

# UPB

## INSTALLATION MANUAL MANUAL DE INSTALACIÓN





## General Safety Requirements

This instruction manual is intended solely for use by qualified professionals. The installation, electrical connections and adjustments must be made in accordance with the current legislation in each country.

Carefully read the instructions before starting to install the equipment. Incorrect installation can be dangerous.

Packing material (Plastic, expanded polystyrene, etc.) should be disposed of without causing environmental damage and should be kept out of the reach of children, as it is potentially dangerous.

Do not install electrical equipment in an explosive environment or atmosphere. The presence of gas or inflammable fumes represents a severe security risk.

Safety devices (photo-electric cells, presence detector, etc.) should be installed in accordance with the current safety standards. These safety devices should be installed such as to avoid any possible crushing, cutting or danger in general by the door that is being automated. Apply the relevant warning signs as per the current standards to indicate the potential danger areas. Install a two-pole switch at the power supply to turn off the supply in case of emergency. Check that there is a differential and thermal cut-out. Always earth the equipment and the door.

## Machinery Directive

According to the Machinery Directive (2006/42/EC) The installer of a door/gate has the same obligations as the manufacturer of a machine and, as such, must :

- Create a technical report for the motorized system, which must include the documents specified in Appendix V of the Machinery Directive. (This technical record should be conserved and made available to the relevant national authority for at least ten years from the date of manufacture of the automatic machinery).
- Produce the CE conformity declaration for the automatic door as per Appendix II-A of the Machinery Directive.
- Put the CE mark on the automatic door as per clause 1.7.3 of Appendix I of the machinery Directive.

## Manufacturers Declaration

(Directive 2006/42/EC, Appendix II, part B)

Manufacturer: Pedro Roquet, S.A.

Address: C/ Antoni Figueras, 91 08551 Tona (Barcelona) – SPAIN

Declares that the systems with part numbers: UPB

- Are built to be used in a machine or to assemble with other machines to build a machine considered by the Directive 2006/42/EC, as modified.
- Conform to the conditions of the following EC Directives:
  - Electro-magnetic compatibility Directive 89/336/CEE, as modified.
  - Low Voltage directive 73/23/CEE, as modified.
  - Safety standard for hydraulic transmission systems EN-982.
  - Product requirements for power pedestrian doors DIN-18650

And also declares that it is not permitted to use the machinery until such time as the machine in which it is to be used, or of which is component part, has been declared in conformity with the conditions of the directive 2006/42/EC and any relevant national legislation.

Barcelona, 28/06/2011

Jordi Roquet (Managing Director)

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## Electro-hydraulic swing door drive

UPB is an electronically controlled, electro-hydraulic swing door operator.

It is a versatile mechanism with a simple assembly and installation in all the different mounting requirements.

It is suitable for standard, large and heavy doors.

It can be adapted to a wide range of applications and mounting requirements and offers numerous adjustable features.

This product utilizes a hydraulic pump system to open the door and the closing action is controlled by a spring mechanism.

Opening and closing speed can be adjustable by means of hydraulic valves.

Opening and closing damping can be adjustable by means of hydraulic valves.

- Door leaf width up to 1.400 mm
- Door leaf weight up to 250 kg
- Reduced external dimensions
- Width x Height x Depth → 636 x 100 x 130 mm
- Lever and guide rail easy assembly
- Maximum opening angle 115°
- Permanent control of door position
- *Master-Slave* easy programming in double-leaf doors
- Optional drive for sensors and peripheral command elements

## One single drive for all the applications

Hy-Dom torque drive for swing doors, offers one unique model for all the different doors thanks to its versatile assembly. As the same system may be used for all swing doors in the building, the maintenance and installation effort can be reduced. As well as, the uniformity of esthetical design for all the building will be guaranteed.

- Right and left hand opening doors
- Pushing and pulling doors
- Single-leaf and double-leaf doors

## UPB Applications

UPB automatic electro-hydraulic operator, is designed for automate standard, large and heavy doors. It is suitable for single and double-leaf doors made of aluminum, wood, glass, pvc, etc.

Hy-Dom torque drive is prepared for smoke and fire doors, in single or double-leaf and pushing type and is an extremely low energy consumption system / silent system. See application example in *Fig.1*.

Applications	Areas
<i>Assistance</i>	Hospitals, Geriatric and handicapped residences, public buildings, airports, stations, service doors, schools, etc.
<i>Energy saving</i>	Exterior doors, corridor doors, porch systems, workshops, studios, etc.
<i>Hygiene</i>	Food and pharmaceuticals industry, hospitals, doctor surgeries, laboratories, social centers, restrooms, etc.
<i>Safety</i>	Safety locks and access control systems, protection areas, etc.
<i>Comfort / Accessibility</i>	Retail stores, banks, public administrations, offices, restaurants, etc.

## Control

### Position control

Hy-Dom torque drive for swing doors features an position control system. Door position is controlled electronically in every moment. Once the speed and damping are adjusted, opening and closing tracking are registered easily and quickly.

## Mounting variations

Hy-Dom offers a single mounting type of the operator and guide rail for all door variations. This fact represents an important standardization and maintenance and installation time reduction. As well as, the uniformity of esthetical design for all the building will be guaranteed.

- Simple leaf door pulling (both hands) *Fig.5.*
- Simple leaf door pushing (both hands) *Fig.6.*
- Double leaf door (pushing and pulling) *Fig.7.*

Mounting dimensions for double-leaf door drives will be treated as two single-leaf doors. See *Connections and Settings* paragraph to activate and set master-slave combination for double-leaf doors.

## Torque Operator Technical Data

Torque operator mechanical layout in *Fig.8.*

Torque operator technical data in *Fig.9.*

## Installation Procedure

Hy-Dom, as a manufacturer of UPB torque operator, recommends the following steps for a successful and easy installation:

1. Set the base plate on the door frame or wall (see Mounting Dimensions in *Fig.10* and *Fig.11*). Use the drilling template.
2. Assemble the hydraulic unit to the base plate (see Base Plate Unit Assembly in *Pag.8* and *Fig.12-14*).
3. Connect the torque drive to the power supply (see Connections and Settings *Pag.9* and *Fig. 20*).
4. Connect external signals to the control board (see Connections and Settings *Pag.9-12* and *Fig.21-23*).
5. Check if manufacturer predetermined hydraulic adjustments are correlated to the specific door needs.
6. Adjust hydraulically speeds and damping if it is necessary (see Unit Hydraulic Adjustments in *Pag.8* and *Fig.15-17*).
7. Register opening and closing movement by *programming* button (see Stroke Programming Procedure *Pag.13* and *Fig.22*).
8. Only for double-leaf doors: interconnect both operators in order to program *Master-Slave* system (see Double-Leaf doors in *Pag.9* and *Fig. 18* ).
9. Check correct operation of the whole system.

## Mounting Dimensions.

Mounting dimensions for **PUSHING type** (Opposite hinge side) in *Fig.10*

Mounting dimensions for **PULLING type** (Hinge side) in *Fig.11*

## Base Plate Unit Assembly

When the base plate is already set on the wall or on the door frame (according mounting dimensions table), we proceed to mounting the unit on this plate.

