

Installation and Maintenance Manual

Commercial Sliding Gate Operator

Model: GDS 240 PP

Made in Australia from Australian & quality imported components



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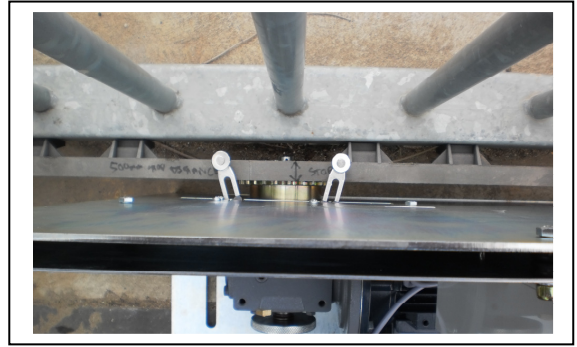
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Abbreviated Installation Instructions

(For those who don't have time!)

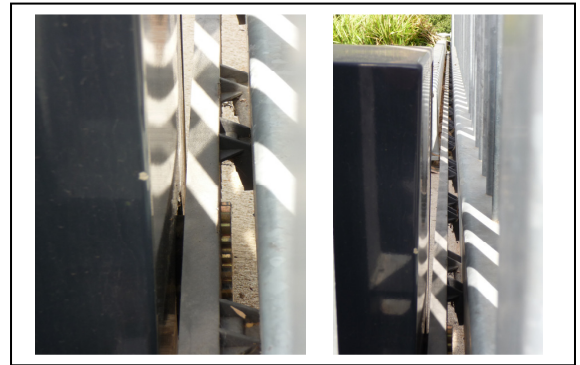
GDS 240PP operator

Place the operator in correct position. Pinion wheel to be parallel to the gate, and stepped out to allow for width of rack once it is mounted onto the gate frame. Mark out fixings and fix operator to the concrete pad.



Fix rack to the gate frame keeping 1mm-2mm clearance between the rack teeth and Pinion wheel

Once the rack is fixed move the gate and sight the rack moving over the pinion wheel, check that most of the pinion wheel meshes with the rack. Make sure rack runs freely over the pinion wheel, any tight spots should be corrected by adjusting the rack height. Check the operator is firmly bolted down to the concrete pad.

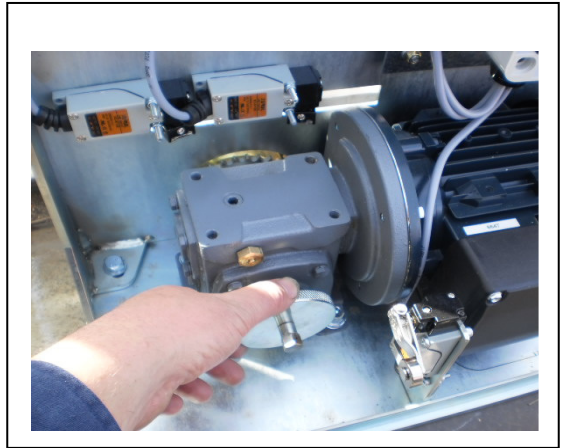


Ensure stops are installed on the gate for the fully closed and fully open positions.

Connect required P.E Beams. Fit limit brackets to actuate at gate end positions. Connect Power supply. Turn on Power.



To commission the gate, move the gate to the half way position and tighten the knurled wheel (Clockwise) engaging the clutch assembly. Hold in the clutch door switch in to allow gate operator to function.



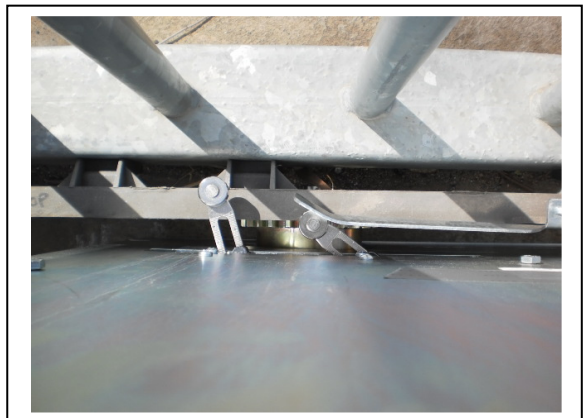
Press the opening button located under the dip switches to begin opening cycle, **ensure the gate travels in accordance with the open and close status leds.** If not, reverse the M1 open and M1 close wires at the CB-6 M1 terminals.

