LEVER
Swing Gate Operator

INSTALLATION MANUAL

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CENTURION
THE AUTOMATIC CHOICE

1.0 Introduction

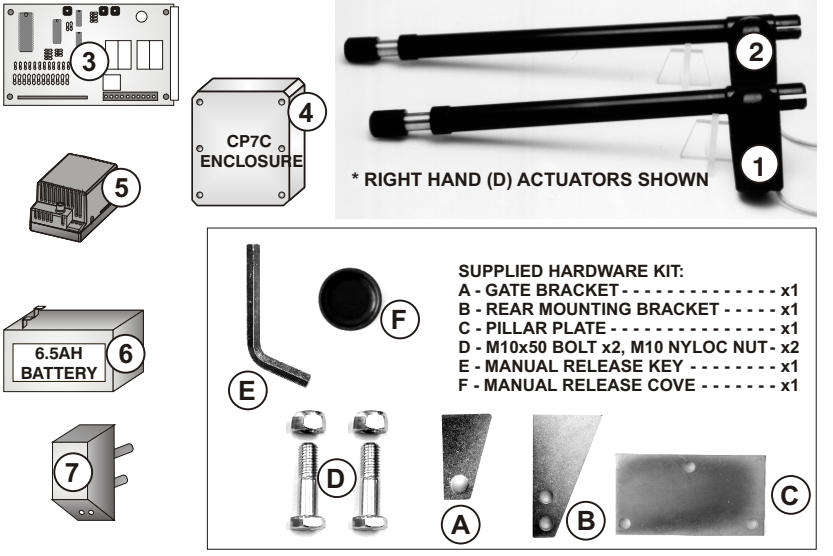
A CENTURION GATE AUTOMATION system is a quality product designed to give many years of trouble free service.

This MANUAL has been compiled to assist you, the customer, with a trouble free installation.

PLEASE READ THE INSTRUCTIONS CAREFULLY

2.0 Basic Kit

LEVER swing gate kit comprises of components shown in the identification list below.

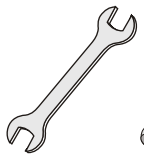


ITEM No	STOCK CODE	DESCRIPTION	KIT REFERENCE			
			RL11	RL12	RL21	RL22
1	LEVER4SMA LEVER4DMA	LEVER 4 LINEAR ACTUATOR S=LEFT D=RIGHT			2	2
2	LEVER5SMA LEVER5DMA	LEVER 5 LINEAR ACTUATOR S=LEFT D=RIGHT	1	1		
3	CP77	CP77 DC MOTOR CONTROLLER	1	1	1	1
4	CP7C	CONTROLLER ENCLOSURE CHASSIS	1	1	1	1
5	CP13E	1.5V AC CHARGER TRFR ENCLOSED	1		1	
6	CP4	BATTERY MF, 12V 6.5 A/H	1	1	1	1
7	CP53	PLUG IN CHARGER TRANSFORMER		1		1

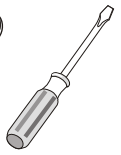
KIT REFERENCE	KIT DESCRIPTION
RL11	Single Lever 5 kit with CP77 controller, 220V supply at gate.
RL12	Single Lever 5 kit with CP77 controller, split charger, low voltage at gate.
RL21	Double Lever 4 kit with CP77 controller, 220V supply at gate.
RL22	Double Lever 4 kit with CP77 controller, split charger, low voltage at gate.

***NB.** It is important to specify whether actuator is on the left or right hand site of the gate, viewed from inside of property.

3.0 Recommended Tools



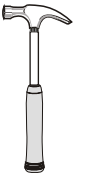
SPANNERS
17mm



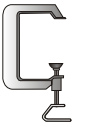
SCREW DRIVERS
3,5mm FLAT
No 1 PHILLIPS

CRIMPING TOOL
AND PIN LUGS

PLIERS/SIDE
CUTTER

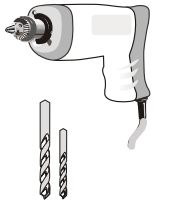


HAMMER



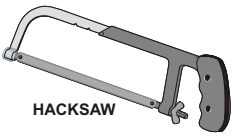
G-CLAMP

ELECTRIC
DRILLING
MACHINE



MASONRY BITS - 6mm
20mm FOR WALL MOUNT
STEEL BITS 8,5mm/4,0mm/5,0mm

6mm ALLEN KEY

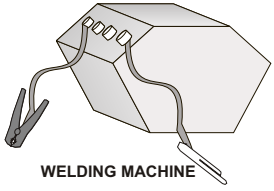


HACKSAW

TAPE MEASURE

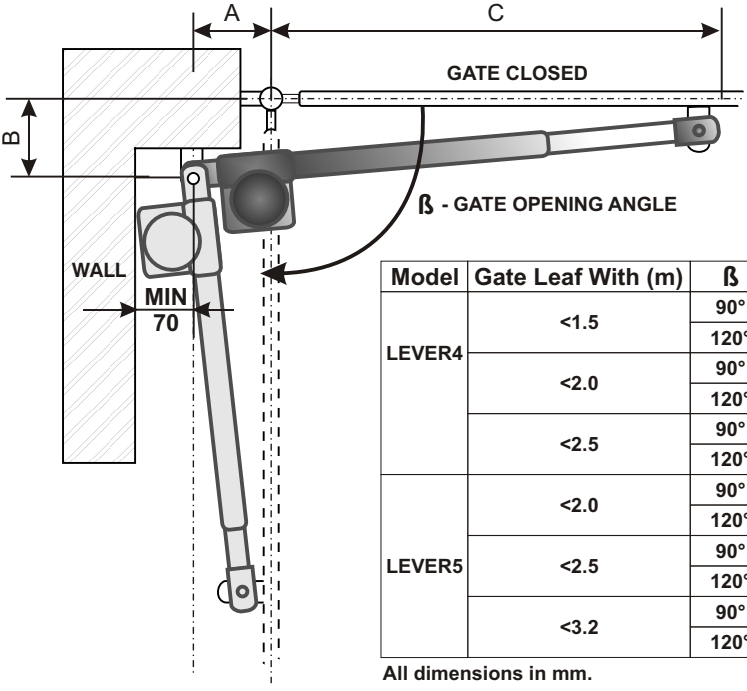
LEVEL

PLUMB BOB



WELDING MACHINE

4.0 Actuator Positioning (Quick Reference Table)



Model	Gate Leaf With (m)	ß	A	B	C
LEVER4	<1.5	90°	136	163	890
		120°	181	114	919
	<2.0	90°	150	186	944
		120°	181	114	919
	<2.5	90°	171	226	949
		120°	194	125	935
LEVER5	<2.0	90°	139	163	1057
		120°	225	151	972
	<2.5	90°	152	184	1043
		120°	225	151	972
	<3.2	90°	179	238	1009
		120°	225	151	972

All dimensions in mm.

5.0 Cable Requirements

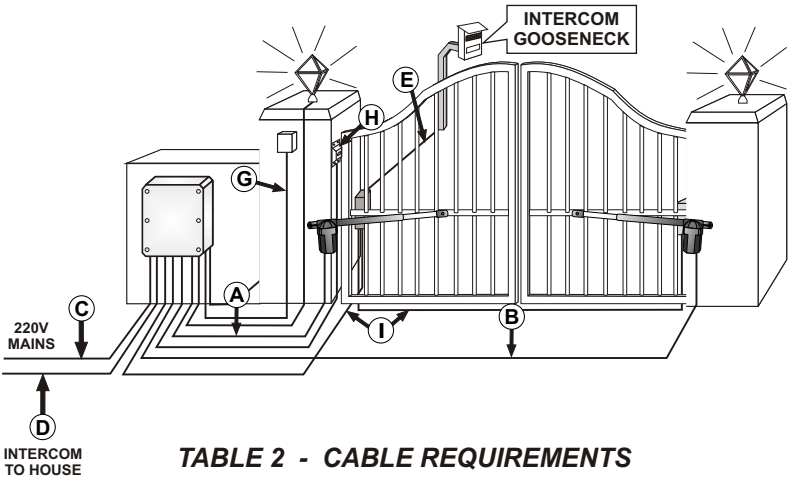


TABLE 2 - CABLE REQUIREMENTS

NO	DESCRIPTION	NO OF CORES	SIZE mm²	OPTIONAL	* CABLE TYPE
A	MASTER MOTOR (MOTOR)	2	2,5		G.P. IN CONDUIT OR NORSK
B	SLAVE MOTOR (MOTOR) and	2	2,5	X	G.P. IN CONDUIT OR NORSK
⧺ C	EITHER: 220V AC SUPPLY CABLE	2 + E	0,5		NORSK ⊕ OR S.W.A.
	OR: 15V AC TRANSFORMER SECONDARY	2 + E	1,5		NORSK
⧺ D	INTERCOM IN HOUSE & STATUS SIGNALLING	n1 + 6	0,2		INTERCOM IN CONDUIT
E	INTERCOM-CONTROL BOX TO GOOSENECK	n 2	0,2		INTERCOM IN CONDUIT
F	PILLAR LIGHTS	2 + E	0,5	X	NORSK IN CONDUIT OR S.W.A.
G	REMOTE RECEIVER	3	0,2	X	INTERCOM/CABTYRE/ G.P. IN CONDUIT
H	PEDESTRIAN KEYSWITCH	2	0,2	X	INTERCOM/CABTYRE/ G.P. IN CONDUIT
I	INFRA RED BEAM	3	0,2	X	INTERCOM/CABTYRE/ G.P. IN CONDUIT
J	SOLENOID STRIKE (not shown)	2	1,5	X	CABTYRE OR G.P. IN CONDUIT
K	SOLAR PANEL (not shown)	2	1,5	X	CABTYRE OR G.P. IN CONDUIT

