PARACAÍDAS PROGRESIVO DYNATECH MODELOS

DYNATECH PROGRESSIVE SAFETY GEAR MODELS

PARACHUTE À PRISE AMORTIE DYNATECH MODELES

DYNATECH BREMSFANGVORRICHTUNG MODELLE

ASG-100-UD/ ASG-100

ASG-120-UD/ ASG-120

ASG-121-UD/ ASG-121

ASG-65-UD/ ASG-65

INSTRUCCIONES DE USO Y MANUTENCIÓN

INSTRUCTIONS FOR USE AND MAINTENANCE

INSTRUCTIONS D'USAGE ET D'ENTRETIEN

GEBRAUCHS- UND WARTUNGSANWEISUNGEN

REVISION	07	DATE	05/12/2013	PRODUCED BY / APPROVED BY	P.Hernández/O.Lacámara
SECTION	DESCRIPTION				EFFECTIVE DATE OF CHANGE
3.3	- ASG-65 UD/ASG-65 Standard P+Q Table has been modified				05/12/2013

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 / M154A-2 / 11**
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	**Paracaídas progresivo** / Progressive safety gear **Dispositivo de frenado** / Overspeed braking device
Modelo / Model	**Serie ASG-xxx UD / ASG-xxx**
Fabricante. Manufacturer	**DYNATECH. DYNAMICS AND TECHNOLOGY S.L.** **P.I. PINA DE EBRO, SECTOR C PARCELA 9** **50750 ZARAGOZA.**
Propietario del certificado. Certificate Owner	**DYNATECH. DYNAMICS AND TECHNOLOGY S.L.** **P.I. PINA DE EBRO, SECTOR C PARCELA 9** **50750 ZARAGOZA.**
Fecha de presentación. Date of submission	**14/02/2011** **15/06/2011**
Fecha del examen de tipo. Date of EC type examination.	**30/05/2011**
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: 1998+A3:2009** **EN 81-2: 1998+A3:2009**
Informe de ATISAE. / ATISAE report	**MD_DEU_112812 (28.07.2011)** **MD_EVN_110058 (30.05.2011)** **MD_DEU_063360 (07.11.2006)** **MD_DEU_060551 (23.03.2006)**
Plazo de validez / Expiry date	**Indefinido / (véase en el anexo técnico sección 2.10).** Indefinite / (Please refer to technical annex section 2.10)

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.

ORGANISMO NOTIFICADO ATISAE 0053

Tres Cantos, a 28 de JULIO de 2011

José Manuel Flórez González
Director Técnico Elevación

Este certificado consta de esta portada, un anexo técnico de 4 hojas y 2 planos / documentos. Su reproducción carece de validez si no se realiza totalmente.

This certificate consists of this main page, a technical annex with 4 pages and 2 drawings / documents. It shall be reproduced with all its pages to be considered valid.

ATISAE, Organismo de Control Autorizado acreditado por ENAC con nº OC-I/025

Procedimiento EC.12.04 Anexo 4 Rev 0 Septiembre 2005

ATISAE

ANEXO TECNICO AL CERTIFICADO CE DE EXAMEN DE TIPO ATI/LD-VA/M154A-2/11

TECHNICAL ANNEX TO THE EC TYPE EXAMINATION CERTIFICATE (ABOVE)

1. Campo de aplicación:
Scope.

1.1. Paracaídas de accionamiento progresivo. (sentido descendente)
Progressive safety gear (downwards)

El siguiente cuadro resume las características de aplicación del paracaídas.
The following table summarises the scope for the safety gear.

TIPO TYPE	Tipo guía Guide rail	Masa admisible (kg) Permisible mass	A.F. (mm)	Vd (m/s)	Lubricación Oiling
ASG-100 / ASG-100 UD	A	515 ÷ 2.139	25	2.33	(1)
ASG- 65 / ASG- 65 UD	T65/A	782 ÷ 2.214	20	2.33	(1)
ASG-120 / ASG-120 UD	B	693 ÷ 4.233	25	2.33	(1)
ASG-121 / ASG-121 UD	B	598 ÷ 4.019	25	2.33	(2)

Clave de la tabla / Key:
- **Tipo de guía: A (estirada) / B (mecanizada).** / guide rail surface condition: A (drawn) / B (machined).
- **A.F. Anchura mínima de frenado.** / minimum gripping width.
- **Vd velocidad de disparo máximo.** / maximum tripping speed.
- **Lubricación** /oiling condition.

1.2. Dispositivo de frenado. (sentido ascendente)
Braking device (upwards)

El siguiente cuadro resume las características de aplicación como dispositivo de frenado en sentido ascendente.
The following table summarises the scope as Upwards Braking device.

TIPO TYPE	Tipo guía Guide rail	Fuerza de frenado (N) Braking force	A.F. (mm)	Vd (m/s)	Lubricación Oiling
ASG-100 UD	A	2.881 ÷ 19.572	25	2.33	(1)
ASG- 65 UD	T65/A	8.394 ÷ 16.242	20	2.33	(1)
ASG-120 UD	B	7.228 ÷ 38.486	25	2.33	(1)
ASG-121 UD	B	9.502 ÷ 36.689	25	2.33	(2)

Clave de la tabla / Key: **(véase sección 1.1.)** / (please refer to section 1.1)

1.3. Tipo de reglaje:
Adjustment.

Reglaje continuo.
Continuous adjustment

1.4 Guías
Guide rails.

Espesores de guía: **7 ÷ 16 mm**
Guide rails blade widths.

Estado lubricación: **(1) DROSERA MS 150 (ISO VG 150)[1]**
Oiling condition. **(2) SECO** / DRY

Estado superficie de guía [2]: A/B
Surface condition of the guide rails.

Anchura mínima de frenado: **25 mm[3]**
Minimum gripping width

(1) o aceite de características similares. / or oil with similar characteristics.
(2) véase clave en sección 1.1. / please refer to key on section 1.1.
(3) 20 mm para ASG-65 / ASG-65-UD / 20 mm for ASG-65 / ASG-65-UD

ORGANISMO NOTIFICADO ATISAE 0053

2. Notas.
Remarks.

2.1. La ampliación del alcance establecido por este certificado consiste en los siguientes ítems:
The scope extension is summarised in the following items:

a) **paracaídas utilizado como elemento de parada de un sistema de protección contra movimiento incontrolado de cabina (según 9.11 de EN 81-1:1998+A3:2009); véase parte 3 y aviso legal.**
safety gear used as stopping element in a protection system against uncontrolled car movement (according 9.11 of EN 81-1:1998+A3:2009): see part 3 and disclaimer.

b) **Ampliación a modelo ASG-65 / ASG-65-UD con guía T65/A.**
Extension to model ASG-65 / ASG-65-UD with T65/A guide rail type.

2.2. **La masa total declarada puede diferir de la masa total admisible en ± 7,5 %.**
The mass stated may differ from the permissible mass by 7.5 %.

2.3. **La certificación afecta a los elementos de frenado y no incluye a los elementos de conexión, palanquería, ni a la actuación del dispositivo eléctrico.**
The certificate affects to the gripping elements and does not include either the connection elements, safety gear rods, or the actuation of the electric safety device.

2.4. **La utilización del dispositivo se realizará según las condiciones dadas en la norma EN 81-1:1998+A3:2009 (9.8) y (9.10). Si es utilizado en ascensores hidráulicos o en contrapeso, solo actuando en bajada Se anulará de forma conveniente la posibilidad de actuación en subida.**
This device must be used according the conditions given in EN 81-1:1998+A3:2009 (9.8) and (9.10). When used in hydraulic lifts or counterweights, only downwards performance allowed. Upwards gripping must be conveniently avoided.

2.5. **Los valores de masa admisible (1.1.) y fuerza de frenado (1.2) actuando el dispositivo como medio de frenado en ambas direcciones, están relacionados de forma fija debido a que para ambos casos se utiliza la misma regulación en un único elemento elástico y no pueden ajustarse de forma separada.**
The values of permissible mass (1.1.) and Braking force (1.2.) acting as braking mean in both directions, are related, because of the device uses the same adjustment value for both in one single elastic element so they cannot be adjusted separately.

2.6. **Las fuerzas de frenado admisibles del dispositivo de frenado en sentido ascendente deberán utilizarse en la instalación del ascensor de modo que no se produzca una deceleración superior a $1g_n$ con la cabina vacía en movimiento ascendente, responsabilidad que recae en el instalador del ascensor. Además la deceleración debe ser suficiente para que en el peor de los casos el contrapeso pueda llegar a sus amortiguadores a velocidad no superior a la nominal[1)].**
The permissible braking force of the braking device (upwards) shall be used in a particular lift installation in such a way that the top deceleration does not achieve 1 g_n with empty car moving in upward direction. The responsibility to fulfil this premise is under the installer of the lift. Furthermore the deceleration must be enough to achieve the counterweight hits its buffers at a speed not higher than the rated speed[1)].

1) **Si el dispositivo es utilizado como elemento de parada para un sistema contra movimiento incontrolado de cabina (UCM) según 9.11 la deceleración debe ser capaz de detener la cabina (véase parte 3)**
When this device is used as stopping element in a protection system against unintended car movement (UCM) according 9.11, the deceleration shall be capable to stop the car (please refer to part 3)

2.7. **El espesor de la guía compatible con una unidad determinada del dispositivo debe indicarse sobre el mismo, además de la masa admisible para la que se encuentra regulado.**
The guide rail thickness compatible with a specific unit of the device shall be marked on it, as well as the permissible mass the safety gear has been adjusted for.

2.8. **Laboratorio de ensayo.**
Test laboratory

AIMME – Instituto Tecnológico Metalmecánico
Parque Tecnológico, Avda. Leonardo Da Vinci
46980 Paterna (VALENCIA)

Informe de ensayo
Test report

S06-00029 (08.03.2006)
S06-00030 (08.03.2006)
S06-01220 (03.11.2006)
S06-01221 (03.11.2006)
S06-01219 (03.11.2006)
S06-01564 (03.11.2006)
S11-00956 (19.07.2011)
S11-01025 (19.07.2011)

ORGANISMO NOTIFICADO ATISAE 0053

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

DESIGNACIÓN Number	FECHA Date	TITULO Title
s/n	17.03.2006	CONJUNTO ASG 100 UD / ASG 120 UD / ASG 121 UD
s/n	s/f	CONJUNTO ASG 100 / ASG 120 / ASG 121

Estos planos se adjuntan con objeto de proporcionar identificación e información sobre el diseño básico del componente de seguridad.
These drawings are 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 envisaged change of design.

- o -

3. Notas sobre la utilización del paracaídas como elemento de parada para UCM:

3.1. Este componente puede formar parte de un sistema UCM (movimiento incontrolado de cabina) como dispositivo de frenado (elemento de parada). El diseñador del sistema tendrá en cuenta las siguientes notas en lo relativo a la parte del elemento de parada cuando utilice este componente.

3.2. La capacitación como dispositivo de frenado en la aplicación dada por el art. 9.11 de EN 81-1:1998+A3: 2009, no excluye el examen de tipo o la evaluación correspondiente dentro del alcance de la norma del sistema completo UCM diseñado con el propósito de dar cumplimiento a los requisitos indicados en el artículo 9.11 por medio de los ensayos y pruebas necesarias.

3.3. Se ha reconocido el interés de participar al diseñador del conjunto UCM de las características e interfaces de sub sistemas del UCM mostrando sus características. Este examen se realiza en este sentido [1)].

3.4. La capacidad de frenado y parada del dispositivo ha sido comprobado a distintas velocidades bajas permitiendo asegurar la obtención de una fuerza de frenado que permita la detención de la cabina, dentro de los márgenes de utilización establecidos por el fabricante en el uso del dispositivo con el alcance dado por el art. 9.8 y 9.10. No obstante no es posible facilitar una única distancia de frenado debido a que esta es función de las características del sistema suspendido (cabina, contrapeso, etc.) y de la velocidad inicial de frenado, valores que el diseñador del sistema UCM deberá averiguar para el rango para el que sistema esté pensado, por lo que lógicamente debe considerarse excluido del alcance de esta evaluación.

3.5. Los valores de fuerza de frenado (BF) aplicables en el sistema UCM deben ser proporcionados por el fabricante del dispositivo, asumiendo como valor nominal los valores establecidos en la aplicación del art. 9.8. (paracaídas en bajada) y 9.10 (dispositivo de frenado contra sobrevelocidad en subida). El fabricante deberá comunicar al diseñador del sistema estos valores de fuerza de frenado de forma adecuada, bien marcándolos en el propio dispositivo o bien dando la relación adecuada de BF en función del P+Q de la instalación, para lo cual puede establecer rango de aplicación por punto de reglaje, en su manual de instrucciones. Con carácter general la fuerza de frenado en bajada es la establecida por F.3.3.3.1.