Also check the limit switches correspond with M1 OP and M1 CL limit switch led indicators (the led will turn off when the limit switch is activated), if not, reverse both open and closed limit switch input wires.

Set the run timing by switching the run /set switch into set, with the gate at full closed position, press and hold the open button until the gate operates the open limit, then keep holding the button for a further 5 seconds, then release. Do the same on the close cycle from the full open position. Switch run/set switch back to run.

Automation settings and operating modes are able to be adjusted via the CB6 board, refer to manual for further instructions.

If needed, adjust the limit switch brackets for the open and closed cycles, ensuring that the gate does not slam into the stop positions before actuating the limits.



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1. SAFETY PRECAUTIONS



WARNING! FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTALLATION INSTRUCTIONS COULD RESULT IN INJURY OR DEATH AND/OR DAMAGE TO PROPERTY AND EQUIPMENT.

- Appropriately licensed and competent personnel only should install the automation equipment.
- The operators are designed specifically to open and close sliding gates or doors and should not be used for any other purpose.
- Before commencing installation, read through this installation manual.
- Check that the operator and controls are in new condition and have not been damaged in transit.
- Check the gate or door and its associated support posts and walls to protect against shearing, compression and other various traps which could cause serious injury or death. Take into consideration the general installation and surrounding environment.
- Check the gateposts or mounting structure has the necessary strength and rigidity to support the operator and the load of the opening and closing gate motion.

CAUTION!



Always incorporate the appropriate Photo Electric Cells, Induction Loops and any other safety devices to protect both equipment and personnel. Extra caution should be employed when using operator in auto close mode.

- Display any necessary signs to indicate any danger areas and automatic operation of the gate or door.
- The operators are not designed to be used in any hazardous areas or areas subject to flooding etc.
- All electrical connections and wiring must be performed with AS/NZS 3000-2007 as the guidelines. (Or its counterpart for other countries outside of Australia and New Zealand)

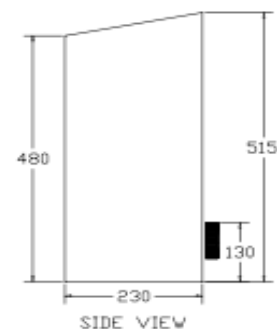
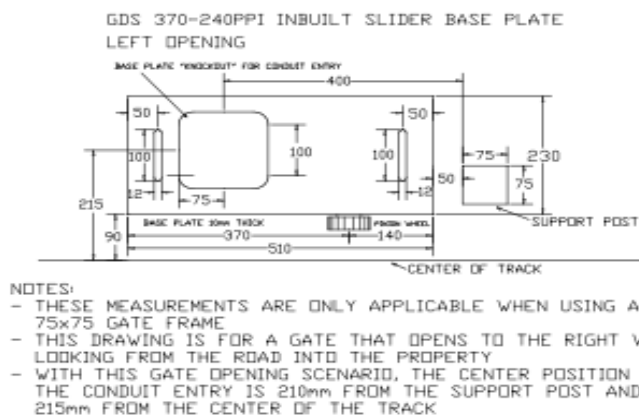
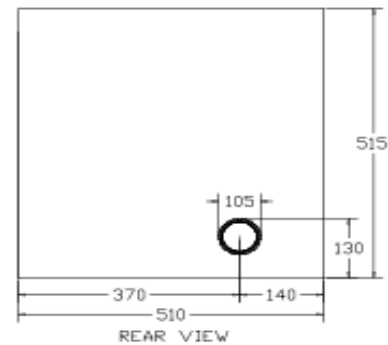
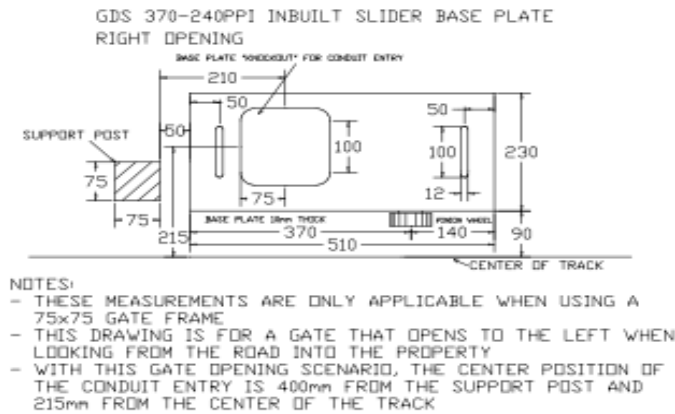
WARNING! ELECTRICITY CAN KILL

