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COMBI 787

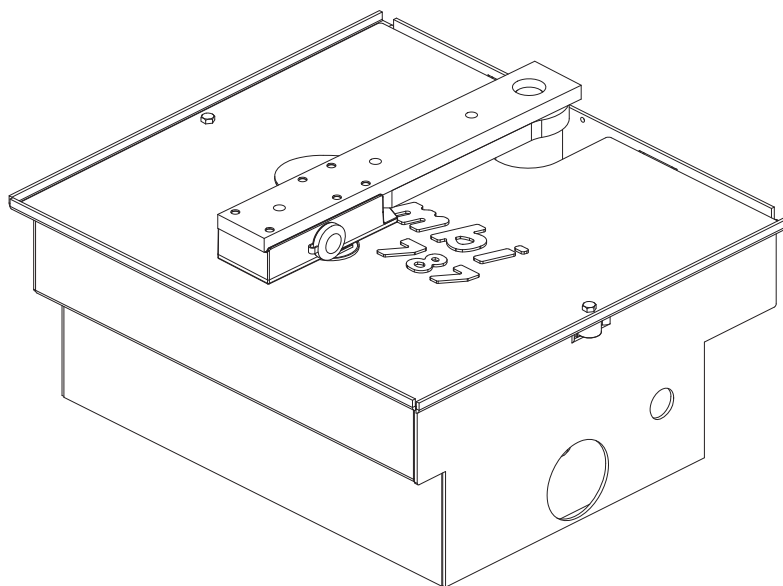
Automazione oleodinamica interrata per cancelli a battente