* = CABLE TYPE IS MINIMUM RECOMMENDATION

S.W.A. = STEEL WIRE ARMOURED

G.P. = GENERAL PURPOSE HOUSE WIRING OR PANEL FLEX

n1 = CONSULT INTERCOM SUPPLIER FOR REQUIRED NO. OF CORES

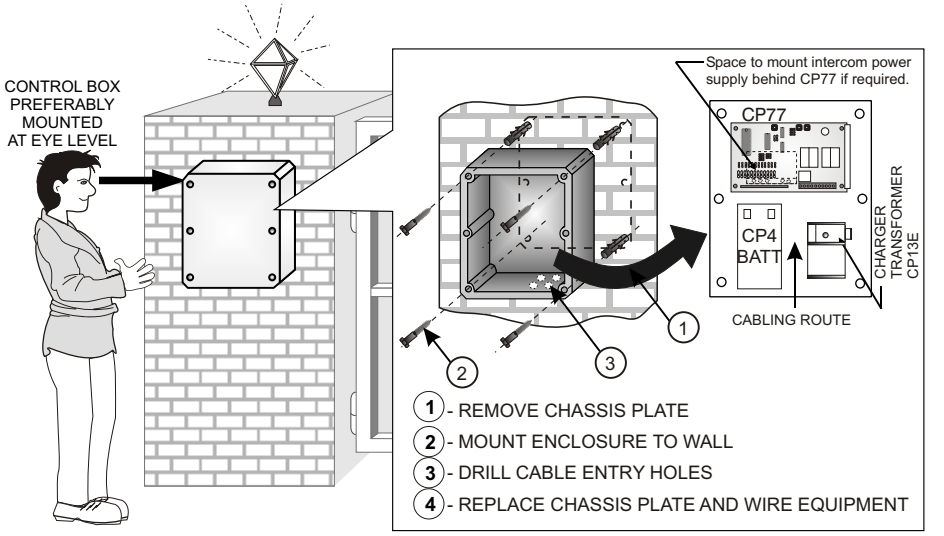
n2 = CONSULT INTERCOM SUPPLIER FOR REQUIRED NO. OF CORES

⧺ = FOR OPTIMUM LIGHTNING PROTECTION USE SCREENED CABLE EARTHED AT BOTH ENDS

⊕ = WHEN LAYING NORSK UNDERGROUND PLEASE NOTE:

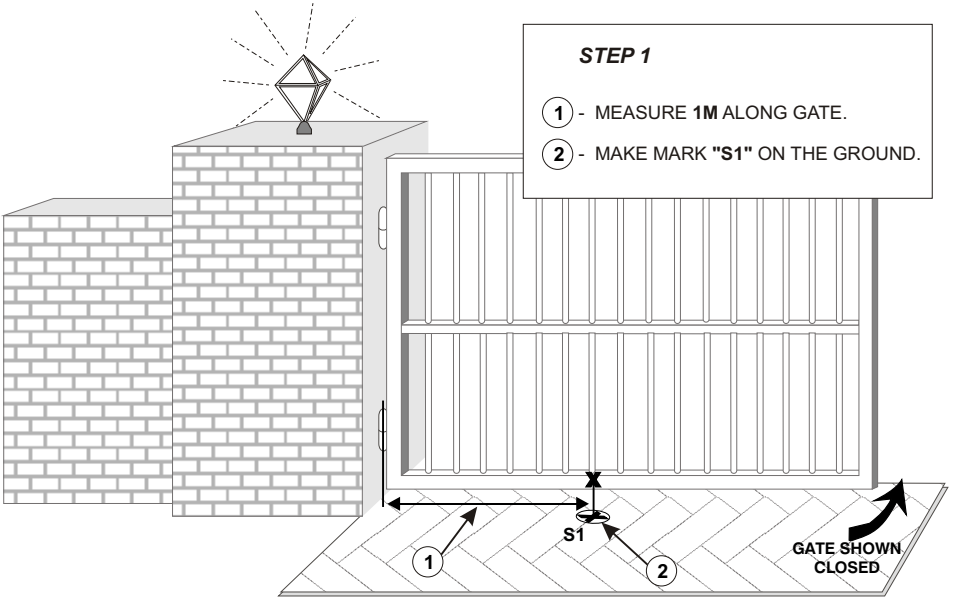
1. CABLE BURIED DEEPER THAN 500MM.
2. 100MM LAYER OF CLEAN SAND ABOVE CABLE
3. STRIP OF “DANGER TAPE” ON TOP OF CLEAN SAND BEFORE FILLING IN CABLE TRENCH.

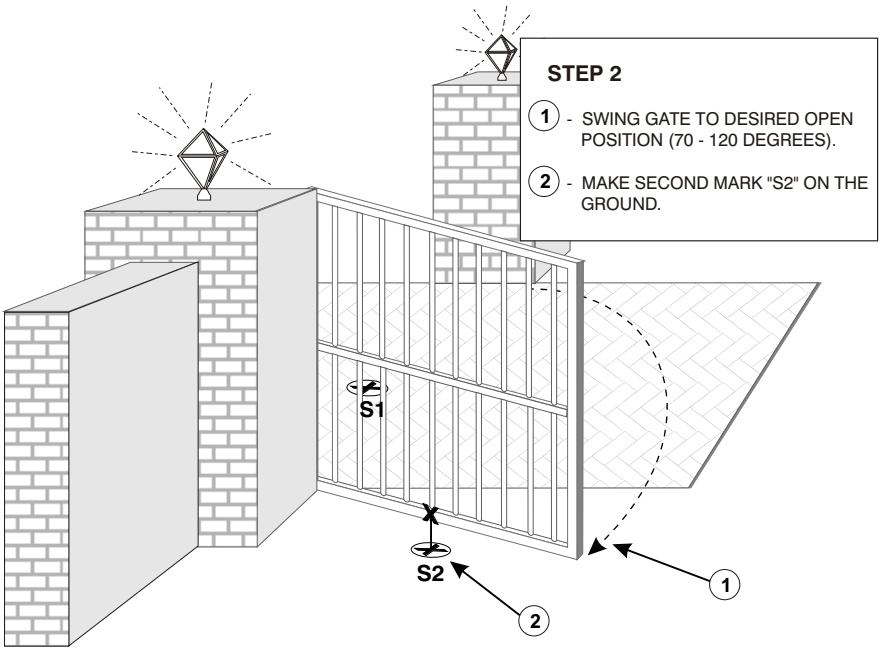
6.0 Mount Control Box

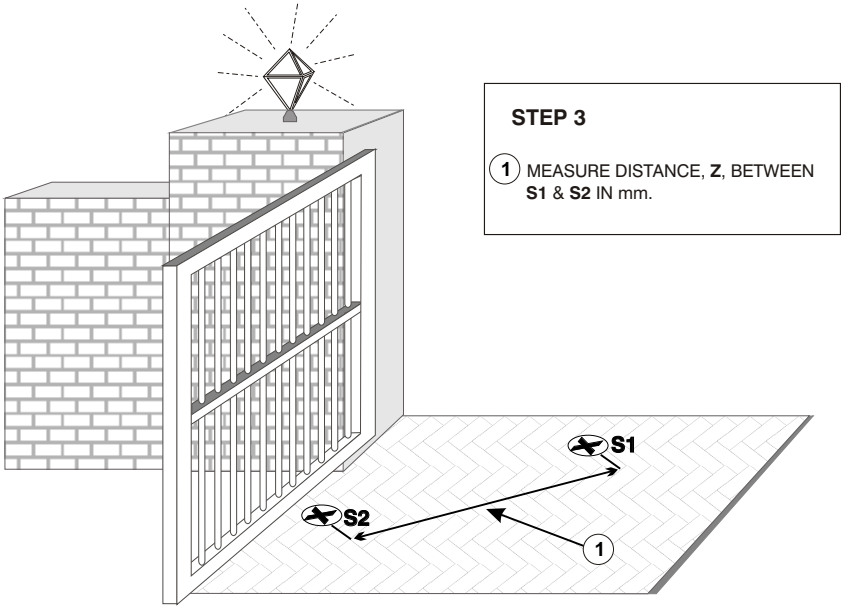


7.0 Position Actuator *(Gate Inward Opening)*

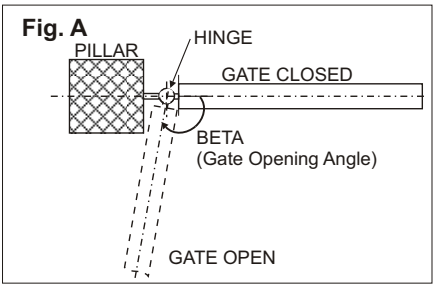
7.1 Determine Gate Opening Angle

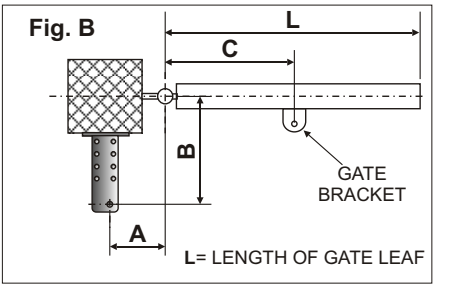



STEP 2
1 - SWING GATE TO DESIRED OPEN POSITION (70 - 120 DEGREES).
2 - MAKE SECOND MARK "S2" ON THE GROUND.
S1
S2
1
2


STEP 3
1 MEASURE DISTANCE, **Z**, BETWEEN **S1** & **S2** IN mm.
S1
S2
1

7.2 Determine Dimensions of Mounting Brackets





1. Having measured ***Z*** as per STEPS **1** TO **3** on pages preceding, select value of ***Z*** in ***TABLE Lever 4*** or ***Lever 5*** below closest to that measured.

