



**DYNATECH  
DYNAMICS AND TECHNOLOGY, S.L.**

***LBD-200*  
OVERSPEED GOVERNOR**

## **CONTENTS**

1.- Introduction.....	page 1
2.- Main components. ....	page 1
3.- Operating principles.....	page 2
4.- Securing to the slab .....	page 7
5.- Technical characteristics.....	page 8
6.- Adjustment type.....	page 9
7.- User and maintenance instructions. ....	page 11
8.- Installation diagrams.....	page 12
9.- Optional devices for LBD-200.....	page 14
10.- E.E.C. type examination certificate. CE marking .....	page 18

## **1.- INTRODUCTION.**

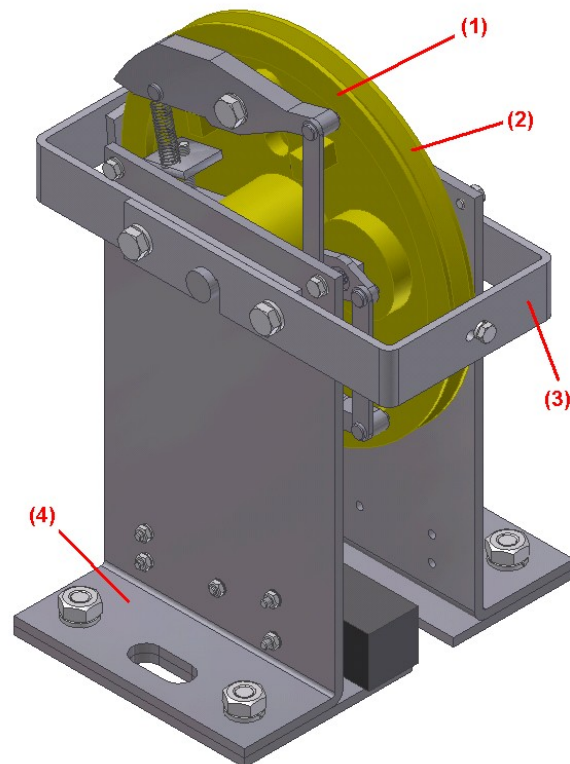
The DYNATECH LBD-200 overspeed governor is designed to cut off the current to the security series line in the event of car overspeed, bringing the lift to a standstill when necessary.

The LBD-200 overspeed governor covers a wide range of speeds and can be used with instant and progressive safety gears. It can also include several additional systems to increase the reliability and safety of the remaining lift installation.

## **2.- MAIN COMPONENTS.**

Each governor is composed of the following main elements: a pulley, a centrifugal system, a locking device, a casing and a plate linking the governor to the floor in the machine room.

Below is an image of the governor assembly:



Where:

- (1) – Main pulley.
- (2) – Centrifugal system.
- (3) – Locking system.
- (4) – Floor fixing plate

### 3. OPERATING PRINCIPLES.

The governor is of the centrifugal type and is able to work either **upwards** or **downwards**.

The governor is fixed directly to the floor in the machine room, joined by the rope to its tensing pulley located in the pit.

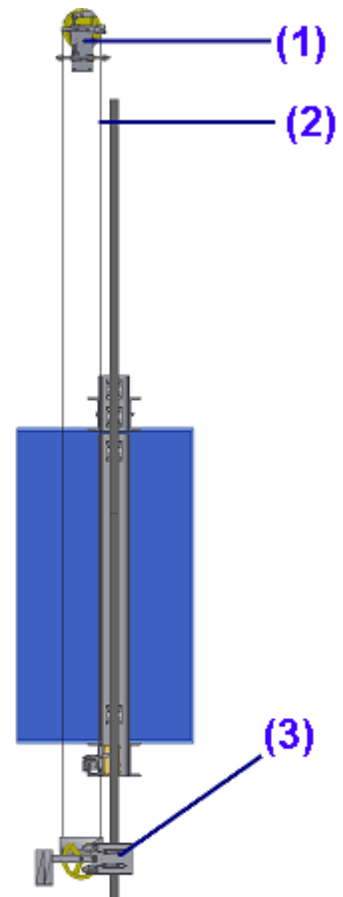
This tensing pulley is attached to the guide pulley by flanges.

The rope passes through the groove of governor and the tensing pulley.

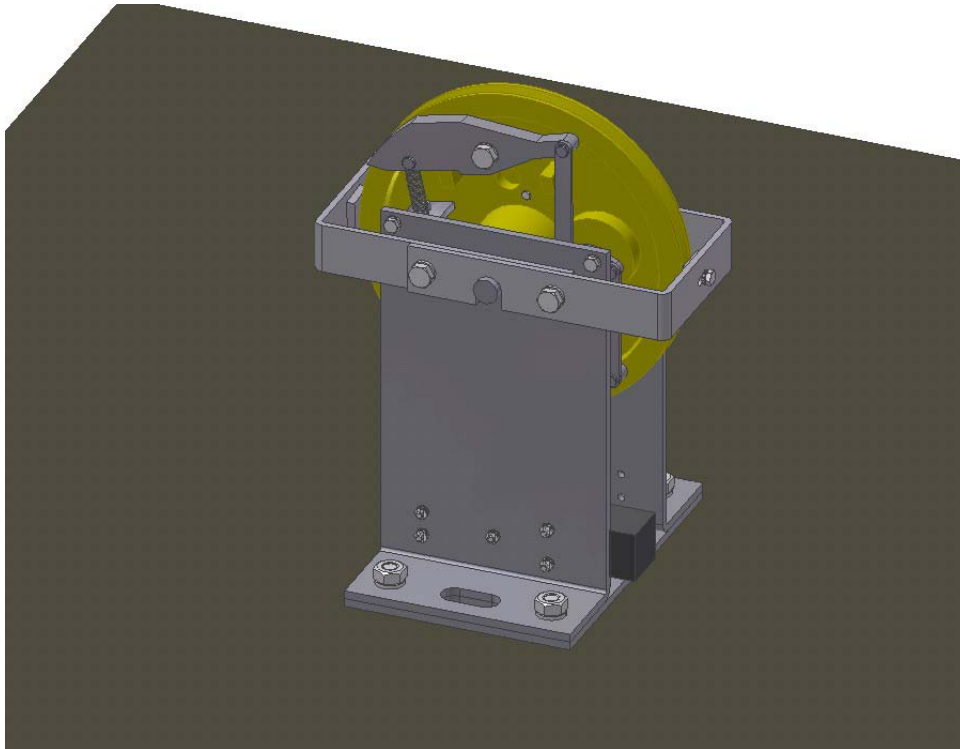
The ends of the rope are attached to the linkage anchoring. Thus, when the car reaches its tripping speed, the rope-governor relative movement will lock it.

The working diagram is as follows:

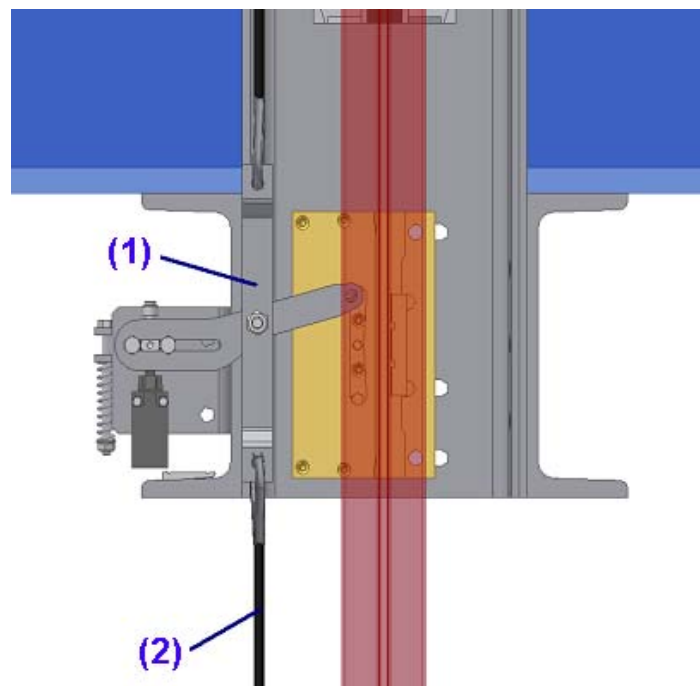
- (1) LBD-200 governor
- (2) Governor rope
- (3) Tensing pulley