- The manufacturer of the automation equipment is not responsible for the damage which may be caused to either the operator, gate or door and any other person or equipment when: -
 - Wrong or poor installation practices were performed.
 - No or inadequate safety devices were used.
 - Either the surrounding structure or the gate or door strength and rigidity was not sufficient for the task in hand.
 - Inefficient locking devices were employed.
 - Poor maintenance on the equipment.
 - Any other circumstances beyond the manufacturers control.
- Isolate power before attempting any maintenance, qualified personnel only to carry out maintenance
- Only original spare parts are to be used should there be a requirement for them.
- Keep loose clothing and hands clear of the gate whilst in operation or potentially able to be operated.
- The installer should provide all information concerning the use of the automation equipment as well as instructions regarding the manual override and maintenance procedures to the users of the system.

2. WIRING REQUIREMENTS:

- Single phase 240v a.c 10 A earth leakage protected supply.
- Control input cables, Output signal cables (all to be shielded cable if over 8m runs).
- Conduits preferably need to come up through base plate.

Plan view of installation and conduit entry location



3. MECHANICAL INSTALLATION

1. Check that the gate runs smoothly throughout it's travel and does not bind anywhere.
2. **IMPORTANT Ensure gate stops are fitted at the fully open and closed positions.** These stops need to be engineered and installed in such a way that they will be strong enough to stop the gate should the limits fail at any time.
3. Position the sliding gate operator on the concrete mounting pad and using a length of rack held onto the gate rail, adjust the operator at a location where the pinion gear meshes fully onto the rack.
4. Ensure the pinion wheel face is parallel with the gate rail and mark the holes through the mounting plate for fixing.
5. Dynabolt mounting plate to concrete pad using 12mm x 100mm dynabolts.
6. Position gate operator so rack will fully mesh onto pinion gear.
7. Loosen manual release knob on backside of gearbox (anticlockwise) and then start attaching rack to the gate frame ensuring that the rack meshes onto the pinion gear with 1 – 2mm clearance.
8. Rack is normally tek screwed to gate rail. After fixing the rack for the full length of the gate, run the gate back and check the rack meshes to the pinion gear without being too high or too low.

4. INSTALLATION DETAILS

Electrical Connections

Supply

- Connect a 10A 240v supply to din rail terminals labelled A & N. Connect earth to din rail terminal.

Control

- If cable runs are over 10m, connect the shielded cable to the chassis.

Control Inputs

The P.E, OPN and STP inputs require a normally closed switch contact and therefore should be shorted to the COM terminal if not used. This is done via bridging links already on the circuit board (bottom left corner) The CLS, OSC and PED inputs require a normally open switch contact and therefore should be left unconnected if not used. All the switch inputs of this control board including the limit switch inputs require a switch contact only. Do not connect any switches which provide a voltage to the control board as this will damage the control board. If the inputs are 12/24v or has long wiring associated with it use an IM-1 module to isolate it from the control board's input. The IM-1 is available from the manufacturer.

Powering Accessories

Accessories, which require a 24v AC supply, can be powered from the transformer output used to power the control board and motor. However, the transformer's current capacity must be checked to allow for the extra power required by the accessories.

Locks & Lights

Use the lock output terminals to switch the 12 volts to an electric lock (if fitted). The load switched by the lock output terminals must not exceed 30v AC / DC @ 5Amps. If an electro magnetic lock is used, change one wire on the control board lock output to the normally closed output. Use the light relay module (if fitted) to switch the applied voltage to a light. The load switched by the light relay module must not exceed 240v AC / 30v DC @ 10 Amps.

Mode Selection

Using the mode selection dip-switches select the desired operating modes. Note the times associated with the parameters marked with an * can be changed. The auto-close times can be changed using the procedure in the following section. See detailed instruction manual for details how to change the other parameters.

POSITION 1 Synchronising Delay

OFF - No delay

ON - Motor 1 starts to open 2 seconds* before Motor 2 & Motor 2 starts to close 2 seconds* before Motor 1.

POSITION 2 Pulse Lock Output

OFF - Lock output is activated for the entire motor drive cycle.

ON - Lock output pulses for 0.3 seconds* at the start of each drive cycle.

POSITION 3 Light Outputs Warning

OFF - Optional light module controls a light with timer which turns light off after 60seconds*.

ON - Optional light module controls a warning light which activates whenever motors are on.