Oil-hydraulic underground operator for swinging gates

Automation hydraulique enterrée pour portails à battant

Ölhydraulischer Unterflur-Antrieb für Drehtore

Automatización hidráulica enterrada para puertas batientes



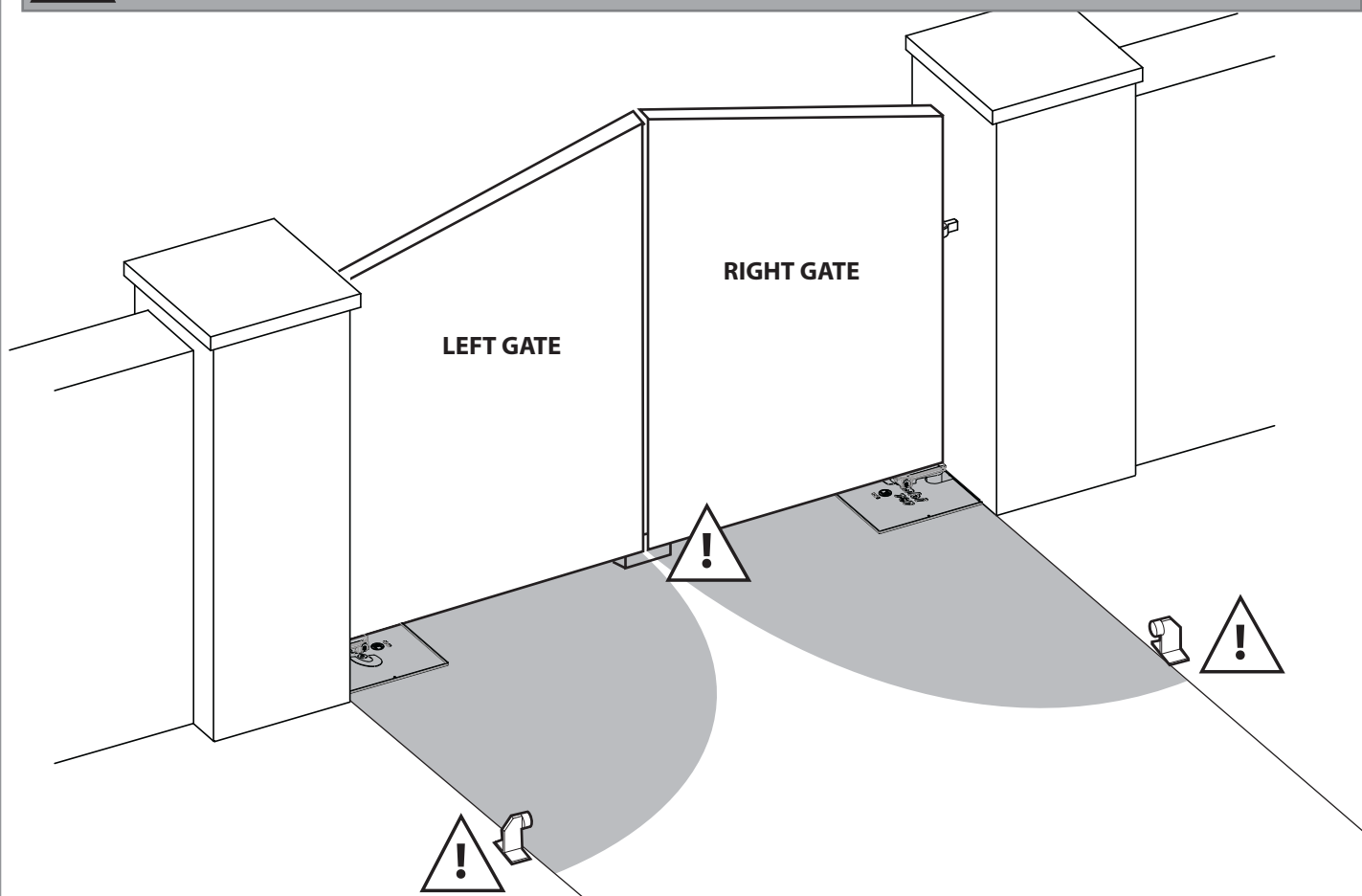
EN 13241
EN 12453
EN 12445

Made in Italy



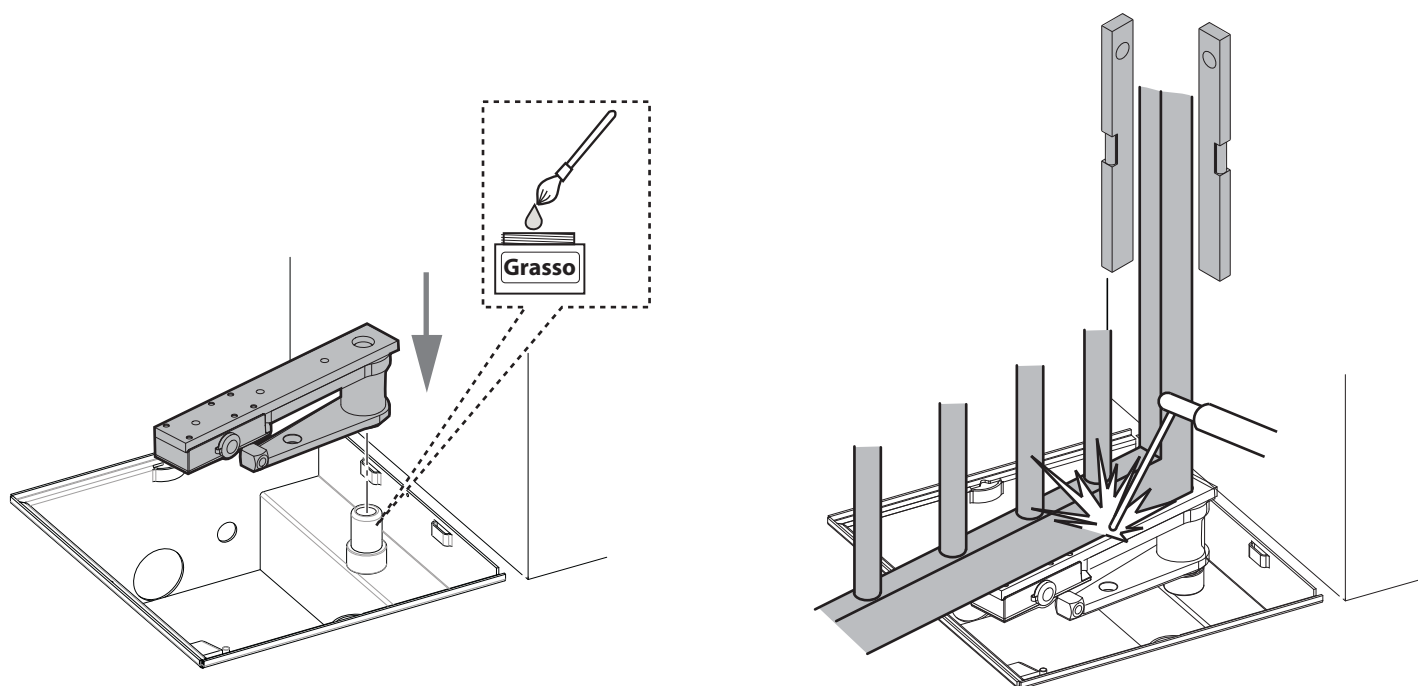


NOTE WELL: IT IS PREFERABLE TO ALWAYS FIT GROUND GATE STOPS. SHOULD THIS NOT BE POSSIBLE, COMBI 787 IS DESIGNED SO THAT GATE STOPS CAN BE FITTED INTO THE FOUNDATION BOX.


1

WELDING THE GATE ONTO THE RELEASE BRACKET

Position the gate onto the release bracket and in vertical line with the gate upper hinge.