3.6. Fuerzas de frenado (BF) en cálculo de prediseño. Debido a la tendencia a mostrar desviaciones de los valores de fuerza de frenado que pueden aparecen en un caso de frenado es muy aconsejable utilizar cuando se diseña el UCM, incrementos (con signo) a los valores de fuerza de frenado nominales comunicados por el fabricante:

-10 % en el cálculo de la deceleración media para obtener la distancia de frenado de manera que la distancias de parada se encuentre entre las dadas en el art. 9.11.5;

+20% para el cálculo de la deceleración máxima exigida en el artículo 9.11.6.

3.7. El dispositivo de frenado es un elemento de parada del tipo indicado en 9.11.4.a); La actuación del paracaídas se hace de la forma habitual mediante un limitador de velocidad (9.9.) bloqueado convenientemente y transmite la fuerza a través de un cable, u otro medio equivalente, a la palanquería del paracaídas. Los valores establecidos por 9.9.4 de fuerza en la actuación deberán ser respetados. El retardo proporcionado por el propio dispositivo debería ser considerado junto con el resto de los componentes de accionamiento cuando se diseñe el sistema.

3.8. La evaluación está referida al uso del paracaídas en ascensor electromecánico suspendido por cables de acero trenzado (u otros medios de suspensión equivalente). Sin embargo con las debidas restricciones (véase 2.4.) también puede ser utilizado en contrapeso (según 9.11.4.b)) o en ascensor hidráulico (9.13.4 primer guión de EN 81-2:1998+A3:2009).

3.9. Aviso legal. Se incluye la capacitación del dispositivo paracaídas como elemento de parada de un sistema UCM (9.11 EN 81-1:1998+A3:2009) en este certificado de examen CE de tipo, pero la utilización como tal del dispositivo no está indicada como componente de seguridad en el anexo IV de la Directiva 95/16/CE [1)], por consiguiente no será considerado examinado CE de tipo, sino examinado de tipo.

1) Referencia CEN TC 10 Doc N1017 Oct. 2010.

[UCM BD NOTES – ESP]

ORGANISMO NOTIFICADO ATISAE 0053

3. **Notes on using the safety gear as UCM stopping element:**

3.1. This component may be part of an UCM (Uncontrolled car movement) protection system as braking device (stopping element). The system designer shall take into account the following notes on respect to the stopping element when providing this component.

3.2. The availability as stopping element in the use given by clause 9.11 of EN 81-1:1998+A3:2009, does not exclude the type examination or equivalent assessment in the scope of the standard to the complete UCM system, designed with the aim to comply with the requirements set forth on clause 9.11 by means of the necessary tests and checking.

3.3. It has been recognised as an interesting fact to provide to the UCM assembly designer the characteristics and interfaces of UCM sub-systems, providing their features. This examination is done in this sense[1)].

3.4. The device braking and stopping ability has been tested at different low speeds so it is assured a braking force (BF) that allows the stopping of the car in the ranges used by the manufacturer when using the device with the scope given by clauses 9.8 and 9.10. However it is not possible to provide a single braking distance because the braking phase distance is a function of the hoisting layout (car, counterweight, etc) and the speed at braking, which shall be find out by the UCM system designer for the range the system is intended to, so it have to be obviously excluded from the scope of this assessment.

3.5. Braking force (BF) data that shall be used in the UCM system shall be provided by the manufacturer of the device, assuming the rated BF set forth using the device as safety gear downwards (clause 9.8) and braking device against upwards overspeed (clause 9.10). The manufacturer shall provide to the system designer this data in a proper way, either marking them in the own device either giving the rate of BF as function of P+Q for a given installation. The scope may be determined by a range per adjustment point on its instruction manual. In general downwards braking force is that given by the formulae in clause F.3.3.3.1.

3.6. Braking forces (BF) for draft design calculus. Due to the braking force deviation tendency that may occur for a single braking event it is highly encouraged to use when designing the UCM system increased values (with sign) from the rated braking force communicated by the manufacturer:

-10 % when computing the mean deceleration in order to obtain the braking distance so the stopping distance may lie within the distances given on clause 9.11.5.

+20 % when computing maximum deceleration as demands clause 9.11.6

3.7. The braking device is a stopping element of the type shown in 9.11.4.a); the tripping of the safety gear is performed as usual by means of a speed governor (9.9.) which is properly tripped and transmitting the tripping force by a rope, or other equivalent mean, to the assembly connections to the safety gear. The tripping force values set forth on 9.9.4 shall be respected. The delay provided by the own device should be considered in connection with the rest of the tripping components when designing the system.

3.8. The assessment is referred to use the safety gear in the car of an electromechanical lift hoisted by steel wire ropes (or other equivalent hoisting elements). Nevertheless with the suitable constraints (see 2.4) it can also be used in the counterweight (clause 9.11.4.b)) or a hydraulic lift (9.13.4 of EN 81-2:1998+A3:2009, first indent)

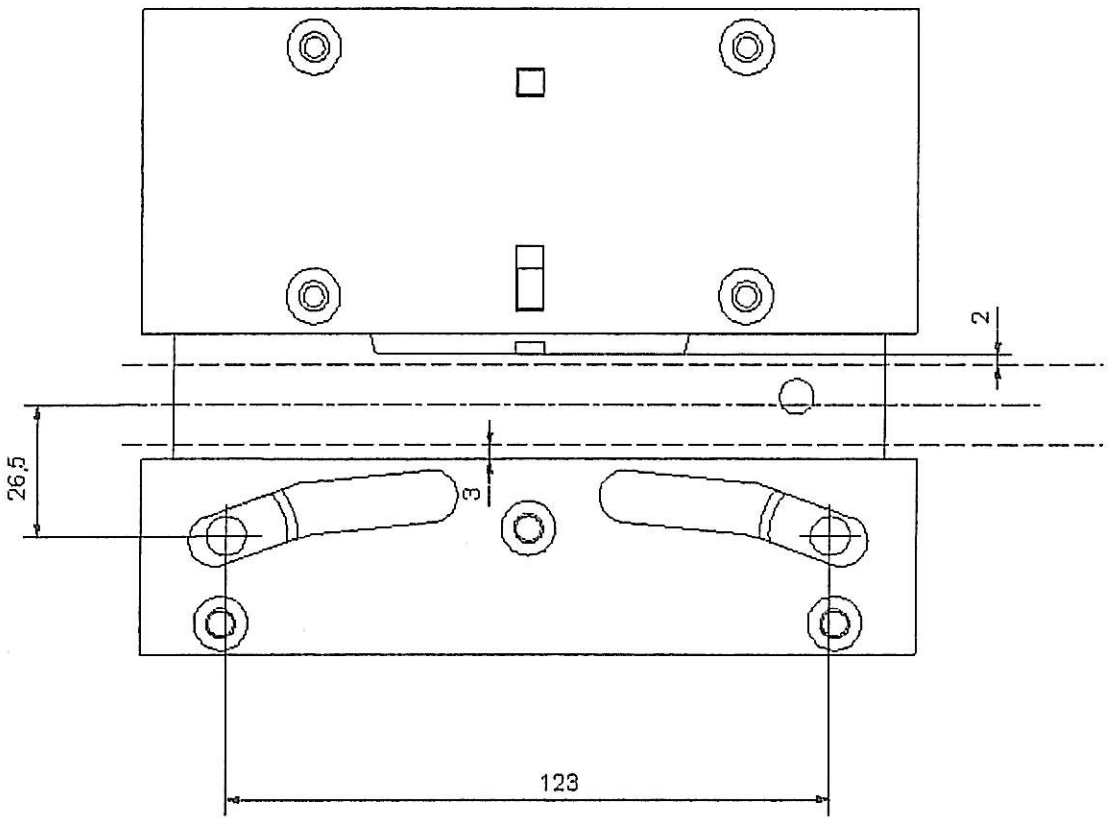
3.9. Disclaimer. The validity of the safety gear as stopping element for a UCM system (9.11 EN 81-1:1998+A3:2009) is included in this EC type examination certificate, but the performance as such device is not listed as safety component in annex IV of 95/16/EC Directive [1)], therefore this part shall not be considered EC type examined but type examined.

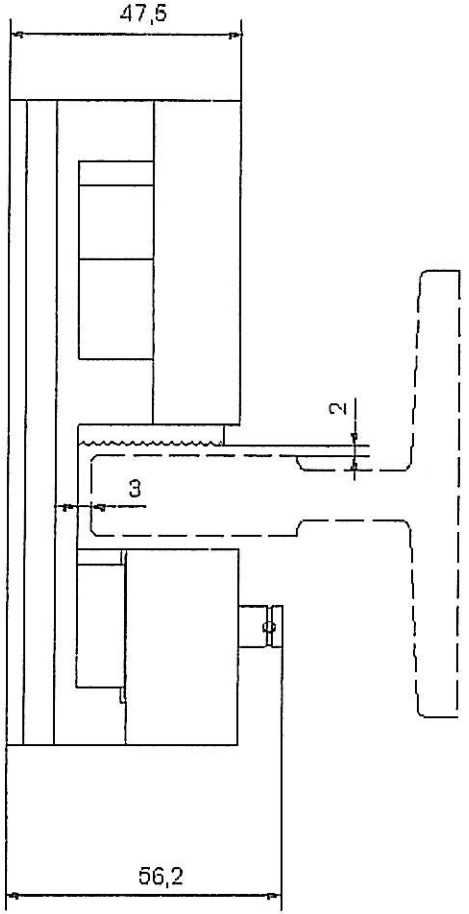
1) Reference: CEN TC 10 Doc N1017 Oct. 2010.

ORGANISMO NOTIFICADO ATISAE 0053

[UCM BD NOTES – ENG]

ATI: M154A-2/11

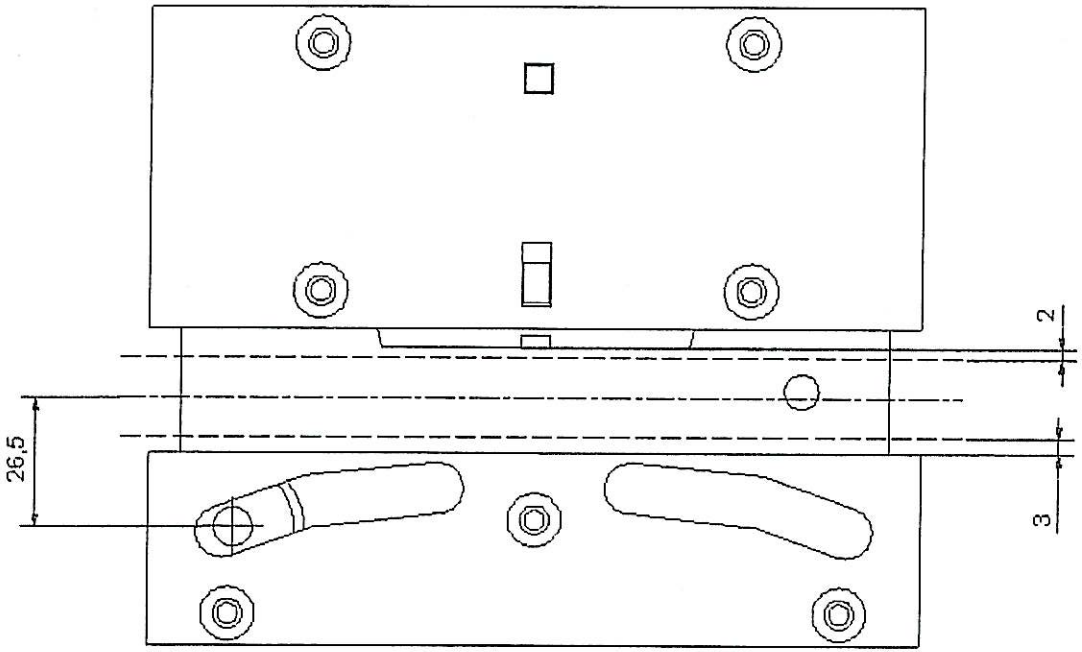


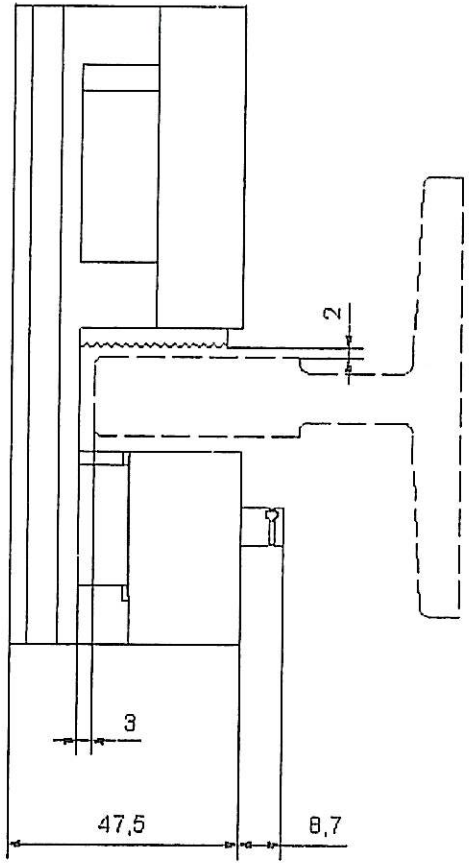


ORGANISMO NOTIFICADO
ATISAE
0053

CANTIDAD POR CONJUNTO:			DYNATECH
Material:			
Peso teórico:			CONJUNTO: ASG-100UD / ASG-120UD / ASG-121UD
Tto. térmico:			
Tto. sup.:			
	Fecha	Nombre	Vista de conjunto
Dibujado	17/03/06		
Norma			
OBSERVACIONES: MEDIDAS SIN TOLERANCIA SEGÚN DIN-7168 GM	PLANO COD. Nº:		Escala:
Fichero:	Sustituye a:	Sustituido por:	

ATI : M154A-2/11





ORGANISMO NOTIFICADO
ATISAE
0053

CANTIDAD POR CONJUNTO:	DYNATECH	
Material:		
Peso terminado:		
Tto. tco:	CONJUNTO: ASG-100/ ASG-120/ ASG-121	
Tto. sup:		
	Fecha	Nombre
Dibujado		
Norma	Vista de conjunto	
OBSERVACIONES: MEDIDAS SIN TOLERANCIA SEGÚN DIN-7168 GM	PLANO COD. Nº:	Escala:
Fichero:	Sustituye a:	Sustituido por:

ATISAE

DYNATECH, S.L.
Att.: Sra. Dña. Olga Lacamara (I+D+i).
Pol. Ind. Pina de Ebro, sector C, P.9
50750 – PINA DE EBRO (ZARAGOZA)

Date: 2011.09.08

Ref: MD_ELV_112812.000

Issue: USING OF SAFETY GEARS IN STOCK AS UCM STOPPING ELEMENT IN UCM.

