TENSING SYSTEM FOR QUASAR OVERSPEED GOVERNORS

INSTRUCCIONES DE USO Y MANUTENCIÓN/

INSTRUCTIONS FOR USE AND MAINTENANCE/

INSTRUCTIONS D'USAGE ET ENTRETIEN/

GEBRAUCHS- UND WARTUNGSANLEITUNG/

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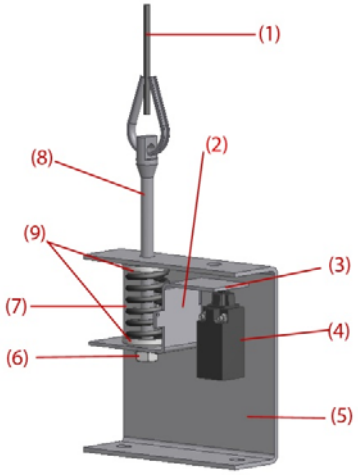
1. STANDARD TENSING SYSTEM WITH QUASAR OVERSPEED GOVERNOR

1.1. OPERATION

The standard tensing system is made up of a couple of tensioners, which are fitted one at the top of the lift installation and the other at the bottom. Each tensioner is made up of the following components:



(1) Rope.
(2) Driving plate
(3) Contact point.
(4) De-tensing contact
(5) U-shaped bracket.
(6) Adjusting nut.
(7) TENSING spring.
(8) Rod
(9) Spring guide.

Figure 1: Standard tensioner's components

Once the overspeed governor has been fitted into the car frame, assemble the tensioners in the installation (item 1.2 displays the different assemblies of these tensioners in the installation).

First, unscrew the adjusting nut **(6)** and leave it at the minimum position, as displayed in figure 2. This operation is to be carried out both on the upper and lower tensioners.

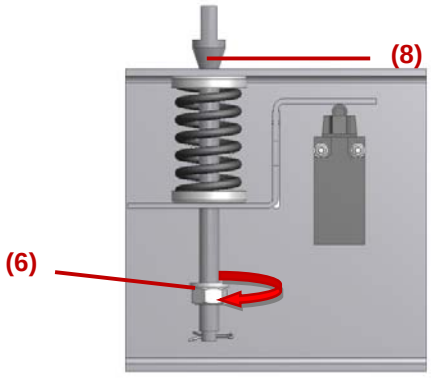


Figure 2: Unscrew nut (6) in tensioners

Then, above the upper tensioner, which is to be fitted so that the rod **(8)** is in the lower position, thread the rope into the hole in the rod **(8)** (it is recommended to use thimbles so as not to damage the rope), by attaching the end of the rope with cable clips as displayed in figure 3.

After that, thread the other cable branch through the governor's pulleys, continuing up to the lower tensioner (for further information on the assembly of the rope into the governor, please refer to the manual for use and maintenance of the corresponding overspeed governor).

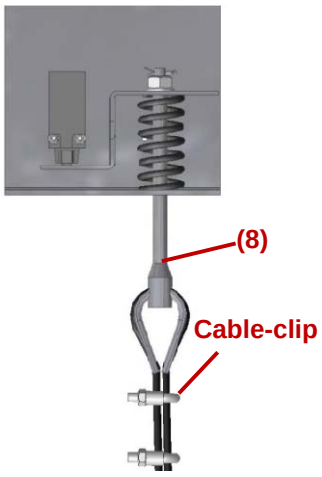


Figure 3: Upper tensioner

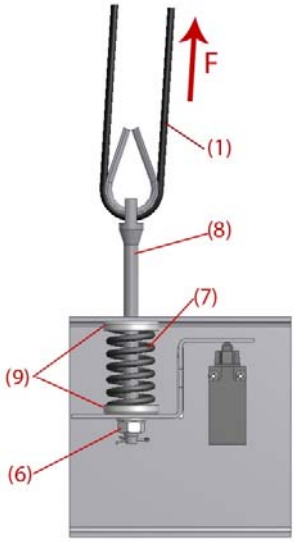


Figure 4: Lower tensioner

Thread the other end of the rope through the lower tensioner's rod **(8).** Apply a force F on the rope's free end in order to pre-tension the system, as displayed in figure 4.

This pre-tensing is recommended to be the greatest possible in order to ensure re- tensing in the future.

Pre- tensing will be maximum when the driving plate **(2)** reaches the U-shaped bracket **(5)**, as displayed in figure 5.

During pre- tensing, it is important to check that both ends of the tensing spring **(7)** are correctly inserted within the spring guide **(9).**

Assemble the cable clips onto the lower tensioner in the same way as with the upper tensioner, maintaining rope pre- tensing.

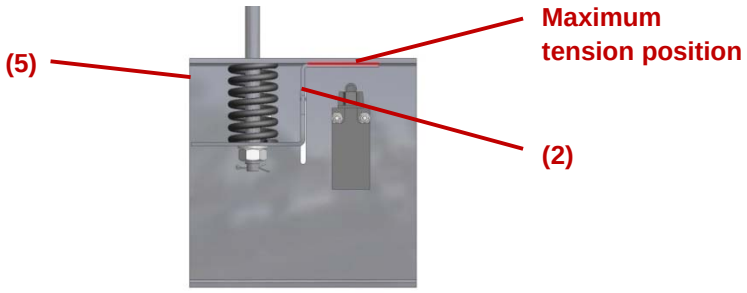


Figure 5: Maximum tension position

If this position of the rope's maximum tension has not been reached with the pre- tensing, apply tension to the rope via the nut **(6)** of one of the tensioners (the most accessible one) until the tripping plate **(2)** reaches the U-shaped bracket **(5)** of the tensioner, see figure 6.

If the nut **(6)** reaches the end of the rod's thread **(8)** and the driving plate **(2)** is not still in contact with the U-shaped bracket **(5),** you must tension by using the other tensioner until it is in contact.

If, even so, it is not still in contact, this will be because the rope has not been pre-tensed enough. In this case, remove the cable clips from the lower tensioner and pre-tension correctly.

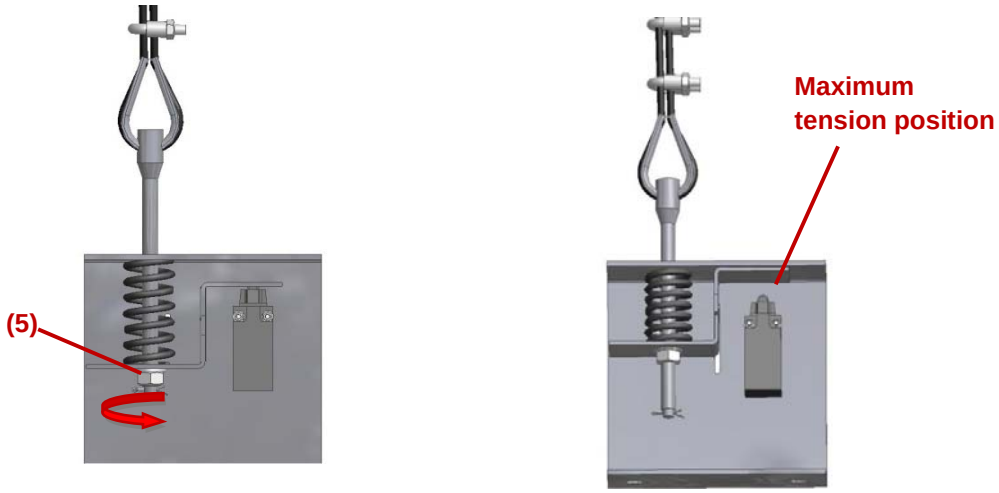


Figure 6: System tensing

During assembly, it is recommended to follow these steps, since, this way, it is ensured that the rope has the correct tension and an acceptable de- tensing margin is guaranteed.

Do not adjust more than required with the nut, since this will apply more tension to the rope than necessary.

Figure 7 below displays the above-mentioned "maximum position", where (1) is the "de- tensing margin".

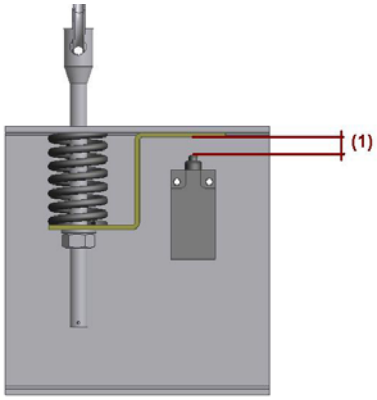


Figure 7: De- tensing margin

A re- tensing of the system by applying tension via the nut **(5)** will be required in the future due to a normal rope elongation. Therefore, it is important to pre-tension the rope in the above-mentioned first stage in order to have a greater re- tensing margin.