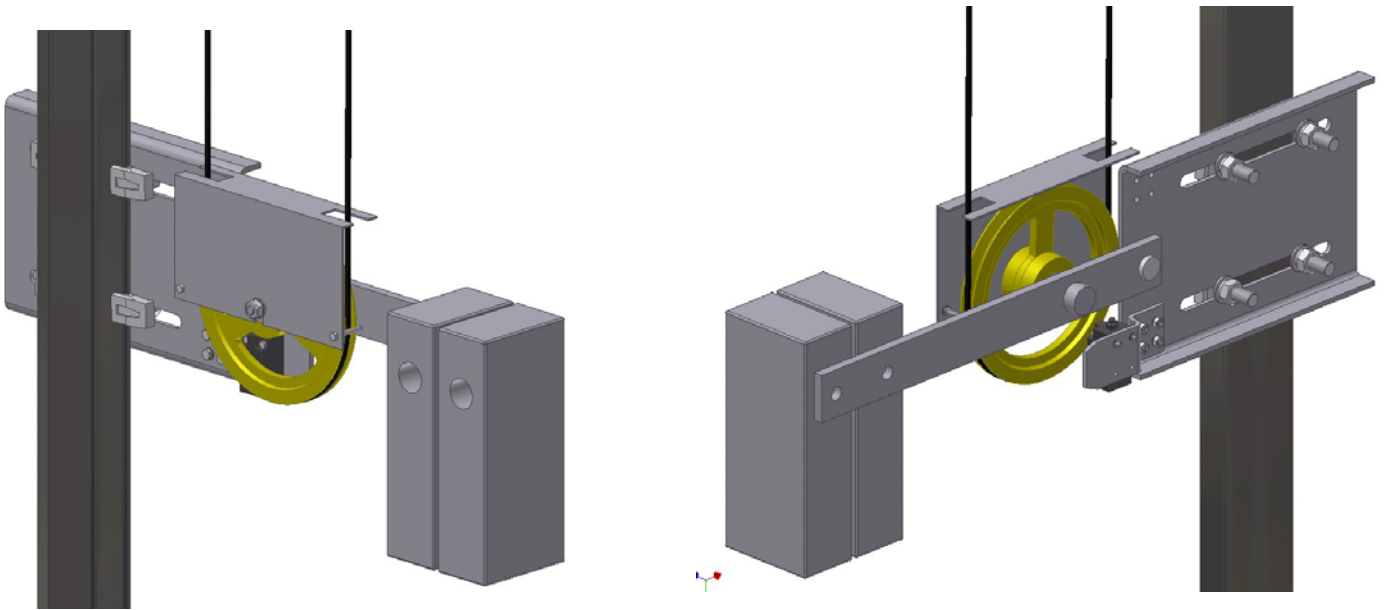
As indicated above, the overspeed governor is attached to the floor in the machine room or in the lift well.



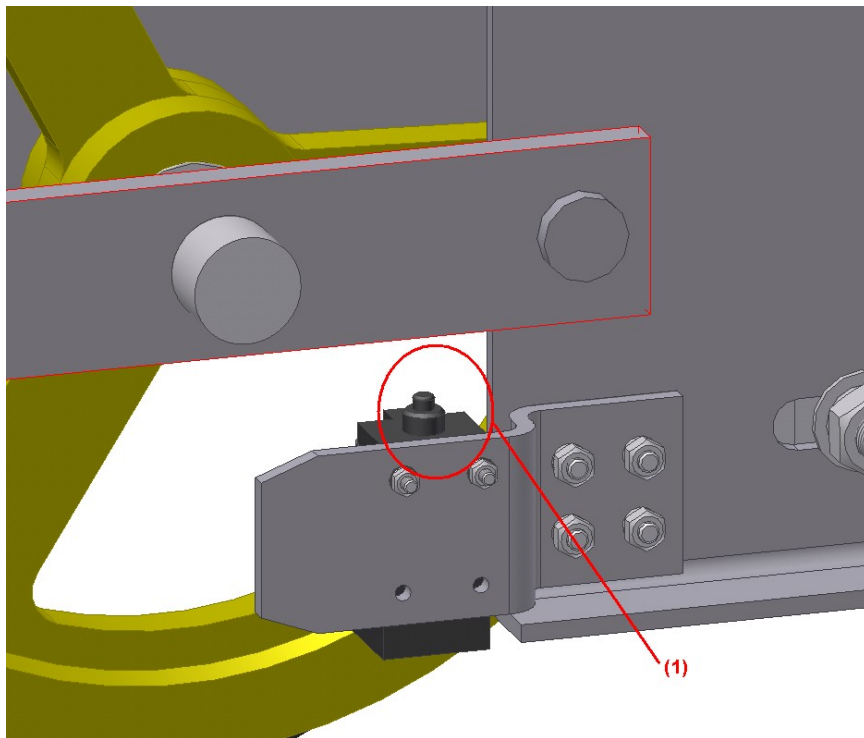
The ends of the rope (2) are attached to the linkage anchoring (1) through eyes.



The tensing pulley is secured to the guide rail by flanges.

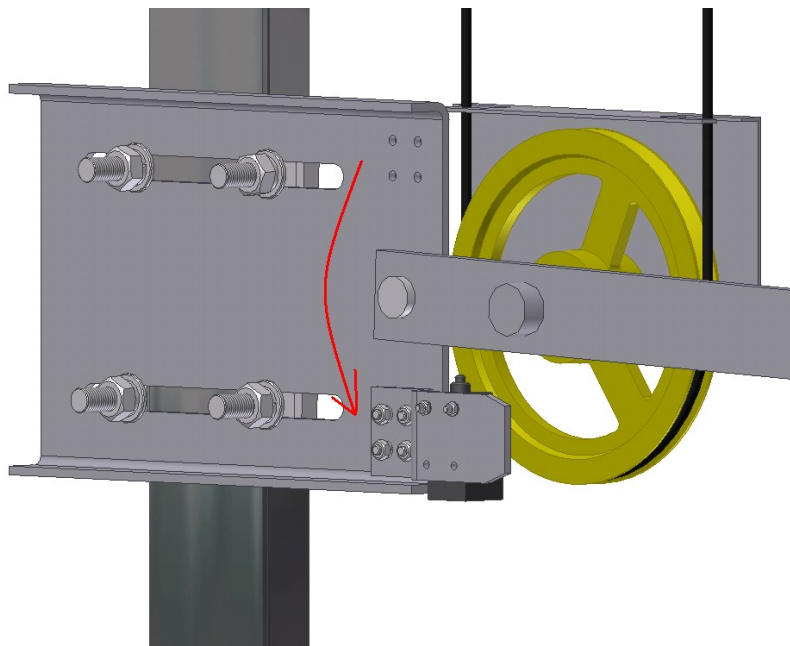


The rope must have enough tension (500 N on each side). In the event of tension loosening or rope breakage, a rope slackening contact (1) connected to the installation security series line will cut off the current.

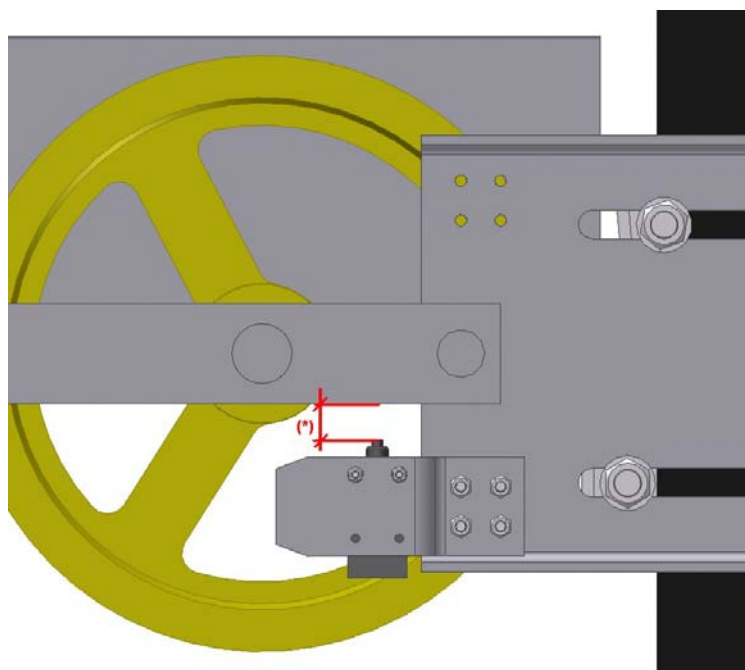


Due to the weight of the masses, the contact is protected from knocks by the part to which it is attached and, therefore, the sensor cannot be damaged.