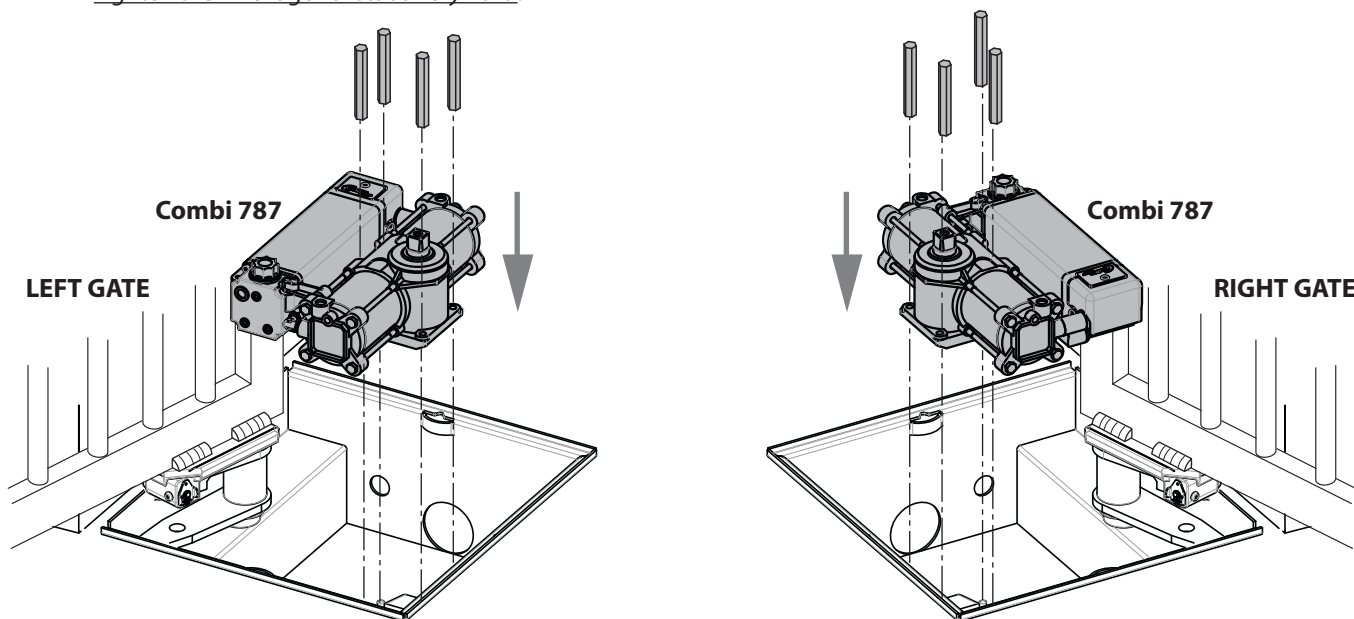


2

FITTING COMBI 787's INSIDE THE FOUNDATION BOXES

Put the Combi 787's inside the foundation boxes and fix them by the 4 stud bolts: *no difference between Combi 787 right-hand or left-hand.*

Tighten the 4 hexagonal studs very hard.