NB. USE CORRECT TABLE ACCORDING TO THE MODEL OF ACTUATOR BEING INSTALLED (LEVER 4 or LEVER 5).

2. Move across the row until you are in the column corresponding to the length of gate leaf (***L***) you have.

3. Read off the values of ***A, B*** and ***C*** for the mounting brackets. continue overleaf.

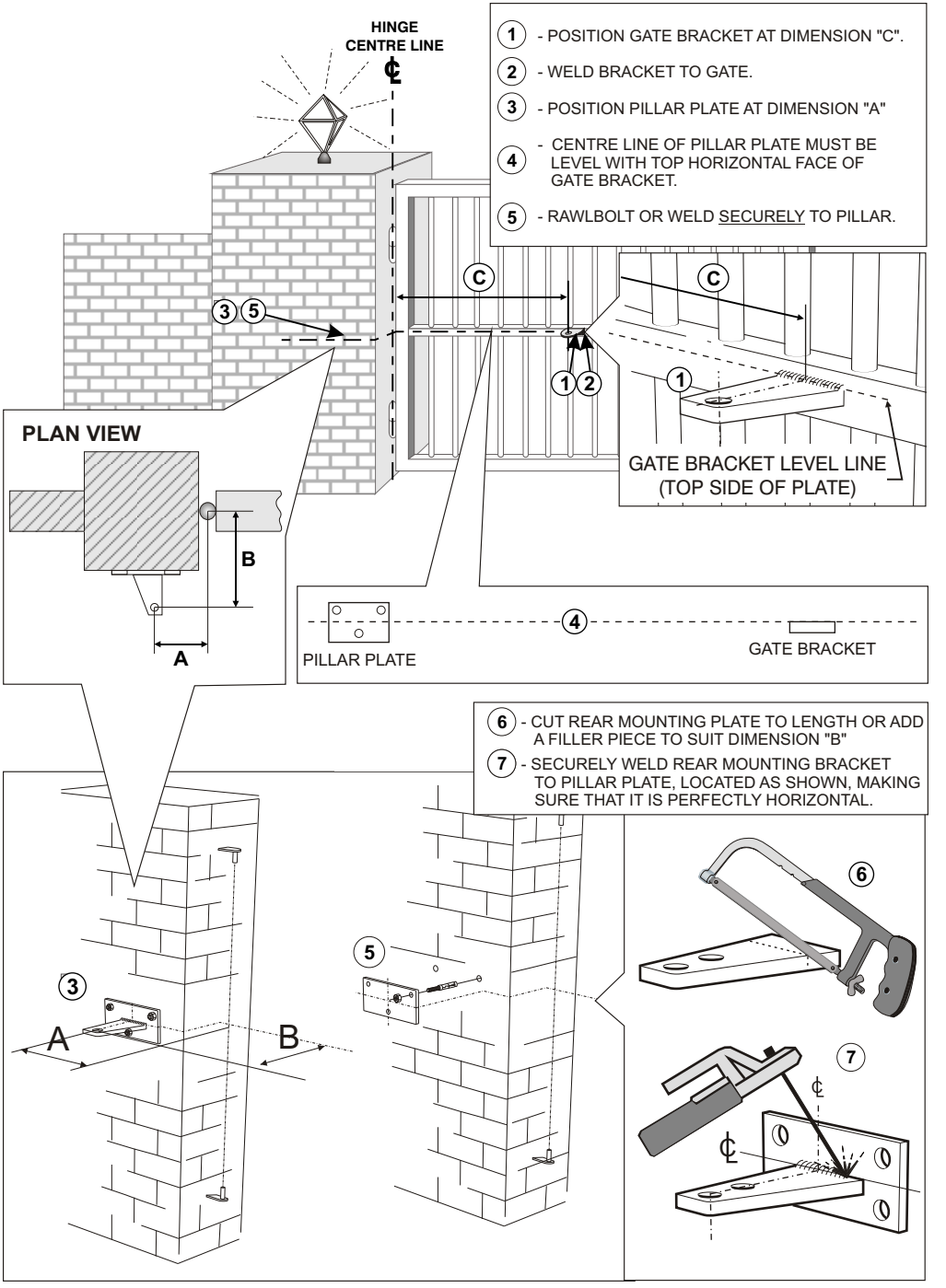
LEVER 4 SMA/ LEVER 4 DMA		LENGTH OF GATE LEAF (L) metres								
		1.0 < L < 1.5			1.5 < L < 2.0			2.0 < L < 2.5		
Z	BETA	A	B	C	A	B	C	A	B	C
1147	70	92	163	848	101	180	994	131	323	970
1218	75	102	163	858	112	181	983	144	295	963
1286	80	112	163	868	124	182	971	155	270	958
1351	85	124	163	878	136	184	958	163	247	953
1414	90	136	163	890	150	186	944	171	226	949
1475	95	166	188	928	166	188	928	177	206	945
1532	100	170	172	925	170	172	925	181	188	942
1587	105	173	156	923	173	156	923	186	171	940
1638	110	176	141	921	176	141	921	189	155	938
1687	115	179	127	920	179	127	920	192	140	936
1732	120	181	114	919	181	114	919	194	125	935

* All dimensions are in mm except for gate length.

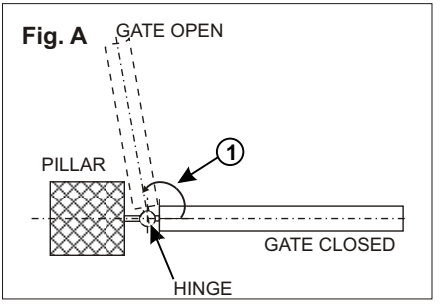
LEVER 5 SMA/ LEVER 5 DMA		LENGTH OF GATE LEAF (L) metres								
		1.5 < L < 2.0			2.0 < L < 2.5			2.5 < L < 3.2		
Z	BETA	A	B	C	A	B	C	A	B	C
1147	70	96	163	1100	102	179	1093	119	229	1071
1218	75	106	163	1090	114	180	1081	132	231	1057
1286	80	117	163	1080	125	181	1069	147	233	1042
1351	85	128	163	1069	138	183	1056	162	235	1026
1414	90	139	163	1057	152	184	1043	179	238	1009
1475	95	152	163	1044	167	186	1027	198	242	990
1532	100	166	163	1030	183	188	1011	166	163	1030
1587	105	181	163	1015	202	190	992	181	163	1015
1638	110	218	187	976	218	187	976	218	187	976
1687	115	222	168	974	222	168	974	222	168	974
1732	120	225	151	972	225	151	972	225	151	972

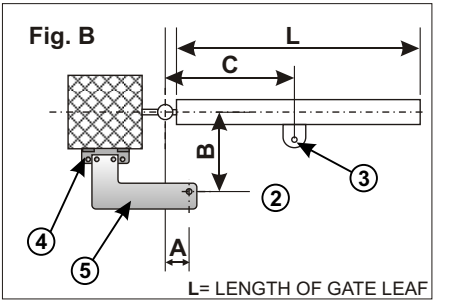
* All dimensions are in mm except for gate length.
NOTE: Values provided in the shaded areas are NOT RECOMMENDED due to excessive speeds.

7.3 Mount Actuator Brackets



8.0 Positioning Actuator *(Gate Outward Opening)*





1. DETERMINE GATE OPENING ANGLE BY FOLLOWING STEP1 TO STEP 3 ON PAGE 4 AND 5.
2. FOR THE PARTICULAR ACTUATOR AND CLOSEST GATE OPENING ANGLE (LEVER4 OR LEVER5) USE THE CORRECT TABLE ON PAGES 8 & 9 TO READ OFF THE VALUE OF A; B; C.
3. MOUNT THE GATE BRACKET AT DIMENSION "C". FOLLOW AS PER INSTRUCTION ON PAGE 7.
4. SECURELY MOUNT THE PILLAR PLATE AS CLOSE AS POSSIBLE TO THE INSIDE EDGE OF THE PILLAR. CHECK LEVEL AS PER INSTRUCTION ON PAGE7.
5. MAKE UP A MOUNTING PLATE TO SUIT AND WELD IT TO THE PILLAR PLATE.