The tensing pulley assembly can be attached to both sides of the guide pulley. The guide rail fixing plate has holes on both sides so that the contact is not a problem when changing the position of the assembly and so that the sensor can be attached on both sides.



The figure below shows the loosening margin(\*):



As indicated, should the tightness be less than acceptable or should the rope break, the bar supporting the weight and the pulley would make contact with the sensor.

### **Overspeed contact.**

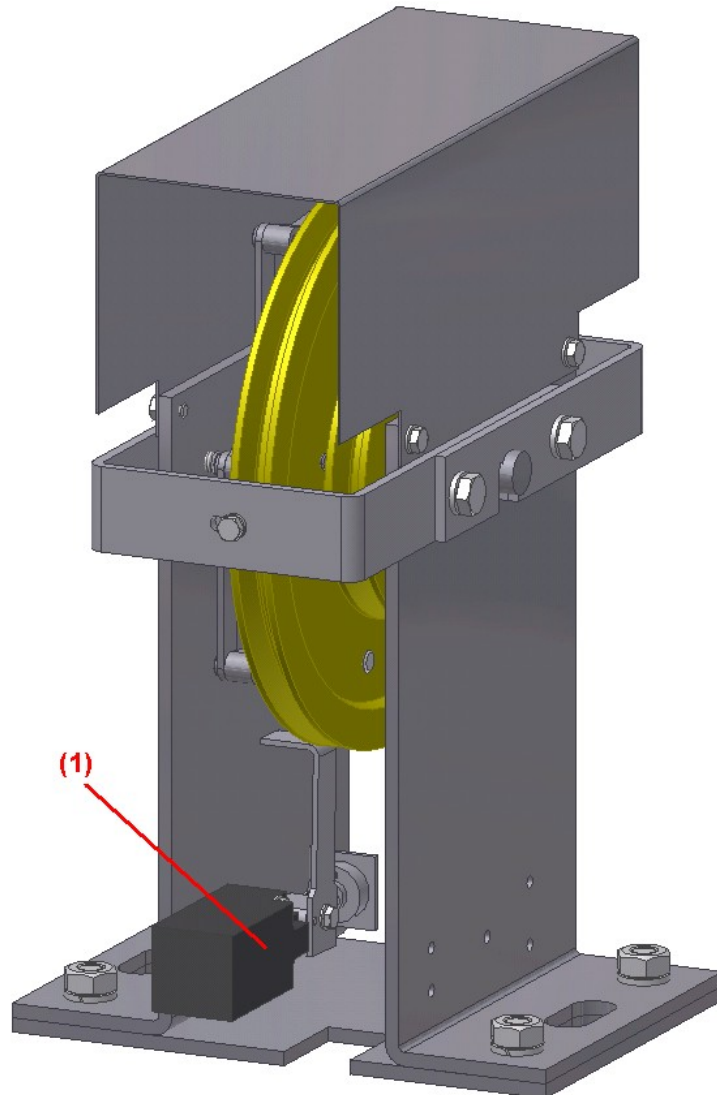
The governor has a built-in overspeed contact.

Below is a drawing of the overspeed contact location (1) on the governor.

The contact will act when the governor reaches a speed above the rated speed yet below the speed at which the governor is enabled.

When this contact is triggered, the current of the security series line is cut off.

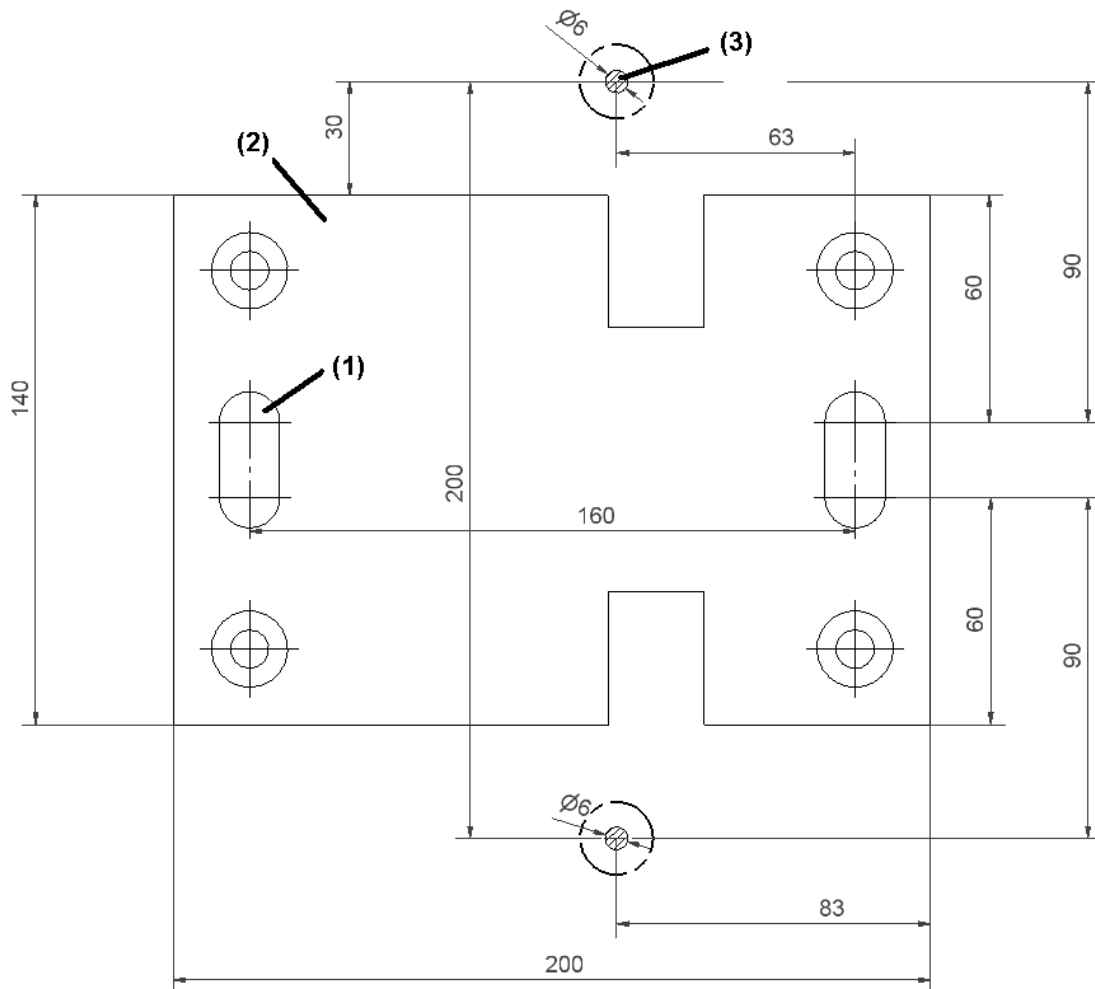
This system is manually reset, which means that once the contact has been triggered it does not return to its initial position unless this is done manually.





#### 4. FIXING TO THE FLOOR.

The figure shows the governor anchoring points to the lift floor. Distances appear in millimetres.



The above figure represents the bottom view of the governor base plate (2).

The governor is anchored to the floor using the threaded holes (1) in the plate.

The rope (3) and its position with regard to the base plate can also be seen in the drawing.

