

Heavy Duty Straight Line Wipers Rán Control System

USER MANUAL

Version 2 - 2024

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Straight line wipers

1 Introduction

1.1 Purpose of manual

The purpose of this manual is to provide guidance for installation and operation of Decca Straight Line Wipers controlled with the Rán Control system, as supplied by Decca Wiper Systems AS.

The manual is intended to give technical information to understand the functions and features of the Decca Wiper Systems and to be able to operate the system, together with installation, commissioning and maintenance information. The manual shall also be used as a textbook for training of crew, and should be read and understood before operation of the wiper system.

Changes occurring since the last issue of the manual are marked with vertical black lines in left margin.

1.2 Marking of Equipment

The wiper unit is identified with a label positioned on the back side of the wiper casing. An additional, similar label is positioned in a more protected location behind the wiper motor cover.

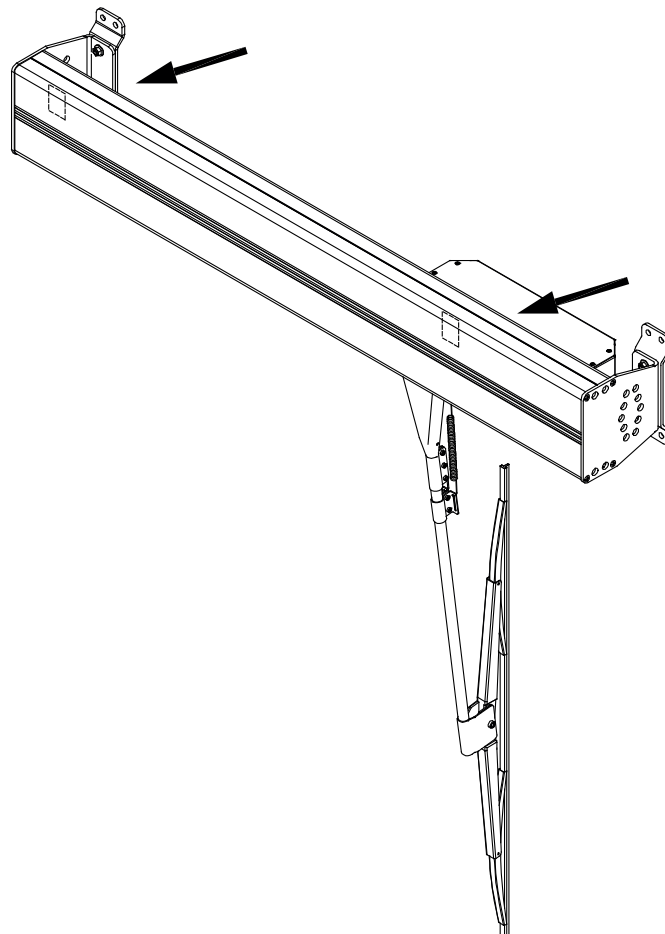


Figure 1 - Label Locations on wiper unit

The product label contains a serial number and technical information about the wiper unit. For service and spare part orders, always refer to the information listed on the product label.

1.3 Symbols



The **NOTE** symbol gives clarifying information or special instructions which are crucial for the equipment or to the operation performed.



The **WARNING** symbol gives clarifying information or special instructions where personal injuries or damage to the equipment can occur.

1.4 Common abbreviations

<i>Abbreviation</i>		<i>Explanation</i>
mm	-	millimetres
"	-	inches
kg	-	kilogram
ECM	-	Electronic Control Module

2 Introduction

2.1 General description

Modern shipbuilding takes full account of visibility requirements. Larger wheelhouses with an omnidirectional view are part of this trend. As a result, there is an increase in window area that must be kept clear in all weather conditions. Decca straight line wipers are designed to meet these demands with reliable and efficient operation in heavy rain, storm conditions, sleet and even snow.

With unique technical design features and built with only high quality materials, Decca wipers provide a reliable wiper operation in extreme weather conditions.

3 Main data

3.1 Dimensions

The wiper units are delivered in 50mm (1,96") increment stroke lengths ranging from 500mm (16,69") to 3000mm (118,11"). The wiper blades range from 500mm (19.68") to 1000mm (39.37"), and the wiper arm length can be adjusted to fit the window site.

