Bonding Reel (Spring Rewind)

ENGLISH

BONDING REEL

Installation and Operating Manual

ELAFLEX HIBY GmbH & Co. KG
Schnackenburgallee 121 · 22525 Hamburg, Germany
Tel. +49 40 540005-0 · info@elaflex.de · elaflex.com

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BONDING REEL

Installation and Operating Manual

Please read this manual carefully before installation or operation of the hose reel, see to additional hose reel markings.

Be sure all instructions are understood. Correct installation, use and maintenance are essential. In case of doubt or question, please contact your service contractor or the manufacturer.

DESCRIPTION

The ELAFLEX bonding reel is required when transferring flammable liquids or powders at high flow rates. It is essential that adjacent system components are electrically connected, or bonded, in order to reduce the risk of explosion caused by static electrical discharges.

The ELAFLEX bonding reel comes with 30 m of standard cable. A heavy duty insulated brass clip is fitted together with the cable. The standard cable is yellow PVC insulated 16 × 14 × 0.15 copper braid with an electrical resistance of 0.007 Ohms.

The Cable Guide Assembly allows the cable to be pulled out at an angle without the cable fouling on the inner or outer plate.

APPROVALS / OPERATING CONDITIONS

Product name	HR bonding reel
Part number	AV-00551
Operating temperature	-40 °C to +65 °C
Materials of construction	SJ235 carbon steel, polyester powder coated for outdoor use
Allowable resistance	Ideally less than 3 Ohms, under no circumstances > 25 Ohms
Weight	12 kg
Connections for bonding	See chapter 'Installation'
Connections for mounting	See chapter 'Installation'

GENERAL INFORMATION / WARNINGS

ELAFLEX is not responsible for the final installation, as there are too many unpredictable ways to install the bonding reel. Therefore, this responsibility lies in the hands of the installer/plant engineer. Make sure that the installer has reviewed all available information on safety, installation and maintenance provided with the equipment. Take appropriate measures to guard against pinch points.

This equipment must only be used for the purpose for which it has been expressly conceived.

WARNING:

- ➔ Ensure that a sound electrical contact is established between the bonding reel and the structure/bonding system.
- ➔ Ensure that the bonding reel is located in an area away from likely impact with equipment, i.e. the refuelling coupling.
- ➔ When working in a potentially explosive atmosphere all installation and maintenance work must be carried out using non sparking tools.
- ➔ All personnel must use the appropriate personal protective equipment during operation of the bonding reel.
- ➔ Before rewinding the cable, the operator must walk the clip back to the bonding reel to avoid the clip dragging along the ground.
- ➔ The operator must exercise caution during the last 2 m of cable rewind to prevent impact between the clip and the bonding reel or themselve.
- ➔ All maintenance work must be carried out using safe principles and adhere to site standards and regulations.
- ➔ Bonding cables must NEVER under any circumstances be cut and joined together in order to remove damaged areas.
- ➔ The resistance from the clip to the adjoining structure/system must be checked at the time of installation and should ideally be less than 3 Ohms, and under no circumstances more than 25 Ohms.

➔ Do not apply lubricant of any kind to the internal components of the bonding reel. For unreeling as well as rewind do not exceed a cable speed of 1 m/s. Never let go the cable in an unlocked reel position so that the rewind system is always under control by the operator.

Danger of high velocity: Bonding clip can cause injury to personnel, damage surrounding equipment or void the safety against ignition sources.

At any time when coiled back the cable must be guided back on the reel.

Keep hands away from discs when operating the bonding reel. It can lead to serious injury.

Keep the hand guiding the cable onto the bonding reel away from the rotating drum so that there is no trapping or pinching fingers.

➔ **CAUTION:**
All installation work must be carried out using safe principles and adhere to site standards and regulations.

