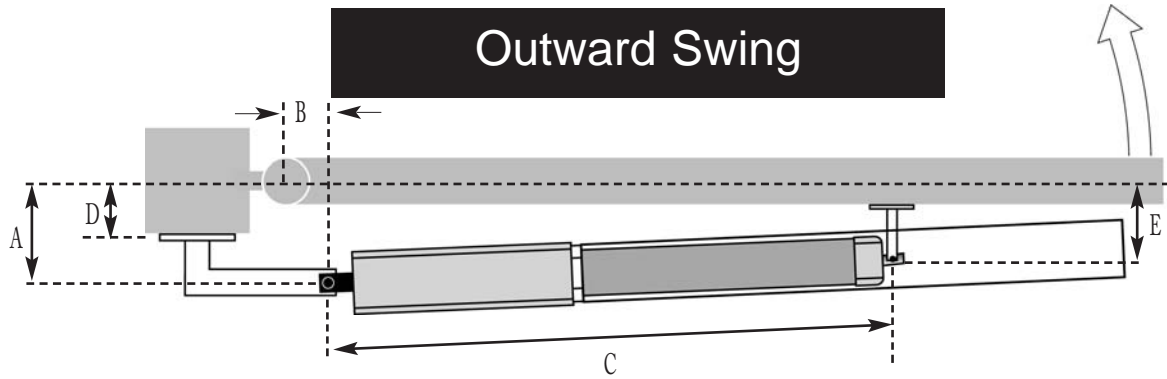


Mounting Geometry



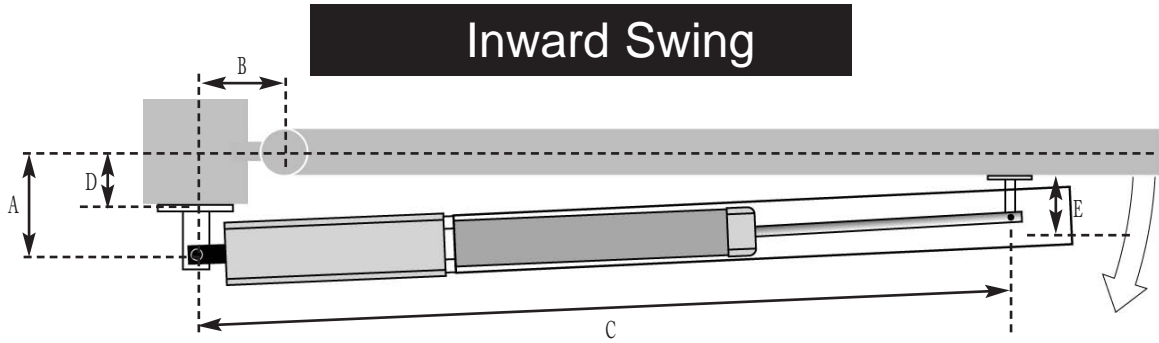
Model		90° Swing	110° Swing	115° Swing	125° Swing
400 standard, high speed, and slow speed models	A	5 in. (12.7 cm)	-	4 in. (10 cm)	-
	B	5 in. (12.7 cm)	-	4.75 in. (12 cm)	-
	C	28 in. (71.12 cm)	-	28 in. (71.12 cm)	-
	D	not a constraint	-	not a constraint	-
400 EG (Extended Geometry)	A	7.875 in. (20 cm)* or 11 in. (29 cm)**	-	5.75 in. (14.6 cm)**	4.75 in. (13 cm)
	B	7.5 in. (19 cm)* or 3 in. (7.5 cm)**	-	7 in. (17.8 cm)	6.625 in. (17 cm)
	C	32.75 in. (83.19 cm)	-	32.75 in. (83.19 cm)	32.75 in. (83.19 cm)
	D	not a constraint	-	not a constraint	not a constraint
402	A	4.5 in. (11.4 cm)	-	-	-
	B	4.5 in. (11.4 cm)	-	-	-
	C	26.25 in. (66.68 cm)	-	-	-
	D	not a constraint	-	-	-
412	A	5.75 in. (14.5 cm)	4.875 in. (12.5 cm)	-	-
	B	5.75 in. (14.5 cm)	4.875 in. (12.5 cm)	-	-
	C	24 in. (60.96 cm)	24 in. (60.96 cm)	-	-
	D	not a constraint	not a constraint	-	-
422	A	4.75 in. (12 cm)	-	-	-
	B	4.75 in. (12 cm)	-	-	-
	C	28.25 in. (71.45 cm)	-	-	-
	D	not a constraint	-	-	-
422 VHS	A	3.125 in. (7.94 cm)	-	-	-
	B	3.125 in. (7.94 cm)	-	-	-
	C	23.75 in. (60.33 cm)	-	-	-
	D	not a constraint	-	-	-
All Models	E	Must be less than A			

* For A and B, if you choose one of these values with one asterisk, then you must choose the other values with one asterisk; the values assume a column that measures less than 20" square.

