November, 2003
422 User Manual

THE 422 OPERATOR USER MANUAL

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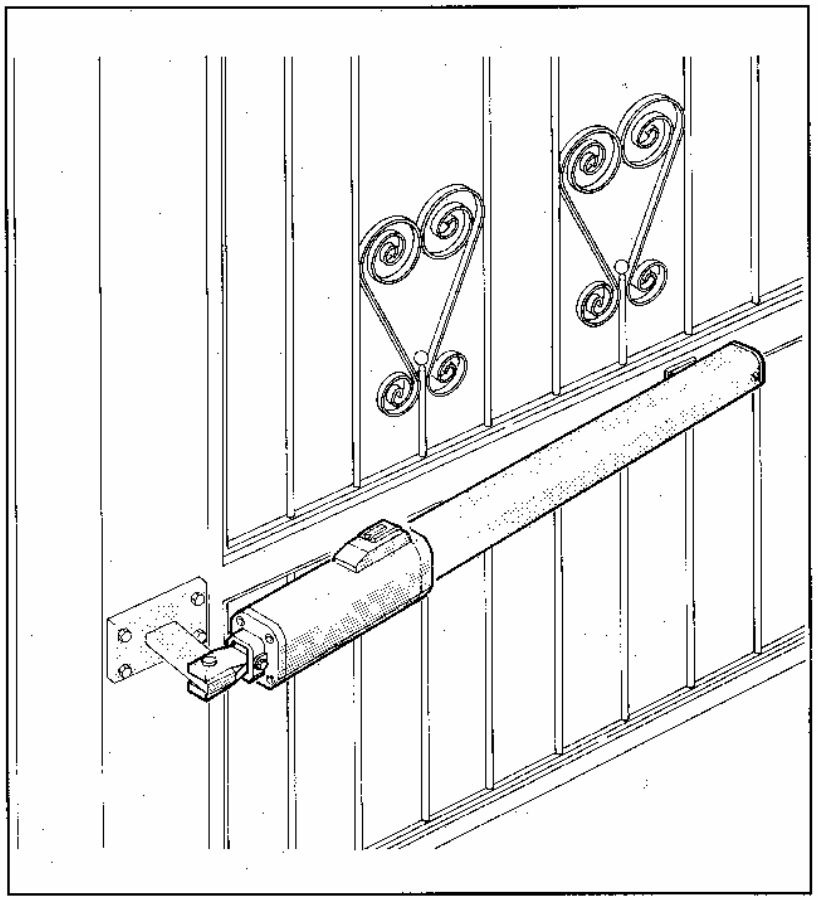

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IMPORTANT SAFETY INFORMATION

The owner and/or operator of this system must read and understand this manual and the safety instructions supplied with other components of the gate system. This information should be retained by the owner/ operator of the gate.

WARNING! To reduce the risk of injury or death

1. **READ AND FOLLOW ALL INSTRUCTIONS.**
2. Never let children operate or play with gate controls. Keep the remote control away from children.
3. Always keep people and objects away from the gate. **NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.**
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.
5. Use the emergency release only when the gate is not moving.
6. **KEEP GATES PROPERLY MAINTAINED.** Read the owner's manual. Have a qualified service person make repairs to gate hardware.
7. The entrance is for vehicles only. Pedestrians must use separate entrance.
8. **SAVE THESE INSTRUCTIONS.**
9. The installer must provide a main power switch that meets all applicable safety regulations.
10. Clearly indicate on the gate with a minimum of 2 warning signs (visible from either side of the gate) that indicates the following.
    - The gate is automatic and could move at any time, posing a serious risk of entrapment.
    - Children should not be allowed to operate the gate or play in the gate area.
    - The gate should be operated only when it is visible to the operator and when the area is free of people and obstruction.
11. Devices such as reversing edge and photocells must be installed to provide better protection for personnel property and pedestrians.