The torque unit will be assembled on the plate with the setting guides and the screws provided by Hy-Dom.

Depends on opening hand of the door, the unit will be assembled with the motor at right or left side.

See assembly unit position for different layout in *Fig.12* and *Fig.13*.

The correct position of the drive is determined for the correspondence between the door OPENING DIRECTION and the marked ARROW in the hydraulic body (*Fig.14*).

## Hydraulic unit adjustments

The Hy-Dom automatism provides an easy speed adjustable system in the opening and closing stroke.

The torque drive comes provided with a pre-setting hydraulic adjustment, adaptable for most standard doors. See hydraulic flow regulators situation in *Fig.15*.

Opening and closing every hydraulic flow regulators, speed and damping required can be achieved, as well as, the final force needed to close the door and to activate the spring force created for the door latch.

See flow regulator OPENING adjustments in *Fig.16* and CLOSING adjustments in *Fig.17*.

## Double-leaf doors. TWIN System

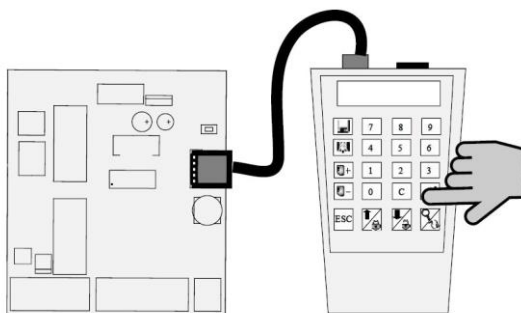
UPB Hy-Dom torque drive is available for assembly on double-leaf doors. The operator assembly for both doors will be the same that for a single-leaf door. Installer must follow the predetermined Installation Procedure: mounting dimensions, hydraulic adjustments, etc. Application example in *Fig.18*.

Control boards of every operator will be connected to each other (see Connection and Settings). The installer will choose the nature of each operator. One master operator and other slave operator are required.

External elements signals shared between both torque drives, will be connected to the operator determined as master. The operator determined as slave will receive opening and closing orders from the master operator. See Slave-Master selection in *Fig.19* and DIP board position in *Fig.23*. Both torque drives will have their own obstacle detection system, as a single-leaf operator. The reaction taken for obstacle detection from one of the operators, will be exported to both operators.

## Programing by console

The Hy-Dom automatism is designed to be set using a programmer called (GADGET). All the electronic parameters can be programmed or modified easily connecting the console to the internal control board (see Connection and Settings). This fact means that the devices are handled only by the installer. Instruction manual about gadget operation is attached in annex document.



## Connections and Settings

### Voltage Supply Settings (*Fig.20*)

- Input Supply Voltage
  - 220V AC
  - 220V AC
  - Ground (External Connection)
  - Ground (Motor Connection)
- Transformer outputs
  - TR OUT1 (yellow)
  - TR OUT1 (red)
  - TR OUT2 (black)
  - TR OUT2 (white)
- Transformer inputs
  - TR IN
  - TR IN
- Output motor / capacitor supply voltage
  - MOTOR - motor supply common
  - MOTOR - motor supply
  - MOTOR - motor supply
  - CAP - capacitor terminal
  - CAP - capacitor terminal



## Control Board (Fig.21)

- Terminal connections
  - **SLAVE I/F** Master/Slave terminal
  - **GND** 0V Ground
  - **A** Alternative button ALT (NO)
  - **GND** 0V Ground
  - **RI** Opening interior detector (NO)
  - **RO** Opening exterior detector (NO)
  - **F** Fire sensor terminal (NO)
  - **GND** 0V Ground
  - **B** 8,2K $\Omega$  safety edge input
  - **S1** Closing safety contact input (NC)
  - **S2** Opening safety contact input (NC)
  - **+12V** 12Vdc supply for additional electronic devices
  - **GND** 0V Ground
  - **LOCK** 12Vdc supply for electro lock
  - **LOCK** 12Vdc supply for electro lock
- *NO* → *Normally open*  
 □ *NC* → *Normally closed*
- Endcoder and electro valve:
  - **ENC** Central point encoder terminal
  - **GND** 0V Ground encoder terminal
  - **+5V** +5V encoder terminal
  - **+24V** Positive electro valve terminal
  - **-24V** Negative electro valve terminal
- Control settings:
  - **WAIT TIME** Dial switch regulation for automatic closing time.
  - **SLAVE** Slave Function. Fit a *jumper* to work as Slave.
  - **PROG** Stroke program button (works only in mode AUTO)
  - **CONFIG** Setting CONSOLE connection
    - Setting options connecting a CONSOLE is possible.
    - IMPORTANT: Device has to be unplugged from electric current.
  - **BAND** Safety edge simulation. Fit a *jumper* if safety edge is NOT in use.

## LED indicators (Fig.22)

- **SLAVE I/F** ON *Slave activated*  
 OFF *Slave on stand by*
- **ALTERN** ON *Alternative button activated*  
 OFF *Alternative button NOT activated*
- **RAD.INT** ON *Interior radar detecting presence*  
 OFF *Interior radar NOT detecting presence*
- **RAD.OUT** ON *Exterior radar detecting presence*  
 OFF *Exterior radar NOT detecting presence*
- **FIRE** ON *Fire sensor detecting alarm*  
 OFF *Fire sensor on stand by*
- **SAFETY1** ON *Opening photocell-1 on stand by*  
 OFF *Opening photocell-1 detecting obstacle or error*
- **SAFETY2** ON *Opening photocell-2 on stand by*  
 OFF *Opening photocell-2 detecting obstacle or error*
- **CONFIG** ON *Multifunction indicator*
- **PROG** ON *Program button pulse (see description below)*

## PROG led indicator (Fig.22)

LED **PROG** allows you to monitor different situations.

- When opening manually - turns on briefly
- When safety edge is detecting - turns on briefly
- When the door stops due to the maximum number of continuous operations reached (safety edge activation or photocell activation) - LED turns on briefly
- Up on door programming (LED indicate encoder position via frequency modulation (much higher near 0 position)).
- When door is in CLOSED mode. LED actuates as door programming.

## WAIT TIME dial switches (Fig.22)

The dial switch **WAIT TIME** allows the user to pre-determine the time the doors stay open until they automatically closes again. This time can vary between 2 seconds to 2 minutes.

If the device is set with external CONSOLE with *wait time* different to zero, time dial switch position doesn't matter.

