

# THE 620/640 BARRIER GATE OPERATOR AND 624BLD CONTROL PANEL INSTALLATION MANUAL:

January, 2007  
620/640 Operator And  
624BLD Control Panel  
Installation Manual

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# FRAC

# IMPORTANT SAFETY INFORMATION

Both the installer and the owner and/or operator of this system need to read and understand this installation manual and the safety instructions supplied with other components of the gate system. This information should be retained by the owner and/or operator of the gate.

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**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.**
- 

When installing the photo-beams with this unit two things need to be considered.

1. Care should be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is in motion.
2. One or more photo-beams shall be located where the risk of entrapment exists, such as the perimeter reachable by the moving gate.

## GATE DESIGN

1. A gate is a potential traffic hazard, so it is important that you locate the gate far enough away from the road to eliminate the potential of traffic getting backed up. This distance is affected by the size of the gate, how often it is used, and how fast the gate operates.
2. The operator you choose to install on your gate must be designed for the type and size of your gate and for the frequency with which you use the operator.
3. Your gate must be properly installed and must

work freely in both directions before the automatic operator is installed.

4. An automatic operator should be installed on the inside of the property/fence line. Do not install the operator on the public side of the property/fence line.
5. Pedestrians should not use a vehicular gate system. Prevent such inappropriate use by installing separate gates for pedestrians.
6. Exposed, reachable pinch points on a gate are potentially hazardous and must be eliminated or guarded.
7. Outward swinging gates with automatic operators should not open into a public area.
8. The operating controls for an automatic gate must be secured to prevent the unauthorized use of those controls.
9. The controls for an automatic gate should be located far enough from the gate so that a user cannot accidentally touch the gate when operating the controls.
10. An automatic gate operator should not be installed on a gate if people can reach or extend their arms or legs through the gate. Such gates should be guarded or screened to prevent such access.

## INSTALLATION

1. If you have any question about the safety of the gate operating system, do not install this operator. Consult the operator manufacturer.
2. The condition of the gate structure itself directly affects the reliability and safety of the gate operator.
3. Only qualified personnel should install this equipment. Failure to meet this requirement could cause severe injury and/or death, for which the manufacturer cannot be held responsible.
4. The installer must provide a main power switch that meets all applicable safety regulations.
5. Clearly indicate on the gate with the 2 warning signs that are included (visible from either side of the gate).
6. It is extremely unsafe to compensate for a damaged gate by increasing hydraulic pressure.
7. Devices such as photo beams must be installed to provide better protection for personal property and pedestrians. Install reversing devices that are appropriate to the gate design and gate application.
8. Before applying electrical power, be sure that the voltage requirements of the equipment correspond to your supply voltage. Refer to the label on your operator system.

## 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.

### U.L. CLASS AND FAAC OPERATOR

Model		Duty Cycle	Typical Use
Class I: Residential Vehicular Gate Operator			
402	750	Limited duty	<ul style="list-style-type: none"><li>• Home use</li><li>• Small apartment building, for example, up to 4 units in a building, with limited public access</li></ul>
422	760		
412	400		
620	640		
885			
Class II: Commercial/General Access Vehicular Gate Operator			
400	640	Continuous duty	<ul style="list-style-type: none"><li>• Apartment buildings</li><li>• Very public access</li></ul>
620	885		
Class III: Industrial/Limited Access Vehicular Gate Operator			
400	640	Continuous duty	<ul style="list-style-type: none"><li>• No public access</li></ul>
620	885		
Class IV: Restricted Access Vehicular Gate Operator			
620	640	Continuous duty	<ul style="list-style-type: none"><li>• Prison rated security</li></ul>
885			

# TECHNICAL DATA

## THE 620/640BARRIER GATE OPERATOR(S)

Parameter	620		640		
	Express				
Available beam length, ft (m)	8 (2.5) 10 (3) 13 (4)	10 (3) 13 (4) 16 (5)	13 (4) 16 (5)	16 (5) 18 (5.5) 20 (6)	20 (6) 23 (7)
Maximum beam length, ft (m) <sup>1</sup>					
Wood	13 (4)	16 (5)	16 (5)	18 (5.5)	20 (6)
Aluminum	12 (3)	13 (4)	16 (5)	20 (6)	23 (7)
Articulated beam (aluminum only)	10 (3)	13 (4)	NA	NA	NA
Skirted beam (aluminum only)	NA	NA	16 (5)	20 (6)	23 (7)
Pump capacity, liters	2	1.5	2	1.5	1
Motor speed, rpm	2800 <sup>2</sup>		1400		
Opening time, sec (not including braking)	2	3	4	5.5	8
Motor run time <sup>2</sup> (frequency of use), %	100		100		
Power voltage required, VAC (frequency, Hz) <sup>3</sup>	230/115 +6 or -10% (50-60) <sup>3</sup>				
Power consumption, W	440				
Operator cabinet weight, lb (kg)	161 (73)		185 (84)		
Operator cabinet dimensions, in. (cm)	6-5/8 ´ 13-3/4 ´ 42-1/2 (17 ´ 35 ´ 108)		7-7/8 ´ 14-15/16 ´ 42-1/2 (20 ´ 38 ´ 108)		
Type of oil	Lubrication Engineers- MONOLEC 6115				
Oil quantity, qt (l)	2.1 (2)				
Fan	Standard		Standard		
Automatic fan operation temperature, deg F (deg C)	113 (45)		113 (45)		
Automatic motor shut off temperature, deg F (deg C)	185 (85)		185 (85)		
Thermal overload switch, deg F (deg C)	212 (100)				

1 Measurements in feet are rounded; measurements in meters are precise.

2 The model 620 115VAC is not available with a 2800 rpm motor.

3 Your standard 220 VAC/115VAC power source meets the specification for 230 VAC, +6 or -10%

## UNPACKING THE BARRIER

When you receive your Barrier System, complete the following steps.

Before you remove the barrier beam or cabinet from its shipping carton, inspect the carton for damage. As you unpack the carton, insure that all the parts listed below for your system are included and are undamaged.

Inspect the parts for damage. Notify the carrier immediately if you note any damage because the carrier must witness the damage before you can file a claim.

The Parts List

Operator Carton:

- 1 Operator cabinet
- 1 Key for cabinet
- Bolts for attaching beam to cabinet: 4 or 6, depending on the barrier and type of beam

Beam Carton (optional):

- 1 barrier beam

## GENERAL CHARACTERISTICS

The U.L. listed Model 620 or 640 Barrier gate system includes a barrier beam and a cabinet housing the hydraulic operator and control panel.

The main differences between the 620 and the 640 Barrier systems are in the length of the barrier beam and in the speed of operation. The 620 system controls beams that are 6-1/2 to 13 ft (2 to 4.5 m) in length and offers extremely fast opening and closing times. The 620 is ideal for single-lane vehicular traffic in moderate to heavy traffic. The 620 Barrier can also be articulated (jointed) for use with low overhead clearances or skirted to prevent vehicles from passing beneath the beam.

The 640 Barrier system is for barrier beams that are 13 to 23 ft (4 to 7 m) long and is suitable for wide entrances and heavy-duty applications. The 640 Barrier can also be skirted (Aluminum Beams Only).

The barrier beam is attached to a heavy-duty, lockable metal cabinet bolted to a cement foundation. Inside the cabinet are the operator and the control panel. Important metal parts of the barrier unit have been powder coated to resist the effects of rust and smog.

The motor housing holds the oil that drives the pistons and helps to cool the motor. The temperature of the oil is monitored, and in high oil temperatures a cooling fan automatically turns on for further cooling.

The hydraulic motor of either the 620 or 640 operator drives two single-acting pistons. Both are attached to the rocker arm, and the rocker arm rotates the barrier beam. A compression spring attached to one piston serves to counterbalance the beam, and an adjustable braking feature guarantees smooth movement of the beam through its travel and prevents damage to the beam and cabinet from abrupt stopping.

Some notable features enhance the reliable and safe operation of the 620 or 640 Barrier. First, a hydraulic locking device holds the beam in both the opened and

closed positions. Second, the metal cabinet that houses the operator can be opened only with a key. Third, the barrier includes a Manual Release function to disengage the beam from its hydraulic operation so that you can raise or lower the beam by hand. Fourth, two adjustable hydraulic valves precisely control the force of the beam in the opening and closing directions.

An optional solenoid valve is available for automatically disengaging the hydraulic system in the event of power failures.

Both the 620 and 640 Barriers are supplied with the FAAC 625 BLD Control Panel. The control panel allows you to select the following:

- Logical mode of operation
- Braking time of the beam
- Pause time between opening and closing

The control panel also provides terminal connections for a number of other reversing and gate system accessories.

Furthermore, the control panel provides a number of light-emitting diodes (LEDs) and a digital display for easily diagnosing any operational problems.

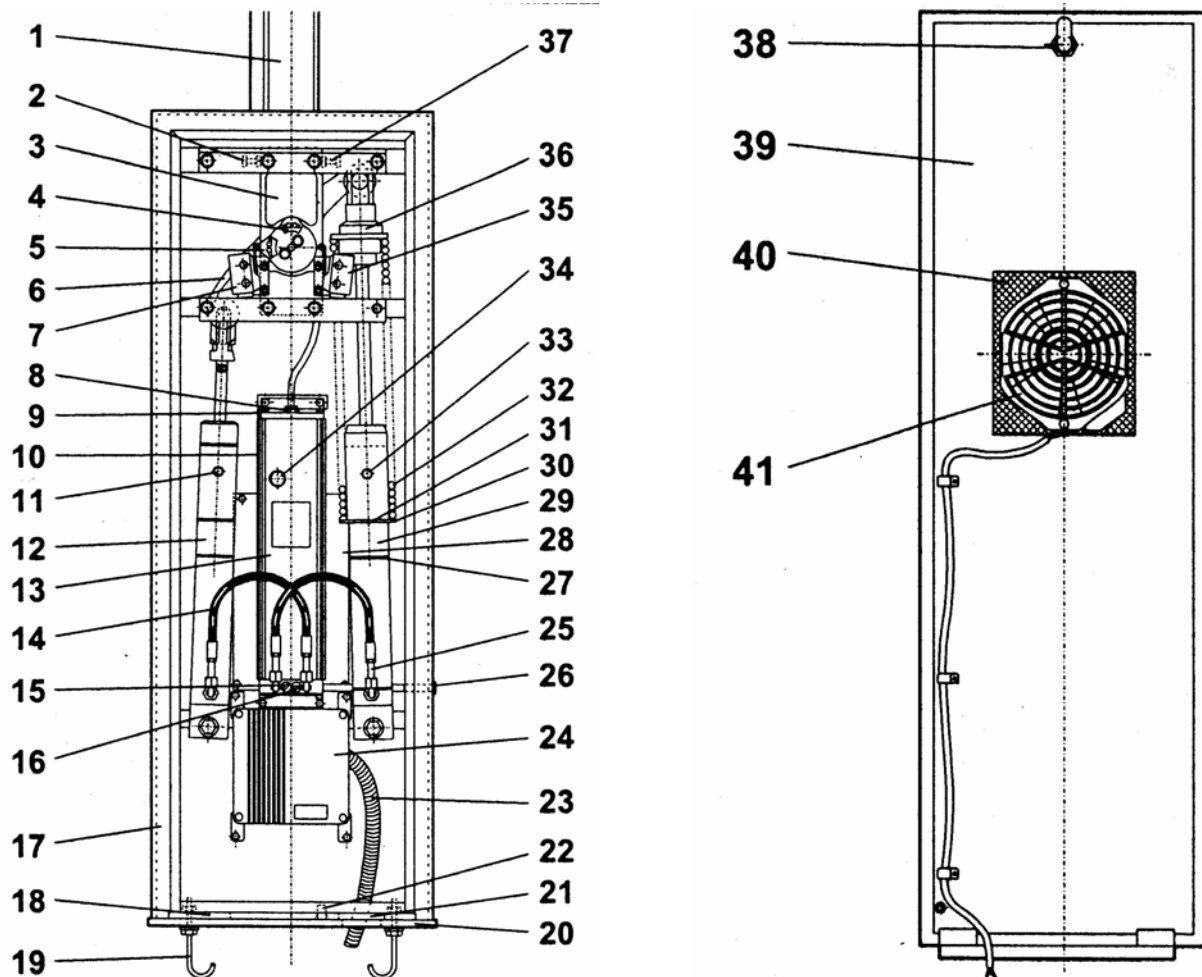


Figure 1. The interior of the 620/640 Barrier cabinet (for right-hand orientation)

1 Aluminum Beam	15 Pressure Adjusting Screw	29 Right Side Piston
2 Left Hand Stop	16 Pressure Adjusting Screw	30 Spring Support (large spring groove)
3 Rocker Assembly	17 Cabinet	31 Spring Support Ring
4 Right Hand Limit Adjuster	18 Hole for conduit/wire	32 Spring
5 Left Hand Limit Adjuster	19 Anchor Bolt	33 Right Side Piston Bleed Screw
6 Rocker Arm	20 Foundation Plate (Optional)	34 Thermal (On Older Models)
7 Left Side Limit Switch	21 Hole for conduit/wire	35 Right Side Limit Switch
8 Oil Fill Cap	22 Grounding Lug	36 Spring Adjuster Nut
9 Vent Screw	23 Conduit (Not Supplied)	37 Right Hand Stop
10 Cooling Fins (On motor/pump)	24 Control Panel Enclosure	38 Lock
11 Left Side Piston Bleed Screw	25 Hydraulic Hose	39 Door
12 Left side Piston	26 Manual Release	40 Screen For Air Intake
13 Motor Pump Assembly	27 Spring Support (small spring)	41 Cooling Fan
14 Hydraulic Hose	28 Screen Cover for Air Intake	

## MANUAL RELEASE MECHANISM

**WARNING!** You must have the manual release key to access the function of the manual release. Using any other tools could damage the manual release mechanism.