1. Having measured ***Z*** as per STEPS **1** TO **3** on pages 4 and 5, select value of ***Z*** in ***TABLE Lever 4*** or ***Lever 5*** below, which is closest to that measured.

NB. USE CORRECT TABLE ACCORDING TO THE MODEL OF ACTUATOR BEING INSTALLED (LEVER 4 or LEVER 5).

2. Move across the row until you are in the column corresponding to the length of gate leaf (***L***) you have.

3. Read off the values of ***A, B*** and ***C*** for the mounting brackets. continue overleaf.

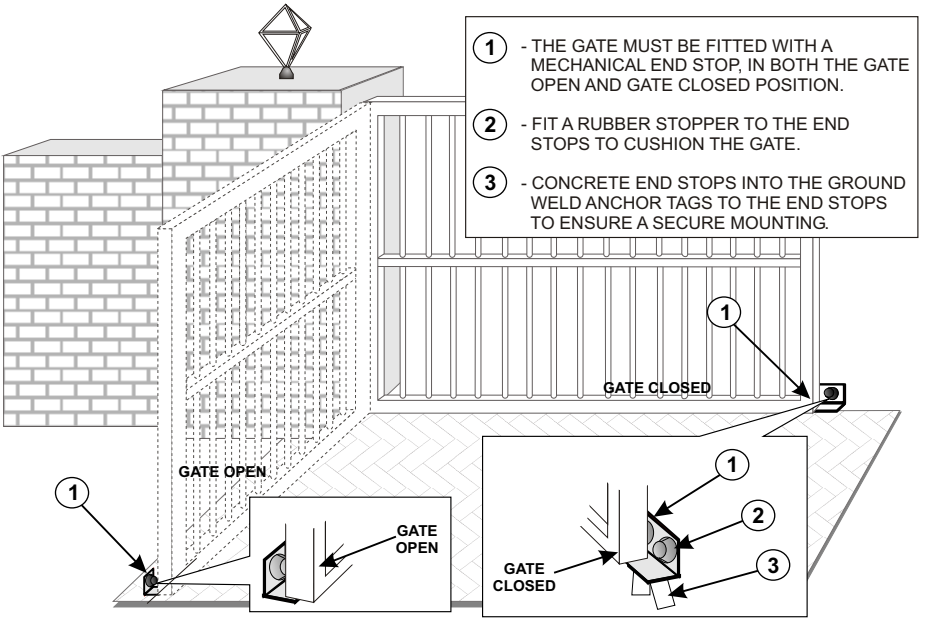
LEVER 4 SMA/ LEVER 4 DMA		LENGTH OF GATE LEAF (L) metres								
		1.0 < L < 1.5			1.5 < L < 2.0			2.0 < L < 2.5		
Z	BETA	A	B	C	A	B	C	A	B	C
1147	70	122	142	848	135	156	994	259	234	970
1218	75	131	141	858	146	155	983	248	215	963
1286	80	141	139	868	158	154	971	239	200	958
1351	85	152	138	878	172	152	958	232	184	953
1414	90	163	136	890	186	150	944	226	171	949
1475	95	202	149	928	201	148	928	221	158	945
1532	100	199	138	925	199	138	925	217	146	942
1587	105	199	127	923	195	127	923	213	135	940
1638	110	193	117	921	193	117	921	210	125	938
1687	115	191	109	920	191	109	920	208	115	936
1732	120	189	100	919	189	100	919	205	106	935

***** All dimensions are in mm except for gate length.
NOTE: Values provided in the shaded areas are NOT RECOMMENDED due to excessive speeds.

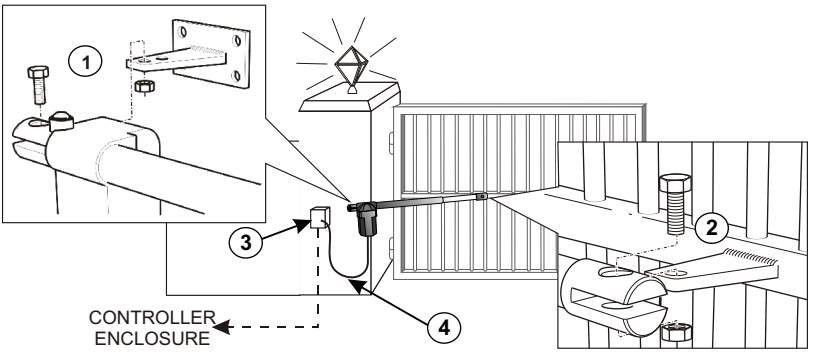
LEVER 5 SMA/ LEVER 5 DMA		LENGTH OF GATE LEAF (L) metres								
		1.5 < L < 2.0			2.0 < L < 2.5			2.5 < L < 3.2		
Z	BETA	A	B	C	A	B	C	A	B	C
1147	70	120	146	1100	133	157	1093	174	190	1071
1218	75	130	145	1090	144	157	1081	189	187	1057
1286	80	140	144	1080	156	154	1069	204	185	1042
1351	85	151	142	1069	170	153	1056	220	182	1026
1414	90	163	139	1057	184	152	1043	238	179	1009
1475	95	176	137	1044	200	150	1027	258	176	990
1532	100	189	135	1030	217	148	1011	189	135	1030
1587	105	204	133	1015	236	146	992	204	133	1015
1638	110	250	141	976	250	141	976	250	141	976
1687	115	246	130	974	246	130	974	249	136	974
1732	120	243	119	972	243	119	972	243	119	972

* All dimensions are in mm except for gate length.

9.0 Install Gate Open and Closed Mechanical End Stop

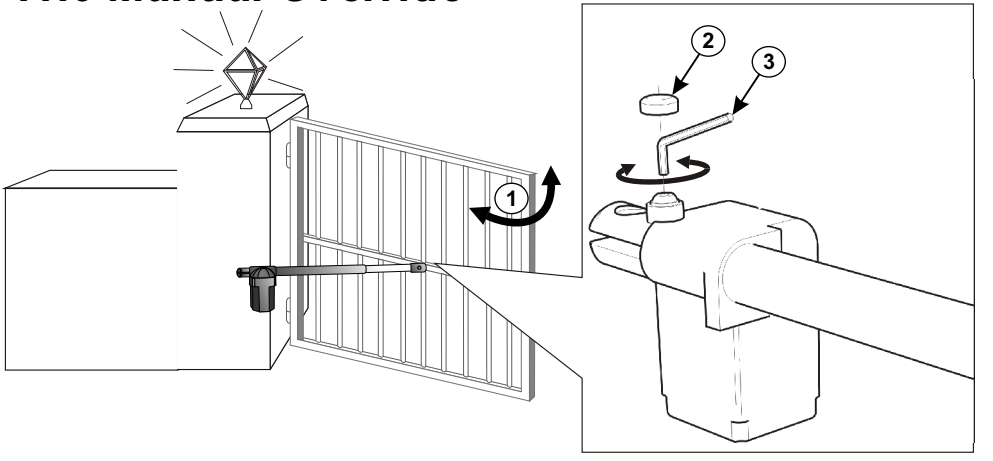


10.0 Mount Actuator



1. MOUNT BACK OF ACTUATOR ONTO PILLAR BRACKET, AS SHOWN.
2. MOUNT FRONT OF ACTUATOR ONTO GATE BRACKET AS SHOWN.
3. WIRE ACTUATOR BACK TO CONTROLLER VIA WEATHERPROOF JUNCTION BOX.
   NB. MAKE ANY JOINTS INSIDE WEATHERPROOF JUNCTION BOX.
4. LEAVE A LOOP IN MOTOR CABLE BETWEEN JUNCTION BOX AND ACTUATOR.

11.0 Manual Override



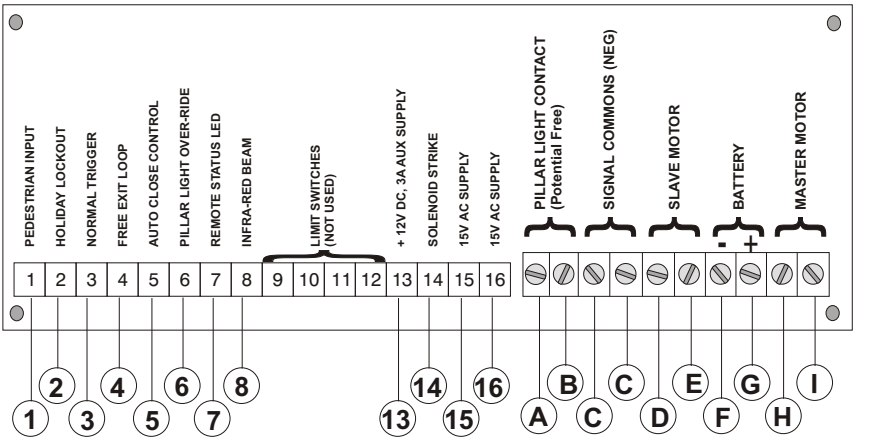
1. TO OPERATE GATE IN MANUAL OVERRIDE MODE:
2. REMOVE BOOT
3. UTILISE MANUAL OVERRIDE KEY ON ACTUATOR AS SHOWN.
4. ROTATE CLOCKWISE TO RELEASE ACTUATOR FOR MANUAL OPERATION.
5. ROTATE ANTI-CLOCKWISE TO RE-ENGAGE ACTUATOR DRIVE.