POSITION 4 Swipe Mode (OSC Input)

OFF - OSC input terminal has standard Open, Close, Stop action.

ON - OSC input terminal will only open the door/gate. The input also resets the P.E triggered auto-close mode so that the P.E input will need to be triggered again before a P.E auto-close cycle will be initiated.

POSITION 5 M 2 Outputs Status

OFF - The M2 output controls second motor

ON - The M2 output controls status lights

POSITION 6 P.E Stops Close Cycle

OFF - Activating the P.E input while motors are closing causes the motors to reverse.

ON - Activating the P.E input while motors are closing causes the motors to stop but not reverse.

POSITION 7 P.E Stops Open Cycle

OFF - Activating the P.E input while motors are opening is ignored by the controller.

ON - Activating the P.E input while motors are opening causes the motors to stop.

POSITION 8 P.E Triggered Auto Close

OFF - Not selected

ON - Selects the P.E triggered auto-close mode which causes the motors to auto-close if the P.E input is activated then released. (Auto-close delay time is 0 seconds*)

POSITION 9 Pedestrian Auto-Close

OFF - No pedestrian access auto-close

ON - Selects auto-close in the pedestrian access mode. (Auto-close delay time is 15 seconds*)

POSITION 10 Standard Auto Close

OFF - Not selected

ON - Selects standard auto-close mode which will close the motors after fully opening. (Auto-close delay time is 30 seconds*)

Setting Cycle Timers & Auto Close Times

The control board has pre-set cycle times which are used to set the maximum time the controller will drive the motors in the open and closed directions. The pre-programmed time for the open and close cycle timer's is 60 seconds. The control board also has a pre-set pedestrian access time of 5 seconds which is intended to open the motor connected to M1 output only part way. If these default times do not suit your needs simply use the procedure below to adjust them. Note the same procedure can be used to adjust the auto-close times.

1. Place the slide switch into the 'set' position
2. Adjust the timer's value by pressing and holding the required push button for the desired time.
3. Repeat step 2 for the next timer (if desired).
4. Place the slide switch back into the 'RUN' position.
5. Test operation.

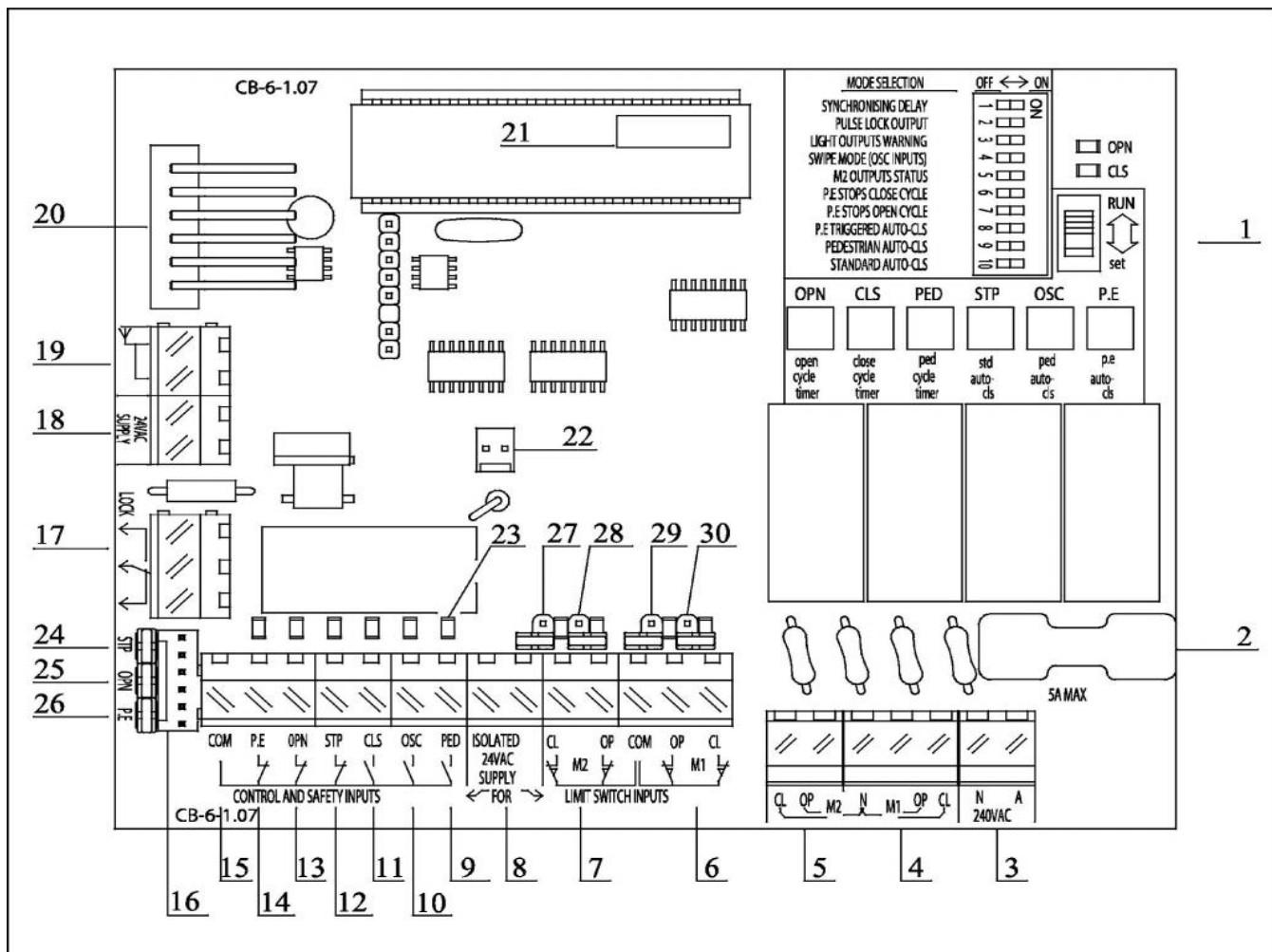
Make sure that the slide switch is placed back into the "RUN" position before testing the new timer value.