USE

1. Use this equipment only in the capacity for which it was designed. Any use other than that stated should be considered improper and therefore dangerous.
2. When using any electrical equipment, observe some fundamental rules:
    - Do not touch the equipment with damp or humid hands or feet.
    - Do not install or operate the equipment with bare feet.
    - Do not allow small children or incapable persons to use the equipment.
3. If a gate system component malfunctions, turn off the main power before making any attempt to repair it.
4. Do not attempt to impede the movement of the gate. You may injure yourself as a result.
5. This equipment may reach high temperatures during operation; therefore, use caution when touching the external housing of the operator.
6. Learn to use the manual release mechanism according to the procedures found in this installation manual.
7. Before carrying out any cleaning or maintenance operations, disconnect the equipment from the electrical supply.
8. To guarantee the efficiency of this equipment, the manufacturer recommends that qualified personnel periodically check and maintain the equipment.

OPERATOR LABEL

The labels on your 422 Operator lists the following information:

- Model Number
- Serial Number
- Voltage Rating
- Amp Draw
- Pump Size
- Motor RPM
- Recommended Oil
- UL Specifications

NOTE: Removing or defacing (i.e. painting over) the labels will void the warranty. The UL labels must be visible for inspection.

TECHNICAL DATA

THE 422 COMPACT OPERATOR

Parameter	422 Standard	422 VHS
Physical dimensions:		
Weight, lb (kg)	15-1/2 lb (7.0 kg)	14-1/3 lb (6.5 kg)
Length, in. (mm)	38 7/8 in. (987 mm)	32-9/16 in (827 mm)
Width ´ height, in. (mm)	3-1/2 x 4-1/2 (90 x 114mm)	3-1/2 x 4-1/2 (90x 114 mm)
Motor speed, rpm	1400	
90-deg opening time, sec	12	6
Thrust and traction force, lb (kg)	0–1100 (0-500)	
Hydraulic Locking	In both opened and closed positions	
Cycles per hour	30	
Power voltage required, VAC (frequency, Hz)[1]	115 (50–60) ± 10% or 230, +6 or -10% (50–60) [1]	
Current draw, amps	115v = 1.5 Amps, 230v = 1.0 Amps	
Operating temperature range, deg F (deg C)	-33 to 165 (-36 to 75)	
Thermal cut out, deg F (deg C)	212 (100)	
Oil quantity, qt (liter)	1 (0.9)	7/8 (0.8)
Oil type	Lubrication Engineers — MONOLEC 6105	
Gate leaf constraints		
Maximum weight per leaf, lb (kg)	900 (410)	440 (200)
Maximum length per leaf, ft (m)	10 (3)	4 (1.2)
Maximum gate leaf swing, deg	90	

[1] Your standard 220 VAC power source meets the specification for the required power supply of 230 VAC, +6 or –10%.

THE 422 OPERATOR

GENERAL CHARACTERISTICS

The FAAC 422 Operator is an automatic gate operator for a swinging gate leaf. It can accommodate a gate leaf of up to 900 lb (410 kg) and up to 10 ft (3 m) in length.

The 422 Operator can be used to swing the gate leaf inward or outward. Most versions provide hydraulic locking in at least one position, either opened or closed, de-pending on how it was ordered.

The hydraulic lock is a service device rather than a security device. Additional, external locks are rec-ommended under the following conditions:

- You are installing the Model 422 SB
- The length of the gate leaf is 12 ft or more
- The installation requires tight security
- The site is subject to vandalism
- The site is subject to strong or very gusty wind
- You are installing a solid face gate

For its protection, the single-phase, bidirectional motor shuts off automatically if its operating temperature reaches 212 deg F (100 deg C). Also for the protection and proper operation of the 422 Operator, each gate leaf on which it is installed must have a fixed positive stop in both the opened and closed positions.

The 422 Operator also includes a key-operated Manual Release mechanism and two bypass valves that precisely control the force applied to the gate leaf through the 400 Operator.

The Manual Release mechanism is a key-operated device that disengages (or engages) the hydraulic system of the 422 Operator. When the hydraulic system is disengaged, you can open and close the gate leaf by hand. Such manual operation of the gate is necessary during installation and useful dur-ing power failures.

The two bypass valves are located beneath the locking cap. You need to adjust the bypass valves to meet the safety standards of FAAC International, Inc. The standards state that the gate leaf should stop if it encounters a force of more than 33 lb (15 kg).

Reversing devices (such as inductive loops and photocells) should be installed to provide more complete protection for people and property.

The electronic control panel is a microprocessor-based controller that accepts a wide range of product accessories and reversing devices, thus allowing for flexible gate system design.