Dear Madam:

Regarding your request made by letters dated July 4th 2011 and September 8th 2011, about the possibility to use the following listed safety gears:

CERT No	DATE	DEVICE	TYPE
ATI/LD-VA/M062/99	24.06.1999	PROGRESSIVE SAFETY GEAR	PR-2500
ATI/LD-VA/M065A-2/00	24.07.2000	PROGRESSIVE SAFETY GEAR	PR-2500 UD
ATI/LD-VA/M105/00	28.07.2000	PROGRESSIVE SAFETY GEAR	PR-2000 UD
ATI/LD-VA/M120/01	14.12.2001	PROGRESSIVE SAFETY GEAR	PQ-4000 UD
ATI/LD-VA/M126/02	12.06.2002	PROGRESSIVE SAFETY GEAR	PQ-3400 UD
ATI/LD-VA/M154A-1/06	11.12.2006	PROGRESSIVE SAFETY GEAR	ASG-1XX-(UD)

in order to be used as stopping elements according clause 9.11 of EN 81-1:1998+A3:2009, being at present in stock and marked with the former certificate reference to that issued last May and July; herewith we inform you that in fact there are not technical reasons to prevent their use as stopping element as there has been no design modifications altering their characteristics

Should nevertheless disclose to your customers who intend to use these devices within such scope, the conditions set forth in part 3 of the certificate extensions with reference:

CERT No	DATE	DEVICE	TYPE
ATI/LD-VA/M062A-1/11	30.05.2011	PROGRESSIVE SAFETY GEAR	PR-2500
ATI/LD-VA/M065A-3/11	30.05.2011	PROGRESSIVE SAFETY GEAR	PR-2500 UD
ATI/LD-VA/M105A-1/11	30.05.2011	PROGRESSIVE SAFETY GEAR	PR-2000 UD
ATI/LD-VA/M120A-1/11	30.05.2011	PROGRESSIVE SAFETY GEAR	PQ-4000 UD
ATI/LD-VA/M126A-1/11	30.05.2011	PROGRESSIVE SAFETY GEAR	PQ-3400 UD
ATI/LD-VA/M154A-2/11	28.07.2006	PROGRESSIVE SAFETY GEAR	ASG-XXX-(UD)

This document supersedes the former dated 2011.04.04 and with reference MD_ELV_111243.000

Sincerely yours.

ORGANISMO NOTIFICADO ATISAE 0055

José Manuel Flórez González.
Elevation Technical Director

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28760 Tres Cantos (Madrid)
Tel: 918 061 730
Fax: 918 040 157
e-mail: madrid@atisae.com
www.atisae.com

INSTRUCTIONS FOR USE AND MAINTENANCE

1 GENERAL INDICATIONS.

Each supplied set of safety gears has been regulated at the factory according to the required use characteristics: Total weight (P+Q) and the guide rail thickness. These characteristics, the EC type examination number and the serial number are shown on the protection plates attached to the safety gear boxes.

***It is absolutely forbidden**:*

a) To combine and install safety gear boxes with different serial numbers.

b) To use a set of safety gears for installations with different characteristics to the ones shown on the protection plates of their safety gear sets.

c) To intervene on any safety gear component.

DYNATECH DYNAMICS & TECHNOLOGY, S.L. will not be responsible of any damage caused by not observing any point of these general indications.

2 SAFETY GEAR INSTALLATION.

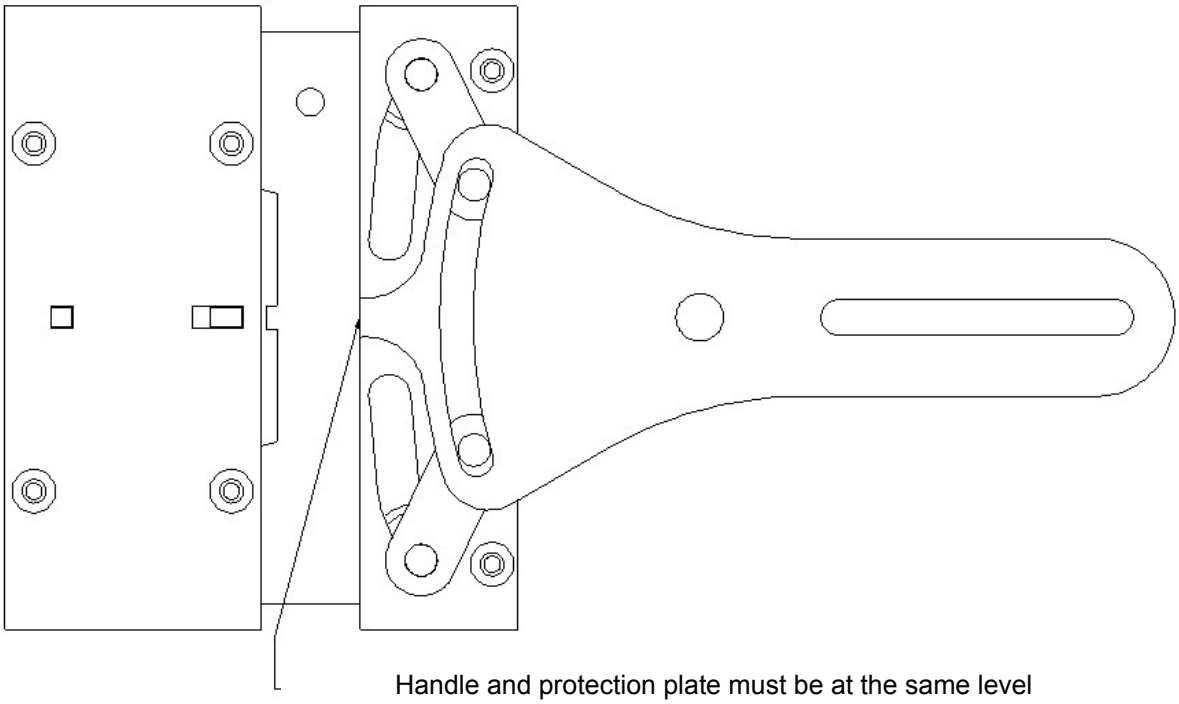
The Standard requires that the safety gear installation must be done including a security contact of AC - 15 or DC - 13 type, according to EN 60947 - 5 - 1.

2.1 TO THE SLING MAKER:

To fix this safety gear on the sling is necessary a plate of 6 mm thickness. This plate is supplied with the DYNATECH T-25 extensible driving bar.

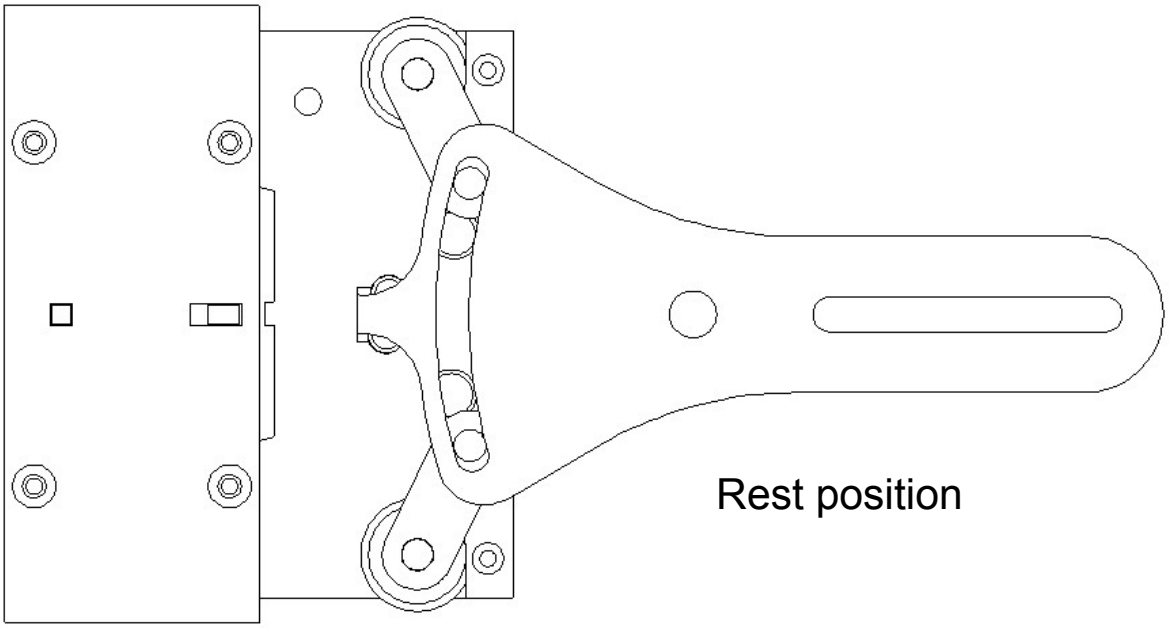
ASG-100-UD/ ASG-120-UD/ ASG-121-UD/ ASG-65-UD

If the DYNATECH T-25 extensible driving bar is used, the end of the handle and the protection plate of the rollers must be at the same level in the rest position (see the instructions of use of the T-25 extensible driving bar).