Some "de- tensing contacts" are located in these tensioners. These contacts must be connected in parallel and, in turn, connected to the installation's safety series line.

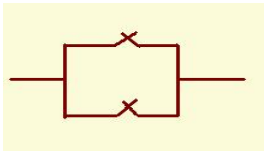


Figure 8: Connection of de-TENSING contacts

The aim of both contacts is to detect breakage or de- tensing in the rope, since, in this case, both springs will drive the contacts. Should the rope de-tension or break, the springs, when returning to its natural length, will allow the plates to drive the contacts; this way, the machine stopping will be ensured.

1.2. POSSIBLE CONFIGURATIONS

1.2.1. CONFIGURATIONS WITH QUASAR T-25

WITHOUT ATTACHMENTS TO GUIDE RAIL

When the standard tensing system is directly installed in the installation's pit and shaft ceiling, both the upper and the lower tensioners may be fitted in different positions, as displayed in the figure on the right. That is to say, they do not have to be perpendicular or parallel to the guide rail background, the tensioner rod will simply have to vertically coincide with the governor rope.

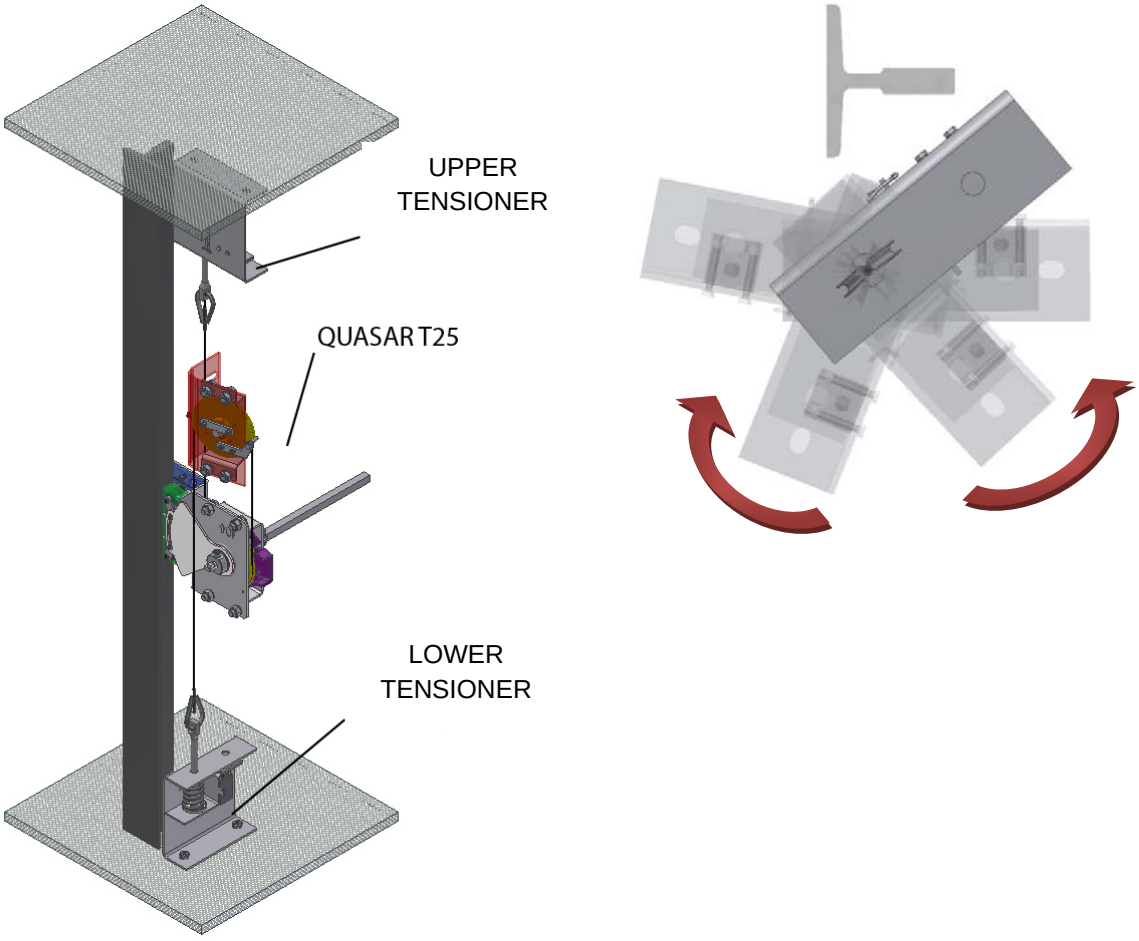


Figure 9: Quasar T25 + Standard tensing system without attachments to guide rail

WITH ATTACHMENTS TO GUIDE RAIL

If the standard tensing system is fitted in the installation with attachments to guide rail, both the lower and the upper tensioners must be parallel to the guide rail background.

The upper tensioner **(1)** is assembled onto the attachment to guide rail **(2)** via two DIN 933 M10x25 screws **(3)**, four DIN 125 M10 **(4),** two DIN 127 M10 **(5)** and two DIN 934 M10 **(6).**

The lower tensioner **(7)** is assembled onto a coupling plate **(8)** via two DIN 7991 M10x20 screws **(10),** two DIN 127 M10 **(11)**, and two DIN 934 M10 **(12);** And the coupling plate **(8)** and the attachment to guide rail **(9)** will be coupled via two DIN 933 M10x30 screws **(3)**, four DIN 125 M10 **(4),** two DIN 127 M10 **(5)** and two DIN 934 M10 **(6).**

Both assemblies will be attached to the guide rail by using clamps. Dynatech recommends using four clamps for each attachment.

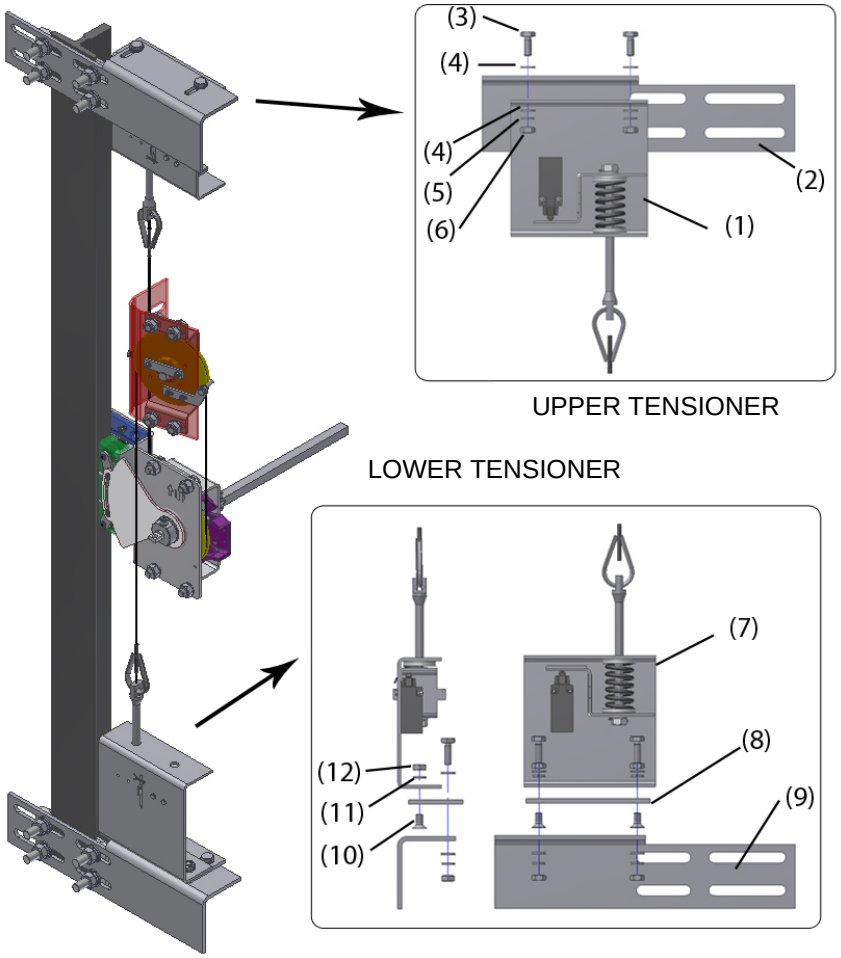


Figure 10: Quasar T25 + Standard tensing system with attachments to guide rail

COMBINATION OF THE PREVIOUS SITUATIONS

As displayed in the figures, the two previous situations may be combined in the assembly of the tensioners.