## MODE functions. External switch

Mode functions include three options (I, O, II)

- (I) OPEN** In position (I), the door will open and stays open until mode is changed. It doesn't respond to alternative button.
- (0) CLOSED** In position (0) the system is off and if the door is open it will close automatically. It doesn't respond to any automatic opening signal.
- (II) AUTO** In position (II), the drive functions automatically

When the door is closed, it will open when the following occurs:

- Activation of ALTERN
- Detection of RAD.INT / RAD.OUT
- Detection of FIRE (when fire setting is open)
- Manual opening
- Mode function switched to (I)OPEN
- Reception of opening signal from MASTER

When the door is opening, it will stop when the following occurs:

- Detection of BAND
- Detection of SAFETY1
- Reception of stop signal from the Slave
- Door final position achieved
- Reception of stop signal from MASTER

When the door is opening, it will invert to close when the following occurs:

- Activation of ALTERN
- Stroke time was reached
- Mode function switched to (0)CLOSED
- Reception of close signal from MASTER

When the door is stopped, it will continue opening when the following occurs:

- Detection of SAFETY1 disappears
- Reception of opening signal from MASTER

When the door is opened, it will remain opened when the following occurs:

- Setting wait time is not achieved
- Mode function selected is (1)OPEN
- Detection of BAND
- Detection of FIRE (when fire setting is open)
- Detection of SAFETY2
- Reception of stop signal from MASTER

When the door is opened, it will close when the following occurs:

- Setting wait time is achieved
- Activation of ALTERN
- Detection of FIRE (when fire setting is close)
- Mode function switched to (0)CLOSED
- Reception of close signal from MASTER

When the door is closing, it will stop when the following occurs:

- Detection of BAND
- Reception of stop signal from the Slave
- Door final position achieved
- Reception of stop signal from MASTER

When the door is closing, it will invert to open when the following occurs:

- Activation of ALTERN
- Detection of SAFETY2
- Detection of RAD.INT / RAD.OUT
- Mode function switched to (1)OPEN
- Reception of stop signal from MASTER

## SLAVE operation mode (Fig.23)

In order to ensure MASTER-SLAVE operations, one of the devices has to be set as SLAVE:

- CONSOLE: setting the device by means of external gadget.
- MANUALLY: setting control SLAVE
  - Device working as Master → No *jumper*
  - Device working as Slave → Fit a *jumper*

The MASTER and SLAVE operators must be connected by two communication wires (command Signal and 0V reference) on the terminal bloc SLAVE I/F. The safety edge signal and the obstacle detection will remain active on the SLAVE and the MASTER will retain the signals for radars, fire alarm and photocell, etc.

## BS Safety edge setting (Fig.22)

In order to enable or disable electric safety edge, device has to be set by means of:

- CONSOLE: setting the device by means of external gadget.
- MANUALLY: setting control BAND
  - Safety edge NOT in use → Fit a *jumper*
  - Safety edge IN USE → No *jumper*

## Position Control System (PCS)

The Position Control System gives us the position of the door via the control panel thus controlling and managing the sequence of door movement. The PCS comprises of the following (*Fig.24* and *Fig.25*);

- Drive gear
- Driven gear with magnet
- Gear and board support
- Drive fixing screw
- Position control board
- Board fixing screw

## Installation or calibration of the PCS

The gear system can be installed for left or right hand doors.

See swing drive layout for “A” and “B” swing type in *Fig.26* and *Fig.27*.

The product supplied will have the “B” swing drive type installed as standard factory setting.

See connections for each different swing type (“A” or “B”) in *Fig.26* and *Fig.27*.

### 1. Installation or calibration of the P.C.S. – “B” Swing Type

Installation or calibration is done by the following method;

- 1.1 Undo the drive fixing screw.
- 1.2 Separate the gears from the gear support.
- 1.3 Align holes on drive gear and gear support maintaining alignment of position control. *Fig.29*
- 1.4 Screw in drive fixing screw turning 3 times (the system should then be blocked).
- 1.5 Rotating the driven gear until the “CONFIG LED” flashing faster, almost ON
- 1.6 Put the system onto the axis.
- 1.7 Screw in the gear support onto the holes on body.
- 1.8 Screw the drive fixing screw until locked.
- 1.9 Check that dip switch of the position control board is in position “1”
- 1.10 Continue with the electronic programming procedure.

### 2. Installation or calibration of the position control – “A” Swing Type

The product supplied will have the “B” swing drive type installed as standard factory setting.

The system can be changed by the following;

- 2.1 Undo the drive fixing screw.
- 2.2 Undo support screws.
- 2.3 Take the drive and support system from body.
- 2.4 Take the drive gear off the support.
- 2.5 Screw in drive fixing screw turning 3 times (the system should then be blocked).
- 2.6 Rotating the driven gear until the “CONFIG LED” flashing faster, almost ON
- 2.7 Put the system onto the axis.
- 2.8 Screw in the gear support onto the holes on body.
- 2.9 Screw the drive fixing screw until locked.
- 2.10 Check that dip switch of the position control board is in position “ON”
- 2.11 Continue with the electronic programming procedure

## Stroke Programming Procedure

In order to a correct action, swing door operator needs to record the door stroke and the time to achieve it (opening and closing).

*Previous steps:* Install alternative push button ALTERN in the control board terminal Fig 21. Speed and damping have to be adjusted hydraulically (use ALTERN push button to open and close).

1. Push button PROG during 2 seconds (approx.). See Fig.22.
2. Push ALTERN button once and the door will open automatically until you reach the desired opening angle. Push again ALTERN button to stop the opening movement.
3. Push ALTERN to start closing movement. Once the door is closed, push again ALTERN button to indicate correct closed position. The system will be already set.
4. Run a complete sequence to check if it is the desired.

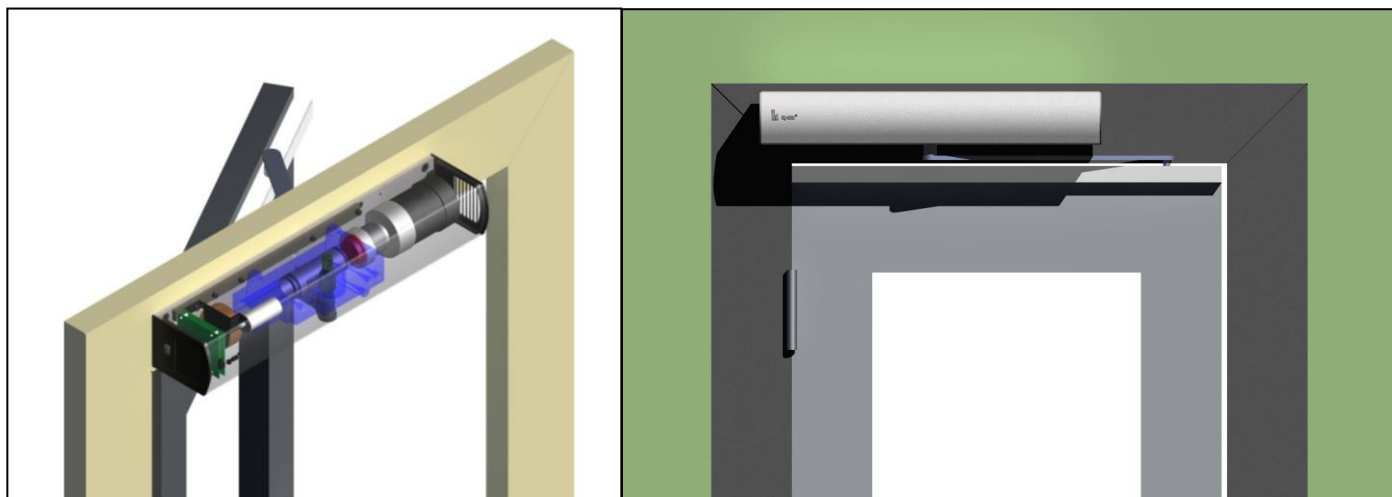
\* During the stroke programming process, device does not have in account safety band, obstacle, fire alarm, radars and photocells detections.

