

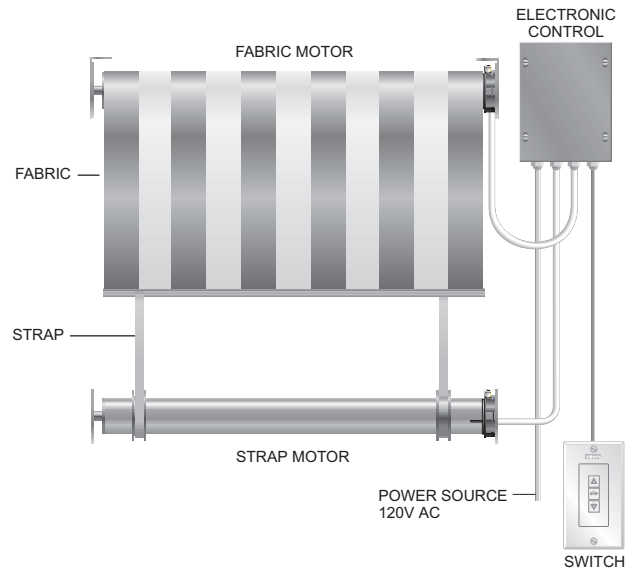
## 1. INTRODUCTION

The FTS is a specialized system designed for the solar protection market where horizontal or inclined type shading is required.

- The system consists of 2 specific operators (or 'motors'), an electronic control unit, and a switch. One operator is inserted into the fabric roll-up tube and is referred to as the **fabric motor**, and the other is inserted into the strap take-up tube and is called the **strap motor**. While not every application will have a load bar and straps as in the diagram to the right, these references will help to reduce confusion during installation.
- The electronic unit controls each motor independently and maintains a desirable dynamic (moving) tension as well as final tension in the system, eliminating fabric sag while the fabric is both moving and standing. Adjustments to both dynamic and final tension can be made via the electronic control.

Refer to the SOMFY website for the full version of the FTS instructions located at:

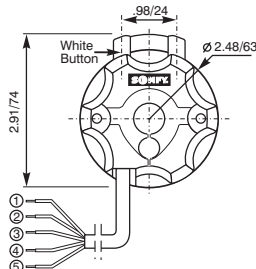
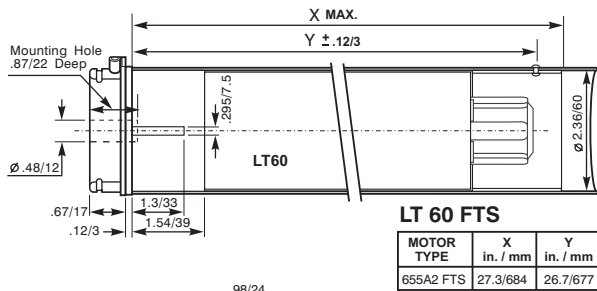
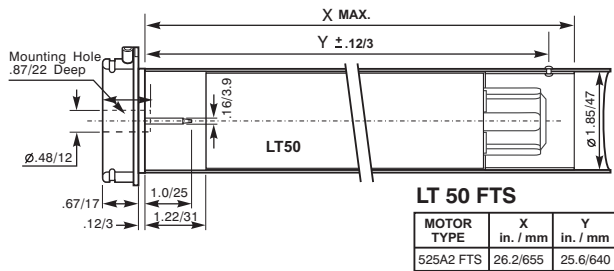
[www.somfysystems.com](http://www.somfysystems.com) under the Technical Documentation section.