** For A and B, if you choose one of these values with two asterisk, then you must choose the other values with two asterisk; the values assume a column that measures less than 20" square.

* Measurements and weights stated in this Price List are approximate. For exact specifications, please refer to the Installation Manual or contact our technical department at 1-800-221-8278.

Mounting Geometry



Model		90° Swing	110° Swing	115° Swing	125° Swing
400 standard, high speed, and slow speed models	A	5 in. (12.7 cm)	-	4 in. (10 cm)	-
	B	5 in. (12.7 cm)	-	4.75 in. (12 cm)	-
	C	38.1875 in. (71.12 cm)	-	38.1875 in. (97 cm)	-
	D	up to 4 in. (10 cm)	-	up to 2 in. (5 cm)	-
400 EG (Extended Geometry)	A	7.875 in. (20 cm)* or 11.5 in. (29 cm)**	-	5.75 in. (14.6 cm)**	4.75 in. (13 cm)
	B	7.5 in. (19 cm)* or 3 in. (7.5 cm)**	-	7 in. (17.8 cm)	6.625 in. (17 cm)
	C	47.625 in. (121 cm)	-	47.5 in. (120 cm)	47.5 in. (120 cm)
	D	up to 5.25 in. (14 cm)* or 10 in. (25.5 cm)**	-	up to 3.5 in. (8.9 cm)**	up to 2.875 in. (7 cm)
402	A	4.5 in. (11.4 cm)	-	-	-
	B	4.5 in. (11.4 cm)	-	-	-
	C	35.5 in. (90.2 cm)	-	-	-
	D	2 in. (5.1 cm)***	-	-	-
412	A	5.75 in. (14.5 cm)	4.875 in. (12.5 cm)	-	-
	B	5.75 in. (14.5 cm)	4.875 in. (12.5 cm)	-	-
	C	36.25 in. (92.1 cm)	36.25 in. (92.1 cm)	-	-
	D	up to 4 in. (10 cm)	up to 3.125 in. (8 cm)	-	-
422	A	4.75 in. (12 cm)	-	-	-
	B	4.75 in. (12 cm)	-	-	-
	C	36.25 in. (92.1 cm)	-	-	-
	D	up to 2 in. (5.1 cm)***	-	-	-
422 VHS	A	3.125 in. (7.94 cm)	-	-	-
	B	3.125 in. (7.94 cm)	-	-	-
	C	30.25 in. (76.84 cm)	-	-	-
	D	up to 2 in. (5.1 cm)***	-	-	-
All Models	E	Must be less than A			

* For A, B, and D, if you choose one of these values with one asterisk, then you must choose the other values with one asterisk; the values assume a column that measures less than 20" square.

** For A, B, and D, if you choose one of these values with two asterisk, then you must choose the other values with two asterisk; the values assume a column that measures less than 20" square.

*** If greater than this value, construct a recess liner.

* Measurements and weights stated in this Price List are approximate. For exact specifications, please refer to the Installation Manual or contact our technical department at 1-800-221-8278.

Visit us online at

www.faacusa.com

Model 412

Electromechanical Swing Gate Operator



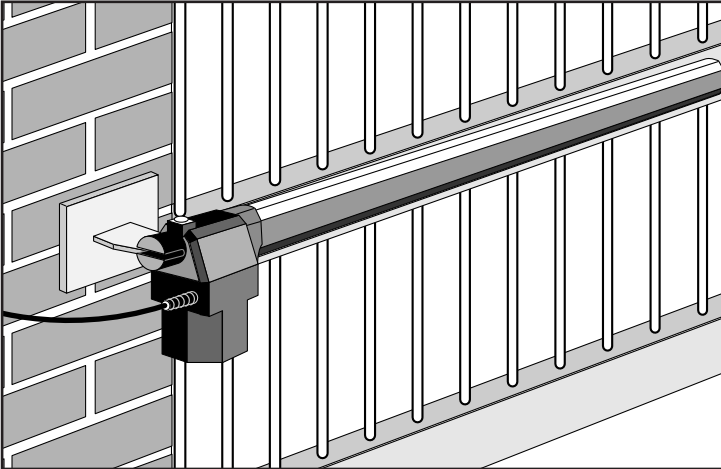
- . Designed for residential applications
- . Two year limited warranty
(see back cover)

FAAC operators for swinging gates are among the safest available. The anti-entrapment and safety provided by all gate operators can and should be improved with photo-cells, loop detectors, sensing edges and/or other similar devices. FAAC strongly recommends that devices such as these be installed with all automated gate systems.

To guarantee the safety and efficiency of its equipment, FAAC strongly recommends that qualified personnel test the safety system on an annual basis, as well as maintain the overall hydraulic or mechanical system.

Model 412

Model 412 | Electromechanical Swing Gate Operator



The Model 412's electromechanical operation is ideal for residential applications.