## **5. TECHNICAL CHARACTERISTICS.**

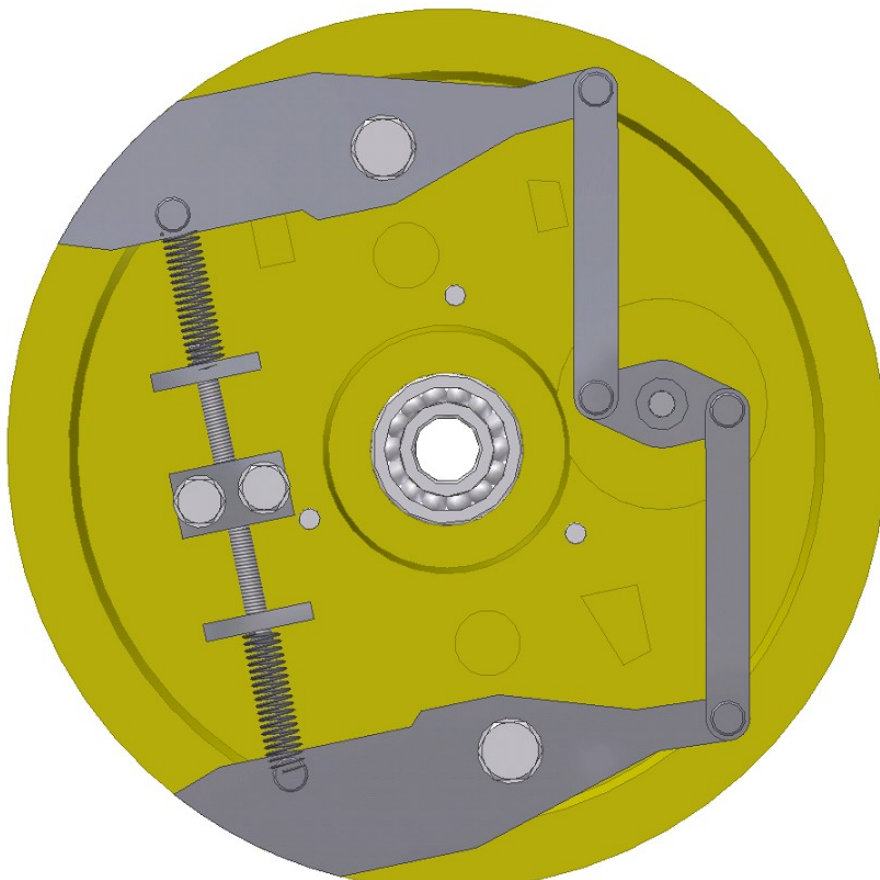
- **Appliance:** Overspeed governor
- **Model:** LBD-200
- **Manufacturing company:**
  - DYNATECH, DYNAMICS & TECHNOLOGY, S.L.
- **Field of action:**
  - Minimum rated speed: 0.1 m/sec
  - Minimum tripping speed: 0.8 m/sec
  - Maximum rated speed: 2.3 m/sec
  - Maximum tripping speed: 2.74 m/sec
  - N.B.: A low-speed pulley with a special low-speed centrifugal system is used for *operating* speeds below 1m/sec.
- **Rope:**
  - Diameter: 6 mm, 6.3 mm y 6.5 mm
  - Composition: 6 x 19 + 1
- **Initial rope tightness:**
  - 500 N
  - This tightness is given by positioning the tensing pulley so that the bar remains horizontal.
- **Tightness produced on the rope on locking:**
  - Over 300 N
- **Pulley diameter:** 200 mm
- **Overspeed contact.**
- **Other features:**
  - Possibility of fitting several devices:
    - Remote tripping mechanism
    - Remote rest
    - Final Limit switch
- **Safety gear with which it can be used:**

Any with a trigger speed that can be reached by the overspeed governor.

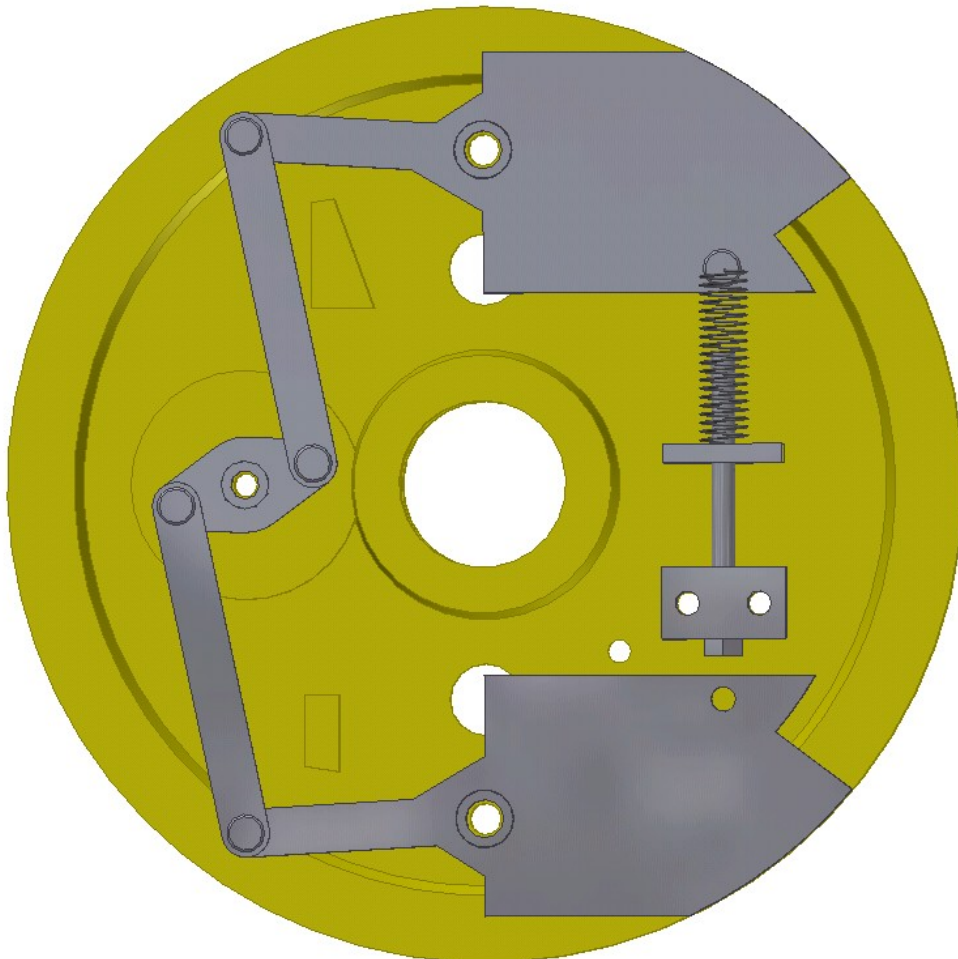
## **6.- ADJUSTMENT TYPE.**

The trigger speed is adjusted by means of an adjustment screw that tightens or loosens the springs on the centrifugal system. When the springs are tightened, the necessary speed to trigger the centrifugal system will be higher. Hence, the trigger speed can be adjusted within the speed range.

This adjustment is made in the factory using a computerised calibration system, according to customer specifications. Following adjustment and once checked, it is sealed so that it cannot be modified.



There is a Low-speed system for operating speeds below 1 m/sec. in which, as shown in the figure, the adjustment is made using a tightening screw that stretches or shrinks the spring attached to the centrifuge.



## **7.- USER AND MAINTENANCE INSTRUCTIONS.**

The trigger speed on the installation can be checked using the motor frequency splitter, increasing the motor speed progressively until the installation locks, or using the check pulley.

To avoid unnecessary risks that may cause the governor to operator incorrectly, take the following two basic criteria into account: Cleanness and monitoring of rust. There are moving parts on all governors that carry out the locking action. The accumulation of dirt on these parts may lead to malfunctioning. Both the fitter and the maintenance staff must make sure that these parts are perfectly clean.