As you can see the procedure used to set each timer's value is the same only the push button used changes. Each push button is clearly labelled underneath as to which timer's value it sets. Note when setting the OPEN, CLOSE and PEDESTRIAN cycle times the controller will drive the motors as if a "real" cycle is being executed. The difference being that the motors will stop as soon as the button is released or the limit switches are reached. The OPN status LED on the control board will flash at 1 second intervals to assist setting times. Note when setting the OPEN and CLOSE cycle times when limit switches are used, release the push button a few seconds after the limit switch cuts motor power. This allows for the motors to slow down over the life of the operators without the need to adjust again.

5. COMMISSIONING

- Position the gate half way and tighten knurled knob at back of slider by hand so gate will drive.
- Power up board and with gate in the half way position, press transmitter or manual control switch so operator drives gate.
- The first pulse will always open gate, green LED will flash (top right hand corner) if it does not, then reverse the 2 motor wires.
- Check which limit switches stop gate in each direction, adjustment of the limit switch brackets may have to be made. Limit switches should not switch off the gates too soon (before reaching the stops) and conversely not too late, so the torque limiter is operating.
- Tighten torque limiter knurled knob.
- Set open & closed travel times.
- Check that all safety devices work as designed and the electromagnetic lock holds the gate firmly closed (if fitted).
- Install cover using screws provided in the front and sides to hold cover firm.
- Provide full details to the owner concerning the operation and relevant maintenance and disconnect details

