RIM DRIVE TECHNOLOGY

Manual

Throttle controls

Our unique throttle control
for ultimate compatibility

Changes

Version	Date	Changes
1	05-07-2022	Original.
2	06-06-2023	Expansion of information and new layout.

Foreword

Dear Customer,

We are delighted by the choice for our products. The RDT throttle control delivers a high level user experience. It has been designed and manufactured with an eye on convenience, environment friendly character, user-friendliness and safety. Before shipment, every throttle control is tested extensively by our engineers.

Please take the time to read this operating manual carefully as to ensure safe and proper use of the throttle control. It is always our intention to improve RDT products, for any comments please do not hesitate to contact us.

Please feel free to contact us with any product inquiries. We wish you all the best with our products.

Rim Drive Technology

Declaration of Conformity

Company name manufacturer	Rim Drive Technology
Company address manufacturer	Wanraaij 33 6673 DM Andelst The Netherlands
Product type	Throttle control

Content

1. General

1.1 Using this user manual

Every person who is operating, servicing, maintaining or using the RDT throttle control must have read and understood this manual in detail. The manual provides important instructions for the safe and proper use of the RDT throttle control. After reading this user manual the owner/operator should have an understanding on how to:
Install the product
Operate the product
Avoid risks/hazards

Always store this manual close to the RDT throttle control. We advise to store the manual in a waterproof sealing.

The illustrations in this manual are for illustrative purposes only and are not relevant to the design details of the RDT throttle control.

1.2 Pictograms

The following pictograms are used in this manual:


Dangerous situation. If this warning is ignored, personal injury up to death or serious damage to the RDT throttle control may result.


Danger due to electric current. The work may only be carried out by a trained electrician


Danger of possible damage to the environment.


Note of useful advice on how to use the RDT throttle control.

1.3 Copyright

This is a confidential user manual. Only persons who have been authorized on written document by Rim Drive Technology. All documents are protected within the meaning of the Copy-right Act.

Disclosure and duplication of documents, including extracts, exploitation and communication of their contents are not permitted. Violations are punishable and oblige to pay damages. We reserve all rights of exercise of industrial property rights.

1.4 Ensure

For safe and pleasant operation and use of the throttle control, it is recommended to read this manual in full before installing or commissioning the RDT throttle control. The manufacturer is not liable for damages or improper functioning of the RDT throttle control as a result from failing to adhere to the operating instructions.

Additionally, please read/check the national regulations before the use of the RDT throttle control.
The warranty expires, for example, in the case of:

- Usage for another application then intended by the manufacturer or beyond the applications as described within this manual.
- Installation not in accordance with the manual
- Use of non-original spare parts and complementary products
- Maintenance/servicing/installation by a non-authorized persons/company.

1.5 Manufacturer details

Rim Drive Technology BV

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6673 DM
Andelst
The Netherlands

+31 (0) 85 482 48 55
info@rimdrivetechnology.nl
www.rimdrivetechnology.nl

2. Security

2.1 Appropriate use

The RDT throttle control can only be used as a product for leisure boat applications. Any other type of application is not allowed without written permission by RDT.

Only power sources and motors which have been approved by RDT should be used in combination with the RDT products.

The intended use also includes people who are servicing/maintaining or operating the RDT have read and understood this user manual. All procedures described in this user manual must be followed.

The manufacturer is not responsible for damages resulting from operation in a way which is not in accordance with this manual. The risk is exclusively for the user/operator.

It is not allowed to use a RDT throttle control without:
Kill switch
LED error indicator

Operate your throttle in compliance with all local safety and accident prevention regulations. Before delivery the double throttle control was designed and manufactured with the utmost care and with a special focus on convenience, user-friendliness and safety, and it has been extensively tested.

However, unintended use of the RDT throttle control may result in danger to the user's life and limb or of third parties, in addition to extensive property damage.

2.2 Requirements for operators

Only persons who have the right licenses (according to national law) may use the RDT on boats which require license(s) to operate.

The required qualification can be found in the applicable national regulations and laws of the country in which the boat is used.