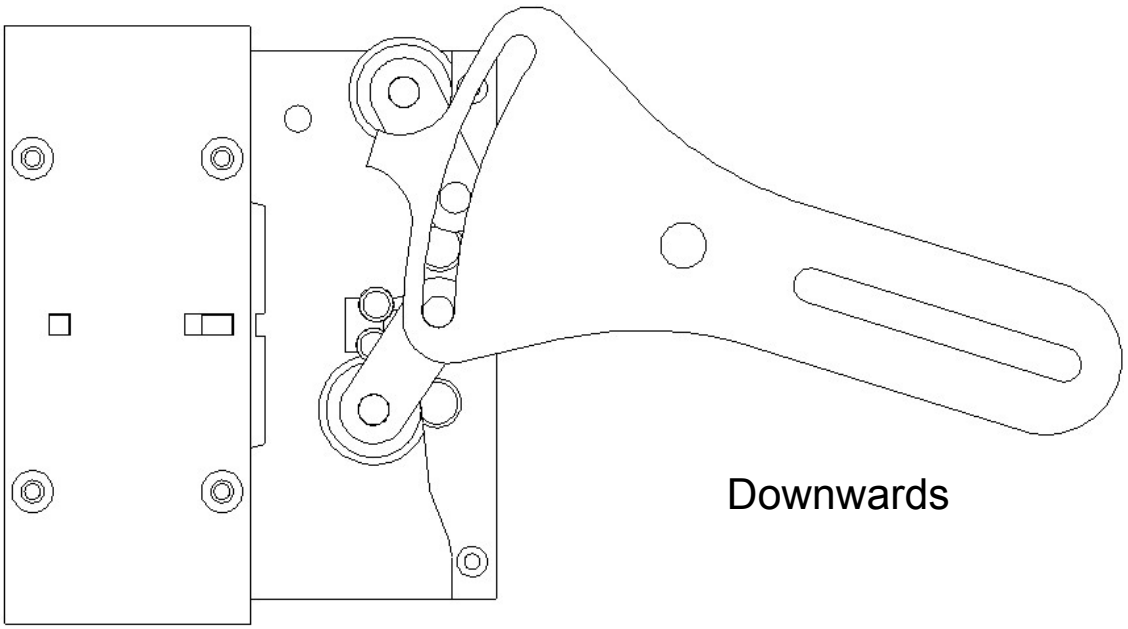


Handle and protection plate must be at the same level

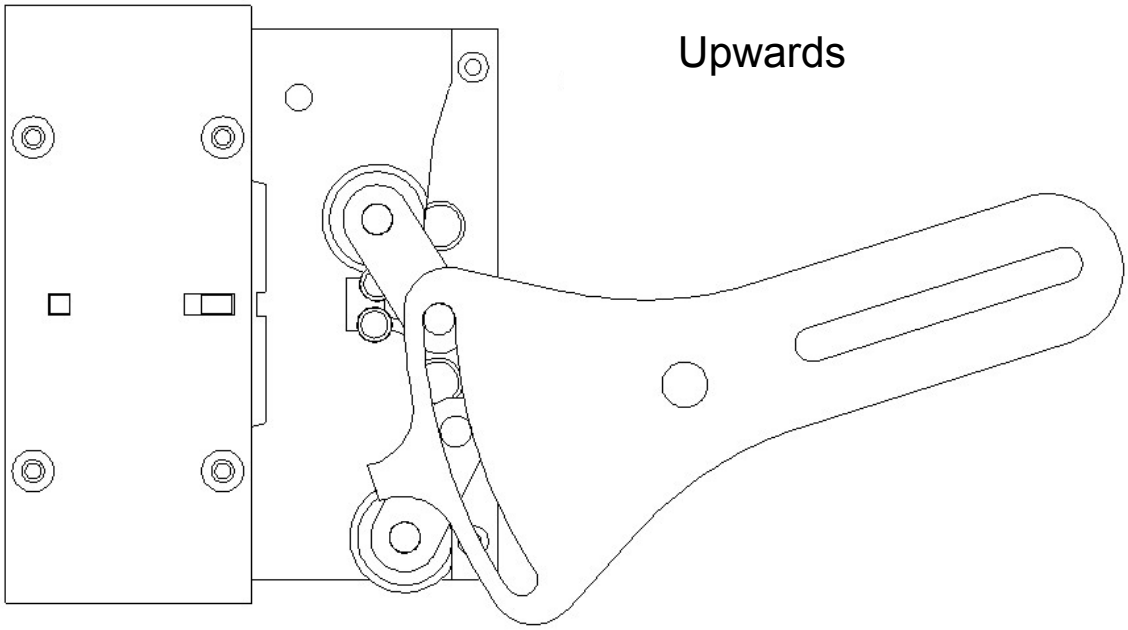
Once the safety gear is well placed and its rollers are attached to the driving bars, it should be checked that both rollers act synchronized in accordance to the driving bar commands. The sling maker is responsible for the proper location of the safety gear on the sling, as well as the adjustment checking and synchronized working of the driving bar. The pin of the roller, in its rest position, must be at the upper and lower position of the protection plate.



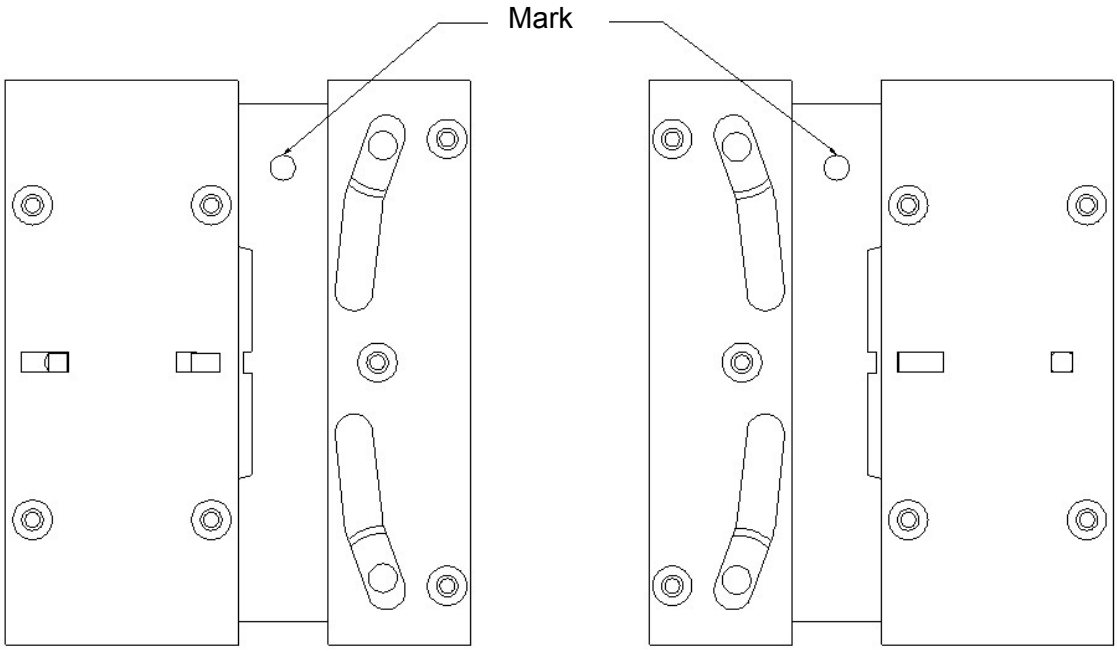
Rest position



Downwards

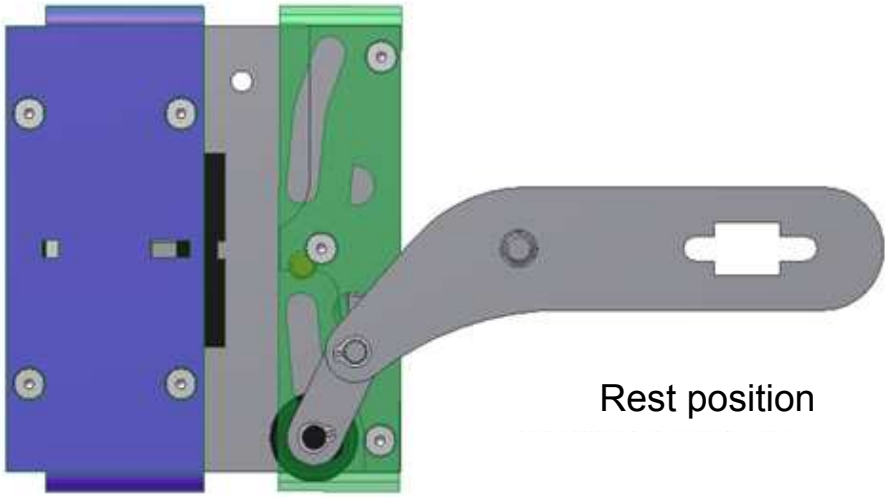


Remark: A circular mark in the place where the guide rails inside the safety gear are situated, will indicate the upper part of it. It is very important to make sure that the safety gears are always situated in the correct position, with the circular mark in the upper part.

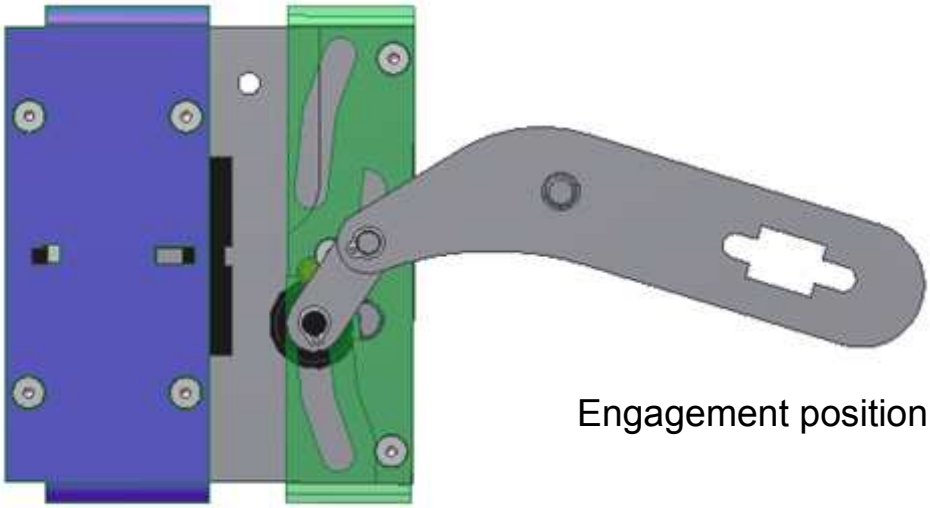


ASG-100/ ASG-120/ ASG- 121/ ASG-65

If the Dynatech extensible driving bar is used, at the rest position, the position of the handle will be like it is shown in the following figure.



At the engagement situation, the position of the handle will be like it is shown in the following figure:



Once the safety gear is well placed and the rollers of both safety gears are attached to the driving bars, it should be checked that both rollers act synchronized in accordance to the

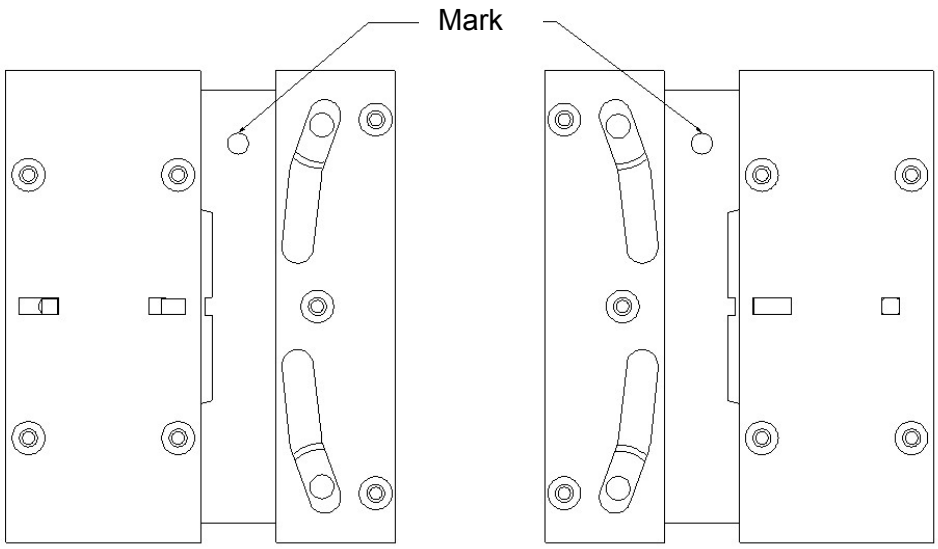
driving bar commands. The sling maker is responsible for the proper location of the safety gear on the sling, as well as the adjustment checking and synchronized working of the driving bar. The pin of the roller, in its rest position, must be at the lower position of the protection plate.

2.2 TO THE INSTALLER:

During the installation at the well, first of all, the guide rails must be introduced in the groves of the safety gear housings. Then the position of the guide rail in the housing will be adjusted as follows: The side of the guide rail, 2 mm from the brake block; the guide head, 3 mm from the bottom of the groove (see drawings).

To make easy the adjustment at work of the distances between the faces of the guide rails and the safety gear parts, which are opposite the guide rail, it will be possible to use plates which will allow the emplacement of the guide rail in its correct position in the grooves of the safety gear. The plates must be removed once the adjustment operation has finished.

Remark The installer must be sure that the sling maker has placed the safety gears with the circular mark in the upper position.



3 USE AND MAINTENANCE.

The non-fulfilment of the following prescriptions may produce deceleration values and breaking distances which could not be in accordance with the Standard.

3.1 GUIDE RAILS:

a) The used guide rails must be cold-drawn oiled for ASG-100, ASG-100 UD, ASG-65 and ASG-65 UD. The used guide rails must be machined oiled for ASG-120 and ASG-120 UD. The used guide rails must be machined dry for ASG-121 and ASG-121 UD. The admissible tolerances for the guide rails thickness must be between –0 and +0.10 mm.

MODEL	**ASG-100/ASG-100 UD**	**ASG-120/ASG-120 UD**	**ASG-121/ASG-121 UD**	**ASG-65/ASG-65 UD**
GUIDE RAIL	COLD-DRAWN	MACHINED	MACHINED	COLD-DRAWN
LUBRICATIÓN	OILED	OILED	DRY	OILED

b) The safety gear can be used with this type of guide rail for a rated speed of not more than 2 m/s, and a maximum governor tripping speed of 2,33 m/s.

c) The gripping width must be 25 mm or greater. For ASG-65 and ASG-65 UD, the gripping width is 20 mm.

d) If after the safety gear performance, scratched guide zones placed within a distance of less than 1 meter between them are found, it is recommended to replace the affected guide rail parts.

e) The guide rails must be lubricated with ISO VG 150 lubricant oil.

f) For guide rails widths: 7-16 mm.

3.2 SPEED GOVERNOR:

The necessary load that activates the safety gear is 150 N.

The speed governor rope tension must be enough to warrant, during the governor performance, a traction of at least 300 N at the connection point of the safety gear driving bar.

3.3 RANGE OF USE:

The standard P+Q table is shown bellow. The nominal values are in the central column of the table.

