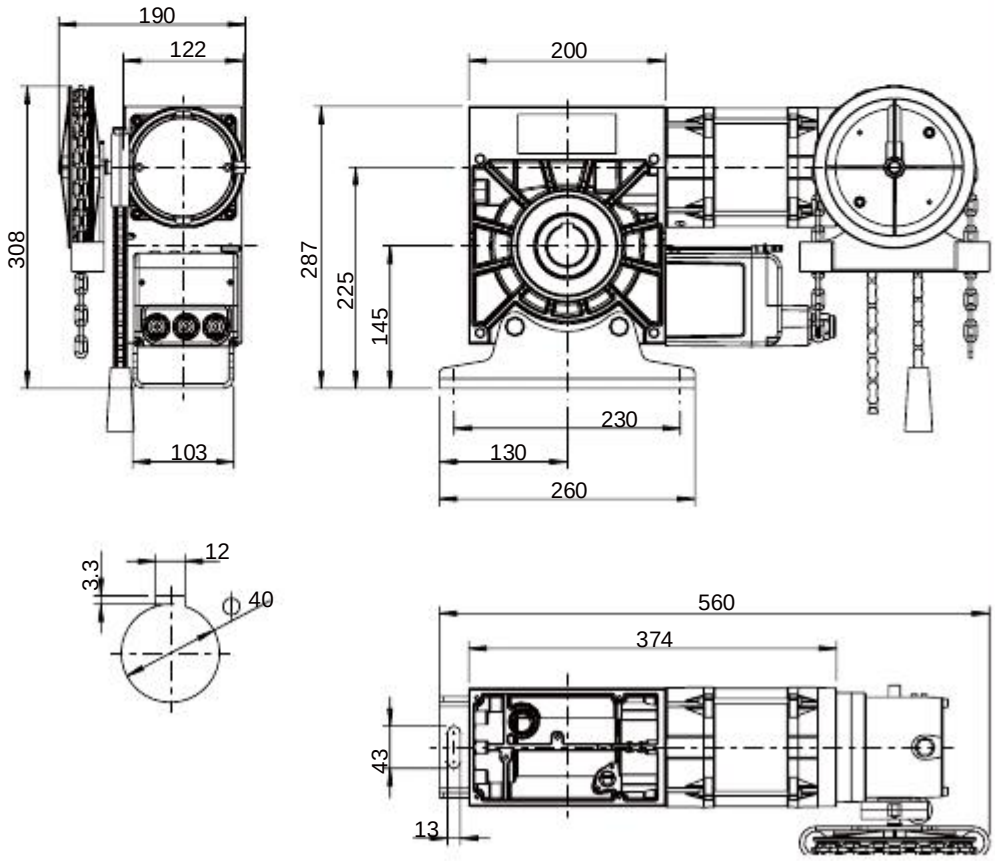


9. Technical data

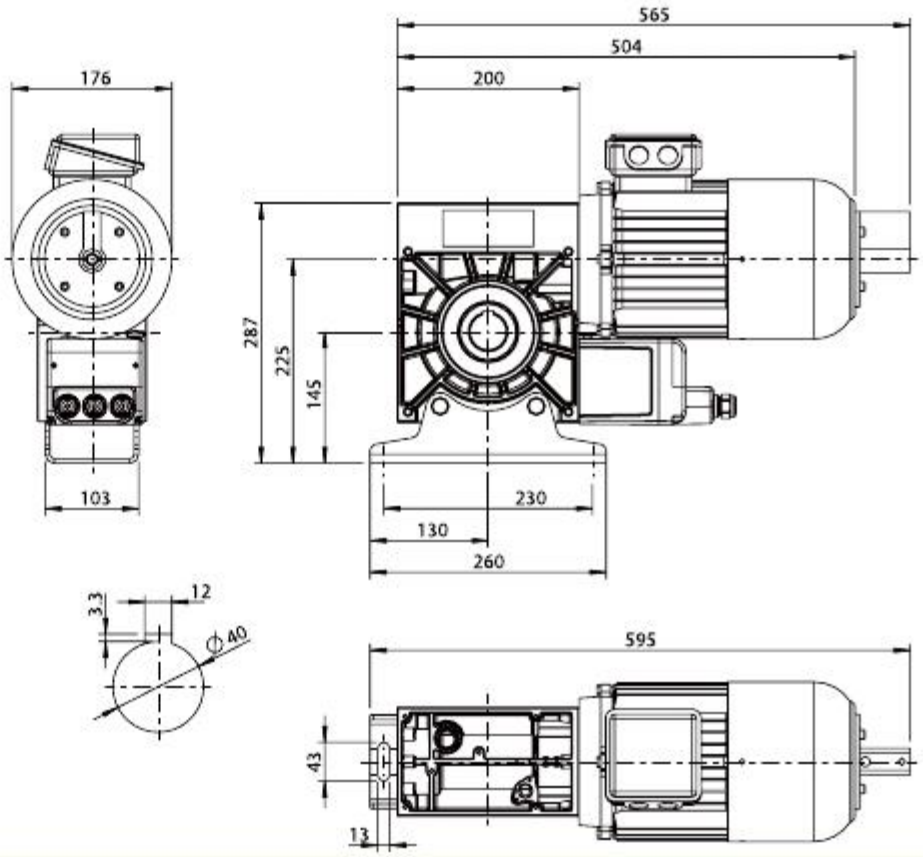
MDF 30-29-17 KU (Crank)