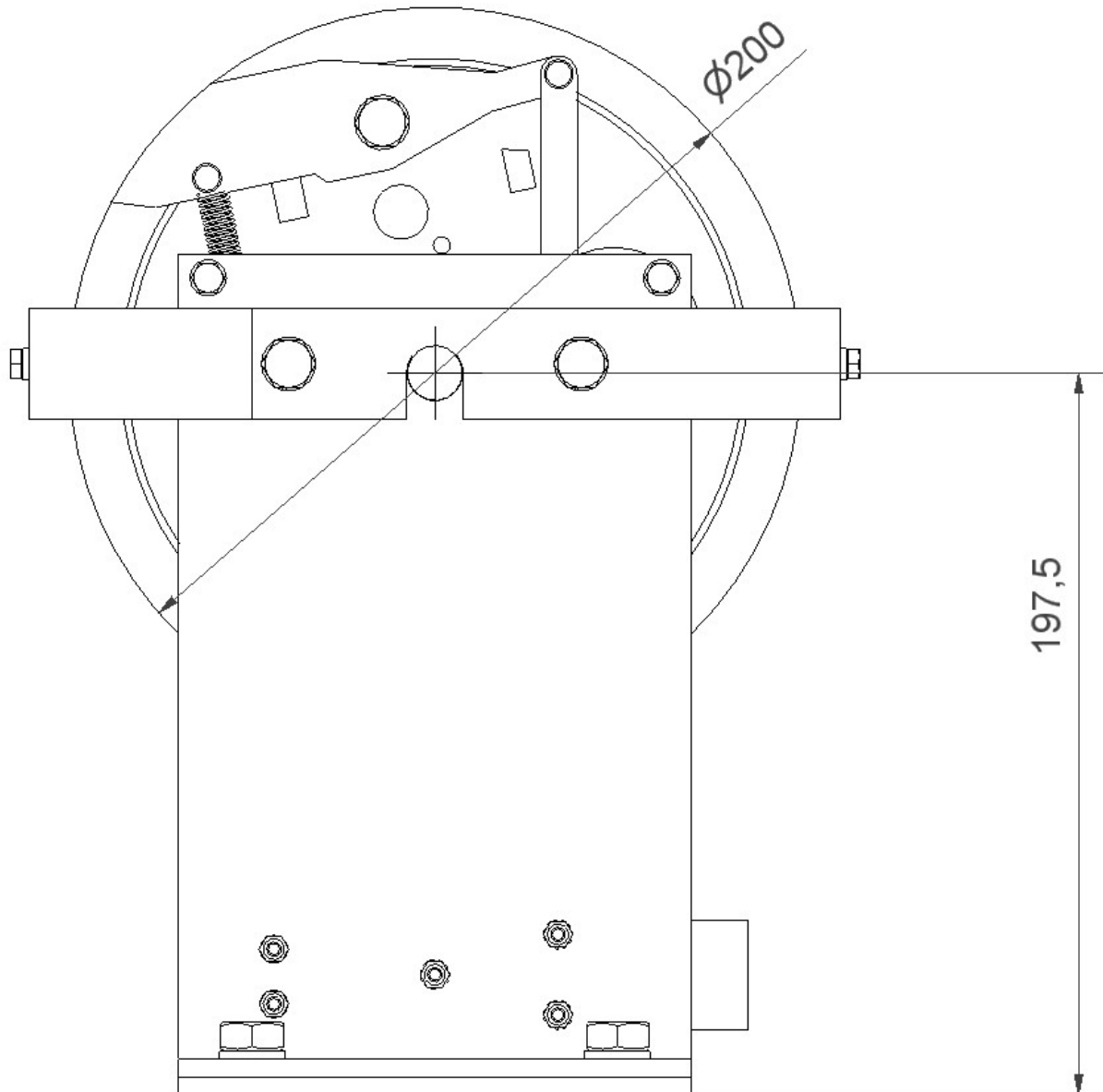
All Dynatech overspeed governors include rustproof protection, although the maintenance staff must check for rust that may affect any moving part or prevent it from moving naturally. This check will be carried out by means of a visual inspection of the surface condition and by making the parts work. These checks must be carried out as often as the maintenance staff sees fit, although they must be more frequent in the event of the lift being installed in a particularly corrosive atmosphere.

Dynatech will not be held responsible for any problem or accident arising from the lack of observance of the indications and advice given in these instructions and in the Type E.E.C. examination certificates.

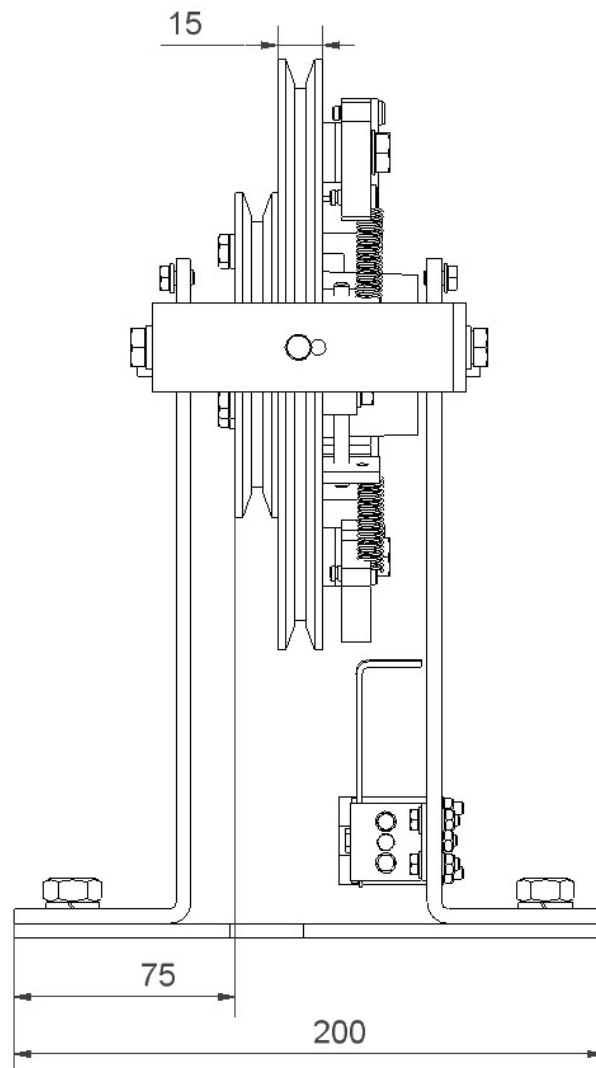
## 8.- INSTALLATION DIAGRAMS.

The following diagrams may be of great help when adapting and installing the LBD-200 overspeed governor:

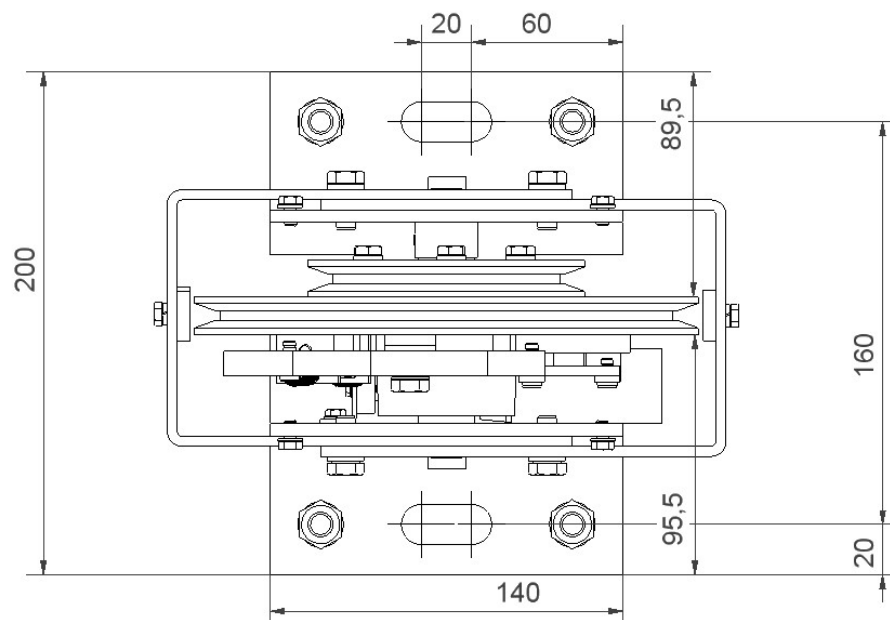
Front view:



Profile:



Ground view:

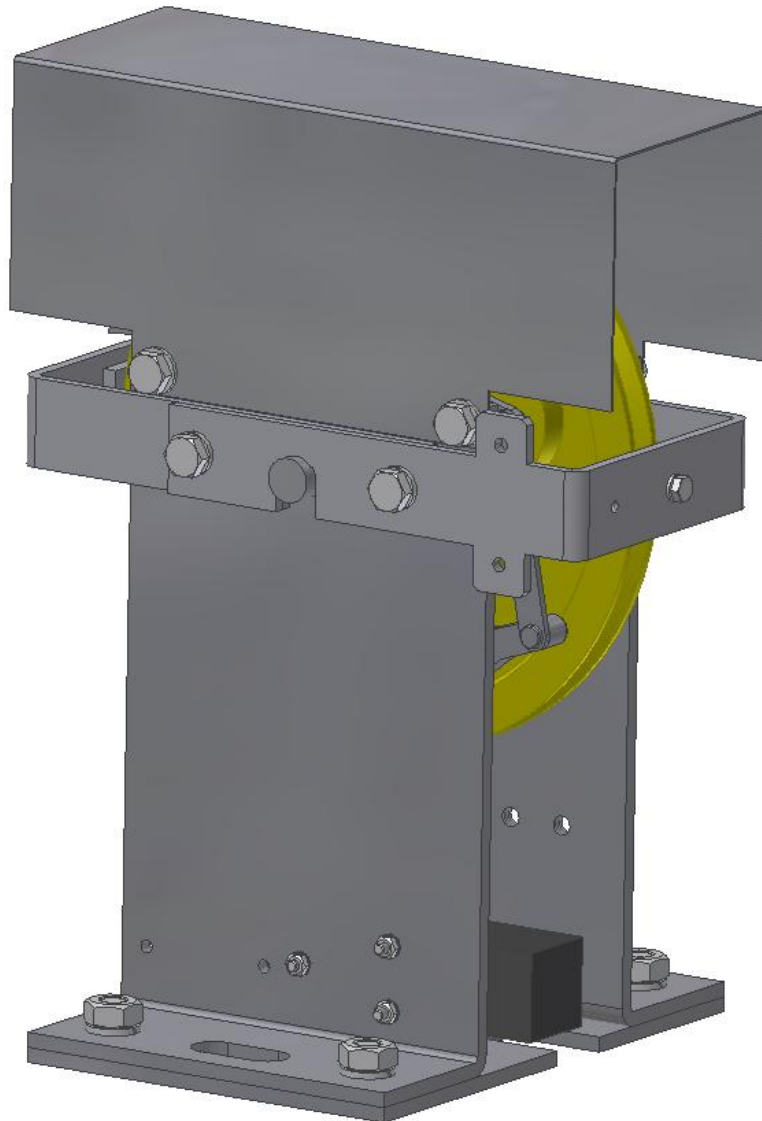


## **9.- OPTIONAL DEVICES FOR LBD-200.**

### **Protection Plate:**

As it is indicated in the 9.7.1. section of the UNE-EN 81 standard, the overspeed governor must be with a protection in order to avoid corporal damages and the entrance of foreign objects.

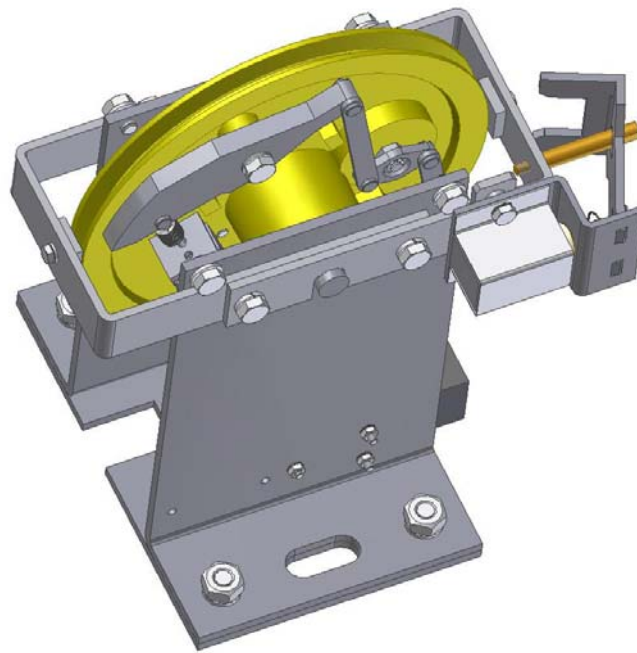
Next it is shown a figure appearing the protection plate.



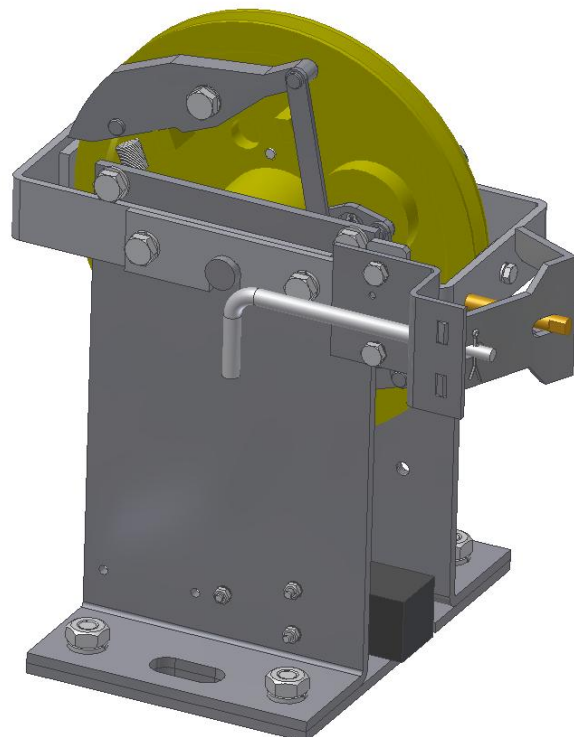


## Remote Tripping Mechanism

In the overspeed governor it is able to be incorporated a mechanic system that interferes in the centrifugal masses, causing an acting of the overspeed governor. This system consists of a solenoid that is available on 24, 48 or 190 V, which currents are 1.1, 0.7 and 0.2 A respectively.

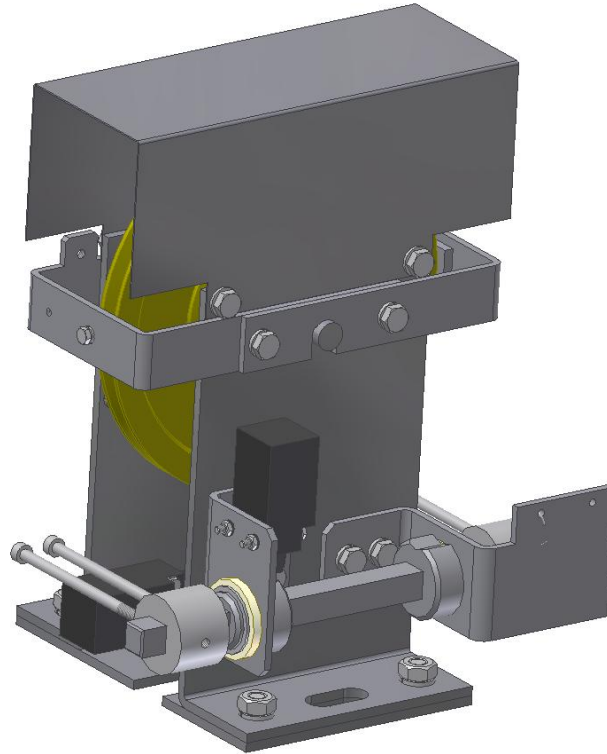


Also there is an option of acting the system without the solenoid. It is able to act manually the mechanic system, as it's shown in the figure by means of a lever.

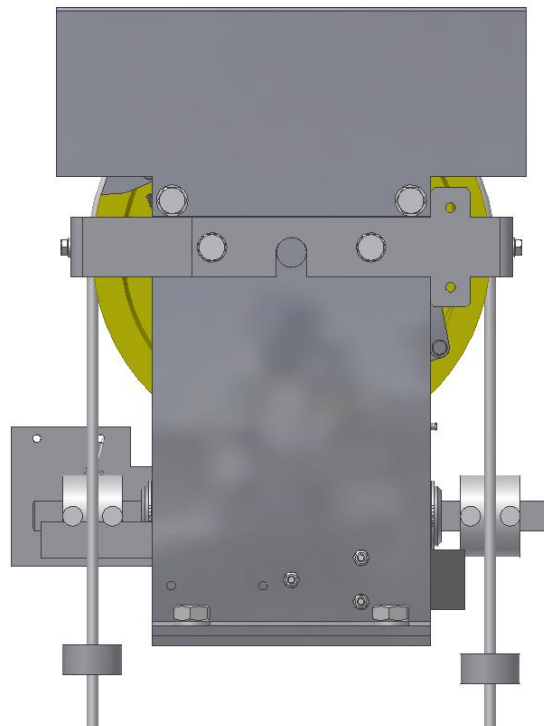


## Final Limit Device

A Final Limit Device can be assembled in the overspeed governor support. The Final Limit assembled is reflected in the figure below.