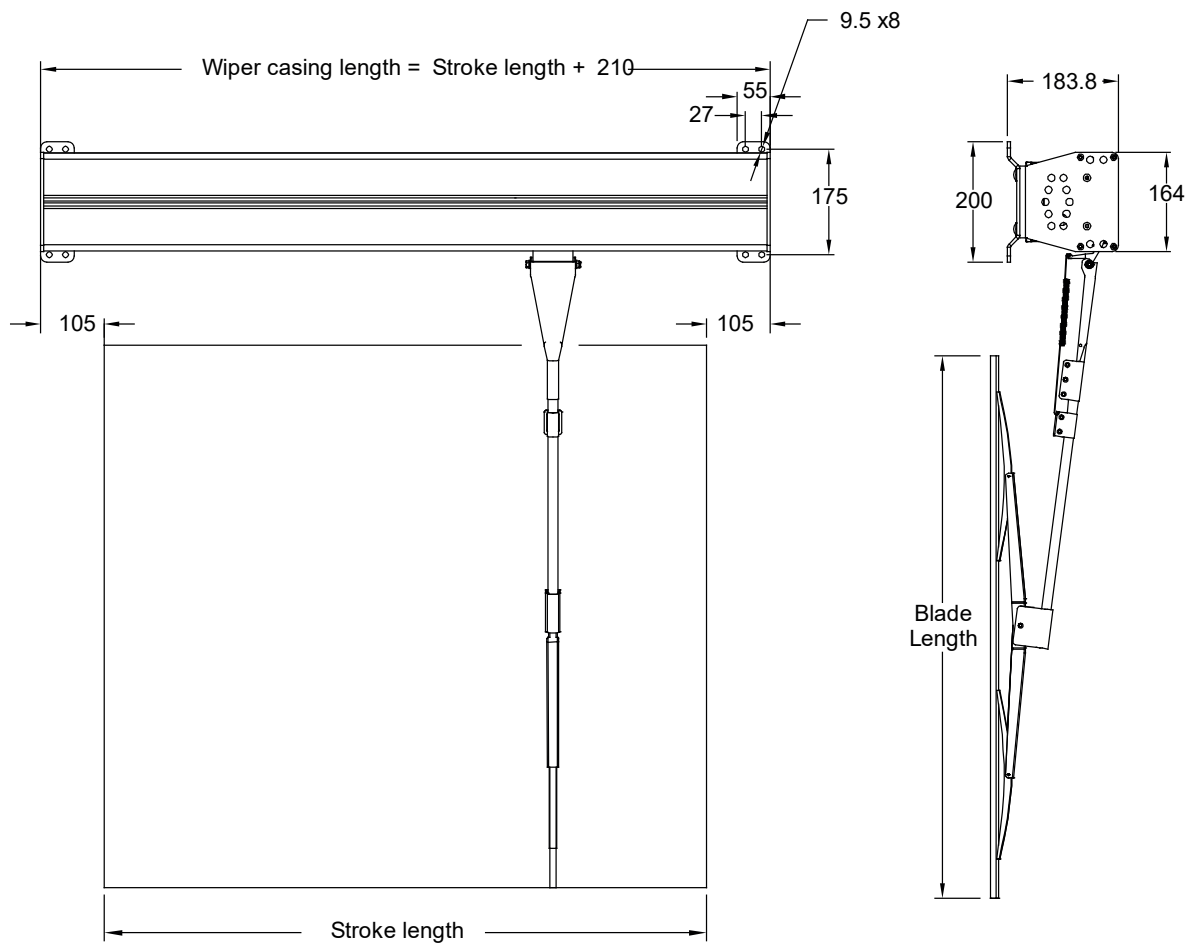


Figure 2 - Wiper Unit Dimensions (all measurements in mm)

The Rán Rotary Switch is available in a single version, featuring control of one wiper unit. See figure below for physical dimensions.

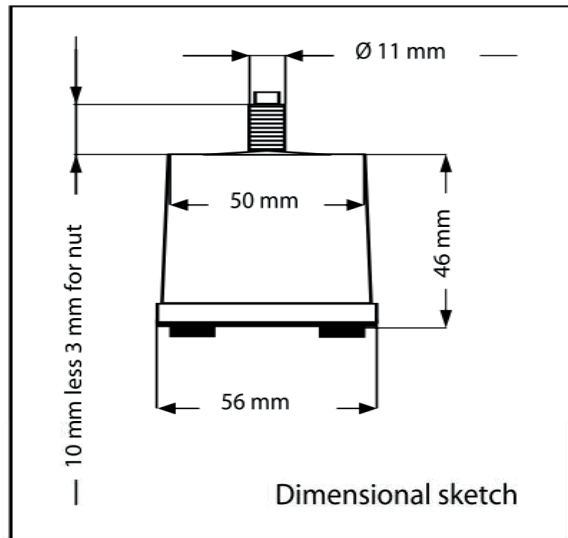


Figure 3 - Rán Rotary Switch dimensions - (all measurements in mm)