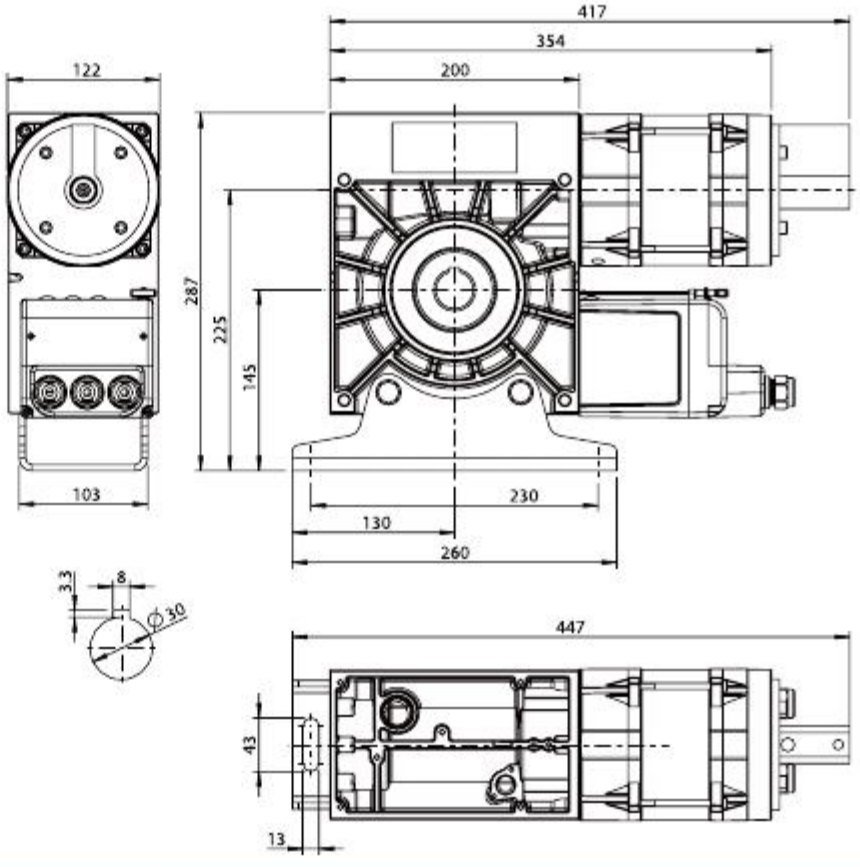
MDF 30-29-17 KE (Chain)



MDF 30-27-12 KU 100% (Crank)

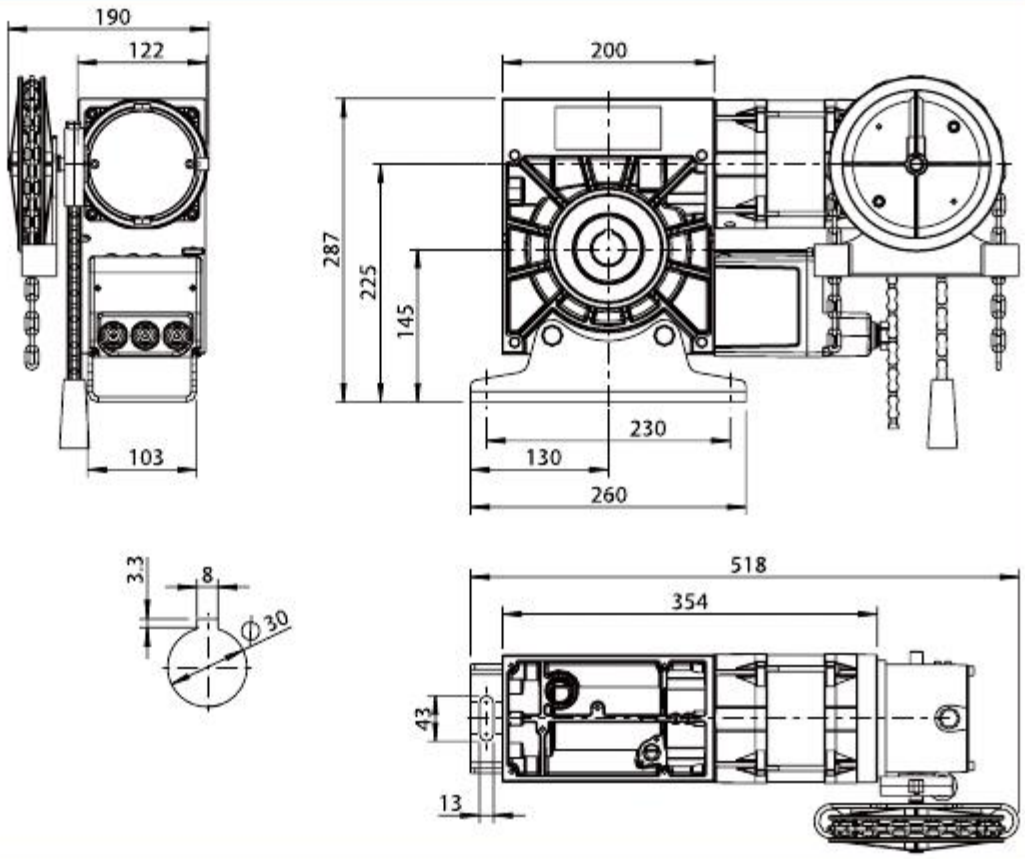


MDF 30-30-12 KU (Crank)

