

# Tess 200 Installation Manual



- ⓐ Please read these instructions in full prior to starting your installation.
- ⓓ Diese Anleitungen bitte vor Beginn der Montage beachten.
- ⓕ A lire attentivement avant le début du montage.

**CE**

Guthrie Douglas Group Ltd, 12 Heathcote  
Way, CV34 6TE, U.K.

**13**

**EN 13561**

Tension-blind-for-external-use  
Wind-resistance Tech class 3 < 13m<sup>2</sup>  
Tech class 2 > 13m<sup>2</sup>



Assessed to ISO 9001  
Cert/Ref No. 1166

## Bedienungsanleitung

## Instructions de montage

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# Guthrie Douglas

# 1. Introduction and Method of Operation

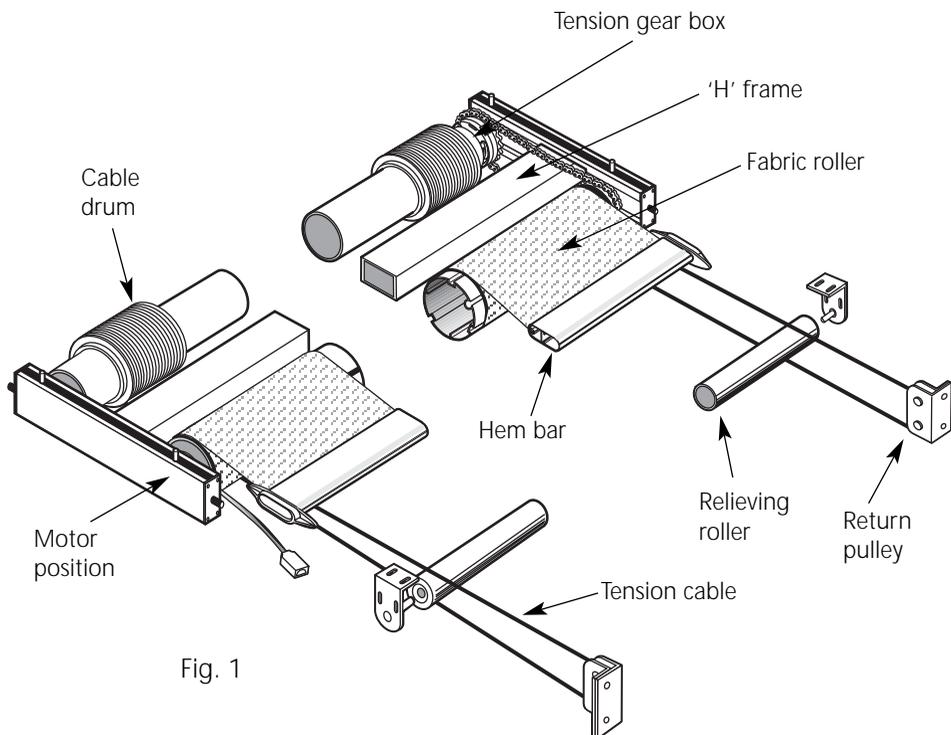


Fig. 1

This manual describes the installation, method of operation and maintenance for the double roller tension blind system type TESS 200. The TESS 200 system comprises an aluminium H-frame containing two rollers which are coupled together. One roller carries a fabric or screen and the other roller has two cable drums to take up a wire which is attached to the hem-bar on the end of the fabric so that the fabric can be drawn under tension across a horizontal or vertically sloping glazed structure.

The fabric roller contains an electric motor to drive the blind and the cable-drum roller contains a spring-tension compensation cassette to maintain an almost constant tension in the fabric. The two rollers are coupled together at one end by a chain drive so that both rollers are effectively powered. Within the coupling there is a gearbox for setting the tension in the spring. It is important to realise that because the spring roller rotates with the fabric roller, the spring cassette only provides the tension in the fabric and compensates for

the difference between the rolling diameters of the fabric roller and the spring roller, hence the tension is almost constant. The basic elements of the system are shown in Fig 1.