Repair work, follow-up and maintenance/service may only be carried out by persons with the appropriate training and qualifications.

Persons under the influence of drugs, alcohol or reacting drugs are not allowed to carry out work on the RDT throttle control or to operate it.

2.3 Safety

In addition to the information in this manual, observe the general legal and other binding regulations for accident prevention and environmental protection as well as basic health and safety regulations.

- Check if the RDT throttle control is in perfect condition before operating
- Never remove or change safety devices.
- Before use always inspect the RDT throttle control for (external) recognizable damage and defects. If any damage and/or defects are recognized they must be reported immediately to a RDT qualified service partner.
- Use only professional and qualified maintenance tools.
- After repairs/maintenance, reattach all dismantled protective devices and ensure proper functioning.
- Every operator is responsible to make sure that the RDT throttle control is only operated in perfect/non-damaged condition and that all applicable safety requirements and regulations are complied with.
- Drive only with a valid license in accordance with the country's regulations in which the boat is being operated.
- Make sure all national safety measurements are covered.

2.4 Personal Protective Equipment

Personal Protection Equipment
Personal Protective Equipment (PPE) is important because it protects workers from injuries and accidents. They ensure that employees can work safely. It is therefore important that employees use the correct personal protective equipment and maintain it correctly.

The need for PPEs is well proven and critical to your safety and practically mandatory when servicing a rim drive product. Always check local PPE requirements before boarding a vessel and/or commencing service.

As a Rim Drive Technology service engineer your PPE's should be:

- Be compliance with our work instructions
- Be compatible with any other equipment you use at the same time
- Be appropriate for the risks involved, and the task being performed, without itself leading to any significant increased risk (e.g. using gloves, hearing protectors, safety glasses..).
- Ensure that you always work with safe and approved resources such as machines, tools and devices.
- Take responsibility to stop unsafe activities and to intervene in unsafe situations.

What PPE's are recommended to bring when working with rim drive product?

- Eye protection (e.g. safety glasses)
- Ear plugs or hearing protection
- Proper fitting working cloths
- Life jacket / drowning protection (e.g. working outboard).
- Safety gloves (suitable for working with oil/glue)
- Safety shoes (toe cap and anti-slip)
- Other PPE's locally required.

2.5 Maintenance/fault removal

Check the deadlines for regular inspections specified in the user manual.

Use only the professional/qualified tools for maintenance/fault removal.

Danger from electric current! Incorrect work on the power supply may result in damage to the RDT throttle control. Work on the electrical equipment of the RDT throttle control may only be carried out by a certified electrician.

3. Technical data

3.1 General data

Model	Throttle control	Throttle control	Throttle control
Type	Single - Top	Single - Top - Comfort	Single - Side
Technology	Contactless hall sensor	Contactless hall sensor	Contactless hall sensor
Mechanical angle of rotation	±90°	±90°	±90°
Rated voltage	5V DC ± 0,02V	5V DC ± 0,02V	5V DC ± 0,02V
Operating voltage	0.5V – 4.5V DC	0.5V – 4.5V DC	0.5V – 4.5V DC
Operating temperature range	-25°C to +55°	-25°C to +55°	-25°C to +55°
Storage temperature	-40°C to +85°	-40°C to +85°	-40°C to +85°
Protection class	IP68	IP68	IP68
Connector	3-pin AMP SuperSeal	3-pin AMP SuperSeal	3-pin AMP SuperSeal
Optional features	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch
Unmarked	Signal	Signal	Signal
Red	V+	V+	V+
Black	GND	GND	GND

Model	Throttle control	Throttle control	Throttle control
Type	Double - Button	Double – Button - Comfort	Double - Display
Technology	Contactless hall sensor	Contactless hall sensor	Contactless hall sensor
Mechanical angle of rotation	±90°	±90°	±90°
Rated voltage	5V DC ± 0,02V	5V DC ± 0,02V	5V DC ± 0,02V
Operating voltage	0.5V – 4.5V DC	0.5V – 4.5V DC	0.5V – 4.5V DC
Operating temperature range	-25°C to +55°	-25°C to +55°	-25°C to +55°
Storage temperature	-40°C to +85°	-40°C to +85°	-40°C to +85°
Protection class	IP68	IP68	IP68
Connector	2x3-pin AMP SuperSeal	2x3-pin AMP SuperSeal	2x3-pin AMP SuperSeal
Optional features	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch
Unmarked	Signal	Signal	Signal
Red	V+	V+	V+
Black	GND	GND	GND