12.0 Control Card Connections

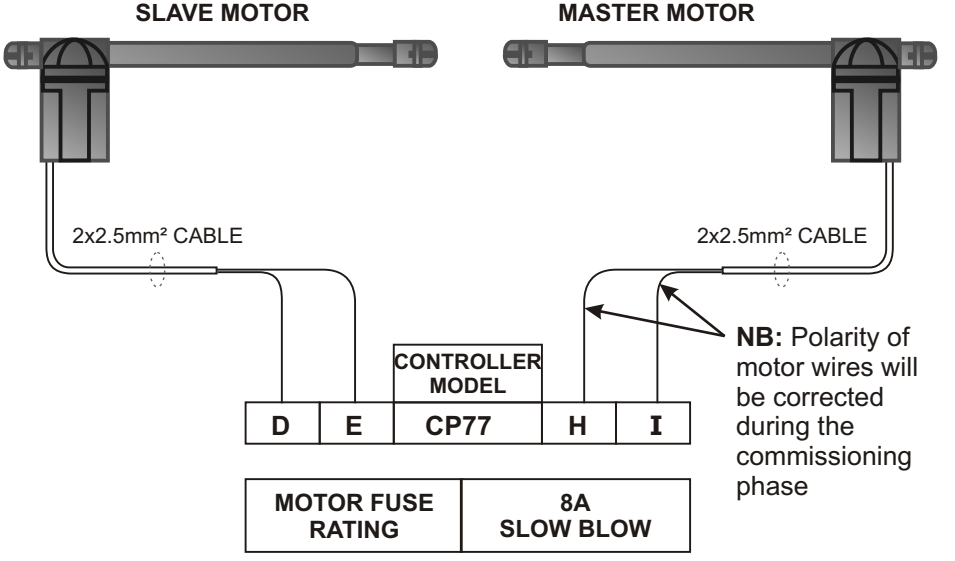
12.1 Overall Schematic of CP77 controller

DOUBLE/SINGLE SWING CONTROLLER WITH MULTIPLE FEATURES

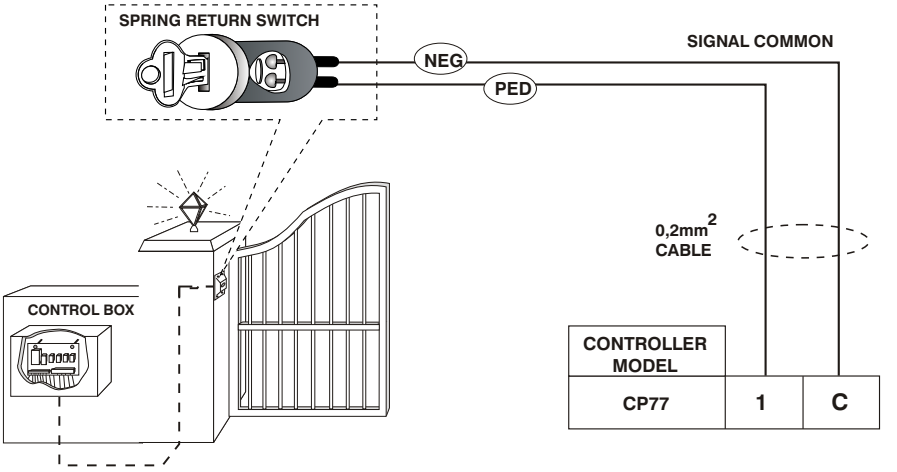
CP77 CONTROL CARD



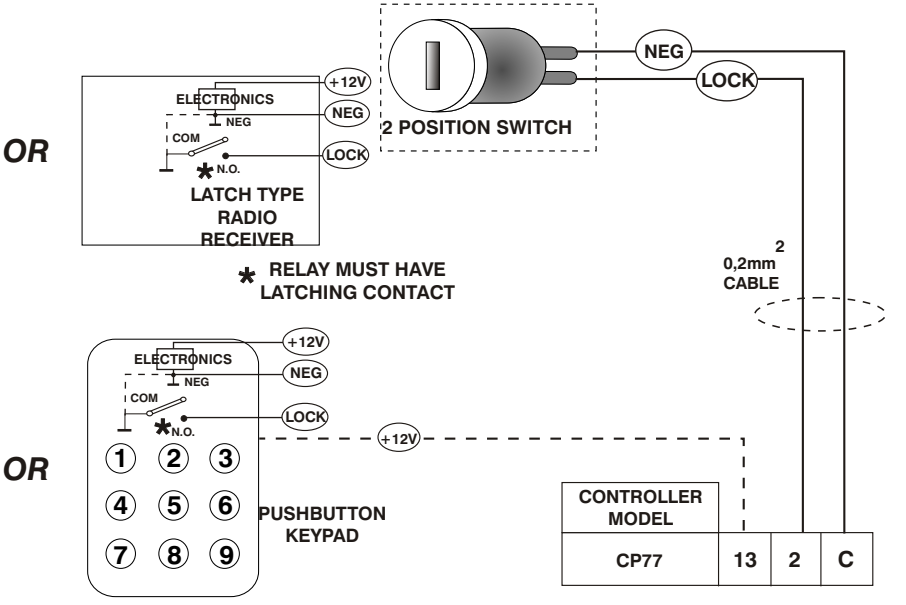
12.2 Motor connections



12.3 Pedestrian Keyswitch

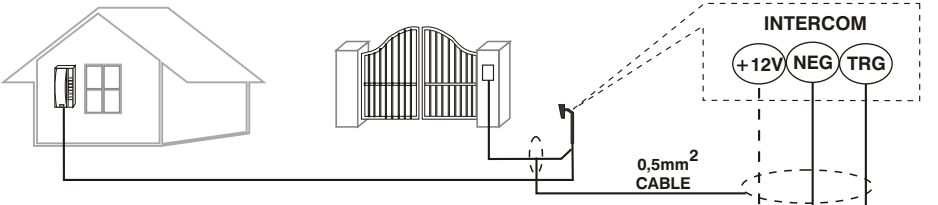


12.4 Holiday Lockout

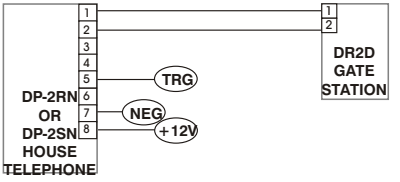


12.5 Intercom Connections

NOTE: - Many different intercom types are available.
- Only signals necessary to interface intercom to Centurion's controller are shown.
- Consult intercom manufacturer for full wiring diagrams.