3.2 Technical data

3.2.2 Power supply

Power supply voltages: 24V DC

4 Technical description

4.1 Functional description

4.1.1 Wiper Unit

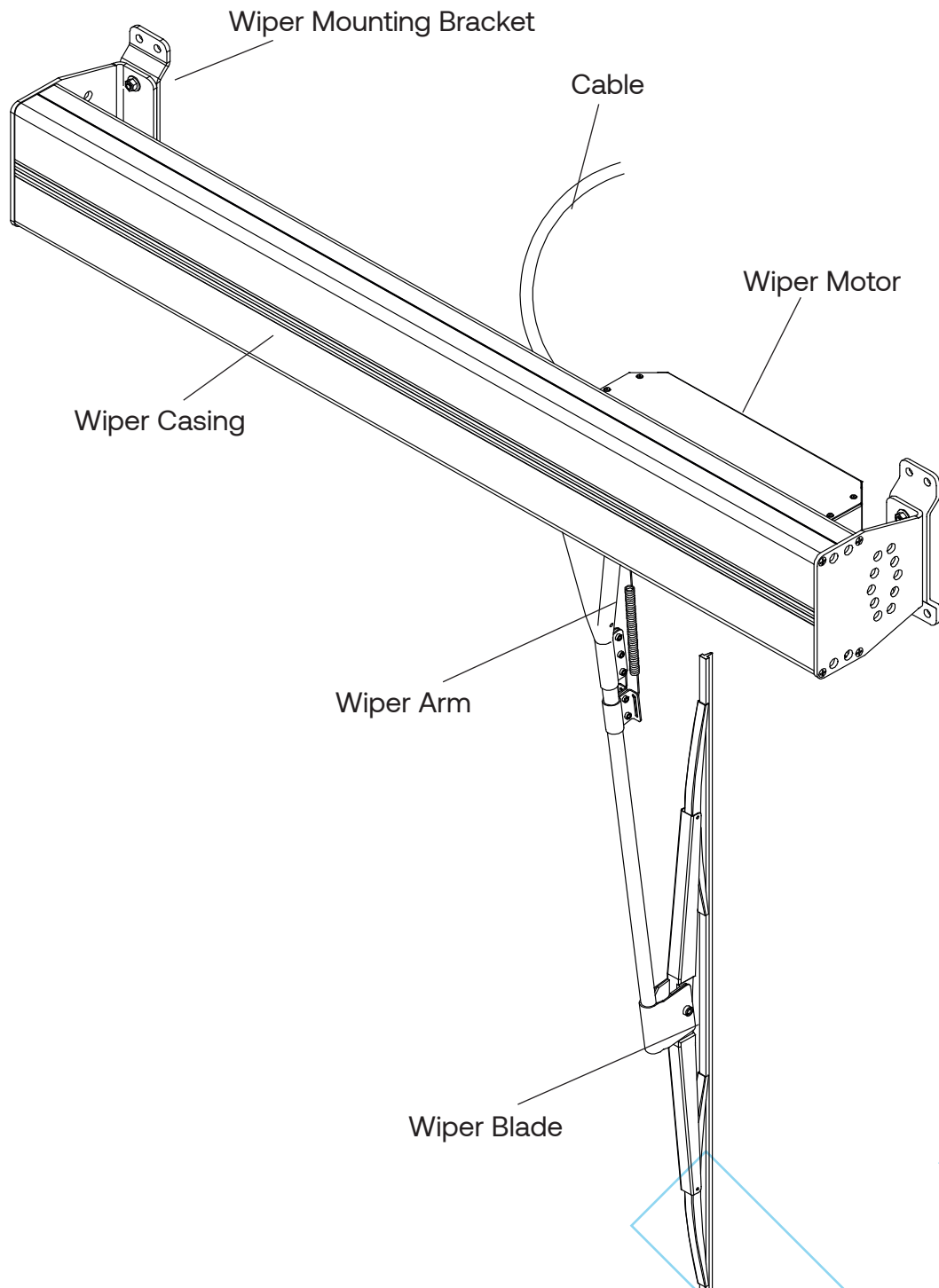


Figure 4 - Wiper Unit

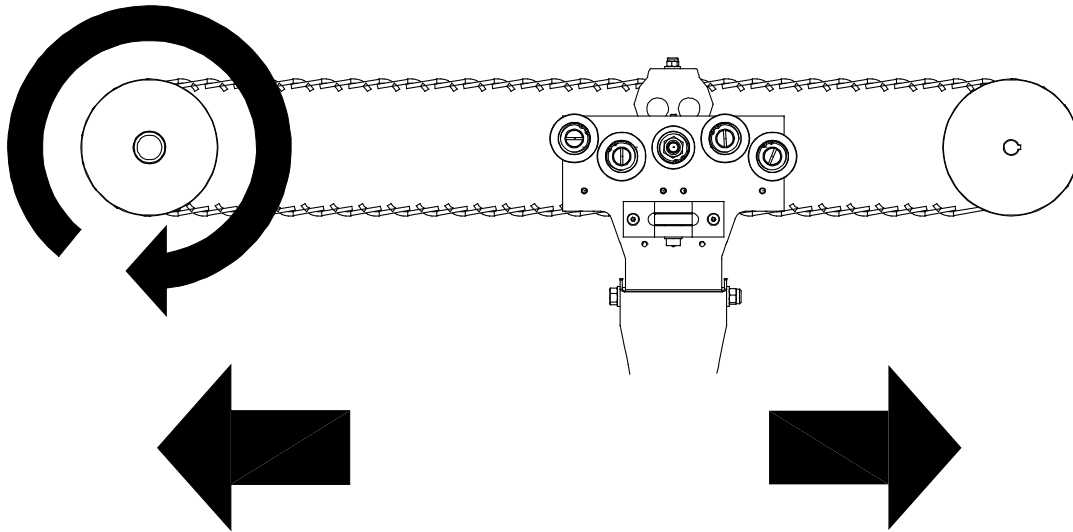


Figure 5 Wiper Function - as viewed from front of wiper unit

4.1.2 Wiper Arms

The arm is supplied in full length, and is cut to appropriate length on site. The three M4 DIN912 bolts on the upper part of the arm assy secure the arm in correct position. This mechanism allows +/- 30mm fine adjustment of the arm length.

The wiper arm features step less spring tension adjustment by means of two springs and a spring tension clamp that is secured by two M4 DIN912 bolts.

The spring tension clamp should be positioned so that the wiper blade is pressed against the window with a force of approximately 2 kg (4 lb). See figure 8 for practical advice on spring tension adjustment.

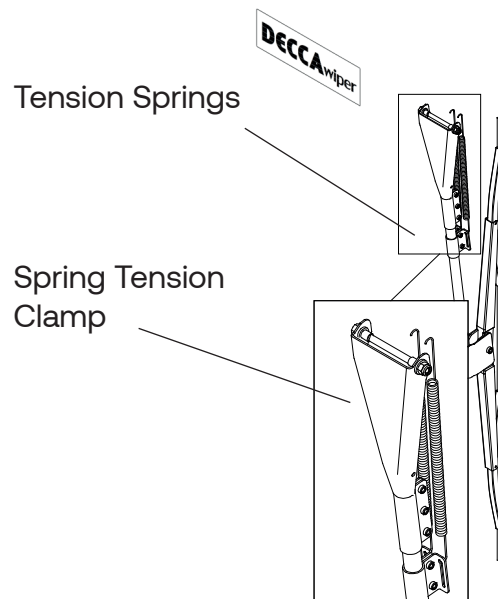
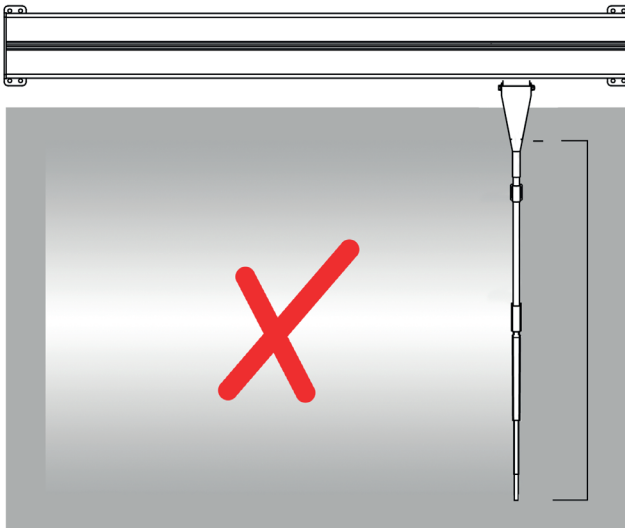
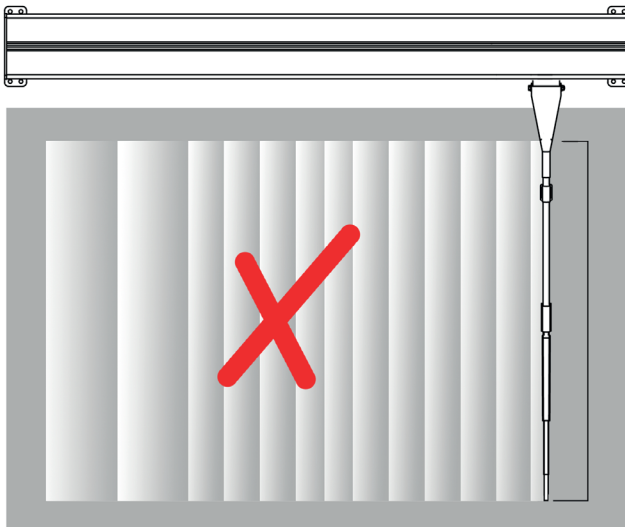


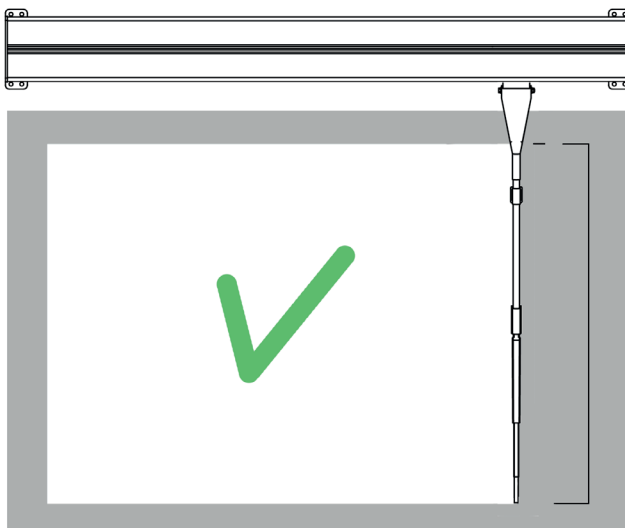
Figure 6 - Wiper Arm



Tension too low



Tension too high



Tension correctly adjusted

Figure 7 - Wiper Tension Adjustment

4.1.3 Rán Rotary Switch

The wiper system is operated from the rotary switch, typically mounted with good access from the operator's position. From the rotary switch the wiper unit is switched on and off, and the wiper speed and intermittent settings are adjusted.