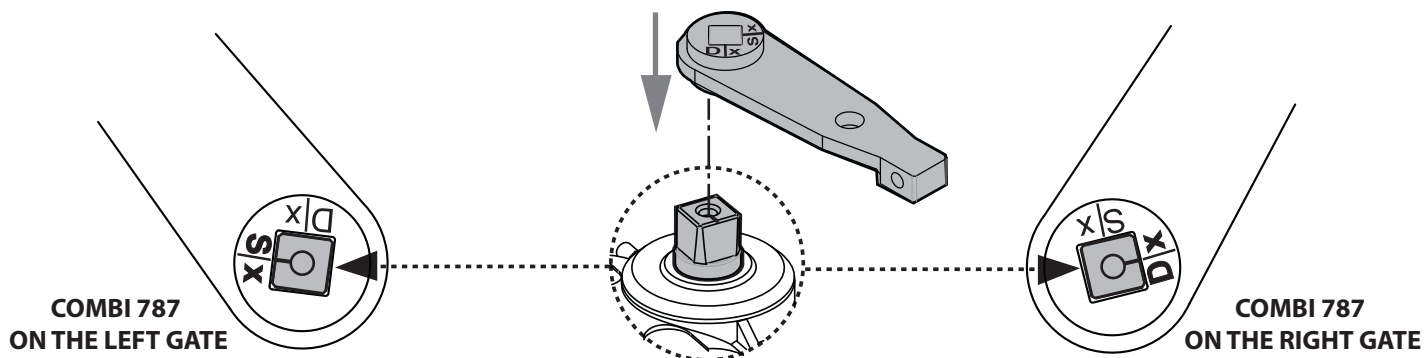


3

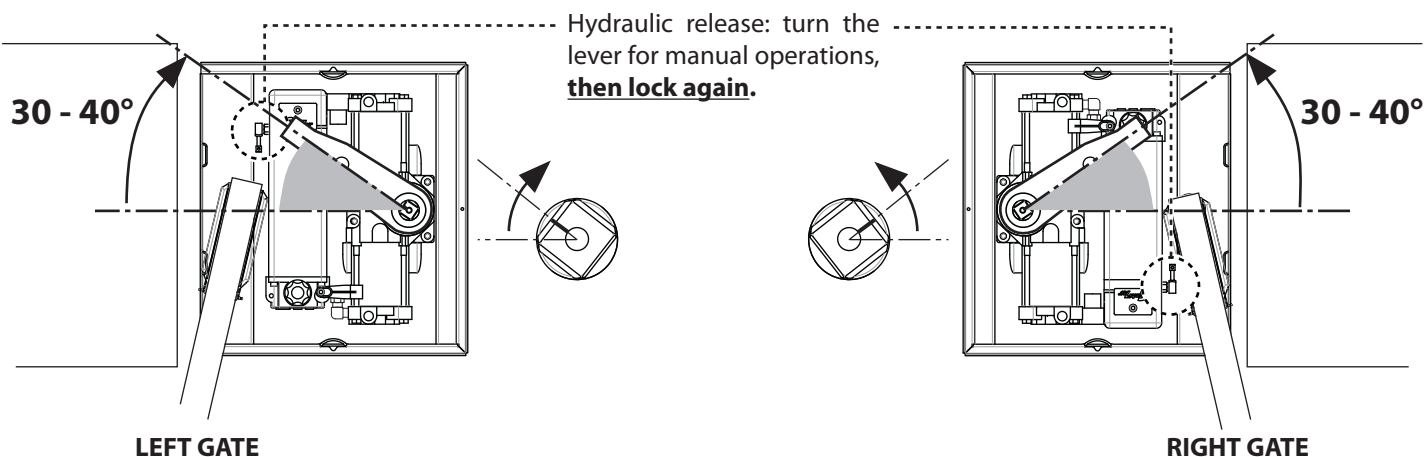
FITTING THE OPERATING ARMS ONTO THE SQUARE SHAFT

NOTE WELL: FIT THE OPERATING ARM AND MAKE SURE THE RESPECTIVE NOTCHES ON THE SQUARE SHAFT AND OPERATING ARM ARE PERFECTLY ALIGNED:

- COMBI 787 INSTALLED ON THE RIGHT TO MATCH THE NOTCH MARKED DX (right)
- COMBI 787 INSTALLED ON THE LEFT TO MATCH THE NOTCH MARKED SX (left)



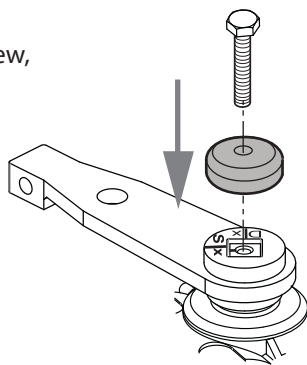
Rotate the shaft about $30-40^\circ$ in the direction opposite to the opening of the gate (towards the outside), manually with Combi 787 released, or electrically by providing a temporary power connection setup.



4

LOCKING THE OPERATING ARM

Fasten the operating arm by the ring and screw, tightening very hard.

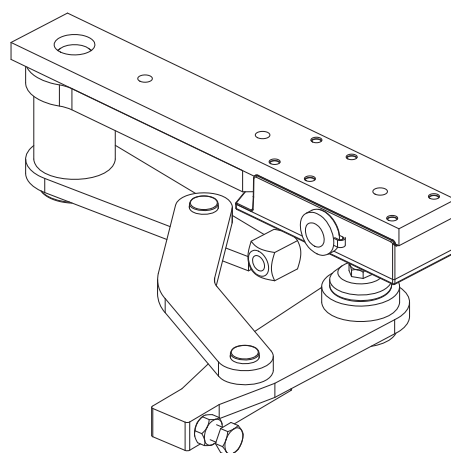
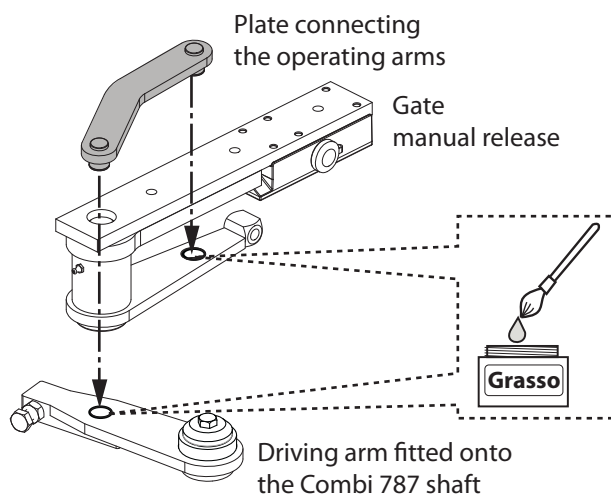