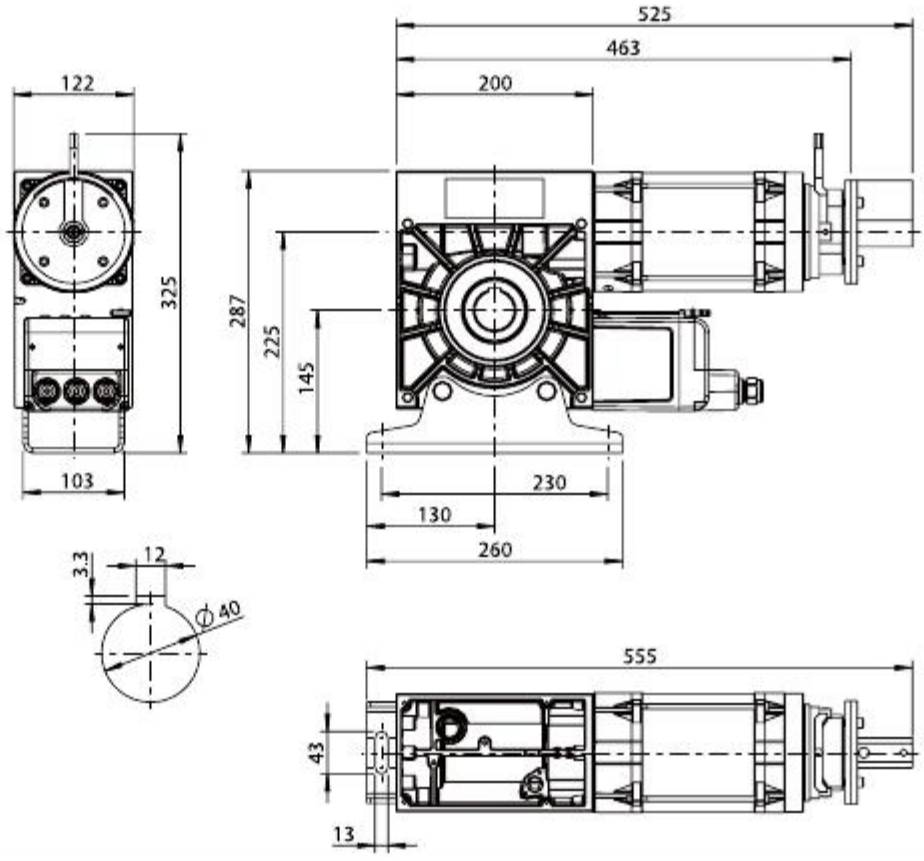


9. Technical data

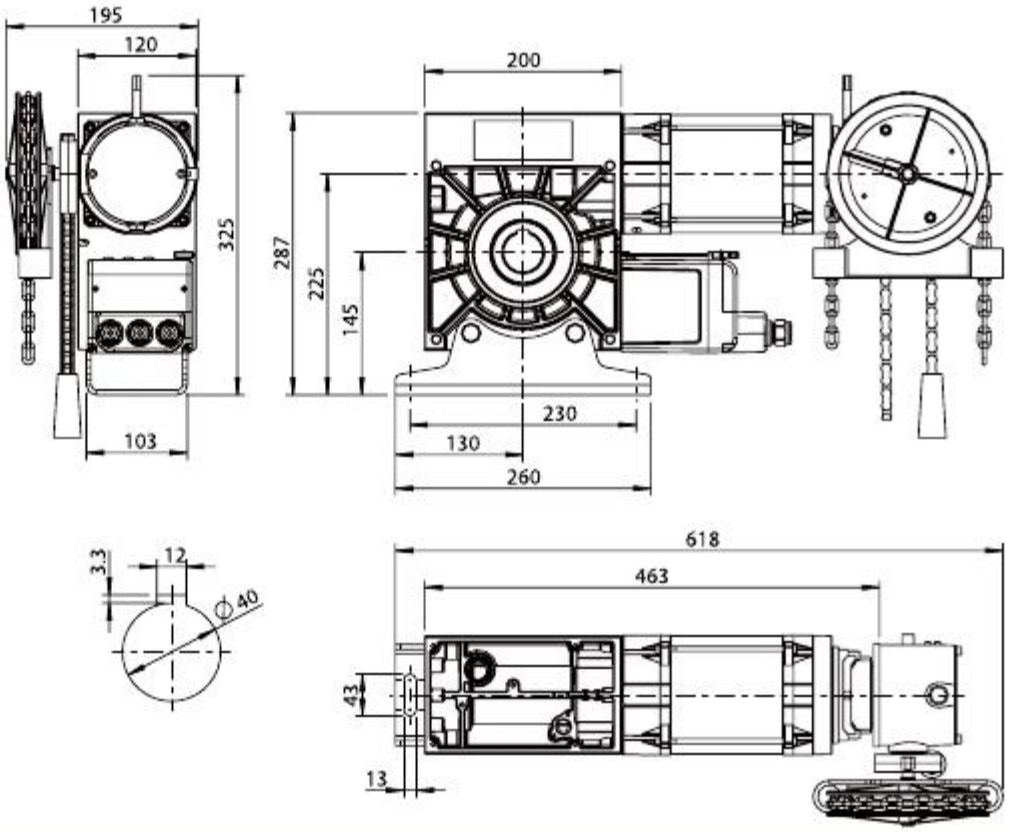
MDF 30-30-12 KE (Chain)