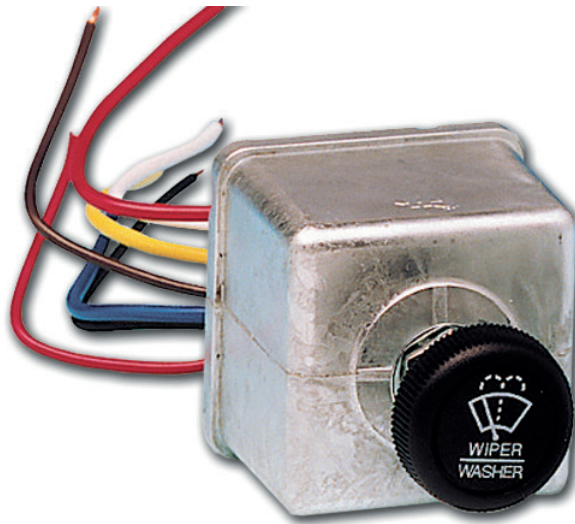


Figure 8 - Rán Rotary Switch



Consult with your Decca supplier for practical advice and project specific solutions.

4.1.4 Rán Rotary schematic for connection

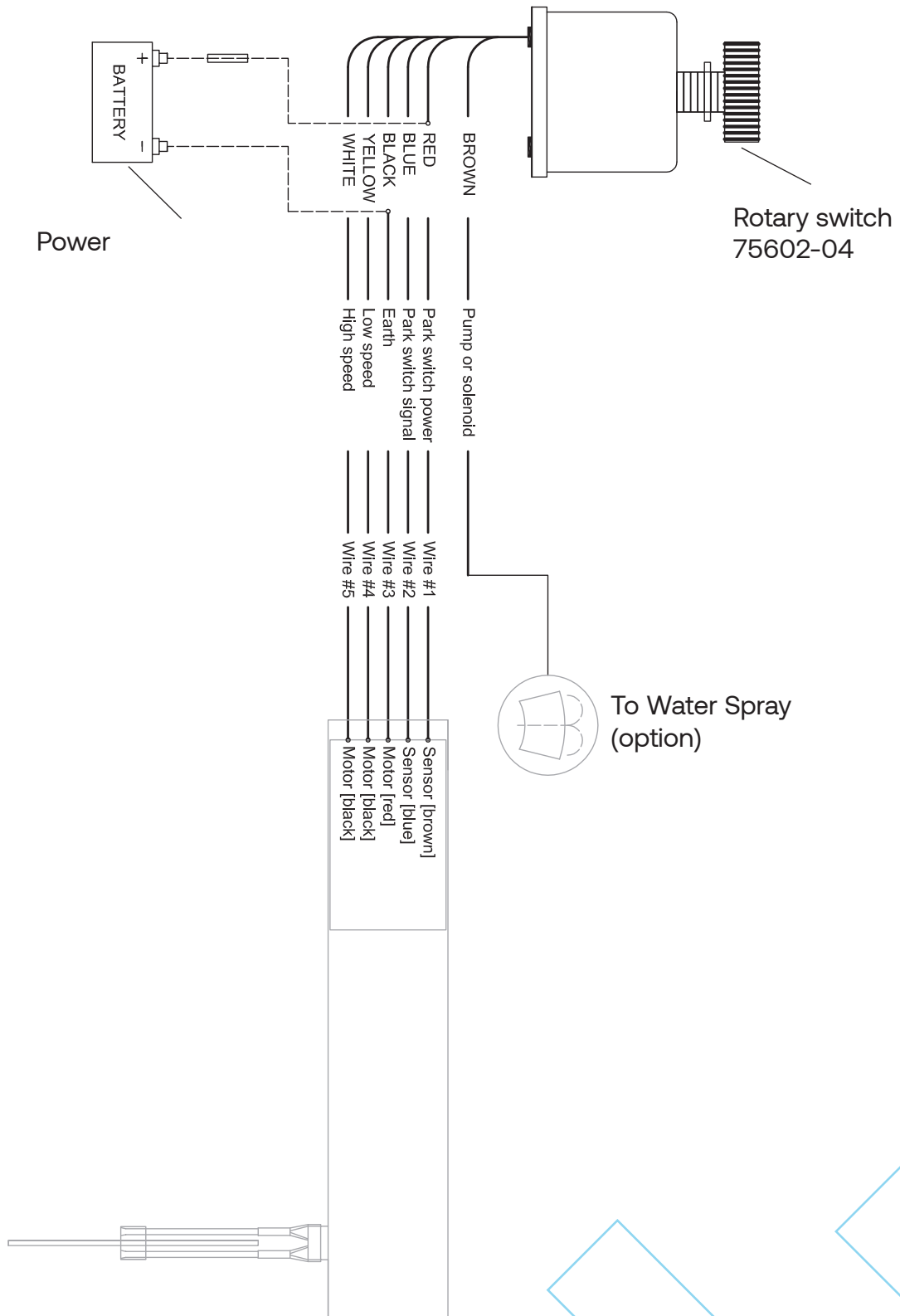


Figure 9 - Typical set up, one Wiper

4.2 Typical installations

A standard wiper installation features a single arm wiper unit that is mounted above or below the window frame. See examples in figure 12.

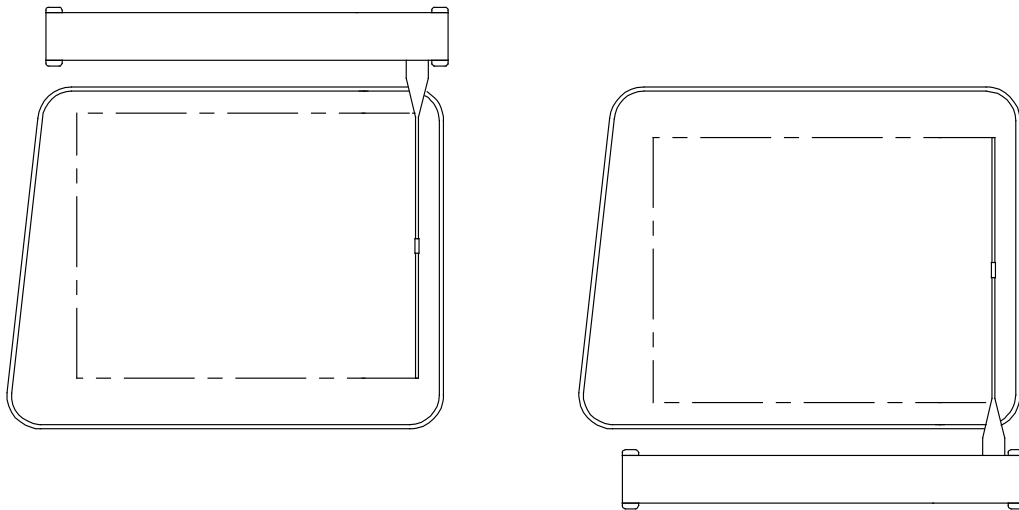


Figure 10 - Single Wiper Installation Layouts

Taller windows require two wipers to ensure maximum visibility, where one wiper unit covers the upper part and the other covers the lower part of the window. See example in figure 13, left side. Optionally, the wiper unit can be supplied with two wiper arms. The dual arm wiper unit can either be configured to cover one large window, or two smaller adjacent windows. See examples in figure 13, right side.