Operating arm
Combi 787 left

5

FITTING THE ARM CONNECTION PLATE

Fit the connection plate into the holes of the two arms.

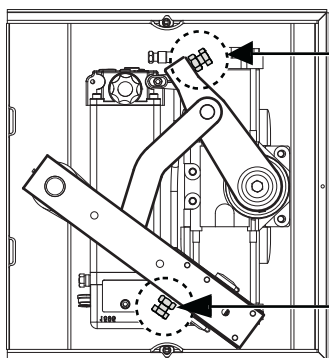


Details of the lever system Combi 787 right

6

ADJUSTMENT OF THE OPENING AND CLOSING GATE STOPS (if case no ground fitting is allowed).

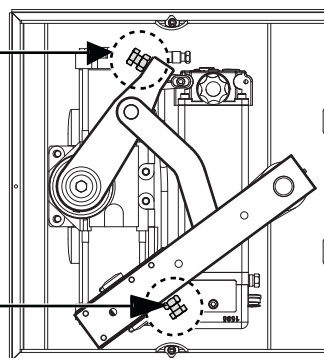
ATTENTION: THE MANUFACTURING COMPANY RECOMMENDS TO INSTALL OPENING AND CLOSING GATE STOPS PREFERABLY ON GROUND. IN CASES WHERE THESE CANNOT BE FITTED, IT IS POSSIBLE TO MOUNT GATE STOPS INSIDE THE MOTOR FOUNDATION BOX AND ADJUST THEM AS DESCRIBED BELOW.



**COMBI 787
ON THE LEFT GATE**

**Adjustment screw
CLOSING gate stop:**
close the gate, then
adjust the screw and
tighten the locking nut

**Adjustment screw
OPENING gate stop:**
open the gate to the
required open position,
then adjust the screw
and tighten the
locking nut



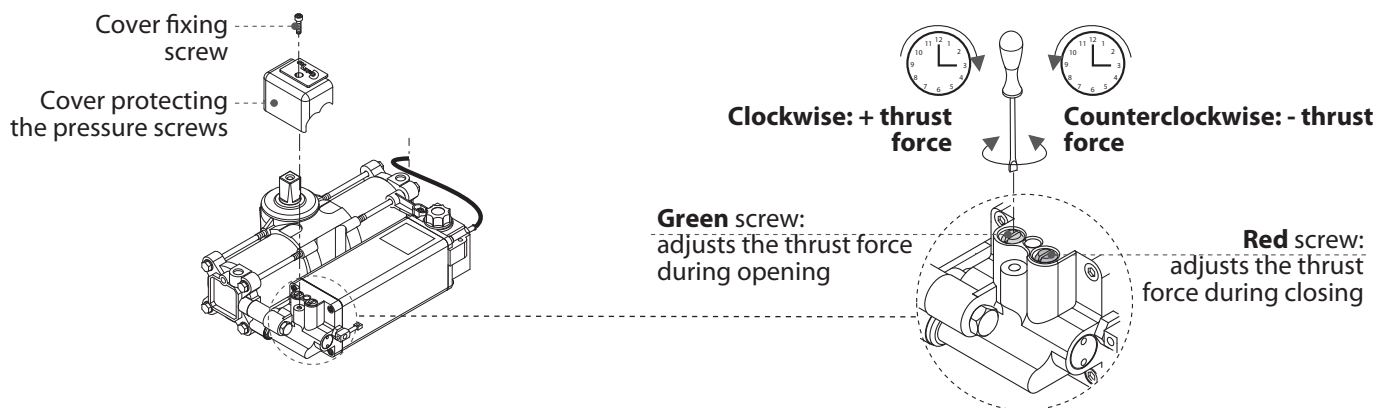
**COMBI 787
ON THE RIGHT GATE**

7 ADJUSTING THRUST FORCE

The anti-crashing safety of Combi 787 is ensured by the hydraulic maximum pressure valves, which allow for an accurate and stable adjustment of the thrust force over the time.

