



# **DTS 600/800**

## **SECTIONAL DOOR OPERATOR INSTALLATION MANUAL**

Comply to: SANS IEC 60-335-2-103  
NRCS Cert. no. 88934/002

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To the extent that they may be lawfully excluded, DTS Security Products hereby expressly excludes all conditions and warranties, statutory or otherwise, which may be implied by law as conditions or warranties of purchase of a DTS 600/800 Garage Door Opener. DTS Security Products hereby further disclaims and rejects to the maximum extent permitted by law any liability or responsibility whatsoever for any direct, indirect, consequential or other injury, damage, cost, expense or loss whatsoever incurred or suffered by any person, company, firm or organization as a result of any failure to install the DTS 600/800 Garage Door Opener in accordance with these installation instructions.

DTS600 (Open & Close force) - 600N – 65Kg.  
DTS800 (Open & Close force) - 800N – 90Kg.

## Contents

No	Package	Part		Qty	Remark
1	Motor	No	Description		
		1	Motor	1 Set	
		2	Transmitter	2 Pcs	Transmitter
		3	Remote Wall Switch	1 Pc	Not Supplied
		4	Remote Wall Switch Bracket	1 Pc	Not Supplied
		5	Disengagement Cord	1 Pc	
		6	Clutch	1 Pc	
		7	Bracket	1 Pc	For Track
		8	Bracket	1 Pc	For Door Panel
		9	Strapping	4 Pcs	For Rail
		10	Connector	2 Pcs	For Door Panel
		11	Bolts/Nuts	1 Set	
12	Installation Manual	1 Pc			
2	Rail	1	Extrusion	1 Set	

## Important Safety Warnings

The DTS600/800 garage door opener described in this manual is designed for the automation of residential sectional overhead doors and one piece overhead tilting doors. Any other use is considered improper and will void the warranty.

### Warning:

You are carrying out operations on machine systems classified in the automatic gates and doors category and as such failure to comply with the relevant safety rules may result in serious personal injury and/or property damage.

Only qualified personnel should install and service equipment. It is the responsibility of the installer to adhere to all relevant safety standards.

## Description

The DTS600/800 garage door opener requires a 220VAC 50 Hz power input and has a 24VDC 100W motor and can provide 'Hold to Run' control and automatic modes for operation. When the door is in operation, movement can be interrupted by activation of the safety inputs (manual pull cord, transmitter, wall button (if fitted) and photo beams (if fitted)).

An encoder sets open and close positions and braking during the end of the travel cycle reducing speed and noise.

Unqualified personnel or those who do not know the occupational health and safety standards applicable to automatic gates and doors category must under no circumstances carry out installations or implement systems.

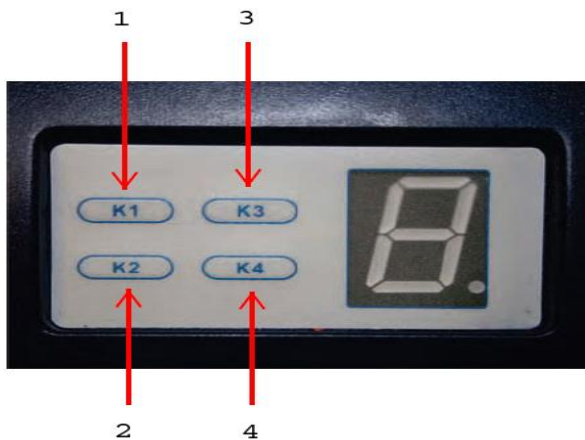
Persons who install or service the equipment without observing all the applicable safety standards will be held responsible for any damage, cost, expense or claim whatsoever suffered by any person as a result whether directly or indirectly from failure to install the system correctly and in accordance with the relevant safety standards and installation manual.