INSTALLATION

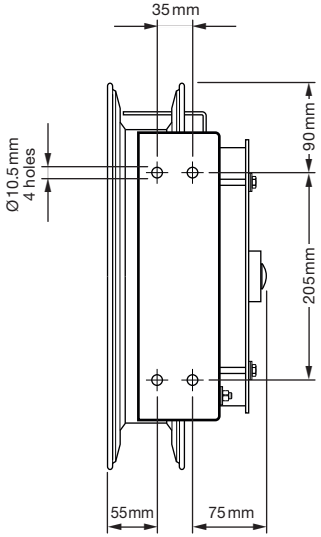
WARNING:

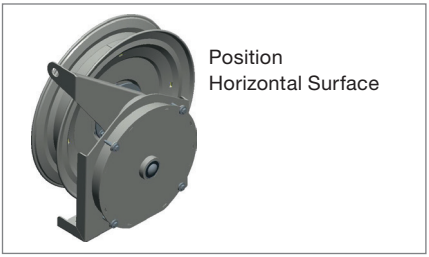
➔ Ensure that a sound electrical contact is established between the bonding reel and the structure/bonding system.

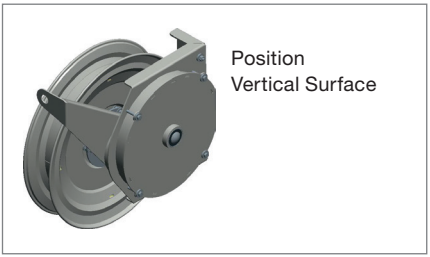
➔ Ensure that the bonding reel is located in an area away from likely impact with equipment, i.e. the refuelling coupling.

➔ When working in a potentially explosive atmosphere all installation and maintenance work must be carried out using non sparking tools.

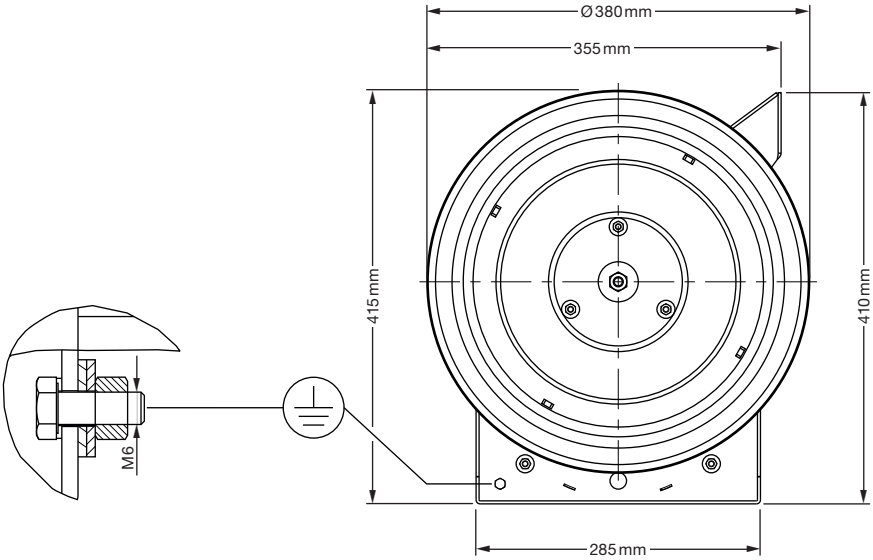
The reel can be mounted by drilling 4 of 10 mm holes and bolting down the reel/bracket assembly on a horizontal surface using 4 of M8 bolts and if necessary securing the bolts directly using the half-nut and lock washer.







In all cases it is essential that a sound electrical contact is established between the reel and structure/bonding system. Therefore a separate bonding cable or link from the bracket to the structure is required (see bonding connection in drawing below).



It is essential that the cable end lug is secured to the outer plate, NOT the inner plate due to the construction of this reel.

The resistance from the clip to the adjoining structure/system must be checked at the time of installation and should ideally be less than 3 Ohms, and under no circumstances more than 25 Ohms.