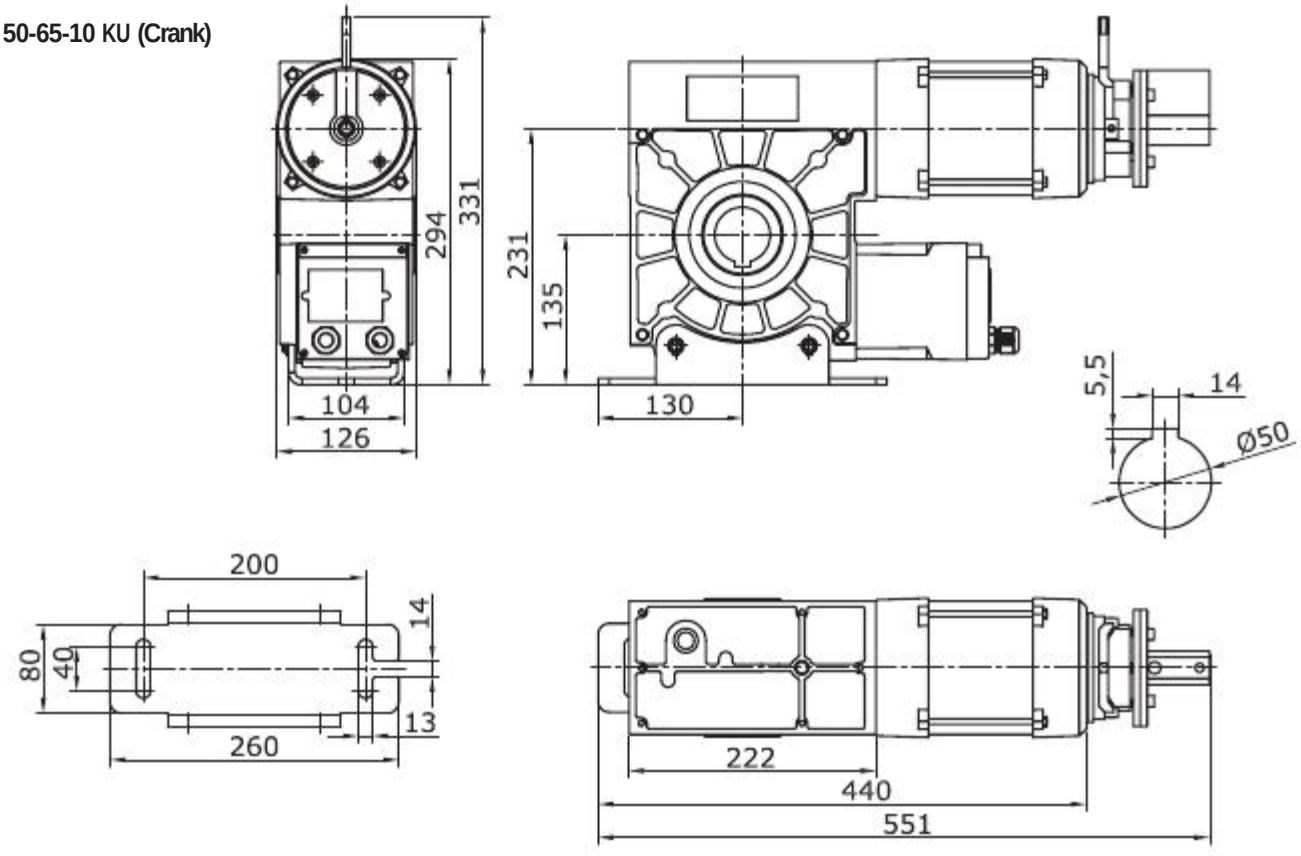
MDF 30-50-12 KU (Crank)



MDF 30-50-12 KE (Chain)