A 433.92MHz radio receiver is built into the circuit board and the rolling code is memorized with the self-learning technique. As an alternative to the built-in receiver the unit will accept any of the range of stand alone radio receiver. The unit has been designed to provide maximum reliability, safety and flexibility of use.

**IMPOTANT: Before starting to install the unit read all of the instructions carefully and make sure you are familiar with the safety warnings included in this manual.**

## Operating Controls.

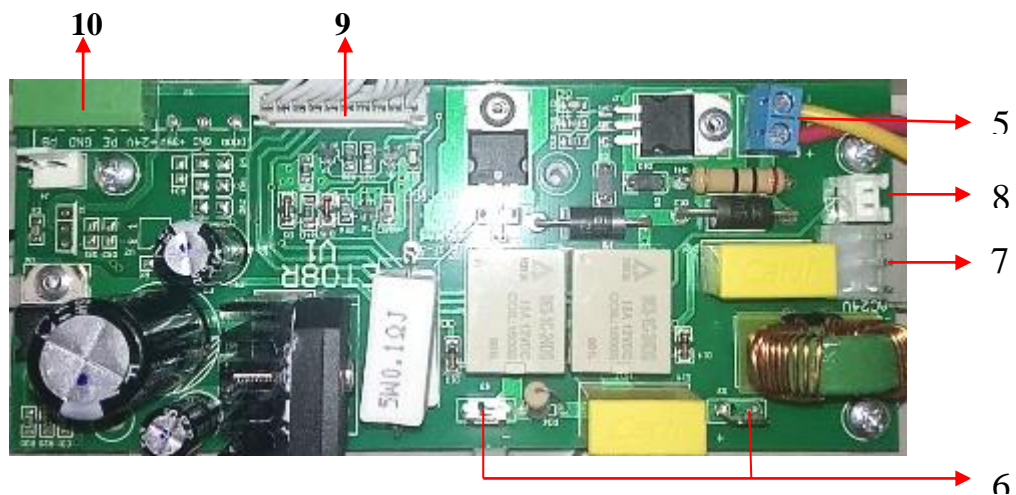
- 1 SET Button (K1) - Confirm set and Reversing sensitivity.
- 2 CODE Button (K2) - Transmitter code set.
- 3 UP Button (K3) - Limit mode set.
- 4 DOWN Button (K4) - Limit mode set



## Circuit Board Connections.

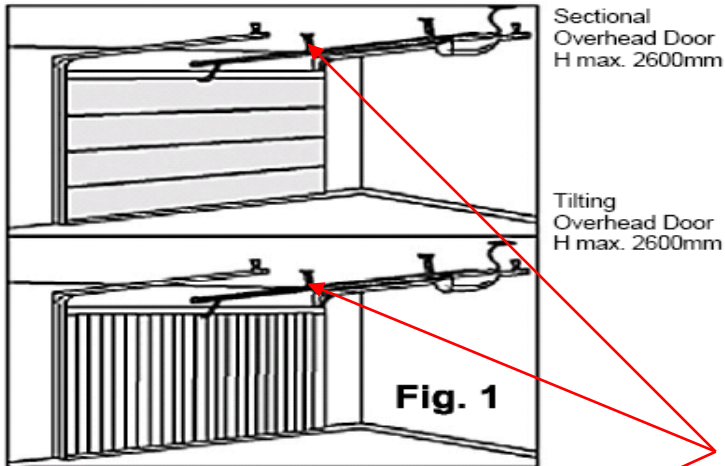
- 5 Coupling for connecting the backup battery.
- 6 Coupling for connecting the motor.
- 7 Coupling for the power transformer.
- 8 Terminal for connecting LED lamp.
- 9 Terminal connector to the control board.
- 10 Terminal connections for photo beam and push button.

PB = Push button, GND = Common & Neg., PE = Beams, +24 = Positive 24VDC.

