Hunter
ACCESS TECHNOLOGIES INC.

IMPORTANT INSTALLATION INSTRUCTIONS
DS-18C

WARNING – to reduce risk of severe injury:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS CARFULLY. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE
2. Do not connect the opener to a power supply until instructed to do so. Connection of the high voltage supply should be done by a **qualified professional** and within the guidelines of **the enforced local electrical codes**.
3. NOTE: HIGH VOLTAGE (INCOMING 115±5VAC) WIRES AND LOW VOLTAGE WIRES CANNOT SHARE THE SAME ACCESS HOLE. HIGH VOLTAGE WIRES MUST BE ROUTED AND SECURED AWAY FROM ALL LOW VOLTAGE WIRES.
4. Test all safety features before turning over the equipment to the customer

ANSI CODE FOR SLIDING DOORS

Closing Speed:	1 Foot per second *
Closing Force:	No more than 30 lbf
Closing Latch:	No less than 2" from close
Time Delay:	1-1/2 sec min time delay

* For doors of other weights and widths, use the following formula:

$$T = \frac{D\sqrt{W}}{188}$$

Where W=Weight of door (lbs), D=Width of door (in) and T=Closing time to latch check (sec).

- Motion Detectors on both sides with a max of 5" Dead Zone on each side, must extend 54" out & equal to opening width
- Threshold presence sensor or safety beams should keep door from closing
- Emergency breakout should be 50lbf or less
- An emergency cut-off switch
- Stickers
  All Doors: "AUTOMATIC DOOR" sign
  Sliding Doors with Swinging Leaf: "IN EMERGENCY, PUSH TO OPEN" sign
  (These shall be provided & placed adjacent to the lock stile between 3 & 5 feet from the floor)

- One way traffic doors
  (Non-Approach Side) A sensor must be active on the side not intended for use, although it may be deactivated when doors are within 6" of being fully closed. The sensor must have a minimum 24" zone from face of doors and its width must be within 5" of each side of clear door opening.

HUNTER DS-18C

The Hunter Automatics sliding door models DS 18C–1 and DS 18C-2 are electromechanical sliding entrance systems, factory assembled and tested.
The operating system is complete inside the header and doors are ready to hang.
The installer has to simply following the sequence:

- Bolt side jambs to the header
- Fit and fasten side jamb and header assembly in door opening
- Secure bottom guide track, hang doors and sidelites
- Connect power supply to operator and wire in any activating devices
- Glaze doors and align height
- Final adjustment of door speed and operation **to conform to ANSI Code**

SHIPPING INSPECTION

Verify that the order was shipped complete and correct, including model number, colour, and job width and height.

NOTE: If any of the below items are not correct, **do not attempt to install the DS-18C Sliding Door Package!** Report any incorrect items to the general contractor **immediately**. Do not proceed until all conditions are correct.

SITE PREPARATION

Verify at job site that all conditions are correct and in accordance with final approved shop drawings.

1. Check that the floor is level. Use a minimum 6'-0 (1829mm) level or use the actual aluminium header **turned upside down** to check floor.
2. Be sure the opening is plumb and square, and is sized in accordance with approved shop drawings or architectural details. Using a plumb bob, check that the rough opening where the jambs will be mounted is vertical and that the diagonal measurements are a true rectangle, not just a parallelogram.
3. The finished opening width (F.O.W.) should be ½" wider than the overall frame width (O.F.W.) and the finished opening height (F.O.H.) should be ¼" higher than the overall frame height (O.F.H.) of the sliding door system. **Caution:** The finished floor must be determined prior to setting the jambs and support beam. The jamb and threshold sit on the finished floor.
4. Check that the electrical feed (110V, 15A single phase, all conduits, electrical junction boxes (for push plates or other activation devices, if required) are correctly located in accordance with final approved shop drawings and within the guidelines of **the enforced local electrical codes**.

HEADER AND JAMB MOUNTING

1. Remove the header from the box and set on a piece of cardboard with the swing cover facing up. Open the access cover.
2. Inside the header is the motor/gearbox with drive pulley, belt drive, idler pulley and tensioning assembly, control box, transformer, safety beam control box (optional), any switches and the terminal block bracket
3. Align the jamb tubes with the ends of the header, making sure that the bolt holes and electrical feed hole line up. Use the supplied ¼-20 x 1" hex bolts on each side to secure the header end cap to each jamb tube.
4. Power supply may be pulled into the header at the same time the jamb/header assembly is positioned. This should be done by a **certified electrician and** within the guidelines of **the enforced local electrical codes**.
   NOTE: HIGH VOLTAGE (INCOMING 115±5VAC) WIRES AND LOW VOLTAGE WIRES CANNOT SHARE THE SAME ACCESS HOLE. HIGH VOLTAGE WIRES MUST BE ROUTED AND SECURED AWAY FROM ALL LOW VOLTAGE WIRES. USE STICK ON WIRE CLIPS SUPPLIED.
5. With two people, flip up the jamb/header assembly and position it in the rough opening. Check that the cover is on the correct side. Confirm that the unit is in the proper position within the rough opening (as shown by the shop drawings). The Hunter DS-18 Sliding Door Package is usually centred within the opening or is mounted flush with the curtain wall, but verify the position with the drawings, contractor, architect, etc.
6. Insert shims at each jamb to plumb each jamb. Insert ¼" (6mm) spacers around the header or horizontal transom tube at anchor locations to keep the tubes from being pulled tight.
7. Use appropriate fasteners (four per jamb) to anchor through the glazing recess of the jamb tube to the wall or adjacent framing. Check the jamb tubes with a level to be sure that the anchors are not pulling them in. The standard package height is 91 ½" (2318mm)