The Manual Release function for the 620 or 640 Barrier is engaged with a key in the operator cabinet on the lower right side. (See figure 2)

Using the Manual Release key to disengage the beam from hydraulic operation allows you to operate the barrier by hand.

You disconnect the hydraulic operation of the beam by turning the Manual Release key counterclockwise. Then you can raise or lower the barrier by hand.

Manual operation of the beam is important during the installation process and can be useful during power interruptions or power failures.

To re-engage the hydraulic operation of the barrier, turn the key clockwise until the mechanism is "snug" tight.

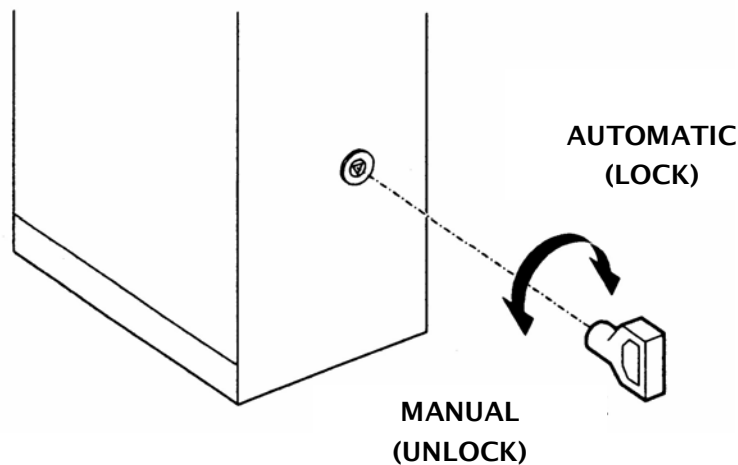


Figure 2. Manual Release Location on both the 620/640 Barrier

## INSTALLING THE BARRIER

**WARNING!** Do not install the barrier in such a way that the beam moves within 2 feet (610 mm) of a rigid object.

Installing the 620 or 640 Barrier System consists of the following general steps:

- Determining the orientation of the installation
- Preparing the forms for the concrete mounting slab and conduit
- Mounting the cabinet on the concrete slab
- Connecting the main power source to the operator
- Wiring the control panel for operational logic
- Wiring additional accessories into the control panel
- Decreasing the hydraulic pressures
- Programming the control panel
- Attaching the barrier beam
- Testing the operation of the beam

**Note:** The following installation instructions assume you are fully capable of installing an electronic barrier gate. This manual does not instruct you in designing a gate, pouring the cement foundation, or basic electrical wiring. The installation tasks discussed in this manual are tasks peculiar to the 620 and 640 Barriers.

### DETERMINE THE ORIENTATION OF THE INSTALLATION

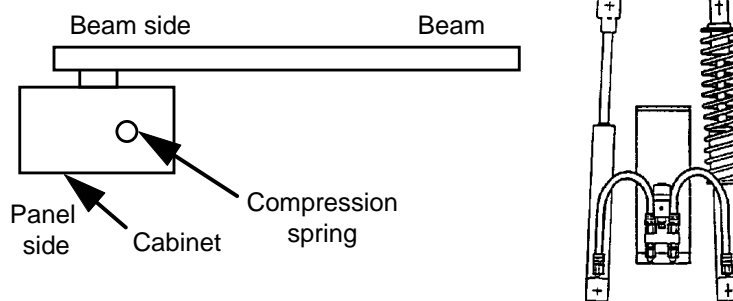
You first need to determine whether your operator is set up for a right-hand or left-hand installation (see Figure 3).

Open the panel door of the operator cabinet with the key provided and lift the door up and away from the cabinet, taking care not to disconnect the cabling to the fan. Look at the two pistons to see which has the compression spring surrounding it. Compare your operator with Figure 3 and use the figure to help you determine the orientation of your installation.

If your operator is not in the correct orientation, turning the cabinet around 180 deg is the easiest way to solve the problem. We suggest you call us if your installation site cannot accommodate this solution since the orientation of the barrier can be changed with about an hour's worth of work.

**NOTE:** It make no difference if the hoses are crossed or not.

(a) Right-hand orientation: top view and hose connections



(b) Left-hand orientation: top view and hose connections

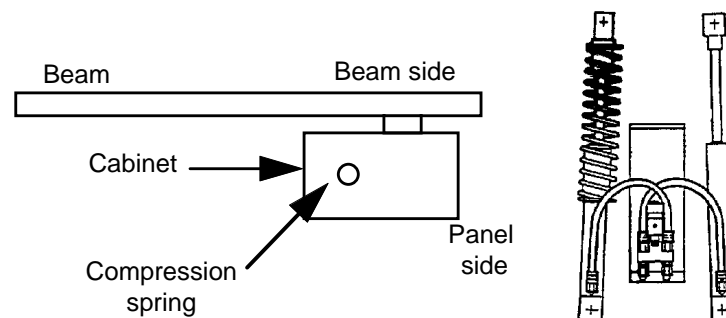


Figure 3. Right Hand vs. Left Hand Installation of the 620/640 Barrier



## PREPARE THE FORMS FOR THE CONCRETE SLAB AND CONDUIT

You need to set the concrete forms to provide a cement footing that is a minimum of 18 by 18 in. (46 by 46 cm) and that is poured a minimum of 18 in. (46 cm) below the ground level or just below the frost line, whichever is greater (see Figure 4). (Your soil conditions will also affect the size of the cement footing.) To help prevent rust, the top of your cement footing should be above ground level.

Within the form boundaries you must locate the electrical conduit so that it will protrude through the foundation plate (the plate is provided as an option) and above the top of the foundation plate about 1/2 in. (1.3 cm).

The exact placement of the conduit is determined partly by the foundation plate you use and more importantly by the access holes in the bottom of the operator cabinet (see Figure 5). If you choose to supply your own foundation plate, be sure to use steel that is 3/8 in. (1 cm) thick for the plate and be sure to provide a hole large enough to accommodate your two electrical conduits, one for high-voltage wire and one for low-voltage wire. In addition, your foundation plate needs four 1/2-in. (1-1/4 cm) anchor bolts that extend at least 6-1/2 in. (16-1/2 cm) into the cement footing. The anchor bolts should be positioned to match the holes in the bottom of your operator's cabinet.

After the concrete is poured in the forms and before it sets, place the foundation plate in the cement so that the top of the plate is level and flush with the top of the cement.

Allow the concrete to set a minimum of two full days before you mount the operator cabinet.

With the key provided, open the operator's panel door and lift the door away from the cabinet. It may be necessary on your model of operator to disconnect the wiring to the fan on the panel door to allow you to more easily handle the heavy cabinet.

Set the operator cabinet on the foundation plate, aligning the holes in the bottom of the cabinet with the bolts and conduit protruding above the foundation plate. Bolt the cabinet to the foundation plate and cement footing. If necessary, reconnect the wiring to the fan on the panel door.

Before connecting the main power to your barrier, you must remove the vent screw on the hydraulic power pack. Midway along the top, left edge of the hydraulic power pack is a 3 mm Allen screw. Remove it now. Failure to remove the screw can result in erratic operation of the barrier beam. Do not throw the screw away in case you ever need to transport the barrier unit or its hydraulic power pack.

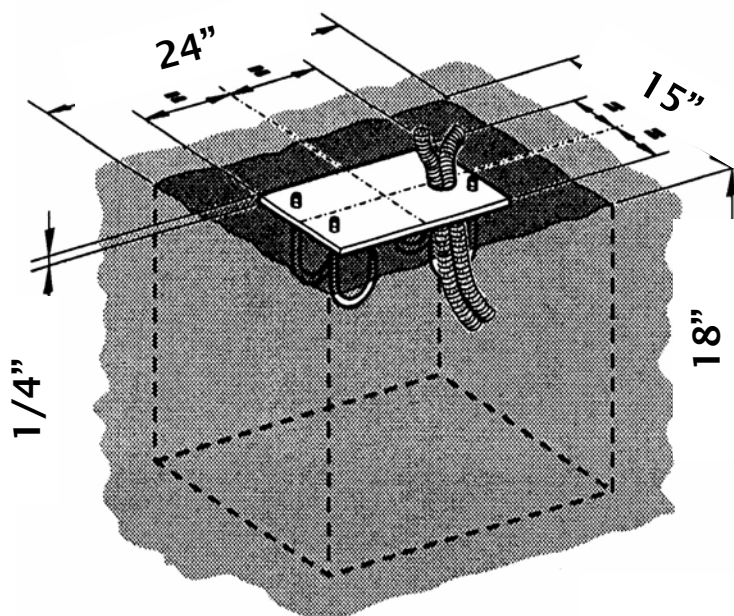
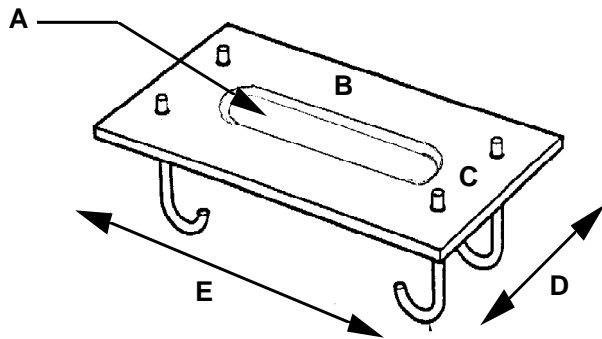


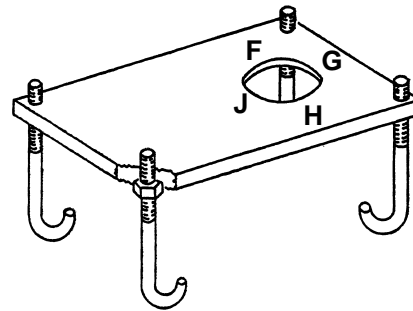
Figure 4. Recommended Concrete Form Dimensions

**American Style****620 Dimensions**

A (rectangle): 12 1/16 x 2 1/16 in.  
Between bolts  
B: 11 1/2 in.  
C: 3 1/2 in.  
Edge to edge  
D: 6 in.  
E: 13 3/4 in.

**640 Dimensions**

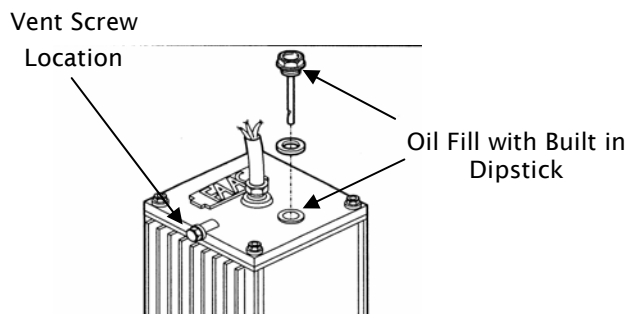
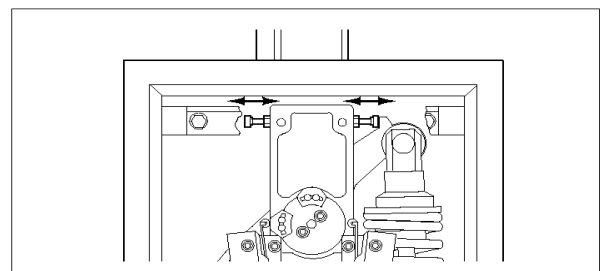
A (rectangle): 13 3/8 x 3 1/8 in.  
Between bolts  
B: 12 1/2 in.  
C: 5 1/8 in.  
Edge to edge  
D: 9 in.  
E: 15 1/4 in.

**Italian Style****620 Dimensions**

Entire plate, edge to edge:  
14 1/16 x 7 7/8 in.  
Hole diameter: 2 1/4 in.  
Distance from hole to edge:  
F: 2 3/4 in.  
G: 1 1/4 in.  
H: 2 3/4 in.  
J: 10 5/8 in.

**640 Dimensions**

Entire plate, edge to edge:  
15 1/4 x 9 1/16 in.  
Hole diameter: 2 1/4 in.  
Distance from hole to edge:  
F: 3 1/2 in.  
G: 1 1/4 in.  
H: 3 1/2 in.  
J: 12 in.