## 2. SPECIFIC CHARACTERISTICS

### Motor Characteristics

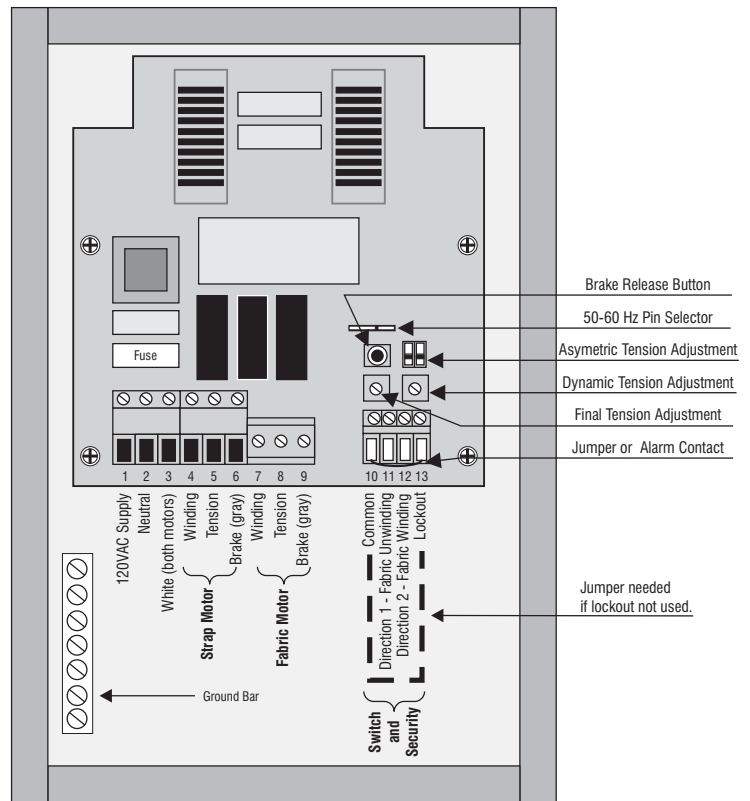
- SOMFY FTS LT 50 and FTS LT 60 motors.
- 6 positional options for the head of the motor.
- Standardization of accessories (LT range).
- Push button type limit switches with:
  - 46 turns on the FTS LT 50
  - 35 turns on the FTS LT 60
- Each motor can turn in either direction and is fitted with a coil brake (5 wires supply cable).
- The supply cable is **non-removable**.
- Available in LT50 and LT60 motor types



| WIRING COLOR CODE FOR FTS 50/60 |               |
|---------------------------------|---------------|
| ① White                         | Neutral       |
| ② Black                         | White Button  |
| ③ Red                           | Yellow Button |
| ④ Green                         | Ground        |
| ⑤ Gray                          | Brake         |

### Electronic Box Characteristics

The diagram below highlights the user-accessible adjustments to the FTS Control. The control PCB board is mounted inside a U.L. listed enclosure.



| MOTOR CATALOG NUMBER | NOMINAL TORQUE |    | SPEED rpm | ELECTRICAL RATING |    |        | LIMIT SWITCH CAPACITY # Rotations | WEIGHT |     | APPROX. THERMAL TIME Min. |     |
|----------------------|----------------|----|-----------|-------------------|----|--------|-----------------------------------|--------|-----|---------------------------|-----|
|                      | in. lb.        | Nm |           | Volt              | Hz | Ampere |                                   | Watt   | lb. |                           | Kg. |
| 525A2FTS             | 220            | 25 | 20        | 120               | 60 | 1.5    | 170                               | 46     | 6.5 | 2.95                      | 8.0 |
| 655A2FTS             | 484            | 55 | 20        | 120               | 60 | 2.1    | 285                               | 35     | 11  | 5.0                       | 7.0 |

### 3. INSTALLATION CONFIGURATIONS

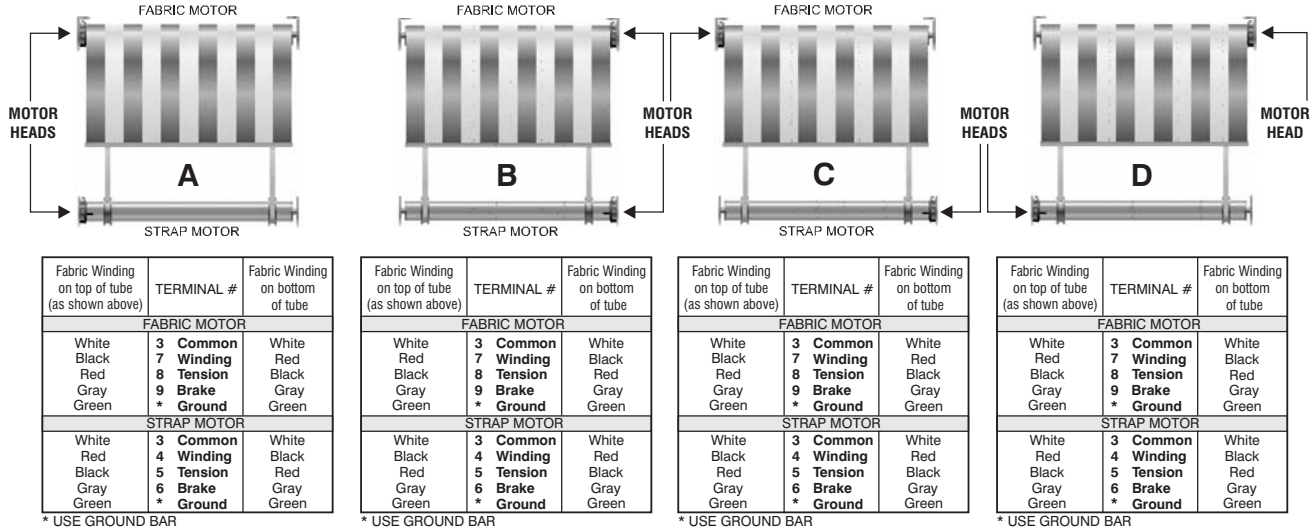
Four Motor Configurations are possible with the FTS System:

- A. Both motor heads mounted on the left
- B. Both motor heads mounted on the right
- C. Fabric motor head to the left, Strap motor to the right
- D. Strap motor head to the left, Fabric motor to the right

In addition, fabric may be wound in two ways, above or below the tube. The different configurations each require a unique instruction for wiring and limit setting.

#### Wiring Identification

The following tables describe the wire references based on motor rotation and fabric orientation. THE DIAGRAMS REPRESENT A VIEW OF THE FTS SYSTEM AS IF YOU WERE STANDING ABOVE IT AND LOOKING DOWN ON THE SYSTEM.



### 4. ELECTRONIC ADJUSTMENT

#### Fabric Dynamic Tension Adjustment

Beginning with dynamic tension, set the dynamic and final tensions of the system by gradually increasing the settings on the potentiometers. Adjustment by potentiometer (value between 0 and 9). 0 is the lowest setting; turning the adjustment higher (9 is the highest) will increase the amount of tension and reduce the amount of sag while the motors are running.

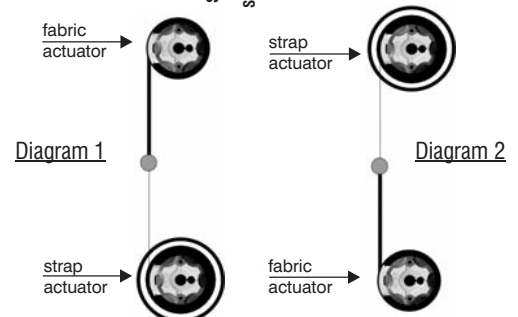
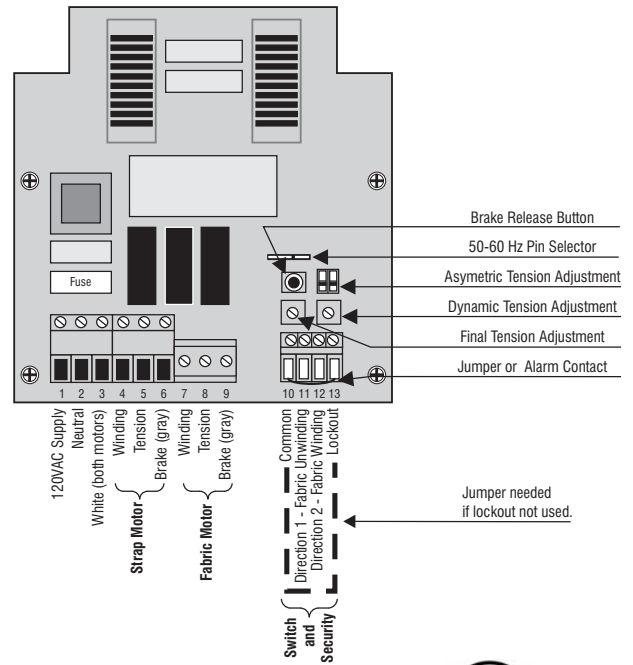
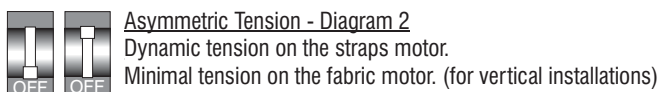
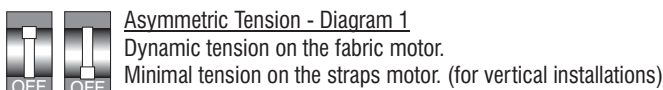
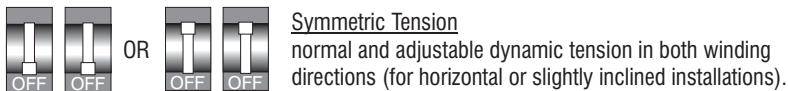
#### Fabric Final Tension Adjustment