Model	Throttle control	Throttle control	Throttle control
Type	Double – Display - Comfort	Double – Standard	Double – Standard - Comfort
Technology	Contactless hall sensor	Contactless hall sensor	Contactless hall sensor
Mechanical angle of rotation	±180°	±180°	±180°
Rated voltage	5V DC ± 0,02V	5V DC ± 0,02V	5V DC ± 0,02V
Operating voltage	0.5V – 4.5V DC	0.5V – 4.5V DC	0.5V – 4.5V DC
Operating temperature range	-25°C to +55°	-25°C to +55°	-25°C to +55°
Storage temperature	-40°C to +85°	-40°C to +85°	-40°C to +85°
Protection Class	IP68	IP68	IP68
Connector	2x3-pin AMP SuperSeal	2x3-pin AMP SuperSeal	2x3-pin AMP SuperSeal
Optional features	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch	Integrated battery monitor Integrated LED Integrated key switch

4. Mounting

Use the holes pre-made in the throttle housing for installation.

- Cut 5 holes, 4 holes as shown on the pattern with a diameter of 8 mm. A fifth hole is centered on the throttle housing which protects the cables, this has a diameter of 40 mm
- Use 4x M8 bolts to securely mount the throttle to the wall of the console. The recommended for the bolts is bolt class A4 or AISI Type 316 Stainless Steel
- Ensure the mounting is secure and waterproof.

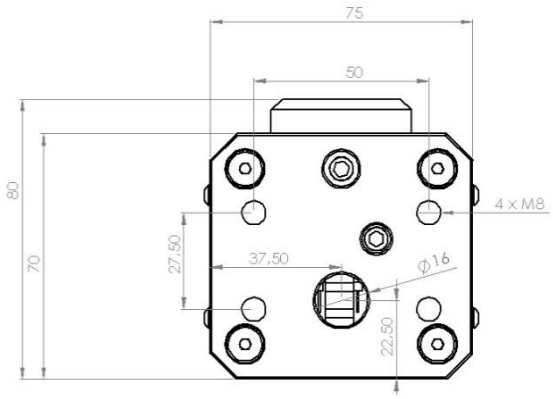


Figure 1: Mounting for the single throttle control-top- (comfort).

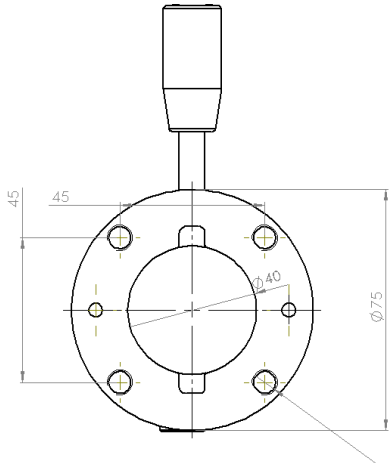


Figure 2: Mounting for the single throttle control-side.