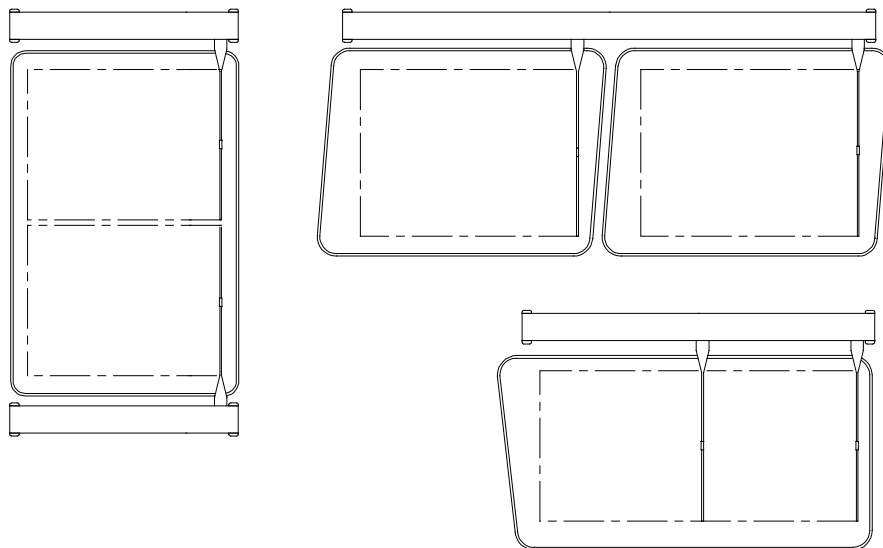


Figure 11 - Dual Wiper Installation Layouts

4.3 Water Spray System (option)

Decca wipers can be equipped with an optional water spray system that consists of 12mm OD piping and nozzles, all in stainless steel (316L). The water spray system can be installed onto the wiper mounting brackets, or directly onto the bulkhead.

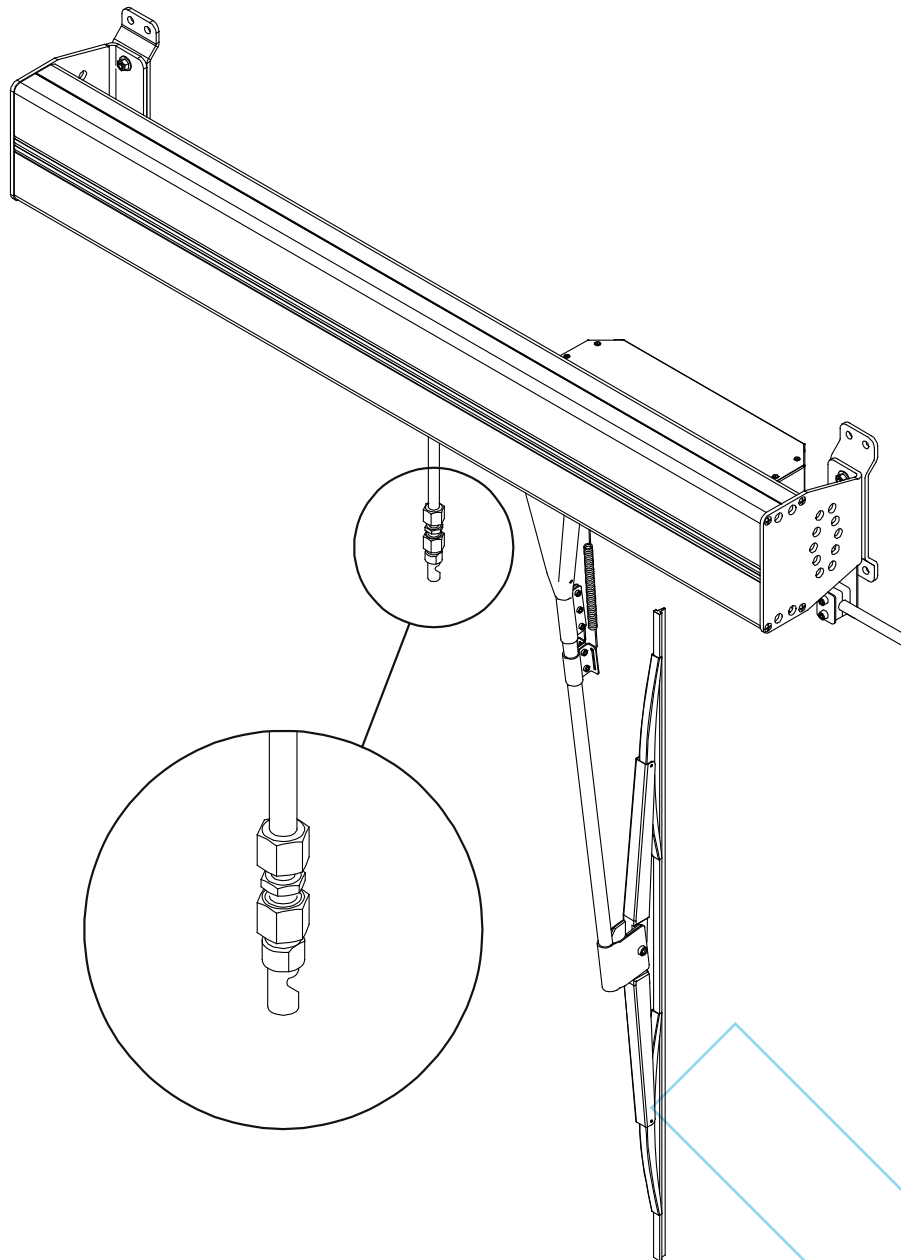


Figure 12 - Water Spray System

5 Installation procedure

5.1 Location of Wiper unit brackets

The wiper unit is equipped with two fixing brackets. The brackets can either be welded or bolted to the bulkhead. Note that the standard brackets are made of aluminium, but mild steel brackets can be ordered as an option.

Check the distance between the mounting holes on the end covers of the wiper unit compared with measurements given in Figure 15.

The wiper casing should be placed as close to the window frame as possible. Please consult your Decca supplier for project specific CAD drawings.