When the final tension is turned on and the FTS receives a stop command or the winding motor reaches its limit, the motors stop, and then the FTS control will run the braking motor briefly to adjust the final tension. The final tension is made after each stop by the limit switch unit of the winding motor or by a STOP command from the switch terminal. Adjustment by potentiometer (value between 0 and 9). Straps tension: 1/10 fabric tension.

#### Asymmetric Dynamic Tension Adjustment

The FTS Control can compensate for the drag of fabric weight when mounted vertically. As shown below, the upper motor must provide resistance when the fabric is moving downward to prevent unwanted sag. The lower motor, however, does not have to provide equal (symmetric) tension during a fabric roll-up because the weight of the fabric itself maintaining the tension. The static (final) tension is unaffected and will be adjusted when the system comes to rest.

#### Adjustable By Dipswitches:



#### Strap Adjustment and Fabric Repair

If the Straps must be adjusted or the system must be disassembled for service, the first step is to disengage the motor brakes. Simply press the Brake Release button inside the electronic control unit. When finished, the system will automatically take up any slack in the fabric and continue to operate normally.

**TIP:** By pressing the brake release button momentarily the fabric motor will take up the slack in the system.

## 5. INSTALLATION PROCEDURE

Using the SOMFY FTS selector chart (located in our Motor Catalog or Online Motor Catalog) select the appropriate sized motors. Operators should then be fit into their respective tubes in accordance with standard installation instructions, using the correct crown and drive. All mechanical accessories of the system and the mounting method must be capable of withstanding the tension and forces exerted by the motors.

Both limits must be set on each motor. Use the following illustrations to determine which limits are set for a given motor rotation and fabric orientation. Before proceeding, press in both limits on each motor, and leave the buttons locked in the "in" position.

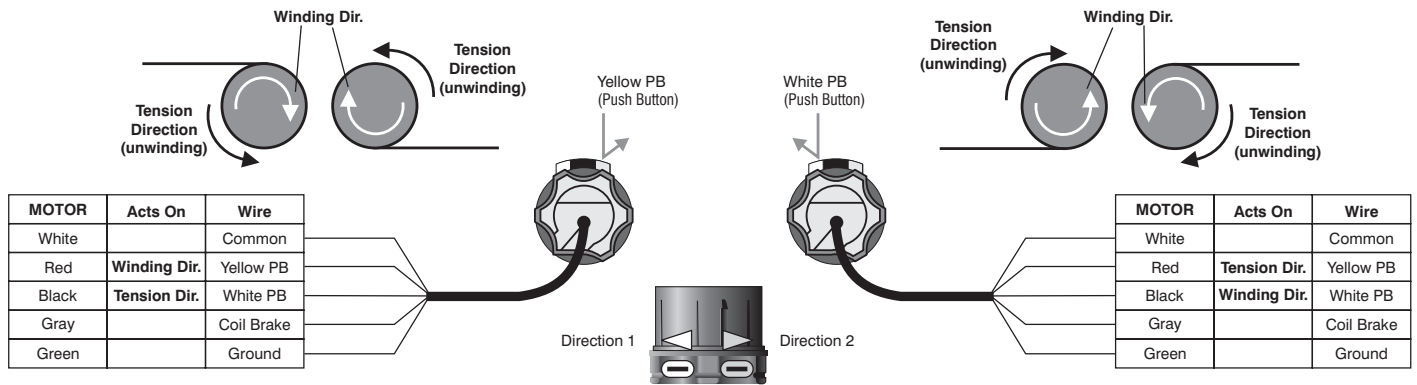
The motorized tubes should be mounted onto their respective brackets. **The locking stop ring included with each operator MUST be used with the motor end bracket.** Ensure that the motorized tubes are parallel. Do not connect straps to strap motor (at this moment).