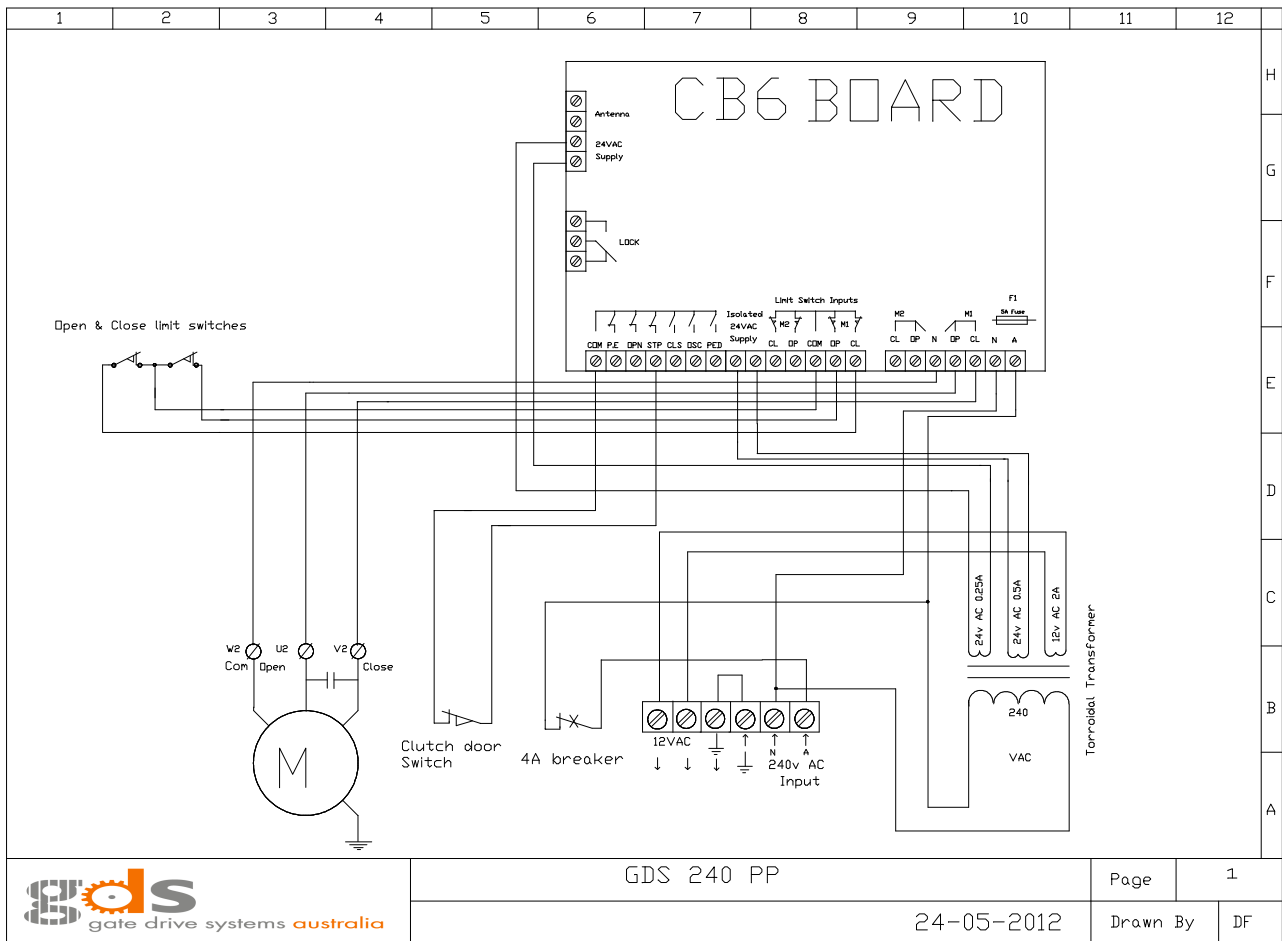
6. CB-6 BOARD LAYOUT FOR 240v a.c CONTROLS