➔ **CAUTION:**
All installation work must be carried out using safe principles and adhere to site standards and regulations.

OPERATION

Use of Spring Rewind Systems

Be cautious when the bonding reel latch assembly lock is disengaged.

➔ **NOTE:**
When unlocking the latch, ensure that you have a firm hold on the cable and that the cable is guided on the reel when the reel rewinds the cable.

For unreeling as well as rewind do not exceed a cable speed of 1 m/s.
Never let go the cable in an unlocked reel position so that the rewind system is always under control by the operator.

Danger of high velocity: Bonding clip can cause injury to personnel, damage surrounding equipment or void the ATEX-safety.

Operating

For **unreeling** the cable pull the cable to uncoil it from the reel. When releasing the pull force, assure that the reel brake will fix the reel/cable in the wanted position.

Bonding

The bonding clip must be securely attached to an appropriate bonding point on the receiving vehicle before fuel transfer can commence.

All fuelling movement must be completed and any refuelling nozzles removed before bonding is removed.

Once fuelling has been completed, the operator must unclip the bonding clip and walk it back to the reel to avoid the clip from being dragged along the ground.

To **rewind** the cable, give the cable a short pull and the cable will be coiled on the reel by means of the tensioned spring.

Because of the strong rewinding force of the spring, make sure to have a firm grip on the cable or bonding clip in order to avoid uncontrolled and quick rewinding of the cable onto the bonding reel. Otherwise the lose end of the cable or its accessories could endanger or even hit the operator by uncontrolled movement.

Uncontrolled quick rewinding might also damage the interior and exterior mechanical parts of the bonding reel. The cable guide ensures a well-aligned cable on every single layer during the rewinding process. That enables the cable to move easily and with low handling force for the operator when unwind the next time.

MAINTENANCE

Never open the frame and remove the spring.

The coiled spring is under high tension and removing the frame could lead to severe injuries. If the spring rewind mechanism is damaged, it shall always be replaced by trained personnel.

WARNING:

➔ All maintenance work must be carried out using safe principles and adhere to site standards and regulations.

➔ When working in a potentially explosive atmosphere all installation and maintenance work must be carried out using non sparking tools.

➔ Although no routine strip down maintenance is required, the bonding reel should be checked regularly as outlined in the latest issue of JIG standards, which states that:

'All electrical bonding wires including clips and reels shall be checked:

- daily for general condition and for firm attachment of the bonding clip
- weekly for electrical continuity (there shall be less than 25 Ohms resistance) between the bonding wire clip and vehicle chassis. Electrical continuity should be checked.'

➔ Before any intervention on the equipment, check that the spring is released.

ROUTINE CHECKS

The resistance between the bonding clip and the adjoining structure/bonding system must be checked to establish that the correct resistance is maintained. This check must be done using a continuity tester or other suitable device. Although JIG standards states the resistance must be less than 25 Ohms, ELAFLEX would recommend that any significant change in resistance should be investigated immediately in order to establish a cause (see chapter 'In case of malfunctions').

Bonding Reel Housing and Fixtures

The screws which fix the bonding reel to the supporting frame
- Correct bonding of the machine.
- Periodically remove deposits of dust.

Bonding Clip Checks

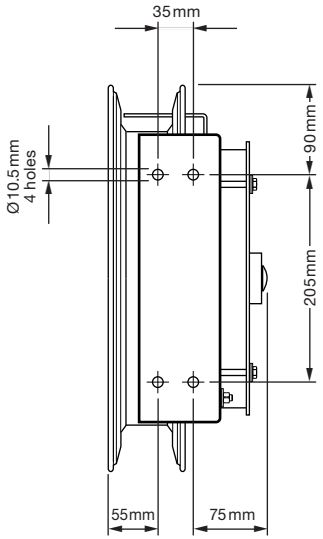
- Check the bonding clip for a smooth operating action and for spring tension.
- Check the connection between the bonding clip and the cable is secure and that there is no notable damage.
- Check the bonding clip for obvious signs of damage.
- Check the plastic grips of the bonding clip for security, scuffing wear and splitting.
- Any fault with the bonding clip requires replacement of the full clip. There are no spare parts available for the clip.