Attach Fabric to the fabric tube. Connect the Tester cable to the motor leads as shown in the table to the right.

To determine which motor wire color corresponds to "Fabric Winding" and "Strap Winding" in the chart, refer to the diagram below under rotation directions.

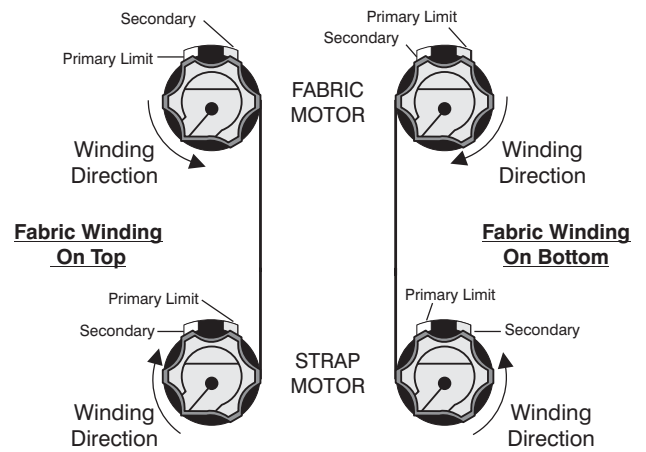
### Rotation Directions

The diagrams represent a view of the motor (Fabric or Strap Motor) looking at the head with the push buttons at the 12 o'clock position. The concept illustrated here applies for all LT FTS configurations. The white push button always corresponds to the black motor wire and the yellow push button always corresponds to the red motor wire. Only the "Winding Direction" and "Tension Direction" designation, change depending on the fabric winding above or below the motor tube. It is crucial that the winding directions and the corresponding motor wires be identified on both motors (and later connected to the appropriate terminal of the FTS control).



1. Wind the fabric around the fabric tube using the tester cable. When the desired position is reached, set the fabric tube limit by pressing and releasing the PRIMARY limit on the fabric tube motor. - Attach the pulleys and straps to strap tube. Adjust the straps as required to ensure that they are all the same length.
2. Using the tester cable, wind the straps around the strap tube. When the desired position is reached, press and release the PRIMARY strap motor limit. Then press and release the SECONDARY fabric motor limit.
3. Wind the fabric around the fabric motor, again. When the desired position is reached (note: fabric motor will stop itself at its previously set limit), press and release the secondary limit on the strap motor.
4. Before connecting the motors to the controller, run the system (using the tester cable) in both directions to verify that the system works correctly within its newly set limits.

**NOTE: If any limits need to be readjusted, be sure to re-set both the primary and secondary limits for the system in the correct order as described above.**



| FABRIC MOTOR                                    | Tester Cable                                    | STRAP MOTOR                                    |
|---|---|--|
| <b>Fabric Winding</b><br>Gray<br>Green<br>White | <b>Black</b><br>Gray**<br>Green<br>White<br>Red | Gray<br>Green<br>White<br><b>Strap Winding</b> |

(\*Note: on older model Tester Cables this wire might be brown)  
(This chart corresponds to the diagram above which shows the fabric winding on to of the tube.)

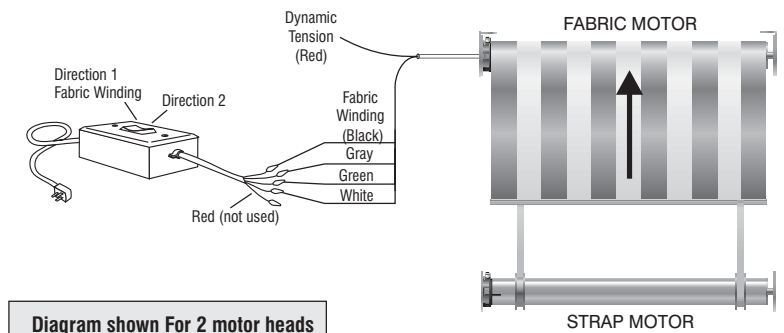
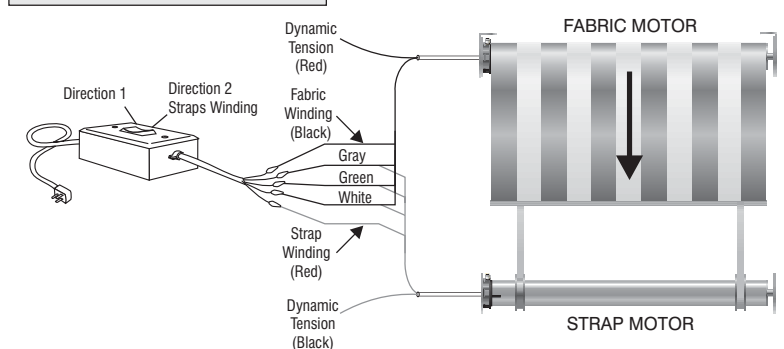