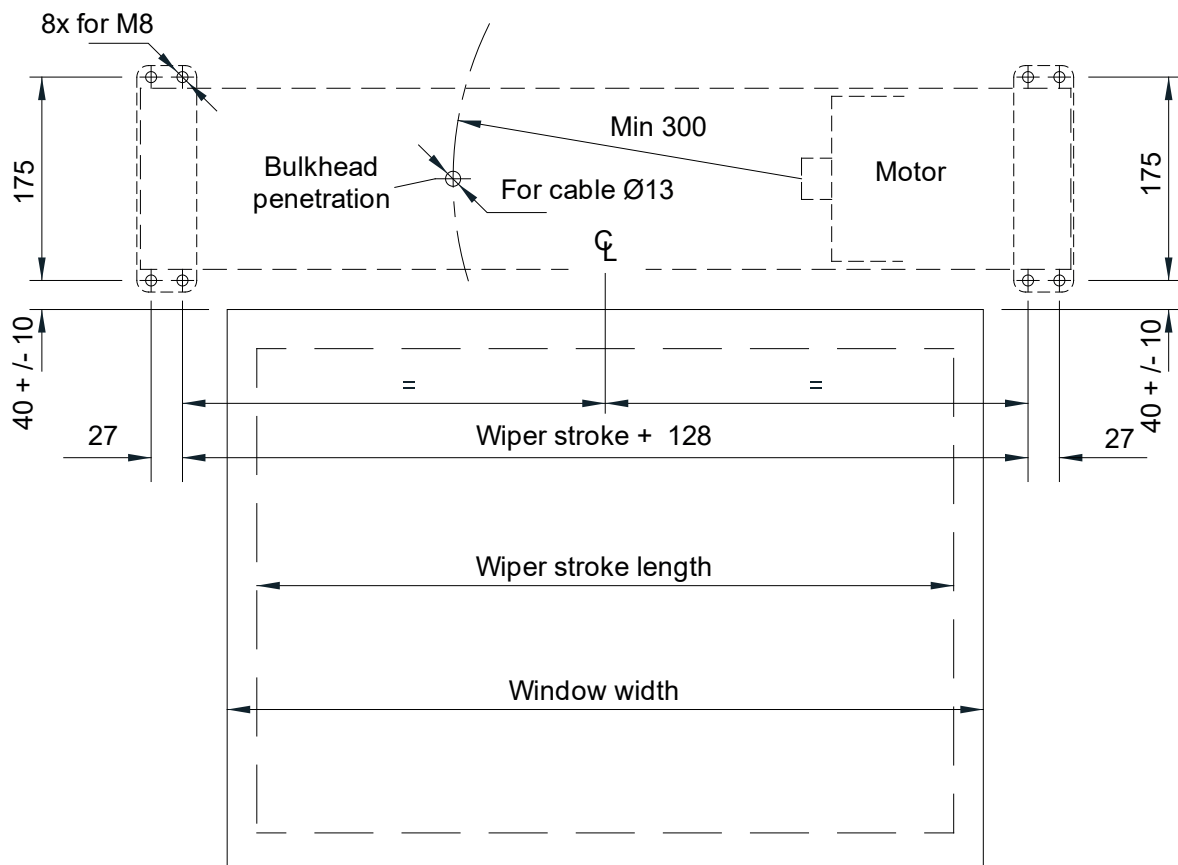


Figure 13 - Wiper Unit Footprint (all measurements in mm)

5.2 Bulkhead penetration

It is important to minimize the tension on the cable and the connector. In order to obtain an optimal location of the bulkhead penetration the hole should be drilled according to the dimension given in figure 16. The cable has an OD of 13mm. The cable gland for bulkhead penetration is not supplied, and must therefore be sourced by installer.



**Avoid sharp bends or edges, the minimum cable bending radius is 75mm.
Protect the connectors from water during installation**

5.3 Wiper Casing

The wiper unit is mounted to the brackets after installation of cable. The wiper unit is bolted to the brackets using carriage bolts for easy fitting and removal, secured with washers and self locking nuts.

