

NOVOROL from



**FOAM FILLED ROLLER DOOR WITH SURROUNDING BOX
(NOVOROL NR-20 CONTROL BOX WITH WIRED SAFETY EDGE)**

STEP by STEP GUIDE

- 1 – Check Contents and condition of parts received
- 2 – Check Brickwork opening, dimensionally and condition
- 3 – Fit Guides to brickwork – Page 4
- 4 – Fit Box complete with Shaft – Page 4
- 5 – Fit Control Box to wall – Page 5
- 6 – Connect Motor via Test Leads and Mains – Page 5
- 7 – Run Shaft to BOTTOM Limit – Page 6
- 8 – Run Shaft to TOP Limit (Count Shaft Revs) – Page 6
- 9 – Run Shaft to Bottom Limit – Page 7
- 10 – Put Curtain over Shaft into Guides – Page 7
- 11 – Connect Curtain to Shaft – Page 8
- 12 – Adjust BOTTOM Limit / Closed Position – Page 9
- 13 – Run Curtain to TOP – Page 9
- 14 – Adjust TOP Limit / Open Position – Page 9
- 15 – On Test Leads, Run Door to Fully Closed – Page 10
- 16 – ON Test Leads to Run, Run Door to Fully Open – Page 10
- 17 – Connect Motor and Safety Edge to Control Box – Page 10
- 18 – RUN Door via Control Box
- 19 – Program Handsets Page 10
- 20 – TEST Door (Safety Edge / Handsets) – Page 11
- 21 – Explain to End User how the door works

INSTALLATION GUIDE

GENERAL INFORMATION

- Safety

Before commencing any work on the product carefully read through this Installation and Operating Guide from start to finish, in particular the section entitled "Safety" and the related safety advice. It is important that these instructions are fully understood. This product could prove hazardous if not fitted correctly and used properly as directed or in accordance with the regulations

Any damage occurring as a result of non-compliance with these instructions shall exempt the manufacturer from all liability

If after reading these instructions there are any questions or anything is not understood then Contact Novoferm Customer Service on 01582 563 777 for guidance

- Explanation of Symbols



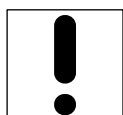
WARNING: IMMINENT DANGER

This symbol indicates that instructions are being given which, if not observed, could lead to serious injury



WARNING! Risk of electric shock

Installation only to be performed by certified electricians



This symbol indicates that instructions are being given which, if not observed, could lead to malfunctions and / or failure of the operator

- Occupational Safety

By following the safety advice and instructions provided in these Installation Instructions, injury to persons and damage to property whilst carrying out the work with and on the product can be avoided. Failure to observe the safety advice and instructions provided in this Manual as well as the accident prevention regulations and general safety regulations applicable to the range of use shall exempt the manufacturer or its authorised representative from all liability and render any damage claims null and void

- Hazards that can result from this product

The product has under gone a risk assessment. The design and execution of the product based on this corresponds to state-of-the-art technology. When used properly in accordance with the regulations, the product is reliable and safe to operate, nevertheless, a residual risk always remains

The Product runs at high voltage, before commencing any work on the electrical systems, PLEASE observe the following;

- 1) Disconnect the power supply
- 2) Safeguard against a power restart
- 3) Establish the electricity supply is cut off

- Spare Parts



Only use the manufacturers' genuine spare parts. Wrong or faulty parts can cause damage, malfunction or event total failure of the product

- Accessories

See later page of this manual or consult with your Approved Novoferm Garage Door Installer

- Changes and modifications to the product

To prevent hazards and ensure optimum performance, the product may not be subjected to and changes, modifications or conversions that have not been expressly approved by the manufacturer

- Dismantling

Dismantling takes place in a reverse sequence to the Installation Instructions.

- Disposal
Observe the corresponding area / country specific regulations
- Data Plates
The Data Plate for the control system is located on the inside of the control box, behind the white cover. Observe the specific power rating. The Data Plate for the door is placed on the curtain
- Packaging
Always dispose of the packaging materials in an environmentally sound manner and in accordance with the local regulations on disposal.
- Terms of Warranty
The purchaser is granted a warranty covering the safe and reliable operation of the Novoferm “Novorol” Garage Door for a period of 5 years from the date of purchase. This warranty is conditional on the regular inspection and maintenance of the product in accordance with the installation manual supplied with this door. During the guarantee period the manufacturer undertakes to repair, without charge, any product which has suffered a proven failure of its safe and reliable operation provided that the springs, wire cables, tracks, guide rollers and hinges have been inspected regularly (at least once a year) and maintained correctly, including replacement of worn items when required.

The Novorol Garage Door systems are guaranteed against any form of manufacturing defects for a period of two years from the date of purchase. The finish of white powder coated is guaranteed for a period of 2 years

In case of textured woodgrain finished doors, the exterior finish is guaranteed to provide an effective weatherproof membrane which will resist perforation of the Novorol door from the weather side due to corrosion for 5 years. Furthermore, colour change or fade to the exterior surface will be limited and uniform for a full 5 year period.