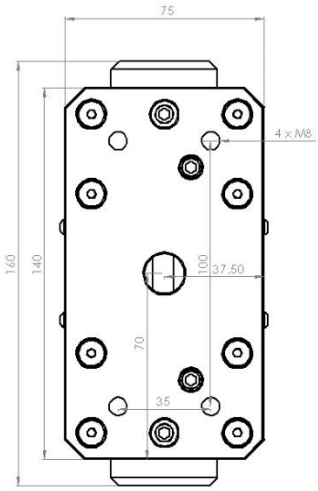


Figure 3: Mounting for the double throttle - Standard

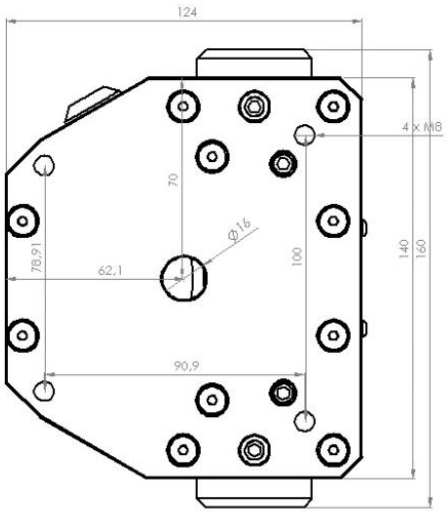


Figure 4: Mounting for the double throttle - Extended

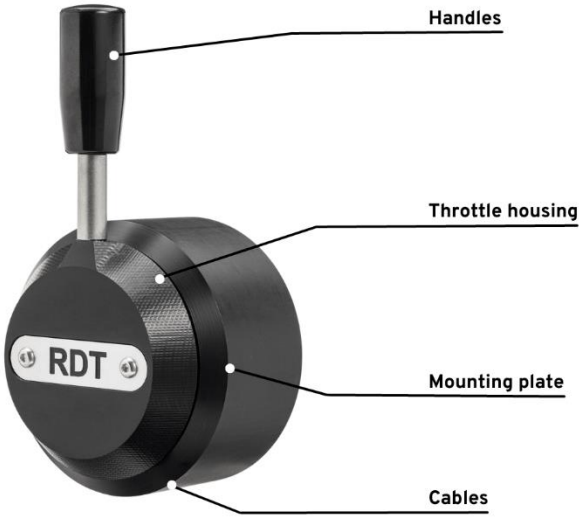
Danger of broken throttle control! When the throttle control is not installed in the right way there is risk for a broken throttle control.

5. Description

5.1 General

The RDT throttle control is a system for the leisure boat market. The installation location can be chosen by the client as long as it can be mounted securely and in accordance with this manual. In case of any questions, please contact a RDT or a RDT qualified service center.

5.2 Construction



The connection of the RDT throttle control to the console/hull is depending on the location of connection.

A sticker is attached to each throttle control, it records the key data as per the EC machinery directive 2006/42/EC.

6. Installation

6.1 Hardware

For the installation always refer to a professional and trained company. The motor controller, batteries, throttle controls and other products shall only be installed as described by Rim Drive Technology.

No client, installation company, dealer or any other person/company is allowed to make any changes to the hardware/software.

All safety equipment like kill switches, fuses, relays, other type of safety products should be installed by a professional and trained company according regulation/law for the country within which the products are used.

When verifying the correct operation of the throttle control, ensure the connections are secure after verifying the installation with testing.

After 10 and after 50 hours of running the throttle control the mounting bolts have to be checked.

6.1.1 Motor controller/input

Depending on the exact system configuration, the specific wiring diagram or manual should be consulted and followed on how to connect the RDT throttle control. The cables from the RDT throttle control to the motor controller/input should be shielded and wherever possible located in or near stainless steel or aluminum tubing.

6.1.2 Fuses

To ensure a safe system several fuse(s) have to be installed. RDT is not responsible for damage occurred by fuses which were not delivered by RDT.

6.2 Software

Rim Drive Technology will provide software (when applicable) which is developed for the specified configuration. Nobody is allowed to make any changes to the software, except Rim Drive Technology.

7. Operation

7.1 Preparation

Ensure the following preparations have been carried out before operating the RDT products.

- Unplug the cable/plug from the power supply.
- Store the charging cable in a way which as to prevent damage or tripping.
- Check the remaining capacity of the batteries.

Do not put the RDT throttle control into operation if the remaining battery capacity is < 20%

7.2 Operation

Ensure the following preparations have been carried out before operating:

- Turn on the power supply for the RDT throttle control.
- Regularly check the remaining battery capacity during operation. Otherwise there is a risk of having no power.

7.3 Stop operation

Ensure the following actions have been carried out when stopping the use of the RDT throttle control:

- Turn off the power supply for the RDT system.
- Connect the charging cable to the charger.
- Make sure that the charging cables are placed in a safe way as to prevent tripping or accidental damage.