FULL THRESHOLD INSTALLATION

Note: The **DS-18** has a special threshold that allows the ramping lip to be snapped off on site, to allow flooring material to butt up to the threshold.

Prior to drilling, verify that the panel pivot groove in the threshold is on the proper

1. side of the opening and that the threshold is level in both directions. Use the appropriate fasteners to secure the threshold to the floor. Do not mount screws in the door guide travel area.
2. The side panel bottom pivot is installed in the threshold and can be adjusted for height ***Figure 1***. If the threshold filler is not installed, it can be tapped in with a wood block and rubber mallet.

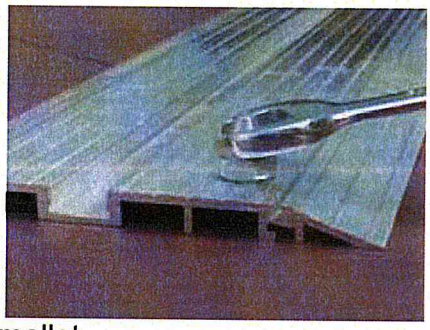


Figure 1

PARTIAL THRESHOLD INSTALLATION

A. Begin installation of the bottom guide (floor portion) by snapping a chalk line between the side jambs on the interior 1 ¾" face of the jambs. This straight reference line will be used to locate the bottom guides.

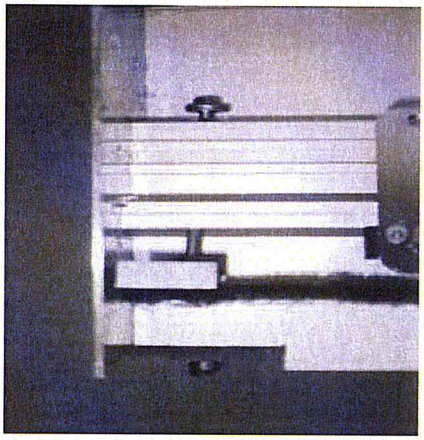
B. **Prior to drilling**, verify that the panel pivot groove in the threshold is on the proper side of the opening and that the threshold is level in both directions. Use the appropriate fasteners to secure the threshold to the floor. Do not mount screws in the door guide travel area.

NOTE: THE BOTTOM SIDELITE GUIDE MUST BE LEVEL AND ALINED PARALLEL TO THE JAMBS, TO INSURE PROPER OPERATION OF THE DOOR.

DOOR AND PANEL INSTALLATIONS

BREAKAWAY SLIDELITE PANEL INSTALLATION

1. Remove panels from carton. Lift panel and place bottom pivot bushing (factory installed in bottom panel stile) onto the track pivot ***Figure 1***. Raise the top pivot pin in the header and place the panel into position. Push the pivot pin in the header down to engage the panel pivot bushing in the top of the panel style ***Figure 2***.
2. Adjust bottom pivot to give the required 1/8"(3 mm) clearance at the top of the panel. The panel may have to be removed to reach track pivot.



FIXED SLIDELITE PANEL INSTALLATION

1. Secure the sidelite J-mould track to the floor or threshold, being sure it is tight to the jamb, plumb, square and level. ***Figure 3***

2. Place the sidelite over the J-mould track and position tight to the jamb and plumb.

3. Secure the top of the track to the header flange with screws inserted from the interior side of the header. ***Figure 4***