Novorol electric operators are guaranteed against any form of manufacturing defect for a period of 5 years for mechanical elements, motors and transformers. The motor control unit is guaranteed for 3 years, remote Control Accessories and parts are guaranteed for a period of 2 years.

Installation Instructions

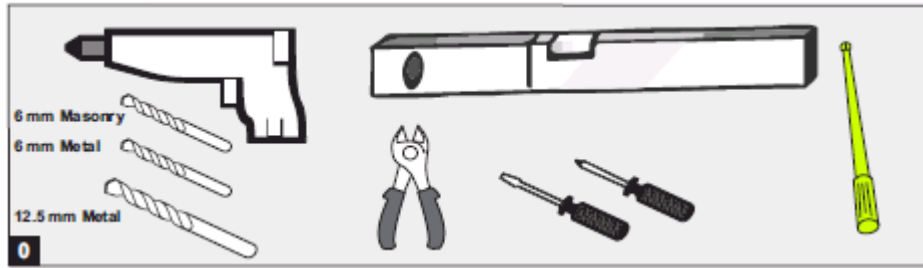


Repairs and adjustments should only be performed by an authorised Novoferm Dealer
Incorrect installation can put the safety of persons at risk, or cause damage to property
Improper Installation shall exempt the manufacturer from all liability.

Preparing for Installation

1. This is a **TWO** man fitting situation
2. To connect to the electrical main supply, a power point must be available, The control box has a 1000mm mains lead included
3. Ensure the screws and wall plugs to be used are suitable for the structural conditions on site
4. Choose the installation side of the tubular motor in accordance with the structural conditions on site
5. Check that the door provided will fit the aperture in the location required (Special Site requirements might over rule the guide lines below)
 - a. Fitting behind / at the back of the opening
 - i. Over Guide Width (OGW) or Width of the Door shown on the ticket is equal to the Brickwork Opening Width + Twice the Guide Width, at least
 - ii. The Guide Height (GH) or Door Height on the Ticket is equal to the Opening Height
 - b. Fitting between or within the brickwork
 - i. Over Guide Width (OGW) or Width of the Door shown on the ticket is equal to the Brickwork Opening Width – 6mm, at least (This allows for 3mm of packers either side
 - ii. The Guide Height (GH) or Door Height on the Ticket is equal to the Opening Height – 305mm (77mm Laths) 205mm (55mm Laths) (this allows for a 5mm gap at the top of the door)
6. For garages without a second entrance, an emergency opening device is required (See Accessories available)

Tools Required:



Drill Bits Masonry to suit fixings

Drill Bits – Metal to 6 & 12.5mm Dia

Screwdrivers – Pozi 2pt – Electricians

Motor Test Leads

Level, Ladder x 2, Motor Limit Adjusting Wand (should be with Motor), Hammer, Quick Clamps 600mm reach (4 off)

Parts Delivered / Required

2 Cardboard Boxes containing

Box 1 – Curtain in Bubble Wrap, Control Box

Box 2 – External Box Assembly consisting of:

Rear 45 Deg Box, Front Box including End Plates and Motor Shaft Assembly

Guides, Fitting Pack, Manual Winding Handle

Accessories ordered (Typically, EMR, Extra Handsets, Digital Key Pads)

Open the boxes and inspect the parts

Remove the 45 Degree Rear Cover

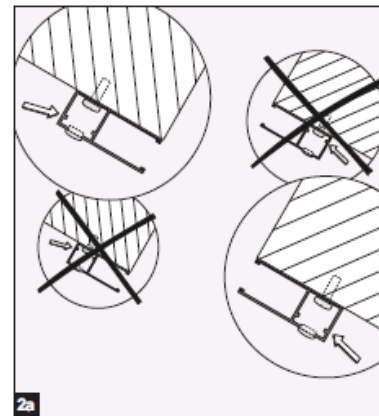
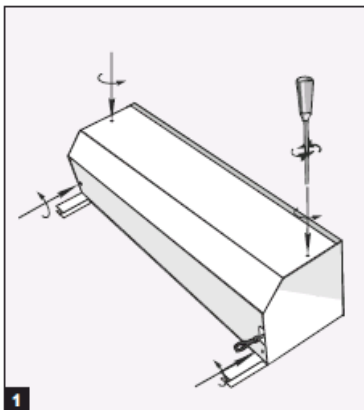
Remove all the loose parts within and fit the

Manual Winding Eye if appropriate

Release the motor wire and thread it through the hole in the end plate above the motor