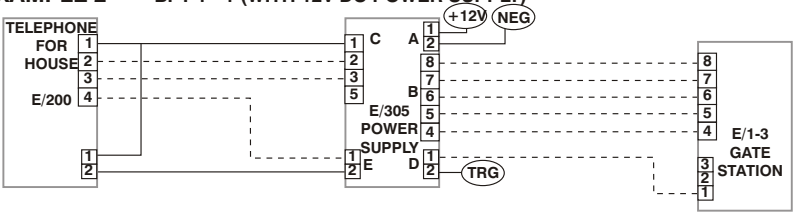


EXAMPLE 1 **COMMAX 1 - 1 (12V)**



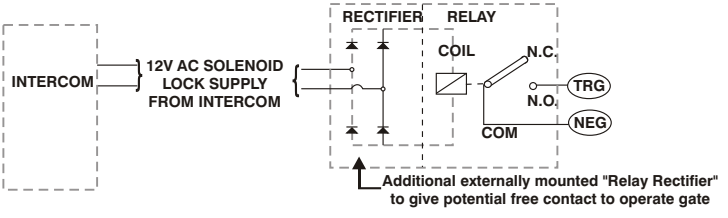
CONTROLLER MODEL			
CP77	13	C	3

EXAMPLE 2 **BPT 1 - 1 (WITH 12V DC POWER SUPPLY)**



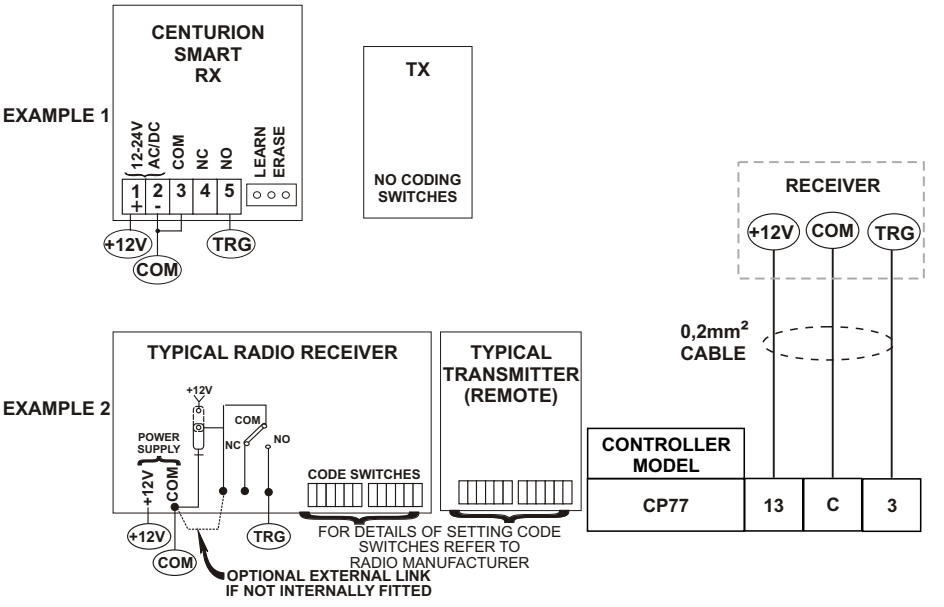
EXAMPLE 3 **TEGUI 12V DC INTERCOM (LUX KIT)**

EXAMPLE 4 **TYPICAL 220V AC POWERED INTERCOM**

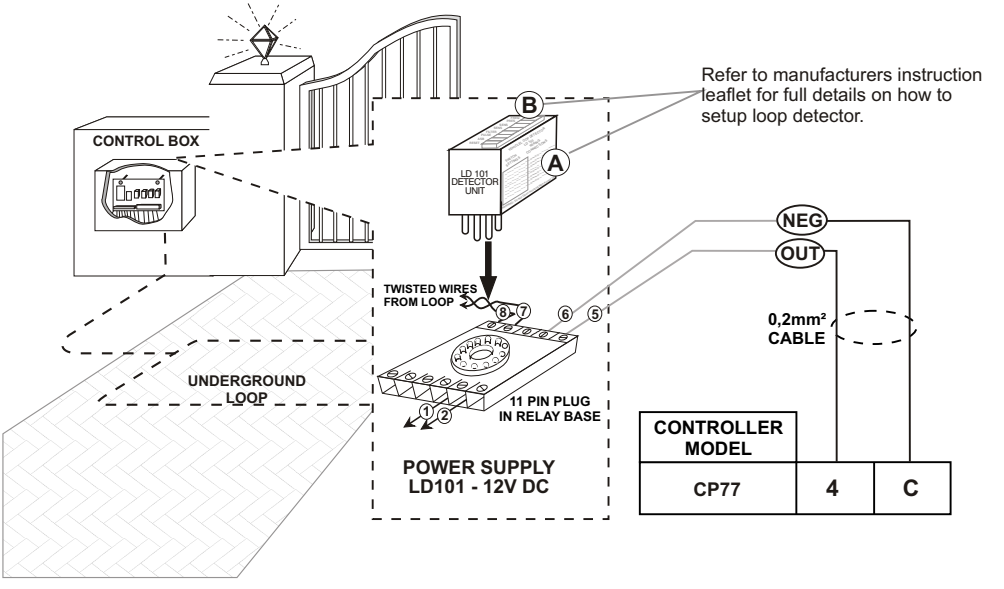


12.6 Radio Connections

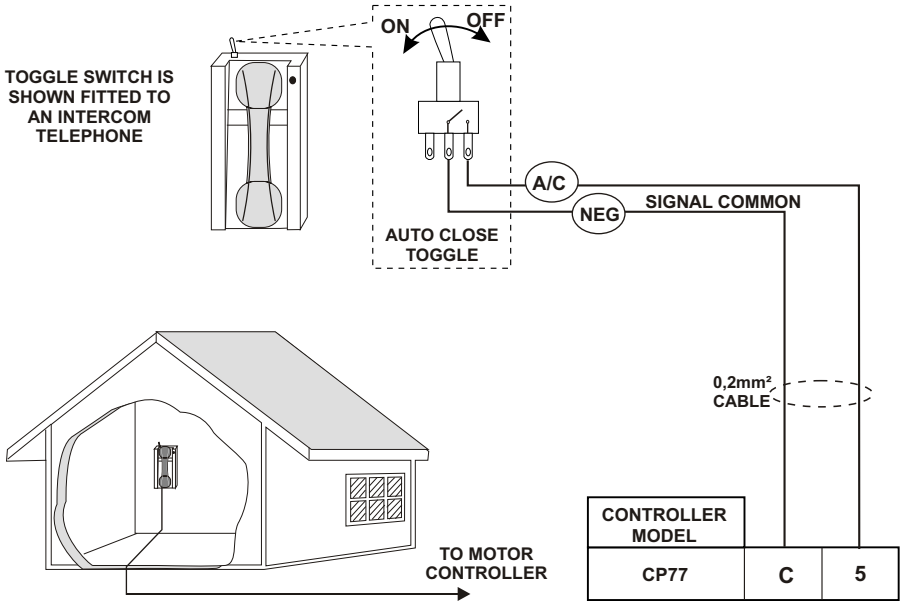
- (Refer to CENTURION for coding details)



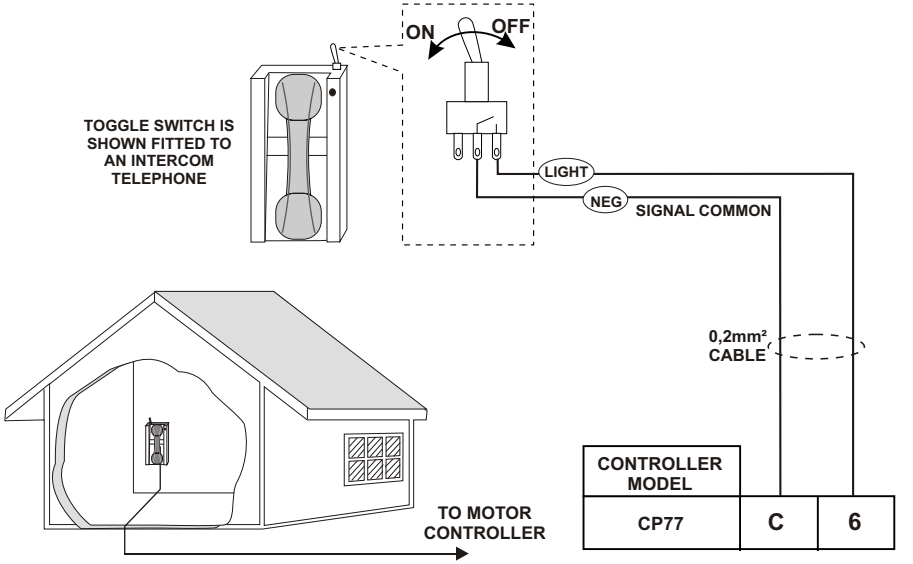
12.7 Free Exit Loop - *LD 101 INDUCTIVE LOOP DETECTOR IS SHOWN BELOW. MODIFY WIRING IF OTHER MAKES OF DETECTORS ARE USED.*