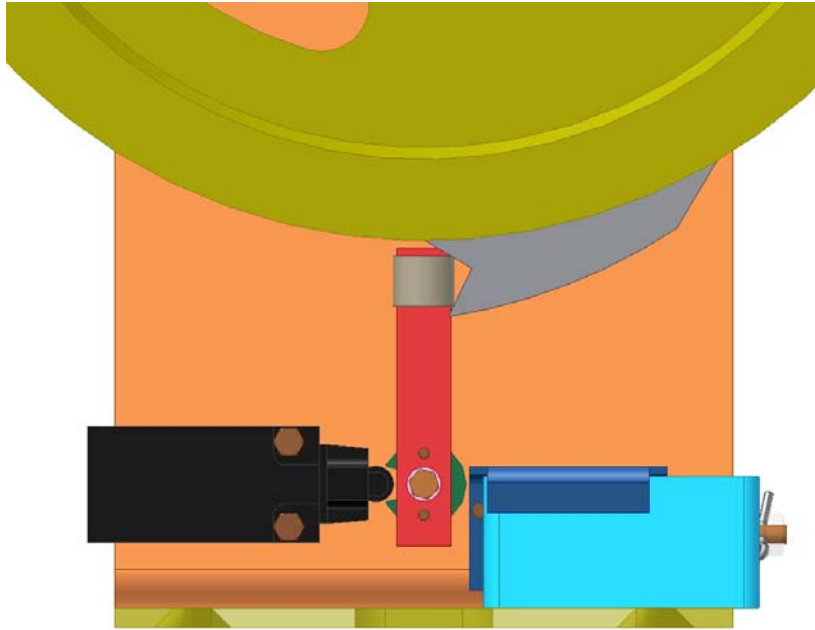


It will be provided a stops which make contact with levers. This levers will act the security contact switch.



## Remote Reset Device

Another option for the overspeed governor LBD-200 is to reset automatically the overspeed contact. It is used a solenoid available in 24, 48 or 190 V with currents of 1.1, 0.7 and 0.2 A respectively.



The overspeed governor can be provided with all the options mentioned previously. However the customer can order the overspeed with the options that fit better to their needs.

In the orders it must be indicated what kind of options the customer wish.

## 10. - TYPE E.E.C. EXAMINATION CERTIFICATE. CE MARKING

# ATISAE

### CERTIFICADO DE EXAMEN C.E. DE TIPO EC TYPE-EXAMINATION CERTIFICATE

Según el anexo V parte A de la Directiva 95/16/CE / According annex V part A of Directive 95/16/EC

Número de certificado. / Certificate number	ATI / LD-VA / M145A-1 / 08
Organismo Notificado. Notified Body	Asistencia Técnica Industrial S.A.E. (ATISAE) Avda. de la Industria, 51 bis E 28760 Tres Cantos MADRID (ESPAÑA) Nº de identificación 0053.
Clase. Tipo. Product. Type	Limitador de velocidad / Overspeed governor
Modelo / Model	LBD-200
Fabricante. Manufacturer	DYNATECH, DYNAMICS & TECHNOLOGY S.L. P.I. Pina del Ebro, sector C, parcela 9 50750 ZARAGOZA ( ESPAÑA ).
Propietario del certificado. Certificate Owner	Véase fabricante / Please refer to manufacturer
Fecha de presentación. Date of submission	26/03/2008
Fecha del examen de tipo. Date of EC type examination.	02/04/2008
Laboratorio de ensayo. Test laboratory	(véase en el anexo técnico sección 2.8). (Please refer to technical annex section 2.8)
Informe de ensayo / Test report	(véase en el anexo técnico sección 2.8). (Please refer to technical annex section 2.8)
Directiva CE aplicada. / EC- Directive.	Directiva 95/16/CE de 29 de Junio de 1995
Norma de referencia. / Reference standard	EN 81-1/2:1998
Informe de ATISAE. / ATISAE report	MD_DEU_081180 (01.04.2008) ED_051783 (19.04.2005)
Plazo de validez / Expiry date	Indefinido / (véase en el anexo técnico sección 2.10). Indefinite / (Please refer to technical annex section 2.10)

Procedimiento EC-12.04 Anexo 4 Rev 0 Septiembre 2005

**Declaración:** El componente de seguridad permite al ascensor sobre el que se instale satisfacer los Requisitos de Seguridad y Salud de la citada Directiva usándose dentro del alcance que queda establecido en el anexo técnico de este certificado, así como con las condiciones de instalación indicadas.

**Statement:** The safety component allows the lift on which installed to satisfy the requirements of health and safety of Lifts Directive when used among the scope which is established in the technical annex to this certificate, as well as under the shown installation conditions.

Tres Cantos, a 02 de ABRIL de 2008

Este certificado consta de esta portada, un anexo técnico de 2 hojas y 1 plano / documento. Su reproducción carece de validez si no se realiza totalmente.  
This certificate consists of this main page, a technical annex with 2 pages and 1 drawing./document. It shall be reproduced with all its pages to be considered valid.

Asistencia Técnica Industrial S.A.E. (ATISAE)  
Organismo Notificado Nº 0053 para la aplicación de la Directiva 95/16/CE  
Avda. de la Industria, 51 bis. E28760 Tres Cantos MADRID  
Tel: 91 806 17 30



Jose Manuel Flórez González  
Coordinador Técnico

# ATISAE

## ANEXO TECNICO AL CERTIFICADO CE DE EXAMEN DE TIPO ATI/LD-VA/M145A-1/08 TECHNICAL ANNEX TO THE EC TYPE EXAMINATION CERTIFICATE (ABOVE)

**El presente certificado amplía y sustituye al certificado:**  
This certificate enhances and supersedes the previous.

ATI / LD-VA / M145 / 05

**El alcance de la ampliación se encuentra detallado en la nota 2.1.**  
The scope of the extension is explained in the remark 2.1.

- |  |  |   |
|--|--|---|
| <b>1. Campo de aplicación:</b><br>Scope.   |  |   |
| <b>1.1. Velocidad de disparo:</b><br>Permissible tripping speed.   |  | 0.70 ÷ 2,74 m/s                                       |
| <b>1.2. Velocidad nominal:</b><br>Permissible rated speed.   |  | ≤2,30 m/s   |
| <b>1.3. Diámetro primitivo de la polea del limitador:</b><br>Pitch diameter of the governor pulley   | <b>cable / rope 6.0 mm Ø</b><br><b>cable / rope 6.3 mm Ø</b><br><b>cable / rope 6.5 mm Ø</b> | <b>190.5 mm</b><br><b>191.5 mm</b><br><b>195.0 mm</b> |
| <b>1.4. Cable:</b><br>Driving rope:  |  |   |
| <b>1.4.1. Diámetro:</b><br>Diameter.   |  | 6.0 / 6.3 / 6.5 mm                                    |
| <b>1.4.2. Composición:</b><br>Art.   |  | 6 x 19+1  |
| <b>1.5. Mínima fuerza tensora:</b><br>Minimum tensioning force.  |  | 1000 N  |
| <b>1.6. Fuerza transmitida a los medios de frenado con mínima fuerza tensora.</b><br>Tensile force at minimum tensioning force   |  |   |
| <b>1.6.1. Hacia abajo / downwards :</b>  |  | 300 N   |
| <b>1.6.2. Hacia arriba/ upwards :</b>  |  | 300 N   |
| <b>2. Notas.</b><br>Remarks.   |  |   |
| <b>2.1. La ampliación del alcance establecido por este certificado consiste en:</b><br>The scope extension for this certificate consists of:   |  |   |
| a) ampliación a cables con diámetros nominales de 6.3 y 6.5 mm;<br>extension to driving ropes with rated diameters of 6.3 (≈ 1/4") and 6.5 mm.   |  |   |
| <b>2.2. Sobre el dispositivo del limitador de velocidad debe colocarse una placa con los datos indicados a continuación:</b><br>It shall be placed an identifiable plate on the overspeed governor with the following items. |  |   |



**Nombre del fabricante**  
Manufacturer's name

**Signo del examen de tipo y sus referencias**  
CE type-examination mark and its references

**Velocidad de disparo mecánico para la cual ha sido ajustado**  
The actual tripping speed for which it has been adjusted

El fabricante también informará del diámetro de cable admisible, dado que existen diferencias en la polea y si el limitador es de actuación SOLO BAJADA. Además se debe indicar el sentido de giro para actuación en bajada.  
The manufacturer shall also inform about the rope diameter for which the governor is intended because there are differences in the groove, and the condition of ONLY DOWN tripping when required. Furthermore the direction of rotation to operate the safety gear DOWN shall be marked.