**Figure 5. FAAC foundation Plates for the 620/640 Barrier****Figure 6. Oil Fill and Vent Screw Locations****Figure 7. Positive Stop Location and Adjusters**

## ATTACH THE BARRIER BEAM

**WARNING!** Do not install the barrier in such a way that the beam moves within 2 feet (610 mm) of a rigid object.

Before you attach the barrier beam, be sure you have disconnected the barrier from hydraulic operation by means of the Manual Release mechanism (turning the key counterclockwise).

Next you attach the beam to the operator cabinet with the beam in a vertical position. See Figure 8 if you are attaching an aluminum beam to a model 620 operator, see Figure 9 if you are attaching an aluminum beam to a model 640 operator. (Wooden beams require additional sandwich plates).

## CHECK THE MECHANICAL STOPS

First, be sure the hydraulic operation of the beam is still disengaged (the Manual Release key should be turned counterclockwise). Next, move the beam by hand from the fully opened position (vertical) to the fully closed position (horizontal) and back to the fully opened position. If the positions are not perfectly vertical and perfectly horizontal, then adjust the mechanical stops as necessary (see Figure 7) using a 17mm socket wrench. The jam nut must be loosened first and tightened last.

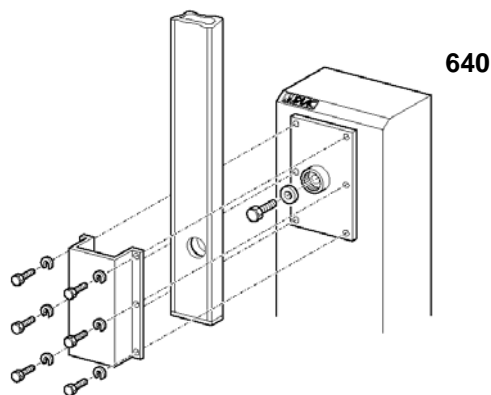


Figure 9. Beam Attachment 640 (Aluminum Beam)

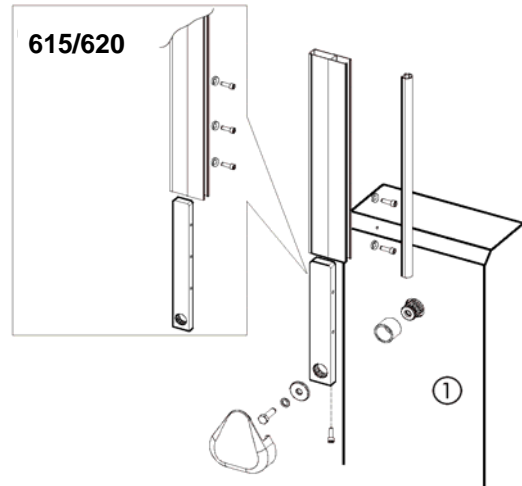


Figure 8. Beam Attachment 620 (Aluminum Beam)

## CHECK THE COMPRESSION SPRING

The compression spring should be adjusted so that it holds the beam in any position that it is placed while in manual mode. (Manual mode is discussed on page 7 shown in Fig. 2)

Move the beam by hand to a half-opened position. The beam should stay there when you remove your hand.

**Note:** All compression spring adjustments should be made with the beam in the vertical (open) position.

If the beam drifts toward the closed position, turn the adjuster nut (shown in Fig. 10) clockwise to tighten the compression spring.

If the beam drifts toward the opened position, turn the adjuster nut (shown in Fig. 10) counterclockwise to loosen the compression spring.

**Note:** Proper adjustment of the spring will counterbalance the beam. This will allow the minimal pressure setting necessary to move the beam in a smooth movement.

**NOTE:** The spanner wrench shown in figure 10 is NOT sold by FAAC or needed to make this adjustment.

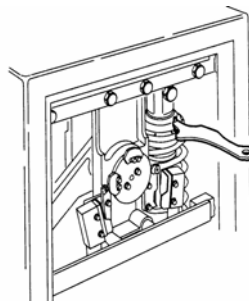


Figure 10. Adjuster Nut

## ADJUST THE HYDRAULIC PRESSURES

Now that the beam is attached, re-engage the hydraulic operation of the barrier by rotating the Manual Release key clockwise.

Send an opening activating signal to the barrier. The signal should open the barrier. If it does not open, increase the pressure of the opening bypass valve (the green valve) by turning the screw clockwise in small, 1/8- turn increments until the beam does open.

Test the closing of the barrier in the same way. If the beam fails to move in the closing direction, then increase the pressure of the closing bypass valve (the red valve) by turning the screw clockwise in small increments until the beam does close.

Remember that you should set the bypass pressure valves so that the beam works with the least pressure necessary. It is a safety feature of the barrier that the beam should apply no more than about 33 lb (15 kg) force against any obstacle it might encounter.

**WARNING!** For maximum safety to people and property, use photo eyes and other non-contact reversing devices in addition to adjusting the bypass pressure valves to the minimum settings.

## INSTALLING THE EMERGENCY BYPASS SOLENOID AND ANTI-VANDALISM VALVE (230VAC MODELS ONLY)

**WARNING!** Turn the main power off before you make any electrical connections or set any switches inside the control panel box.

The emergency bypass solenoid automatically disengages the hydraulic system of the barrier beam when the main power is not available. This allows the barrier to be raised by hand so that people and vehicles can safely pass during power interruptions and failures without having to manual release the barrier.

**Note:** Once the emergency bypass solenoid has disengaged the hydraulic system *and* once you have raised the beam by hand, you *cannot* lower the barrier beam until the power is restored or by using the manual release key.

If you are installing the optional emergency bypass solenoid, you must first turn off the main power and disengage the hydraulic system by using the Manual Release key.

Then you disassemble the hydraulic lines between the pistons and the operator so that you can install new hydraulic pipe fittings.

After installing the new pipe fittings, install the emergency bypass solenoid as shown in figure ()

After connecting the solenoid, you need to connect the hydraulic lines between the operator and the pistons. How you connect the lines depends on the orientation of your barrier installation (see Figure 11).

Finally, connect the solenoid to your main power line so that it can sense when power is or is not available (see Figure 11).

Re-engage the hydraulic system with the Manual Release key so that you can test the installed solenoid. To test the solenoid, turn off the power to the barrier. If the solenoid works, you should be able to raise the beam but not lower it after raising it. You should be able to lower the beam only after turning the power back on.

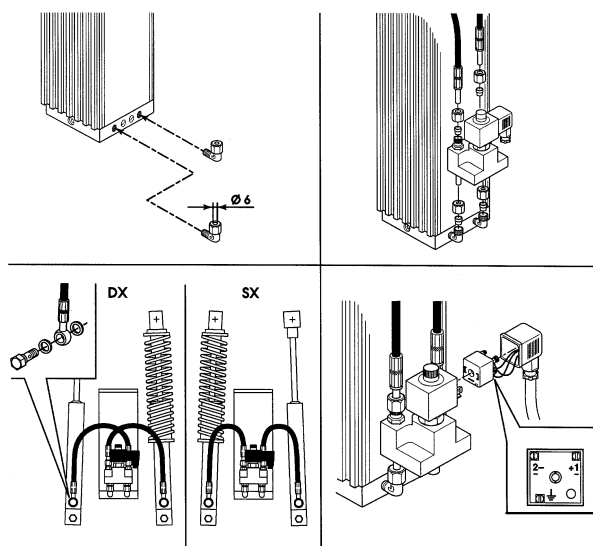
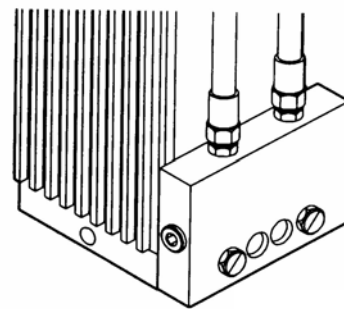


Figure 11. Emergency By-Pass Valve and the Anti-Vandalism Valve



Install the anti-vandalism valve with the instructions that are provided with it in it's packaging.

## CHANGING THE LENGTH OR TYPE OF BARRIER BEAM

**WARNING!** Do not install the barrier in such a way that the beam moves within 2 feet (610 mm) of a rigid object.

Changing the length or type of the beam requires installing a different balancing compression spring. Make sure you have the correct compression spring (designed for a particular weight of beam).

The installer is responsible for making sure that the compression spring is the correct spring for the barrier beam.

The following tables show which springs are designed for various beam types and lengths. To check for the part number of the compression spring in your barrier, check the tag attached to the spring previously installed.

If it is necessary for you to replace the spring in a cabinet with another compression spring, do the following. First, turn off the main power to the operator and then open the cabinet panel. Turn the Manual Release key counterclockwise. Then move the beam by hand to the fully opened position.

Unbolt the piston with the compression spring from the rocker arm. Then very carefully unscrew the cap holding the compression spring by hand to the left to remove the spring from the piston. Remove the spring from the piston.

**NOTE:** Hold the bottom of the piston cylinder to keep the piston rod from sliding out of the cylinder.

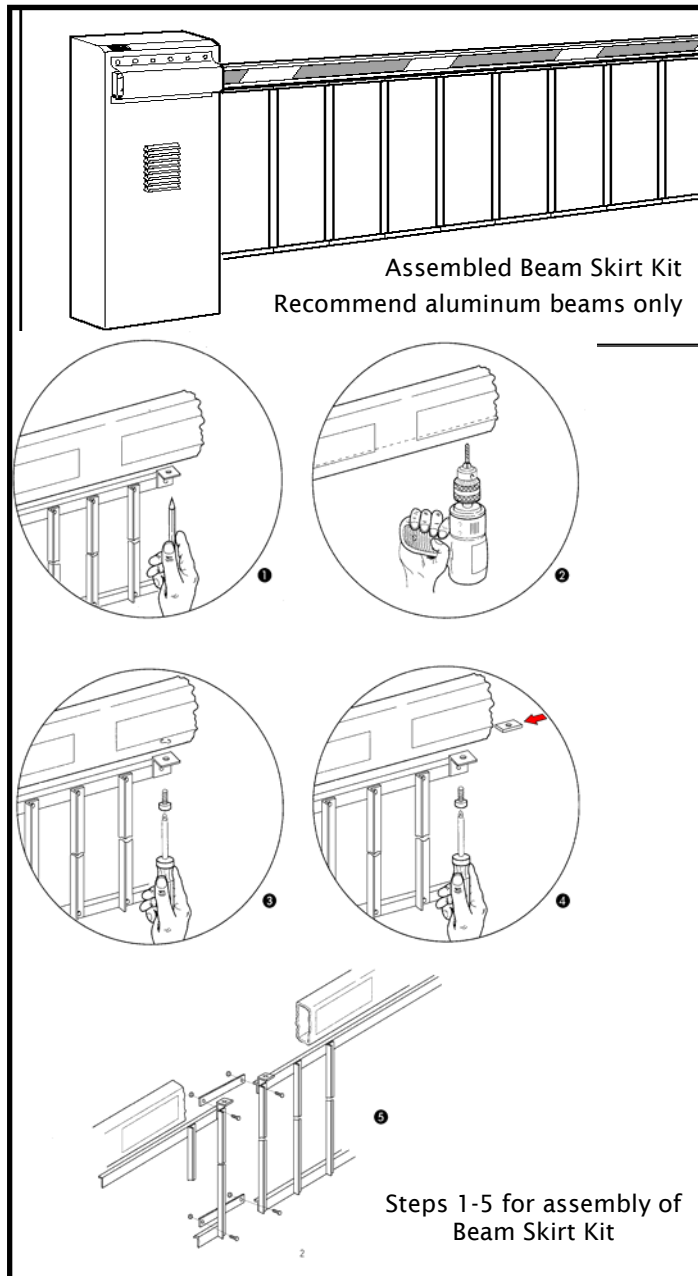
Install the correct compression spring by placing it over the piston and screwing it into place with adjusting cap. Then bolt the piston to the rocker arm and reinstall the steel cross member. Re-engage the hydraulics by turning the Manual Release key clockwise.

Be sure to recheck the tension of the compression spring before you turn on the main power to the operator. Then be sure to adjust the hydraulic pressures.