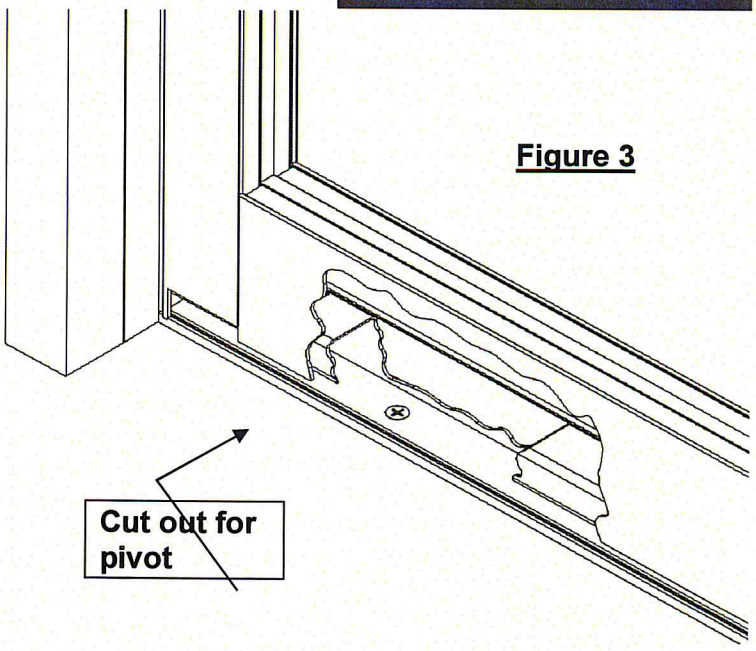


Figure 3

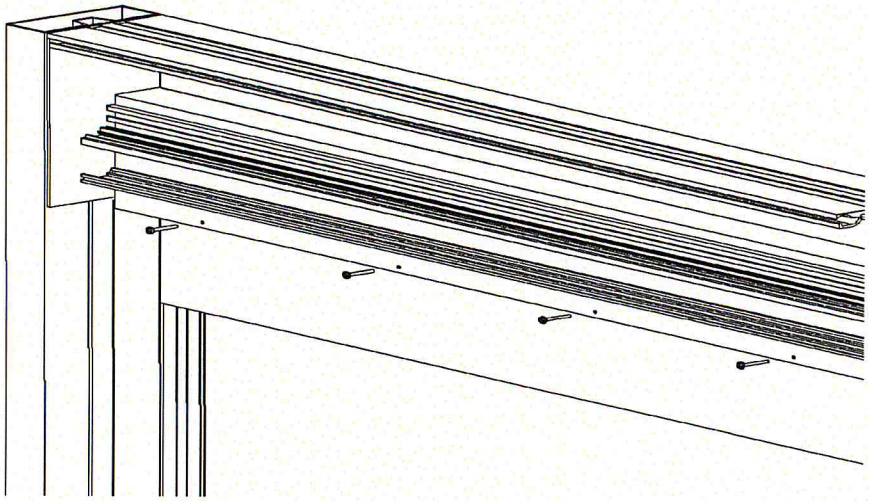


Figure 4

INSTALLATION OF THE ACTIVE DOOR (S)

Systems with Breakaway Sidelite

Check to see that the active door supplied with the sliding door system is complete and that all mounting screws are tight.

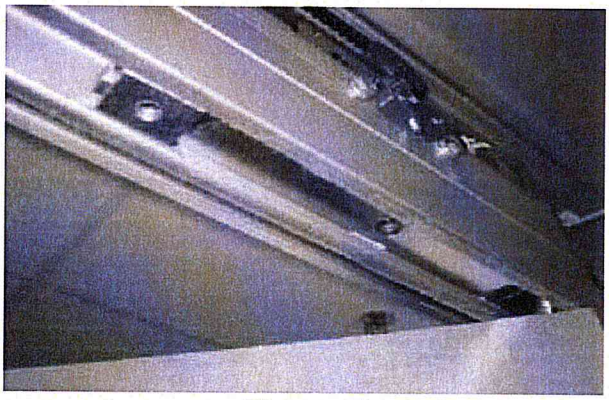


Figure 5

Turn the carrier portion of the PSA hardware 90 degrees to the active door and slide it into the carrier extrusion. **Do not leave out the adjusting block.** Position the carrier portion of PSA to line up with the end of the panel style and secure the first Allen set screw beside the PSA shaft; this locks the PSA in position. Use the pivot screw in the adjusting block to bring tension on Allen PSA. This adjustment is to remove the sag of the panel in the break out position with the weight of the glass on the hinge ***Figure 5***. **The final adjustment cannot be made until glass is installed.** The middle set screw is used to lock the PSA in place. Slide the door carrier portion of the ball catch assembly into the door carrier extrusion and position the ball catch, but do not tighten the setscrews. Slowly close the active leaf and position the carrier portion of the ball catch so that it passes through the cut out in the active leaf and engages the door portion of the ball catch. Mark the position of the ball catch on the carrier and secure the two setscrews.

Check the amount of force required to breakout the active leaf (**no more than 50 LBF)**, and then adjust the tension, if necessary. The tension on the ball catch, can be adjusted by the Allen set screw until the desired tension is obtained.

Systems with Fixed Sidelite

The active door in a fixed sidelite system mounts the same as a breakaway slidelite on the door carrier except the door guide track is mounted inside the sidelite instead of on the threshold.

1. Slide the lower pivot wheels into the 1 ¾" X 2" cut out on the bottom of the fixed sidelite panel See ***Figure # 3***

Install the foam bumpers on both sides of the carrier assembly as shown in ***Figure 6*** and swing the active leaf closed until the ball catch is engaged.