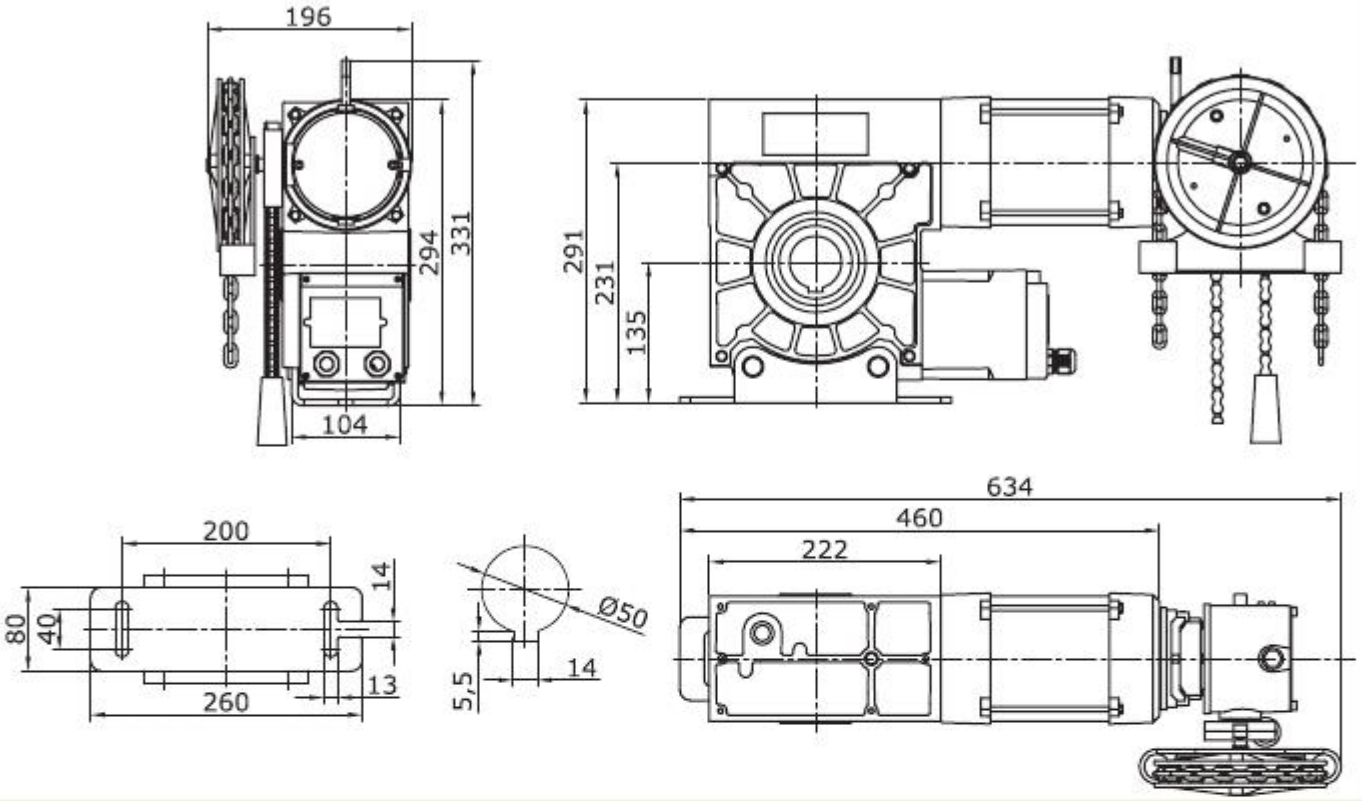


MDF 50-65-10 KU (Crank)



9. Technical data

MDF 50-65-10 KE (Chain)



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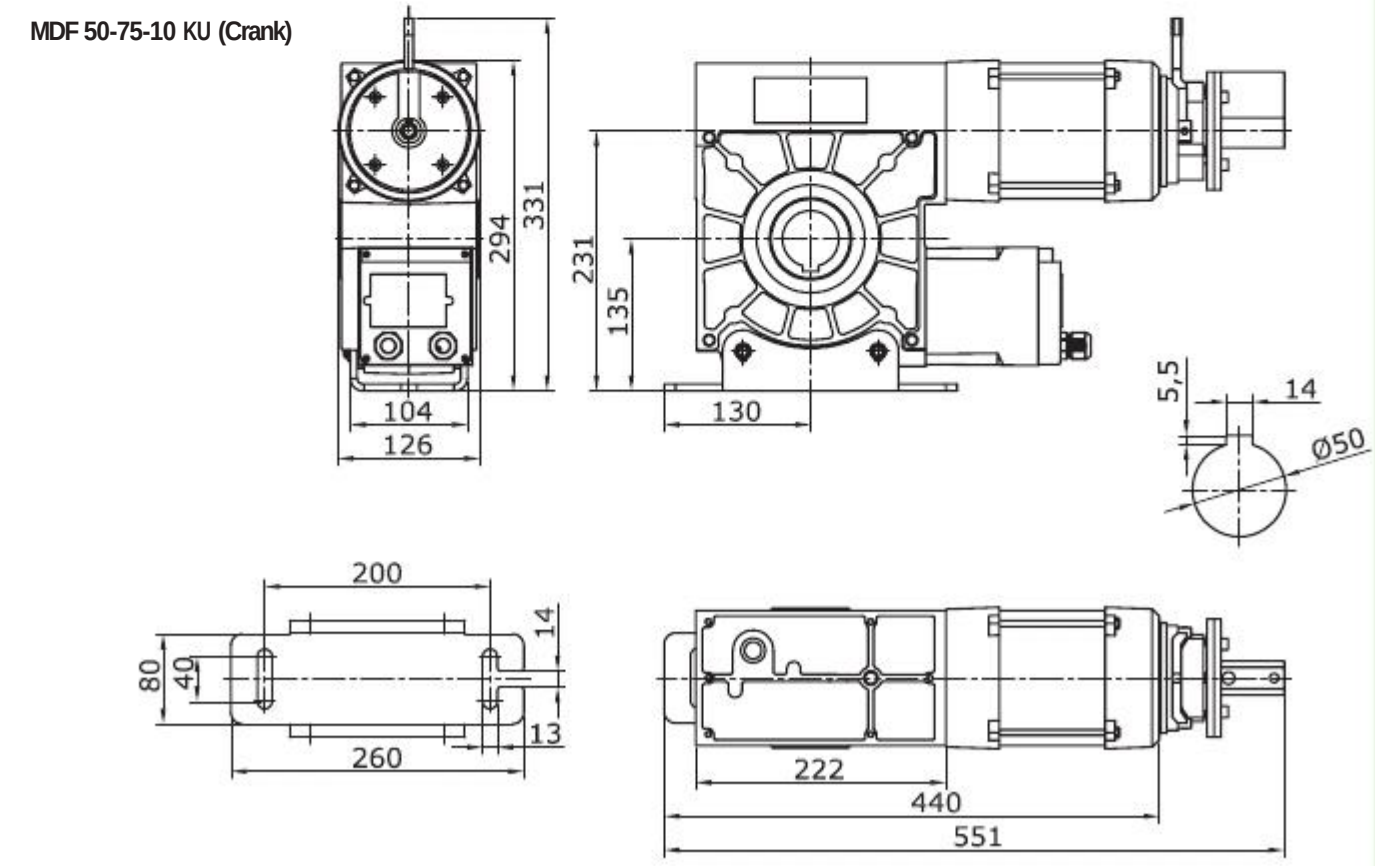