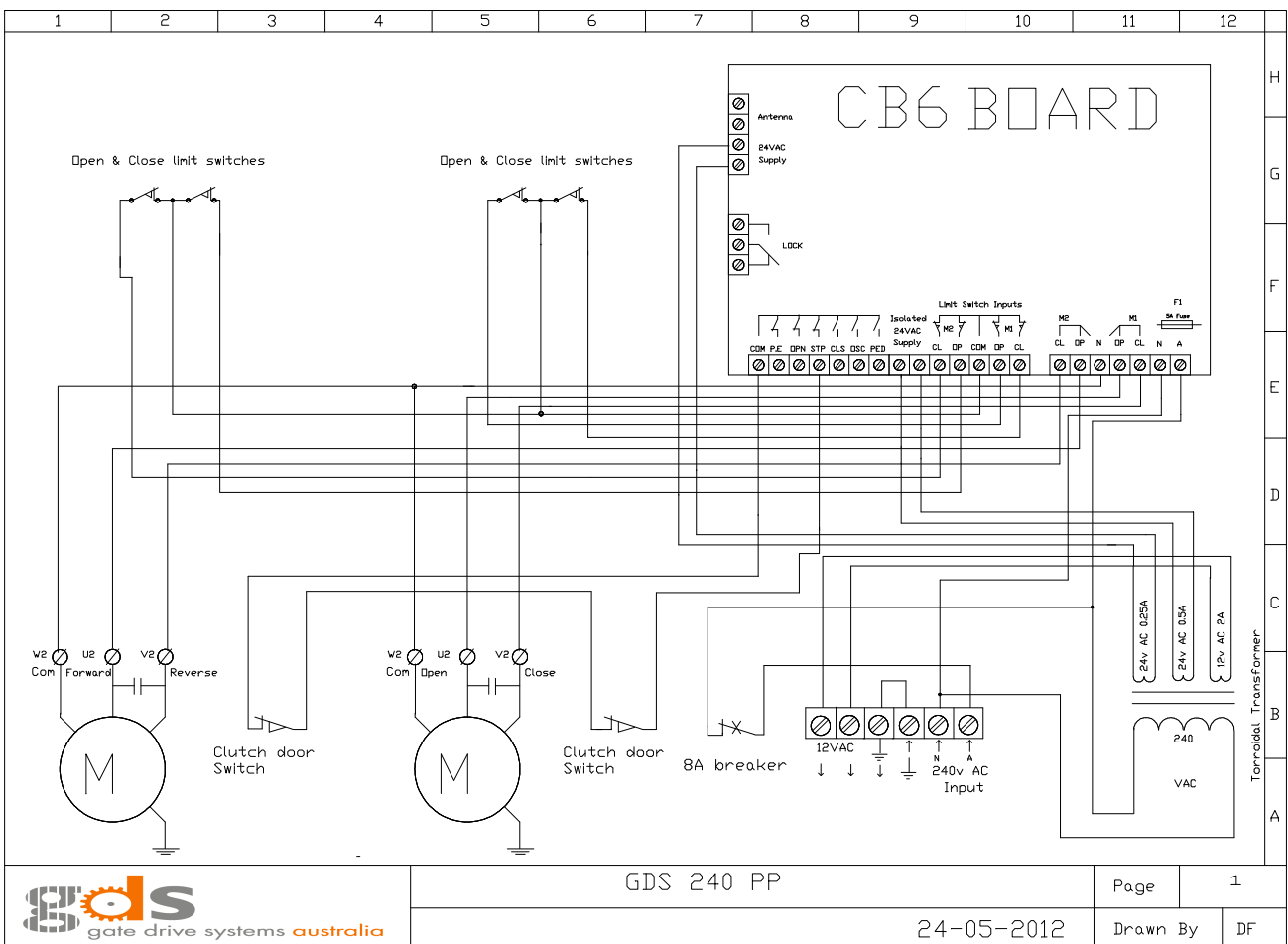
1. Mode Selection and Adjustment
2. Protection Fuse
3. Motor power Input Terminals
4. Motor 1 Output to 240v motor
5. Motor 2 Output to 240v motor
6. Motor 1 Limit Switch Inputs
7. Motor 2 Limit Switch Inputs
8. Terminals for Isolated 24vAC Supply for Limit Switch and Control Inputs
9. Pedestrian Access Control Input
10. Open/Stop/Close Control Input
11. Close Control Input
12. Stop Control Input
13. Open Control Input
14. Photoelectric Safety Beam Input
15. Common Terminal for Inputs [9] Thru [14].
16. Control Input Harness Connector
17. Electric Lock Control
18. Terminals for 24vAC Supply Control Logic
19. Plug In Receiver's Antenna With Optional Shield
20. Connector for Plug-In (not shown)
21. Firmware Version Label
22. Light Control Relay Interface Connector
23. Input Status L.E.D.s.
24. Stop Input Jumper
25. Open Input Jumper
26. PE Beam Input Jumper
27. M2 Close Limit Jumper
28. M2 Open Limit Jumper
29. M1 Close Limit Jumper
30. M1 Open Limit Jumper

7. SCHEMATIC WIRING DIAGRAM

Single controls



Dual controls

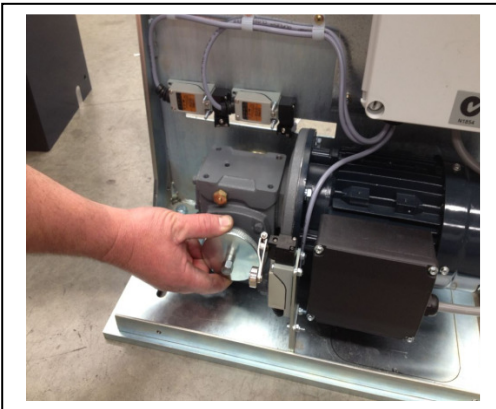


8. MANUAL RELEASE INSTRUCTIONS

Place key in door lock, turn clockwise till released and pull door open.