ASG-100 UD/ ASG-100

P+Q Minimum (Kg.)	*P+Q Nominal (Kg.)*	*P+Q Maximum (Kg.)*
477	**515**	553
542	**585**	628
605	**653**	701
691	**747**	803
787	**850**	913
897	**969**	1041
975	**1053**	1131
1090	**1178**	1266
1202	**1299**	1396
1266	**1368**	1470
1408	**1522**	1636
1540	**1664**	1788
1682	**1818**	1954
1849	**1998**	2147
1979	**2139**	2299

ASG-65 UD/ ASG-65

P+Q Minimum (Kg.)	*P+Q Nominal (Kg.)*	*P+Q Maximum (Kg.)*
731	**790**	849
835	**902**	969
923	**997**	1071
1031	**1114**	1197
1137	**1229**	1321
1227	**1326**	1425
1341	**1449**	1557
1432	**1548**	1664
1559	**1685**	1811
1776	**1919**	2062
1894	**2047**	2200
2048	**2214**	2380

ASG-120 UD/ ASG-120

P+Q Minimum (Kg.)	*P+Q Nominal (Kg.)*	*P+Q Maximum (Kg.)*
642	**693**	744
723	**781**	839
803	**868**	933
874	**944**	1014
981	**1060**	1139
1107	**1196**	1285
1197	**1293**	1389
1332	**1440**	1548
1542	**1667**	1792
1720	**1859**	1998
1952	**2110**	2268
2253	**2435**	2617
2524	**2728**	2932
2799	**3025**	3251
3025	**3270**	3515
3417	**3693**	3969
3916	**4233**	4550

ASG-121 UD/ ASG-121

P+Q Minimum (Kg.)	*P+Q Nominal (Kg.)*	*P+Q Maximum (Kg.)*
554	**598**	642
631	**682**	733
705	**762**	819
770	**832**	894
869	**939**	1009
985	**1064**	1143
1066	**1152**	1238
1192	**1288**	1384
1379	**1490**	1601
1597	**1726**	1855
1838	**1987**	2136
2134	**2306**	2478
2406	**2601**	2796
2639	**2852**	3065
2858	**3089**	3320
3236	**3498**	3760
3718	**4019**	4320

3.4 FRICTION PARTS REPLACEMENT:

The friction parts, brake shoes and rollers, can support three free fall upwards performances and three free fall downwards performances, as it is exposed in the Standard EC type-examination criteria.

Anyway, after a real free fall performance of the safety gear, it is recommended to replace the friction parts. In that case, you can contact Dynatech requesting the manual exchange of friction parts or your nearest distributor, in order to know the procedure to be followed.

It is not necessary to replace the braking parts caused by normal inspection tests, unless the braking distance surpass the double of the one obtained at the very first test of the installation.

In order to have a better control, the maintenance personnel must have a register of the safety gear performances, in which the serial number and the number of performances will be annotated.

3.5 MAINTENANCE:

3.5.1 CLEANING:

It is very important to make sure that there is not any alien element inside the safety gear housing, in order to guarantee the proper work of the moving parts.

3.5.2 CORROSION:

Dynatech safety gears have anticorrosive protection in all cases. However, a periodic checking must be done to make sure that all the moving parts of the safety gear still in perfect work conditions. A wedging test is not necessary, but a simple check of its free movements and a visual checking of the surfaces general condition.

These verifications must be done more often when the installation is placed inside a especially corrosive atmosphere.

4 ON-SITE ADJUSTMENT

On-site adjustment is an option for the ASG series safety gear models. It is used where the distance between the safety gear and the guide rail must be adjusted during installation. It is not factory-fitted and the components can be found in the small bag of nuts and bolts supplied with the safety gear.

This system consists of one DIN 933 M8x35 bolt (1) that adjusts the distance of the block as it is loosened or tightened and one DIN 463 M8 safety washer (2) that prevents the bolt from becoming loose once adjusted. The shoe will move towards the guide rail on tightening the bolt and will move away from the guide rail on loosening the bolt.

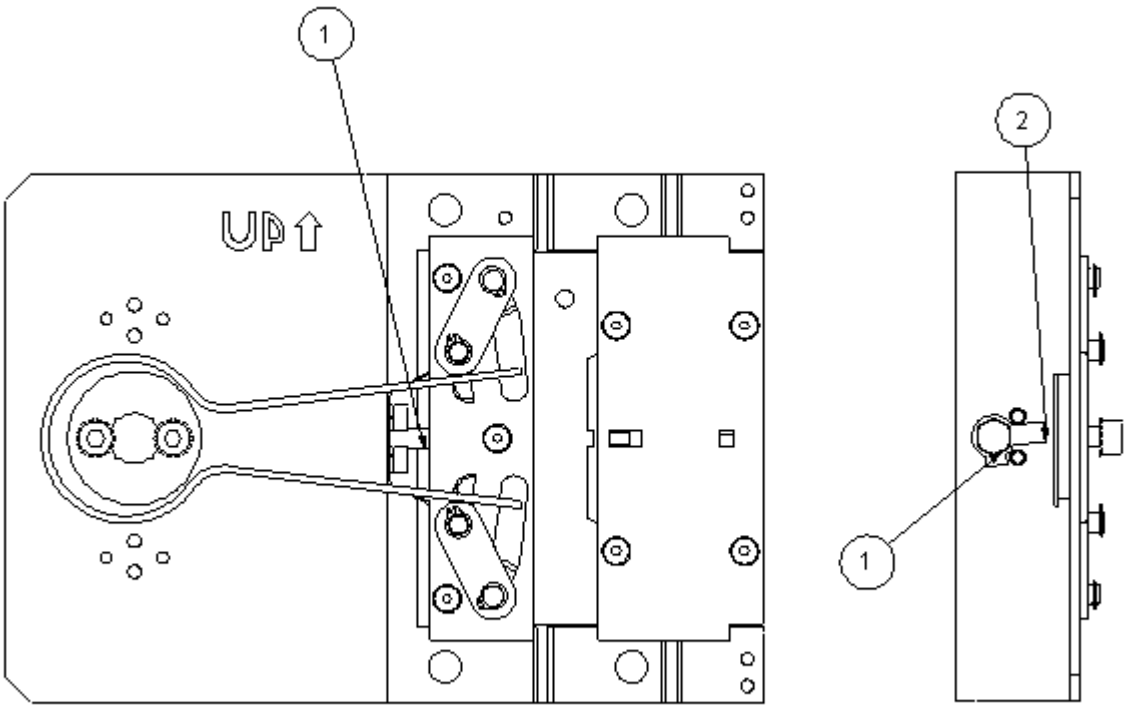


Figure 1. Layout of the on-site adjustment system inside the safety gear

4.1 Fitting

The system is extremely easy to fit, although minimum precautions are necessary. First check that the side rail where the ASG safety gear with the on-site adjustment system is fitted allows for the bolt to move freely, as it moves when the safety gear operates. Where necessary, modify the side rail to permit this movement.

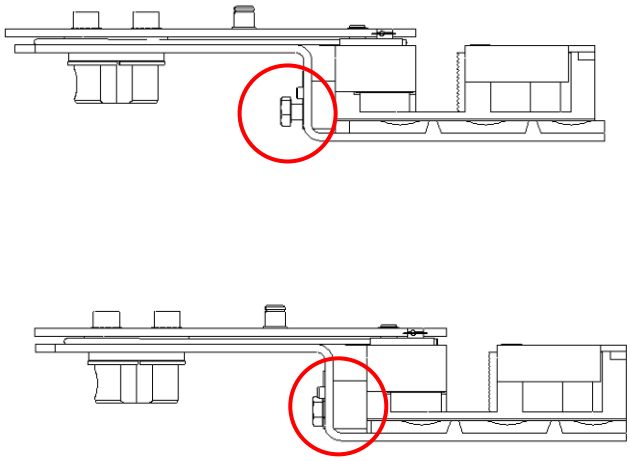


Figure 2. Movement of the bolt when the safety gear operates

Also check the head of the bolt can be accessed using the correct tool for adjustment.

The block must always be fitted at the distance recommended by the manufacturer. The part of the block where the shoe is located must be 2 mm from the edge of the guide rail. If necessary, use a gauge of the recommended thickness to ensure the distance between the guide rail and the shoe is correct.

Fit the washer in the position indicated in Figura 3 and insert the bolt into the hole in the side of the safety gear. The longest tab of the washer must be placed between the strap attachment bolts.

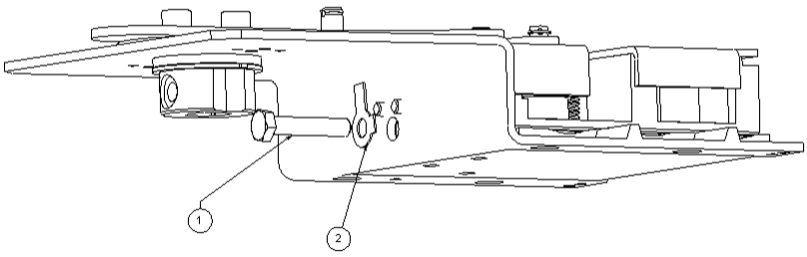


Figure 3. Fitting method

It is factory-adjusted to the corresponding type of guide rail and, therefore, this system will solve any installation defect. Where the shoe is to be moved away from the guide rail, the DIN 912 M6x8 lock bolts (3) should be loosened to allow the block to move freely. When loosening, never remove the bolt fully as the block would become loose and have no end stop. Simply loosen until there is a certain amount of play with the block.

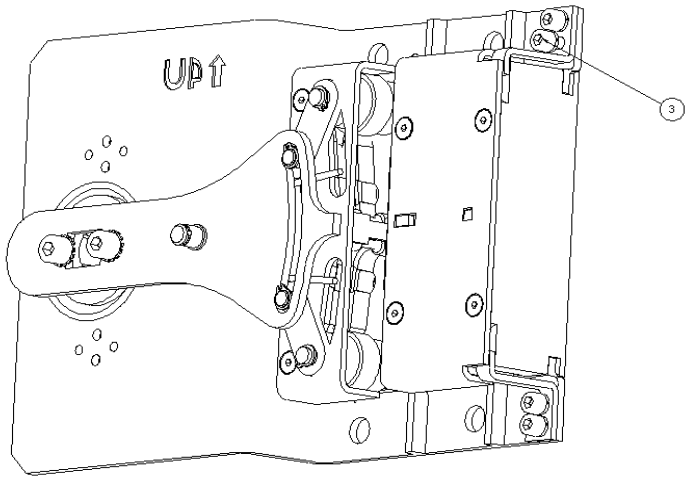


Figure 4. Loosening the lock bolts

After adjusting to the appropriate distance, fully bend the flap on the DIN 463 M8 safety washer (2) to prevent the bolt from becoming loose and, as a result, the block from moving during normal frame operations.

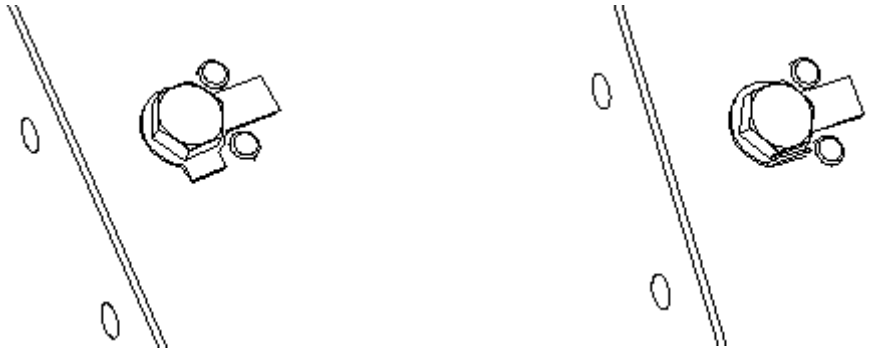


Figure 5. Bending the safety washer

Make sure the flap on the washer is bent after fitting the safety gear. Make sure that one of the flat sides of the bolt head is parallel to the washer flap to ensure it prevents the bolt from turning.

Make especially sure that the bent flat is the shortest (see Figure 5), as the other flap operates as a turn protection stop.

The on-site adjustment system of the ASG model safety gear is now in place. The fitter is responsible for ensuring that the ASG safety gear and the T-25 linkage work properly after handling and that the frame is designed for this option

5 UCM

5.1 UCM system preliminary design

The safety gear can be used as a means of braking within the uncontrolled movement detection system. The theoretical safety gear stopping distances can be calculated, but several lift installation parameters must be known beforehand. The more knowledge available of the different physical components in the system, the closer the theoretical value is to the actual value.

These values are theoretical only, and are used as in the preliminary design of the system. The installation requirements have to be certified as meeting the regulation values.

5.2 Calculating safety gear stopping distances

The input data are the P, Q and q values for the installation.

P is the sum of the mass of the empty car and the components supported (kg)

Q is the lift's rated load (kg)

q is the balance factor.

The response time of the various components making up the uncontrolled movement detection system must also be known. As a first approximation, these response delays are simplified to the distance needed for the governor to act.

DESCENT:

Assuming the simplest installation, with only the car and counterweight masses having an influence, the natural acceleration of the unbalanced system can be calculated as follows:

[1] $$a_n = \frac{-[(1-q)\cdot Q]}{2\cdot P + (1+q)\cdot Q}\cdot g$$

This natural acceleration of the system must be known to calculate the speed at which the safety gear activates. Typically, the acceleration is between 0 and 2m/s^2, although it depends on the imbalance which is worse in the downward case for a loaded car.