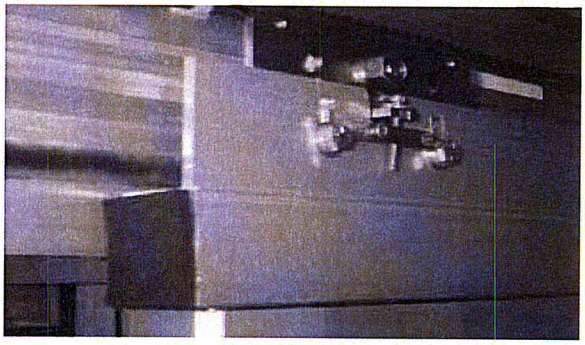


Figure 6

ELECTRICAL

Once the doors are installed the main power supply to the unit may be connected. This should be done by a **certified electrician** and within the guidelines of **the enforced local electrical codes**.

The **Hunter Automatics DS-18** requires 115±5VAC (Black and white) power supply which by means of a step-down transformer provides the main controller with **100VAC** (Black and red), and also supplies 24VAC (Green wires) for any auxiliary features.

Note: installation of any extra wiring for controls or accessories into the header unit shall be **secured** out of the way of **all moving parts** and **any sharp edges** that may cut into the outer chasing of the wires.

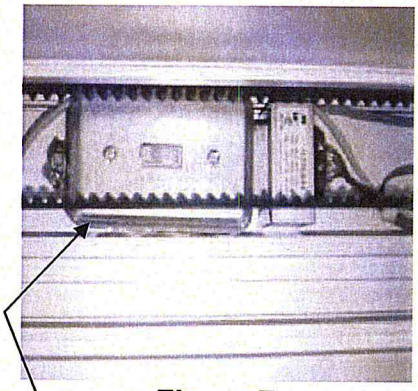


Figure 7

Insert and clamp incoming 115+/-VAC wires into connection box

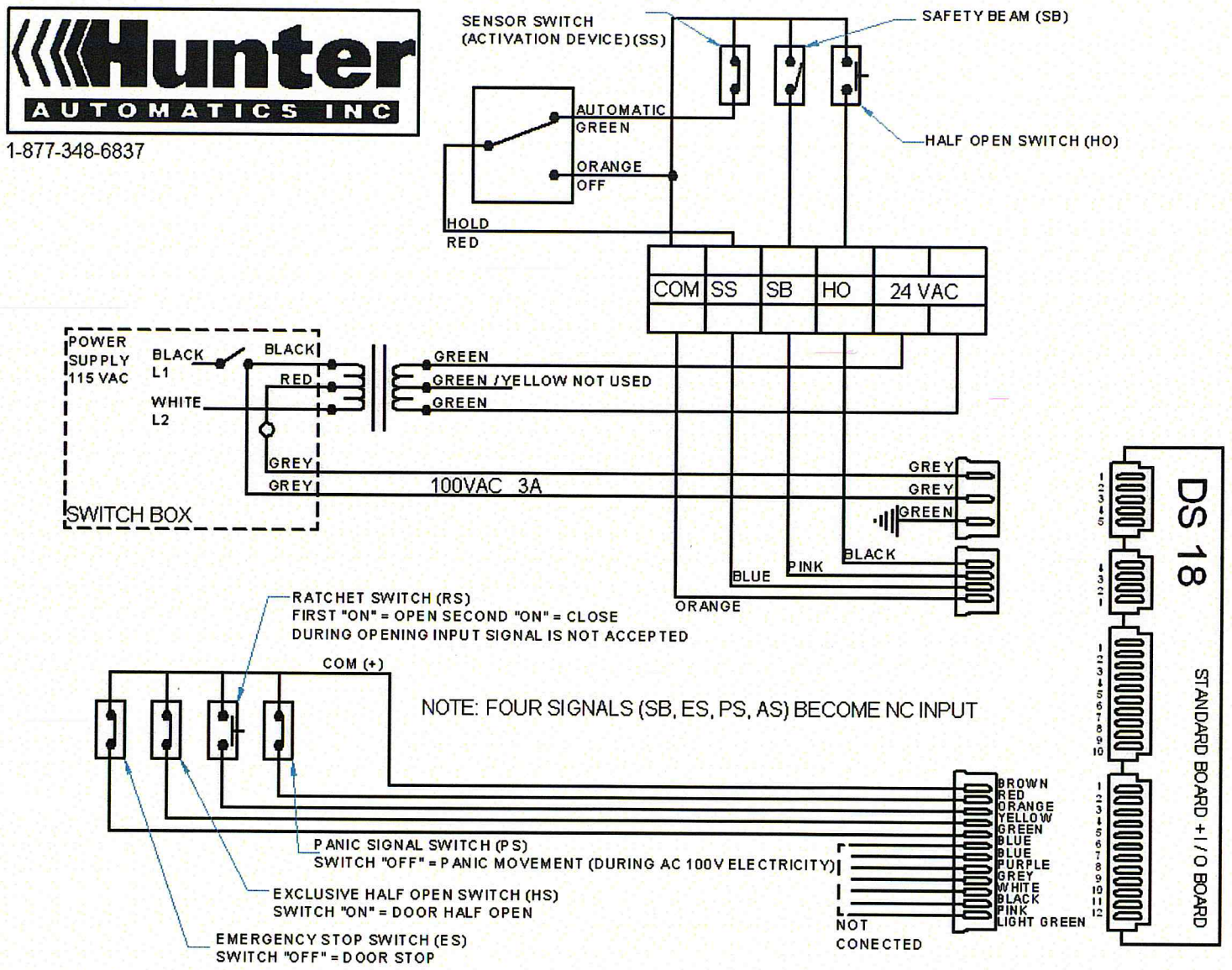
NOTE: THE GROUND WIRE FOR THE INCOMING 115±5VAC POWER AND THE SYSTEM GROUND WIRE CANNOT SHARE THE SAME GROUNDING STUD. GROUND THE INCOMING 115±5VAC ACCORDINGLY.