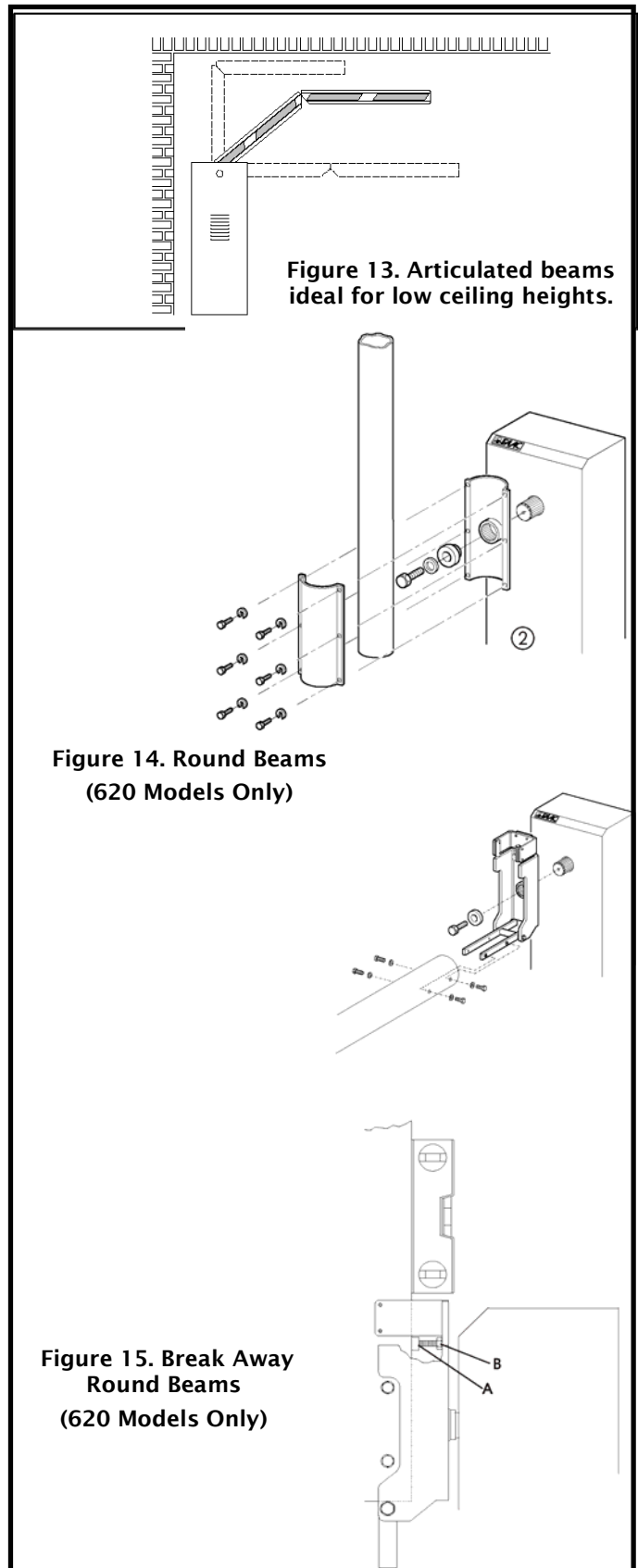
Rigid Beams: Part Numbers of Compression Springs for Various Lengths								
Beam and Required Spring	620 Barrier Systems				640 Barrier Systems			
Redwood Beam, ft	8-10	12-14	16	NA	16-18	18-20	20	NA
Rigid Aluminum Beam, ft (m)	6 (2)	8 (2 1/2)	10 (3)	13 (4)	13 (4)	16 (5)	20 (6)	23 (7)
FAAC Part No. for Compression Spring	7210855	7210695	7210705	7210885	7210735	7210745	7210755	7210805

Skirted Beams: Part Numbers of Compression Springs for Various Lengths								
Beam and Required Spring	620 Barrier Systems				640 Barrier Systems			
Skirted Aluminum Beam, ft (m)	6 (2)	8 (2 1/2)	10 (3)	13 (4)	13 (4)	16 (5)	20 (6)	23 (7)
FAAC Part No. for Compression Spring	7210695	7210715	7210735	7210745	7210795	7210805	7210815	7210825

# BEAM AND BEAM ACCESSORIES



**Figure 12. Skirted Beam Kit and Assembly Instructions.**  
(The Skirt Kits Are Intended For Aluminum Beams Only)



# BREAK AWAY BEAM “STOP” SWITCH

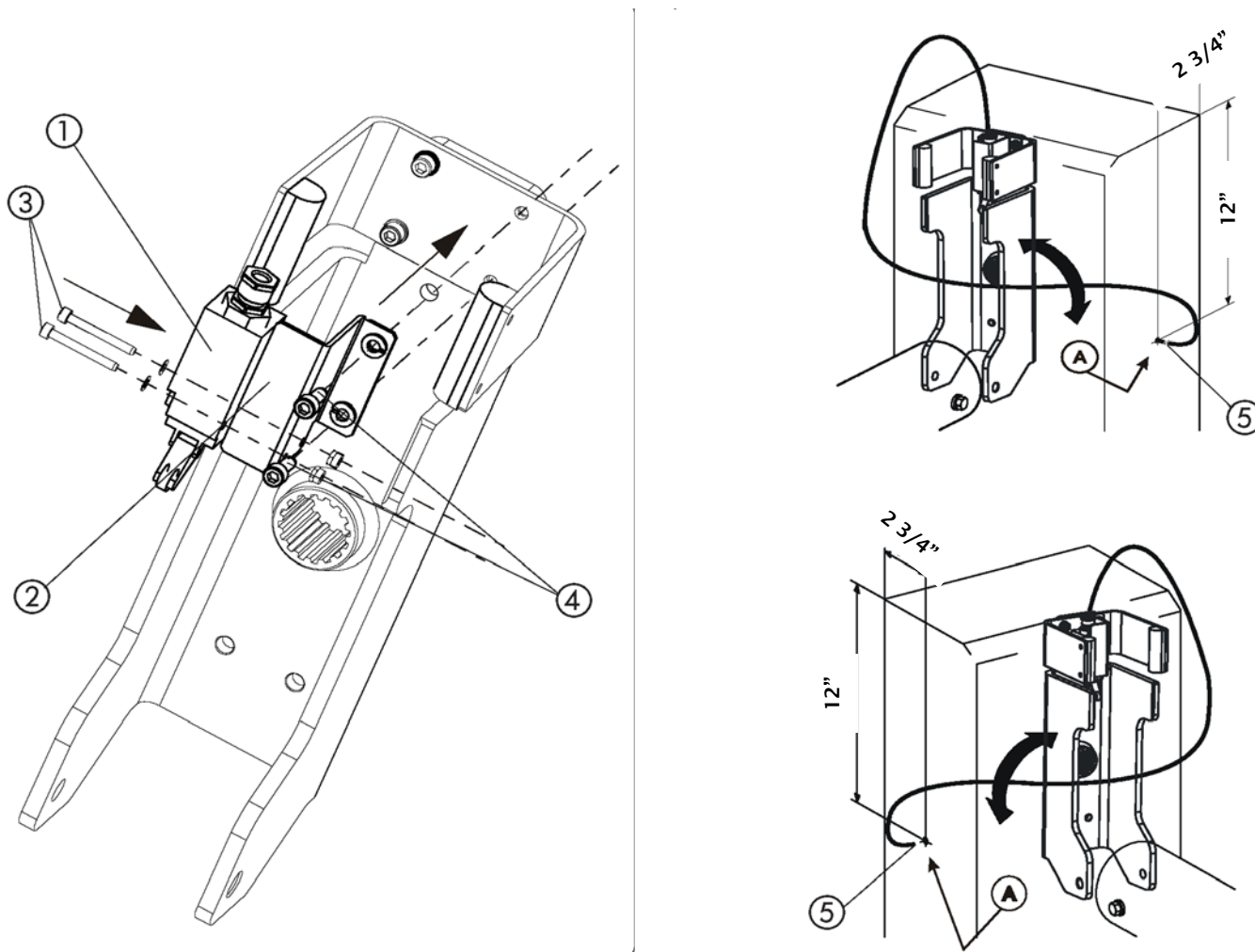
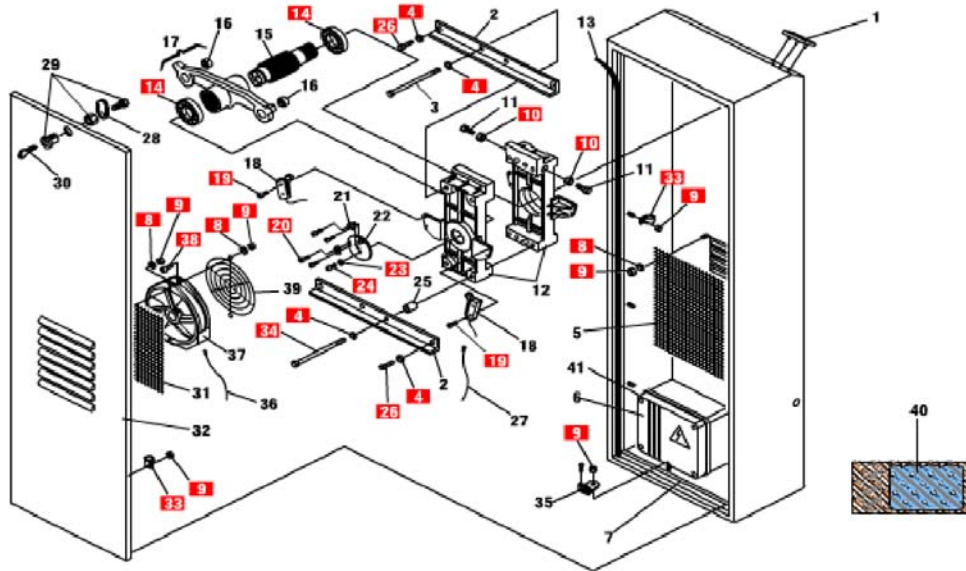


Figure 16. 620 Break Away Round Beam Stop Switch Installation Instruc-

# 620 CABINET EXPLODED VIEW



POS.	PART	DESCRIPTION	QTY
1	N/A	FAAC Logo	1
2	N/A	620 Cross Member	2
3	N/A	Cross Member Bolt	2
4	N/A	Lock Washer (10MM)	8
5	N/A	Screen/Filter	1
6*	2022711	624 BLD Control Panel	1
7	416004	620 Cabinet (Orange)	1
8	N/A	Washer (4MM)	4
9	N/A	Nut (4MM)	16
10	N/A	Nut (10MM)	2
11	N/A	Positive Stop Bolt (10x35MM)	2
12	499460	Rocker Assembly Housing	1
13	N/A	Door Gasket	94"
14	2484	Bearing (Output Shaft)	2
15	N/A	Output Shaft	1
16	7073015	Ball Joint	2
17	415001	Rocker Arm	1
18	7580145	Limit Switches	2
19	N/A	Screw (3x16MM)	4
20	N/A	Bolt (Allen Head 4X10MM)	4
21	N/A	Limit Switch Cams	2

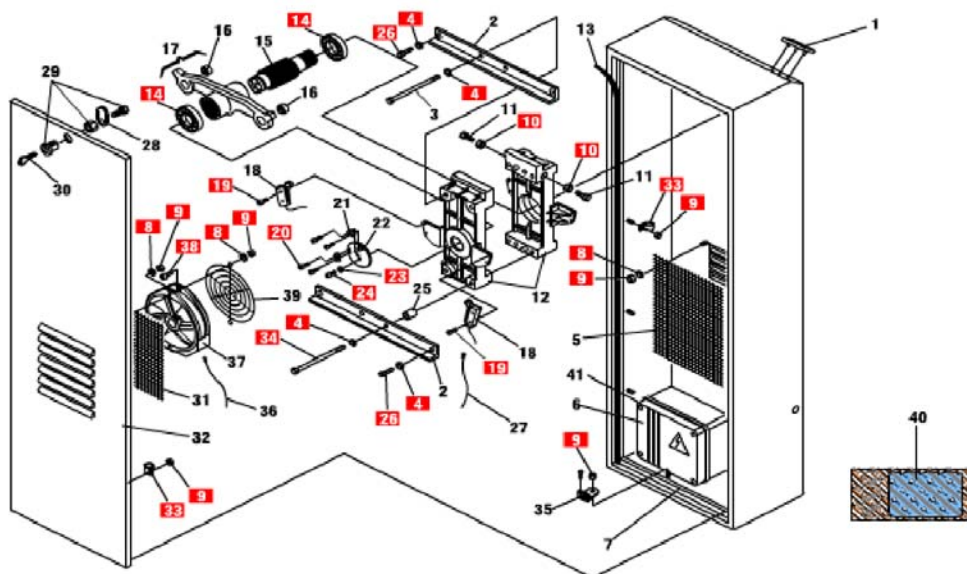
POS.	PART NUMBER	DESCRIPTION	QTY
22	N/A	Limit Switch Cam Plate	1
23	N/A	Lock Washer (6MM)	2
24	N/A	Screw (6x10MM)	2
25	N/A	Spacer	2
26	N/A	Bolt	4
27	N/A	Harness (Limit Switches)	1
28	7291025	Lock Dog	1
29	7120505	Key Cylinder	1
30	7131005	Viro Key	10
31	N/A	Screen/Filter	1
32	7270645	Cabinet Door	1
33	N/A	Wire Loom	9
34	N/A	Bolt (10x140MM)	2
35	N/A	Cable Clamp	1
36	N/A	Harness (Fan)	1
37**	N/A	Cooling Fan	1
38	N/A	Bolt (Allen Head 4x16MM)	2
39	N/A	Fan Guard	1
40	N/A	Skin Pack	1