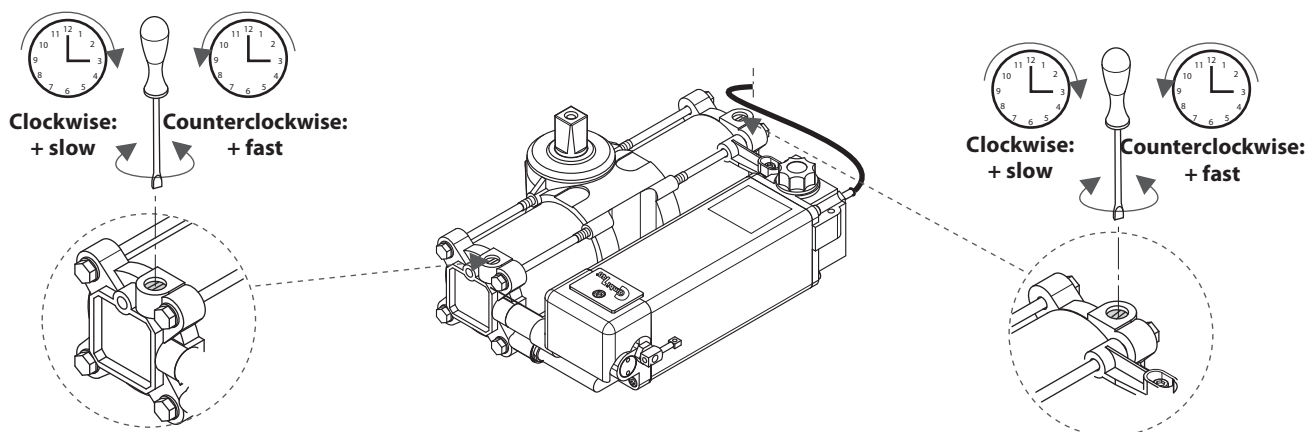
To access the thrust adjusting screws, undo the Allen screw and remove the cover

- **Red screw:** by **tightening** (clockwise) **thrust force is increased during closing**, and decreased by loosening.
- **Green screw:** by **tightening** (clockwise) **the thrust force is increased during opening**, and decreased by loosening.

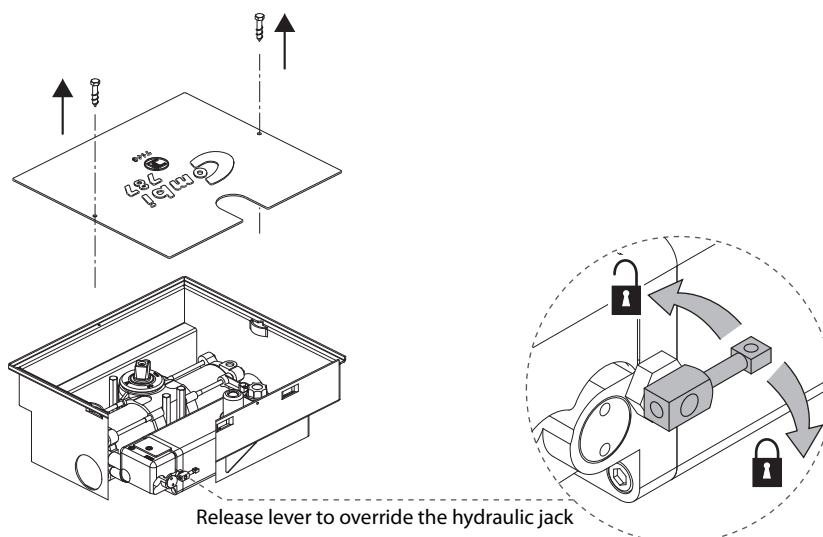


8 BRAKE ADJUSTING (ONLY WITH COMBI 787 WITH BRAKING IN OPENING AND CLOSING)

It is possible to adjust braking ie. slowdown during the last few rotation degrees of the gates (approx. 40 cm)



9 ACTUATOR RELEASING FOR MANUAL OPERATIONS OF THE GATE WITHOUT THE EMERGENCY MANUAL RELEASE BRACKET



MAINTENANCE RECORD

hand over to the end user of the installation



Installation address:

Maintainer:

Date:

Installation type:

Sliding gate

☐

Folding door

☐

Swinging gate

☒

Road barrier

☐

Over-head door

☐

Bollard

☐Lateral folding
door☐

.....

Operator model:

Quantity of models
installed:

Dimensions per gate leaf:

Weight per gate leaf:

Installation date:

NOTE WELL: this document must record any ordinary and extraordinary services including installation, maintenance, repairs and replacements to be made only by using Fadini original spare parts. This document, for the data included in it, must be made available to authorized inspectors/officers, and a copy of it must be handed over to the end user/s.

The installer/maintainer are liable for the functionalities and safety features of the installation only if maintenance is carried on by qualified technical people appointed by themselves and agreed upon with the end user/s.