\* After programming the correct MODE must be selected.

\* If we desire to change some hydraulic adjustments, we have to re-programming the unit.

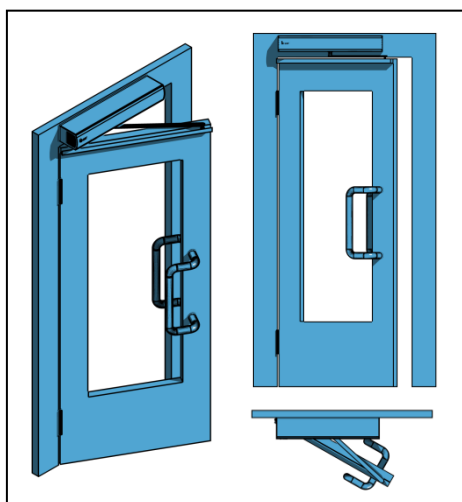
\* Before programming the unit again, device must to have been UNPLUGGED from the electric current.

## Applications UPB / Aplicaciones UPB

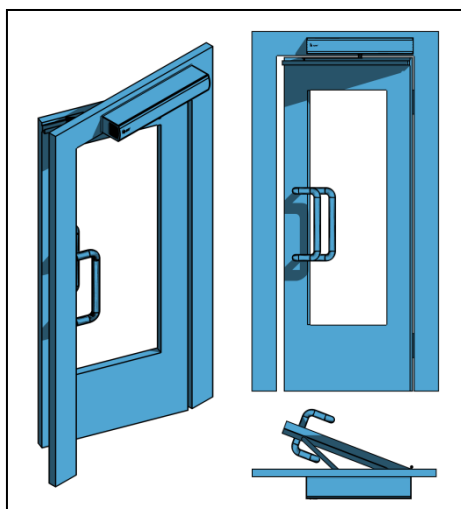


**Fig.1** Torque Drive applications  
Aplicaciones de la Unidad de Par

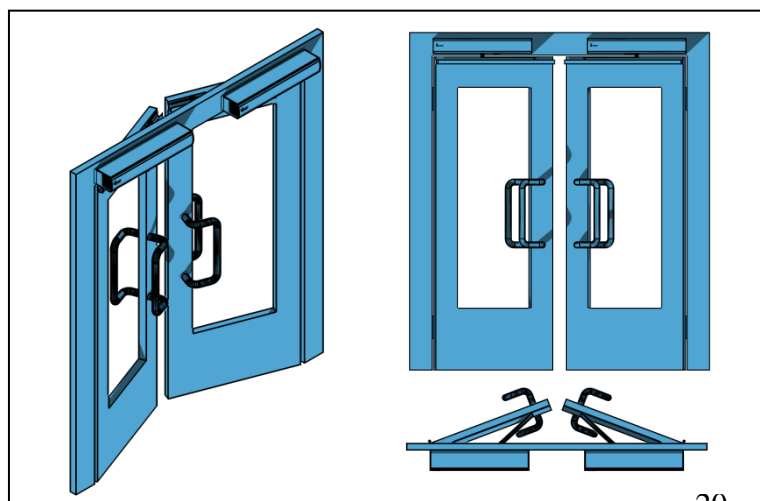
## Mounting variations / Variaciones de montaje



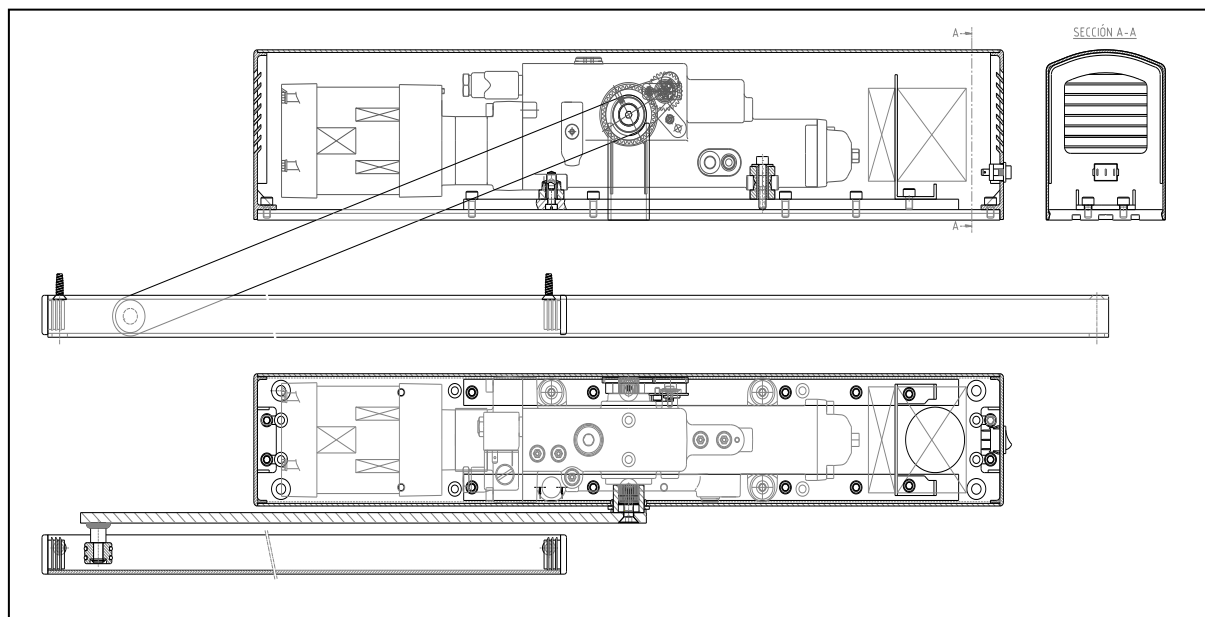
**Fig.5** Pulling Type. Hinge side, pull-opening  
(for both hands)  
Versión Pull. Lado bisagra, apertura  
tirando (a ambas manos).