NOTE: HIGH VOLTAGE (INCOMING 115±5VAC) WIRES AND LOW VOLTAGE WIRES CANNOT SHARE THE SAME ACCESS HOLE. HIGH VOLTAGE WIRES MUST BE ROUTED AND SECURED AWAY FROM ALL LOW VOLTAGE
WIRES. USE STICK ON WIRE CLIPS SUPPLIED.

Hunter AUTOMATICS INC

1-877-348-6837

Wiring Diagram



GLAZING

1. Refer to the following chart for maximum weight of door and glass as well as maximum glass thickness.

Door / Panel	Max. Weight of Door & Glass	Max. Glass Thickness
Door Inside Slide	200 lbs. (90kg)	1" (16mm)
Door Outside Slide	200 lbs. (90kg)	1" (16mm)
Swing Out Panel	200 lbs. (90kg)	1" (16mm)
Fixed Panel	200 lbs. (90kg)	1" (16mm)
Sliding Door	200 lbs. (90kg)	1" (16mm)
Transom	Varies	1/4" to 1" (6mm to 25mm)

NOTE: The average weight of a 42"(1067mm) wide door or panel less glass is 35 lbs. (16kg).

A. Tempered or laminated glass required in doors and panels shall comply with the requirements in the Performance Specifications and Methods of Test for Safety Glazing Material used in buildings, ANSI Z97-1-1984.
B. All final opening and closing speed adjustments should be made after the glass is installed.
C. When glazing the doors and panels. Be sure the stops are securely snapped into the rails and stiles. Place the bottom of the glass onto the nylon glazing blocks and tilt up into vertical position. Have a helper hold the glass in place, and snap-in the interior glazing stops.

ADJUSTMENTS

Once the glass has been installed the fine-tuning of the unit may begin. The Hunter DS series comes with factory settings and activation can be triggered by gently pressing the test button on the main controller.

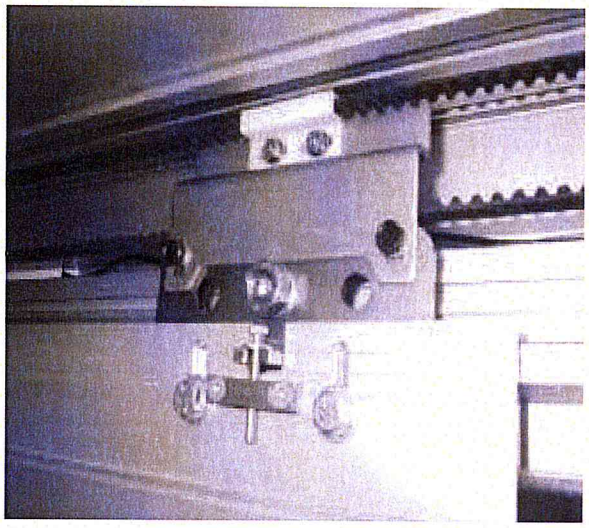


Figure 9

Door Height

Door heights must be equal and parallel to carrier assembly by adjusting the carrier mount, as shown in ***Figure 9.***

Loosen the two 5/16" bolts that are locking the carrier. To reposition the carrier height, turn the machine screw in the appropriate direction. When finished, re-tighten the locking bolts.

Centering the Doors

To adjust the doors, loosen the two locking screws on the belt clamp (the white nylon block shown in ***Figure 10***). Centre the doors in the opening, then re-lock the screws.

Adjusting the Belt Tension

To adjust the belt tension, loosen the lock nut. Next, turn the adjusting screw, using a screwdriver, as shown in ***Figure10***. By turning the screwdriver, it will cause the wedge to pinch or relax its tension on the belt. Once the belt has been properly set, re-tighten the locking nut.