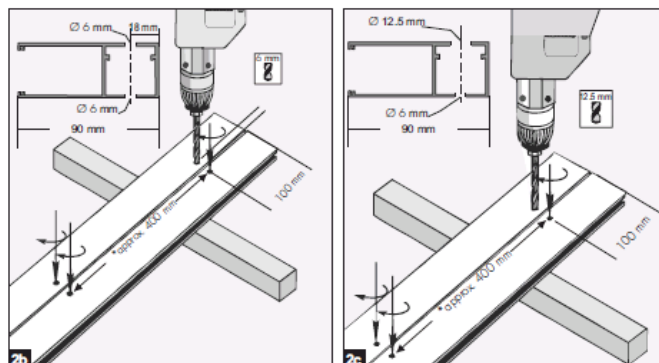
Front and Back of Tracks

Ensure they are the correct way round



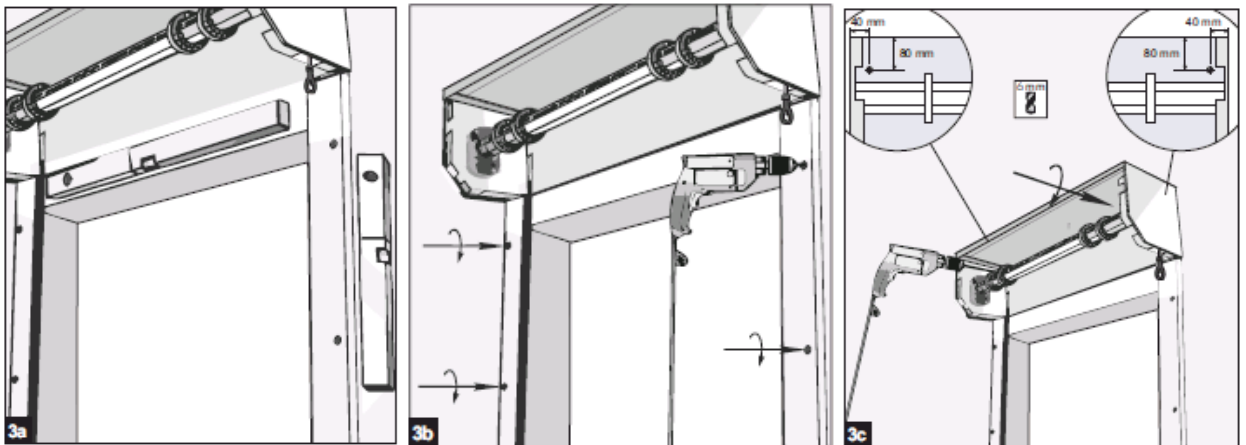
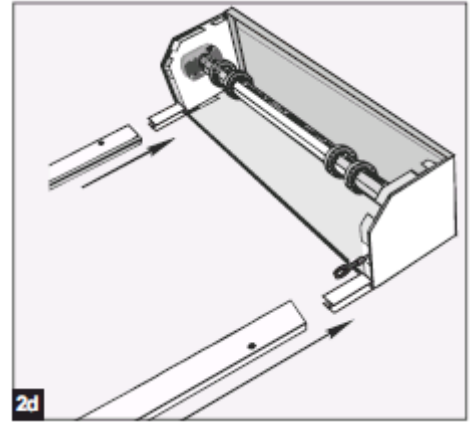
Preparing the Guides

1. Identify the front and back of the tracks (See diagram above – 2a)
2. Hold the guides up against their fixing area and determine and mark the most suitable fixing points aiming for the top and bottom fixings to be approximately 100mm from the ends of the guides and the intermediate fixing points on 400mm centers between the Top and Bottom fixing points.
3. Pilot drill the fixing holes in the guides with a 6mm drill.
4. Open up the holes on the back face to 12.7mm (Take Care **DO NOT** Drill all the way through)



Mounting the Guides and the Box

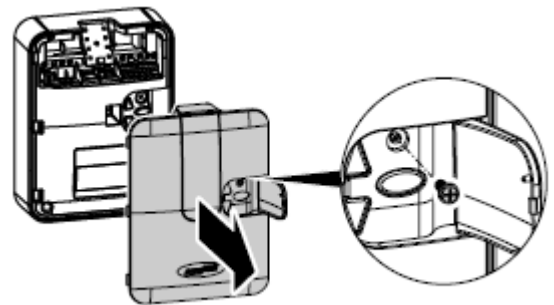
1. Slide the Guides on to the End Plates as shown (Diagram 2d)
2. Lift Box into place above door opening, to the position governed by the guides and secure in place with quick clamps, a minimum of two per side
3. Level up the Box and ensure the Guides are vertical and the Guides are square (Diagram 3a)
4. Mark out the fixing points of the guides ensuring they are vertical and that the box is level, if required it may require a gap between the floor and the bottom of a guide to ensure the box section is level.
5. Fix the guides to the wall with appropriate fixings (Diagram 3b)
6. Fix the end plates to the wall using appropriate fixings above the motor shaft (Diagram 3c)
7. Ensure the "U" Clamp on the Dummy Ends' Square Shaft is up against the end of the main shaft
8. **DO NOT INSTALL THE CURTAIN AT THIS POINT**



