



## BATTERY-POWERED ROTARY DRIVE

## Battery-powered Rotary Drive

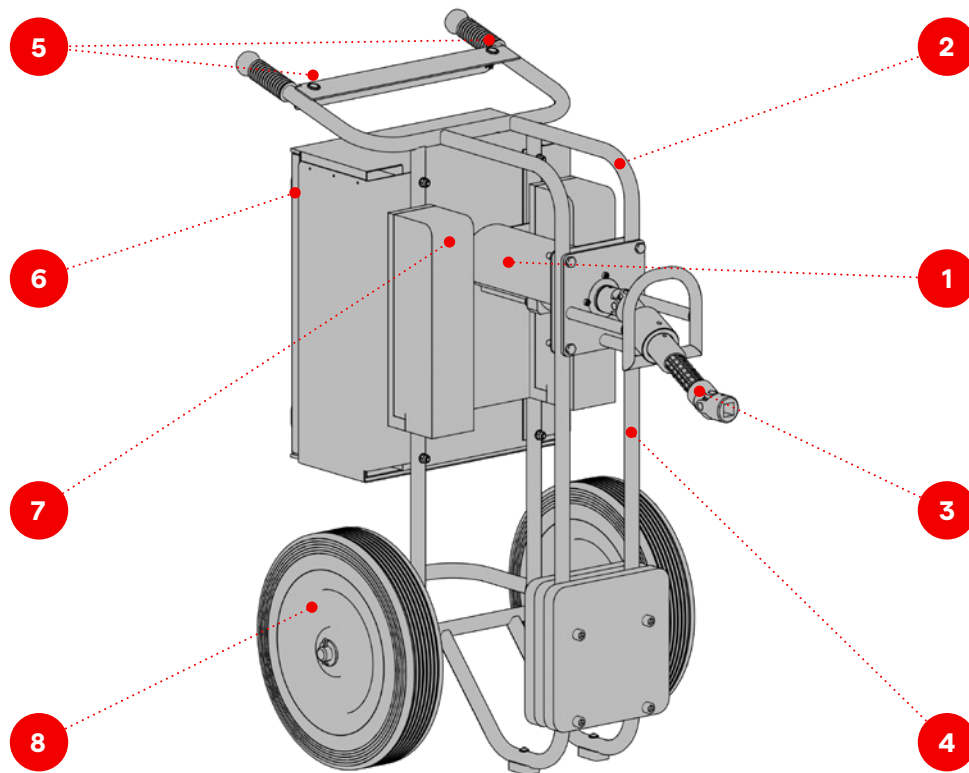
This operation manual contains all information for the correct and safe use of the rotary drive. Please, make sure you read and fully understand this manual before using the rotary drive. GLENTOR s.r.o. reserves the right to make any changes to the specifications in this manual at any time without prior notice and without being liable in any way. An integral part of this manual is the operation manual for the BLDC NEMA DB80 direct-current motor and for the EVBIKE 48 V–13 Ah frame battery. It is prohibited to reproduce any part of this manual without prior written consent.

### Technical data

|                                                        |                       |
|--------------------------------------------------------|-----------------------|
| Total length                                           | <b>1140 mm</b>        |
| Total width                                            | <b>670 mm</b>         |
| Total height                                           | <b>1140 mm</b>        |
| Operating temperature                                  | <b>-20 °C – 40 °C</b> |
| Articulated shaft torque                               | <b>90 Nm</b>          |
| Articulated shaft revolutions                          | <b>86 rpm</b>         |
| Wheels                                                 | <b>Ø 400 mm</b>       |
| Weight                                                 | <b>75 kg</b>          |
| Voltage                                                | <b>48 V</b>           |
| Battery capacity                                       | <b>13 Ah</b>          |
| Battery runtime                                        | <b>30 min</b>         |
| Battery charging time                                  | <b>3,5 h</b>          |
| The dimensions of the rotary drives can be customised. |                       |

## Rotary Drive Description

The rotary drive is used for handling railway carriage loading platforms. The following picture shows the essential parts of the rotary drive.



