

INSTRUCTIONS: PQ-4000-UD

Date: 17-05-2004 Check: 02



DYNATECH PROGRESSIVE SAFETY GEAR PQ-4000-UD

INSTRUCTIONS FOR USE AND MAINTENANCE

ATISAE

ASISTENCIA TÉCNICA INDUSTRIAL, S.A.E.


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

De un paracaídas progresivo y dispositivo de frenado contra embalamiento en subida.
 Progressive safety gear and upwards speed reducing overspeed protection mean.

Número de certificado. /Certificate number. ATI / LD – VA / M120 / 01

Organismo Notificado. / Notified Body. Asistencia Técnica Industrial S.A.E. (ATISAE)
 Avda. de la Industria, 51 bis
 E 28760 Tres Cantos MADRID (ESPAÑA)
 N° de identificación 0053.

Clase. Tipo. Paracaídas progresivo/Dispositivo de frenado.
 Product. Type. Progressive safety gear./ Overspeed protection mean PQ-4000 UD

Nombre y dirección del fabricante: DYNATECH DYNAMICS AND TECHNOLOGY S.L.
 Manufacturer's name and address. C/ María de Luna, 11. Nave 7
 50015 ZARAGOZA (ESPAÑA).

Nombre y dirección del propietario del certificado: DYNATECH DYNAMICS AND TECHNOLOGY S.L.
 Name and address of Certificate holder. C/ María de Luna, 11. Nave 7
 50015 ZARAGOZA (ESPAÑA).

Fecha de presentación: NOVIEMBRE. 2001
 Date of submission.

Fecha del examen de tipo: DICIEMBRE. 2001
 Date of EC type examination.

Laboratorio de ensayo: AIMME – Instituto Tecnológico Metalmecánico.
 Test laboratory. Parque Tecnológico, Avda Leonardo Da Vinci.
 Paterna 46980. VALENCIA (ESPAÑA)

N° y fecha de protocolo de ensayo: S01-01212 DE NOVIEMBRE 2001
 Number and date of laboratory report. S01-01214 DE NOVIEMBRE 2001

Directiva CE aplicada Directiva 95/16/CE de 29 de Junio de 1995.
 EC- Directive. EC- Directive 95/16/EC of 29.06.1995.

Declaración: El campo de aplicación de este componente de seguridad queda establecido en el anexo a este certificado.
 Statement. The scope of this safety component is stated in the annex to this certificate.



Establecido en Madrid, DICIEMBRE DE 2001

Juan A. Cano Hernández
 Director Técnico

Este certificado consta de esta portada, un anexo técnico de 2 hojas y 2 planos.
 This certificate consists of this main page, a technical annex with 2 pages and 2 plans.

Asistencia Técnica Industrial S.A.E. (ATISAE)
 Organismo Notificado N° 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



ANEXO AL CERTIFICADO CE DE EXAMEN DE TIPO ATI/LD-VA/M120/01
ANNEX TO THE EC TYPE EXAMINATION CERTIFICATE (ABOVE)

1. Campo de aplicación:
Scope.

El paracaídas progresivo/dispositivo de frenado PQ-4000 UD está certificado para actuar tanto en bajada como en subida, para diferentes masas totales con reglaje continuo.

The progressive safety gear/ overspeed protection mean PQ-4000 UD is certified to operate in downward and upward direction, for different permissible masses and continuous adjustment.

1.1. Tipo de reglaje:
Adjustment.

Reglaje continuo.
Continuous adjustment

1.2. Masa total admisible como dispositivo de frenado en dirección descendente:
Permissible mass when working as safety gear in downward direction.

Para guía: de 8, a 16 mm de espesor.
Applied from: 8 to 16 mm. thickness, guide rail.

Masa total admisible. Permissible mass	(Kg.)	Reglaje (valor de regulación.) (mm) Adjustment (Adjustment value)
Máxima/ Maximum	4023	50
Mínima/ Minimum	881	9

Otros valores intermedios de reglaje se encuentran especificados en el expediente técnico de este certificado.
Other intermediate adjustment values are specified into the technical dossier of this certificate.

1.3. Fuerza de frenado admisible como dispositivo de frenado en dirección ascendente:
Permissible braking force when working as braking mean in upward direction.