\* 624 BLD Control Panel 115VAC = 2022712

\*\* Electric Fan 115VAC = 727316



# 640 CABINET EXPLODED VIEW



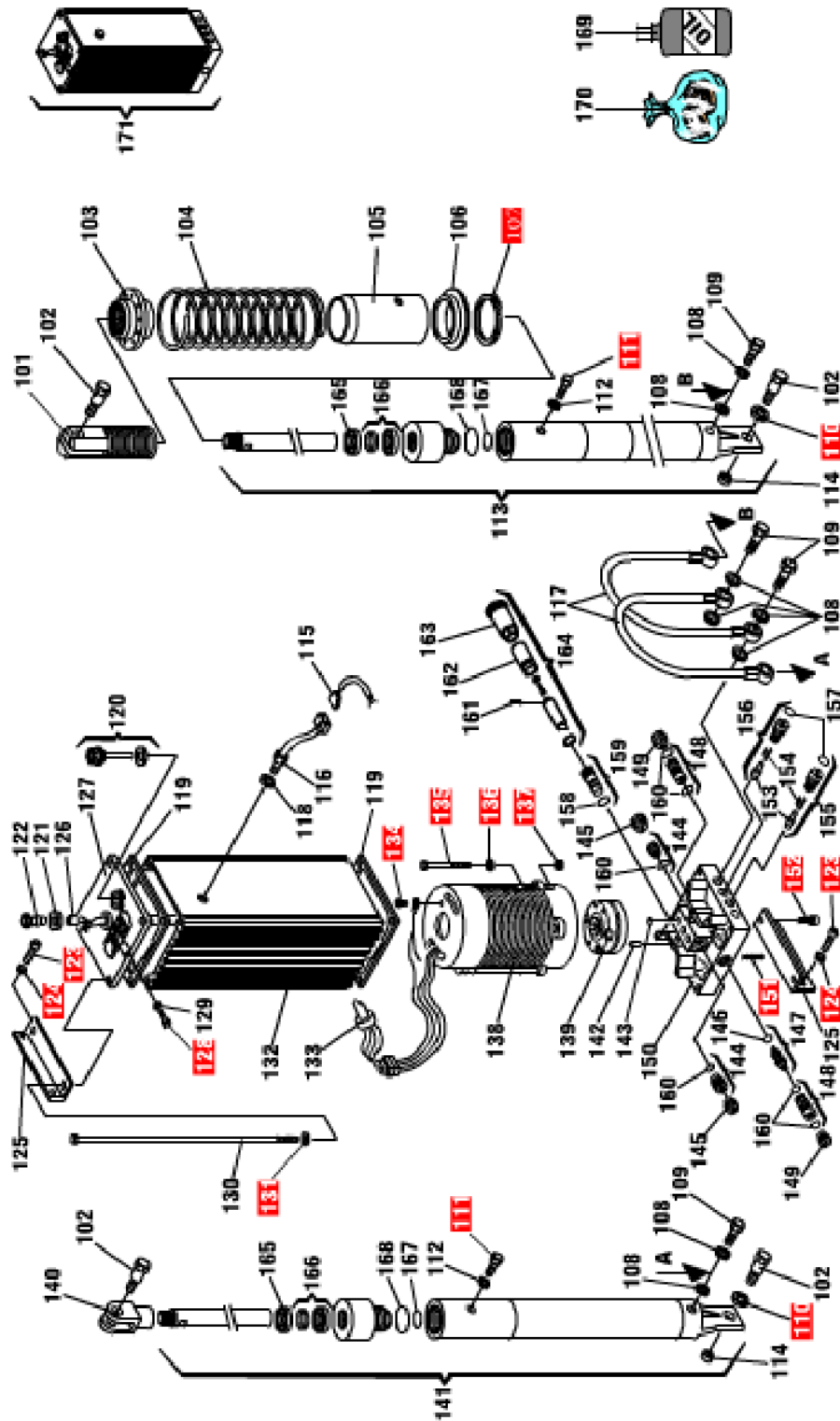
POS.	PART NUMBER	DESCRIPTION	QTY
1	N/A	FAAC Logo	1
2	N/A	620 Cross Member	2
3	N/A	Cross Member Bolt	2
4	N/A	Lock Washer (10MM)	8
5	N/A	Screen/Filter	1
6*	2022711	624 BLD Control Panel	1
7	416004	620 Cabinet (Orange)	1
8	N/A	Washer (4MM)	8
9	N/A	Nut (4MM)	18
10	N/A	Nut (10MM)	2
11	N/A	Positive Stop Bolt (10x35MM)	2
12	499460	Rocker Assembly Housing	1
13	N/A	Door Gasket	102"
14	2484	Bearing (Output Shaft)	2
15	N/A	Output Shaft	1
16	7073015	Ball Joint	2
17	416003	Rocker Arm	1
18	7580145	Limit Switches	2
19	N/A	Screw (3x16MM)	4
20	N/A	Bolt (Allen Head 4x10MM))	4
21	N/A	Limit Switch Cams	2

POS.	PART NUMBER	DESCRIPTION	QTY
22	N/A	Limit Switch Cam Plate	1
23	N/A	Lock Washer (6MM)	2
24	N/A	Screw (6x10MM)	2
25	N/A	Spacer	2
26	N/A	Bolt (10x20MM)	4
27	N/A	Harness (Limit Switches)	1
28	7291025	Lock Dog	1
29	7120505	Key Cylinder	1
30	7131005	Viro Key	10
31	N/A	Screen/Filter	1
32	7270655	Cabinet Door	1
33	N/A	Wire Loom	9
34	N/A	Bolt (10x140MM)	2
35	N/A	Cable Clamp	1
36	N/A	Harness (Fan)	1
37**	N/A	Cooling Fan	1
38	N/A	Bolt (Allen Head 4x16MM)	2
39	N/A	Fan Guard	1
40	N/A	Skin Pack	1

\* 624 BLD Control Panel 115VAC = 2022712

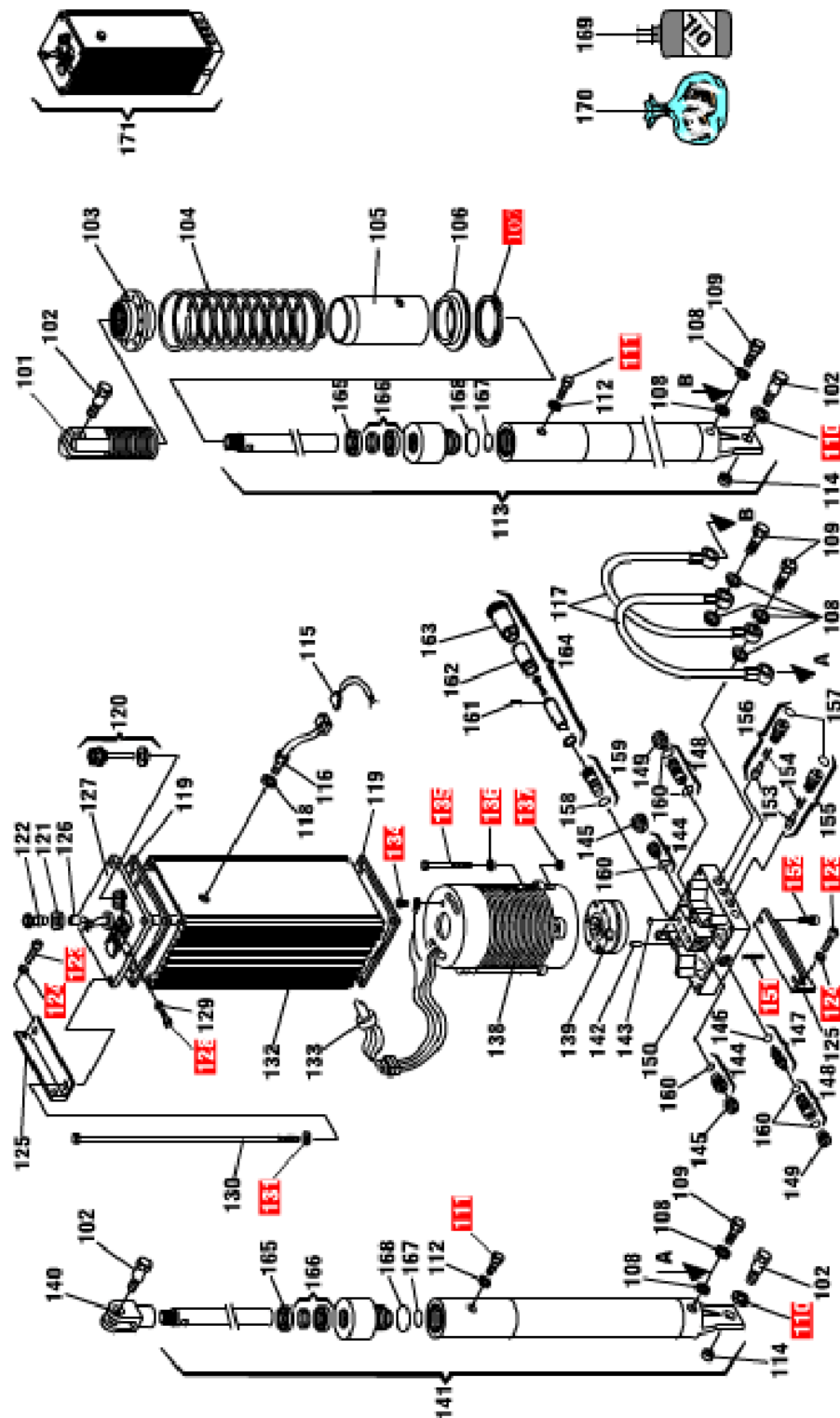
\*\* Electric Fan 115VAC = 727316

# 620 MOTOR PUMP ASSEMBLY EXPLODED VIEW



POS	PART NUMBER	DESCRIPTION	QTY	POS	PART NUMBER	DESCRIPTION	QTY
101	7221005	Spring Adjustment Fork	1	136	N/A	Washer	4
102	7182155	Shoulder Bolt	4	137	702003	Nut (Jam)	4
103	7049145	Spring Adj. Retainer	1	138*	7700205	Motor	1
105	7360165	Cylinder Protection Guide	1	139**	3204435	Lobe Pump*	1
106	7222725	Spring Support Ring	1	140	N/A	Fork (Non Spring Cylinder)	1
107	2487	Snap Ring (Spring Support)	1	141	725203	Piston (Non Spring Side)	1
108	7039285	Washer	8	142	N/A	Pin (Pump)	2
109	7110115	Banjo Bolt	4	143	7090010015	O-Ring (Pump to Valve Body)	2
110	N/A	Lock Washer	2	144	4404065	Inlet Valve	2
111	2274	Screw (Air Bleed)	2	145	7049005	Retainer	2
112	N/A	Copper Washer	2	146	7090300015	O-Ring (Shuttle Piston)	1
113	725202	Piston (Spring Side)	1	147	4180285	Shuttle Piston	1
114	7073015	Ball Joint	2	148	4404085	Lock Valve	2
115	N/A	Harness (Thermal)	1	149	7049005	Retainer (Brass)	2
116	7543005	Temperature Switch	1	150	4997645	Valve Body	1
117	7361275	Hydraulic Hose	2	151	N/A	Roll Pin (Manual Release Lock)	1
118	7039275	Fiber Washer	1	152	N/A	Bolt (Allen Head)	2
119	7099315	Gasket (Flange)	2	153	N/A	By Pass Valve Feet	2
120	7112055	Oil Cap (Dip Stick)	1	154	N/A	By Pass Valve Spring	2
121	7043355	O-Ring (Strain Relief)	1	155	4180395	By Pass Screw	1
122	N/A	Strain Relief	1	156	4180395	By Pass Screw	1
123	N/A	Screw	4	157	7090150015	O-Ring ( By Pass Screws)	2
124	N/A	Washer	4	158	N/A	O-Ring (Manual Release)	1
125	7220625	Mounting Bracket	2	159	4180305	Manual Release	1
126	7099245	Gasket (Strain Relief)	1	160	7090050015	O-Ring (Inlet Valve)	6
127	7270535	Flange (Top)	1	161	N/A	Roll Pin (Manual Release Rod)	1
128	2274	Vent Screw	1	162	N/A	Coupler (Manual Release Rod)	1
129	7094065	Washer	1	163	7128035	Manual Release Knob (Triangular)	1
130	7230295	Tie Rod	4	164	424593	Manual Release Assembly	1
131	N/A	Star Washer	4	165	N/A	Wiper Seal	2
132	N/A	Operator Body	1	166	N/A	O-Rings (Cylinder Top)	2
133	7514075	Power Cord	1	167	7090360025	O-Ring (Piston Center)	2
134	N/A	Screw	1	168	N/A	O-Ring (Cylinder Center)	2
135	2365	Bolt (Motor)	4	169	6115*	Artic Grade Oil (Quarts)	2
				170	2170*	Seal Kit	1