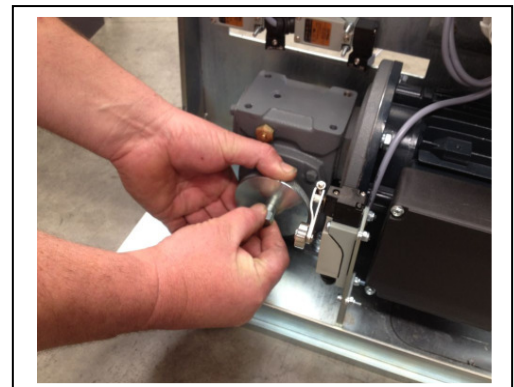


Turn knurled knob anticlockwise approx. $\frac{1}{2}$ a turn to release



Gate can now be opened by hand. Once in the open position, be sure to re engage the clutch, or secure by other means as to prevent the wind catching the gate and inadvertently moving the gate which may cause accidental damage to property or person.

To re-engage the clutch, move the gate by hand into approx. The half way position and turn the Knurled knob clockwise until it is very tight. If, when turning the knurled knob clockwise and it just spins, either, try spinning it clockwise with more force to release it off of the hexagonal retaining nut or hold the nut with one hand and turn the knurled knob clockwise.



9. MAINTENANCE DETAILS



WARNING!

Failure to maintain equipment may result in injury or death and/or damage to property and equipment

Recommended maintenance to be performed on the operator and gate are as follows:-

Operator performs over 150 cycles a day	each month
Operator performs between 100-150 cycles a day	every 2 month
Operator performs between 50-99 cycles a day	every 4 months
Operator performs between 20-49 cycles a day	every 6 months
Operator performs under 20 cycles a day	every 12 months

Date:

Site Name:

Site Address:

Before commencing maintenance on the operator, isolate the electrical supply to ensure operator will not run inadvertently.

- Gate rolls freely when in manual ☐
- Gate wheels and guide rollers in good condition ☐
- Gate stops in good condition and not loose..... ☐
- Gate track is not damaged ☐
- Gate rack is tight & correct clearance between pinion wheel & rack ☐
- Gate operator mounting bolts tight..... ☐
- No oil leaks from gearboxes ☐
- Gearbox mounting bolts/nuts tight..... ☐
- Inside operator and control box clean ☐
- 'Baygon' Surface Spray around operator and control box (not on electronics)..... ☐
- All electrical connections tight..... ☐
- Limit Switches operate in appropriate positions ☐
- External safety devices work effectively / cleaned ☐
- Electromagnetic lock, if fitted, operates correctly & is clean ☐
- Wash down of control box and cover (particularly near corrosive/sea environments ☐
- General operation i.e. speed, auto close etc normal ☐

Comments

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Service performed by

10. WARRANTY

- a. Gate Drive Systems Australia warrants that the goods manufactured by it shall be free from defect in manufacture for a period of 12 months from the date of invoice. Should any fault occur within that period as a result of faulty workmanship or materials, Gate Drive Systems Australia will at its discretion, replace the product at no charge to the Customer except for removal installation & freight. The appropriate Serial Number must be quoted for all warranty claims.
- b. For the goods not manufactured by Gate Drive Systems Australia, we shall pass on the manufacturer's warranty to the Customer from the date of invoice. It is the manufacturer's discretion to repair or replace goods deemed to be defective as a result of faulty workmanship or materials.
- c. All goods must be returned to Gate Drive Systems Australia or its representative for inspection or testing to assess if a claim is justified. It is the responsibility and at the cost of the Customer, to remove & return the goods for inspection and freight costs are the responsibility of the Customer.
- d. The warranty is negated and will not apply in the following circumstances:-
 - i. If no proof of date of purchase can be produced.
 - ii. If the product has been used in a manner beyond its design parameters.
 - iii. If the product is tampered with or repaired by personnel not authorised to do so.
 - iv. In respect of loss or damage caused by rough treatment.
 - v. If the product is not used and maintained in accordance with instructions or recommendations listed in this Installation and Maintenance Manual.
 - vi. In respect of loss or damage caused by an Act of God or any other cause not within the manufacturers control.
- e. Goods returned under warranty for repair or testing will incur a charge to be fixed by the manufacturer if no fault is found.
- f. The Customer shall bear freight charges for removing & returning the goods for inspection and for the delivery & installation of any replacement or repaired product from a justified warranty claim.
- g. Save for the express conditions and warranties herein contained all other conditions or warranties (whether as the quality, fitness for purpose or any other matter) expressed or implied by statute, common law, equity, trade custom, usage or otherwise are hereby expressly excluded provided that nothing in these terms and conditions shall exclude or limit any breach or condition implied by law, the exclusion or limitation of which is not permitted by law.