- Designed for light residential, single family use
- UL 325 compliant
- Mechanical locking in the opened and closed positions
- Easy interconnection of loop detectors, photocells, etc. to reverse a gate if an obstacle is sensed
- Easy interconnection of actuating devices like remote control radios, key pads and telephone entry systems
- On-board diagnostic LEDs
- Convenient manual release in case of power failure

The 412 is not recommended for use with solid gates or in high wind situations.

Model 412 HIGH VOLTAGE includes:

- One 455 D control panel which operates single leaf or master/slave gates
- Choice of 6 operating modes including:
 - "pulse-to-open, pulse-to-close"
 - automatic timed closure
 - "man present" (separate open and close contacts)
- 30 VDC power for accessories
- 115 VAC

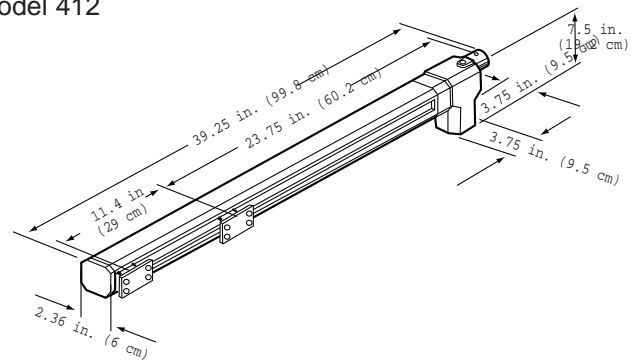
Model 412 Operating Specifications

Parameter	High Voltage
Application	Single family residence, single leaf or bi-parting gate (vehicles only, not for pedestrian use) (not recommended for solid gates)
Cycles per hour	18
Maximum gate swing	110 degrees
90 degree opening time	13 seconds
Maximum weight per gate leaf	500 pounds, (226.8 kg)
Maximum length per gate leaf	14 feet (4.2 m)
Approx. operating temperature range	-4°F to 131°F (-20°C to 55°C)
Mechanical locking	Available in opened and closed positions
Voltage	115 VAC

Model 412 kit for bi-parting gates: major components (not to scale)



Model 412



Note: Operator specifications are approximate. Environmental factors can change the performance of the operator. Your installer will advise you which model of operator will work best for your site and application.

* Measurements and weights stated in this Price List are approximate and subject to change without notice. For exact specifications, please refer to the Installation Manual or contact our technical department at 1-800-221-8278.

Model 412 | Electromechanical Swing Gate Operator

Model Description	Package Includes	Shipping Weight	Voltage	Part Number	Price
Model 412 kit for Bi-Parting Gates You can upgrade from the 10 X12 to a 14 X 16 pre-wired enclosure for only \$150.00 net more. See page 135 for plug-in-loop detector info.	OPTION 1: 1 DX & SX operator & cover w/ mounting hardware 455 D Control panel w/10 x 12 in. enclosure 1 radio receiver, 2 radio transmitters, 2 manual release keys, 2 photobeam sets, 4 warning signs OPTION 2: Same options except 14 X 16 pre-wired enclosure	50 lb (22.7 kg)	115VAC	412BP1-R*	\$1,923
Model 412 DX KIT for Single Leaf RIGHT HINGED GATE	1 DX operator & cover 455 D Control panel w/10 x 12 in. enclosure & mounting hardware 1 radio receiver, 2 radio transmitters 2 manual release keys, 2 photobeam sets 2 warning signs	36 lb (16.3 kg)	115VAC	412DX1-R*	1,363
Model 412 SX KIT for Single Leaf LEFT HINGED GATE	1 SX operator & cover 455 D Control panel w/10 x 12 in. enclosure & mounting hardware 1 radio receiver, 2 radio transmitters 2 manual release keys, 2 photobeam sets 2 warning signs	36 lb (16.3 kg)	115VAC	412SX1-R*	1,363
Model 412 DX operator for Single Leaf RIGHT HINGED GATE	1 DX operator & cover	20 lb (9.1 kg)	115VAC	104475	679
Model 412 SX operator for Single Leaf LEFT HINGED GATE	1 SX operator & cover	20 lb (9.1 kg)	115VAC	104476	679



Model 455D control panel with 10x12 enclosure

Model 412 operators require a Model 455 D control panel, which can operate a single leaf or master/slave gate system.