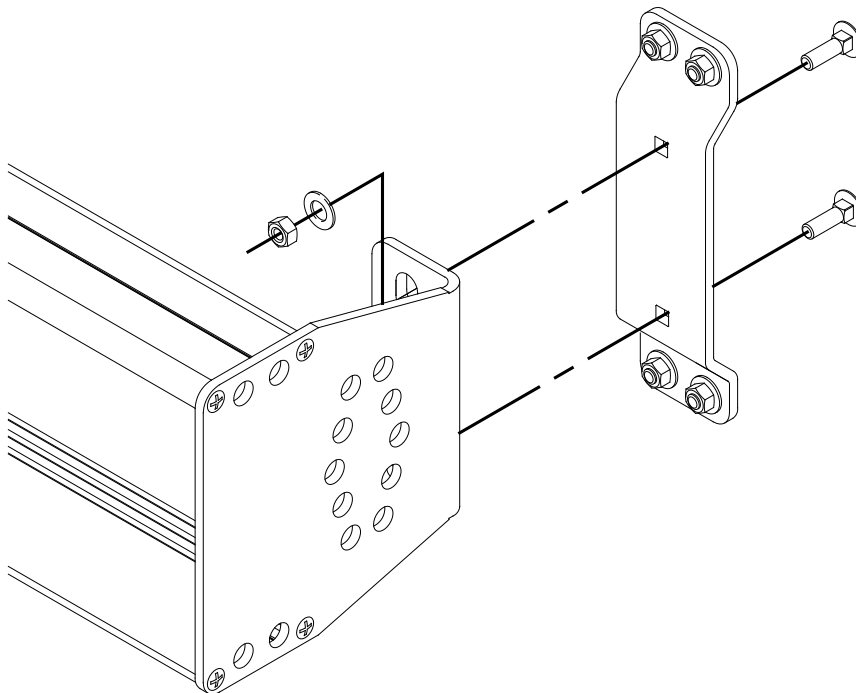


Figure 14 - Wiper Casing Mounting

5.4 Cable connections

5.4.1 Wiper Unit Cable Connector

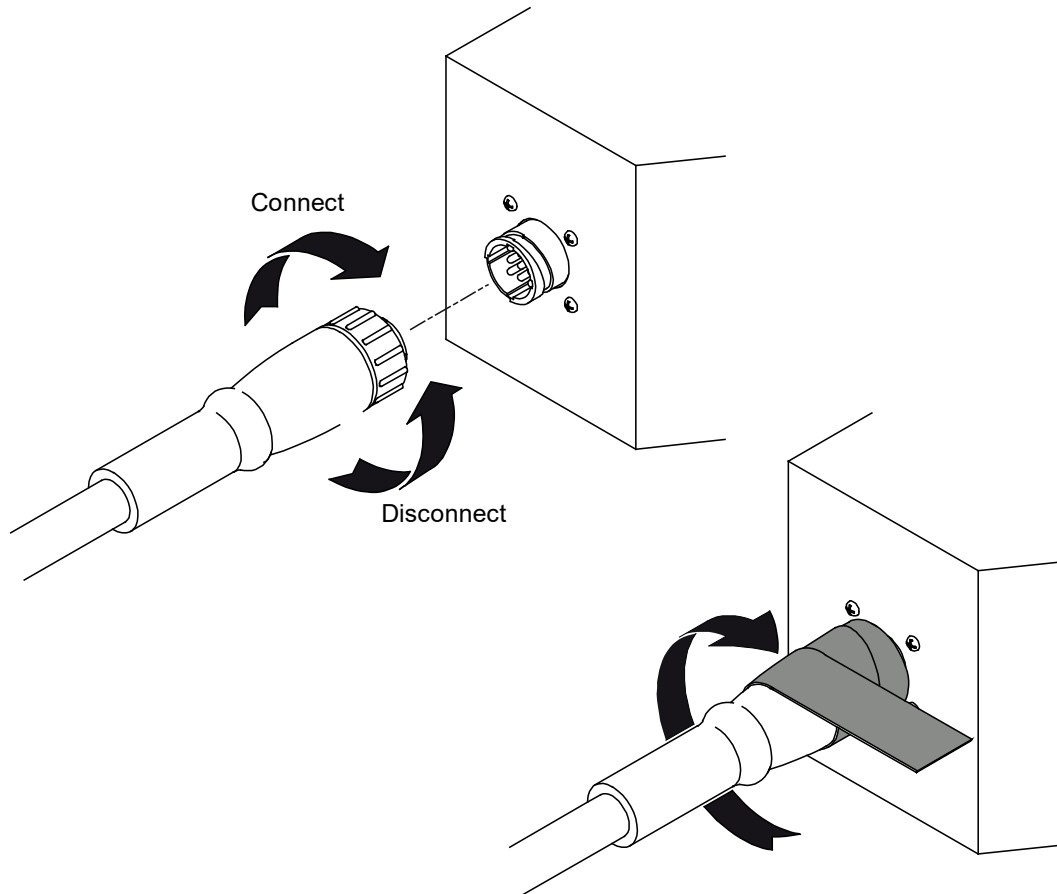


Figure 15 - Cable Connection

Rotate the cable connector to enter the guides in the mating connector. Secure by twisting the outer lock ring clockwise until it clicks into locked position. To form a waterproof connection, tape the connection with self-healing tape: Scotch® Professional Grade Silicone Rubber Tape #70, or similar.



Always make sure that power is switched off before doing any kind of maintenance to the electric circuits



The cable connector should only be twisted by hand. Use of tools and excessive force will damage the connector

6 System Operation

6.1 Rán Rotary series

The Rán Rotary switch has the following features:

- Supports one wiper
- Self parking controls
- Separate connection for pumps and solenoid valve
- Water spray function
- Two speeds control
- Variable intermittent speed
- Available in 24V

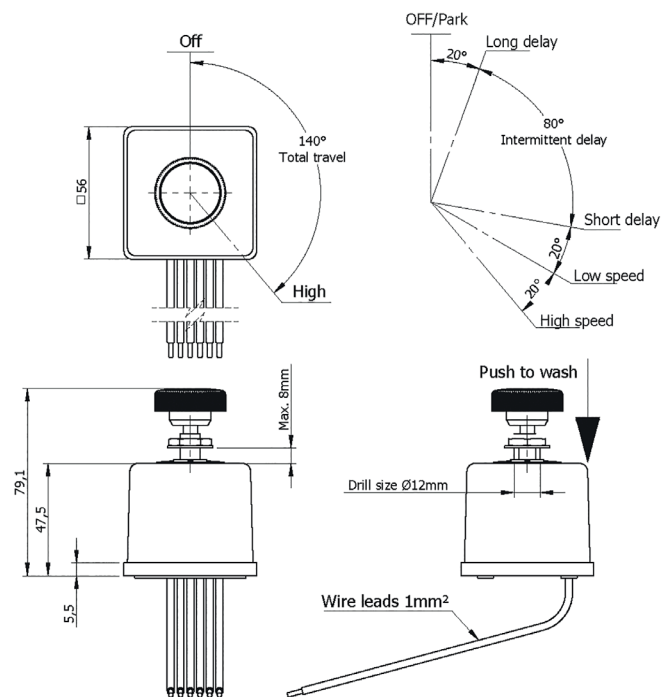


Figure 16 - Rán rotary switch

7 Spare Parts

Identification	Description	Remarks	Decca No.
	Wiper Unit		
A	Motor Complete PM4 220VAC		81000141
B	Motor Complete PM5 110VAC		81000132
C	Motor Complete PM5 24VDC		81000133
D	Carriage Standard Complete		81000001
E	Drive belt A-profile	Sold by meters	10570105
F	Motorcover With Plug		81000005
G	Drive Belt Tension Bracket		81000022
H	Parksensor NBN15-30GM40-ZO/ 088214	220V and 110V	50102001
I	Heater tape 250mm single 50W 220VAC		50103111
J	Heater tape 250mm single 50W 110VAC		50103112
	<i>Heater tape 250mm single 50W 24VDC</i>		50103113
	Wiper Arms and Blades		
K	Wiper Arm (50-70cm blade)max L-arm=730mm		81000007
K1	Wiper Arm (80-120cm blade)max L-arm=730mm		81000008
	Wiper Wiper arm XL, adjustable - max L-arm=880mm		81000025
L1	Wiper Blade 500 mm		10500500
L2	Wiper Blade 600mm		10500600
L3	Wiper Blade 700 mm		10500700
L4	<i>Wiper Blade 800mm (16 mm fixing)</i>		10500800
L4.1	Wiper Blade 800mm (21 mm fixing)		10500801
L5	Wiper Blade 900mm		10500901
L6	Wiper Blade 1000mm		10501001
	Wiper Blade 1200mm		10501201
	All blades: Min. 400mm to Max. 1200 mm		
	<i>16 mm fixing from 400mm to 800mm blades</i>		
	21 mm fixing from 800 mm blades and up		
	Rotary Switch		
M	Rán Rotary Switch for 1 Group		