Bonding Cable Checks

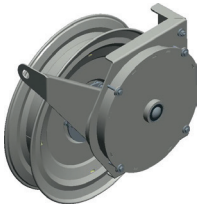
WARNING:

➔ Bonding cables must NEVER under any circumstances be cut and joined together in order to remove damaged areas.
➔ Carry out regular continuity checks on the cable.
➔ Carry out periodic visual checks on the cable cover, checking for abrasion through to the braid, cracking or kinking (especially adjacent to the bonding clip).
➔ Check that the connections between the cable and the crimp on lugs at each end are secure and that there are no obvious signs of damage.
➔ The cable can be cut back to remove any damaged areas until it becomes too short, at which point it must be replaced. Care must be taken when cutting the cable back to use new crimp on lugs and to make sure they are securely crimped in place.

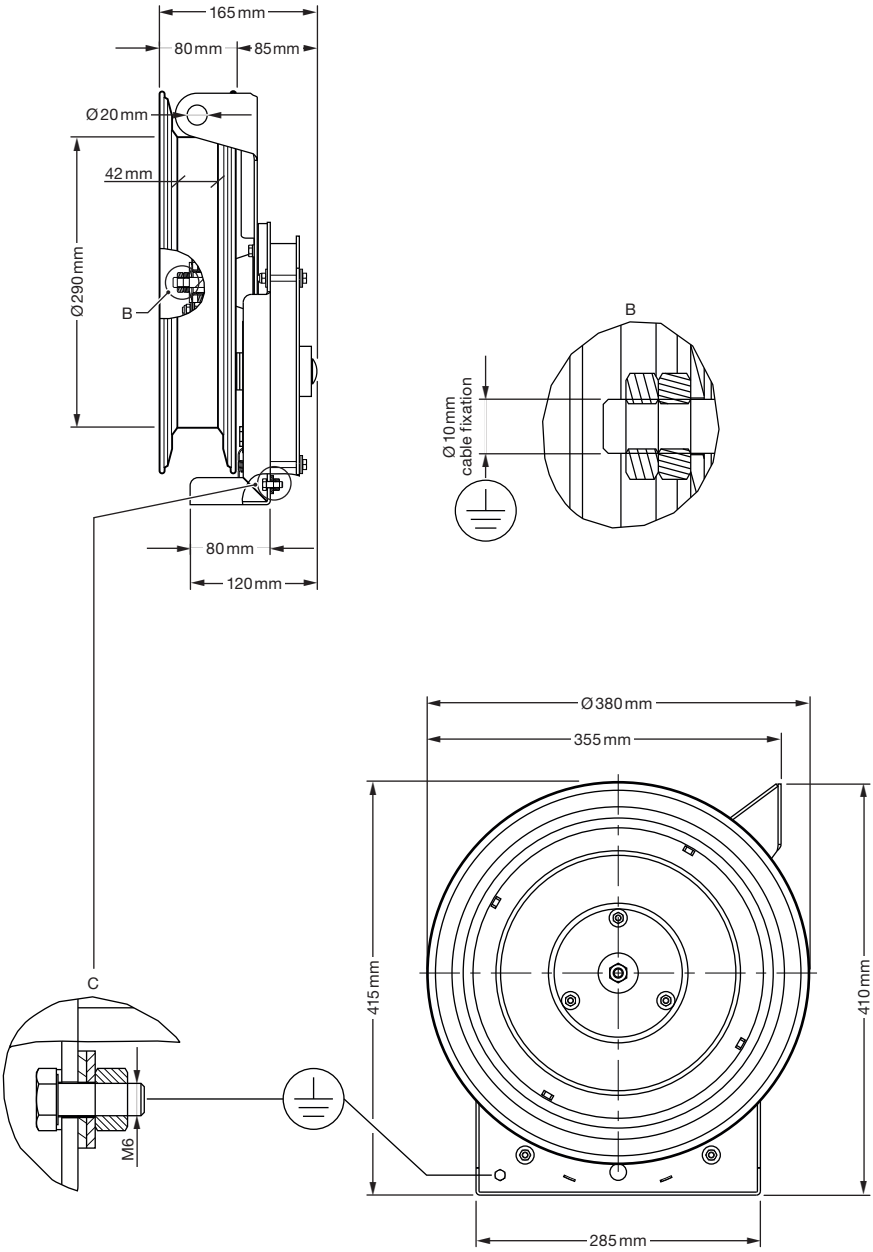
ASSEMBLY DRAWINGS



Position
Horizontal Surface



Position
Vertical Surface


165 mm
80 mm
85 mm
Ø 20 mm
42 mm
Ø 290 mm
B
80 mm
120 mm
B
Ø 10 mm
cable fixation
Ø 380 mm
355 mm
415 mm
410 mm
285 mm
C
M6

IN CASE OF MALFUCTIONS

High Electrical Resistance

WARNING:

➔ Do not apply lubricant of any kind to the internal components of the bonding reel.

➔ Check cable for continuity from end to end, to locate the potential malfunction.

➔ Examine all surfaces of the bonding connections
- cable to drum
- bonding connection port at reel base

Any deposits on the bonding connections which cannot be removed by a soft brush can be removed by rubbing the surfaces with fine abrasive paper until the surface is fully clean.

If self-service is not possible, please contact the manufacturer.

TERMS OF USE

Failure to follow warnings, instructions, procedures or generally unreasonable behaviour may result in injury, damage to components, damage to property or inadequate performance.

ELAFLEX takes no liability for direct, indirect, incidental, consequential or other types of damages resulting from failure to follow warnings, instructions and procedures in this manual or from generally unreasonable behaviour in connection with this equipment. The above limitations extend to personal injury or property damage resulting from failure to use the equipment, whether for loss of profit or product, loss of power supply, procurement costs for alternative power sources, loss of time (whether by users or their personnel), installers, agents, service technicians or other third parties.