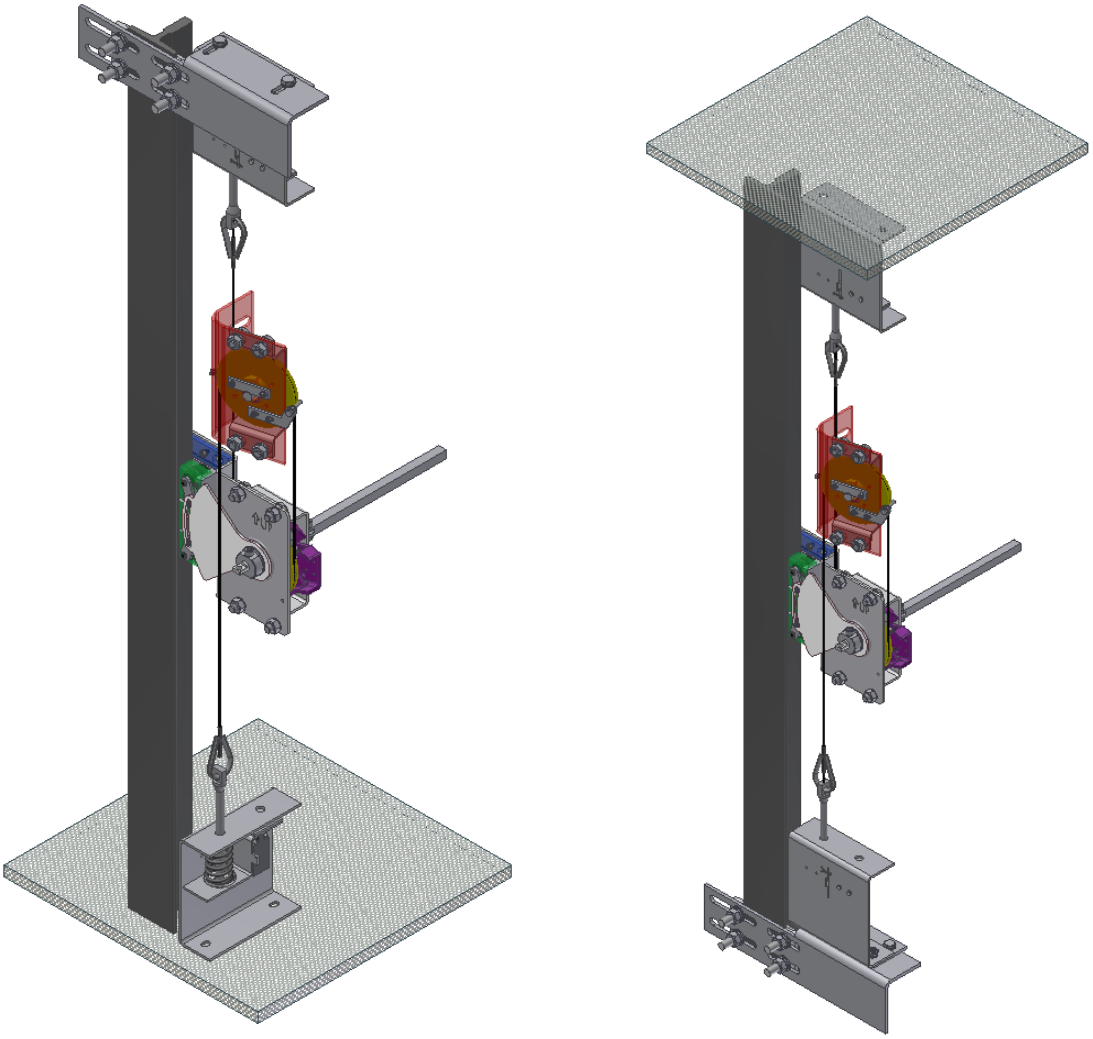


Figure 11: Quasar T25 + Standard tensing system

1.2.2. CONFIGURATIONS WITH QUASAR SV

When this tensing system is assembled along with the Quasar SV overspeed governor, the tensioners will be directly assembled onto the pit and shaft ceiling of the installation.

As in the case of Quasar T25, the tensioners may be at any position, only the position of the tensioner rod must vertically coincide with the governor's rope.

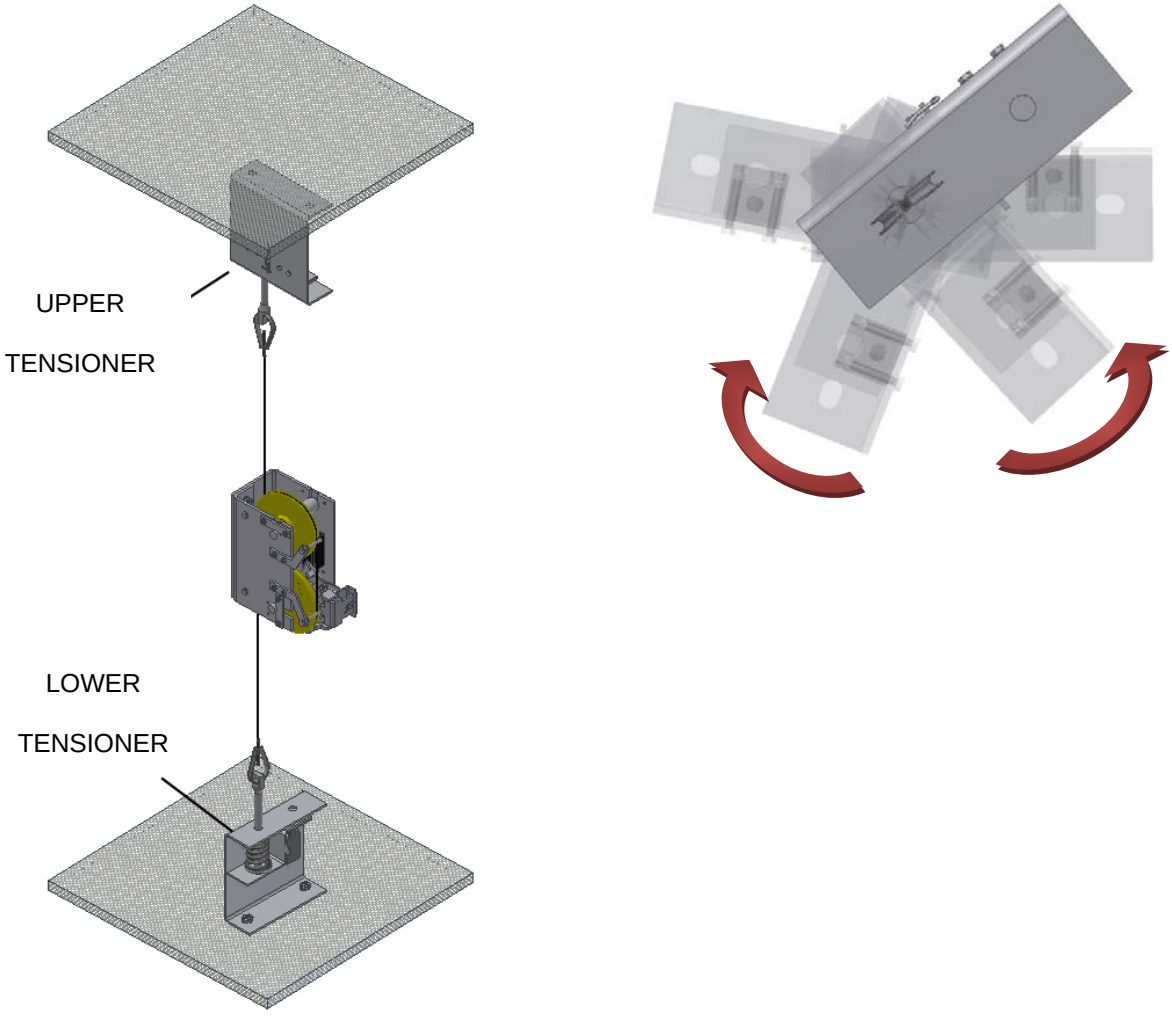
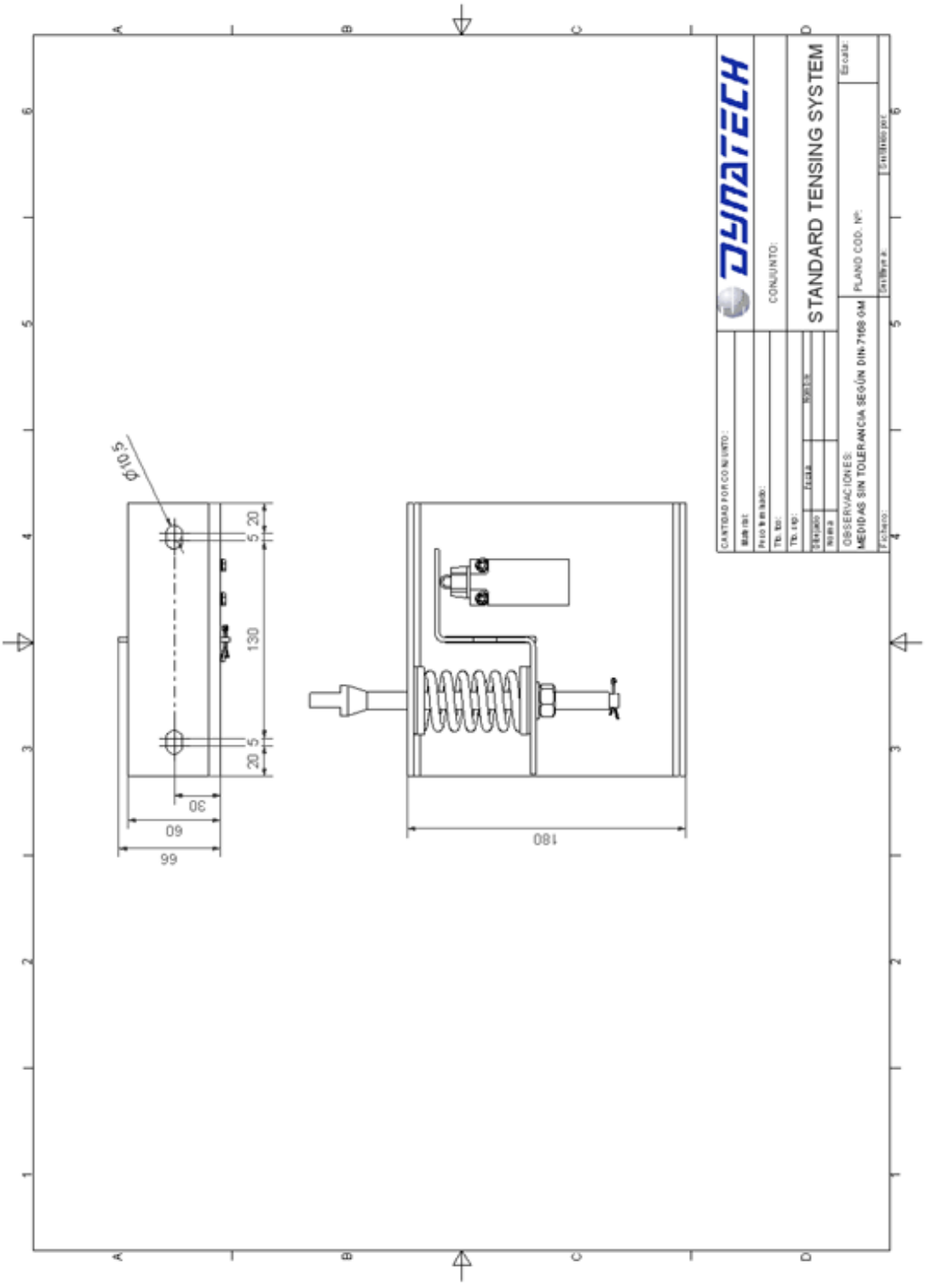