The 455D has the following functions and features:

- Operates a single leaf or a bi-parting gate
- Provides opening and closing "slow down, soft stop" convenience
- Power supply: 115 VAC (+/- 10%) or 230 VAC (+6% -10%) 50-60 HZ
- Absorbed power: 10W
- Motor max load: 800W
- Accessories max load: .5 amp
- Electric lock max load: 15 Va
- Operating temperature: -78°F to +131°F
- Protection fuses: .800 mA (accessories) 5 amp (motors)
- Operating logics:
 - A** (automatic): signal to open, gate closes automatically after selected timed pause
 - S** (security): similar to A logic, useful in reducing tailgating
 - E** (semi-automatic): garage door-like operation; signal to open, signal to close
 - EP** (semi-automatic): similar to E logic, but second signal stops gate, third signal reverses gate
 - B** (manned, pulsed): designed for guard station use, requires 3-button switch (pulsed) to open, close and stop gate
 - C** (manned, constant): similar to B logic, but 3-button switch requires constant pressure on each button
- Opening/closing time: 0 to 120 seconds (programmable)
- Pause time: 0 to 4 minutes (programmable)
- Closing leaf delay: 0 to 4 minutes (programmable)
- Opening leaf display: 2 seconds (can be disabled)
- Torque: adjustable from 0 to 50 levels
- On board programming via push button
- Easy interconnection of actuating and reversing devices
- Open/Hold open function

To complete your gate system, or for replacement purposes, the following accessories can be ordered:

Accessory	Description	Shipping Weight	Voltage	Part Number	Price
Photobeam	Directional with diagonal alignment; required for UL-325 compliance.	2 lb (1 kg)		785163	\$204
Photobeam Mounting Post Standard	Foundation plate included	5 lb (2.2 kg)		401028/ 737630*	105
Photobeam Mounting Post Double	Foundation plate included	9 lb (4.1 kg)		401035/ 737630*	170
Photocell Set: also requires Photocell Metal Housing or Photocell Plastic Housing		2 lb (1 kg)		785152	257
		3 lb (1.4 kg)		720089	37
		2 lb (1 kg)		720086	8
Receiver	FAAC single channel	1 lb (.5 kg)		1RP418DS	68
Transmitter	FAAC single button	1 lb (.5 kg)		1TM418DS	38
Transmitter	FAAC two button	1 lb (.5 kg)		787317	45
Antenna	FAAC tuned antenna kit	2 lb (1 kg)		412003	75
Battery Backup	BC Pro Single system backup	45 lb (16.8 kg)	115V	3520	1,538
	BC Pro Dual system backup	45 lb (16.8 kg)	115V	3522	1,748
	700i Single system backup	45 lb (16.8 kg)	230V	3521	1,538
	700i Dual system backup	45 lb (16.8 kg)	230V	3523	1,748
Control panel	455D (replacement only)	3 lb (1.4 kg)	115V	790919	630
			230V	790926	630
	455D w/ 14 x 16 infiberglass, hinged, lockable enclosure	26 lb (11.8kg)	115V	455D115F*	1,045
			230V	455D220F*	1,045

You can upgrade from the 14 X16 pre-wired enclosure to a 20 X 16 metal pre-wired enclosure for only \$100.00 net more.