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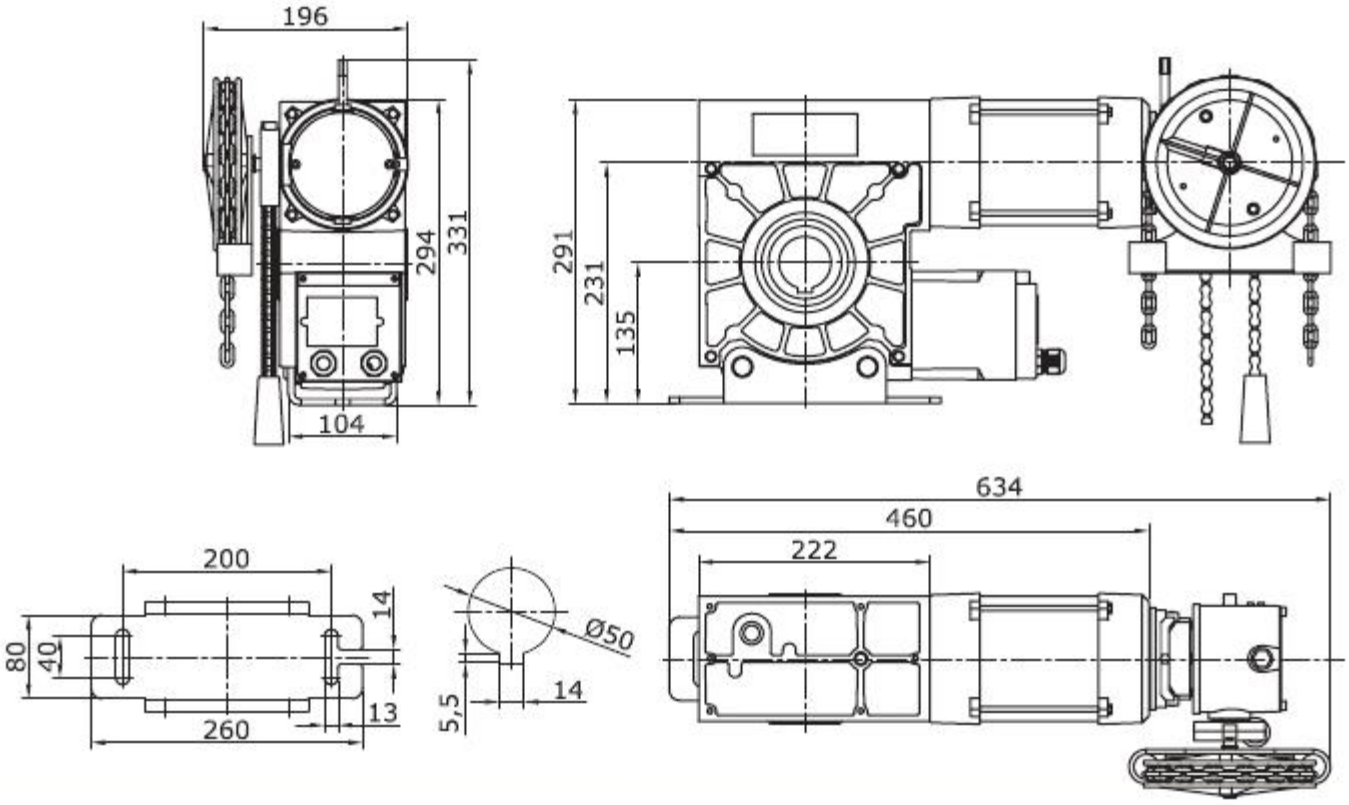