N°	Service date	Service description	Technical maintainer	End user/s
1				
2				
3				
4				
5				
6				

Stamp and signature
installation technician/maintainer

Signed for acceptance
end user
buyer

hand over to the end user of the installation



TECHNICAL SPECIFICATIONS

TWO-PHASE CLASS H ELECTRIC MOTOR

Power output	0,24 kW (0,33 HP)
Absorbed power	330 W
Frequency	50 Hz
Supply voltage	230 Vac
Absorbed current	1,8 A
Capacitor	12,5 µF
Motor rotation speed	1.350 rpm
Intermittent service	S3

PERFORMANCE

Frequency of use	very intensive
Service cycle	opening ~ 23 s
	dwell 15 s
	closing ~ 23 s
	dwell 15 s
Complete cycle time	~ 76 s
Complete cycles opening-dwell-closing-dwell	No. 45/hour

DOUBLE STROKE JACK AND OIL-HYDRAULIC PUMP

P3 - Hydraulic pump capacity	0,85 l/1'
Working temperature	-20 °C +80 °C [A]
Oil type	Oil Fadini - Item 708L
Shaft rotation	110°
Working torque	250-400 Nm
Piston diameter	75 mm
Piston stroke	52 mm
Weight with foundation box	34 kg
Protection standard	IP 67
Dimensions (LxWxH)	435x396x190 mm

APPLICATIONS

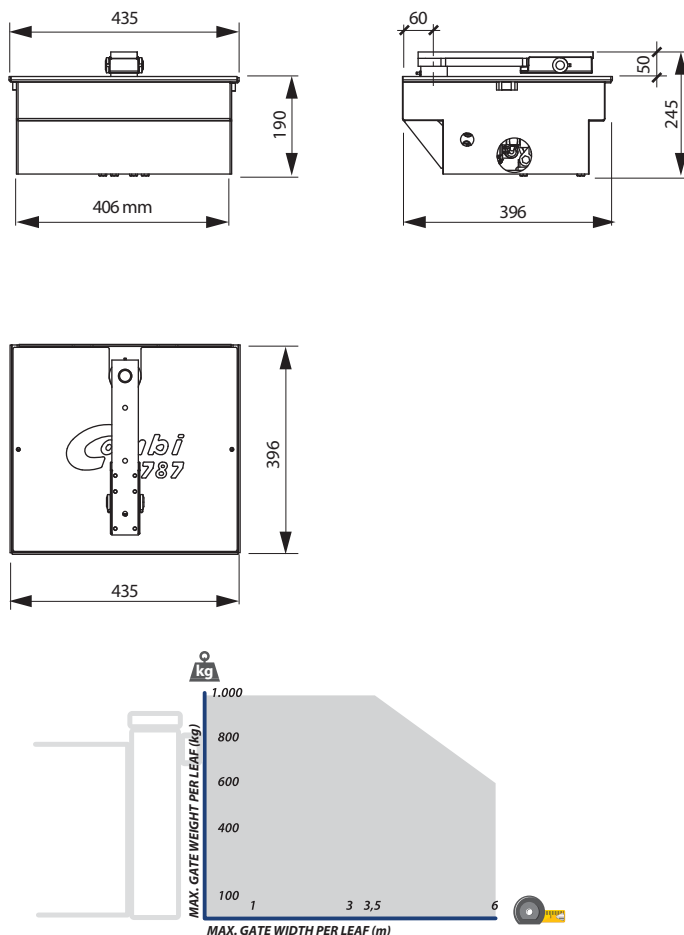
Max. gate weight per leaf	1.000 kg
Max. gate width per leaf	6 m

VERSIONS

- Braking in opening and closing
- Non braking
- Hydraulic bidirectional locking
- Non locking (reversible): an electric lock is to be fitted
- With flow regulator

[A]: -40 °C with specific optional accessories (Ref. General Catalogue).

• With gate leaves wider than 2 m, an electric lock is also required.



The gate structure, design (solid, in-filled), height and strong wind pressure may affect and decrease the indicated values. Make always sure the gate structure is adequate to automation.

GENERAL WARNINGS FOR PEOPLE SAFETY**THANK YOU**

Thank you for purchasing a Fadini product. Please read these instructions carefully before using this appliance. The instructions contain important information which will help you get the best out of the appliance and ensure safe and proper installation, use and maintenance. Keep this manual in a convenient place so that you can always refer to it for the safe and proper use of the appliance.