Figure 12: Quasar SV + Standard tensing system

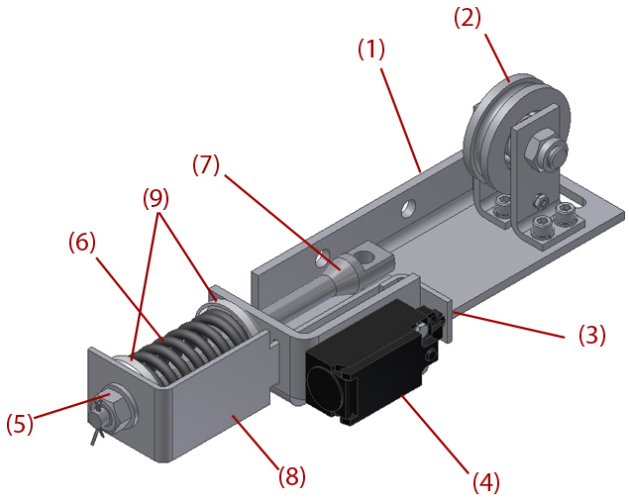
1.3. DRAWING FOR INSTALLING THE STANDARD TENSING SYSTEM



2. ROLLER TENSING SYSTEM WITH QUASAR OVERSPEED GOVERNOR

2.1. OPERATION

The Roller tensing system is made up of a couple of tensioners, which are fitted one at the top of the lift installation and the other at the bottom. Each tensioner is made up of the following components:



(1) Bracket
(2) Deflection wheel
(3) Minimum tension plate
(4) De- tensing contact
(5) Adjusting nut.
(6) Tensing spring.
(7) Tensing rod
(8) Maximum tension plate
(9) Spring guide.

Figure 13: Roller tensioner components

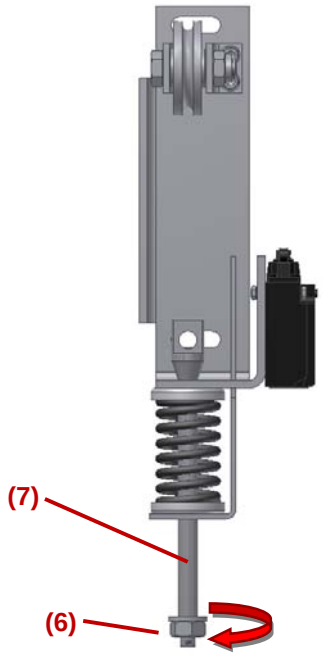


Figure 14: Nut de- tensing (6)

Once the overspeed governor has been fitted into the car frame, assemble the tensioners in the installation (item 2.2 displays the different assemblies of these tensioners in the installation).

First, unscrew the adjusting nut (6) and leave it at the minimum position, as displayed in figure 14. This operation is to be carried out both on the upper and lower tensioners.

The upper tensioner will always be installed horizontally and with the diverter pulley facing downwards, as displayed in the figure.

Then, above the upper tensioner, thread the rope into the rod hole **(7),** attaching the end of the rope with a cable-clip, as displayed in the figure.

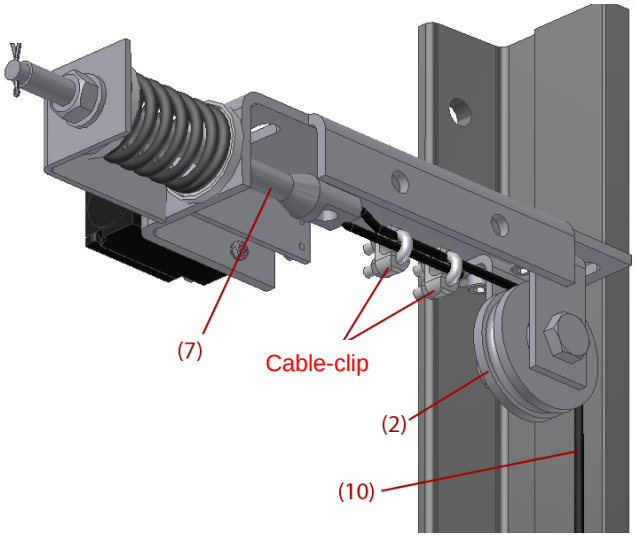


Figure 15: Upper tensioner installation

After that, thread the other cable branch through the governor's pulleys, continuing up to the lower tensioner (for further information on the assembly of the rope into the governor, please refer to the manual for use and maintenance of the corresponding overspeed governor).

The lower tensioner may be installed both vertically and horizontally, according to the installation's room needs.

Thread the other end of the rope through the lower tensioner's rod **(8).** Apply a force **F** on the free end of the rope to pre-tension the system, as displayed in figure 16. It is important to check that the ends of the tensing spring **(6)** are correctly inserted into those of the spring guide **(9)** during pre- tensing.