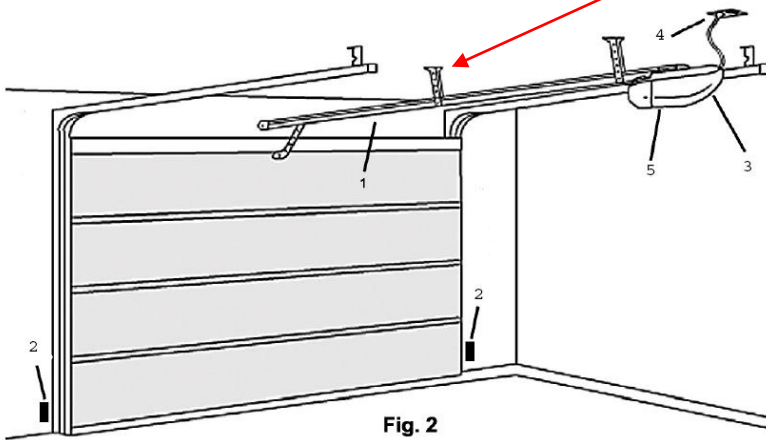


## Installation

- 1) Read the instructions carefully.
- 2) Make sure the door structure is solid and suitable to be motor driven.
- 3) Make sure that when the door is moving there are no friction points.
- 4) The door must be properly balanced and must be easily lowered and raised by hand.
- 5) Install a 220V, adequately protected 3 pin socket near where the DTS600/800 opener is going to be installed.



**Please ignore middle bracket on the extrusion**



Refer to Fig. 2 for recommended installation.

- |                                       |                                |   |
|---------------------------------------|--------------------------------|---|
| 1) DTS600/800 sectional door operator | 2) Infra red beams (Optional). | 3) Inside push button panel (Optional). |
| 4) Power point (Optional).            | 5) Power head.                 |   |

## CHAIN SHUTTLE ASSEMBLY.

For ease of installation the DTS600/800 is delivered with the chain and chain shuttle already assembled in the track. If you need to assemble it yourself, connect the chain shuttle to the chain with screw C tightened firmly. Move shuttle B to half way along the rail section, grease the chain and sprocket (Fig. 3) with a lithium type grease or equivalent. Do not use oil type lubricants.