Lay down the charging cable as to prevent damage.

8. Maintenance & cleaning

8.1 Maintenance

Have the RDT throttle control checked at least once a year by Rim Drive Technology or by an authorized specialist to check for perfect condition. If damage is discovered, it must be rectified immediately by a RDT service partner before operating. Do not use the RDT product when it is damaged.

Danger of destruction! Maintenance should only be performed by authorized personal/ service centers. Otherwise, errors may occur which can lead to the destruction of the throttle control. Rim Drive Technology accepts no liability for damages caused by improper maintenance.

	Executor	Time
Maintenance	Client	Every run
Service task	Actions	
Test functionality	Handle turns forward Handle turns reverse	
Cable connections	Check for damage Visual check Check connectors	
Batteries and cables	Visual check of cables Visual check of connectors Visual check of connections	
Mechanical connection to hull	Test and repair if necessary	
Waterproofness	Visual check of complete throttle control	

8.1.1 Replacement parts

For information on spare parts and the installation of these parts, contact Rim Drive Technology or an authorized Service Partner.

8.1.2 Corrosion protection

A high level of corrosion resistance is ensured by the design of the products and with the selection of the materials. All materials are classified as sea water resistant materials.

To reduce the chance of corrosion:

- Regularly apply a suitable contact spray (e.g. Wet protect) to cable contacts, data sockets, and data plugs.
- The use of paint or other material on or in the throttle control housing is not allowed.

8.2 Cleaning

Before starting turn off the power supply, as to prevent accidental activation during the cleaning process.

Injury! When the power supply is switched on, the throttle control may cause injuries to the limbs when cleaning the RDT throttle control.

The cleaning intervals depend on the area of application and the number of operating hours. At least, the throttle control must be cleaned once a year in fresh water.

In case of contaminated, salt water or with frequent use of the throttle control; the interval between cleaning should be shortened.

Only use fresh water for cleaning.

8.3 Feedback mechanism

The feedback of the throttle neutral position is provided by a mechanism containing a spring. When the feedback weakens due to wear and age, the outermost hexagon set screw can be tightened down slightly further to increase the feedback. Preferably this is done by either Rim Drive Technology or an authorized Service Partner.

Possible damage, when the throttle is not in the absolute neutral position there is risk of damage to the throttle.

9. Disorders

Make sure that the power supply is switched off and is secured against activation.

Injury! When the power supply is switched on the throttle control may cause injuries to the user.

Disorder	Possible cause	Fix
The throttle control is not running.	The main switch is not turned on.	Turn on the main switch.
	The batteries are empty.	Charge the batteries.
	The handle is blocked.	Check if there is a visual damage.
	Connection/Wiring is not correct/bad.	Check wiring and connections.
	The motor controller gives an error.	Restart the system.
The batteries are not charging.	The plug from the charging cable is not properly plugged into the land-side power supply.	Insert the plug correctly into the land-side power supply.
	The land-side power supply is switched off.	Turn on the land-side power supply.
	The batteries are defect.	Replace the defect batteries.

10. Disposal and environment

10.1 Disposal of waste electrical and electronic equipment

For customers in EU countries

RDT permits all clients to follow the European Directive 2012/19/EU relating to Waste Electrical and Electronic Equipment – WEEE, and to the corresponding national laws. The WEEE Directive forms the basis for handling waste electrical equipment across the whole of the EU. The RDT system is marked with the symbol of a crossed-out rubbish bin. Waste electrical and electronic equipment must not be disposed of as normal household waste, because this could allow entry of pollutants to the environment which have effects injurious to health on humans, animals, and plants, and which build up in the food chain and in the environment. In addition, valuable raw materials are lost in this way. Please therefore direct all waste equipment for separate collection in an environmentally friendly way.

For customers in other countries

RDT permits all clients to follow the European directive 2012/19/EU regarding waste electrical and electronic equipment. We recommend that the system is not discarded as normal household waste, rather this should be disposed of via separate collection in an environmentally friendly way. The applicable national laws may also prescribe this. Therefore, please ensure appropriate disposal of the system as per the regulations which apply in the country within which the throttle control is used.