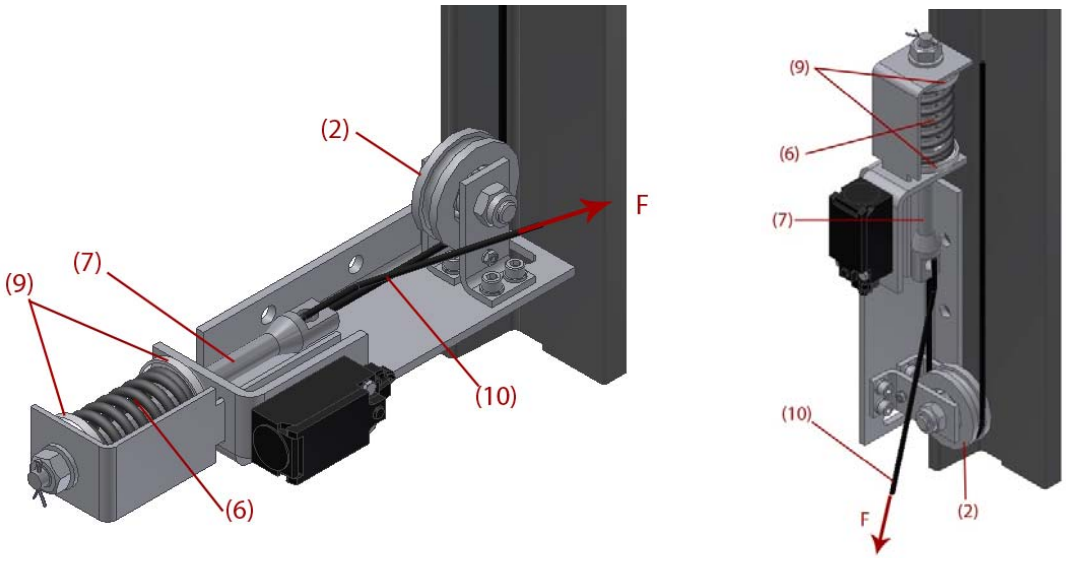


Figure 16: Lower tensioner installation

This pre- tensing is recommended to be the maximum possible in order to ensure re- tensing in the future.

Pre- tensing will be maximum when the maximum tensing plate (8) gets in contact with the bracket **(1),** as displayed in figure 17.

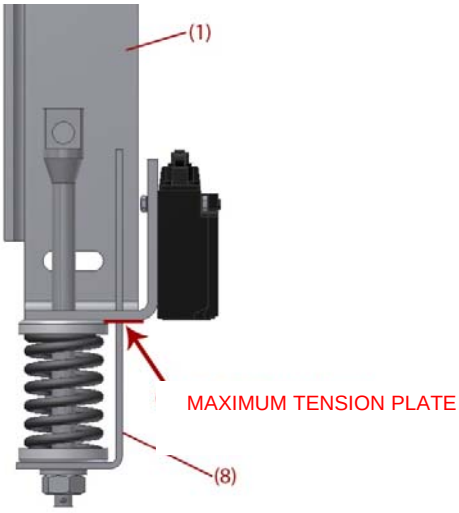


Figure 17: Maximum tension position

Assemble the cable clips onto the lower tensioner in the same way as with the upper tensioner, maintaining rope pre- tensing.

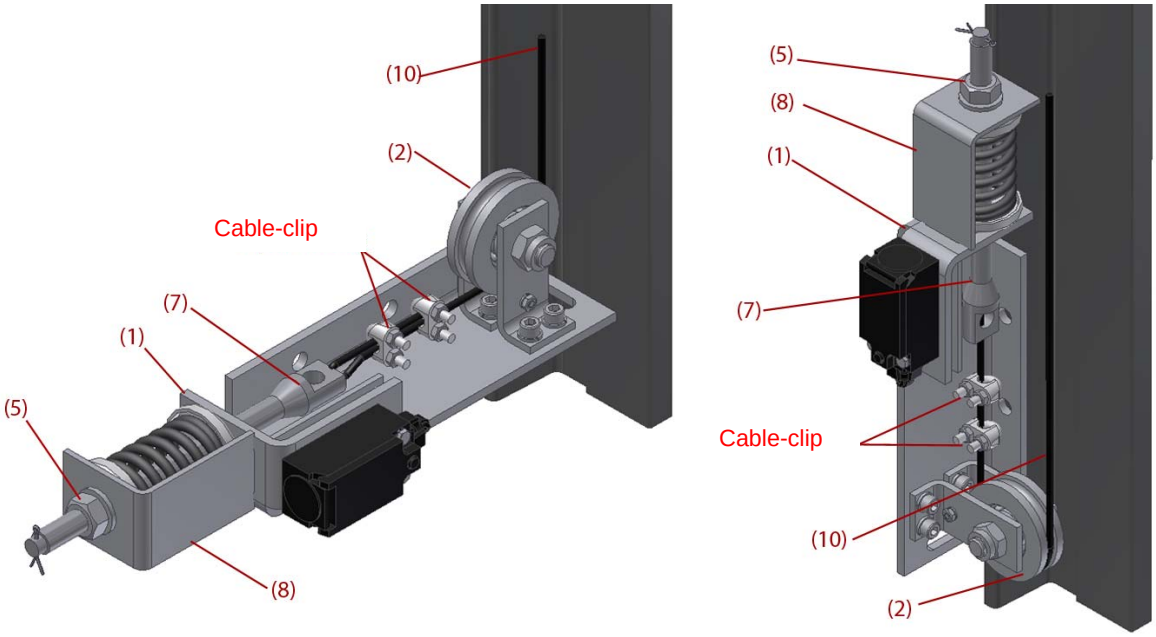


Figure 18: Assembly of lower tensioner's cable clip

Then, if required, apply tension to the rope via the nut **(5)** in one of the tensioners (the most accessible one) until the maximum tension plate **(8)** reaches the tensioner **(1)**

If the nut **(6)** reaches the end of the rod's thread **(8)** and the tensing plate **(2)** is not still in contact with the bracket **(5),** you must tension it by using the other tensioner until it is in contact.

If, even so, it is not still in contact, this will be because the rope has not been pre-tensed enough. In this case, remove the cable clips from the lower tensioner and pre-tension correctly.

During assembly, it is recommended to follow these steps, since, this way, it is ensured that the rope has the correct tension and an acceptable de- tensing margin is guaranteed.

Do not adjust more than required with the nut, since this will apply more tension to the rope than necessary.

Important: Finally, assemble the minimum tension plate part **(3)** onto the maximum tension plate **(8)**, via two DIN 7984 M4x6 screws **(11)** (see figure 19). Both the part **(3)** and the screws **(11)** are supplied in a plastic bag along with the tensioner. The assembly of this part is very important, since this part will be the witness determining the system's minimum tension position, by tripping the safety contact.

Figure 20 below displays the above-mentioned "maximum position", where **(1)** is the "de- tensing margin".

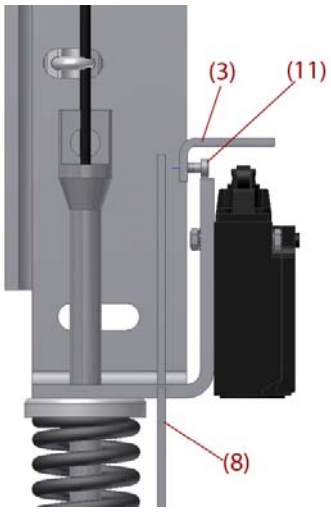


Figure 19: Part assembly (3)

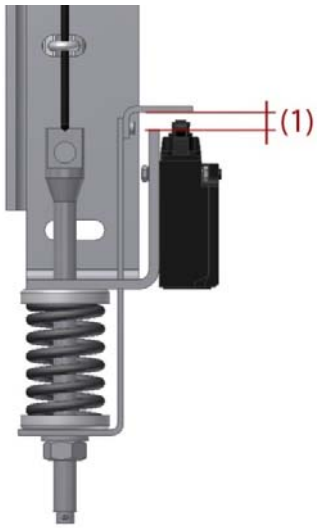


Figure 20: De- tensing margin

A re- tensing of the system by applying tension via the nut **(5)** will be required in the future due to a normal rope elongation. Therefore, it is important to pre-tension

the rope in the above-mentioned first stage in order to have a greater re- tensing margin.

Some "de- tensing contacts" are located in these tensioners. These contacts must be connected in parallel and, in turn, connected to the installation's safety series line.

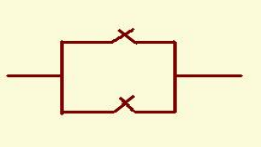


Figure 21: Connection of de- tensing contacts

The aim of both contacts is to detect breakage or de- tensing in the rope, since, in this case, both springs will drive the contacts. Should the rope de-tension or break, the springs, when returning to its natural length, will allow the plates to drive the contacts; this way, the machine stopping will be ensured.