**Fig.6** Pushing Type. Opposite hinge side,  
push-opening (for both hand)  
Versión Push. Lado opuesto bisagra,  
apertura empujando (a ambas manos)



**Fig.7** Twin Type. Double-leaf doors (pushing and pulling)\*  
Versión Twin. Para puertas de dos hojas (a tirar o



**Fig. 8** Torque Operator mechanical layout  
Esquema mecánico unidad de par

## Torque operator technical data

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Product Reference → <b>UPB133B37T3/24</b><br/>Referencia Producto</li> <li>Voltage<br/>Tensión               <ul style="list-style-type: none"> <li>a) 230V 50-60Hz</li> <li>b) 115V 60Hz</li> </ul> </li> <li>Consumption (Opening, Open, Closing and Standby)<br/>Consumo (Abriendo, Abierta, Cerrada and Standby)               <ul style="list-style-type: none"> <li>→ 337W, 22.6W, 4.5W</li> </ul> </li> <li>Capacitor<br/>Condensador               <ul style="list-style-type: none"> <li>a) 10 <math>\mu</math>F a 400V</li> <li>b) 40 <math>\mu</math>F a 400V</li> </ul> </li> <li>Motor Power → 164W (1300 rpm)<br/>Potencia Motor</li> <li>Thermal cut-out → 130°C<br/>Protección térmica</li> <li>Solenoid check valve<br/>Válv. Retención eléctrica               <ul style="list-style-type: none"> <li>○ NO (Normally Open)</li> <li>○ 24Vdc 5W</li> </ul> </li> <li>Temperature Range → -20°C a 80°C<br/>Margen Temperatura</li> <li>IP Rating → IP__<br/>Grado protección IP</li> <li>Flow → 2 L/min<br/>Caudal</li> </ul> | <ul style="list-style-type: none"> <li>Maximum Pressure → 3 Mpa<br/>Presión máxima</li> <li>Fluid to be used → Renolin MR-2835<br/>Tipo de aceite</li> <li>Tank capacity → 265 cm<sup>3</sup><br/>Capacidad depósito</li> <li>Unit weight → 13,2 kg<br/>Peso unidad</li> <li>External operator dimensions<br/>Dimensiones exteriores unidad<br/>               Width x Height x Depth<br/>               Ancho x Alto x Profundidad<br/> <b>636 x 100 x 130 mm.</b> </li> <li>Door leaf width (max.) → 1.400 mm<br/>Anchura hoja puerta (máx.)</li> <li>Door leaf weight (max.) → 250 kg<br/>Peso hoja puerta (máx.)</li> <li>Integrated door coordinator for double-leaf doors<br/>Preparado para puertas de doble hoja</li> <li>Maximum opening angle → 115°<br/>Ángulo de apertura máximo</li> <li>Adjustable opening time → <math>\geq 3</math> sec.<br/>Tiempo ajustable de apertura</li> <li>Adjustable closing time → <math>\geq 3</math> sec.<br/>Tiempo ajustable de cierre</li> </ul> |
|--|---|

- Torque variation along the opening and closing strokes  
*Variación del par a lo largo de la carrera de apertura y cierre*

	<i>Maximum pre-stressing spring Pretensado máximo del muelle</i>	<i>Minimum pre-stressing spring Pretensado mínimo del muelle</i>
<i>OPENING Generated Torque Par Generado en APERTURA</i>	30 Nm - 15 Nm	34 Nm - 19 Nm
<i>CLOSING Generated Torque Par Generado en CIERRE</i>	33 Nm - 18 Nm	30 Nm - 16 Nm

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Adjustable opening speed<br/>Regulación velocidad apertura</li> <li>Adjustable closing speed<br/>Regulación velocidad cierre</li> <li>Adjustable opening damping<br/>Regulación amortiguación apertura</li> <li>Adjustable closing damping<br/>Regulación amortiguación cierre</li> </ul> | <ul style="list-style-type: none"> <li>Safety sensors connection<br/>Conexión para seguridad</li> <li>Door locking device connection<br/>Conexión para electrocerradura</li> <li>Access control system connection<br/>Conexión para sistema control de acceso</li> <li>Resistive band connection<br/>Conexión para banda resistiva</li> </ul> |
|--|---|

#### For Plate offset X=0 / Para cota de Placa X=0

Lintel depth / Profundidad dintel <b>Fig.9 L (mm)</b>	Door Leaf / Anchura Puerta <b>(mm)</b>	Plate-Hinge / Placa-Bisagra <b>X (mm)</b>	Slide-Hinge / Guía-Bisagra <b>G (mm)</b>	Door Opening / Apertura puerta <b>max. (°)</b>
0	>=800	0	145	115°
50	>=800	0	135	103°
100	>=800	0	120	91°

To obtain opening angle 115° / Para obtención de apertura 115°

Mounting  
Cotas de

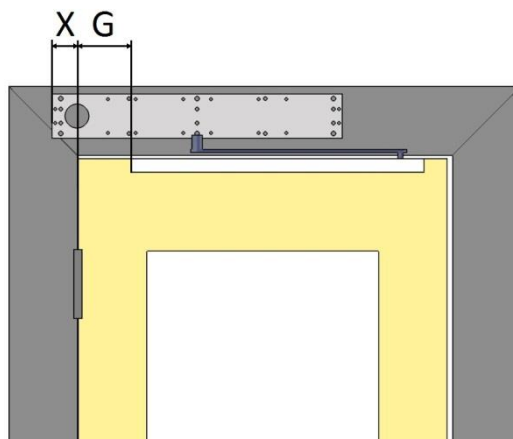
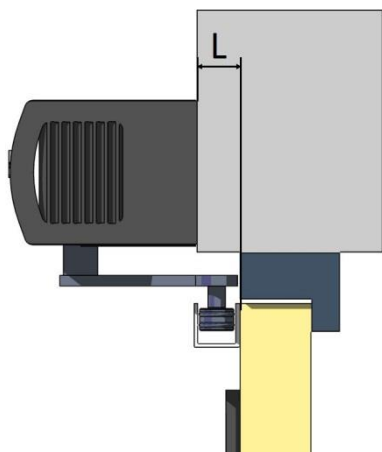




Lintel depth / Profundidad dintel <b>L (mm)</b>	Door Leaf / Anchura Puerta <b>(mm)</b>	Plate-Hinge / Placa-Bisagra <b>X (mm)</b>	Slide-Hinge / Guía-Bisagra <b>G (mm)</b>	Door Opening / Apertura puerta <b>max. (°)</b>
<b>0</b>	700	90	60	Mín. 115°
	750	40	110	
	>=800	0	145	
<b>50</b>	700	80	60	
	750	30	110	
	>=800	20	120	
<b>100</b>	700	75	60	
	>=725	60	75	
<b>150</b>	>=700	50	50	
<b>200</b>	>=700	60	15	

**Fig.10***L = Lintel Depth (mm)**X = Plate offset relative to hinge (mm)**G = Slide offsets relative to hinge (mm)**L = Profundidad de Dintel (mm)**X = Cota placa respecto a la bisagra (mm)**G = Cota guía respecto a la bisagra (mm)*