# ATISAE

- 2.3. **El contacto eléctrico de seguridad es de rearme manual.**  
The safety electric contact is reset manually.
- 2.4. **Con el conjunto de polea de limitador ubicado en cuarto de máquinas, se proveerán protecciones adecuadas contra daños corporales.**  
When the governor pulley is located in a machine room, suitable protections shall be provided in order to avoid bodily injuries.
- 2.5. **El limitador puede ser instalado en el interior del hueco o en zonas no accesibles cuando se proporcionen los medios solicitados por 9.9.8.3. de EN 81-1. Las características de estos dispositivos no han sido evaluados y no forman parte de esta certificación.**  
The governor can be located inside the well or at non-accessible places if the means required by 9.9.8.3. of EN 81-1 are provided. The characteristics of such devices have not been assessed and they are not part of this certification.
- 2.6. **La mínima fuerza tensora es la producida en el eje de la polea de desvío. La fuerza transmitida a los medios de frenado es la determinada en el ensayo con cable y ranura nuevos y con un ángulo de abrazamiento de 180°.**  
The minimum tensioning force is the force produced on the axis of the rope deviation pulley. The tensile force is determined in the test with new rope and groove and a wrap angle of 180°.
- 2.7. **El limitador de velocidad puede ser utilizado para accionar dispositivos de frenado de conformidad con 9.9.1., 9.9.3. y 9.10. de EN 81-1 y 9.10.2. de EN 81-2, de acuerdo con el alcance de la velocidad de disparo compatible.**  
The overspeed governor can be used for tripping braking devices according 9.9.1., 9.9.3. and 9.10. of EN 81-1 and 9.10.2. de EN 81-2, according the compatible tripping speed.

2.8. **Laboratorios de ensayo.**  
Test laboratories.

Laboratorio / Laboratory  
Laboratorio de Ensayo de Materiales (L.E.M.)  
E.T.S. Ingenieros Industriales. UPM  
C/ José Gutiérrez Abascal, 2  
28006 MADRID

Informe / report  
2003-1132 (17.01.2005)  
2006-001 (26.01.2006)  
2006-001/2 (09.06.2006)

2.9. **Se adjunta a la presente certificación los siguientes documentos:**  
The following documents are enclosed to this certificate.

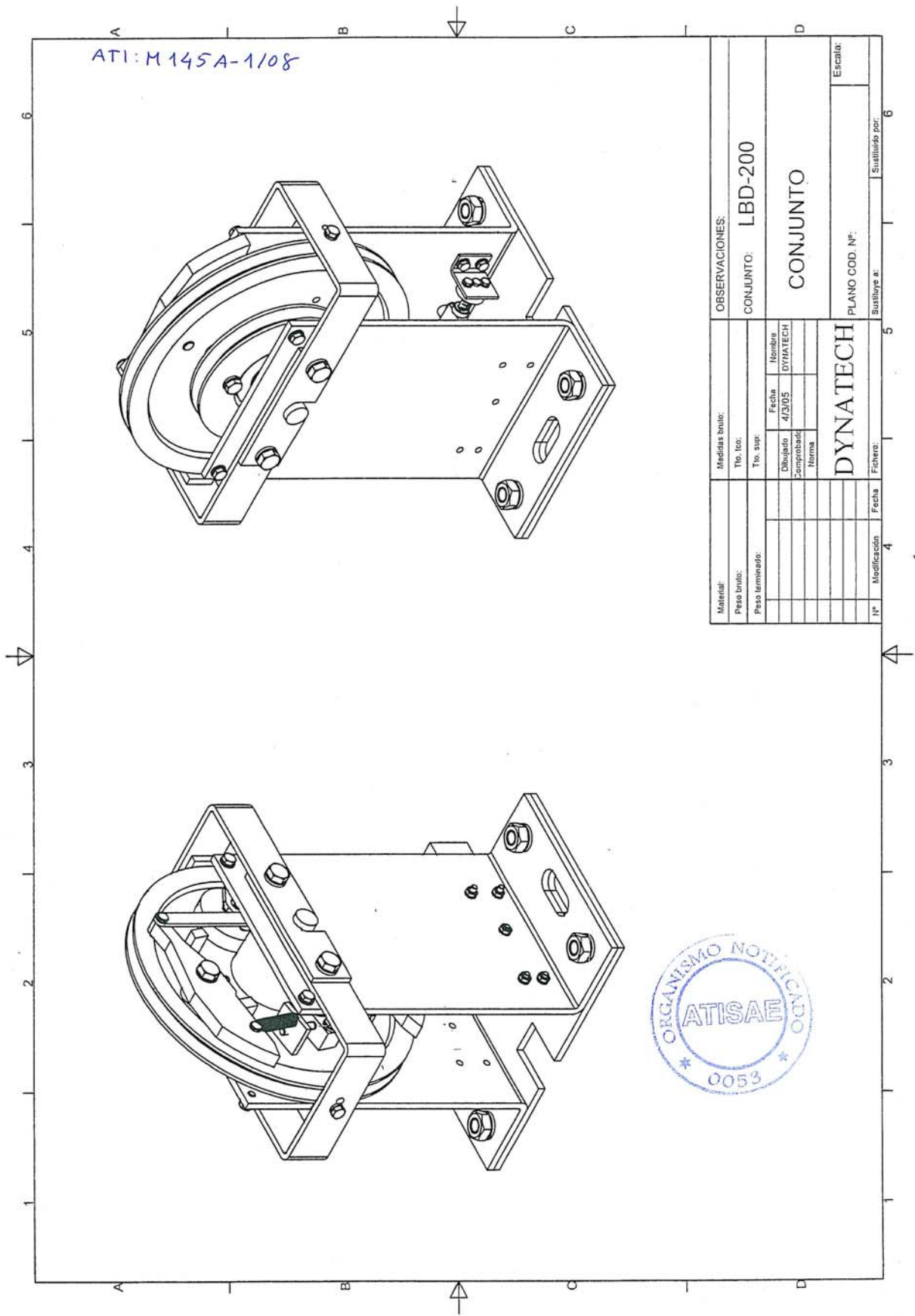
DESIGNACIÓN	FECHA	LEYENDA
Number	Date	Title
sn	4/3/05	LBD-200 CONJUNTO

**Este plano se adjunta con objeto de proporcionar identificación e información sobre el diseño básico del componente de seguridad.**  
This drawing is enclosed in order to provide identification and information about the basic design of the safety component.

2.10 **Este certificado perderá su validez debido a cambios de diseño, cambios en la legislación o en la normativa aplicable. El fabricante deberá poner en conocimiento de este Organismo Notificado cualquier cambio de diseño previsto.**  
This certificate would loose its validity because of design modifications, changes in the applicable law or standards. The manufacturer must communicate to this Notified Body any foreseeable change in the design.

- o -





Material:		Medidas bruto:		OBSERVACIONES:	
Peso bruto:	Tto. lco:	Tto. lco:	Tto. sup:	CONJUNTO: LBD-200	
Peso terminado:		Dibujado	Fecha	CONJUNTO	
		Comprobado	4/3/05	PLANO COD. N°:	
		Norma	DYNATECH	Escala:	
			DYNATECH	Sueltos por:	
N°	Modificación	Fecha	Fichero:	6	