With the natural acceleration of the system (a_n), the speed at which the safety gear trips (v_0) can be obtained knowing the distance travelled (d_r) by the car in uncontrolled movement. This distance is the sum of the several delays in the installation, with the main one being the actuation distance of the governor, although there are others, such as the distance established for detecting the start of the movement.

This can also be obtained from the below formula:

[2] $$v_0 = \sqrt{d_r \cdot 2 \cdot a_n} \cdot$$

For a Dynatech governor, this information is found in the manual.

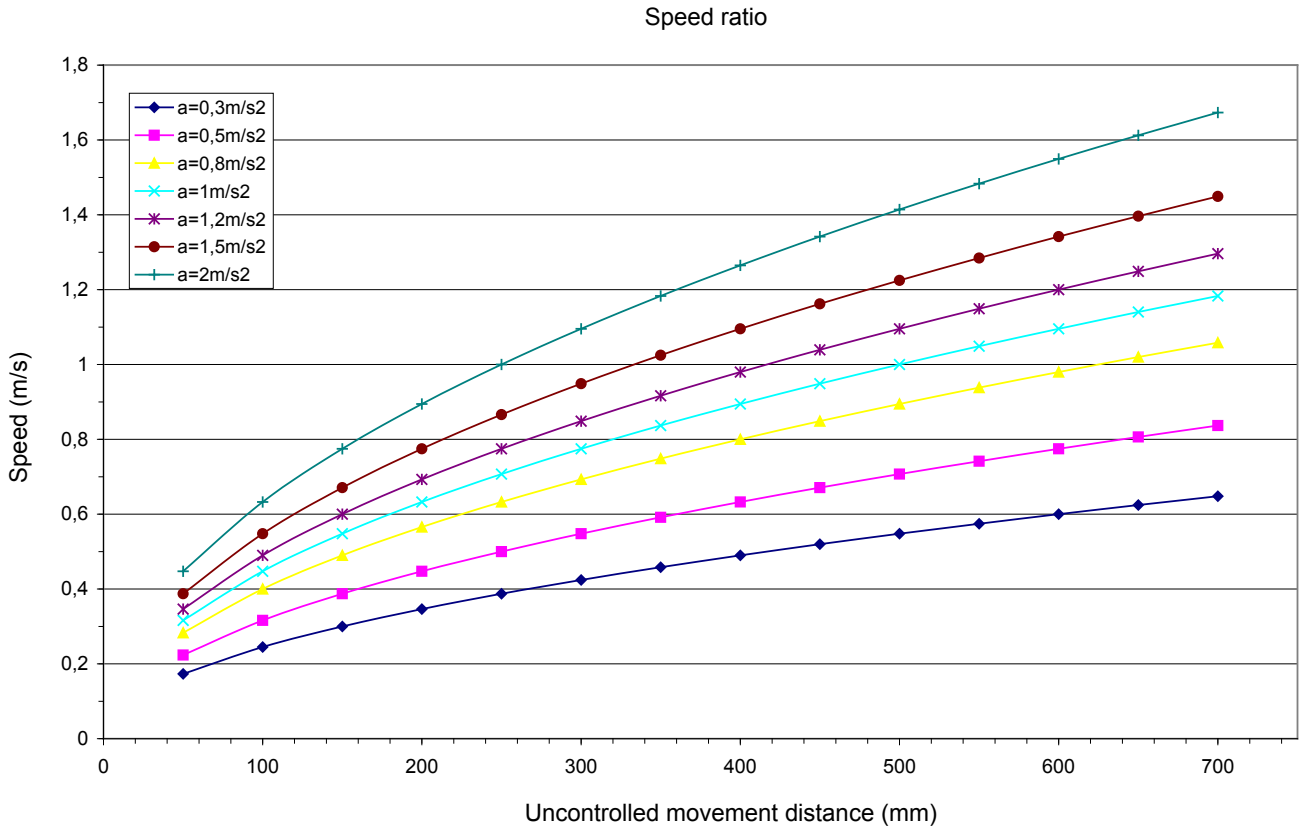


Figure 6. Speed v Uncontrolled movement distance

The system deceleration now needs to be calculated when the safety gear brakes.

$$a_f = \frac{BF^{(1)} - [(1-q)\cdot Q]\cdot g}{2\cdot P + (1+q)\cdot Q}$$

[3]

(1) BF = Safety gear braking force corrected for this calculation

Substituting the braking force for its relationship with (P + Q) in the installation and applying a safety factor gives the below formula.

$$a_f = \frac{16 \cdot 0{,}9 \cdot (P+Q) - [(1-q) \cdot Q] \cdot g}{2 \cdot P + (1+q) \cdot Q}$$

Then substituting $10\ \mathrm{m/s^2}$ for g :

$$a_f = \frac{14{,}4 \cdot (P+Q) - 10 \cdot [(1-q) \cdot Q] \cdot}{2 \cdot P + (1+q) \cdot Q}$$

With the braking deceleration [3] and the safety gear actuation speed obtained from Figure 6 or formula [2], the safety gear stopping distance can be deduced from Figure 7 or the following formula,

[4] $$d_r = \frac{v_0^2}{2 \cdot a_f} \cdot$$

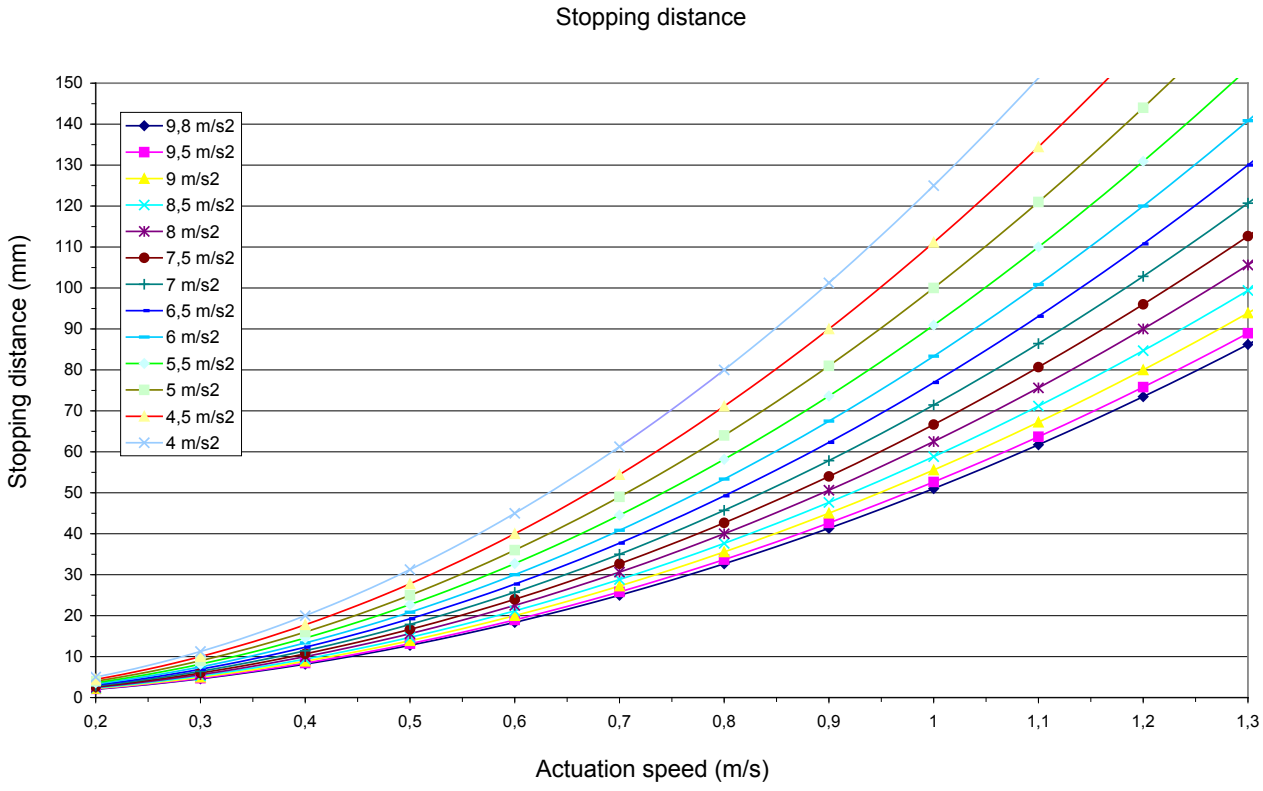


Figure 7. Safety gear: Stopping distance v Actuation speed

This is the theoretical distance for the safety gear to stop on the frame in a downward direction.

To obtain the total stopping distance for the UCM system, the governor distance must be added to other distances due to the different delay times of the UCM system components.

ASCENT

As with the descent, a calculation for the natural acceleration of the system must be done. The worst case for this situation is when the car is empty and is determined by the following equation.

[5] $$a_n = \frac{-q \cdot Q}{2 \cdot P + q \cdot Q} \cdot g$$

Using this acceleration and the distance travelled by the car in uncontrolled movement, the safety actuation speed is obtained from Figure 6 or formula [2].

In the same way as in descent, the system deceleration is calculated by applying the safety gear braking force.

$$a_f = \frac{BF^{(1)} - q \cdot Q \cdot g}{2 \cdot P + q \cdot Q} = \frac{16 \cdot 0{,}9 \cdot (P + Q) - \cdot q \cdot Q \cdot g}{2 \cdot P + q \cdot Q}$$

(1) BF = Safety gear braking force corrected for this calculation

[6] Substituting $10 ms/^2$ for g

$$a_f = \frac{7{,}2 \cdot (P + Q) - 10 \cdot q \cdot Q}{2 \cdot P + q \cdot Q}$$

Using this acceleration and the safety actuation speed obtained from Figure 7 or formula [4], the safety gear stopping distance for the car in upward movement can be calculated.

This gives the theoretical distance for the safety gear to stop on the frame in the upward direction.

To obtain the total stopping distance for the UCM system, the governor distance must be added to other distances due to the different delay times of the UCM system components.

DECELERATION

Deceleration must be calculated over the whole load range, ie from Q=0 to Q maximum, by taking a ratio λ from q to 1 in descent and from 0 to q in ascent, then checking the deceleration is valid throughout the range.

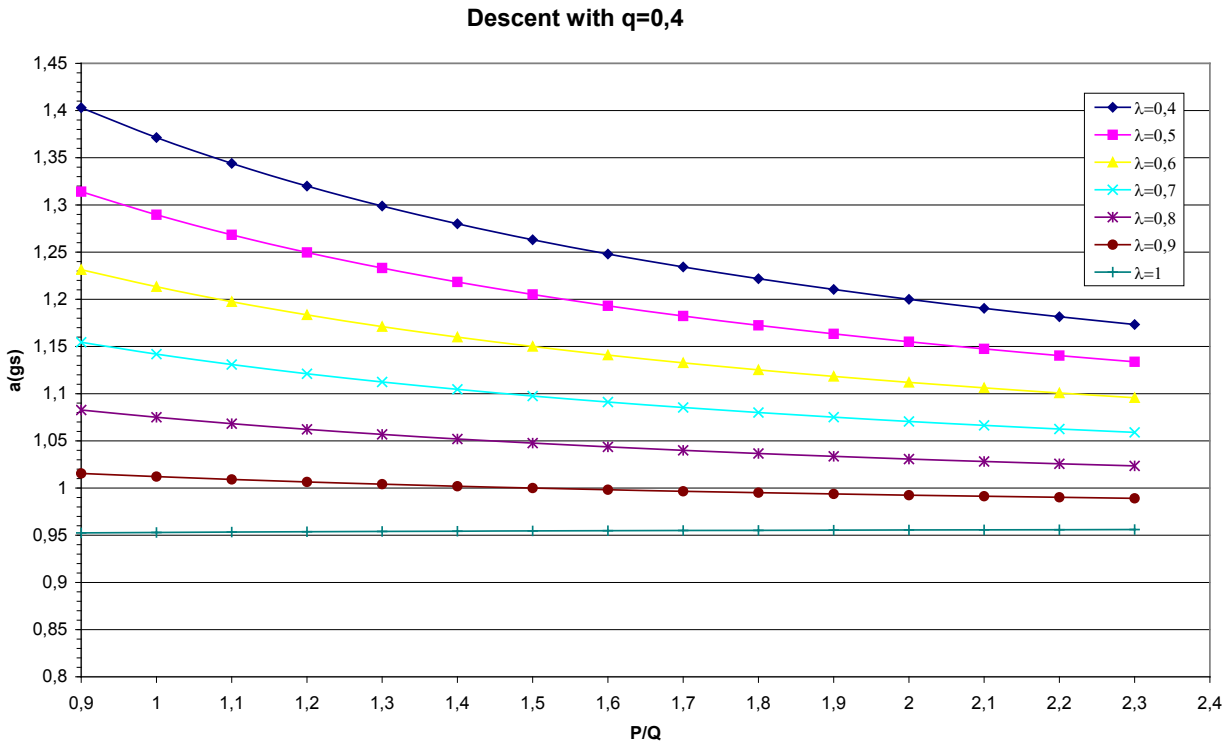
[7] $$a_f = \frac{BF^{(1)} - [(\lambda - q)] \cdot Q \cdot g}{2P + (\lambda + q) \cdot Q} = \frac{19{,}2 \cdot (P + Q) - 10 \cdot [(\lambda - q)] \cdot Q}{2P + (\lambda + q) \cdot Q} \text{ in descent}$$