## Mounting Dimensions. PULLING type (Hinge side) Cotas de Montaje. Versión a TIRAR (Lado Bisagra)



To obtain opening angle 115° / Para obtención de apertura 115°

Dintel depth / Profundidad dintel <b>L (mm)</b>	Door Leaf / Anchura Puerta <b>(mm)</b>	Plate-Hinge / Placa-Bisagra <b>X (mm)</b>	Slide-Hinge / Guía-Bisagra <b>G (mm)</b>	Door Opening / Apertura puerta <b>max. (°)</b>
<b>0</b>	700	100	60	Mín. 115°
	750	50	110	
	>=800	0	160	
<b>50</b>	700	130	60	
	750	70	110	
	800	15	160	
	>=825	0	185	
<b>100</b>	700	170	60	
	750	100	110	
	800	40	160	
	>=850	0	210	
<b>150</b>	750	150	110	
	800	80	160	
	850	20	210	
	>=875	0	235	
<b>200</b>	800	140	160	
	850	60	210	
	>=900	0	260	

**Fig.11**

L = Lintel Depth (mm)

X = Plate offset relative to hinge (mm)

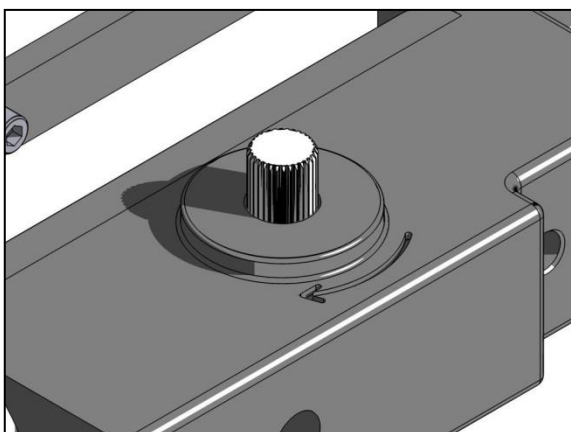
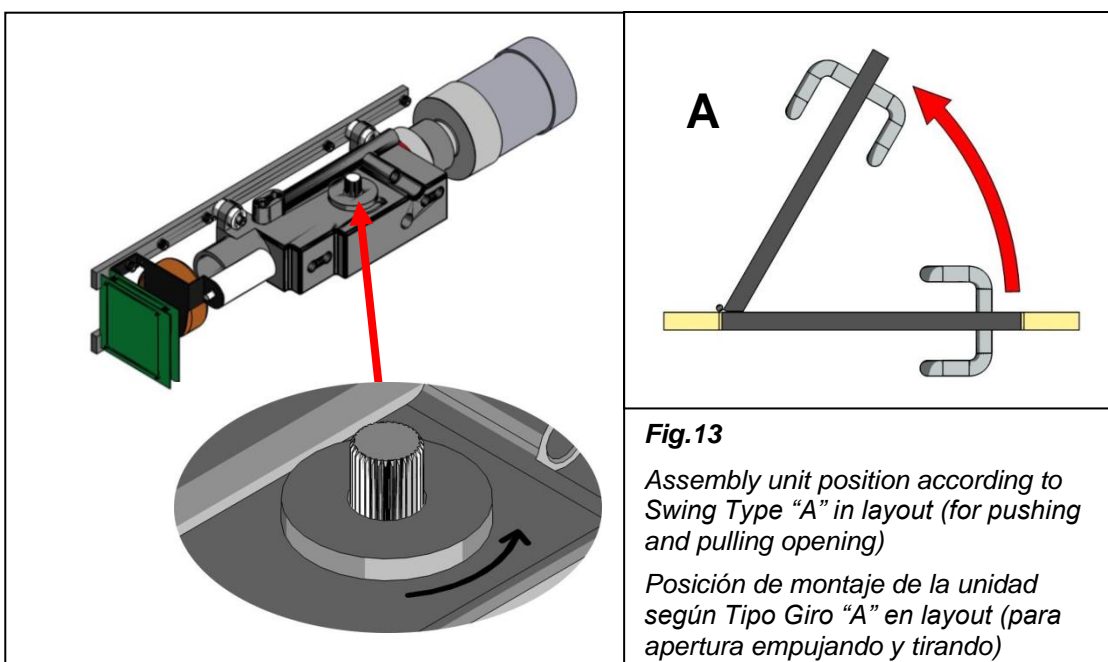
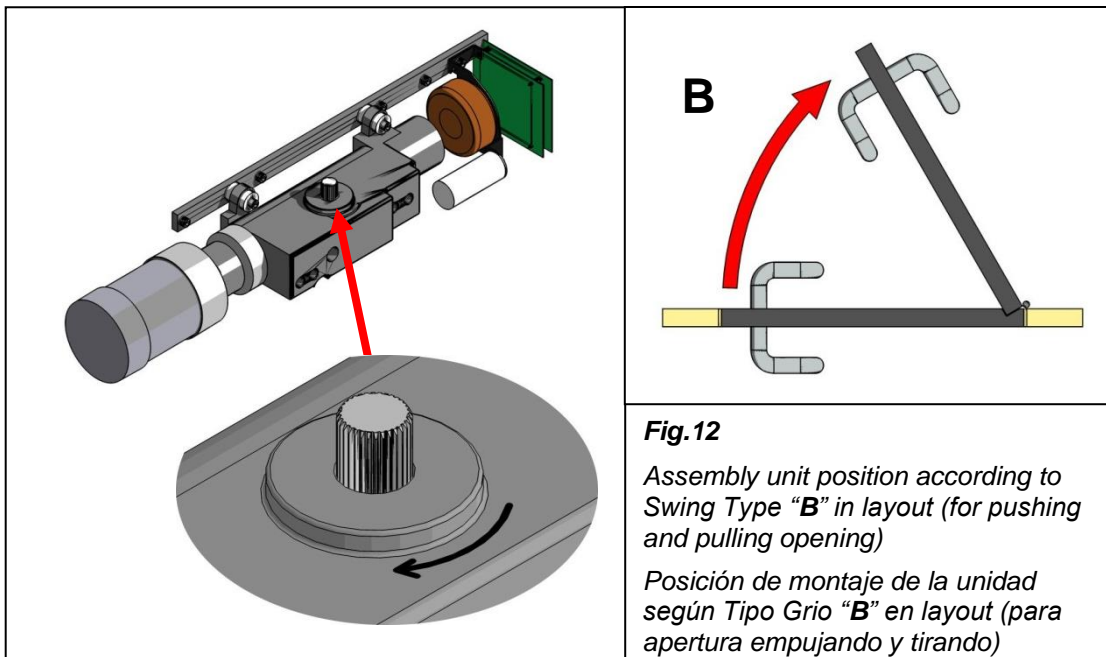
G = Slide offsets relative to hinge (mm)

L = Profundidad de Dintel (mm)

X = Cota placa respecto a la bisagra (mm)

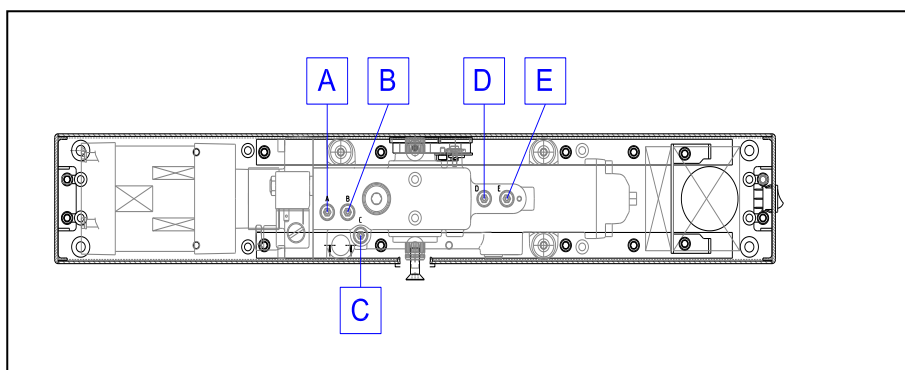
G = Cota guía respecto a la bisagra (mm)