# 640 MOTOR PUMP ASSEMBLY EXPLODED VIEW



POS	PART	DESCRIPTION	QTY
101	7221005	Spring Adjustment Fork	1
102	7182155	Shoulder Bolt	4
103	7049145	Spring Adj. Retainer	1
105	7360165	Cylinder Protection Guide	1
106	7222725	Spring Support Ring	1
107	2487	Snap Ring (Spring Support)	1
108	7039285	Washer	8
109	7110115	Banjo Bolt	4
110	N/A	Lock Washer	2
111	2274	Screw (Air Bleed)	2
112	N/A	Copper Washer	2
113	725202	Piston (Spring Side)	1
114	7073015	Ball Joint	2
115	N/A	Harness (Thermal)	1
116	7543005	Temperature Switch	1
117	7361275	Hydraulic Hose	2
118	7039275	Fiber Washer	1
119	7099315	Gasket (Flange)	2
120	7112065	Oil Cap (Dip Stick)	1
121	7043355	O-Ring (Strain Relief)	1
122	N/A	Strain Relief	1
123	N/A	Screw	4
124	N/A	Washer	4
125	7220625	Mounting Bracket	2
126	7099245	Gasket (Strain Relief)	1
127	7270535	Flange (Top)	1
128	2274	Vent Screw	1
129	7094065	Washer	1
130	7230295	Tie Rod	4
131	N/A	Star Washer	4
132	N/A	Operator Body	1
133	7514125	Power Cord	1
134	N/A	Screw	1
135	2365	Bolt (Motor)	4

POS	PART	DESCRIPTION	QTY
136	N/A	Washer	4
137	702003	Nut (Jam)	4
138*	7700205	Motor	1
139**	3204435	Lobe Pump*	1
140	N/A	Fork (Non Spring Cylinder)	1
141	725203	Piston (Non Spring Side)	1
142	N/A	Pin (Pump)	2
143	7090010015	O-Ring (Pump to Valve Body)	2
144	4404065	Inlet Valve	2
145	7049005	Retainer	2
146	7090300015	O-Ring (Shuttle Piston)	1
147	4180285	Shuttle Piston	1
148	4404085	Lock Valve	2
149	7049005	Retainer (Brass)	2
150	4997645	Valve Body	1
151	N/A	Roll Pin (Manual Release Lock)	1
152	N/A	Bolt (Allen Head)	2
153	N/A	By Pass Valve Feet	2
154	N/A	By Pass Valve Spring	2
155	4180395	By Pass Screw	1
156	4180395	By Pass Screw	1
157	7090150015	O-Ring ( By Pass Screws)	2
158	N/A	O-Ring (Manual Release)	1
159	4180305	Manual Release	1
160	7090050015	O-Ring (Inlet Valve)	6
161	N/A	Roll Pin (Manual Release Rod)	1
162	N/A	Coupler (Manual Release Rod)	1
163	7128035	Manual Release Knob (Triangular)	1
164	424593	Manual Release Assembly	1
165	N/A	Wiper Seal	2
166	N/A	O-Rings (Cylinder Top)	2
167	7090360025	O-Ring (Piston Center)	2
168	N/A	O-Ring (Cylinder Center)	2
169	6115*	Artic Grade Oil (Quarts)	2
170	2170*	Seal Kit	1

# THE 624 BLD CONTROL PANEL

## GENERAL DESCRIPTION

The FAAC 624 BLD control panel is used to operate the following models.

### Barrier gate operators:

620 115VAC/230VAC  
640 115VAC/230VAC

The 624 BLD programming controls the following:

**Operating logic:** A, S, E, EP, B, C and other logics.

**Reversing device behavior:** Choose whether a triggered reversing device during closing immediately reverses gate movement or stops the gate and reverses gate movement when no longer triggered.

**Torque or Pressure:** Adjustable from 0 to 50.

**Pause time between opening and closing:** adjustable from 0 to 4 minutes.

**Opening/Closing time:** adjustable from 0 to 4 minutes.

**Deceleration Time:** programmable

The 624 BLD control panel is installed in an enclosure that is conveniently located inside the barrier cabinet. Any addition enclosures should be rated for outdoor use and be water proof.

The 624 BLD control panel requires a single-phase power supply voltage (115 VAC [ $\pm 10\%$ ] or 230 VAC [+6 or -10%], 50-60 Hz). The power supply should be protected by a 15 amp dedicated circuit breaker (not provided).

The installer is responsible for grounding the operator system, for providing the main power breaker switch, and for making sure that the entire gate system meets all applicable electrical codes. The installer should refer to the installation manual for a given operator for more information.

**NOTE:** An installation is U.L. compliant only when you install the FAAC operators according to the UL325 standards.

## INSTALLING THE 624 BLD CONTROL PANEL

Installing the control panel consists of the following general steps:

- Connecting the main power to the control panel
- Connecting the activating device
- Connecting the operator to the control panel
- Checking the direction of the motor's rotation
- Connecting other devices to the control panel
- Set operating modes

## CONNECT THE MAIN POWER SUPPLY (REPLACEMENT PANELS ONLY)

**WARNING!** Turn the main power off before you make any electrical connections or before programming.

If the panel is installed in the barrier system than the main power needs to be wired to the switch that is explained in the barrier section of this manual.

Wire the main power supply to control panel terminals in block J9 (Figure 1C). The installer is responsible for insuring that a separate, grounded circuit protected by a circuit breaker is between the control panel and the main power supply. All wiring should conform to applicable electrical codes, and all wiring and fittings should be weatherproof and/or suitable for burial.

Connect the ground to the grounding terminal in block J9 and connect the power wires to the terminals labeled N (neutral) and L (line).

**NOTE:** For a 230V system, a neutral is not needed. Connect one 115V line to the L (Line) and a second 115V line to the N (Neutral).

# THE 624 BLD CONTROL PANEL

## TECHNICAL SPECIFICATION

Supply Voltage	115/230 VAC (+6% -10%)
Absorbed Power	7 Watts
Accessory Voltage Supplied	24VDC
Fuse Ratings	500mA
Logics	A, A1,E,P,PA,CN,CA,RB,C,R,CU
Motor Run Time	Programmable (0-4 minutes)
Pause Time	Programmable (0-4 minutes)
Motor Power	Programmable (50 levels)
Connectors on Board	Limit Switches, Loop Detector, Break Away Beam Sensor
Radio Plug In	FAAC Plug In Radio Receiver
Programming Buttons	3 Buttons (+, -, F)
Programming Functions	Logics, Pause Time, Work Time, Deceleration Time, Torque, and Loop 1 & 2.

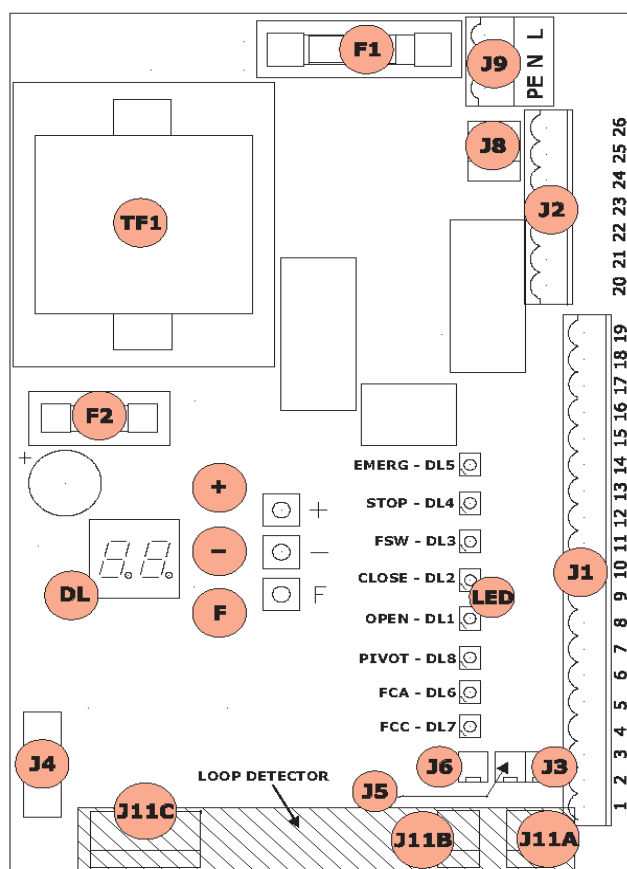


Figure 1C. 624 BLD Control Panel

DL	Display for Programming/Diagnostics
LED	Input Status LEDS (Light Emitting Diodes)
J1	Low Voltage Terminal Strip
J2	Terminal Strip For Motor, Fan, Warning Light
J3	Open Limit Switch Quick Connector
J4	Radio Receiver Plug In
J5	Closing Limit Switch Quick Connector
J6	Break Away Beam Sensor Quick Connector
J8	Capacitor Quick Connector
J9	Main Power Terminal Strip
J11	Loop Detector Quick Connector
F1	5 Amp (Motor Fuse)
F2	500mA (Accessory Fuse)
F	Program Push Button "F"
+	Program Push Button "+"
-	Program Push Button "-"
TF1	Transformer

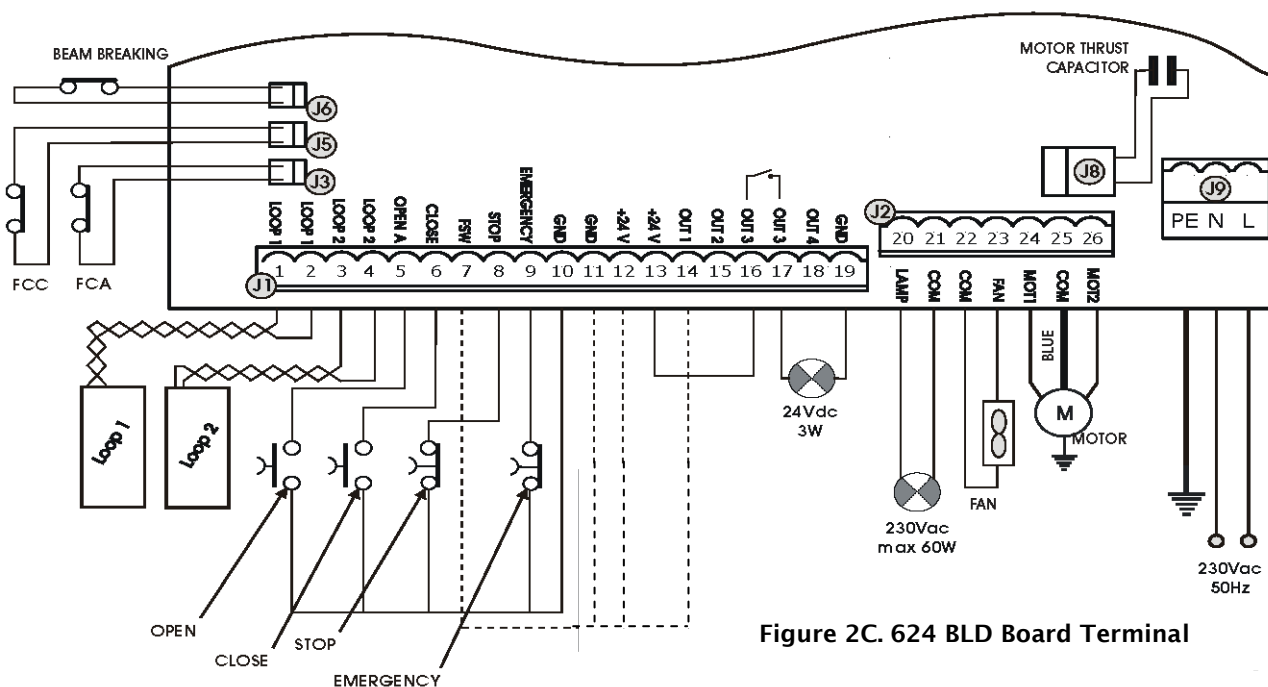


Figure 2C. 624 BLD Board Terminal

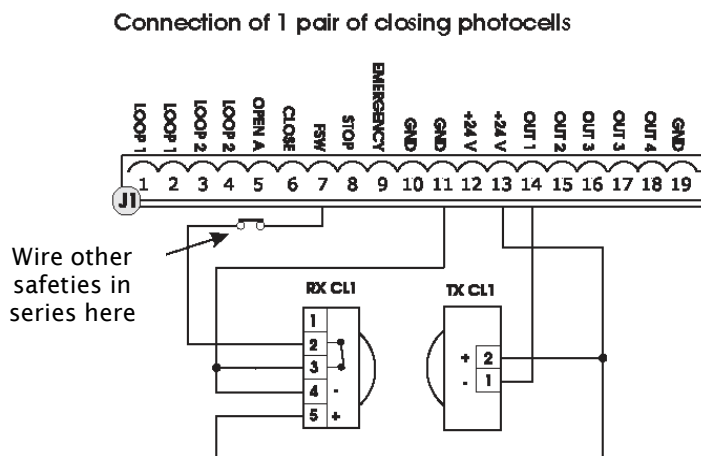
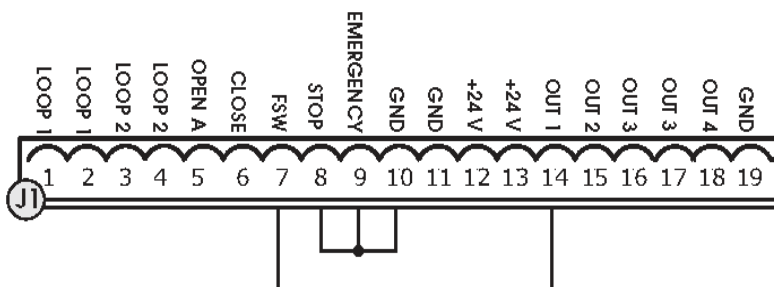


Figure 3C. Typical wiring diagram  
using FAAC photo beams  
(FAAC PART NUMBER 785163).  
Wire other reversing devices in  
series as shown here.