Installing the Control Box

The control box should be mounted on the side wall so that it can be reached by the motor cable, the mains lead from the Control Box can reach its' socket and the "UP, and DOWN" Buttons can be accessed by the end users if required (Typically 1500mm from the ground, within 1000mm of the motor side guide)

1. To Remove the Front White Cover, Open the "Up Down" Flap, Remove screw and remove front cover
2. Secure the Control Box to the wall with two screws and suitable rawl plugs, 100mm apart and level
3. Remove the two screws that secure the top side in place, it slides towards you, this panel secures the wires' grommets in place
4. The Motor and Safety Edge Curly Cable enter the Control via the Top and Rubber Grommets
5. Secure the Control Box to the Wall with appropriate fixings



Determining the Open / Closed limits by using Motor Test Leads

- 1) Connect the Motor Wire to the Test Leads and plug the test leads into the electric mains
- 2) Using the "Up Down" Switch run the shaft to the Down / Bottom Limit
- 3) Using the "Up Down" Switch run the shaft to the Upper / Top Limit, Counting the number of revolutions the shaft takes from Bottom to Top
- 4) Using the "Up Down" Switch run the shaft to the Down / Bottom Limit, Counting the number of revolutions the shaft takes from Top to Bottom (This should be the same as the previous run)

IF MORE THAN 3 ½ COMPLETE REVOLUTIONS OF THE SHAFT ARE OBSERVED WHILE THE SHAFT IS MOVING / OPENING THEN THE CURTAIN MAY COME OUT OF THE TRACKS (Depending upon the height of the door) WITHOUT TAKING APPROPRIATE ACTIONS - AS DESCRIBED LATER IN THE INSTRUCTIONS

Ensure all tools required for the completion of the installation are inside the garage, especially if there is no other access to the garage space

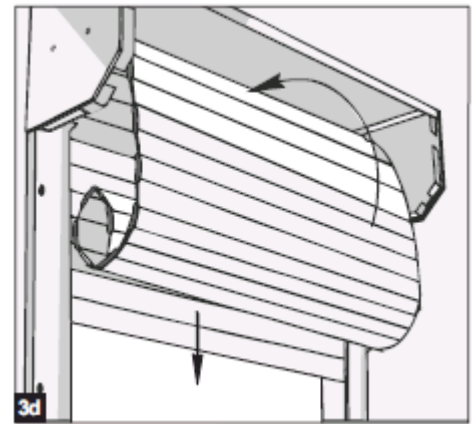
NOW PUT THE CURTAIN INTO PLACE

This requires two people on doors up to 4267mm wide and three people when the over guide width is greater than 4267mm

Remove the outer packaging

Remove any jewelry that might cause the curtain to be scratched, from hands / ears etc

Place two 50mm high spacers (Sufficiently high to ensure that should the curtain falls fully into the guides in an uncontrolled manner fingers are not trapped between the curtain and the ground) through the opening on to which the curtain is lowered in the first instant



A safe platform is required at a height that allows for the installers (Each installer should face away from the centre of the door) to have the curtain roll placed on their shoulders and from this position the bottom lath is fed **OVER** the shaft and into the top of the guides



When the curtain is half way down the guides the remaining unrolled part of the curtain should be unrolled resulting in the curtain being half in the Guides and half of in the garage space **(DO NOT ALLOW THE CURTAIN TO UN-ROLL BY IT'S OWN WEIGHT / GRAVITY INTO THE GUIDES)**



The curtain can now be lowered fully into the guides, one installer pushing the rear loose hanging laths up and the other steadying the speed of descent by holding on to the bottom lath and lowering the curtain on to the floor spacers

When the curtain is resting on the floor spacers they then can be removed one at a time by raising the curtain slightly, locally and sliding the spacer out on one side before repeating on the other side

INFORMATION - About the Motor and the Limits

The Motor has two limit adjusters, one for the “Open” or “Top” and one for the “Closed” or “Bottom” position, usually one Red and one White

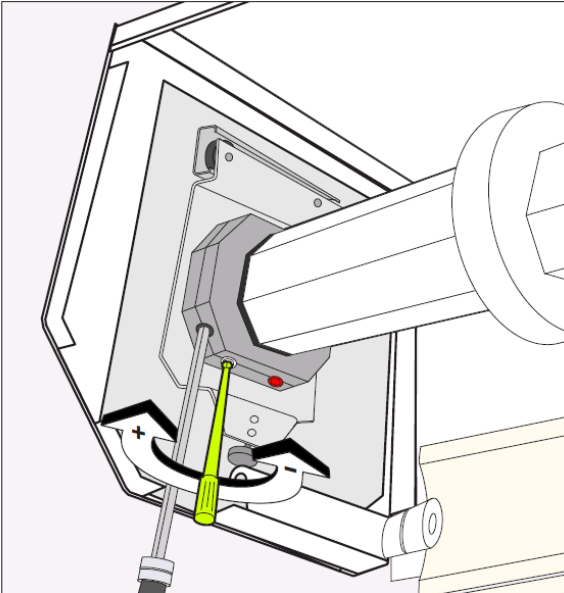
These are Plastic hexagonal sockets, best adjusted via a plastic wand supplied with the door