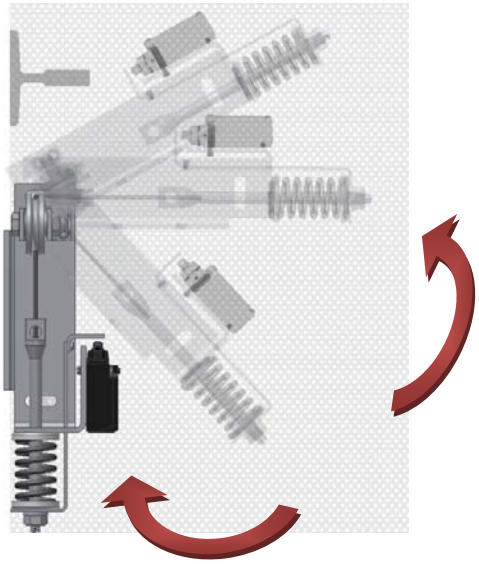
2.2. POSSIBLE CONFIGURATIONS

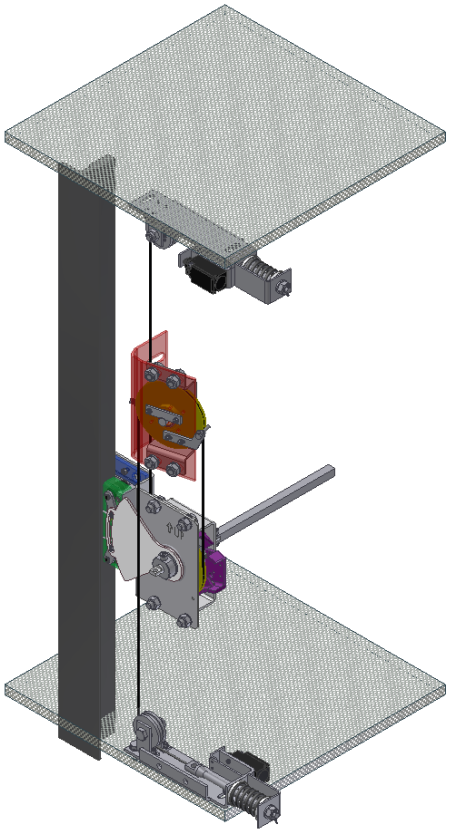
2.2.1. CONFIGURATIONS WITH QUASAR T-25

WITHOUT ATTACHMENTS

When the standard tensing system is directly installed onto the installation's pit and the shaft ceiling, both the upper and the lower tensioners may be fitted in different positions, as displayed in the figure on the right.

That is to say, they do not have to be perpendicular or parallel to the guide rail background; only the tensioner rod will have to vertically coincide with the governor rope.





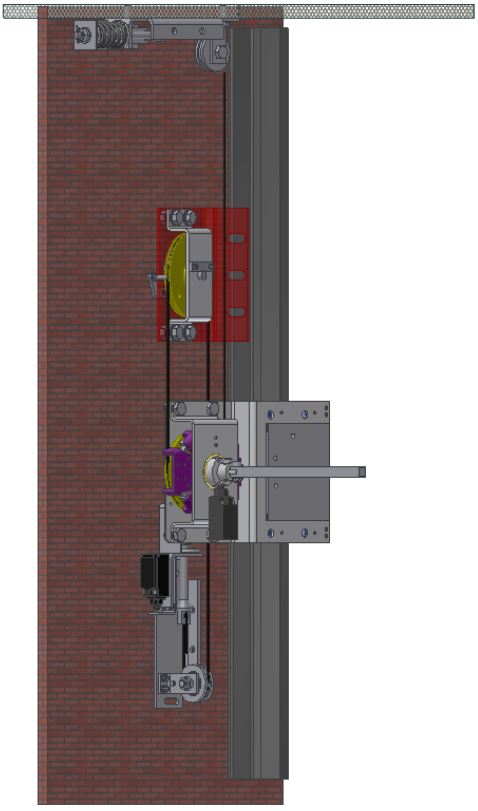


Figure 22: Quasar T25 + Roller tensing system without attachments to guide rail

ATTACHMENT TO HORIZONTAL GUIDE RAIL

The upper and lower tensioners will be assembled onto the attachment to guide rail as displayed in the figure. Each of them will be assembled onto the attachment **(2)** via two DIN 933 M10x25 screws **(3)**, four DIN 125 M10 **(4),** two DIN 127 M10 **(5)** and two DIN 934 M10 **(6).**

Both assemblies will be attached to the guide rail by using clamps. Dynatech recommends using four clamps for each attachment.

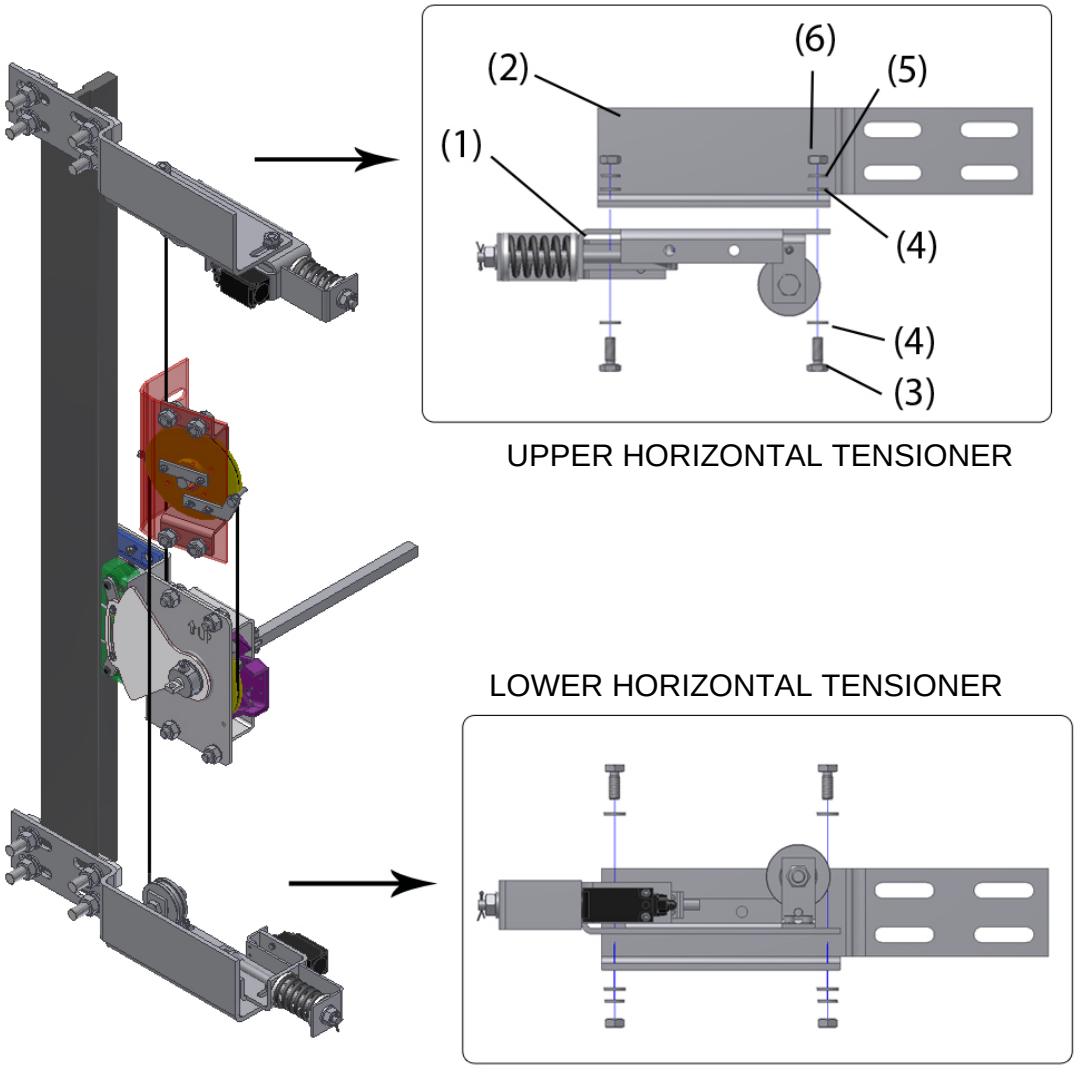


Figure 23: Quasar T25 + Roller tensing system with horizontal configuration and attachments to guide rail

ATTACHMENT TO VERTICAL GUIDE RAIL

The upper and lower tensioners will be assembled onto the attachment to guide rail as displayed in the figure.