The unit also features adjustable mountings for the rollers so that the fabric roller can be set precisely at right-angles to the direction of travel of the blind and also so that the tension can be set in the chain that couples the two rollers together.

The hem-bar incorporates two pulleys and the tension wire is attached to one cable drum, fed under or over the fabric to the return pulley located at the extremity of the blind, back to the hem-bar, through the hem-bar passing around the hem-bar pulleys and back via a second return pulley to the second cable drum. This ensures an even all-round pull.

All bearings and bushes within the system are sealed-for-life and the whole system is designed to require the minimum of maintenance.

The stopping position of the blind is controlled by two limit switches built into the motor. The motor is connected to the control system by a flying lead terminated in a 3-pin + E plug (optional).

Each motor incorporates a thermal switch which operates to prevent the motor overheating. The motors are designed to run for about 4 minutes before reaching the thermal cut-out temperature.

## 2. Installation

The TESS 200 system is designed to be installed in any attitude providing the axis of the rollers is horizontal. The fabric can be fed off either side of the roller, the only restraint is that the tension wire must wind back onto the drum as the fabric winds off. Some typical installations are shown in Fig 2.

Alignment of the whole system is the most critical item in the installation. The TESS must be installed precisely at right-angles to the direction of travel of the fabric, and the return pulleys must be equi-spaced either side of the fabric centre-line to ensure an even pull. A correctly installed system with properly fitted fabric will run true and not exhibit any tendency for the fabric to corkscrew as it winds on the roller, eventually winding off the end of the roller and jamming in the mechanism. Some fabrics will behave differently to others and it can sometimes be necessary to let the fabric adjust to the tension for a period before trying to set the travel correctly.

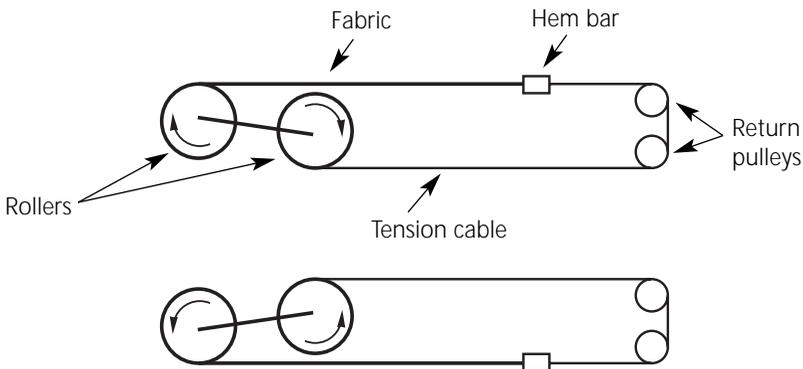
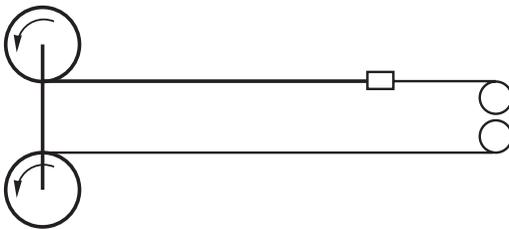


Fig. 2



The following sequence should be adhered to when installing TESS 200 :

(1) Starting with the fully-assembled unit with fabric and hem-bar fitted install the main frame on the purpose-made brackets. The main frame is attached by four sliding tee-bolts in the end channels, see Fig 3.