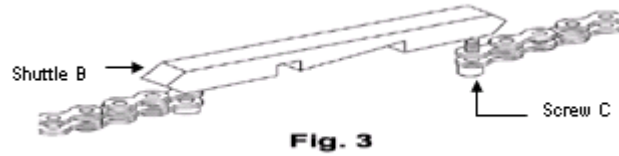


Fig. 3

**Installation.**

**Please ignore middle bracket on extrusion.**

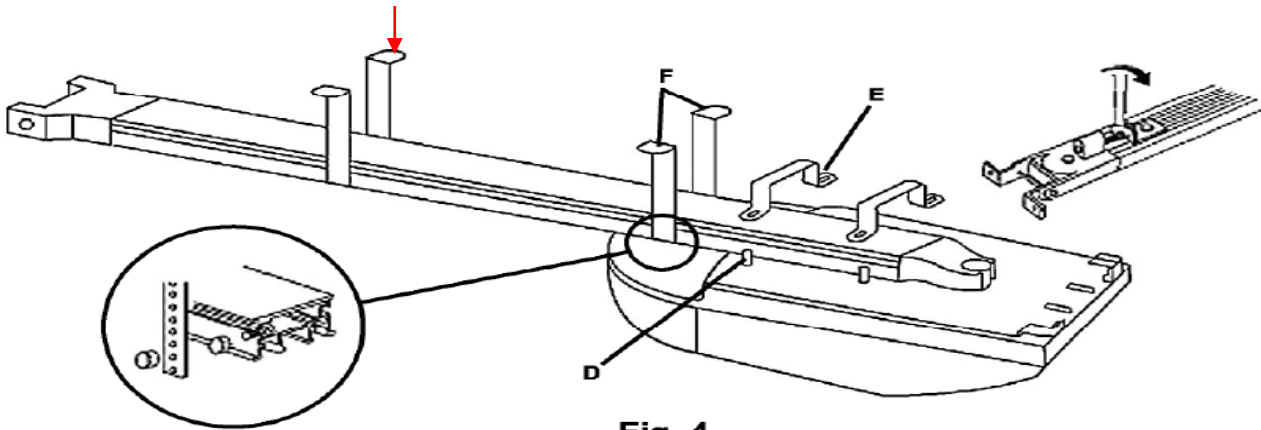


Fig. 4

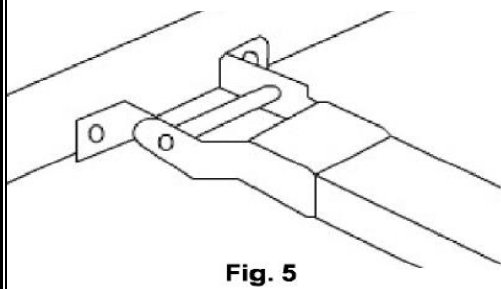


Fig. 5

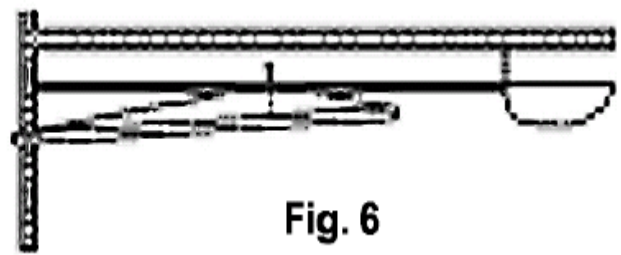


Fig. 6

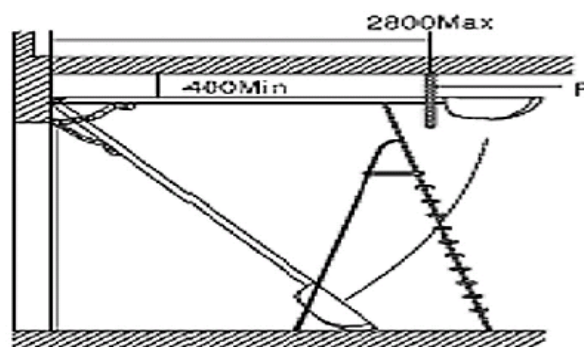


Fig. 7

Position the bracket (E) on the studs (D) and secure them in place using 6 mm wing nuts.

Fix the DTS600/800 opener to the doorframe or to the ceiling with the correct fixing (Fig. 5) maintaining a min. gap of 30 mm from the panel's maximum height (Fig. 6). Check measurements for drilling insert and lock brackets F and fix the DTS600/800 opener to the ceiling with the correct fixings (Fig 6). Cut off any fixing straps excess.

**Warning: Make sure the opener is affixed to noggins in ceiling and not just to plasterboard. Failure to have safe secure fixing will lead to opener falling causing serious personal and/or property damage.**

Note: A set of fixing straps should be located in the centre of the aluminium rail to prevent flex that will result in phantom reversing.

## Installation

**Remember** there are specific standards that have to be strictly followed regarding the safety of electrical installations and automatic gates and doors.

As well as the legal requirements and standards that must be adhered to, please take note of the following points to ensure maximum safety and reliability of your installation.

- 3.1) Prior to installing check the surrounding environment. Carefully evaluate any hazards there could be from physical damage (transiting vehicles, parts of trees falling etc.), possible contact with foreign bodies (insects, leaves, etc.). Flooding hazards or any others exceptional events.
- 3.2) Check that the main voltage is the same as that given on the rating plate and in this manual.
- 3.3) Check that there is suitable electrical protection against short circuit/power spikes and proper earth on the main supply.