Figure 4C. Typical jumpers needed for  
testing purposes.

FAAC Strongly recommends the use of  
reversing devices for a safe/UL listed  
installation.





## CONNECTING THE MAIN POWER SWITCH

The installer is responsible for providing a grounded circuit protected by a 15 amp circuit breaker from the main power source to the operator.

**NOTE:** Your standard 220VAC/115VAC power source meets the specification for 230VAC/115VAC, +6 or -10%.

All wiring should conform to applicable electrical codes and all wiring and fittings should be weather-proof and/or suitable for burial.

To connect the main power source to the barrier, remove the cover of the main power switch at the top of the inside of the barrier cabinet. Then run the main power wires from the base of the cabinet up through flexible conduit that is on the cabinet door side of the steel cross member. Run the wires and conduit through the connector on the right side of the junction box for the main power switch.

**CAUTION:** Do *not* run the main power conduit up the metal channel in the right front of the cabinet. The right front channel houses wiring for the limit switches and is appropriate *only* for low-voltage wiring.

Connect the main power ground wire to the ground screw in the junction box. Connect the other wires to the line side of the switch (see Figure 4C). The 624 BLD control panel is already connected to the load side of the main power switch.

**CAUTION:** U.L. listing *requires* the use of flexible conduit around the main power wiring from the base of the barrier cabinet to the flexible conduit connector on the junction box of the main power switch.

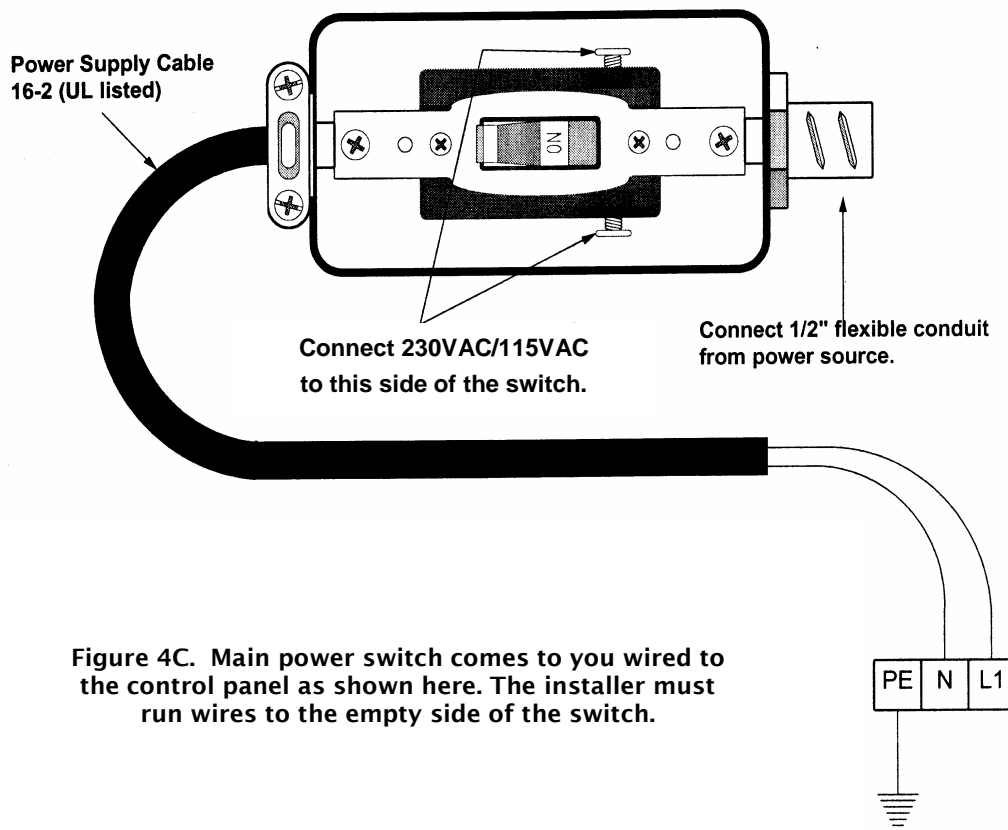


Figure 4C. Main power switch comes to you wired to the control panel as shown here. The installer must run wires to the empty side of the switch.

**J1 TERMINAL STRIP ACCESSORIES**

LOOP 1 — Power supply to loop 1 (OPEN - terminals 1-2): use these terminals to connect the loop you wish to use as a FREE EXIT.

LOOP 2 - Power supply to loop 2 (REVERSE/CLOSE - terminals 3-4): use these terminals to connect the loop you wish to use as the REVERSE/CLOSE loop.

OPEN - "Opening" Command (N.O. - terminal 5 & 10): this is where your N.O. activation device wire to pulse the beam open. (e.g.: push-button)

**NOTE:** To install several opening devices, connect the N.O. contacts in parallel.

CLOSE - "Closing" Command (N.O. - terminal 6 & 10): this is where your N.O. closing devices wire to pulse the beam closed.

**NOTE:** To install several total opening pulse generators, connect the N.O. contacts in parallel.

FSW - Closing Reversing-devices (N.C. - terminal 7 & 14) The purpose of the closing reversing devices is to protect the barrier movement area under the beam, by reversing motion. If the closing safety devices are activated when the automated system is in open status they prevent the closing movement.

**NOTE:** To install several closing safety devices, connect the N.C. contacts in series.

**WARNING:** If closing safety devices are not connected, jumper terminals 7 and 14.

STOP - STOP contact (N.C. - terminal 8 & 10): this refers to any device (e.g.: push-button) which stops the motion of the barrier.

**NOTE:** To install several STOP devices, connect the N.C. contacts in series.

**WARNING:** If stop safety devices are not connected, jumper terminals 8 and 10.

EMERGENCY - EMERGENCY contact (N.C. - terminal 9 & 10, or 11 or 19) this refers to any switch which, by being activated in emergency state, opens the barrier and stops its movement until the contact is restored.

**WARNING:** If emergency safety devices are not connected, jumper terminals 9 & 10 between.

GND - (terminals 10-11-19) - Negative contact for accessories and DC power negative.

24 Vdc - (terminals 12-13) - Positive contact for powering 24VDC accessories.

**WARNING:** Max. load of accessories: 500mA.

OUT 1 - Output 1 (terminal 14): the output can be set to one of the functions described in 2nd level Programming. The default value is FAILSAFE.

OUT 2 - Output 2 (terminal 15): the output can be set to one of the functions described in 2nd level Programming. The default value is beam CLOSED.

OUT 3 - Output 3 (terminal 16-17): the output can be set to one of the functions described in 2nd level Programming. The default value is INDICATOR LIGHT.

Connect 24 Vdc - 3W max. indicator light, if any, to these terminals, following the instructions in figure 2C.

**WARNING:** To avoid shorting the system, **do not exceed** the indicated power.

OUT 4 - Output 4 (terminal 18): **NOT USED AT THIS TIME**

**J2 TERMINAL STRIP - MOTOR - FLASHING LIGHT AND FAN**

M (COM - MOT 1 - MOT 2): Motor connection  
LAMP (LAMP - COM): Flashing light output (230V~)  
FAN (FAN - COM): Fan output (230V/115V)

**J8 CONNECTOR — MOTOR CAPACITOR**

Rapid connector for connecting the motor thrust capacitor.

**J9 TERMINAL STRIP - POWER SUPPLY**

PE : Earth connection  
N : Power supply 230/115VAC (Neutral)  
L : Power supply 230/115VAC (Line)

**WARNING:** To ensure correct operation, the board must be connected to earth ground and an adequate 15Amp breaker upstream of the barrier.

**J3, J5 RAPID CONNECTORS - FOR OPENING AND CLOSING LIMIT SWITCHES**

Quick-fit connector for connection of the opening (J3) and closing (J5) limit-switches.

**J6 CONNECTOR - BREAKAWAY BEAM SENSOR**

Quick-fit connector for breakaway beam (round) sensor (where present). If this sensor is not being used, leave the supplied jumper in place.

J11 A, B, C CONNECTOR - QUICK-FIT  
CONNECTOR FOR FAAC PLUG IN LOOP DETECTOR

Quick-fit connector for connecting the external loop-detector. For adjustment and programming consult the loop detector instruction.

J4 QUICK-FIT CONNECTOR - FOR FAAC RADIO  
RECEIVER

If you are using the FAAC two-channel receiver, you will be able to directly command the automated system's OPEN and CLOSE from the radio control.

**WARNING:** Insert and remove the plug-in boards ONLY after cutting power.

PROGRAMMING

To program the 624 BLD control panel, you must access the "PROGRAMMING" mode.

Programming is in two parts: 1st LEVEL and 2nd LEVEL.

**NOTE:** Modification of the programming parameters is immediately effective, whereas complete memory-storage occurs only on exiting programming and returning to the view of the automation status St. If you cut power to the unit before returning to view the status, all the programming changes made will be lost.

**NOTE:** You can return to viewing the status from any point of programming at any level, by pressing keys "F" and "—" at the same time.


**NOTE:** To restore the programming back to default settings, press keys "+", "—", and "F" at the same time and hold them down for 5 seconds.

1ST LEVEL PROGRAMMING

To access 1ST LEVEL PROGRAMMING, use push-button F:

- If you press it (and hold it down), the display shows the name of the first function.
- If you release the push-button, the display shows the value or parameter of that function, which can be changed by using the "+" and/or "—" keys.
- If you press F again (and hold it down) the display shows the name of the next function, etc.
- When you reach the last function, press the F push-button to exit programming, and the display resumes showing the input status.

The following table indicates the sequence of functions accessible in 1st LEVEL PROGRAMMING:

1ST LEVEL PROGRAMMING 		
DISPLAY	FUNCTION	DEFAULT
LO	FUNCTION LOGICS: R AUTOMATIC R1 AUTOMATIC 1 e SEMI-AUTOMATIC p PARKING PR PARKING AUTOMATIC C CONDO CA CONDO AUTOMATIC rb TRAFFIC BOLLARD LOGIC C DEAD-MAN C REMOTE C CUSTOM	U
PR	PAUSE TIME: This function only works if an automatic logic was selected. It can be adjusted from 0 to 59 seconds in one second steps. Next, the viewing changes in minutes and tenths of a second (separated by a dot) and time is adjusted in 10 second steps, up to the maximum value of 4.1 minutes. E.g. if the display shows 2.5, the pause time will be 2 minutes and 50 seconds.	20
FO	POWER: Adjusts motor power. 01 = minimum power 50 = maximum power	50

1ST LEVEL PROGRAMMING continued		
DISPLAY	FUNCTION	DEFAULT
L1	<p>LOOP 1: If this function is activated, the loop connected to the Loop1 input will have the OPEN function.</p> <p>Y = loop1 active no = loop1 not active</p> <p>ATTENTION: If the function is not activated, loop1 status will nevertheless be available on one of the outputs, if appropriately set (see 2nd level programming).</p>	no
L2	<p>LOOP 2: If you activate this function, the loop connected to Loop 2 input will have the REVERSE/CLOSE function, i.e. it will operate as REVERSING during the closing stage, and will activate a CLOSE to the board at release.</p> <p>Y = loop 2 active no = loop 2 not active</p> <p>ATTENTION: If the function is not activated, loop2 status will nevertheless be available on one of the outputs, if appropriately set.</p>	no
51	NO EFFECT	05
52	NO EFFECT	05

















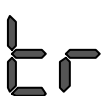





1ST LEVEL PROGRAMMING continued		
DISPLAY	FUNCTION	DEFAULT
54	<p>AUTOMATED SYSTEM STATUS: Exit from programming, storage of set data and return to automated system status view.</p> <p>00 CLOSED 01 OPENING PRE-FLASHING 02 OPENING 03 OPEN 04 ON PAUSE 05 CLOSING PRE-FLASHING 06 CLOSING 07 STOPPED READY TO CLOSE 08 STOPPED READY TO OPEN 09 EMERGENCY OPENING 10 CLOSING SAFETY DEVICE IN OPERATION</p>	

## 2ND LEVEL PROGRAMMING

To access 2nd LEVEL PROGRAMMING, press push-button F and, while **holding** it down, press push-button "+".