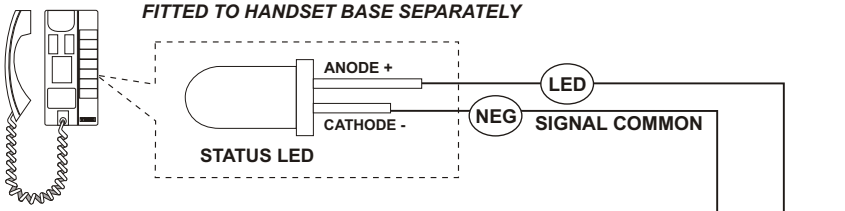
12.8 Remote Autoclose Switch



12.9 Remote Pillar Light Control

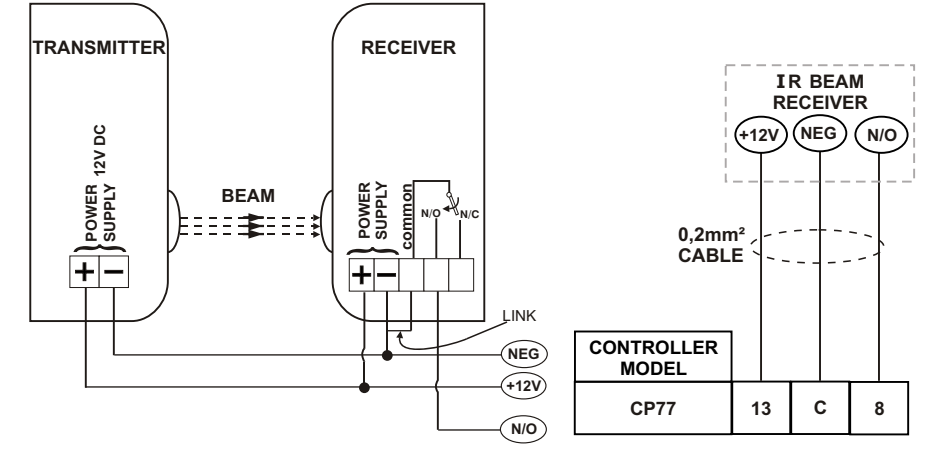


12.10 Remote Gate Status Light Emitting Diode (LED)



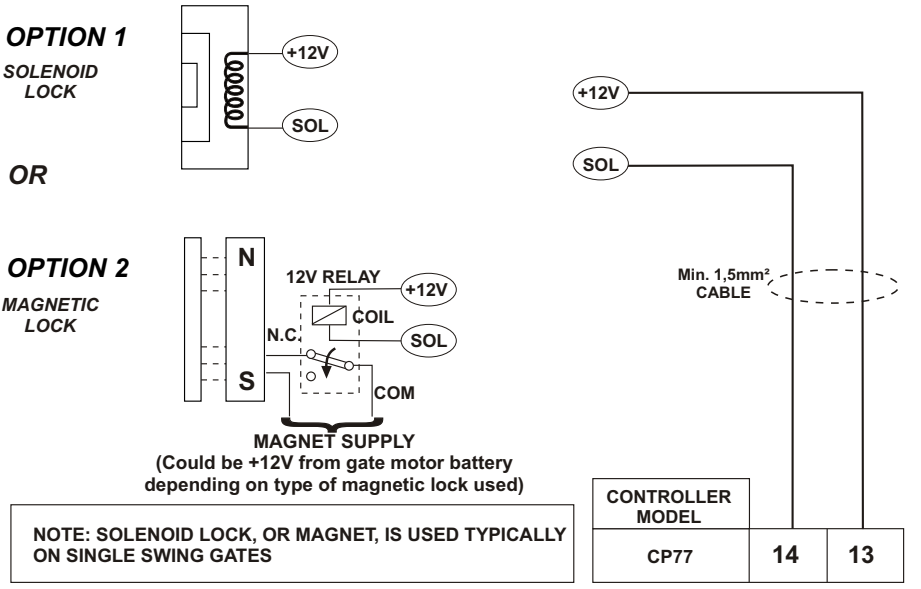
GATE STATUS	LED INDICATION
MAINS LOSS	2 FLASHES / 2 sec
BATTERY LOW	3 FLASHES / 2 sec
COLLISION DETECTION	4 FLASHES / 2 sec
GATE CLOSED	OFF
GATE OPEN	ON
GATE OPENING	SLOW EVEN FLASH
GATE CLOSING	FAST EVEN FLASH

12.11 Safety Beam (Infra Red Beam)



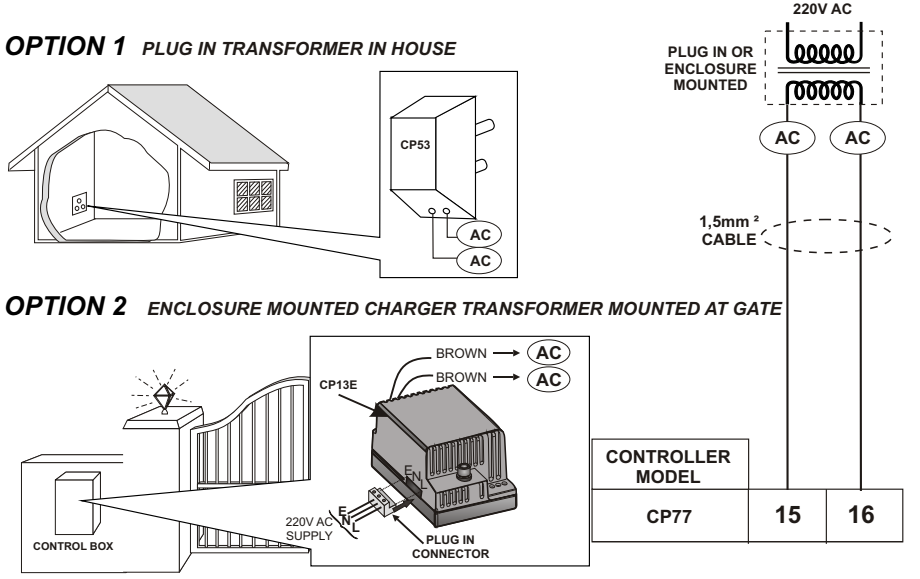
NOTE - TYPICAL SAFETY BEAM IS SHOWN.
REFER TO MANUFACTURER FOR DETAILS

12.12 Solenoid Lock/Magnetic Lock

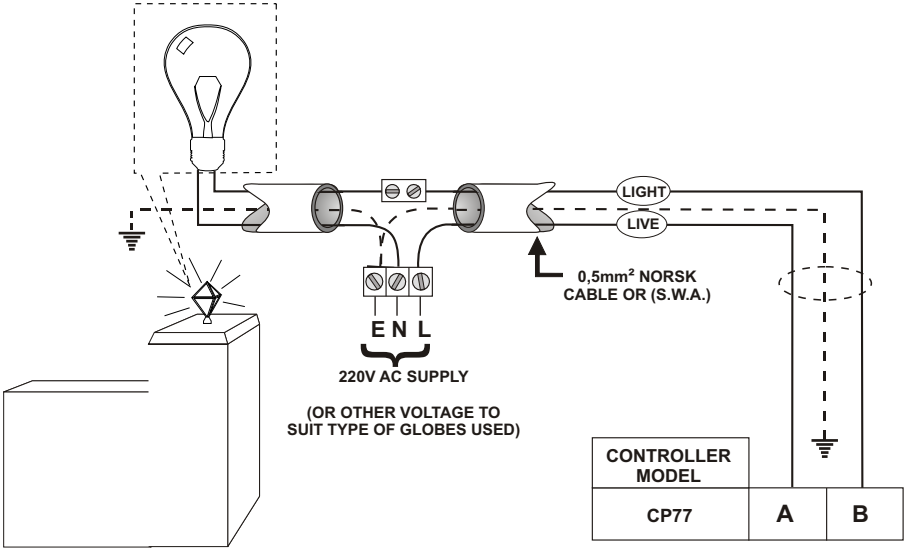


NOTE: SOLENOID LOCK, OR MAGNET, IS USED TYPICALLY ON SINGLE SWING GATES

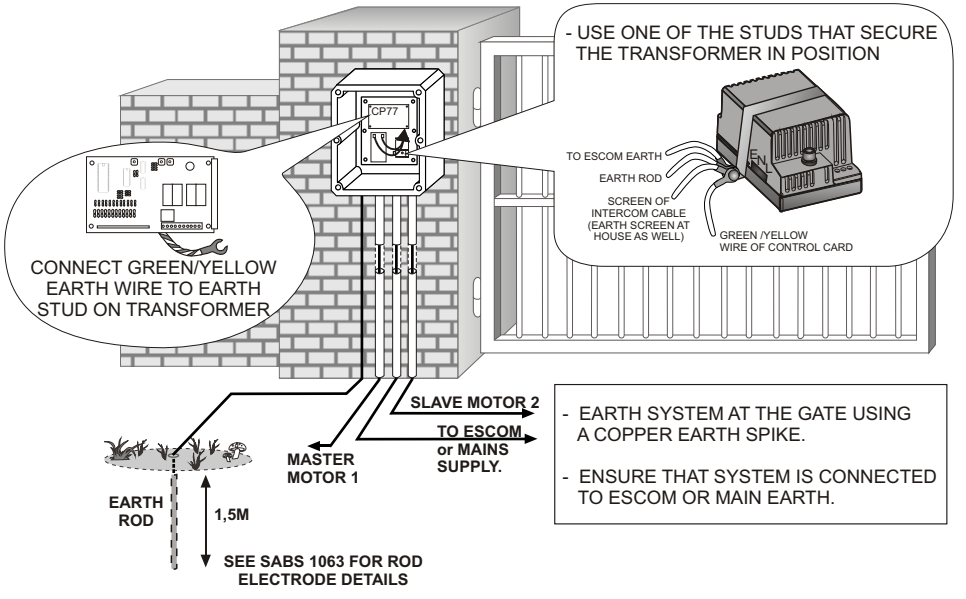
12.13 Battery Charger Transformer Supply



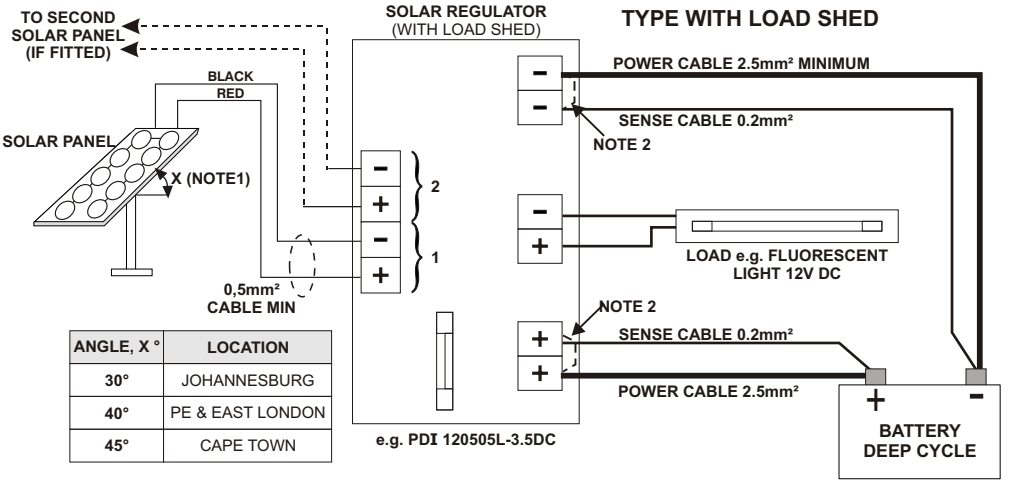
12.14 Pillar Light(s)



12.15 Recommend Earthing for Lightning Protection



12.16 Solar Panel



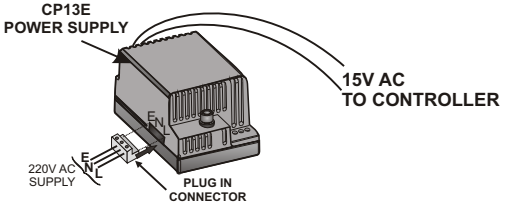
ANGLE, X °	LOCATION
30°	JOHANNESBURG
40°	PE & EAST LONDON
45°	CAPE TOWN

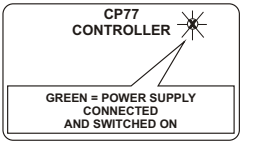
NOTE: TO PREVENT THE STATUS LED ON THE CP77 CONTROLLER FROM INDICATING "MAINS FAILURE", IT IS NECESSARY TO CONNECT TERMINAL 13 TO TERMINAL 15.