The upper tensioner will be assembled onto the attachment **(2)** via two DIN 933 M10x25 screws **(3)**, four DIN 125 M10 **(4),** two DIN 127 M10 **(5)** and two DIN 934 M10 **(6).**

Whereas the lower one will be coupled via two DIN 933 M10x25 screws **(8)**, 2 DIN 125 M10 **(9),** 2 DIN 127 M10 **(10)** and 2 DIN 934 M10 **(11).**

Both assemblies will be attached to the guide rail by using clamps. Dynatech recommends using four clamps in this attachment.

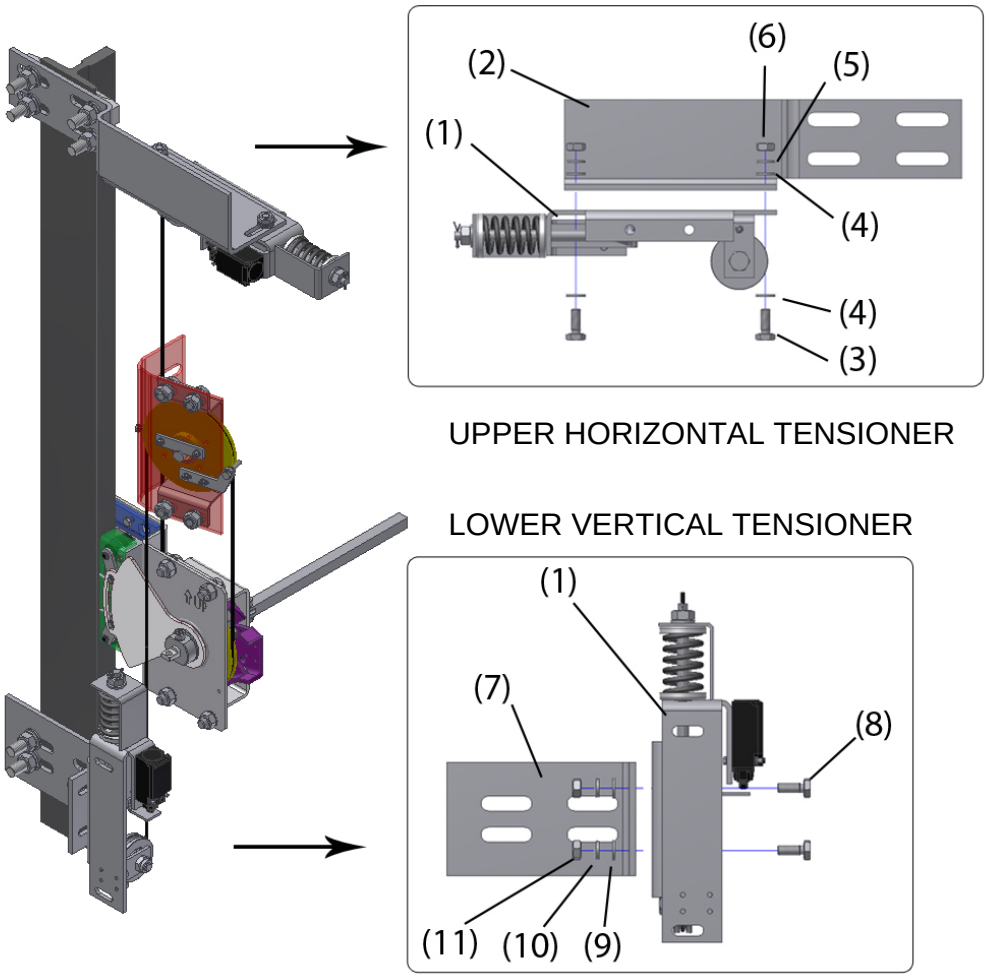


Figure 24: T25 + Roller tensing system with vertical configuration and attachments to guide rail

This configuration is perfect for an installation with a reduced pit and ceiling. The vertical position of the lower tensioner allows the car frame to come as close as possible to the shaft's pit.

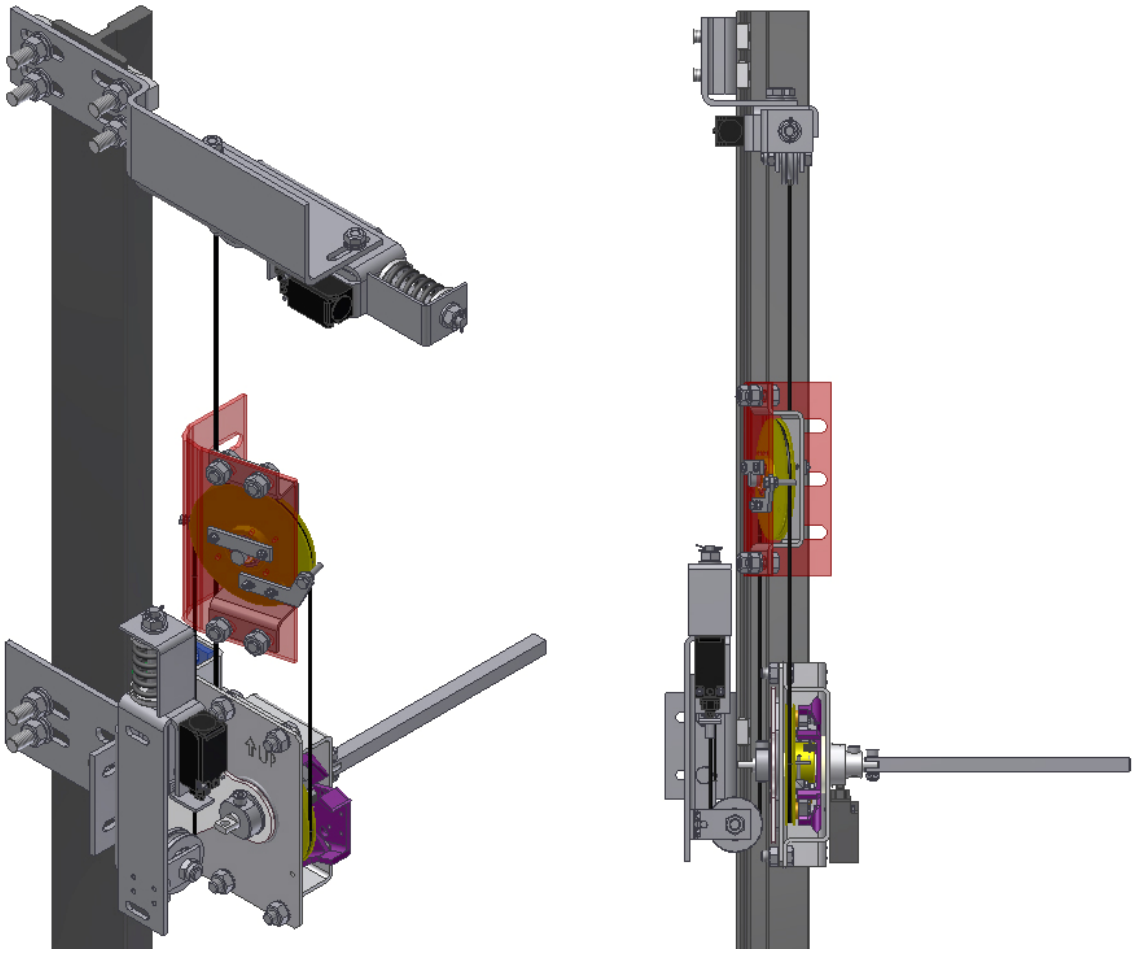


Figure 25: Perfect configuration for reduced pit and ceiling

Note: To attach the tensing system onto guide rails, types T-125 and T-127, both in horizontal and vertical configuration, drill the guide rail and attach the system as displayed in figure 24, via four DIN 933 screws **(1)**, four DIN 434 washers **(2)**, four DIN 125 washers **(3)**, four DIN 127 washers **(4)** and four DIN 934 nuts **(5)**.