One needs to determine which is the “Open” and which is the “Closed” Limit, this will depend upon the orientation of the motor and which side of the opening the motor is on (Generally the one nearest the back of the garage is the **BOTTOM LIMIT**)

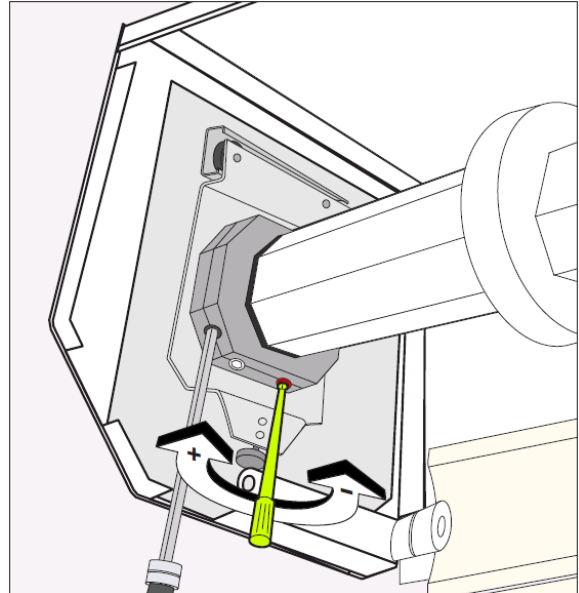
In an arc round each limit switch hexagon socket is an arrow with a “+” and “-” at each end
Turning in the “+” direction will make the motor run longer (IE, If the top limit is set too low then the motor needs to run longer to allow the curtain to open fully, therefore turn the “Open” Limit in the “+” direction

Turning in the “-” direction will make the motor run for a shorter time (IE, If the bottom limit is set so that the curtain wants to be driven into the ground, then the motor needs not to run for so long, therefore turn the “Closed” Limit in the “-” direction

Bottom Limit Adjustment



Top Limit Adjustment



ADJUSTING THE LIMITS / SETTING THE OPEN AND CLOSED DOOR POSITIONS

With the Curtain is in place and the Locking Straps extended up towards the shaft

The Shaft is in the Bottom Limit Position

The Connecting Points on the Locking Rings might not line up with the securing holes in the ends of the Locking Straps

Getting the Connections in the Locking Rings and Locking Straps to line up

Assuming the BOTTOM LIMIT is the Hexagonal Adjuster nearest the back of the garage stick the Plastic Wand in it

SETTING THE BOTTOM LIMIT / CLOSED POSITION

If the Locking Ring Holes are past the Locking Strap Holes – IE the Shaft needs to be rotated in the opening direction to get the holes to line up then the Limit will need moving in the “-“ direction, therefore

1. On the Test Leads **PRESS** and hold the “**UP**” Button for 2 seconds this will get the shaft to move in the opening direction and the, keep pressing it until the Connecting holes and past each other and release the “**UP**” Button
2. Turn the Plastic Wand in the “-“ Direction 2 revolutions
3. Press the “**DOWN**” Button and the shaft should rotate as if closing, stopping so the gap between the connecting holes is less
4. The aim is to repeat 1 to 3 until the Connecting Holes Line up and the Pins can be inserted, joining the Curtain to the Shaft

With the Curtain Connected to the shaft at the Bottom Limit / Fully Closed Position needs finalising

5. **PRESS** and hold the **UP** Button the Curtain will start to rise, when 150mm off the ground release the **UP** Button
6. **PRESS** and hold the **DOWN** Button, the curtain will close, It will stop in the programmed position
7. The top of the top lath should be positioned / adjusted to the point that it just touches the inside edge of the Box / garage front wall – it should not be pushing the curtain hard into the ground
8. Using the process in 1 to 3 (Turning the bottom Limit adjuster in the “+” directions, move the top of the top lath so it is just in contact with the inside face of the box or the garage.

SETTING THE TOP LIMIT / OPEN POSITION

Depending on the number of complete revolutions the shaft was seen to go through during the initial running of the motor shaft it will be worth rotating the Top Limit Adjuster in the “-“ Direction to reduce the likelihood of the curtain coming out of the top of the tracks during this phase.

The Number of complete turns of the Plastic Wand required if the curtain is likely to come out of the tracks is 15 per revolution of the shaft over 3 ½ ..

Insert the plastic wand in the Top limit Adjuster, it should hold itself, it will be more difficult to do this as the curtain rolls up and the light in the confined space reduces making it hard to see where the wand is required.