## Base plate unit assembly / Montaje de la unidad en placa

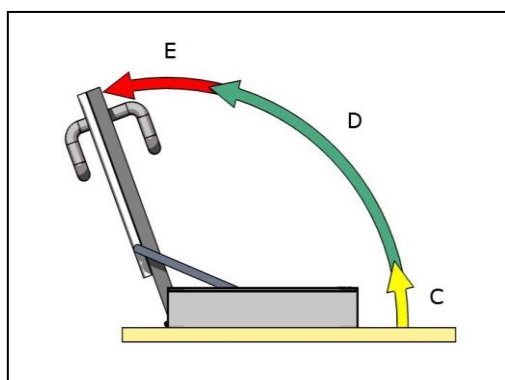


**Fig. 14** Door OPENING DIRECTION and marked ARROW in the hydraulic body must match.  
 El SENTIDO DE APERTURA de la puerta y la FLECHA marcada en el cuerpo deben coincidir.

## Hydraulic unit adjustments / Regulación hidráulica de la unidad



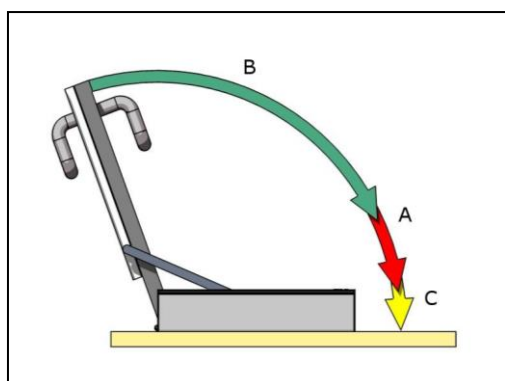
**Fig.15** Hydraulic flow regulator situation  
Situación de las válvulas de regulación



**Fig.16**

Flow regulator OPENING adjustments:  
Reguladores de caudal de ajustes de apertura:

- C** → Initial acceleration\*  
Aceleración Inicial\*
- D** → Opening Speed  
Velocidad Apertura
- E** → Opening Damping  
Amortiguación Apertura



**Fig.17**

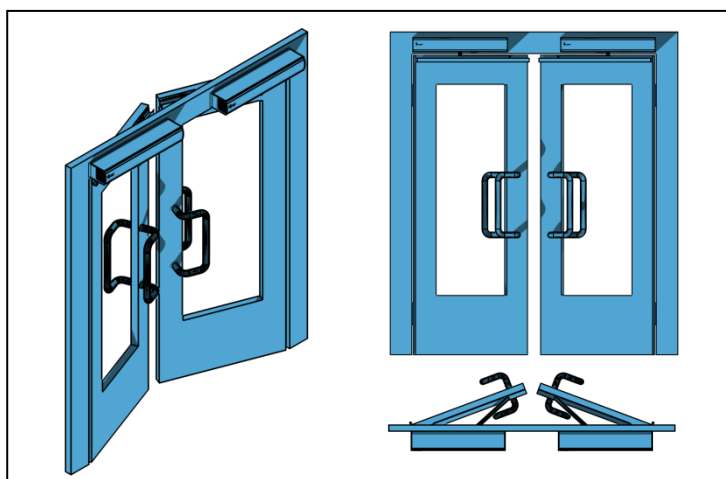
Flow regulator CLOSING adjustments:  
Reguladores de caudal de ajustes de cierre:

- B** → Closing Speed  
Velocidad de Cierre
- A** → Closing Damping  
Amortiguación Cierre
- C** → Latch Close\*  
Golpe Final \*

\* Initial acceleration and latch close are regulated with the same hydraulic flow regulator.

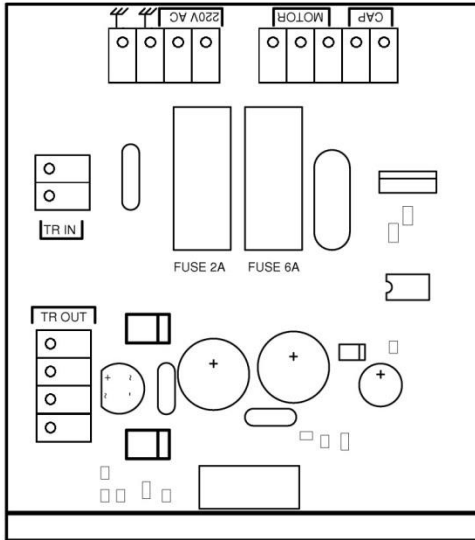
\* La regulación de la Aceleración Inicial y el Golpe Final se realizan con la misma válvula.