Para guía: de 8, a 16 mm de espesor.
Applied from: 8 to 16 mm. thickness, guide rail.

Fuerza de frenado admisible. Permissible braking force	(N.)	Reglaje (valor de regulación.) (mm) Adjustment (Adjustment value)
Máxima/ Maximum	28659	50
Mínima/ Minimum	6629	9

Otros valores intermedios de reglaje se encuentran especificados en el expediente técnico de este certificado.
Other intermediate adjustment values are specified into the technical dossier of this certificate.

1.4. Velocidad nominal máxima.
Maximum rated speed.

Cabina / Car:	2,0	m/s
Contrapeso / Counterweight:	2,0	m/s

1.5. Velocidad máxima de disparo del limitador de velocidad.
Maximum overspeed governor tripping speed.

Cabina / Car:	2,5	m/s
Contrapeso / Counterweight:	2,5	m/s

Anexo al certificado ATI/LD-VA/M120/01
Annex to the certificate



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1.6. Tipo de guía: Type of the guide rail.	Designación (ISO 7465): Designation.	T 90/B
	Espesor de guía: Guide rails thickness.	16 mm
	Ancho: Width.	42 mm
	Estado superficie de guía: Surface condition of the guide rails.	Cepillada

Se permite la utilización de guías de espesor de 8, a 16 mm. para lo cual existen las medidas adecuadas que garantizan la equivalencia de las características de frenado mostradas en el ensayo.

Other guide rails from 8, to 16 mm. of thickness are allowed due to the adequate measures taken to assure the gripping characteristics equivalence, as shown in the test.

1.7. Anchura mínima de frenado: Gripping width.	25 mm
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1.8. Estado de lubricación de las guías, clase y características del lubricante:
The state of lubrication of the guide rails, category and specifications.

Especificaciones del lubricante: Lubricant specifications.	ISO VG 150
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2. Notas.
Remarks.

2.1. Sobre el dispositivo del paracaídas debe colocarse una placa con los datos indicados a continuación:
It shall be placed an identifiable plate on the safety gear 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
Masa admisible actuación en bajada Permissible mass for free fall protection	Espesor de guía para el que está regulado Guide rail thickness.

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 masa admisible en la actuación del paracaídas en sentido descendente, y la fuerza de frenado media para el dispositivo de frenado en sentido ascendente, están relacionados de una 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 permissible mass, when acting in downward direction, and the mean braking force, when acting in upward direction are related, because of the device uses the same adjustment value for both in one single elastic element so they cannot be adjusted separately

2.4. Se permite la utilización de un bloque de 120 mm. de anchura (variante /P) para regulaciones de P+Q hasta los 2.300 kg, habida cuenta que las dimensiones relevantes de regulación se mantienen.
It is possible to use a block with 120 mm width (variant /P) for adjustment of P+Q up to 2.300 kg, considering relevant adjustment dimensions are kept the same.

2.5. Se adjunta a la presente certificación los siguientes documentos:
The following documents are annexed to this certificate.