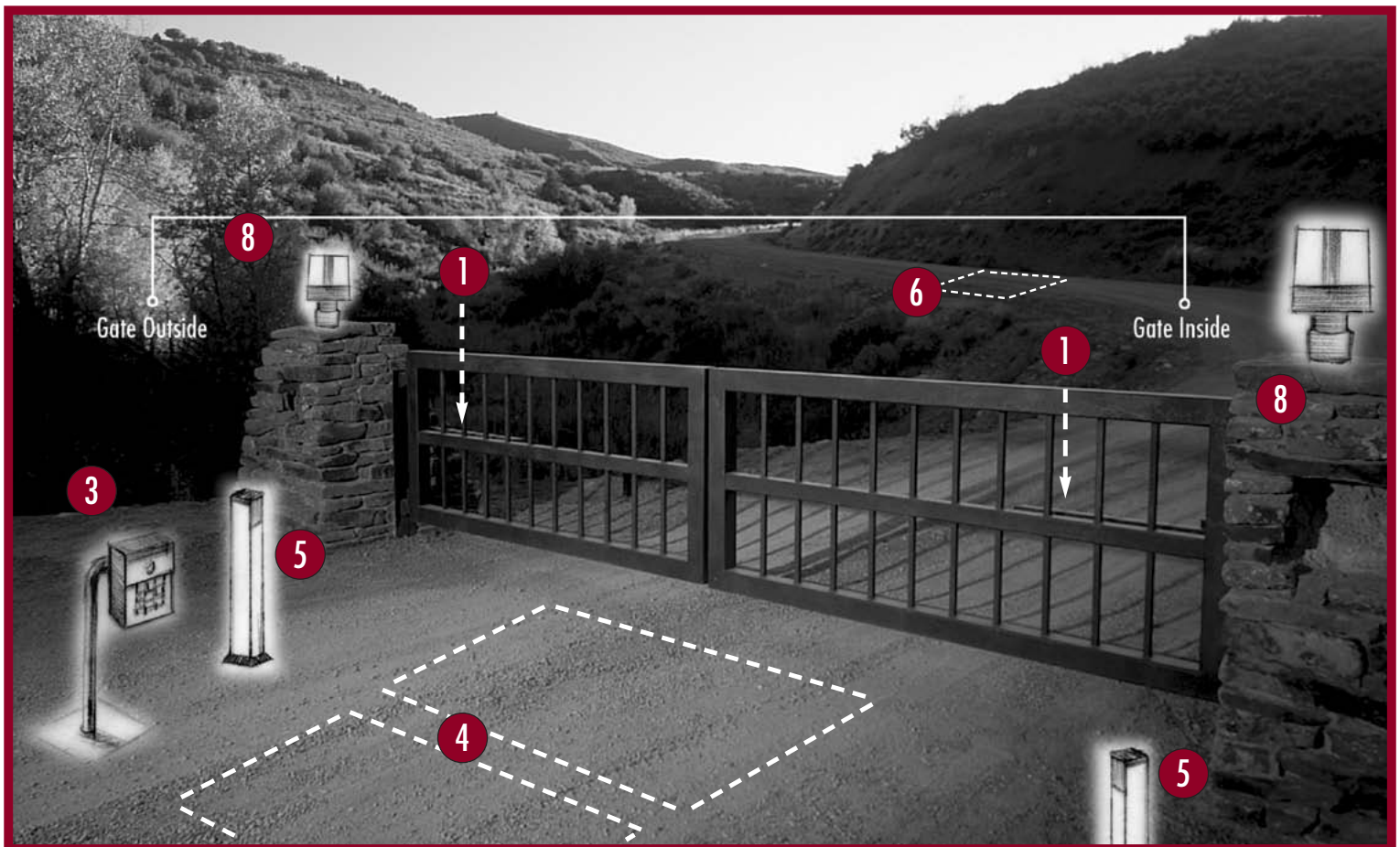
Safety

A Complete Swing Gate System Designed with Safety in Mind

What is UL 325 and why is it important?

In order to prevent personal injuries associated with automated gate systems, United Laboratories (UL), along with several government-sponsored consumer safety organizations, developed what is called the UL 325 Standards for gate safety (much the same as has now been done with automatic garage door systems). These standards are meant to protect people, not vehicles, by providing at least two types of safety measures (primary and secondary) in the event a person becomes entrapped by the gate system. Consequently, every manufacturer must have their products tested at an approved laboratory to ensure that their safety measures work. For FAAC, our safety measures include a hydraulic bypass as primary and photobeams as secondary...and we've been providing these safety standards for more than 40 years!

FAAC will be happy to package your gate system so that it can be UL 325 compliant, right out of the box. For more information on additional access control options, refer to the "ACCESSORIES CATALOG" section on the Home Page of our web site at www.faacusa.com.

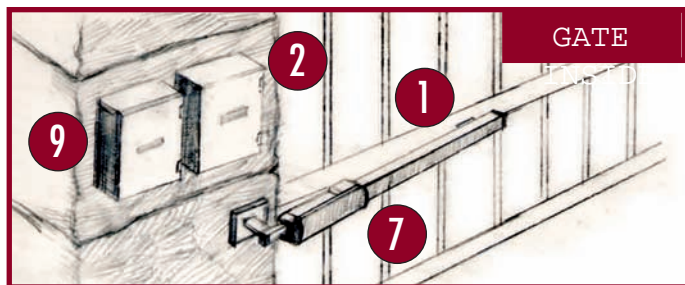


To guarantee the safety and efficiency of its equipment, FAAC also strongly recommends that qualified personnel perform an annual safety test on your gate system, as well as maintain the overall hydraulic or mechanical system.

Gate Safety System



1 Gate Operator
The swing gate operator (either gate-mounted or in-ground) automates the gate.



2 Control Panel
The "brain" of the gate system, the control panel is usually housed in a fiberglass or metal, weather-resistant enclosure along with other important access control devices. For security and safety, it is recommended that this enclosure be lockable. Another recommended option is to install a "pre-wired" control system from the manufacturer that provides accurate, organized wiring which is extremely helpful in future troubleshooting or repairs.



3 Access Control Options

A variety of access control devices are available, including these conventional options:

- Keypad: provides multiple codes for different visitors such as relatives, workers, regular deliveries, etc.
- Keyswitch/card reader: simplified access control using a special key or coded plastic card.
- Telephone entry: connects to existing phone line and features distinctive ring to alert you that someone is at the gate. Gates can be opened from the phone itself, and a "hold open" feature allows for gates to remain open for extended periods of time.
- Radios: radio receiver plugs into control panel and transmitters are conveniently kept in vehicles or on key ring.



4 Loops

Normally used to activate traffic lights, in-ground loop detectors can also signal your gate operator to open or close. But remember, they are designed to protect vehicles and to protect pedestrians or individuals inside the fenced area.



5 Photobeams

Photobeams protect anything that "breaks" the beam (vehicles, pedestrians, animals and, especially, children) which causes a reversal of the gate operators. Two sets of photobeams are recommended for best coverage.