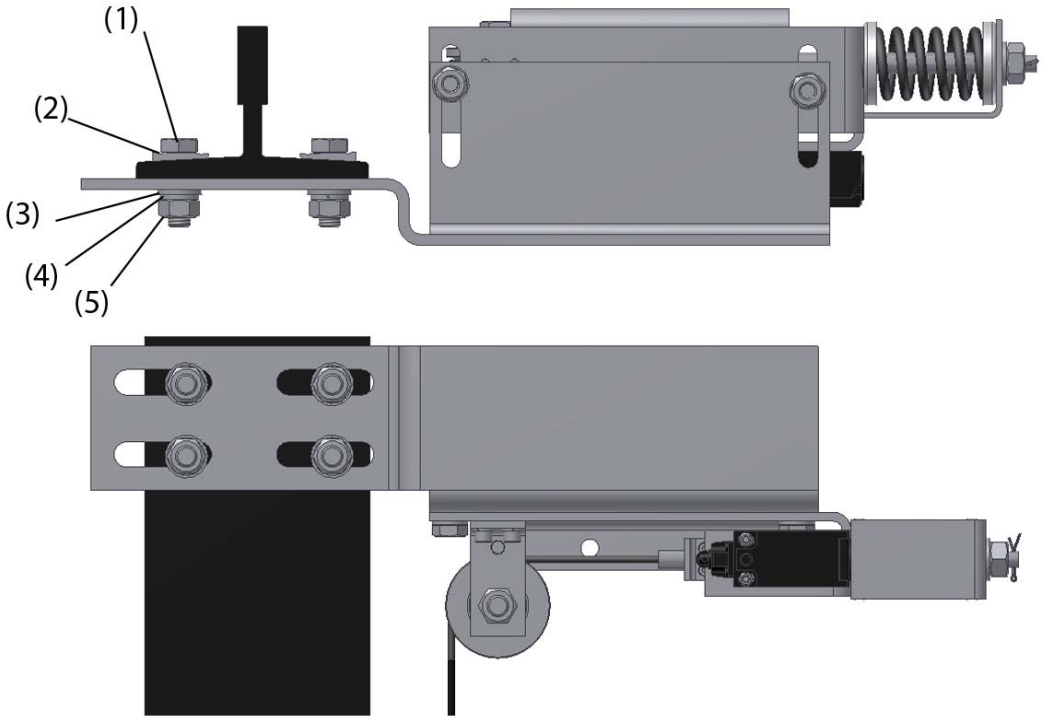


Figure 26: Roller tensing system's attachments onto T-125 and T-127 guide rail

COMBINATION OF THE PREVIOUS SITUATIONS

As displayed in the figures, the previous situations may be combined in the assembly of the tensioners.

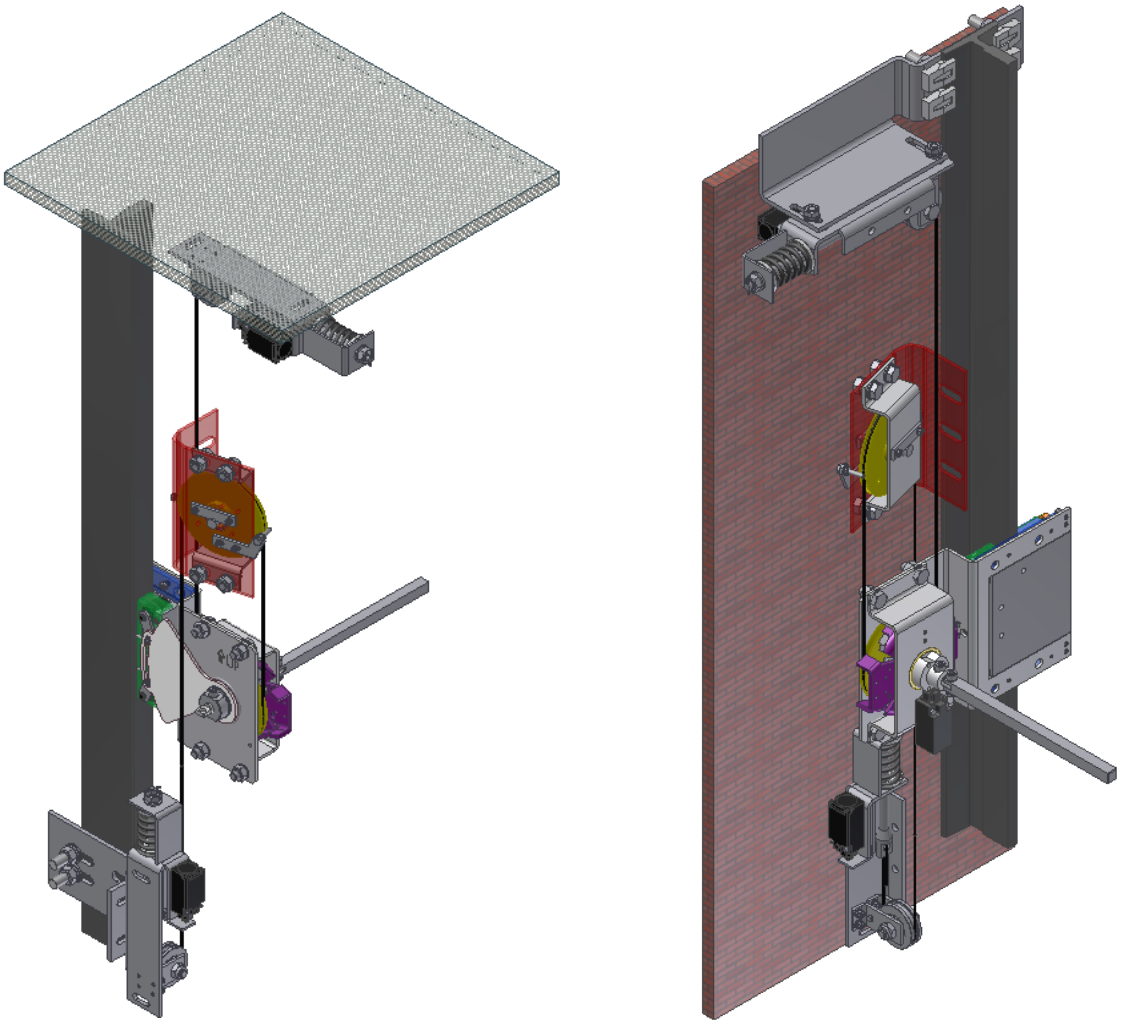
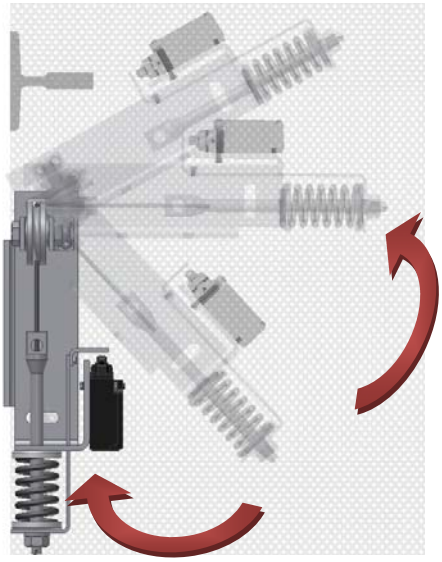


Figure 27: Quasar T25 + Roller tensing system

2.2.2. CONFIGURATIONS WITH QUASAR SV

When the Roller tensing system is directly installed onto the installation's pit and shaft ceiling, both the upper and the lower tensioners may be fitted in different positions, as displayed in the figure on the right.



That is to say, they do not have to be perpendicular or parallel to the guide rail background; only the tensioner rod will have to vertically coincide with the governor rope.

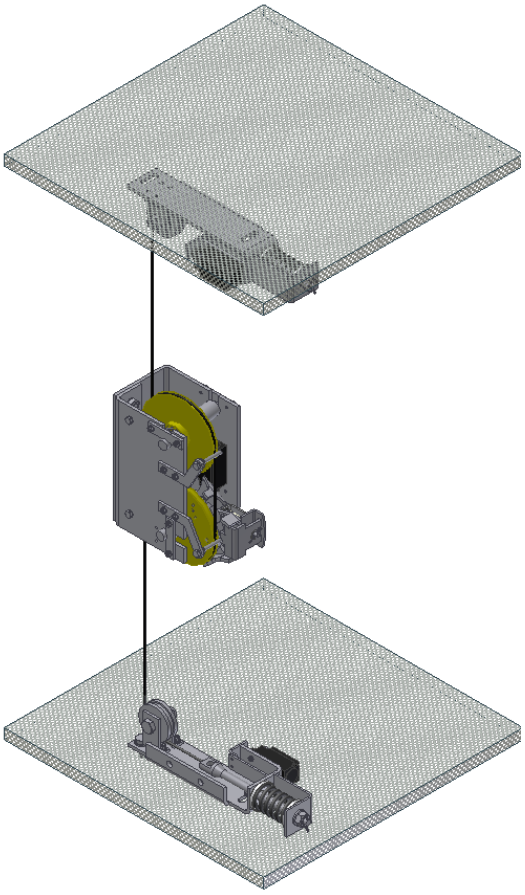


Figure 28: Quasar SV + Roller tensing system

2.3. DRAWING FOR INSTALLING THE ROLLER TENSING SYSTEM