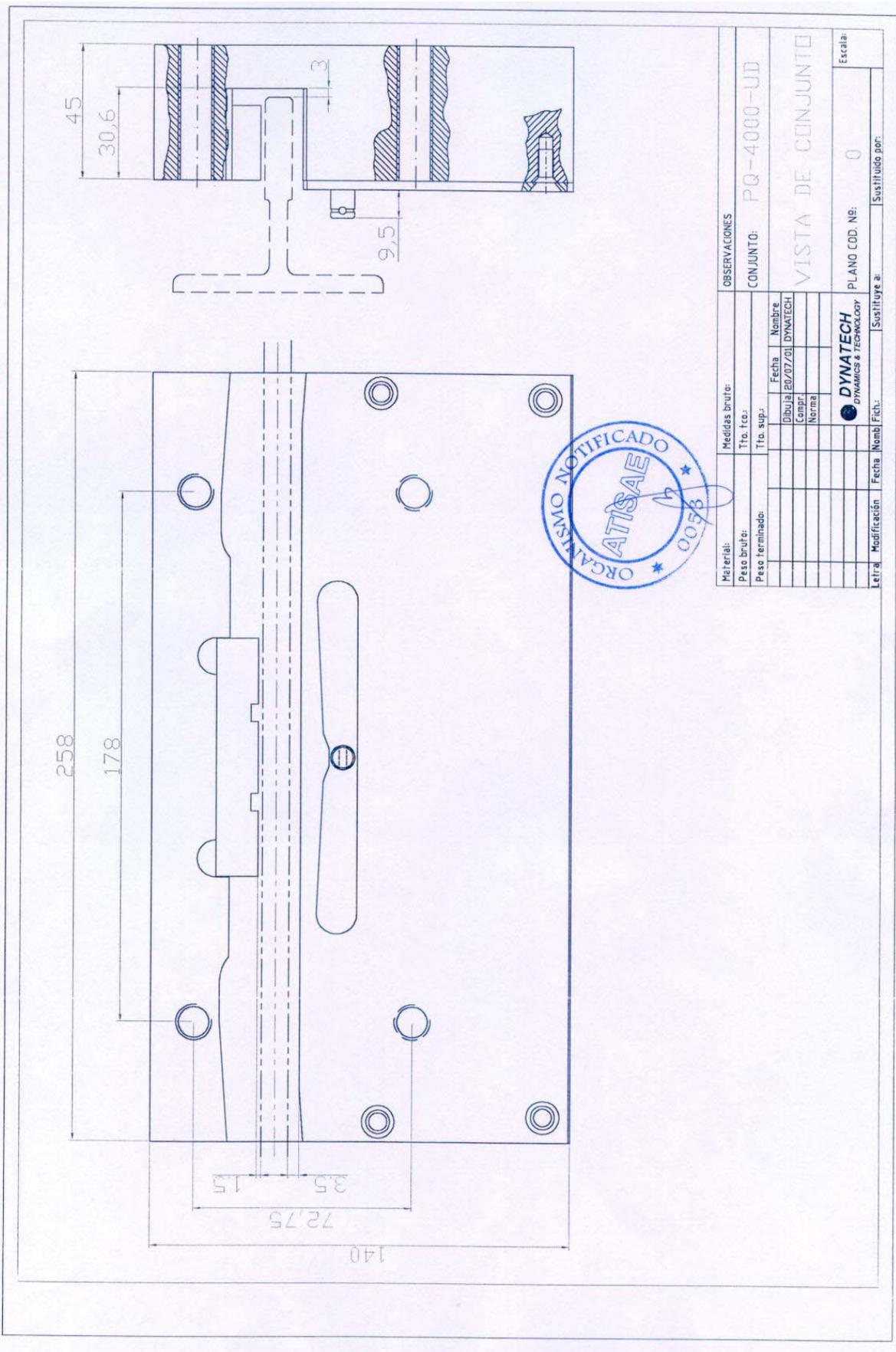
DESIGNACIÓN	FECHA	LEYENDA
PLANO COD N°: 0	20.07.01	PQ - 4000 - UD VISTA DE CONJUNTO
PLANO COD N°: 0	20.07.01	PQ - 4000 - UD/R VISTA DE CONJUNTO

- 0 -

Anexo al certificado ATI/LD-VA/M120/01
Annex to the certificate



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Material:		Medidas bruto:		OBSERVACIONES	
Peso bruto:	Tto. fro:	Tto. sup:	Dibuja:	CONJUNTO:	PQ-4000-UD
Peso terminado:	Tto. sup:	Fecha:	Nombre:	VISTA DE CONJUNTO	
		20/07/01	DYNATECH		
		Comar:			
		Norma:			
			 DYNATECH DYNAMICS & TECHNOLOGY		
Letra:	Modificación:	Fecha:	Nombre:	Fich:	Sustituye a:
					Sustituido por:
				PLANO COD. Nº:	0
				Escala:	

INSTRUCTIONS FOR USE AND MAINTENANCE

- 1. GENERAL INDICATIONS.**
 - 2. SAFETY GEAR INSTALLATION.**
 - 2.1. TO THE SLING MAKER.*
 - 2.2. TO THE INSTALLER.*
 - 3. USE AND MAINTENANCE.**
 - 3.1 GUIDE RAILS.*
 - 3.2 SPEED GOVERNOR.*
 - 3.3 RANGE OF USE.*
 - 3.4 FRICTION PARTS REPLACEMENT.*
 - 3.5 MAINTENANCE.*
 - 3.5.1 CLEANING.*
 - 3.5.2 CORROSION.*
 - 4. GENERAL DRAWING.**
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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 damages caused by the unobservance of any point of these general indications.