The Fully open position of a Novorol Door is considered to be when ¾ (60mm) of the bottom lath is retained within the guides at their top

LESS THAN 3 ½ REVOLUTIONS OF THE MOTOR SHAFT INITIALLY

If on the initial movement of the curtain there was 3 ½ of less revolution of the shaft then it will stop rising before the top of the guides then:

1. **Press** and hold the **UP** Button in and the curtain will start to rise
When the Door stops rising, it is at the TOP LIMIT it sees
2. **Press** and hold in the **DOWN** Button and the curtain will start to close – release after 150mm of closing
3. **Rotate** the Plastic Wand in the “+” Direction, 5 complete turns
4. **Press** and hold the **UP** Button in and the curtain will start to rise, stop closer to the new fully opening position
5. Repeat 2 to 4, varying the number of turns of the Plastic Wand prior to the send the curtain up wards to ensure it stops, closer to and finally in the desired fully open position

If on the initial movement of the curtain there were more than 3 ½ revolutions of the shaft then the bottom lath of the curtain will rise out of the guides before the top limit is reached, therefore:

MORE THAN 3 ½ REVOLUTIONS OF THE MOTOR SHAFT INITIALLY

1. Insert the Plastic Wand and turn it in the “-“ Direction and number of turns
2. **Press** and hold the **UP** Button in and the curtain will start to rise
When the bottom lath is getting near the top of the guides proceed with caution
Release the **UP** Button as the bottom starts to rise above the to of the guides
DO NOT LET THE BOTTOM LATH TO COME OUT OF THE GUIDES -
3. **Press** and hold in the **DOWN** Button and the curtain will start to close – release after 450mm of closing
4. **Rotate** the Plastic Wand in the “+” Direction, 5 complete turns
5. **Press** and hold the **UP** Button in and the curtain will start to rise, - if the situation described in “2” occurs then release the **UP** Button and go to “3”
6. Repeat 3 to 5, varying the number of turns of the Plastic Wand prior to the send the curtain up wards until the bottom lath stops below the top edge of the guides
7. Move the Bottom Lath to the fully open position as described in the section above “**LESS THAN 3 ½ REVOLUTIONS OF THE MOTOR SHAFT INITIALLY** “

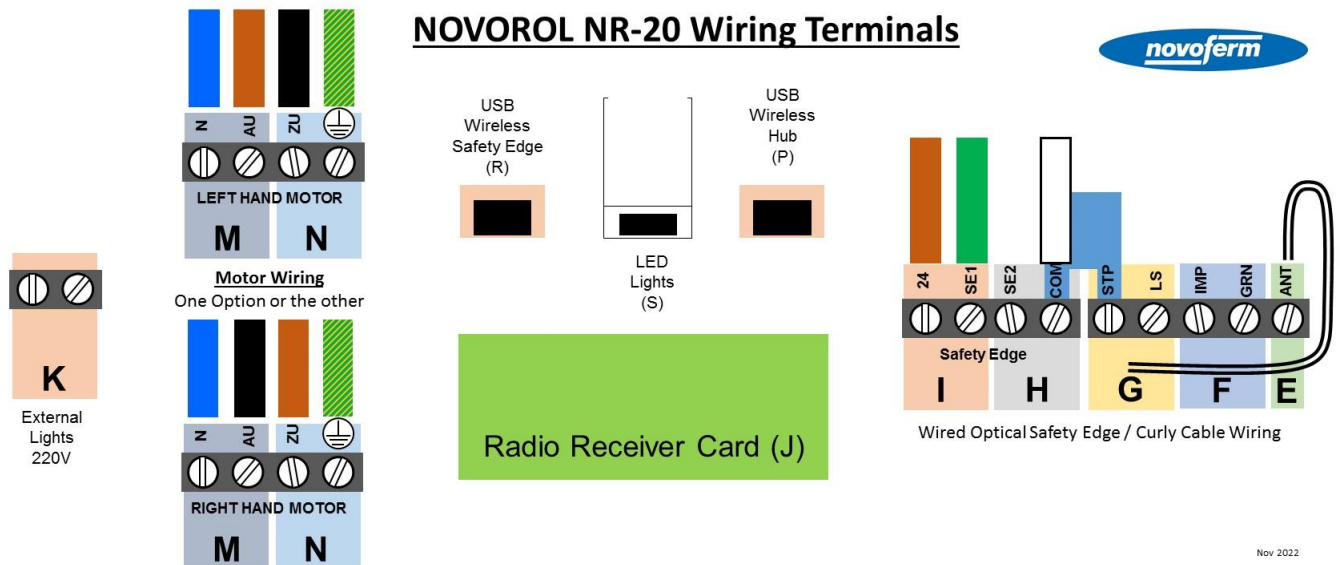
CONFIRMING THE FULLY OPEN AND FULLY CLOSED POSITIONS

PRESS and hold in the **DOWN** Button, the Curtain should close and the motor turn off when the curtain is fully closed and release the button then