Note: The 455 D Control Panel provides inputs for opening and closing reversing devises. FAAC strongly recommends the use of such devises, like photocells or other non-contact sensors.

Note: A reversing device is required for a U.L. recognized installation.

Caution: Failure of an opening reversing device cause the gate to lock in the closed position and requires the use of the Manual Release key.

455 D CONTROL PANEL LOGIC MODES

The following logics are available on the 455 D:

- **A (automatic):** The gate opens on command and automatically closes after a pause phase. A second command on opening is ignored; a second command during the pause phase interrupts the pause time; a second command during closing reopens the gate. A maintained open command will hold the gate open.

- **S (security):** The security mode is like A logic except that a second command during opening immediately closes the gate. A maintained open command will not hold the gate open.

- **E (semi-automatic):** This mode requires a command to open and a command to close. A second command during opening or closing causes the gate leaves to stop. A third command then closes the gate.

- **EP (semi-automatic, step by step):** This mode requires a command to open and a command to close. A second command during opening or closing causes the gate leaves to stop. A third command then reverses the previous motion of the gate.

- **B (manned, pulsed):** This mode is designed for guard station use and requires a three-button switch (pulsed) to open, close, and stop the gate.

- **C (manned and constant):** This mode requires constant pressure switches. One to open and one to close. No pressure on a switch stops the gate.

MANUAL RELEASE MECHANISM

The manuals release mechanism is located on the top of your 422 operator (see figure 2) To access the keyhole, slide the keyhole cover in the direction of the arrow (see figure 1). Insert the key and turn it counterclockwise one full turn to disengage the operator's hydraulic system. You can now move the gate leaf **slowly** by hand to open or close the gate.

> NOTE: Operating the gate leaf by hand is necessary during power failures.

You re-engage the hydraulic system by turning the key clockwise one full turn (or until snug). Remove the key and slide the cover closed.

> CAUTION: Over tightening the manual release mechanism can damage or even break the key.

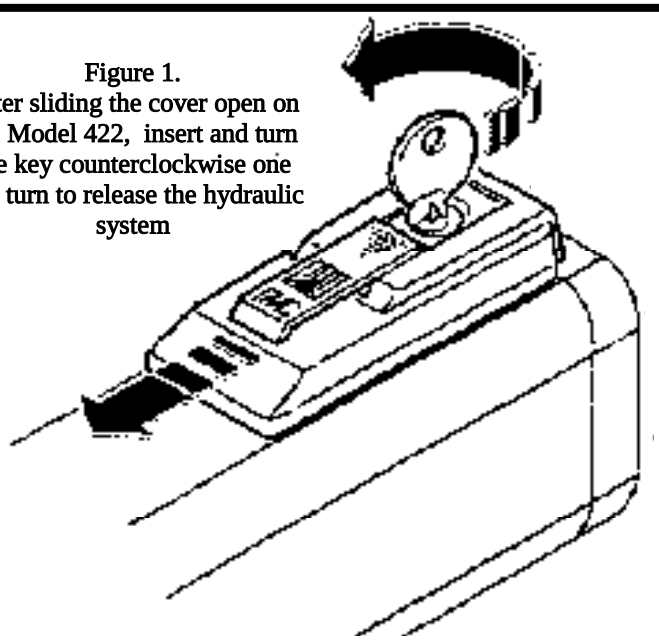

Figure 1.
After sliding the cover open on the Model 422, insert and turn the key counterclockwise one full turn to release the hydraulic system

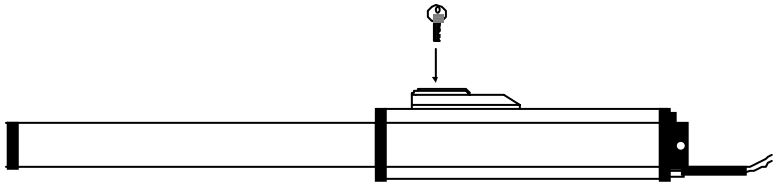

Figure 2.
Insert the manual release key in the locking cap located on the top of the 422 Operator.

MAINTENANCE

THE 422 OPERATOR

The FAAC recommended maintenance schedule varies according to the frequency of use of the operators, whether lightly used operators (once or twice an hour) or heavily used operators (many cycles per hour). Operators used in a humid/ salt air climate should follow the heavy duty use schedule.

Check the oil.