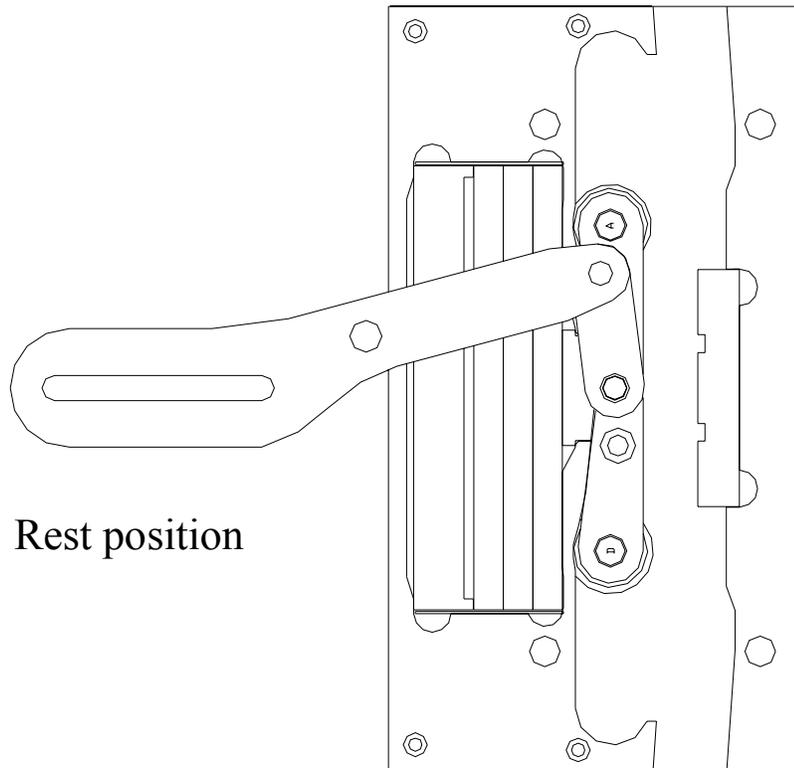
2.-SAFETY GEAR INSTALLATION.

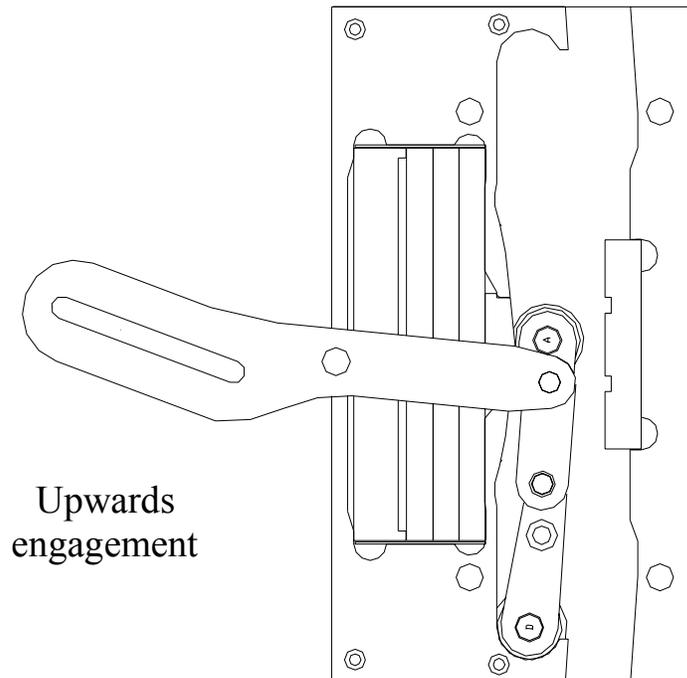
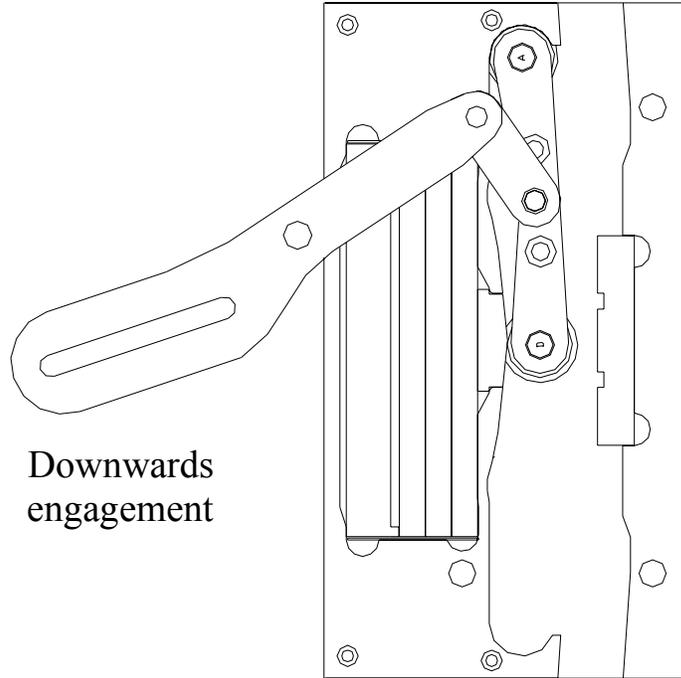
The Standard requires that the safety gear installation must be done including a security contact of type AC - 15 or DC - 13 according to EN 60947 - 5 - 1.