10.2 Disposal of batteries

Remove spent batteries immediately, and comply with the following specific disposal information relating to batteries or battery systems:

For customers in EU countries

RDT permits all clients to follow the European directive 2006/66/EC regarding (spent) batteries, as well as to the corresponding national laws. Here the Battery Directive forms the basis for handling batteries throughout the EU. Our batteries are marked with the symbol of a crossed-out rubbish bin. Spent batteries must not be disposed of as normal household waste, because this could allow pollutants to enter the environment which could have effects injurious to health on humans, animals, and plants, and which build up in the food chain and in the environment. In addition, valuable raw materials are lost in this way. Please therefore dispose of the spent batteries exclusively via specially set-up collection points, the dealer, or the manufacturer. There is no charge for handing them in.

For customers in other countries

RDT permits all clients to follow the European directive 2006/66/EC regarding (spent) batteries. The batteries are marked with the symbol of a crossed-out rubbish bin. We recommend that the batteries are not discarded as normal household waste, rather this should be disposed of via separate collection. Your national laws may also prescribe this. Therefore, please ensure appropriate disposal of the batteries as per the regulations which apply in the country within which the throttle control is used.

11. General conditions for warranty

11.1 Warranty and liability

The statutory warranty runs for and includes all components of the RDT system. The client needs to activate the warranty within 30 days after delivery via our website: www.rimdrivetechnology.nl

The warranty period starts from the day of delivery of the RDT system to the end customer.

11.2 Scope of warranty

Rim Drive Technology, Wanraaij 33, 6673 DM, Andelst guarantees the end customer of a RDT system, the product is free from material and manufacturing defects during the period of coverage defined below. Rim Drive Technology will indemnify the end customer for the costs of correction of a material or manufacturing defect. This indemnification obligation does not apply to any incidental costs caused by a warranty case or to any other financial detriment (e.g. costs for towing, telecommunication, accommodation, subsistence, loss of use, lost time, etc.).

The warranty terminates two years from the day of handover of the product to the end customer. Products used - even temporarily - for professional or official purposes are excluded from the two-year warranty. For these uses, the statutory warranty applies. The guarantee claim expires six months after the discovery of the defect.

Rim Drive Technology decides whether defective parts are repaired or replaced. Distributors and dealers who carry out repair work on Rim Drive Technology motors have no power to make legally binding statements on behalf of Rim Drive Technology.

Wearing parts and routine maintenance are excluded from the warranty.

Rim Drive Technology has the right to refuse warranty claims if:

- The warranty was not submitted correctly (especially failure to make contact before dispatching goods under complaint, absence of a fully completed warranty form and of proof of purchase; see warranty process).
- The product has been used in a manner contrary to instructions.
- The safety, operating, and care information in the instructions were not followed.
- Prescribed maintenance intervals were not complied with and documented.
- The purchased item was in any way converted, modified, or equipped with parts or accessory items which are not expressly authorized by Rim Drive Technology or which do not form part of recommended equipment.
- Previous maintenance or repairs were undertaken by companies not authorized by Rim Drive Technology, or parts other than original replacement parts were used. This applies unless the end customer can prove that the circumstances resulting in the refusal of the warranty claim have not encouraged the progress of the defect.
- The product has been used for other applications as described.

In addition to the claims arising from this warranty, the end customer has statutory warranty rights arising from his purchase contract with the relevant dealer; these are not restricted by this warranty.

11.3 Warranty process

It is a prerequisite that the warranty process described below is followed for the fulfilment of warranty claims.

For the problem-free handling of warranty cases, we request that the following instructions are complied with:

- In the event of a claim, please contact Rim Drive Technology. RDT will provide a return number.
- Should it be necessary to transport products to Rim Drive Technology premises, please note that inappropriate transport is not covered by guarantee or warranty.

For queries regarding the warranty process, we can be contacted by means of the details given in this manual.

11.4 Shipment

The client is responsible for shipment, costs and any damage or loss which are related to this shipment.

RIM DRIVE TECHNOLOGY

Uncompromised
Electric Motors

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