INTRODUCTION

This operator is designed for a specific scope of applications as indicated in this manual, including safety, control and signaling accessories as minimum required with Fadini equipment. □ Any applications not explicitly included in this manual may cause operation problems or damages to properties and people. □ Meccanica Fadini S.r.l. is not liable for damages caused by the incorrect use of the equipment, or for applications not included in this manual or for malfunctioning resulting from the use of materials or accessories not recommended by the manufacturer. □ The manufacturer reserves the right to make changes to its products without prior notice. □ All that is not explicitly indicated in this manual is to be considered not allowed.

BEFORE INSTALLATION

Before commencing operator installation assess the suitability of the access, its general condition and the structure. □ Make sure that there is no risk of impact, crushing, shearing, conveying, cutting, entangling and lifting situations, which may prejudice people safety. □ Do not install near any source of heat and avoid contacts with flammable substances. □ Keep all the accessories able to turn on the operator (transmitters, proximity readers, key-switches, etc) out of the reach of the children. □ Transit through the access only with stationary operator. □ Do not allow children and/or people to stand in the proximity of a working operator. □ To ensure safety in the whole movement area of a gate it is advisable to install photocells, sensitive edges, magnetic loops and detectors. □ Use yellow-black strips or proper signals to identify dangerous spots. □ Before cleaning and maintenance operations, disconnect the appliance from the mains by switching off the master switch. □ If removing the actuator, do not cut the electric wires, but disconnect them from the terminal box by loosening the screws inside the junction box.

INSTALLATION

All installation operations must be performed by a qualified technician, in observance of the Machinery Directive 2006/42/CE and safety regulations EN 12453 - EN 12445. □ Verify the presence of a thermal-magnetic circuit breaker 0,03 A - 230 V - 50 Hz upstream the installation. □ Use appropriate objects to test the correct functionality of the safety accessories, such as photocells, sensitive edges, etc. □ Carry out a risk analysis by means of appropriate instruments measuring the crushing and impact force of the main opening and closing edge in compliance with EN 12445. □ Identify the appropriate solution necessary to eliminate and reduce such risks.

□ In case where the gate to automate is equipped with a pedestrian entrance, it is appropriate to prepare the system in such a way to prohibit the operation of the engine when the pedestrian entrance is used. □ Apply safety nameplates with CE marking on the gate warning about the presence of an automated installation. □ The installer must inform and instruct the end user about the proper use of the system by releasing him a technical dossier, including: layout and components of the installation, risk analysis, verification of safety accessories, verification of impact forces and reporting of residual risks.

INFORMATION FOR END-USERS

The end-user is required to read carefully and to receive information concerning only the operation of the installation so that he becomes himself responsible for the correct use of it. □ The end-user shall establish a written maintenance contract with the installer/maintenance technician (on -call). □ Any maintenance operation must be done by qualified technicians. □ Keep these instructions carefully.

WARNINGS FOR THE CORRECT OPERATION OF THE INSTALLATION

For optimum performance of system over time according to safety regulations, it is necessary to perform proper maintenance and monitoring of the entire installation: the automation, the electronic equipment and the cables connected to these. □ The entire installation must be carried out by qualified technical personnel, filling in the Maintenance Manual indicated in the Safety Regulation Book (to be requested or downloaded from the site www.fadini.net/supporto/downloads). □ Operator: maintenance inspection at least every 6 months, while for the electronic equipment and safety systems an inspection at least once every month is required. □ The manufacturer, Meccanica Fadini S.r.l., is not responsible for non-observance of good installation practice and incorrect maintenance of the installation.

DISPOSAL OF MATERIALS

Dispose properly of the packaging materials such as cardboard, nylon, polystyrene etc. through specializing companies (after verification of the regulations in force at the place of installation in the field of waste disposal). Disposal of electrical and electronic materials: to remove and dispose through specializing companies, as per Directive 2012/19/UE. Disposal of substances hazardous for the environment is prohibited.

**CE DECLARATION OF CONFORMITY of the manufacturer:**

Meccanica Fadini S.r.l. (Via Mantova, 177/A - 37053 Cerea - VR - Italy) declares under own responsibility that:

COMBI 787 complies with the 2006/42/CE Machinery Directive, and also that it is sold to be installed in an "automatic system", along with original accessories and components as indicated by the manufacturing company. An automatic gate operator is, by law, a "machinery" and therefore the installer must fit the equipment with all of the applicable safety norms. The installer is also required to issue the installer's Declaration of Conformity. The manufacturer is not liable for possible incorrect use of the product. The product complies with the following specific norms: analysis of the risks and subsequent action to cure them as per EN 12445 and EN 12453, Low Voltage Directive 2014/35/UE, Electromagnetic Compatibility 2014/30/UE. In order to certify the product, the manufacturer declares under own responsibility the compliance with the EN 13241-1 PRODUCT NORMS.

Meccanica Fadini S.r.l.
Director in charge