13.0 COMMISSIONING

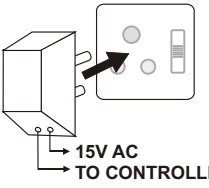
13.1 Applying Mains Power

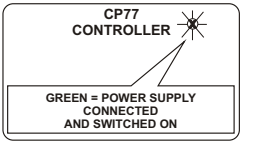
OPTION 1 ***220V AC SUPPLY TO GATE***
- APPLY 220V AC POWER
- CHECK POWER ON INDICATION



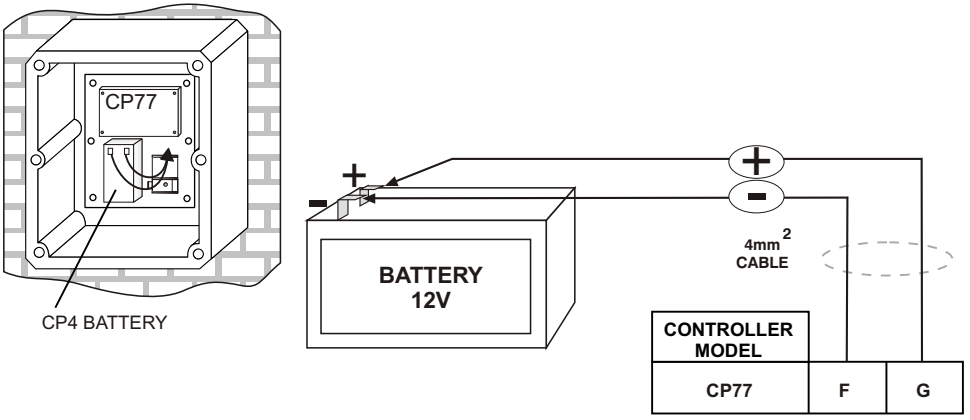


OPTION 2 **LOW VOLTAGE SUPPLY TO GATE**
- PLUG IN TRANSFORMER AND SWITCH ON CIRCUIT
- CHECK POWER ON INDICATION



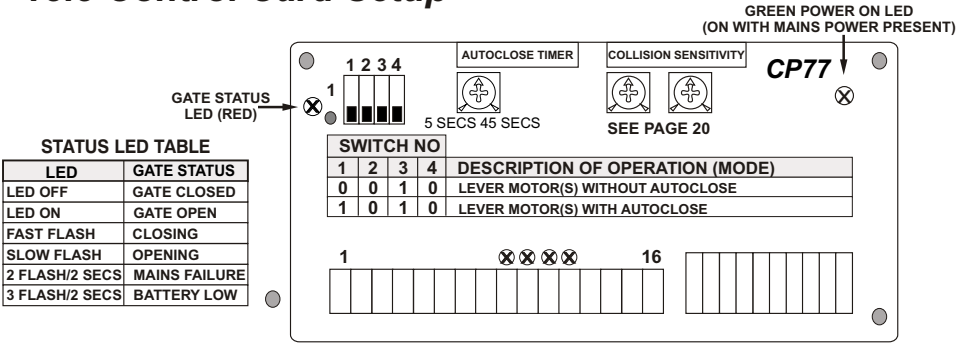


13.2 Connecting Battery



NOTE: IF A LARGE BATTERY IS USED, THE CABLES CONNECTING THE BATTERY TO THE CP80 CARD SHOULD BE BETWEEN 6 & 10 mm² FOR CABLE LENGTHS LESS THAN 5 METRES.

13.3 Control Card Setup



STATUS LED TABLE

LED	GATE STATUS
LED OFF	GATE CLOSED
LED ON	GATE OPEN
FAST FLASH	CLOSING
SLOW FLASH	OPENING
2 FLASH/2 SECS	MAINS FAILURE
3 FLASH/2 SECS	BATTERY LOW

SWITCH NO				
1	2	3	4	DESCRIPTION OF OPERATION (MODE)
0	0	1	0	LEVER MOTOR(S) WITHOUT AUTOCLOSE
1	0	1	0	LEVER MOTOR(S) WITH AUTOCLOSE

COMMISSIONING INSTRUCTIONS

IDENTIFY STATUS LED WHICH WILL GIVE INFORMATION ON GATE STATUS (e.g. WHETHER GATE SHOULD BE OPEN OR CLOSED).

SELECT DIP SWITCH SETTINGS TO GIVE REQUIRED MODE OF OPERATION.

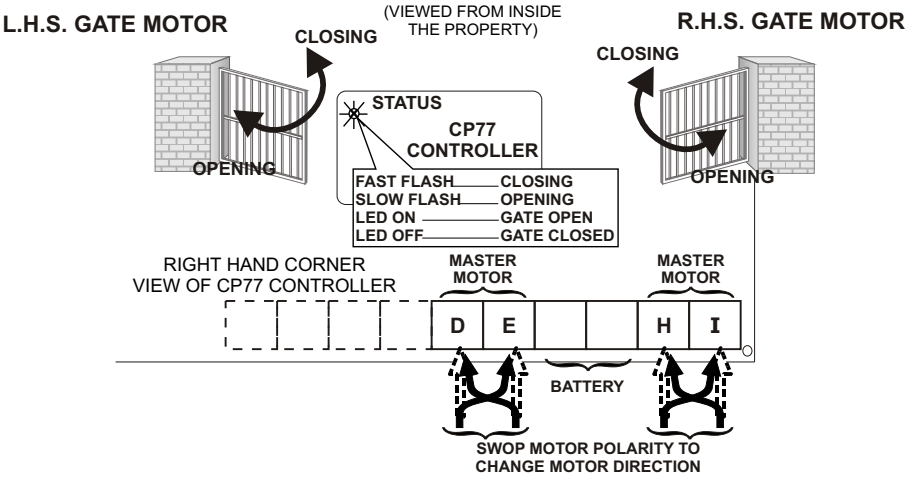
SELECT "AUTOCLOSE" IF REQUIRED (USE SW1).

SET AUTOCLOSE TIMER POTENTIOMETERS TO MINIMUM INITIALLY AND ADJUST TIME TO SUIT AFTER COMMISSIONING.

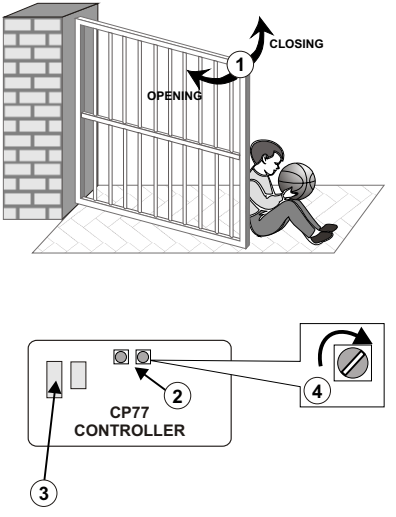
SET COLLISION SENSITIVITY POTENTIOMETERS TO MID POSITION (SEE PAGE 20 FOR CORRECT FINAL ADJUSTMENT).

13.4 Set Motor Polarity

- TRIGGER CONTROL CARD.
- MAKE SURE MOTOR DIRECTION(S) CORRESPOND(S) WITH STATUS LED.
- SWOP MOTOR WIRES ON CONTROL CARD TO GIVE CORRECT MOTOR ROTATION. (SEE FIG BELOW)



14.0 Collision Sensing Adjustment



ADJUST SENSITIVITY ON CONTROLLER SUCH THAT GATE(S) WILL OPEN AND CLOSE RELIABLY, BUT NOT CAUSE DAMAGE TO PERSONS OR OBJECTS IN THE PATH OF THE GATE(S).

(1) MOTOR WILL JUST STOP WHEN GATE HITS AN OBSTRUCTION WHILE *OPENING* OR *CLOSING*.

(2) THERE ARE TWO SENSITIVITY POTENTIOMETERS ON THE CP77 CONTROLLER.

(3) CHECK VERSION OF FIRMWARE (MICRO - CONTROLLERS) AND ADJUST SENSITIVITY POTS ACCORDINGLY.

VERSION MV8.0/1/03: ADJUST SENSITIVITY FOR BOTH MOTORS WHILE OPENING (LH POT) AND CLOSING (RH POT)

*VERSION MV8.03**L***: ADJUST SENSITIVITY OF MOTORS INDEPENDENTLY.
MASTER MOTOR - LH POT
SLAVE MOTOR - RH POT

NB. LEGEND ON PCB IS INCORRECTLY MARKED FOR THIS VERSION

(4) CLOCKWISE INCREASES PRESSURE.

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