[8] $$a_f = \frac{BF^{(1)} - [(q - \lambda)] \cdot Q \cdot g}{2P + (\lambda + q) \cdot Q} = \frac{9{,}6 \cdot (P + Q) - 10 \cdot [(q - \lambda)] \cdot Q}{2P + (\lambda + q) \cdot Q} \text{ in ascent}$$

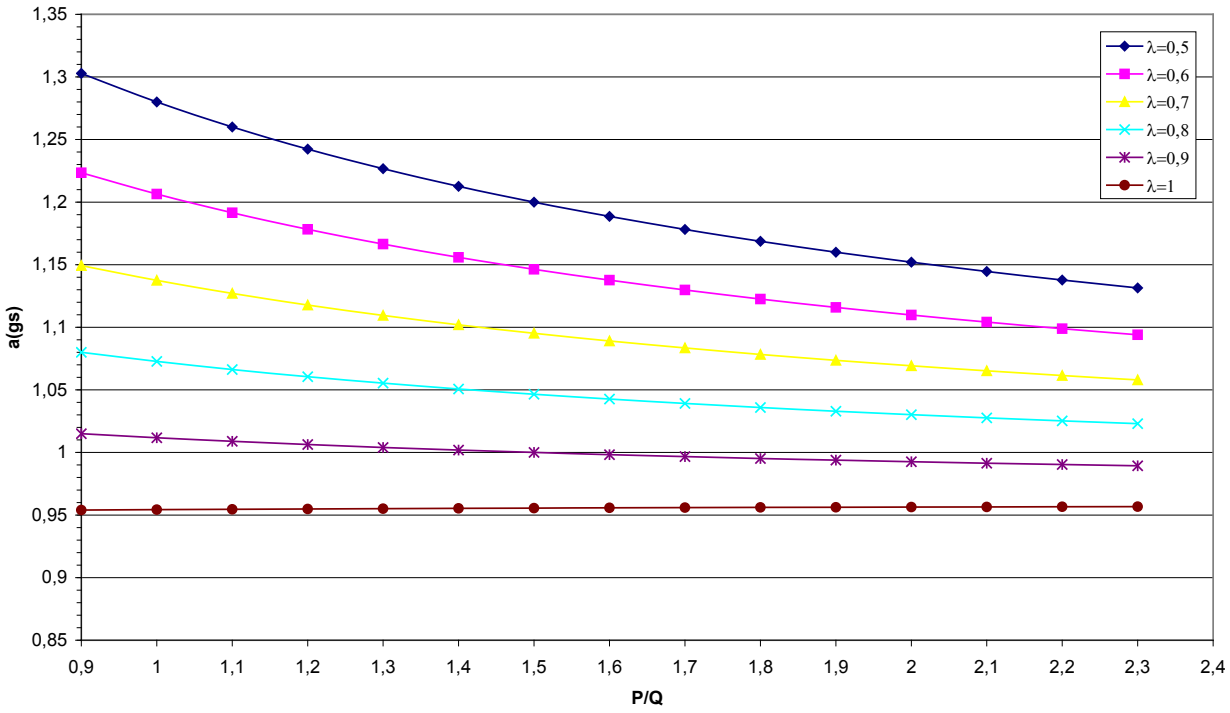
$^{(1)}$ BF = Safety gear braking force increased by 20% for this calculation

In the following deceleration graphs, the x-axis shows the ratio P/Q and the y-axis shows the system deceleration in g (force due to gravity).