PRESS and hold in the **UP** Button, the Curtain should open and the motor turn off when the curtain is fully opened and release the button then

Turn the Motor Test Leads off at the mains and disconnect the Motor Wire from the Test Leads and Connect the Motor wire to the Motor Wire Terminals

Thread the Motor Cable through the grommet and connect the four core cable as follows



WIRING in the MOTOR CABLE in to Terminals “M” & “N”

	<u>Right Hand Motor</u>	<u>Left Hand Motor</u>
Left Hand Terminal of “M”	Term N = Blue (Neutral)	Term N = Blue (Neutral)
	Term AU = Brown	Term AU = Black
	Term ZU = Black	Term ZU = Brown
Right Hand Terminal of “N”	Term \oplus = Green/Yellow (Earth)	Term \oplus = Green/Yellow (Earth)

Determining the Open / Closed limits by using Control Box

- 1) Connect the Motor Wire to the Control Box as per the Diagram above
- 2) Plug the Control Box into the electric mains
- 3) Connect the Safety Edge to the Control Box See Below
- 4) Turn the Mains Electricity ON – LED Display will return with a “.”
- 5) Press and Hold the Oval until “3” Appears
- 6) Wait for it to start Flashing – **The Curtain is not attached at this point**
- 7) Press the “DOWN” Button and the Shaft should rotate in the closing direction, let it run until it stops
- 8) Press the “UP” Button and allow the shaft to rotate to the fully Open Position, Counting the number revolutions of the shaft takes from Bottom to Top
- 9) Press the “DOWN” Button and allow the shaft to rotate to the fully Closed Position, Counting the number revolutions of the shaft takes from Top to Bottom (It should be the same as in (8))
- 10) **NOW GO TO THE SECTION – NOW PUT THE CURTAIN INTO PLACE**
- 11) After Confirming the Open and Closed Limits by Press the “UP” & “DOWN” Buttons respectively the LED Display will have “3” Flashing
- 12) To exit this part of the Program Briefly Press the “OVAL” Button repeatedly this will go through “4,5,6,7,8,9,A,C,E,F,H,U,P,L arriving at “.” **Back to normal running mode**

Connecting the Safety Edge to the Control Box

Take the Curly Cable and thread it through the grommet and then in to the top of the Control Box

Connect as follows

The Brown Wire - 24v

The Green Wire - SE1

The White Wire - COM

Link Terminals - COM & STP

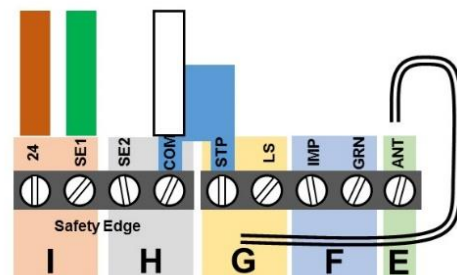
Testing the Curtain

Press the “UP” Button – the Curtain will Open

Press the “DOWN” Button – The Curtain will Close

Press the “UP” Button – the Curtain will Open

Press the “DOWN” Button – As Curtain Closes squeeze the bottom seal and the door should stop and start to open



Programming the Handset

Take the handset in one hand

Briefly Press the “**OVAL**” Button and a “1” with a “.” Should appear on the LED Display and should “**Flash**”
Press ONE of the Handset Buttons – Until the 1 Disappears and the “.” Stops flashing

Repeat on all Handsets

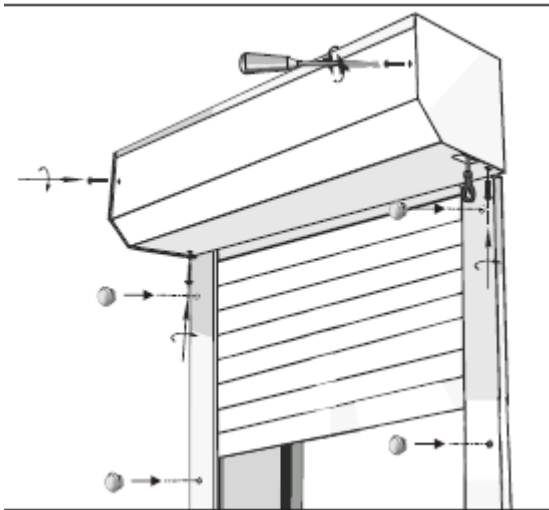
This confirms the safety edge is working

Take one of the handsets and **PRESS** one of the programmed buttons, the curtain will rise to fully open

Take the second handset and **PRESS** one of the programmed buttons, the curtain will close