- |   |                          |
|---|--------------------------|
| 1 | BLDC motor with gear box |
| 2 | Protective frame         |
| 3 | Articulated shaft        |
| 4 | Load-bearing frame       |

- |   |                 |
|---|-----------------|
| 5 | Buttons         |
| 6 | Distributor box |
| 7 | Battery         |
| 8 | Wheels          |

## Safety Rules

1. Please read all the information in this manual carefully and familiarise yourself with the control features and proper use before operating the rotary drive.
2. Use the rotary drive with extreme caution. Improper or careless use of the rotary drive may cause severe or fatal injuries.
3. The operator is liable for any accidents or damage caused to other persons or their property.
4. Never smoke, eat or drink while operating the rotary drive.
5. The operator must not be under the influence of alcohol or other addictive or intoxicating substances.
6. While you use and handle the rotary drive, always wear stout footwear, protective gloves, suitable ear protectors and long trousers.
7. Do not use the drive in bad weather, such as heavy rain, strong winds, heavy frost, thick fog, and snow.
8. Never use the rotary drive on icy surface.
9. Always operate the rotary drive on flat surface. If you use it on uneven surface, proceed with extreme caution.
10. Around the rotary drive there must be no obstacles that might reduce the operator's handling capabilities.
11. Always make sure that the operator is not forced to enter the danger zone.
12. Never touch or approach rotating parts while the unit is in operation. There is increased risk of injury. Avoid using other than original spare parts.
13. Only operate the rotary drive in daylight or under sufficient artificial light.
14. Proceed with extreme caution while moving and turning the rotary drive. In the event of any collision, always check the rotary drive for damage.
15. Keep the rotary drive clean and in working order.
16. Never use a damaged rotary drive. Protect the electric motor against moisture and water leaking into it.
17. Always make sure that all bolts, nuts and other fasteners are properly tightened. Each element of the rotary drive has an important function, so none of them must be modified or removed.
18. Do not transport the rotary drive while the electric motor is running.
19. Store the rotary drive in sheltered and dry places. Allow the rotary drive to cool down before storing it in indoors. Do not store the rotary drive near fire, sparks or heat sources.

## Instructions for use

1. Check the general condition of the rotary drive and battery status before use.
2. Use both hands to grasp the handles, put one foot on the wheel drive axle and tilt it towards yourself.
3. Transport the rotary drive to the railway carriage so that the head of the open end of the articulated shaft is directed towards the platform lift control shaft. Put the rotary drive on the ground and make sure it is stable on its wheels and on the front stops.
4. Take hold of the articulated shaft, press the articulated shaft and put the head onto the platform lift control shaft.
5. Turn on the battery, make sure that neither button is pressed and turn the electric motor on by turning the switch to 1.
6. Press the left-hand or right-hand button to lower or lift the railway carriage loading platform. Put the loading platform to the required position, check whether the buttons are not pressed and turn the motor off.
7. Remove the articulated shaft head and drive the rotary drive away from the carriage.

## Drive Operation

The drive is started by pressing one of the rotation direction buttons on the right- and left-hand frame handles. The drive status is indicated by four indicators. The two white indicators monitor the logical status of the rotation direction buttons. The red and green indicators indicate drive system status according to the table below.

| Event                          | Result ↓        | Description ↓                                                             | Red Led | Green Led               |
|--------------------------------|-----------------|---------------------------------------------------------------------------|---------|-------------------------|
| Normal Status                  |                 | Unit fully functional                                                     | 0       | 1                       |
| Distributor Overheated         | STOP            |                                                                           | 1       | 0                       |
| Battery Voltage Low            | Speed decreased | Decrease in speed to 50% indicating the necessity of battery replacement. | 0       | 1                       |
| Battery Voltage Critically Low | STOP            | Battery must be replaced.                                                 | 1x/1    | 0                       |
| Excessively Frequent Starting  | STOP            | Too many starts within a short time period – reset blocked for 20 s       | 2x/1    | 0=remains,<br>1=is over |
| $Speed_{act} \ll speed_{stp}$  | STOP            | Drive blocked, overloaded during travel                                   | 3x/1    | 0=remains,<br>1=is over |
| $Speed_{act} \ll speed_{stp}$  | STOP            | Drive blocked, overloaded during starting – reset blocked for 10 s        | 3x/1    | 0=remains,<br>1=is over |
| Fault driver                   | STOP            | Internal BLDC motor exciter fault                                         | 4x/1    | 0=remains,<br>1=is over |