6 Free Exit

For residential purposes, this in-ground loop or radio system automatically opens and closes your gate system to allow guests or visitors to exit your property without you having to do anything.



7 Gate Stops (concealed)

Gate stops are required on all FAAC gate systems. Stops limit the extent of gate travel and help protect the operator from damaging wear and tear. Stops can be fabricated and attached to the gate leaves, but don't look particularly attractive and can also create unsafe "pinch points." These problems can be solved by installing gate stops that are totally concealed inside the gate operator cover.



8 Warning Light

A warning light will alert anyone near the gate of its imminent movement plus helps to illuminate the gate area.



9 Battery Back-up

Having a battery back-up unit as part of your gate system provides the peace of mind of knowing that your gate will continue to operate even if the power goes out.

GATE-SAFE

Your gate system can also be set up to provide special safety options, including "Gate-safe" and "Gate-secure" configurations (refer also to #9 on this sheet).

Gate-safe: During power outages, the hydraulic operator can be configured to allow the gate to be pushed open, permitting emergency access to your property.

Gate-secure: During power outages, your gate stays closed and locked.

CHOOSING LINEAR STYLE SWING GATE OPERATORS

Features/Operators	415	415-24V	402	422	400	400EG
Max leaf length (ft.)	15	15	10	10	16	18
Max leaf length (ft.) w/ External Lock	15	15	10	10	23	23
Maximum Force Output	675	630	1550	1550	1740	1740
Duty (1)	Medium	Continuous	Medium	Medium	Continuous	Continuous
Use Frequency (Cycles per hour)	25	75	55	55	80	80
Power Supply (V)	115	24	115 or 230	115 or 230	115 or 230	115 or 230
Alternative Power Supply Source	BC Pro 1050	24V Sources	BC Pro 1050 (115V or 700i (230V)	BC Pro 1050 (115V or 700i (230V)	BC Pro 1050 (115V or 700i (230V)	BC Pro 1050 (115V or 700i (230V)
Battery (AC Power Failure)	No	Yes (Optional)	No	No	No	No
Anti-Crushing Protection	Electronic	Electronic	Hydrolic By-Pass +Electronic	Hydrolic By-Pass +Electronic	Hydrolic By-Pass +Electronic	Hydrolic By-Pass +Electronic
End Travel Declaration	Timed	Self-Learning	Timed	Timed	Timed	Timed
Rod Effective Stroke (in.)	15 3/4	15 3/4	9	9 1/2	10	15
Max Opening Angle (Degrees)	110	110	90	100	110	125
Forced Gate Resistance (lbs. on 6' leaf)	290	290	220 (2)	220 (2)	300 (2)	300 (2)
Built-In Mechanical Stops	No Stops Required (Limit Switches)	No Stops Required (Limit Switches)	Optional (Model - 80)	Optional (Model - 80)	Optional (Model - 84)	Optional (Model - 84)
Product Life Expectations (Cycles)	200,000 (4)	200,000	1,000,000 (5)	1,000,000	1,000,000	1,000,000
	Transmission w/ Low-Temp Grease	Transmission w/ Low-Temp Grease	Oil Bath Transmission	Oil Bath Transmission	Oil Bath Transmission	Oil Bath Transmission
Cost (Single Basic Kit)	\$1,379.00	\$1,629.00	\$1,935.00	\$2,225.00	\$2,425.00	\$2,625.00

(1) LIGHT duty: Single residence application(1-2 Families) MEDIUM duty: Subdivision application (10-30 Families) CONTINUOUS duty: Apartment complex application (> 30 families) and industrial, public and commercial applications.

(2) The hydrolic operators do not undergo permanent damages (repairable)