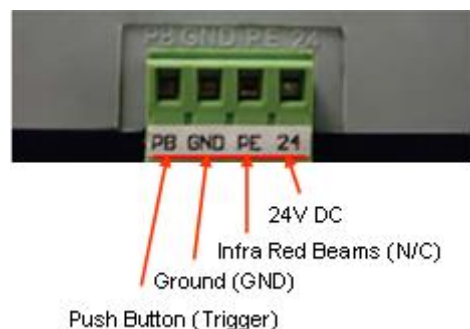
**Remember** the unit has mains voltage running through it (electrocution hazards, fire hazards).

- 3.4) Take care with the control unit, parts may be subject to damage if abused.
- 3.5) Make sure you have all the necessary materials and that they are suitable for this kind of use.
- 3.6) Read all the instructions thoroughly and make sure they are understood before attempting to install the DTS600/800.
- 3.7) Before starting the installation, carefully analyse all the risks relating to automating the door. Verify that the door to be automated is in a sound condition and that the mechanisms are in good working order, observe the safety margins and minimum distances.
- 3.8) Evaluate with particular care the safety devices to be installed and where to install them, always install an emergency stop device for interruption of power to the opener if required.
- 3.9) Once the risks have been analysed, install the DTS600/800 opener and relative safety devices, emergency stop and photoelectric cells.

**Important: Infra Red Beams must be fitted if auto close is activated.**

- 3.10) When installing the DTS600/800 opener, strictly follow all the instructions given in the instruction manual. If some points or procedures in this manual are not very clear, do not install until all doubts have been cleared up with our technical department.

## Terminals and Connections.



- 1) GND & PB = **Push Button** terminals. Step by step command input (open, stop, close) same as the step by step button on the transmitter.
- 2) GND & PE = **Photo beam** terminals.
- 3) 24V & GND & PB = **Plug in receiver** terminals.

To safeguard the operator and avoid damaging components while wiring, disconnect the unit from all power when working on it.

**Remember** that there are specific strict standards that must be complied with in regards to both the safety of the electrical systems and the automatic doors.

Only qualified, trained personnel may carry out the installation and subsequent maintenance.

Whoever installs and uses the DTS600/800 door opener will be held responsible for any damage caused.

**NOTE:** Contact DTS Security Products technical department for the wiring diagram for the above connections if uncertain of the correct procedures.

## Programming the Unit.

The system must be checked and tested when connections are completed.

- 4.1) Check that the chain support is halfway so that movement is problem free both in opening and closing.

Make sure that all the standards relative to the automatic gates and doors category have been observed.

- 4.2) Now carry out a test with the door disconnected from the motor and open and close the door to verify that the mechanical parts are all in good working order and the door does not bind or jam in its tracks.

- 4.3) Power the unit. As soon as the unit is powered, the system displays a 7 segment LED number from 0 – 9 and the lamp will turn on for 2 seconds.

- 4.3.1) If the LED display is upside down, press the SET (K1) button once, then the LED will display the number in the correct direction.

The system will remember the display direction. It will display correctly the next time the power is turned back on.

- 4.3.2) If this is not the case, switch the power off immediately and check connections carefully.

- 4.4) Check that all the safety devices on the unit are working properly (emergency stop, photo beam, etc.). This is one of the most important checks and must be done with great care, in fact, the active safety of the automatic door depends on the correct functioning of the safety devices. The reversing sensitivity device is of great help in minimizing damage but only the correct installation of the safety devices will make it possible to stop the door before it can cause any damage or injury to person and/or property.

- 4.5) It is now time to set the opening and closing position.