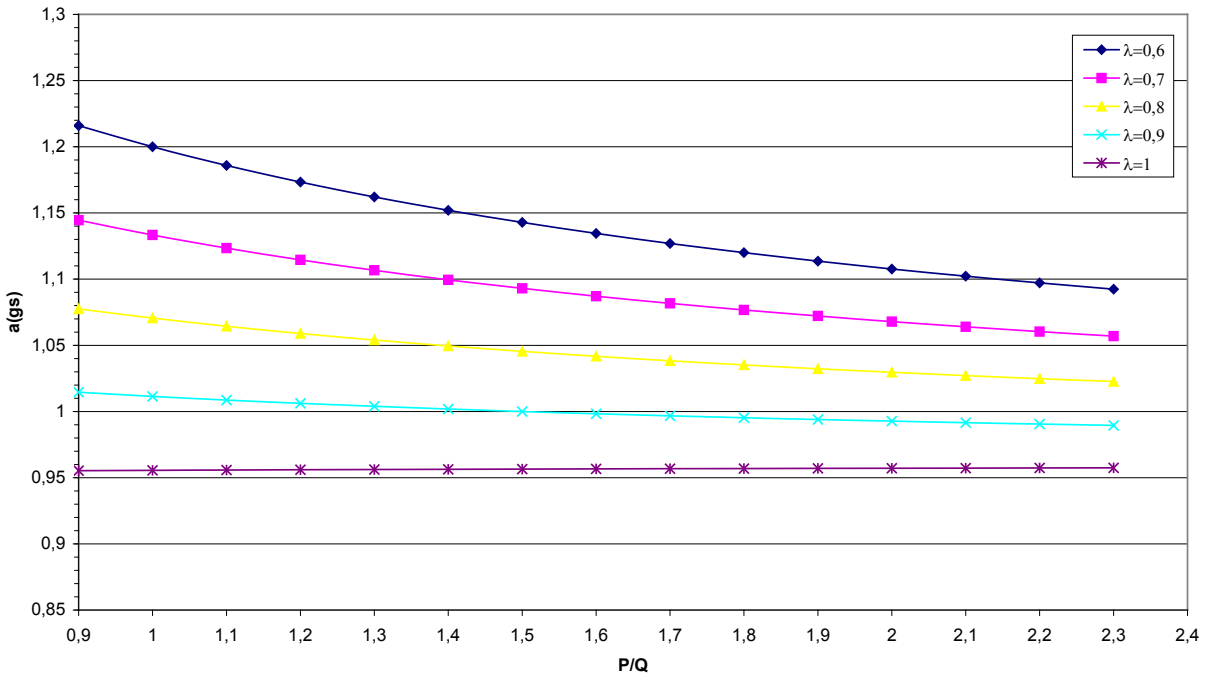
Figure 8. Deceleration graphs



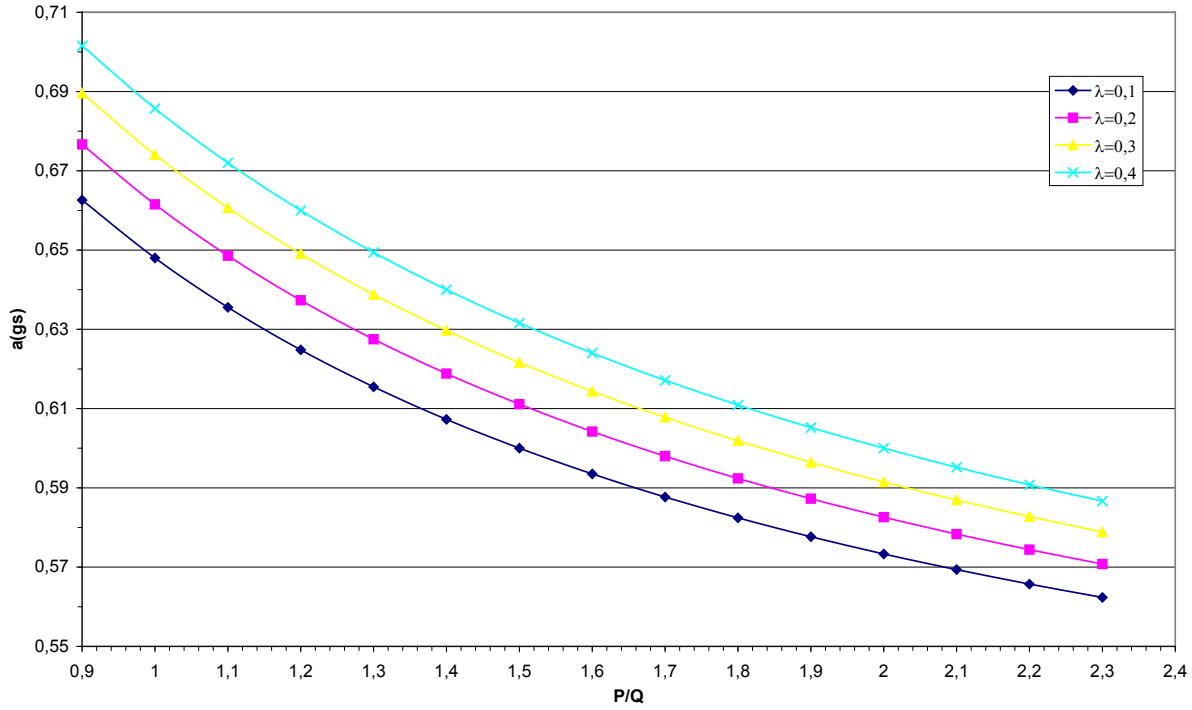
Descent with q=0,5



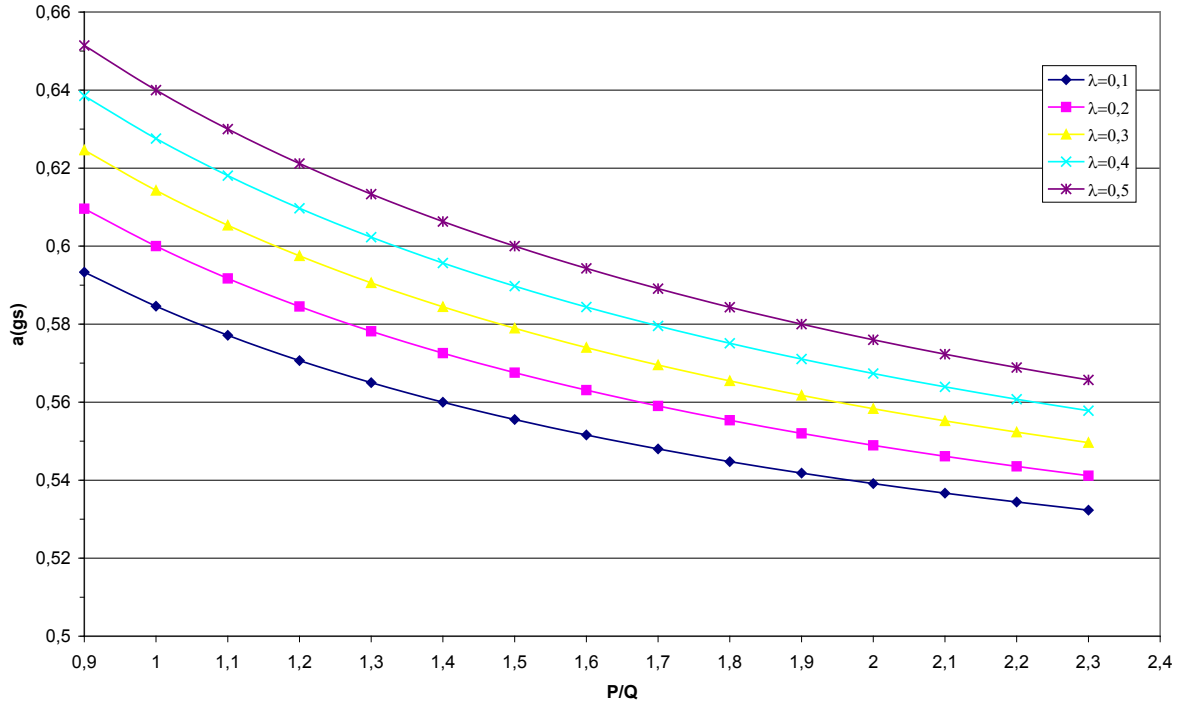
Descent with q=0,6

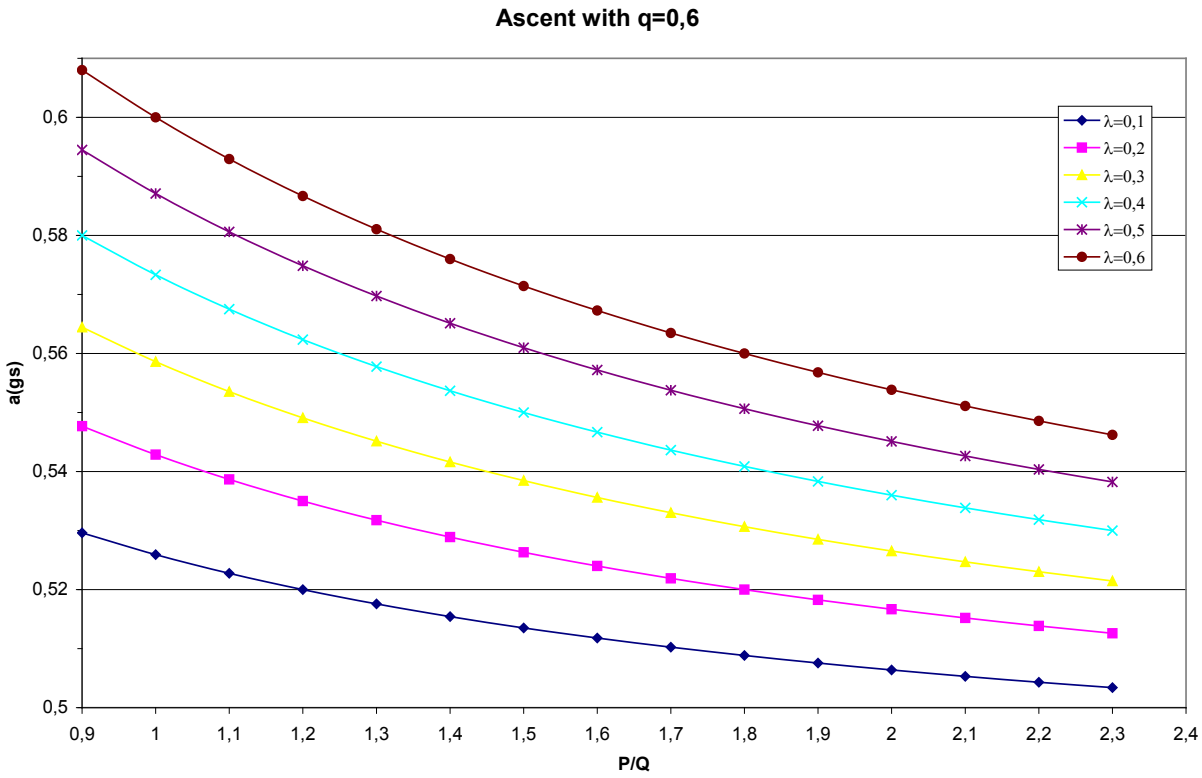


Ascent with q=0,4



Ascent with q=0,5



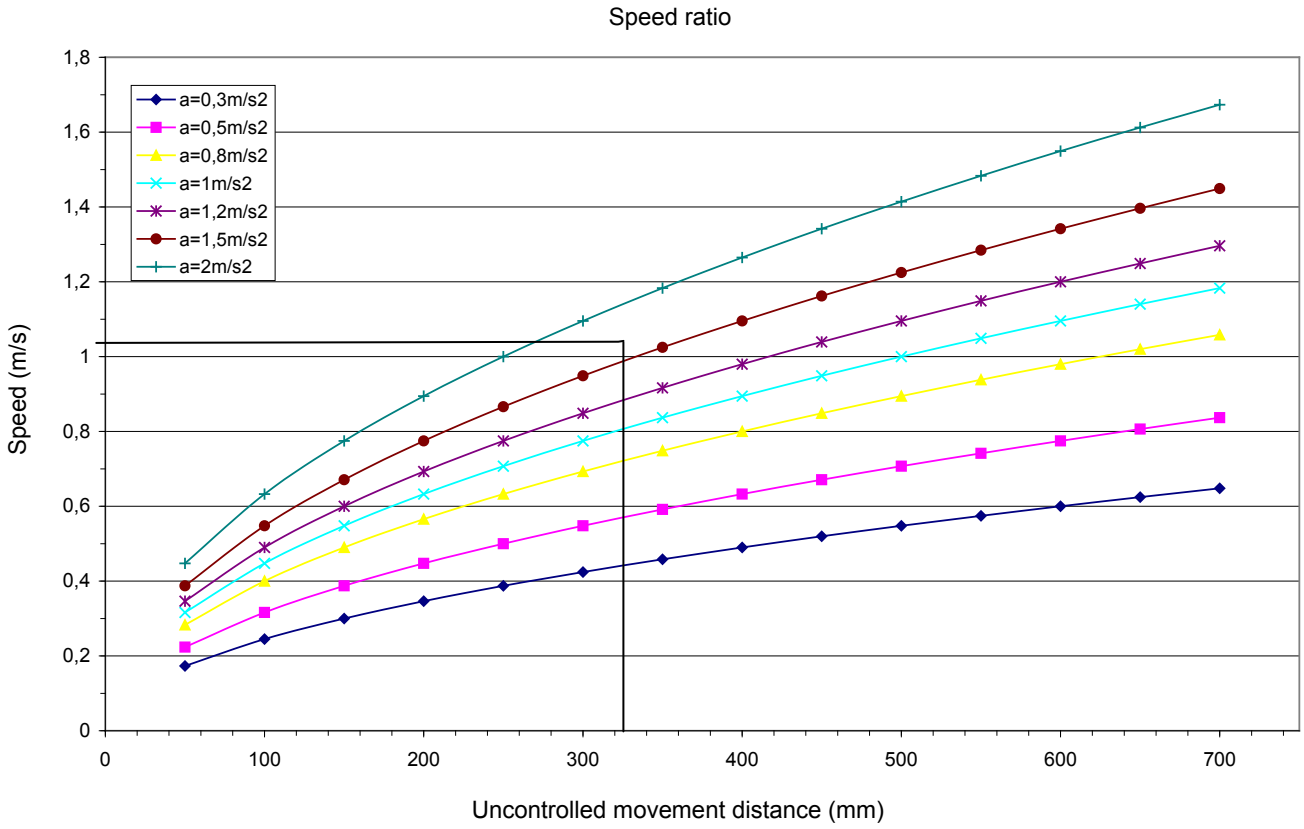


For other counterweight balance factor values, use formulas [7] and [8].

EXAMPLE

An installation with a P of 600kg, a Q of 550kg and a balance factor of q = 0.4 requires a counterweight mass of 820kg. Assuming that the only movement the car suffers is the distance required for the governor to act, which in this case is 0.335m.

Firstly, in descent, inputting the values into formula [1], a natural acceleration of 1.64 m/s^2 is obtained for the system. Using this value and the governor value, Figure 6shows the speed at which the safety gear acts: 1.05m/s.



The natural acceleration curve is extrapolated, as the 1.5 m/s^2 and 2m/s^2 curves are in the graph. However, formula [2] can be used for a more accurate value.

The deceleration produced by the safety gear can be calculated with formula [3], which gives a value of 6.13m/s^2. Using the speed value calculated above and this deceleration in Figura 7, we obtain the safety gear stopping distance, in this case around 83mm. This can also be calculated from formula [4].

For the ascending case, the same steps as for descending are followed, but using the ascending formulas.

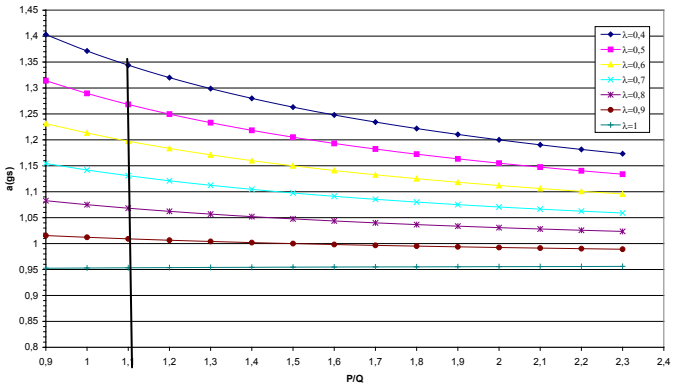
Formula [5] gives a natural acceleration of 1.51m/s^2. Using this figure and the governor distance, we can go to Figure 6 or calculate it from formula [2], as with the descending case. This gives the safety gear actuation speed, which in this example is 1.0m/s.

As with the descending case, but with formula [6], the safety gear braking deceleration is obtained, which is 3.87 m/s^2 in the example. Then, using Figure 7 or

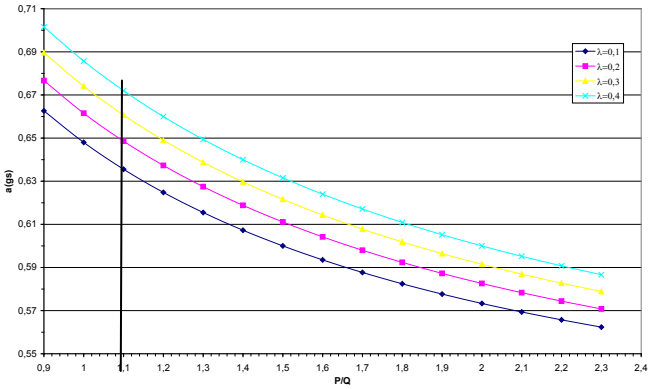
formula [4], the distance required for the safety gear to stop the car can be obtained, 122mm in this case.

Finally, the deceleration produced by the safety gear braking is checked not to be dangerous for the lift occupants. In this example, the ratio P/Q is 1.1 and the graphs in Figura 8 can be checked

Descent with q=0,4

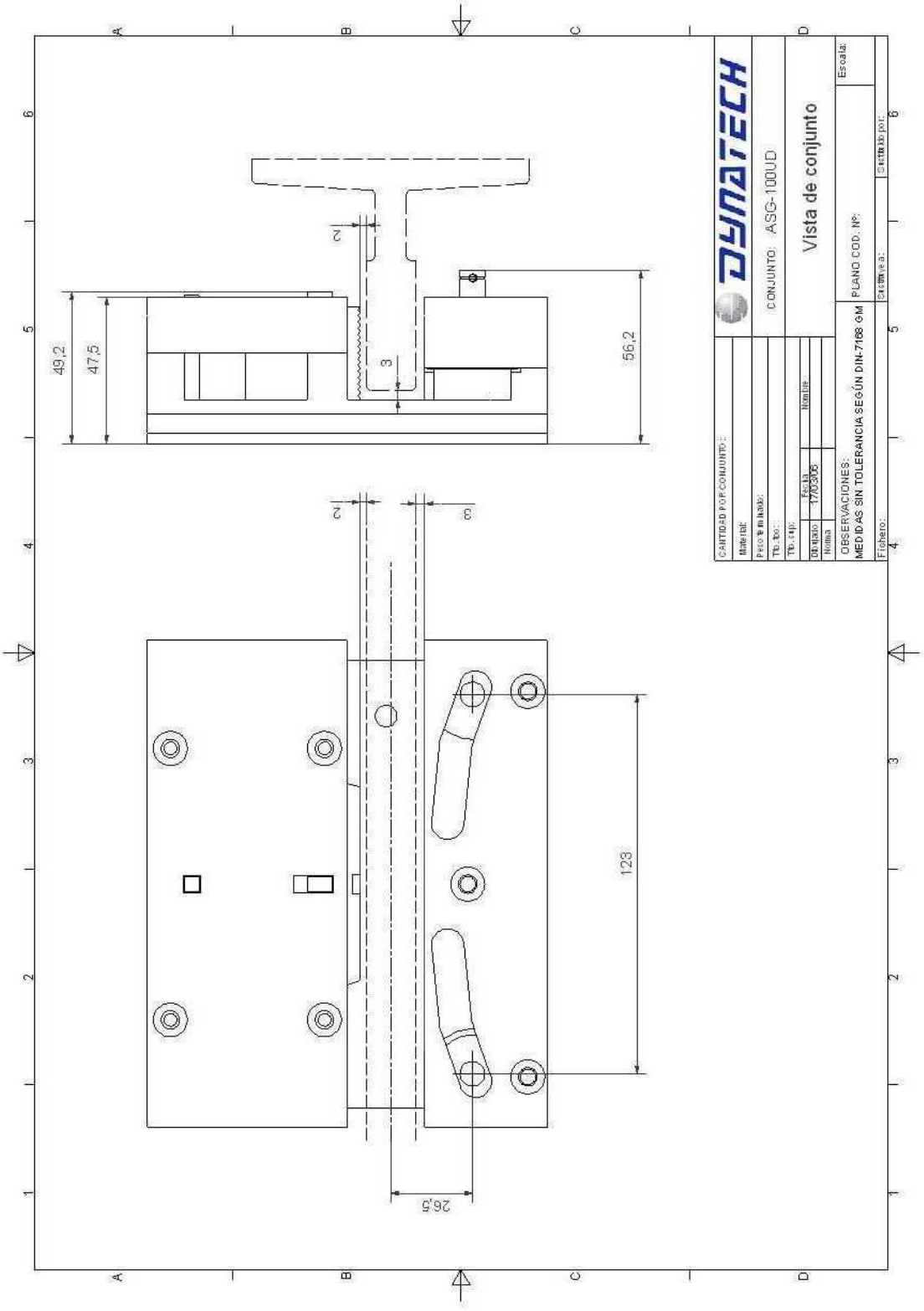


Ascent with q=0,4



6 GENERAL DRAWING

ASG-100-UD/ ASG-120-UD/ ASG-121-UD/ ASG-65-UD



ASG-100/ ASG-120/ ASG-121/ ASG-65