(3) About 10 years at 15 cycles/day

(4) About 10 years at 55 cycles/day

(5) About 10 years at 280 cycles/day

Selecting the Correct Operator for the Application

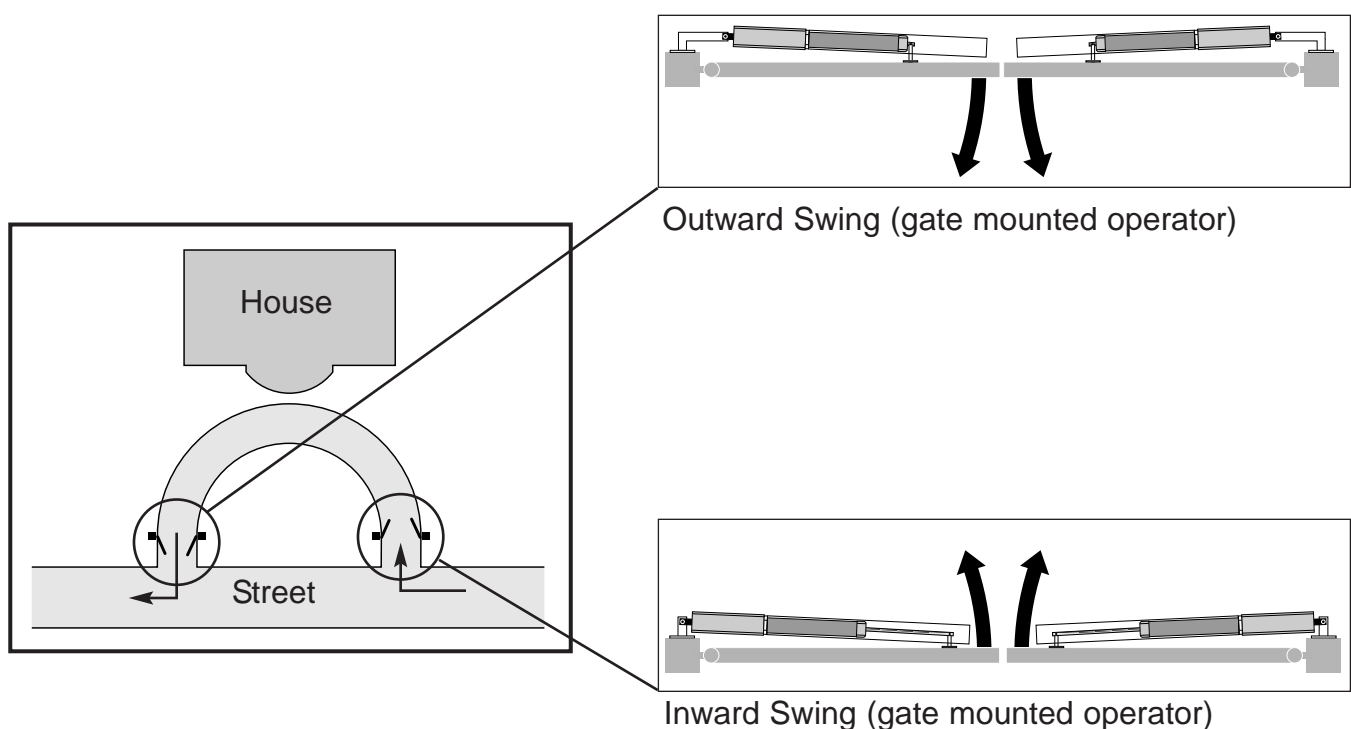
THERE ARE FOUR “DECISIONS” THAT YOU NEED TO MAKE BEFORE SELECTING A GATE OPERATOR.

FAAC offers many different models of swing gate operators. Models are designed to fit certain applications.

The following pages provide background information to help you select the best operator for your application.

DECISION #1: WHICH DIRECTION TO SWING THE GATE?

FAAC gate mounted and in-ground operators can swing gates either inward or outward. Gate mounted operators can be kept inside the property, while the direction of gate swing is best for traffic flow. In-ground operators are mounted beneath the gates. These options reduce opportunities for vandalism and improve appearance.

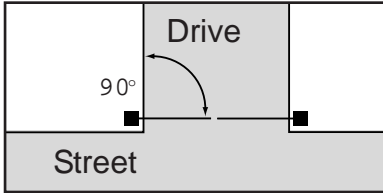


* If you have any questions regarding your application, please call FAAC's technical department at 1-800-221-8278.

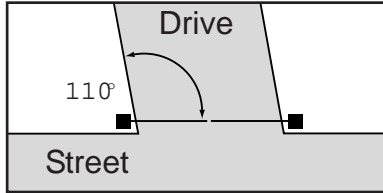
DECISION #2:

HOW MANY DEGREES OF SWING ARE REQUIRED?

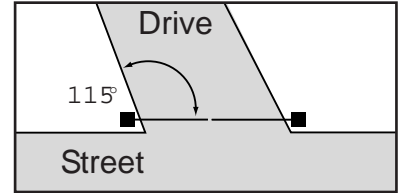
- One FAAC gate operator (Model 750) can swing a gate up to 180°.
- All other models of FAAC operators can swing a gate 90° to 148°.
- Openings which require swings greater than 90° will need certain FAAC operator models.
- The swing of an operator applies equally to inward or outward swinging gates.



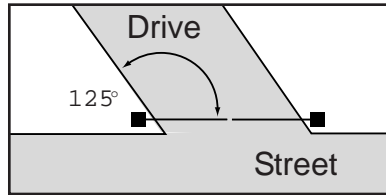
All FAAC operators: Models 412, 402, 422, 400, 750, 760



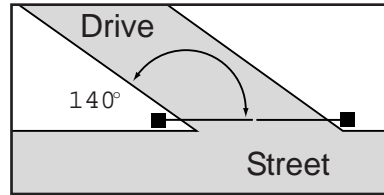
Models 412, 400, 750, 760.



Models 400, 750, 760.



Models 400 EG (extended geometry), 750, 760.