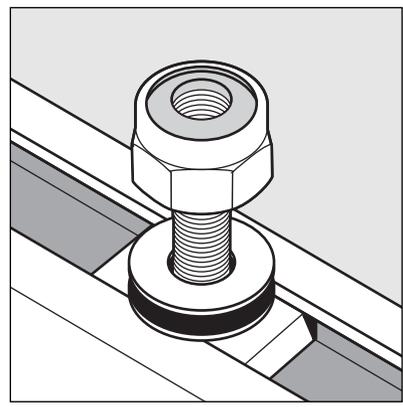


Fig. 3 : Mounting Tee Bolt

(2) Adjust the position of the main frame on the slides so that the rollers are at right-angles to the direction of travel of the fabric

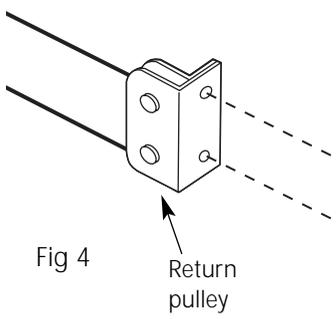


Fig 4

(3) Refer to the installation drawing for the fixing positions of the return pulleys. Fix the return pulleys at the opposite end and ensure all fixings are tight. (fig 4)

(4) Install the relieving rollers on their purpose-made supports. (fig 5)

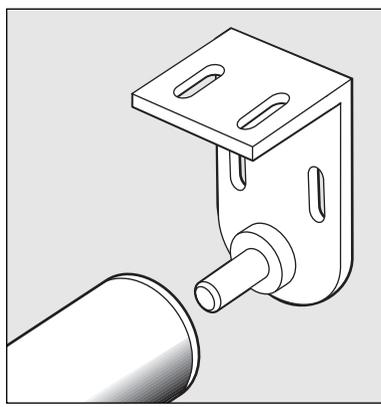


Fig. 5 : Relieving roller bracket

(5) Connect the motor to a test-switch equipped with a suitable socket for the motor plug and connect to a suitable temporary supply.

(6) Place the reel of tension wire on some form of horizontal spindle and pull one end of the wire through a return pulley and back up to the hem-bar. Feed the cable around one hem-bar pulley and down the back of the extrusion. Extract the wire from the other end and lay it back to the opposite return pulley. Feed around the return pulley back up to the Tess unit. Fig 6.

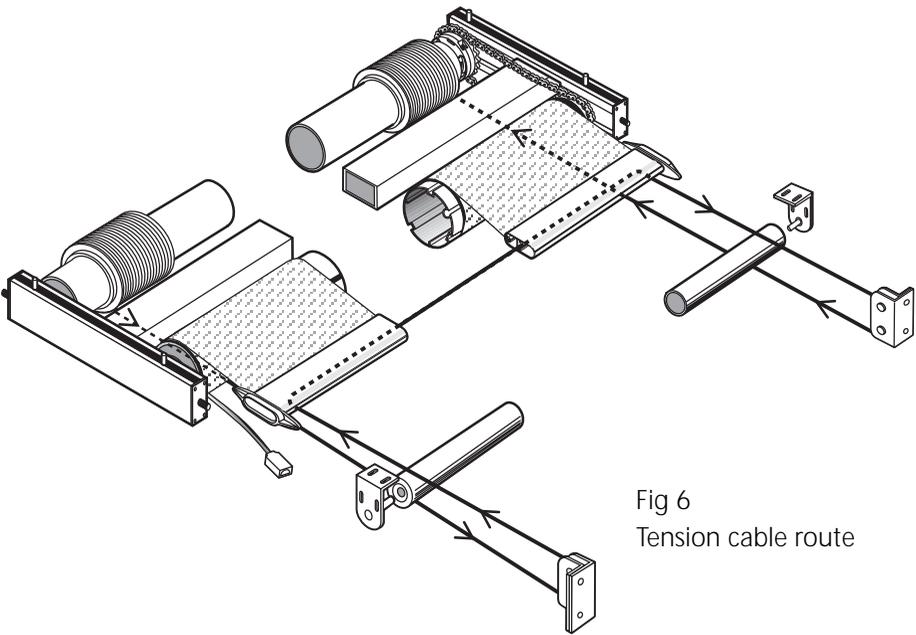


Fig 6  
Tension cable route

Attach the cable to the outer end of the cable drum where there is a clamp. Now pull sufficient cable off the reel so that the wire can be cut and attached to the other cable drum. Leave a small amount of slackness in the wire so that when the tension is taken up there will be a minimum of one turn of cable on the each drum. Note that the cable will centralize itself around the hem-bar pulley.