## Double leaf door / Puertas de doble hoja

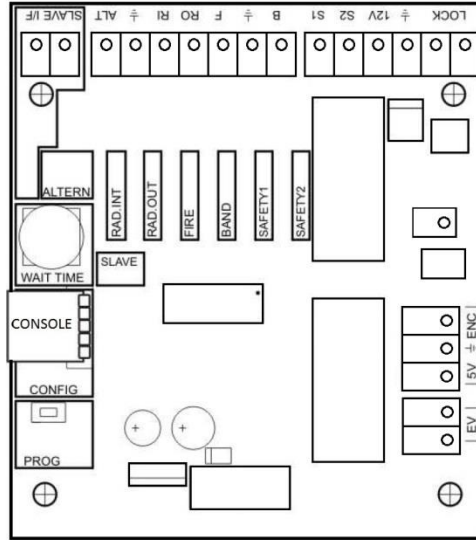


**Fig.18** Two drive assembly on a standard double-leaf door  
Montaje de 2 unidades en puerta de doble hoja

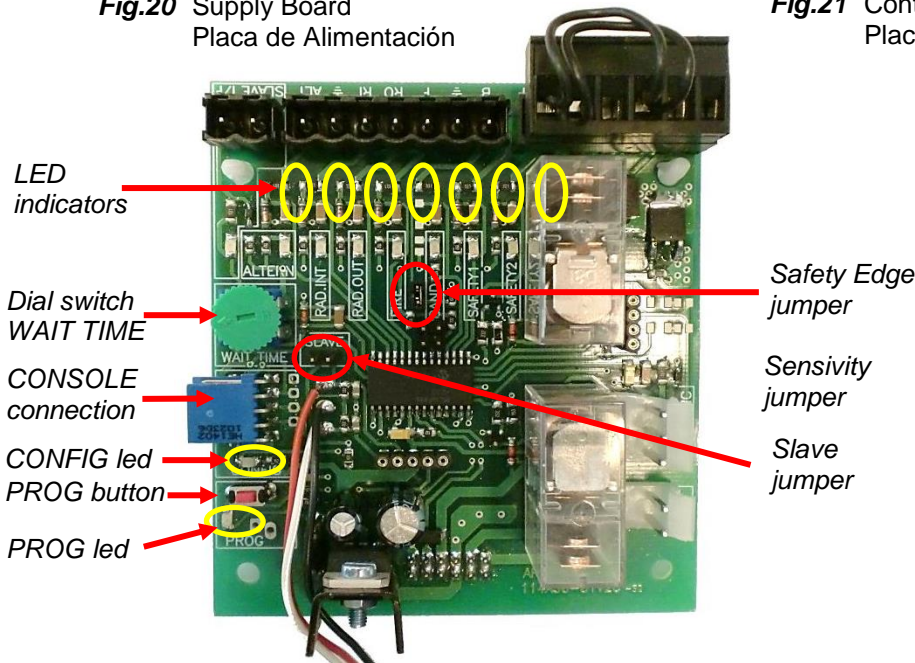
## Connections and settings / Conexiones y programación



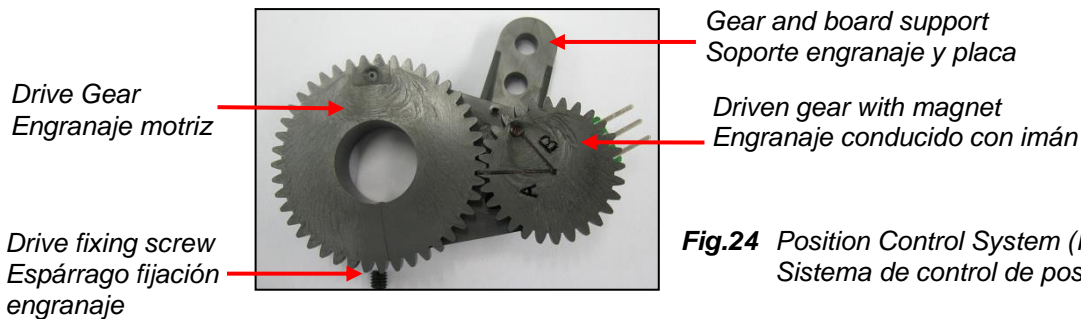
**Fig.20** Supply Board  
Placa de Alimentación



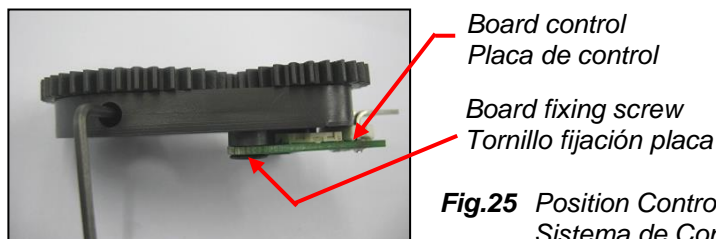
**Fig.21** Control Board  
Placa de Control



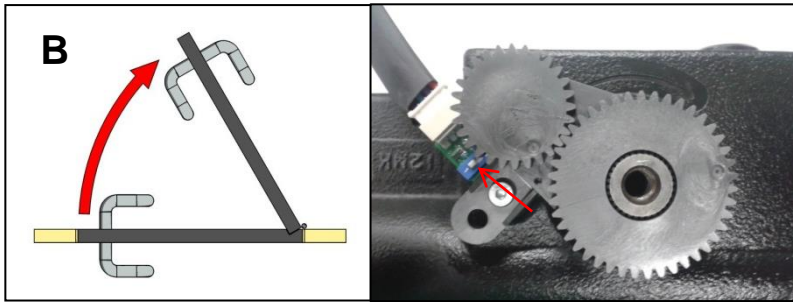
**Fig.22** Programming button and LEDs  
Pulsador de programación y LEDs



**Fig.24** Position Control System (PCS)  
Sistema de control de posición (PCS)

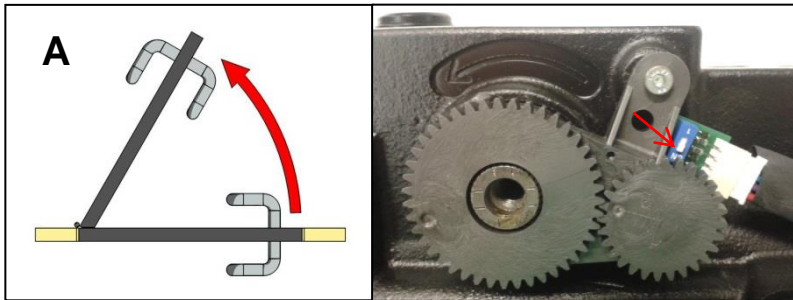


**Fig.25** Position Control System  
Sistema de Control de Posición



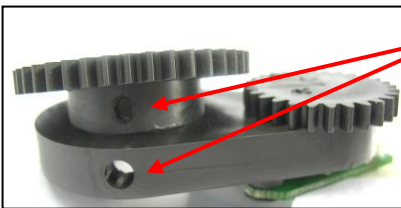
**Fig.26**

**"B"** Swing Type layout and PCS connections. Standard factory setting.  
Layout del Tipo de Giro **"B"** y conexiones del PCS. Configuración estándar de fábrica.



**Fig.27**

**"A"** Swing Type layout and PCS connections Layout del Tipo de Giro **"A"** y conexiones del PCS

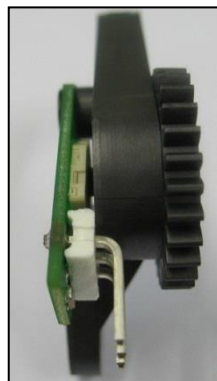


Gear support and drive gear fixing hole alignment  
Agujeros soporte y engranaje alineados

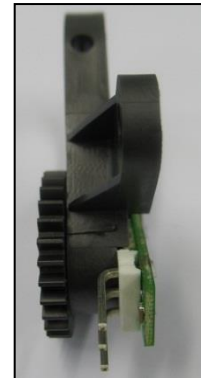
**Fig.29** Alignment of gear fixing for **"B"** Swing  
Alineación de engranaje fijo para giro **"B"**



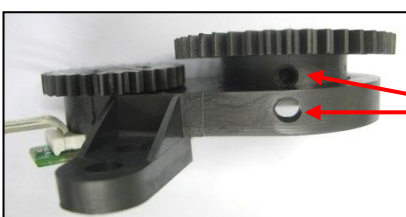
**Fig.30** Alignment of gear system **"A"**  
Alineación **"A"** marca engranaje



**Fig.31** **"B"** Swing position  
Posición Giro **"B"**



**Fig.32** **"A"** Swing position (turned 180°)  
Posición Giro **"A"** (girado 180°)



Gear support and drive gear fixing hole alignment  
Agujeros soporte y engranaje alineados

**Fig.33** Alignment of gear system **"A"**  
Alineación **"A"** marca engranaje