2.1- TO THE SLING MAKER:

The fixing holes for the safety gear must be made in the sling sides according to the dimensions and positions shown in the enclosed safety gear drawings, making sure the guide rail axis center to the sling beams.

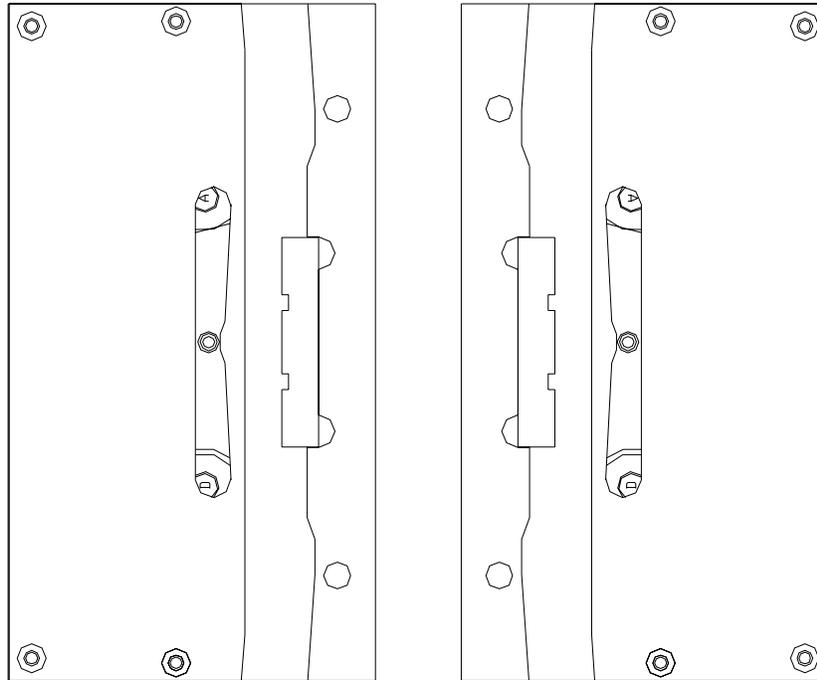
Once the safety gear is well placed and its roller trains are attached to the driving bars, it should be checked that both trains act synchronized in accordance to the driving bar commands. The sling maker is responsible for the proper location of the safety gear on the sling as well as the adjustment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





As a suggestion for the safety gear fixing to the sling, the tightening torque of 8.8 M12 screws is 79.09 Nm and 111 Nm for those of 10.9.

Remark: The rollers for the downwards engagement marked with a “D” letter, must remain always at the lower part of the safety gear. The letters which rollers are distinguished with can be appreciated at first view trough the long hole of the protection plates.