Diagram shown For 2 motor heads on the left and fabric and straps winding above the tube.



## Final Connections

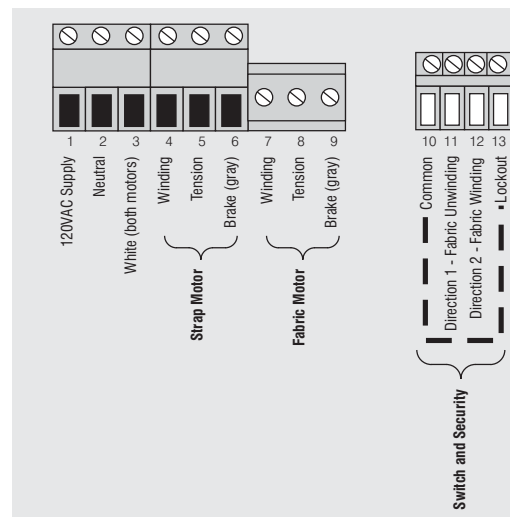
All wiring must conform to NEC (National Electrical Code) and local codes.

Before connecting the operators to the electronic control, set the tension adjustment potentiometers to "0" and ensure that all the dip switches are in the "off" position.

Connect the motors and switch to the electronic control as shown, in the diagram shown to the right.

Check that the system operates correctly with respect to the switch directions. Make sure the limits have been properly set. At this point, there may be some fabric sag - this is normal.

Refer back to Step 4 to make the necessary tension adjustments as needed for the particular FTS System.



## ACCESSORIES

|  |  |  |  |
|--|--|--|--|
| <p>LT 50 Adjustable Universal Motor Bracket</p> <p>6070514</p>   | <p>LT50 Idler Bracket with 14 mm ID Bearing</p> <p>6080217</p>           | <p>Tube Cord Take-up Reel<br/>63 x 1.5 mm (approx. 2.5")</p> <p>6050326</p>                                      | <p>LT Heavy Duty End Cap<br/>3.0"<br/>4.0" (102 x 2 mm)</p> <p>6090083<br/>6090300</p> |
| <p>Heavy Duty Angle Plate with Universal Motor Bracket<br/>Heavy Duty Angle Plate</p> <p>6070504<br/>6070506</p> | <p>Heavy Duty 12 mm Nylon Ball Bearing with Holder</p> <p>6080250</p>    | <p>Locking Spring Ring</p> <p>4350027</p>  | <p>LT50 Intermediate Bracket with 16 mm ID Bearing</p> <p>6050348</p>                  |
| <p>Motor Bracket LT FTS 60</p> <p>6070256</p>  | <p>Heavy Duty Idler Bracket with Idler End Cap Holder</p> <p>6080256</p> | <p>Heavy Duty LT Intermediate Support Bracket</p> <p>6050256</p>   | <p>LT FTS Controller</p> <p>6300291</p>  |
| <p>Side Motor Bracket With Spring Ring</p> <p>6070503</p>  | <p>Heavy Duty Idler Bracket</p> <p>6080116</p>                           | <p>Universal End Cap with<br/>12 mm Collapsible Shaft<br/>14 mm Collapsible Shaft</p> <p>6090324<br/>6090325</p> | <p>FTS Switch</p> <p>6300040</p>   |
| <p>Heavy Duty Angle Plate</p> <p>6070182</p>   | <p>Idler End Cap Holder</p> <p>6080257</p>                               | <p>Heavy Duty End Cap Shaft</p> <p>6090256</p>   | <p>FTS Motor Tester Cable</p> <p>6020087</p>   |

**SOMFY reserves the right to void the motor warranty if the wiring recommendations are not followed.**