## Setting Open and Close Positions.

**Warning:** Keep all persons and property clear of the garage door during the programming process.

- 5.1) Press and hold **SET** (K1) until the LED displays the letter **1**. It turns into opening learn state.
- 5.2) Now press and hold **UP** (K3), the door must travel to the open position, release the button when the door has reached the desired open position.
- 5.3) If the door has overrun its open position, press the **DOWN** (K4) button to move the door downwards. Adjust and fine tune the open position by pressing **UP** (K3) and **DOWN** (K4).
- 5.4) Press **SET** (K1) to store the open position, the LED will display the letter **2**, it is now ready to set the close position.
- 5.5) Press and hold **DOWN** (K4), the door must travel to the close position, release the button when the door has reached the desired close position.
- 5.6) If the door has overrun its close position, press the **UP** (K3) button to move the door upwards. Adjust and fine tune the close position by pressing **DOWN** (K4) and **UP** (K3).
- 5.7) Press **SET** (K1) to store the close position.

The door will then open and close automatically to map the open and close sensitivity force requirements.

(Program the load setting by holding K1 until the digit 3 appears, with K3 up the load to figure 7. Press and release K1 to store this load.)

- 5.8) The door is now set for normal operational mode.

**IMPORTANT: Safety systems must be checked regularly to ensure that maximum safety is maintained at all times.**

## Adjustments.

The force settings must now be set. (Set force between 7 - 9)

- 6.1) Press and hold **SET** (K1) until the LED displays setting number **3**, release **SET** (K1), the force setting number will appear from **1 – 9**. It is now in force adjustment mode.
- 6.2) Press **UP** (K3) to increase the force by one degree and **DOWN** (K4) to decrease the force by one degree. Maximum degree is **9** and the minimum degree is **1**.
- 6.3) Press **SET** (K1) to store your setting.
- 6.4) If the door meets an obstruction it will stop and rebounds 15 – 20 cm.

## Function Modes.

The unit has three selectable functioning modes, PHOTO BEAM, AUTO CLOSE and HOLIDAY LOCK OUT.

### 7.1) SET PHOTO BEAM ON / OFF.

Make sure the photo beam has been installed correctly before setting the PHOTO BEAM function.

- 7.1.1) Press and hold **DOWN** (K4) until the LED displays **-**.
- 7.1.2) Press **DOWN** (K4) once, the LED displays **II**, the photo beam is now disable. Press **UP** (K3) once, the LED displays **H**.  
The photo beam is now en-able.
- 7.1.3) Press **SET** (K1) to store your setting.

### 7.2) SET AUTO CLOSE ON/OFF. (Infra Red Beams must be fitted if auto close is ON)

- 7.2.1) Press and hold **UP** (K3) until the LED displays **-**
- 7.2.2) Press **UP** (K3) once, the auto close time will increase by **1** minute. Press **DOWN** (K4) once, the auto close time will decrease by **1** minute. The LED will display the current set value.
- 7.2.3) The Auto Close function will be disabled when the setting is **0**.
- 7.2.4) Press **SET** (K1) to store your setting.

### 7.3) HOLIDAY LOCK OUT ON/OFF.

- 7.3.1) Press and hold **SET** (K1) until the LED display setting number **4**, release **SET** (K1). It is now in holiday lock out program.
- 7.3.2) Press **UP** (K3), LED display **1**, holiday lock out is now activated or press **DOWN** (K4) , LED displays **0**, holiday lock out is now de-activated.
- 7.3.3) Press **SET** (K1) to store your settings.
- 7.3.4) The GDO will allow one opening and closing. After closing, allow 2 seconds for lock out to activate.

Note: When the GDO is in lock out mode, the DTS 60TX4 is the only transmitter that can be used to open the GDO. First press the button with the lock printed on the button followed by, within 2 seconds, the button that is programmed into the receiver.

### 7.4) Error codes

E1: No signal detected on main hall (black colour).

Firmware cannot detect main hall sensor signal in two seconds, may be the following reason:

- main hall sensor broken, or main hall sensor is unplugged
- motor is suddenly stuck during movement
- motor connector is unplugged or broken

E2: No signal detected on Sub hall (white colour).