Figure 17 - Spare Parts

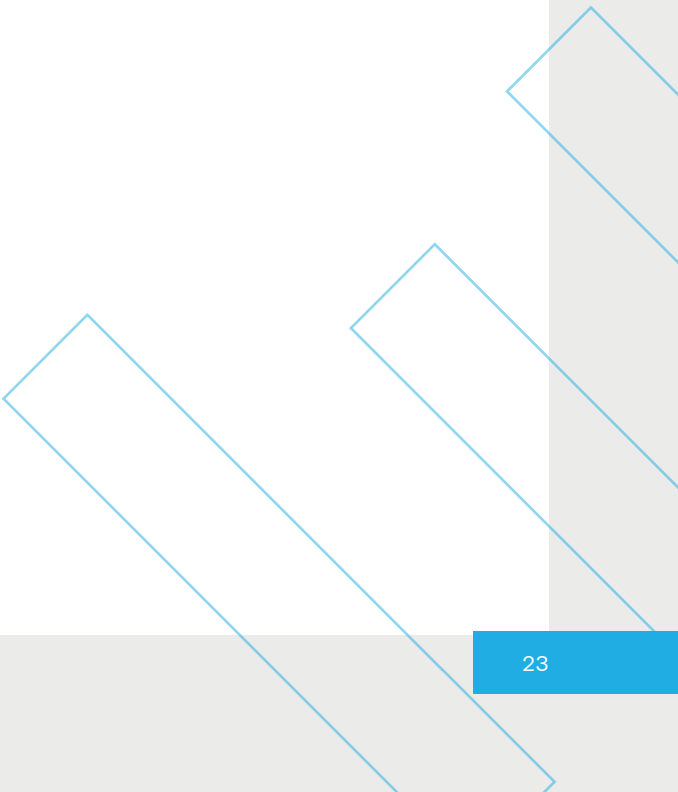
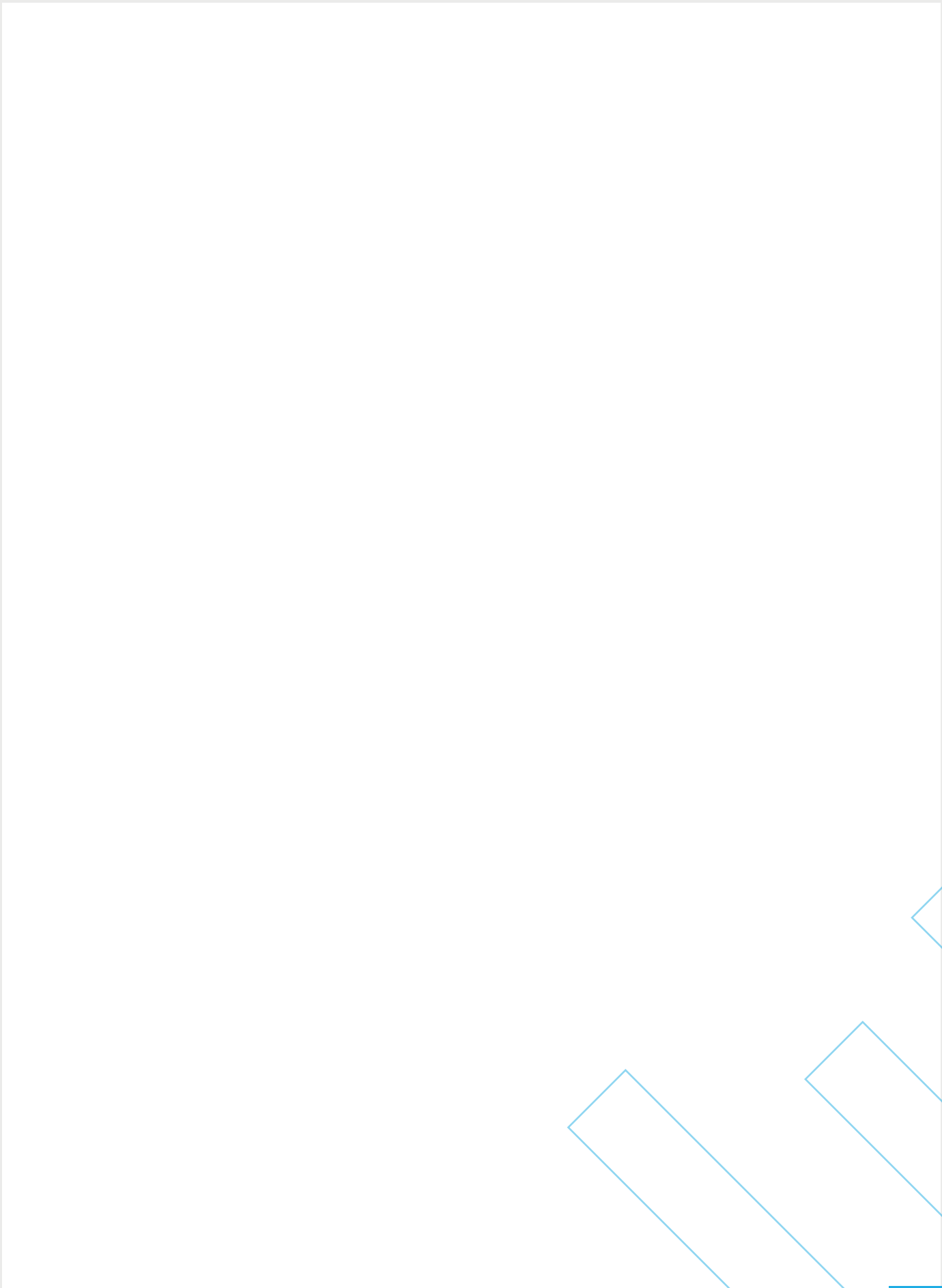
8 Warranty

Standard warranty is 12 month from delivery from shipyard to ship owner, or 24 months from delivery to shipyard, whichever comes first.
Wiper blades are not covered by the warranty.

9 Trouble shooting

Trouble shooting Rán module:

1. Check for any loose cables. If cables are loose, make sure to tighten.
2. Check for any damage to the cable.
3. Check for any damage in the switch itself.
4. Spare parts not available. Only complete switch available for purchase.



Contact

Idrettsvegen 113C
5353 Straume
NO - Norway

Phone No.
+47 551 12 300

Website
deccawiper.com

Email
sales@deccawiper.com

Australia:

STELA MARINE GROUP
Phone No +61 7 5665 8071
info@stellamarine.com.au
www.stellamarine.com.au

India:

MOLOOBHOY MARINE
Phone No +9122 23 080 800
info@moloobhoyme.com
www.moloobhoyme.com

China:

HOLYLIGHT (HK) TRADING CO. LTD
Phone No +852 25 437 048
anthony@holylight.biz
www.holylight.biz

Singapore & Asean region:

ALQUEST
Phone No +65 6749 9359
sales@alquest.com.sg
www.alquest.com.sg

Spain:

CONAVI S.L
Phone No +34 886 124 607
juancarlos@conavi.es
www.conavi.es

UK & The Netherlands:

EXALTO WIPER TECHNOLOGIES
Phone No +31 85 203 17 00
wipers@exalto.com
www.exaltowipers.com

Rest of the World:

EXALTO DECCA WIPER
TECHNOLOGIES.
Phone No +47 551 12 300
sales@deccawiper.com
www.deccawiper.com

South Africa:

SEASCAPE MARINE SERVICES
Phone No +27 215 118 201
info@seascapemarine.co.za
www.seascapemarine.co.za

USA:

IMTRA CORPORATION
Phone No +1 508 9957 000
decca@imtra.com
www.imtra.com