Never unwind the cable from a drum, always let the drum spin on an axis, otherwise the wire will come off twisted. Also take care that the cable is not pulled over any sharp edges as this will damage the nylon coating.

(7) Insert the tension adjusting tool in the gearbox and put a few turns in the spring. Remove the tool and let the spring take up the slack in the wire. Do not tension the blind at this stage. Fig 7. There are 11 turns of the gear to one turn of the spring.

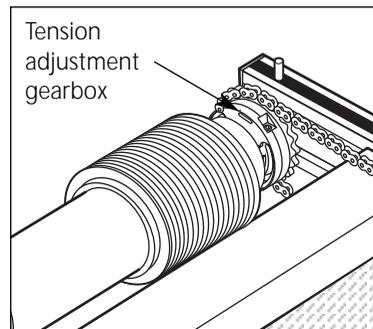


Fig. 7

(8) Using the test switch run the blind out until the hem-bar is about 1m from the

fully extended position. On the first run be very careful that the hem-bar or fabric does not catch on anything or the blind may be damaged. If necessary increase the tension in the cloth to prevent the hem-bar sagging more than 300mm

- (9) Adjust the front roller using the pusher-rods on the ends of the side channels until the fabric sags evenly on both sides. This indicates that the roller is at right-angles to the fabric. Increase the travel until the blind is 100mm from the return pulleys.
- (10) Move the back roller or spring roller until there is about 10mm slack in the drive chain.
- (11) Move the blind back about 1m from the fully extended position and increase the tension until the hem-bar does not sag more than 50mm and does not touch the return cable below. This is the correct tension setting. Any further increase in the tension will only stretch the fabric. Test the blind by driving it fully in and fully out.
- (12) Fit the boat-type end caps to the hem-bar and retain them in position with self-tapping screw.
- (13) Finally, run the blind back in. If it does not roll up within approximately 15mm of each end of the roller, it is because the fabric roller setting is still incorrect. Only very small movements of the roller are required to affect the evenness of the roll-up.
- (14) Check all fasteners on the system are tight. Tighten the locking nuts on the pusher rods. Fig 8.

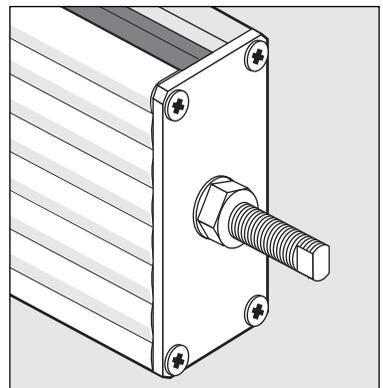


Fig. 8 Tracking adjustment

### 3. Setting the Limit Positions.

The blind travel is controlled by two limit switches which stop the motor in the fully extended and retracted positions. These limits are adjusted by two red nylon screws on the side of the motor head. Turning the screws clockwise increases the travel and anticlockwise decreases the travel. The direction in which the limit operates is indicated by an arrow on the motor head but note that this refers to the direction of rotation of the roller and not necessarily the direction of travel of the fabric. When decreasing the travel it is important that the blind is within the operating region required. The final settings should always be done in an increasing travel direction. Fig 9.