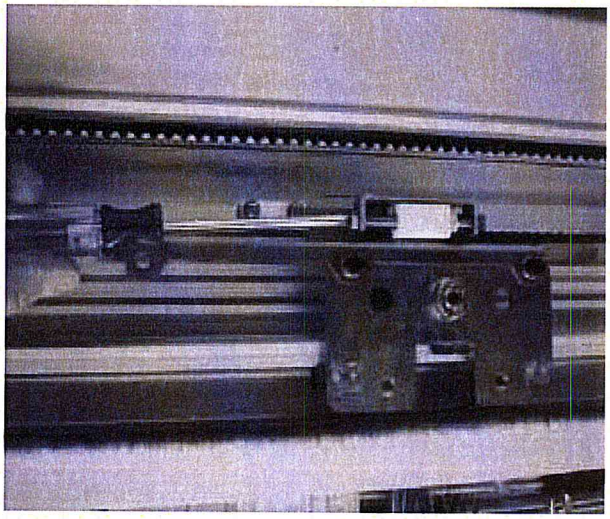
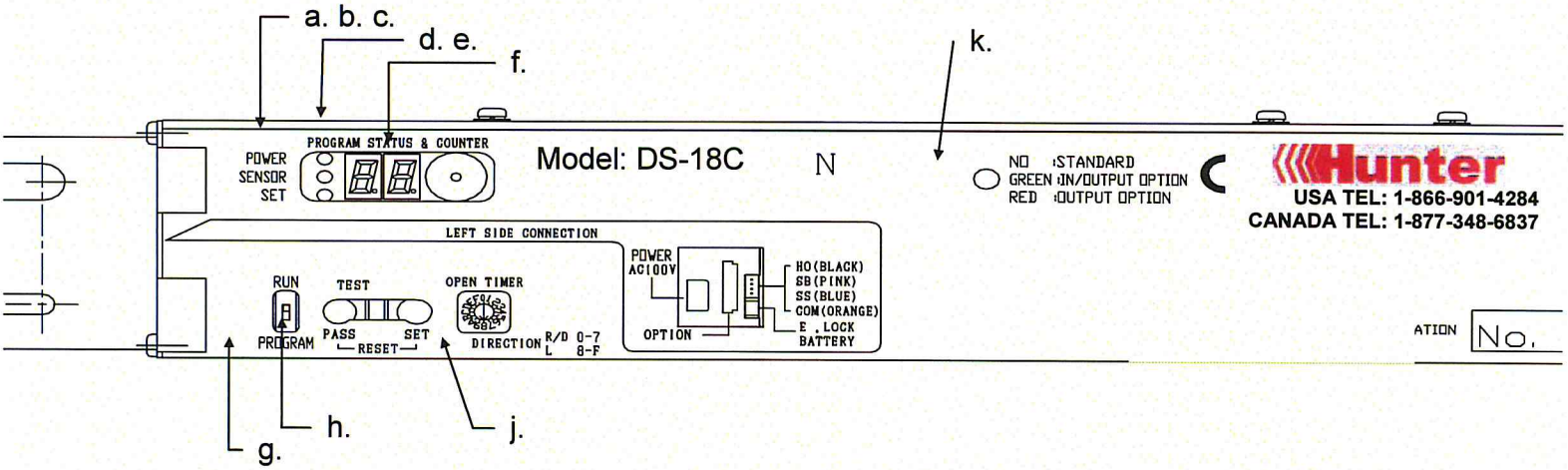


Figure 10

Adjustment of Control Box



a. Power indicator
b. Sensor indicator and program setting on / off indicator
c. Program mode indicator
d. Counter status indicator
e. Program status indicator
f. Buzzer
g. Run / program switch
h. Test / Pass button
i. Set / check button
j. Open timer and direction switch
k. Optional board indicator

Control Box Set-up

To enter the set-up mode, move the run/program switch from "run" to "program". All data is entered using the test/pass and set/check buttons. The test/pass button selects which value to modify. The set/check button is used to increase/decrease the selected value (i.e. speed, torque or braking forces).

All door operators are supplied with a set of factory default settings for all values, which can be tuned as needed for each installation. The setting codes list describes each available value and the available range. After the new value is entered, the current setting can be confirmed using the LED display (refer to the code list).

LED (Light Emitting Diode) Display

The two-digit LED display can be used to display current settings, a cycle counter, and error codes. During set-up, it displays the selected setting and its value as you program the unit. When there is an error, it will show an error code, as well as an error history, such as the number of power failures or programming changes since the unit was manufactured. The LED can also show the number of cycles the unit has performed.

Add-on Functions

The control box includes support for basic connections and functions, such as a sensor switch, safety beam, and half-open system.

A terminal strip is provided to facilitate the connection of all activation and safety devices and provides a 24 output for the powering of sensors.
By jumping two terminals the HALF OPEN function is activated.

Additional functions can be added using an optional circuit board, such as a panic switch, emergency stop or OE & CE signals. Consult with the factory for details.