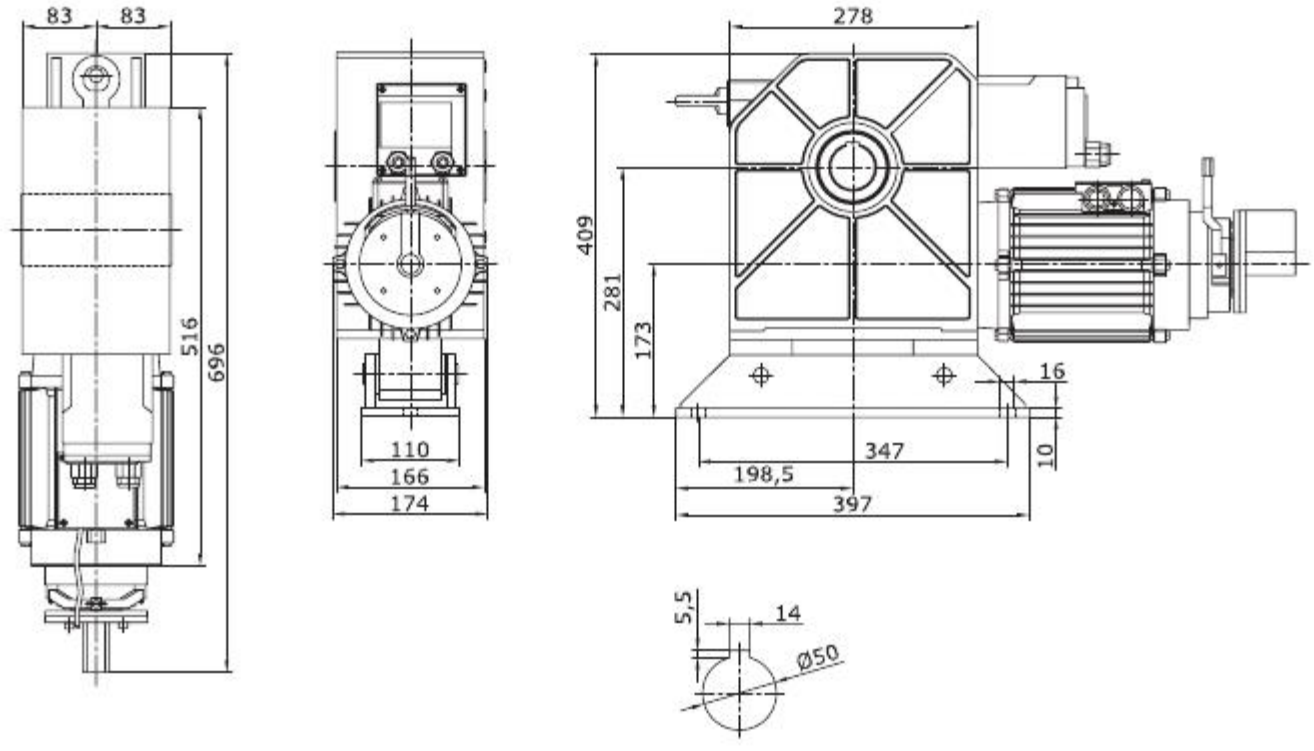
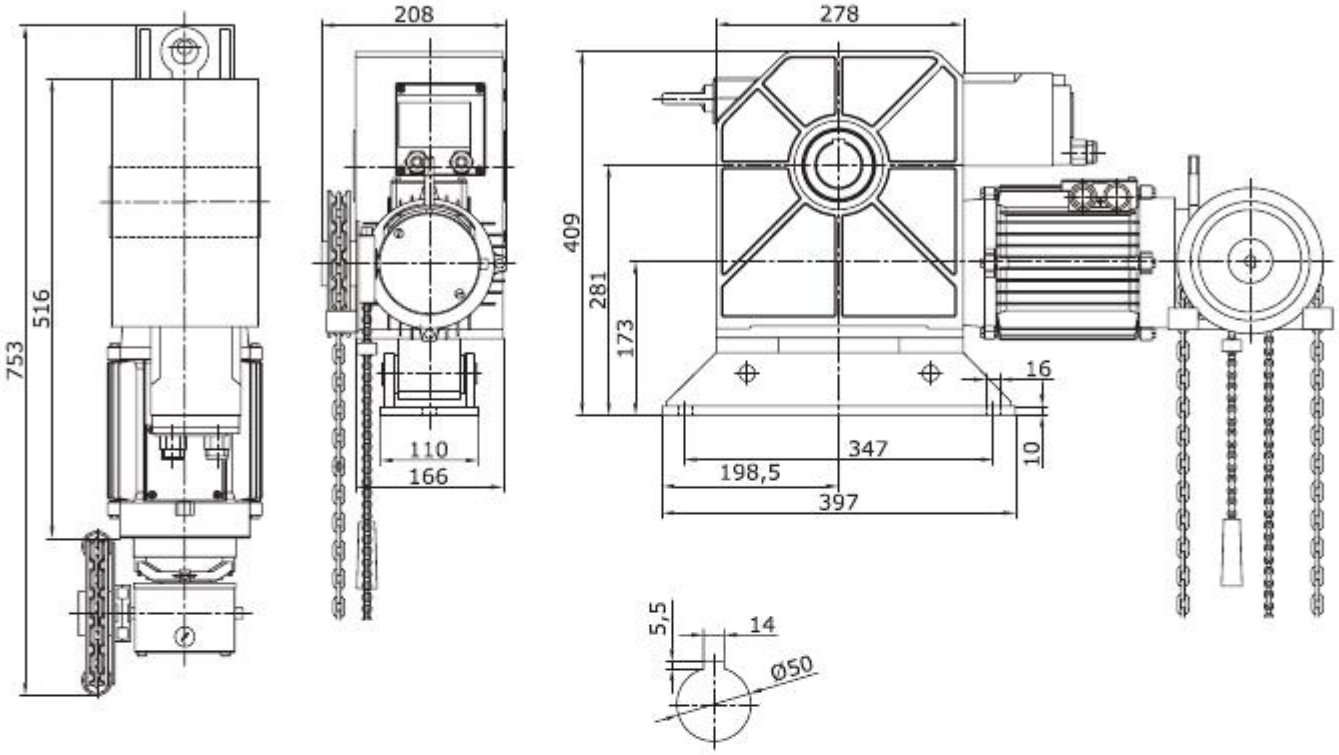