Firmware cannot detect sub hall after more than about 36cm distance, may be the following reason:  
sub hall sensor out of work, or sub hall sensor is unplugged

E3: Hall sensor wrong position error: Main hall is plugged in the sub hall terminal and sub hall is plugged in the main hall terminal.

E4: Passing door is opened. This error will keep displaying until passing door is closed.

E5: Unsupported motor is used.

E6: Large force detected during open movement. This error will be displayed 3 times after motor stopped.

### Self Learning Transmitter. (Maximum 20)

8.1) Press and hold **CODE** (K2), the Red dot will light up.

Press and release a button on the transmitter, the Red dot will disappear, press the same button again, the Red dot will flash and then be replaced by a II on the LED display. Transmitter is programmed successful.

8.2) Repeat step 1 to code a maximum of 20 transmitters onto the DTS600/800 operator.

8.3) To master erase the DTS600/800 receiver, press and hold **CODE** (K2), the LED display dot will flash, keep holding for approximately 8 seconds until the LED display flashes a **C**. Release button. All transmitters are now deleted.

Note: The DTS 60TX4 transmitter button with the lock printed on it CANNOT be programmed into the receiver.

### Maintenance.

No particular maintenance is required for the logic circuit board. Check at least twice a year that the door is properly balanced and that all working parts are in good working condition.

**IMPORTANT:** A poorly operating door can affect the life of the automatic operator due to incorrect loads and will void the warranty. Make sure that the safety devices are working effectively (photo beams, etc.). Check the reversing sensitivity at least twice a year and adjust if necessary.

### Final Notes.

This manual is only for the use of technical personnel qualified to carry out the installation. No information given in this manual can be considered of any interest to the end user. No setting or adjustments contained in this manual can be carried out by the end user.

It is important for the installer to show their clients correct operational use of the DTS600/800 operator, including the use of the manual disengagement cord. Inform the owner about the need for a regular and accurate maintenance, especially regarding a regular check of the safety and reversing devices.

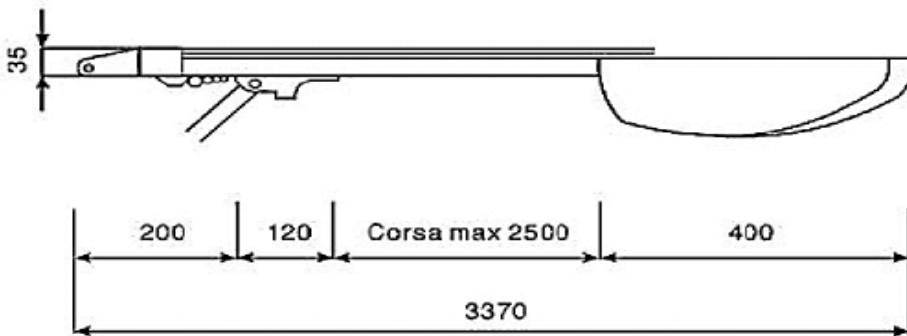
## Technical Specifications.

Power Input	220VAC 50Hz	Motor	24VDC 100W
Courtesy light time	3 minutes	Working temperature	-29 degrees to +70 degrees C
Relative Humidity	< 90 %	Open and close force	600 N
Reception frequency	433.92 MHz	Decoding	Rolling code
Transmitter power	12V Battery	Globe	220V 25 watt screw type
Sensitivity	> 1 V for correct receiver signal (average range 50 Meters, with an aerial)		

**NOTE: DTS Security Products reserves the right to modify its product and product specifications at any time without prior notice.**

## Typical Application.

The DTS600/800 (max. 2500mm travel) model can automate sectional and tilting overhead garage doors up to a height of 2600mm.



## Manual Disengagement.

The DTS600/800 is equipped with a manual release cord to disengage the shuttle and move the door by hand while holding the handle down (Fig. 8). To operate, pull on the handle to disengage the shuttle. To re-engage the door, simply run the operator in automatic mode or move door by hand until the trolley engages in the shuttle.