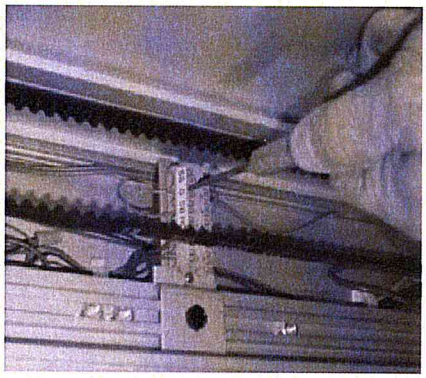


Figure 8

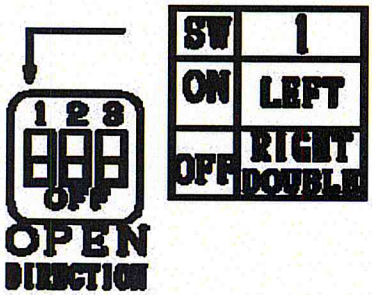
To insert wires into the terminal block, depress plastic tabs with a small screwdriver.

Optional extras

There are optional battery and locking systems available that can be installed to fit various safety and security needs.

Setting of Opening Direction

Door opening direction is set by dipswitch on the control box.



SWITCH 1	
ON	LEFT
OFF	RIGHT
	DOUBLE

Note: Switches 2 & 3 are always OFF

Note: Hold open time is now adjusted through the Basic Code Settings Table.

Control Box Setting

A. **Basic Setting (Code)**
   a. Open and close high-speed can be adjusted in sixteen steps (from 0 to F).
   b. Open and close low speed can be adjusted in sixteen steps (from 0 to F).
   c. Open and close braking force is adjusted in ten steps (from 0 to 9).
   d. Open and close torque can be adjusted in ten steps (from 0 to 9).
   e. Open / close pressure can be adjusted in five steps (from 0 to 4). 0 is no pressing.

f. Half open percentage can be adjusted in ten steps (from 0 to 9).

Setting Code	0	1	2	3	4	5	6	7	8	9
Half Open (%)	12.5	25	37.5	50	62.5	75	87.5	93	95	98
								Fix Only		

g. Teaching stroke can be adjusted in ten steps (from 0 to 9).

Setting Code	0	1	2	3	4	5	6	7	8	9
Teaching Stroke (cm)	All Slow	30	60	90	120	150	180	210	300	400

Note: Teaching stroke must be set within 70 % of whole door stroke to prevent the door from hitting the doorstopper in high speed.

B. **Application Setting (Code)**

Apart from basic setting, various application setting can be adjusted.
Application code table shows the details.

BASIC CODE TABLE

CODE INDICATION LED 1	LED 2	ADJUSTABLE	FUNCTION	FACTORY SETTING
0	0-F	16 STEPS	OPEN TIMER	1
1	0-F	16 STEPS	OPEN HIGH SPEED	9
2	0-F	16 STEPS	OPEN LOW SPEED	5
3	0-9	16 STEPS	OPEN BRAKING FORCE	4
4	0-9	10 STEPS	OPEN TORQUE	4
5	0-F	10 STEPS	CLOSE HIGH SPEED	5
6	0-F	16 STEPS	CLOSE LOW SPEED	4
7	0-9	10 STEPS	CLOSE BRAKING FORCE	4
8	0-9	10 STEPS	CLOSE TORQUE	4
9	0-4	5 STEPS	OPEN/CLOSE PRESSURE	1
A	0-9	10 STEPS	HALF OPEN	3
B	0-9	10 STEPS	TSTR	0
C	0-3	4 STEPS	SPECIAL PROGRAM (FACTORY ONLY)	0

DEFAULT SETTINGS

The DS-18C control offers technicians the ability to return to default settings. If several changes to the control have been made and a technician wishes to start over at the original settings, need to hold down Test/Pass & Set/Check Buttons for 5 seconds.

IMPORTANT INFORMATION ON DEFAULT SETTIGS

The DS-18C control is supplied with settings adjusted to comply with all applicable ANSI specifications. However, when default settings are initiated a couple of minor changes to the controller must be completed to again conform to ANSI specifications.

CODE INDICATION		ADJUSTABLE	FUNCTION	DEFAULT SETTINGS	FACTORY SETTING
LED 1	LED 2				
5	0 F	16 STEPS	CLOSE HIGH SPEED	8	4
6	0 F	16 STEPS	CLOSE LOW SPEED	5	4
8	0 9	10 STEPS	CLOSE TORQUE	7	4

With these three adjustments ANSI codes for Closing speed and Closing Torque are satisfied

Note: Under the Application Code Table the Default Setting for NO/NC is NO.

Therefore, this must be changed to NC for activation sensors to work properly.