MDF 6-100-9 KU (Crank)

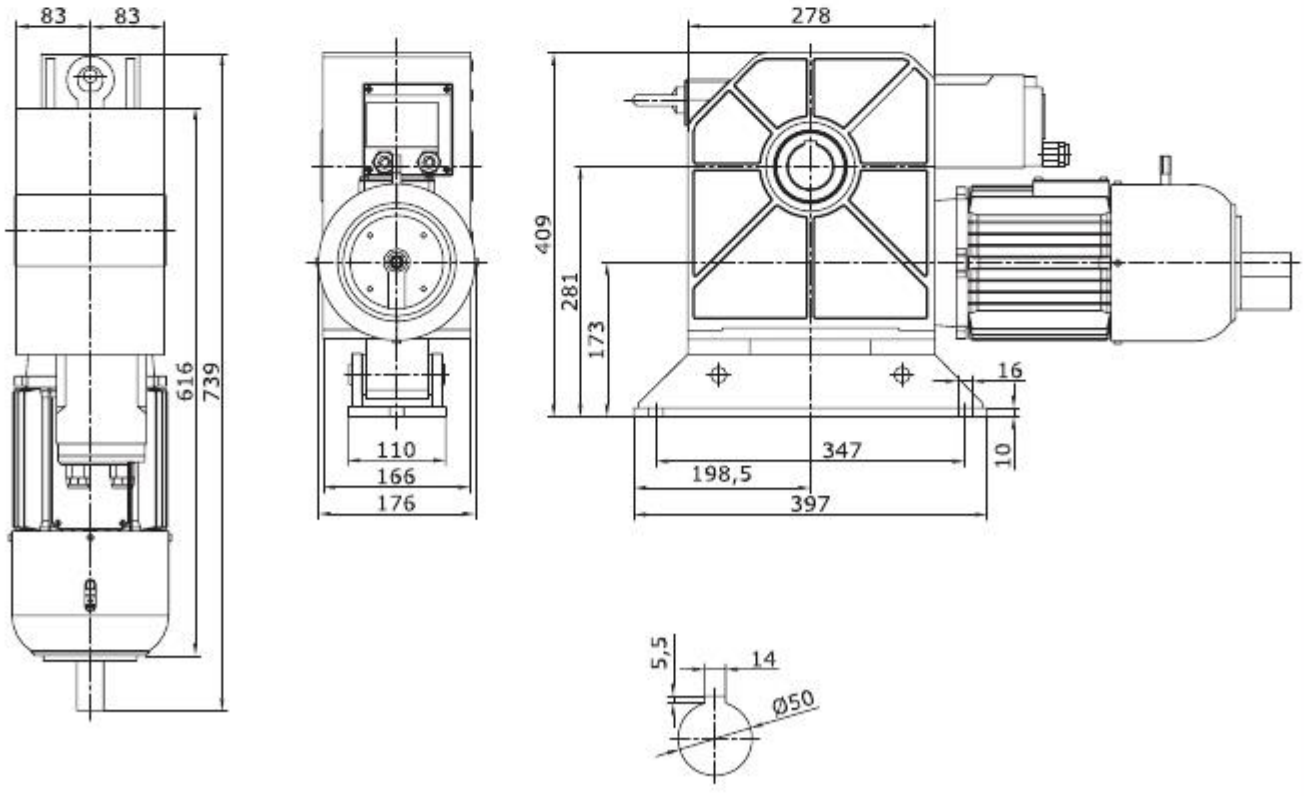


9. Technical data

MDF 6-100-9 KE (Chain)



MDF 6-100-9 KU 100% (Crank)



10. EU Declaration of Conformity

Manufacturer:
MFZ Antriebe GmbH & Co. Kg, Neue Muehle 4,
48739 Legden, Germany

We hereby declare that by virtue of their conceptual development and design, as well as their manufacture as we have brought them onto the market, the products cited below:
Roll-Up Door Operator / MDF
conform to the relevant basic health and safety regulations of the following EU directives and standards:

EU Construction Products Directive 89/106/EU
DIN EN 13241-1
DIN EN 12453
DIN EN 12445
DIN EN 12978

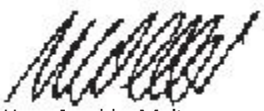
EU Electromagnetic Compatibility Directive 2004/108/EU
EN 55014-1
EN 61000-3-2
EN 61000-3-3
EN 61000-6-2
EN 61000-6-3

EU Machinery Directive 2006/42/EU
EN 60204-1
EN ISO 12100-1

EU Low Voltage Directive 2006/95/EU
EN 60335-1
EN 60335-2-103

BGR 232 - Directive for Power-driven Windows, Doors and Gates

Legden, 29 December 2009
Manufacturer's signature:



Hans-Joachim Molterer

Position of signatory:
Manager