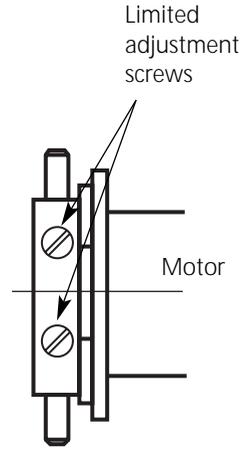
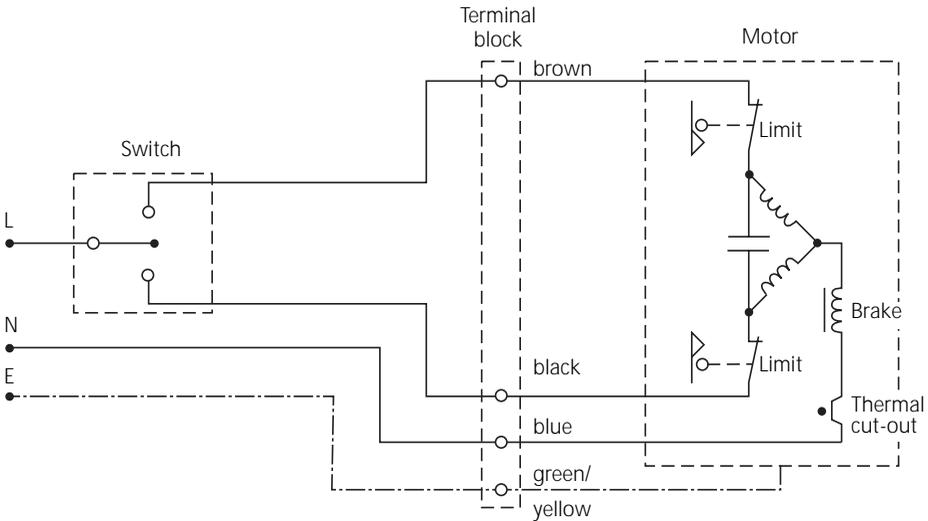


Fig. 9

### 4. Wiring



- Green/Yellow - earth
  - Blue - neutral
  - Black - live
  - Brown - live
- Supply required: 240V AC, 1.6A

## 5. Testing the Electrical Installation

When a group of blinds has been commissioned and connected to a group control relay it is necessary to check the following functions:

- (1) Do all the blinds travel in the same direction. If not interchange the up and down feeds to the incorrect motors.
- (2) Does the group travel in the correct direction. If not interchange the up and down feeds to the group control relay.
- (3) If one motor fails to operate check the motor fuse in the group control relay. If the whole group fails to operate in one direction check the supply fuses.

## 6. Maintenance

The TESS 200 system is designed to be maintenance-free and should require very little attention during its life.

Maintenance inspection is recommended on an 6 monthly basis. During this inspection the following functions should be checked:

- (1) Is the blind tension set correctly?
- (2) Is the fabric rolling evenly onto the roller?
- (4) Is the tension wire frayed or cut?
- (5) Is the tension wire running properly over the return and hem-bar pulleys?
- (6) Is the drive chain tension set correctly and is it greased lightly?
- (7) Are the hem-bar caps secure?
- (8) Are all the fixings tight?

## DECLARATION OF INCORPORATION

according to

73/23/EEC – Low Voltage Directive.

89/336/EEC – Electromagnetic compatibility.

BSEN61000-6-4: 2001 – Electromagnetic compatibility.

BSEN61000-6-2: 2005 – Electromagnetic compatibility.

EN60439-1: 1999 – Low voltage switch gear and control gear assemblies

We,

**Guthrie Douglas Group Ltd**  
**12 Heathcote Way, Heathcote Industrial Estate,**  
**Warwick CV34 6TE**

hereby declare that the following products conform with the  
above EC directives and are only intended for installation with :  
Solar Shading Systems

Model:	Tess
Part Numbers:	100, 101, 102, 120, 140, 200, 308, 312, 400, 401, 402, 420, 440, 512, 600, 601, 602, 640, 660
Description:	Blind Mechanisms

The Systems must be installed as per Guthrie Douglas Instructions and relevant E.U. and Local regulations.