Models 750 (up to 180°), 760 (up to 148° with "soft stop")

DECISION #3:

SPEED AND LEAF LENGTH

Some thought should be given to the speed at which the gate will travel. The longer the gate leaf, the faster the traveling edge must move to clear an area in a given amount of time.

A speed of 40 feet/minute (12.2 meters/minute) is a "bench mark" velocity. It permits efficient operation while limiting the energy in the moving gate leaf. The lower the energy, the less chance of damage to property or injury to people in the event of accidental contact with the moving gate.

Examples illustrating the relationship between operator speed, gate leaf length, and the velocity of the leaf's traveling edge

Speed options available with FAAC Operators (in seconds needed to swing a gate 90°)	EXAMPLE: Velocity of the traveling edge of an 8 ft (2.4 m) leaf [in feet/m and (meters/m)]	Longest leaf which can be used if the velocity of the traveling edge is not to exceed 40 fpm (12.2 mpm)
6 sec.	126 fpm (38 mpm)	2.5 ft (0.8 m)
12 sec.	63 fpm (19 mpm)	5 ft (1.5 m)
15 sec.	50 fpm (15 mpm)	6 ft (1.9 m)
17 sec.	44 fpm (14 mpm)	7.5 ft (2.3 m)
23 sec.	33 fpm (10 mpm)	10 ft (3 m)

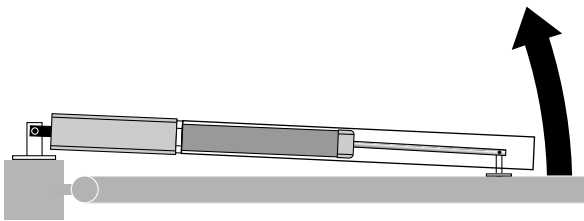
* If you have any questions regarding your application, please call FAAC's technical department at 1-800-221-8278.

DECISION #4: WHAT TYPE OF MOUNTING GEOMETRY?

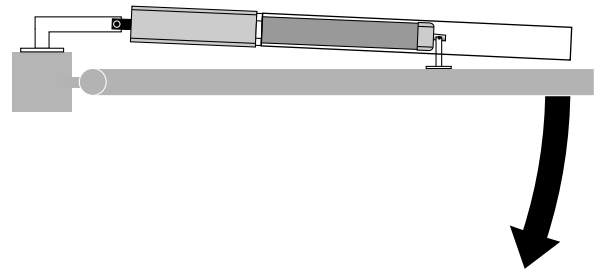
Decisions regarding mounting geometry apply to gate mounted operators: Models 412, 415, 402, 422 and 400.

As shown in the diagrams below, the operators must be mounted at an angle to the gate. Correct mounting geometry assures that the desired degrees of swing are achieved, that the gate speed is correct, and that the operator and gate will operate properly and have a long life.

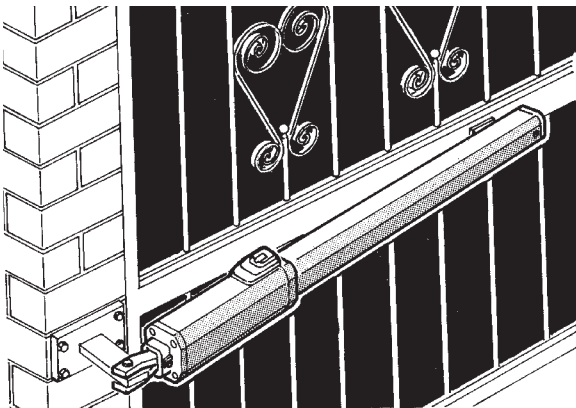
1. Example of a mounting for an inward swinging gate.



2. Example of a mounting for an outward swinging gate.

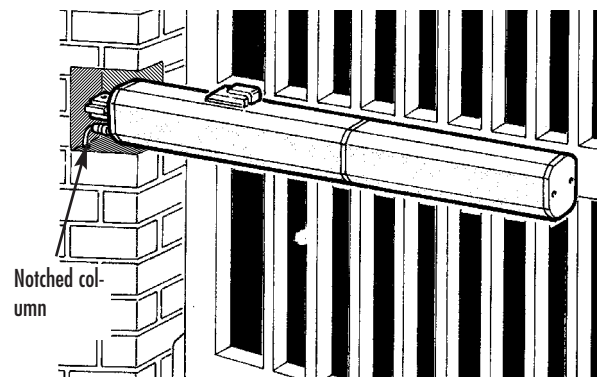


3. Sometimes the mounting measurements will result in a flush mounting



Special Situations

4. Sometimes a column must be notched in order to accommodate the correct mounting geometry.



Note: If, in your installation, notching a column is not practical, other solutions are available:

1. Install operators using an outward swing.
2. Upgrade to an operator with more mounting flexibility.
3. Use an in-ground operator (see Model 750 on page 50 or Model 760 on page 61).

* If you have any questions regarding your application, please call FAAC's technical department at 1-800-221-8278.