For situations where a pedestrian door is not present it is recommended that an external disengagement device is fitted. (Fig. 9).

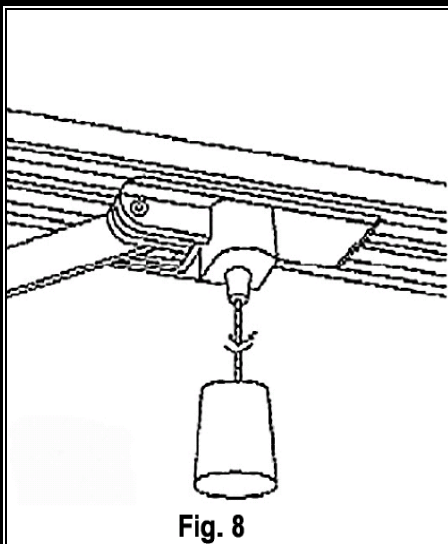


Fig. 8

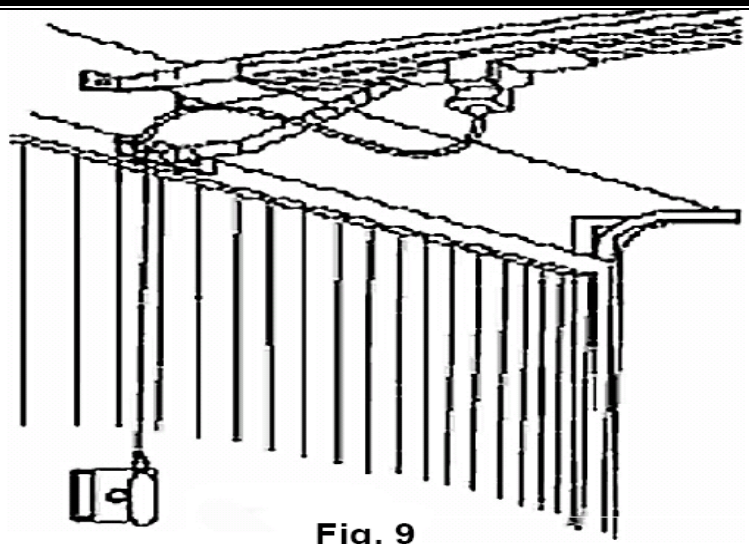


Fig. 9

### **Important Information for the User.**

Once the DTS600/800 operator has been installed, the user must be informed about how it works and all the risks that can arise if it is used improperly. The user must avoid placing himself/herself in dangerous situations such as standing within the door's operating range when it is moving.

**Do not** let children play near the door and keep the remote controls out of their reach.

All servicing, repairs or checks must be carried out by professionally qualified personnel and noted on a maintenance register kept by the user.

**IMPORTANT:** In the case of a malfunction, the user must call an authorized installer.

## **Manufacturers warranty.**

- **All goods manufactured by DTS Security Products carry a 12 month factory warranty from date of invoice.**
- **All goods are warranted to be free from faulty components and manufacture.**
- **Faulty goods will be repaired or replaced at the sole discretion of DTS Security Products, free of charge.**
- **This warranty is subject to the goods being returned to the premises of DTS Security Products.**
- **This warranty excludes lightning damage, insect damage and damage caused by faulty installation.**
- **In the event of the goods being supplied by dealer, merchant, agent or duly appointed installer of DTS Security Products, the claim must be directed to that supplier.**
- **The carriage of goods is for the customer's account.**
- **This warranty is only valid if the correct installation and application of goods, as laid out in the applicable documentation accompanying said goods, is adhered to.**
- **All warranty claims must be accompanied by the original invoice.**
- **The liability of DTS Security Products and / or their distributors is limited as herein set out DTS Security Products and / or their distributors will not be liable for consequential or incident damages howsoever arising.**