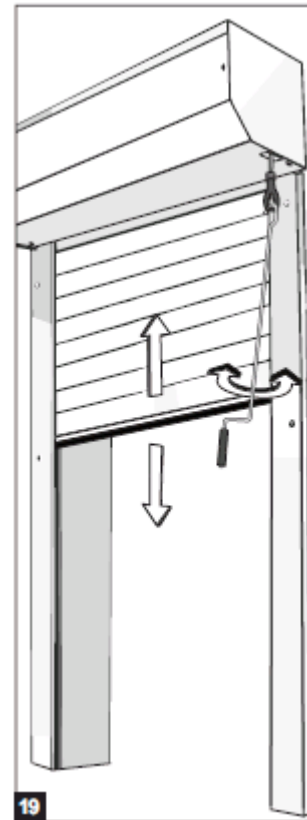
As the Curtain is closing the Squeeze the bottom rubber with your fingers, this should trigger the curtain to stop moving and begin re-opening – As Standard the curtain will fully re-open (a Partial Re-open is possible via Menu 6 Option 6 and inputting a Time of re-opening from Menu H Options 1 through to 9 (0.5 to 5 seconds) A door with a 2134mm Guide Height takes approx. 18 seconds from top to bottom)

Fit the Back Part of the Box if required



Connect Manual Crank Handle to Winding Eye

Move curtain manually, one full cycle



ACCESSORIES

FUNCTIONS WITHIN THE CONTROL BOX

Alarm – Go to Menu “L” and change “O” to “1” – See “Novorol NR20 – Setting the On Board Alarm”

Light Settings

Ventilation Mode

Warning Times (Delayed Opening) Warning Lights

Automatic Closing

Accessories

Low Level Manual Release (EMR) – for garages with no other access than the garage door

Those that can be connected to the Control Box (Relevant Instructions are with the accessory)

Push Button (Wired or Wireless)

Wireless Digital Keypad

Key Switch

Additional 230V Lighting

Additional Safety – Photocells (Required if Automatic Closing is activated)

! WARNINGS !

The above mentioned product must be installed only by qualified technical personnel in compliance with the standards of automatic openings. All connections must be rated for single phase power supply of 240V. For the disconnection from the power line, use an all-pole switch with contact with an opening of at least 3.5mm. Only suitable material for the connections must be used to guarantee insulation that complies with current standards on the subject of electrical safety. All the necessary safety devices are to be seen separately. Incorrect wiring will cause incorrect functioning impairing the safety purpose for which the product has been designed so that people injuries could occur; failure to follow instructions can cause personal injury and/or property damage. The correct functioning of the product must be checked once a year. Keep the 240V wires separately from the low voltage safety wire, The earth wires must be fixed with an additional fastening on the terminals; the fastening has to be done by a qualified technical personal during the installation phase. The appliance has been tested with a power supply wire type H05W-F; the power supply wires for outdoor use have not to be lighter than ordinary wire types H05RN-F; The Safety devices have to be in conformity with EN12978. The installation of the control unit has to be done by fixing the box vertically with cable glands downwards. This product is in conformity with RAEE and RoHS directive. The earth wire must be longer than the other wires because it must be the last to break off if the cable clamps are slack. Remember that there are specific standards that must be complied with both as regarding the safety of the electrical systems and as regarding the remote control of tubular motors for roller blinds.

In the view of a constant development of their products, the manufacturer, Novoferm Tormatic GmbH, reserves the right for changing Technical data and features without prior notice

The connection between the control unit and the ancillary device must be done using double insulated cables. The auxiliary device connected must be a Class II device



In case of an external aerial is connected the connections must be done using double insulated cables

TROUBLESHOOTING GUIDE (What to do when. . . .)

Fault	Meaning / Info	Solution
		-
The Door will not close via handset or Control Box, but will go up / open	<p>Safety Edge not talking to the Control Box</p> <p>The Safety Edge Sensors are different from each other. The sensor in the bottom seal closest to the black connection box has an LED in it. When the Bottom Seal is squeezed, disrupting the beam the LED (Orange) Lights up – Therefore if the LED is on there is a problem with the Sensor System</p>	<p>Control Box Check</p> <ul style="list-style-type: none"> - The Curly Cable is wired correctly (See Page. . .) <p>Bottom Slat Box Check</p> <ul style="list-style-type: none"> - Check wiring in the black connection box on the bottom slat transmitter (See below) <div style="text-align: center;"> <p style="font-size: small; text-align: center;">Important The Wires from one cable mirror image the other</p> </div> <p>Safety Edge Checks</p> <ul style="list-style-type: none"> - Check the condition of the bottom rubber edge, not perished, not gnawed

TECHNICAL SPECIFICATIONS

Control Box Data

Power Supply	220/230V ~ 50Hz
Operating Temperature Range	-20°C + + 60°C
IP Rating (Dry Rooms)	IP20

Curtain Data

Resistance to wind load	2
Thermal Losses	5.2w/m ² k
Water Tightness	NPD
Air Permeability	NPD

Maximum output power for flashing light` 500W

Reception frequency 868.3MHz
Radio Memory capability (Transmitters) 32

Motor Characteristics

Voltage	230V~50Hz
Up to 3000mm Wide Doors	205W
Up to 5000mm Wide Doors	345W
Stand By	< 0.5W