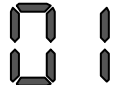





- If you release the push-button "+", the display shows the name of the first function.
- If you also release the F push-button, the display shows the value or parameter of that function, which can be changed with the "+" and "-" keys.
- If you press the F key again (**and hold it down**), the display shows the name of the next function, etc.
- When you reach the last function, press the F push-button to exit programming, and the display resumes showing the input status.

The following table indicates the sequence of functions accessible in 2nd LEVEL PROGRAMMING.

2ND LEVEL PROGRAMMING  		
DISPLAY	FUNCTION	DEFAULT
	<b>MAXIMUM TORQUE AT THRUST:</b> The motor works at maximum torque (ignoring the torque adjustment) during the initial time of the movement.   = Active  = Excluded	
	<b>PRE-FLASHING:</b> To activate the flashing light for 5 sec before the start of the movement   Excluded  Before every movement  Before closing  At end of pause only	
	<b>SLOW CLOSING:</b> For setting the entire closing stage at slow speed.   = Active  = Excluded	
	<b>DECELERATION TIME AFTER LIMIT-SWITCHES:</b> For setting deceleration time (in seconds) after the opening and closing limit-switches have been activated. It can be adjusted from 0 to 10 sec, in one second steps.   = deceleration excluded  = maximum deceleration	
	<b>WORK TIME (time out):</b> We advise you to set a value from 5 to 10 seconds longer than the required by the automated system to move from the closing to the opening position and vice versa. It can be adjusted from 0 to 59 sec in one second steps. Next, the viewing changes in minutes and tenths of a second (separated by a dot) and time is adjusted in 10 second steps, up to the maximum value of 4.1 minutes.	

2ND LEVEL PROGRAMMING continued		
DISPLAY	FUNCTION	DEFAULT
FS	<p>FAIL SAFE: If this function is activated, it enables a function test of the photocells before any automated system movement, independently from the output used. If the test fails, the automated system does not start the movement.</p> <p>y = Active no = Excluded</p>	no
01	<p>OUTPUT 1: The output can be set to one of the following functions:</p> <p>00 FAILSAFE</p> <p>01 INDICATOR LIGHT (lighted at opening and pause, flashing at closing, and off when automated system closed)</p> <p>02 BEAM LIGHT (output achieve with beam closed and on pause, inactive with beam open, flashing during movement)</p> <p>03 BEAM CLOSED</p> <p>04 BEAM OPEN or in PAUSE, it goes OFF during closing pre-flashing</p> <p>05 BEAM MOVING AT OPENING, pre-flashing included</p> <p>06 BEAM MOVING AT CLOSING, pre-flashing included</p> <p>07 BEAM STILL</p> <p>08 BEAM IN EMERGENCY STATUS</p> <p>09 LOOP 1 ENGAGED</p> <p>10 LOOP 2 ENGAGED</p> <p>11 OPEN FOR 624 SLAVE</p> <p>12 CLOSE FOR 624 SLAVE</p> <p>13 BEAM DETACHED</p>	00

2ND LEVEL PROGRAMMING continued		
DISPLAY	FUNCTION	DEFAULT
P1	<p>OUTPUT 1 POLARITY: For configuring the output polarity status.</p> <p>y = N.C. polarity no = N.O. polarity</p> <p>NOTE: If the output is set to FAIL-SAFE (00) leave the default value.</p>	no
02	OUTPUT 2: See output 1	03
P2	OUTPUT 2 POLARITY: See Output 1 Polarity.	no
03	OUTPUT 3: See output 1	01
P3	OUTPUT 3 POLARITY: See Output 1 Polarity.	no
04	OUTPUT 4: See output 1, except to functions 00, 11, 12 that in this case have no effect.	02
P4	<p>OUTPUT 4 POLARITY: For configuring the output polarity status.</p> <p>y = Active no = Excluded</p>	no
RS	<p>ASSISTANCE REQUEST (work with the next two functions): If activated at the end of the count-down (settable with the next two functions under "Cycle Programming"), it activates LAMP output for 4 sec every 30 sec. Can be useful for setting scheduled maintenance.</p> <p>y = Active no = Excluded</p>	no

2ND LEVEL PROGRAMMING continued		
DISPLAY	FUNCTION	DEFAULT
	CYCLE PROGRAMMING IN THOUSANDS: For setting a count-down of the system operating cycles. Settable value from 0 to 99 (thousands of cycles). The displayed value is reset as the cycles progress, interacting with the nC value (99 nC decrementing steps correspond to one nC decrement). The function can be used combined with nC, to check the use of the system and to make use of the "Assistance Request".	
	CYCLE PROGRAMMING IN HUNDREDS OF THOUSANDS: For setting a count-down of the system operating cycles. Settable value from 0 to 99 (hundreds of thousands of cycles). The displayed value is reset as the cycles progress, interacting with the nc value (1 decrement of nC corresponds to 99 decrements of nc). The function can be used combined with nc to check the use of the system and to make use of the "Assistance Request".	
	NO EFFECT	
	NO EFFECT	
	AUTOMATED SYSTEM STATUS: Exit from programming, storage of data and return to gate status view.	

## LEDs DESCRIPTION

The following table shows the status of the LEDs in relation to the status of the inputs (the normal operating leds are **in bold**).

Check the status of the signaling LEDs as per table below:

NOTE: LED on = closed contact  
LED off = open contact

Operation of status signaling LEDs

LED	Description	ON (closed contact)	OFF (open contact)
DL1	OPEN	Command enabled	<b>Command disabled</b>
DL2	CLOSE	Command enabled	<b>Command disabled</b>
DL3	FSW	<b>Safety devices released</b>	Safety devices engaged
DL4	STOP	<b>Command disabled</b>	Command enabled
DL5	EMERGENCY	<b>Command disabled</b>	Command enabled
DL6	FCA	<b>Opening limit switch free</b>	Opening limit switch engaged
DL7	FCC	Closing limit switch free	<b>Closing limit switch engaged</b>
DL8	PIVOT	<b>Beam attached</b>	Beam detached

## AUTOMATED SYSTEMS TEST

When you have finished programming, check if the system is operating correctly.

Above all, check, if power is adequately adjusted and if the reversing devices are operating correctly.

## MASTER/SLAVE WIRING INSTRUCTIONS

To wire two barriers as a Master/Slave configuration, follow the wiring diagram below and program the barriers as follows.

**MASTER:** Program the logic as needed and the parameters as follows:

OUT2:  $a2 = 11$   $P2 = no$

OUT3:  $a3 = 12$   $P3 = no$

**SLAVE:** Program the slave logic into the "C" Mode it should look as follows:

$LO = C$

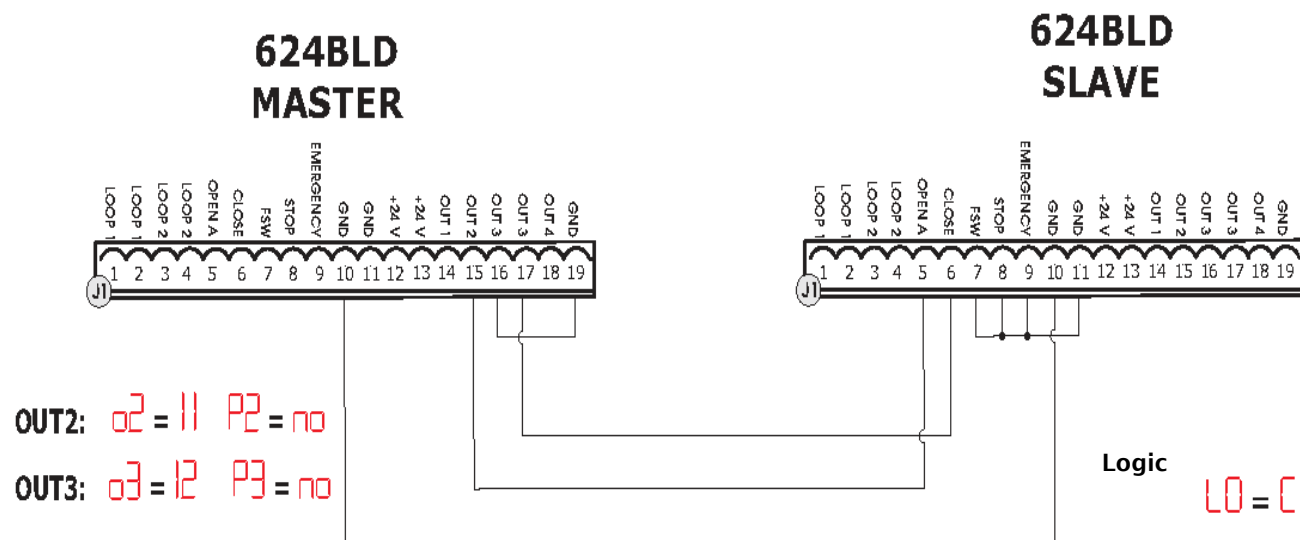


Figure 5C. 624 BLD Master/Slave Wiring Diagram



# PROGRAMMING NOTES

# MAINTENANCE

## REGULAR MAINTENANCE

Inspect and service your 620 or 640 Barrier system anytime you observe or suspect a malfunction of the barrier. In addition, FAAC recommends you check the barrier system every 1,000,000 cycles of the operator for the items listed below to keep your operator in the best working condition. Failure to observe these recommendations could compromise the functionality of the operator.

Item to Check Every 1,000,000 Cycles	What to Do
Entire barrier system	Replace any visually obvious defective part
Oil level	Refill the oil if necessary
Bypass valves	Tighten or loosen the valves to maintain the recommended pressure settings
Beam motion	Adjust the compression spring if necessary
Cooling fan	Clean the motor cooling ducts
Control panel	Test the function of input power and output function of all attached relays, cards, and devices

## SPECIAL MAINTENANCE

Inspect and service your 620 or 640 Barrier system anytime you observe or suspect a malfunction of the barrier. In addition, if your observations warrant it, FAAC recommends you make the following listed repairs and replacements to the barrier system to keep your operator in the best working condition. Failure to observe these recommendations could compromise the functionality of the operator.

Part(s) to Repair or Replace	Number of Cycles
Drive pistons: seals and gaskets	1,000,000
Ball joints in the rocker arm	1,000,000
Mechanical stops	1,000,000
Hydraulic unit: seals and gaskets	2,000,000
Cooling fan	2,000,000
Balancing spring	3,000,000
Limit switches	6,000,000

# TROUBLESHOOTING

**WARNING!** Before you do any work on the control panel, be sure to turn off the main power.

**NOTE:** Any control panel specific information in the following applies to the 624BLD control panel only.

**PROBLEM:**

**The beam is closed and won't open in response to an activating signal.**

**SOLUTION:**

Make sure the hydraulic operation of the barrier beam is engaged: The Manual Release key should be turned clockwise until snug.

The OPEN indicator LED should illuminate when you send an activating signal. If it does not, temporarily short terminals 5 and 10. If the short causes the beam to open, then the problem exists in the activating device itself.

If you have no stop device wired to terminal 8, then make sure you have a jumper installed between terminals 8 and 10 on the control panel. The STOP LED should be on.

The FCC indicator light on the control panel should not be illuminated. If it is illuminated, then the gate is not fully closed. Adjust the position of the closing limit switch plate.

Try increasing the opening hydraulic pressure in small increments by turning the opening bypass valve screw (the green valve) clockwise.

Verify that you have the correct compression spring for your barrier beam. If you have the correct spring, check that the spring will hold the beam in any position during manual operation. If the spring doesn't hold the beam in any position, try tightening the compression spring until the beam is held and then recheck the hydraulic operation of the beam.

**PROBLEM:**

**The beam is open and won't close in response to an activating signal.**

**SOLUTION:**

Check the LEDs on the control panel. The FCA light should be off, and the FSW, STOP, FCC, and

EMERGENCY lights should be on if the FCA light is on, then the gate is not fully opened. Move the opening limit switch plate closer to the opening limit switch.

If you have no reversing devices installed and you are operating in A or E mode, make sure you have a jumper installed between terminals 7 and 19. (The FSW light should be on.)

If the FSW light is off, some reversing device you have installed is being continuously triggered and is preventing the beam from closing. Check your reversing devices.

If your activating device has two buttons—one for opening/closing and one for stop—and you are operating in P mode, then make sure you have a jumper between terminals 2 and 5.

If you have no stop device wired to terminal 8, then make sure you have a jumper installed between terminals 8 and 10 on the control panel.

If you have no emergency device wired to terminal 9, then make sure you have a jumper installed between terminals 9 and 10 on the control panel.

Increase the pressure of the closing bypass valve (the red valve) by turning the screw clockwise in small increments to see if the beam needs more hydraulic pressure for the closing direction.

**PROBLEM:**

**The beam is half opened and will neither open nor close in response to the activating device.**

**SOLUTION:**

The barrier may be in jam status because something or someone has physically prevented the beam from opening or closing. Reset the barrier and then try sending another activating signal.

Check the FSW indicator light. It should be on. If it is not illuminated, then check the wiring on your safety devices.

# 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

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**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.**