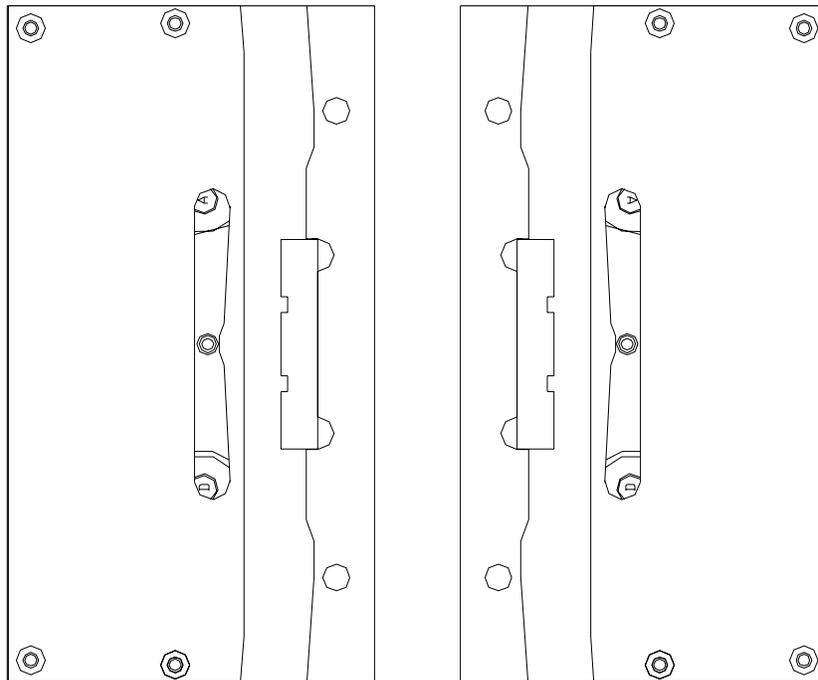
2.2- TO THE INSTALLER:

During the installation at the well, first of all, the guide rails must be introduced in the grooves of the safety gear housings. Then the position of the guide rail in the housing is adjusted as follows: the side of the guide rail, 1.5 mm from the brake block, the guide head, 3mm from the bottom of the groove (see drawings). For these adjustments the sliders will be handled without modifying the position of the safety gear in the sling because the sling maker

must have properly fixed the safety gear in its final position. For the correct safety gear acting, the distances mentioned here above must be strictly respected by the installer.

To make easy the adjustment at work of the distances between the faces of the guide rails and the parts of the safety gears 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 situated the rollers for the downwards engagement, marked with a “D” letter, at the lower part of the safety gear.



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 guide rails used must be **planed (machined)**. The admissible tolerances for the guide rails thickness are between -0 and $+0.10$ mm.
- b) The progressive safety gear PQ-4000-UD can be used with this type of guide rails until a nominal speed of 2m/s and the governor response maximum speed is 2.5 m/s.
- c) If after the safety gear performance you find scratched guide zones placed within a distance of less than 1 meter between them, it is recommended to substitute the affected guide parts.
- d) The guide rails must be lubricated with ISO VG 150 oil lubricant.
- e) The gripping width of the guide rails must be 25 mm or greater.
- f) admissible widths of guide rails: 8 – 16 mm.

3.2-SPEED GOVERNOR:

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

3.3-RANGE OF USE:

Here below the standard P+Q board is shown. The nominal values are those of the central line.

Lower value	2100	2222	2411	2610	2851	3095	3351	3722
P+Q	2173	2402	2606	2821	3081	3345	3622	4023
Upper value	2335	2582	2801	3032	3312	3595	3893	4324

***Remark:** For all this range, the wide version of the safety gear will be supplied (140 mm of width). For lower values of P+Q, the correct safety gear is the PR-2500-UD, which has 120 mm of width.

3.4-FRICTION PARTS REPLACEMENT:

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

Anyway, after having intervene in a real situation it is recommended to replace the friction parts. In that case, contact Dynatech or its nearest distributor, in order to know the procedure to be followed.

In order to obtain a better control, the maintenance person may have a register of the safety gear performances. The safety gear serial number should be written in its register as well as each and every acting.



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

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 periodical checking must be done to make sure that all the moving elements of the safety gear are 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 specially corrosive atmosphere.

4.-GENERAL DRAWING.