The manufacturer reserves the right to change the specification of its products or the information in this manual without prior notice to users.

Different installation and operating conditions can affect the performance of the product. ELAFLEX cannot monitor the installation in the different operating environments. Therefore, no representations or warranties are made as to the performance of the pressure equipment in the actual operating conditions prevailing at the time of installation.
A technical expert of choice should validate the operating parameters for each application.

To the best of our knowledge, ELAFLEX has described all maintenance procedures, warnings and safety measures as clearly and comprehensively as possible. However, due to completely different operating environments, it is not possible to anticipate all possible questions and problems. The purpose of this manual is to provide general guidelines. If you require more specific guidelines and technical support, please contact your authorised service company or supplier.

Only authorised original parts may be used. Only authorised personnel may service the device. Any use of unauthorised parts or modifications will invalidate all warranties and approvals. In addition, the use of unauthorised parts or modifications may constitute a safety risk.

The information contained in this manual does not constitute a guarantee, assurance or warranty. The warranty conditions applicable to this appliance are available under 'Warranty'.

Every effort has been made to ensure the accuracy of this document. However, it may contain technical inaccuracies or typographical errors. ELAFLEX accepts no responsibility for such inaccuracies, errors or omissions and disclaims all liability for them.

WARRANTY

ELAFLEX provides a warranty for material and manufacturing defects for 18 months from the date of delivery. If the delivery date cannot be determined beyond doubt, the production date on the device.

Excluded from the warranty are hose assemblies that have become unusable due to wear and tear or improper use, e.g. with unsuitable media. Assembly and travelling costs in connection with replacement and repair as well as physical injury and consequential damage resulting from the use of the device are not subject to compensation.

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