To check the oil level correctly, remove the locking cap from the operator. The operator should be at least half full.

> **Note:** You will not be able to see the oil level. Use something flexible (i.e. A piece of stranded wire) to act as a dipstick.

If the operator is too full, it will bleed oil out the vent hole.

> Light duty use: check once per year
> Heavy duty use: check every 6 mo

Change the oil.

Changing the oil requires removing the operator from its installed position. Remove the locking cap and drain the oil out of the hole under the cap. Refill the operator with the proper new oil (see page 4).

> Light duty use: change every 4 yr
> Heavy duty use: change every 2 yr

Check the pressure settings.

> Light duty use: check once per year
> Heavy duty use: check every 6 mo

THE GATE SYSTEM

A qualified technician should check the entire gate system periodically for proper operation. All reversing devices should be functioning properly, as well as the 422 operators.

LIMITED WARRANTY

To the original purchaser only: FAAC International, Inc., warrants, for twenty-four (24) months from the date of invoice, the gate operator systems and other related systems and equipment manufactured by FAAC S.p.A. and distributed by FAAC International, Inc., to be free from defects in material and workmanship under normal use and service for which it was intended *provided* it has been properly installed and operated. FAAC International, Inc.'s obligations under this warranty shall be limited to the repair or exchange of any part of parts manufactured by FAAC S.p.A. and distributed by FAAC International, Inc. Defective products must be returned to FAAC International, Inc., freight prepaid by purchaser, within the warranty period. Items returned will be repaired or replaced, at FAAC International, Inc.'s option, upon an examination of the product by FAAC International, Inc., which discloses, to the satisfaction of FAAC International, Inc., that the item is defective. FAAC International, Inc. will return the warranted item freight prepaid. The products manufactured by FAAC S.p.A. and distributed by FAAC International, Inc., are not warranted to meet the specific requirements, if any, of safety codes of any particular state, municipality, or other jurisdiction, and neither FAAC S.p.A. or FAAC International, Inc., assume any risk or liability whatsoever resulting from the use thereof, whether used singly or in combination with other machines or apparatus.

Any products and parts not manufactured by FAAC S.p.A. and distributed by FAAC International, Inc., will carry only the warranty, if any, of the manufacturer. This warranty shall not apply to any products or parts thereof which have been repaired or altered, without FAAC International, Inc.'s written consent, outside of FAAC International, Inc.'s workshop, or altered in any way so as, in the judgment of FAAC International, Inc., to affect adversely the stability or reliability of the product(s) or has been subject to misuse, negligence, or accident, or has not been operated in accordance with FAAC International, Inc.'s or FAAC S.p.A.'s instructions or has been operated under conditions more severe than, or otherwise exceeding, those set forth in the specifications for such product(s). Neither FAAC S.p.A. or FAAC International, Inc., shall be liable for any loss or damage whatsoever resulting, directly or indirectly, from the use or loss of use of the product(s). Without limiting the foregoing, this exclusion from liability embraces a purchaser's expenses for downtime or for making up downtime, damages for which the purchaser may be liable to other persons, damages to property, and injury to or death of any persons. Neither FAAC S.p.A. or FAAC International, Inc., assumes nor authorizes any person to assume for them any other liability in connection with the sale or use of the products of FAAC S.p.A. or FAAC International, Inc. The warranty hereinabove set forth shall not be deemed to cover maintenance parts, including, but not limited to, hydraulic oil, filters, or the like. No agreement to replace or repair shall constitute an admission by FAAC S.p.A. or FAAC International, Inc., of any legal responsibility to effect such replacement, to make such repair, or otherwise. This limited warranty extends only to wholesale customers who buy directly through FAAC International, Inc.'s normal distribution channels. FAAC International, Inc., does not warrant its products to end consumers. Consumers must inquire from their selling dealer as to the nature and extent of that dealer's warranty, if any.

This warranty is expressly in lieu of all other warranties expressed or implied including the warranties of merchantability and fitness for use. This warranty shall not apply to products or any part thereof which have been subject to accident, negligence, alteration, abuse, or misuse or if damage was due to improper installation or use of improper power source, or if damage was caused by fire, flood, lightning, electrical power surge, explosion, wind storm, hail, aircraft or vehicles, vandalism, riot or civil commotion, or acts of God.

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