APPLICATION CODE TABLES

Application Code Table 1

CODE INDICATION		FUNCTION	LED 4 (RED)		
LED1	LED 2		LED ON	LED OFF	FACTORY SETTING
d	0	BUZZER	ON	OFF	OFF
d	1	CLOSE BRAKING POSITION	150mm	70mm	70mm
d	2	DS18 / DS30 GEAR BOX	30	18	AUTOMATIC ADJ
d	3	ELECTROMAGNETIC LOCK	YES	NO	NO
d	4	BATTERY SYSTEM	BC	BO	BO
d	5	OPEN PRESSING	NO	YES	YES
d	6	CLOSE PRESSING	YES & NO	YES	YES
d	7	HALF OPEN	FIX	AUTO	AUTO
d	8	WARNING (BEFORE CLOSING)	YES	NO	NO
d	9	SB FUNCTION ON CLOSE END	YES	NO	NO
d	A	SELF CLOSING DEVICE	YES	NO	NO
d	b	SAFETY FUNCTION	STOP	RETURN	RETURN
d	C	RS FUNCTION DURING OPENING	YES	NO	NO
d	d	INTERLOCK	YES	NO	NO
d	E	NO/NC	NC	NO	NO
d	F	AS FUNCTION	DOOR	FIX	FIX
d	H	PRESSING DURING EMRG STOP	ON	OFF	OFF
d	J	LOW SPEED WHEN POWER ON	PROGRAMED	MAX	MAX
d	L	TORQUE WHEN POWER ON	PROGRAMED	MAX	MAX

Application Code Table 2

CODE INDICATION		FUNCTION	ADJUSTMENT		FACTORY SETTING
CODE	SETTING		MIN	MAX	
P1	00-60	CONSULT FACTORY			00 (AUTO)
P3	00-50	CONSULT FACTORY			00 (AUTO)
P4	0.3-2.5	CONSULT FACTORY			10
P5	00-50	CONSULT FACTORY			00 (AUTO)
P6	00-10	CONSULT FACTORY			07
P7	00-50	CONSULT FACTORY			00 (AUTO)
P8	0.3-2.5	CONSULT FACTORY			1.0
Pb	0.0-1.0	CONSULT FACTORY			00
PC	02-30	CONSULT FACTORY			06
PE	00-0f	CONSULT FACTORY			01
PF	00-09	CONSULT FACTORY			00

NOTE: FACTORY ADJUSTMENT ONLY, DO NOT ATTEMPT TO CHANGE FROM DEFALTS

ERROR CODE TABLE

LED indication changes in succession during an error

CODE	ERROR	LED INDICATION IN SUCCESSION					
		LED 1	LED 2	LED 1	LED 2	LED 1	LED 2
E 0	TSTR	E	0	0~9	0~9	0~9	0~9
E 1	OPENING SAFETY	E	1	0~9	0~9	0~9	0~9
E 2	CLOSING SAFETY	E	2	0~9	0~9	0~9	0~9
E 3	INTER-LOCK	E	3	0~9	0~9	0~9	0~9
E 4	LOOSE BELT	E	4	0~9	0~9	0~9	0~9
E 5	BROKEN BELT	E	5	0~9	0~9	0~9	0~9
E 6	ELECTROMAGNETIC LOCK	E	6	0~9	0~9	0~9	0~9
E 7	PS AND BATTERY	E	7	0~9	0~9	0~9	0~9
E 8*	TIMES OF POWER ON	E	8	0~9	0~9	0~9	0~9
E 9*	RESET TIMES	E	9	0~9	0~9	0~9	0~9
				*1	*2	*3	*4

Note : Four figures (*1,*2,*3,*4) shows total error times. For example, 10, 15 shows 1,015 times.

E 8 and E9 are not errors, you can find how many times you powered on or reset.

ERROR INDICATION BY BUZZER SOUND

CODE		SOUND	ERROR INDICATION	CAUSE
E	0	– – –	Teaching stroke error	a. Door weight exceeds safe operation limit. b. Door is locked.
E	1	· – · – · –	Opening error Door stops opening	a. Door weight exceeds safe operation limit. b. Open torque is weak for door weight. c. Door is blocked when opening
E	2	··– ··– · ·	Closing error Door stops closing	a. Door weight exceeds safe operation limit. b. Close torque is weak for door weight c. Door is blocked when closing
E	3	···– ··· –	Inter-lock error Inter-locked door is moved	Inter-locked door is forced open by hand
E	4	····–	Door runs longer distance than memorized door stroke	a. Loose belt b. Door stopper moves back
E	5	·····–	Motor continuously rotates in the same direction more than three minutes.	a. Broken belt b. Running idle of motor pulley
E	6	·····–	Electro magnetic lock error	a. Wrong setting on control box, (check Lock d3) b. Lock pin dose not move properly c. Check wiring of lock cables
E	7	·····–	Emergency movement (PS) Battery movement	No error present..... Indication of PS movement and battery movement only (check BO/BC setting on d4)

RELEASE FOR SERVICE

Clean the glass. Install all safety, traffic control, and instruction decals to the door as required. **This is very important. Failure to do this leaves the installer LIABLE for any accident that might occur. This must be done!** Present the keys to the owner or general contractor. **Demonstrate the unit; review all safety features as well as the safety check that is to be performed by the owner each morning.**

DECALS

All decals should be installed according to ANSI Code.