

The Newsletter for Technicians



Welcome to Issue 3 of our Technical Newsletter. In this issue we are introducing the new and improved Magnum 3 control. And, speaking of Magnum controls, we have introduced a new tool; the Magnum Diagnostic Daughter Board (DDB).

This publication is intended to help keep technicians up to date. So please ensure a copy of this newsletter is distributed to each technician on staff.

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Introducing the Magnum 3 Control

The Magnum 2 control has undergone some software and hardware revisions and is being released as the Magnum 3. We take your input and suggestions very seriously and the Magnum 3 control reflects these types of changes.

Hardware Changes:

1. More range will be added to the door OPEN potentiometer for greater adjustability. **Caution!** Greater adjustability means it could be possible to adjust the OPEN speed beyond what is specified in ANSI 156.10 or 19. Be certain the door conforms to the relevant ANSI standard once final adjustments are completed.

Software Changes:

1. The software version is indicated on the microprocessor chip located on the board. The designation "8183a10x" indicates Magnum 2 software while "8183a11x" indicates Magnum 3 software.
2. The Magnum 3 control will now wait for 4 seconds (instead of 2 seconds) after closing into latch-check area before switching the header mounted swing side Acusensor back into the circuit.
3. The Magnum control has been reprogrammed to ignore the rush of motor start up current for a longer period of time. This will prevent the motor from accidentally tripping the Current Limit function when the door is reactivated while closing.
4. We have changed the motor frequency to avoid interference with the popular SensorMatic UltraMax Security system.
5. If for some reason the door is forced out of Back Check while it is at the Full Open point, then the "Open" power is re-applied until the door returns to the Back Check area. The timer that determines when the door is to close (for timed operation only; no effect in sequential mode) is not reset, so the time to close is based solely off when the door reaches Back Check the initial time.

New Tool !!

The Magnum Diagnostic Daughter Board (DDB)



The Magnum Diagnostic Daughter Board (DDB) is designed to be a visual aid to assist installers and service technicians to determine the status of signals that are being sent to the Magnum control. The DDB will work on either the Magnum 1, Magnum 2 or Magnum 3 control. The DDB does not require an external power supply. To use the DDB, remove the six pin Molex connector on the Magnum control and inset the cable from the DDB into the empty plug. The six pin Molex connector is then reconnected to the DDB. The multicolor LED's on the board are now easily viewable and will light up when their respective signal is applied.

This makes the DDB a very useful tool, especially when it comes to determining the correct arm/pre-load position or if you are trying to tell if a circuit is receiving an activation signal. The part # for this tool is 14-10597 and it sells for only \$40.00 LIST. Included with this Newsletter is a copy of the DDB Instruction Sheet for your reference.

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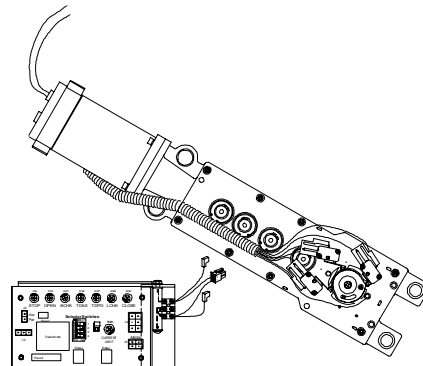
Looking to Replace the Model 1400 Analog Control on a GT-300/400 or 500 with a Magnum 3 Control?

We now have retrofit kits available to convert any Analog Controlled GT 300, 400 or 500 Unit to the new Magnum 3 control.

Bear in mind any upgrade to the Magnum 3 from the older style analog control, requires a conversion kit due to changes in the wiring harness and functions.

The kits include Magnum 3 Control & chassis assembly with braking module, short arm micro switch, operator switch harness, main harness assembly with terminal block, Magnum Control power harness and Magnum Board 3 Retrofit Manual For Swing Operator

Following are the kit part #'s.



Application	Single or Simultaneous Pair	Kit Part Number	List Price
Model 1400 Analog Controlled GT300/400/500 Swinger	Single	11-10293-01	\$ 485.00 *
Model 1400 Analog Controlled GT300/400/500 Swinger	Simultaneous Pair	11-10293-02	\$ 939.00 *

* For questions on pricing contact Customer Service at 1-877-622-2694.

Don't forget to register for our Regional Technical Training Classes !!

Two day courses are divided into Beginner and Advanced Classes. You get a 100+ Page Training Manual Full of Valuable Information and the Opportunity to take part in "Hands on Troubleshooting"



Below is a schedule of our Regional Technical Training Classes for the upcoming months.

Syracuse, NY, August 4-5, 2004
THE FACTORY (Muskego, WI) Sept, 2004
Houston, TX - Oct 2004
Orlando, FL - Dec. 6th - 10th, 2004
Western Canada, Winter 2005 -Tentative

Contact: Jan Grabowski @ 1-877-622-2694 ext 514 for more information

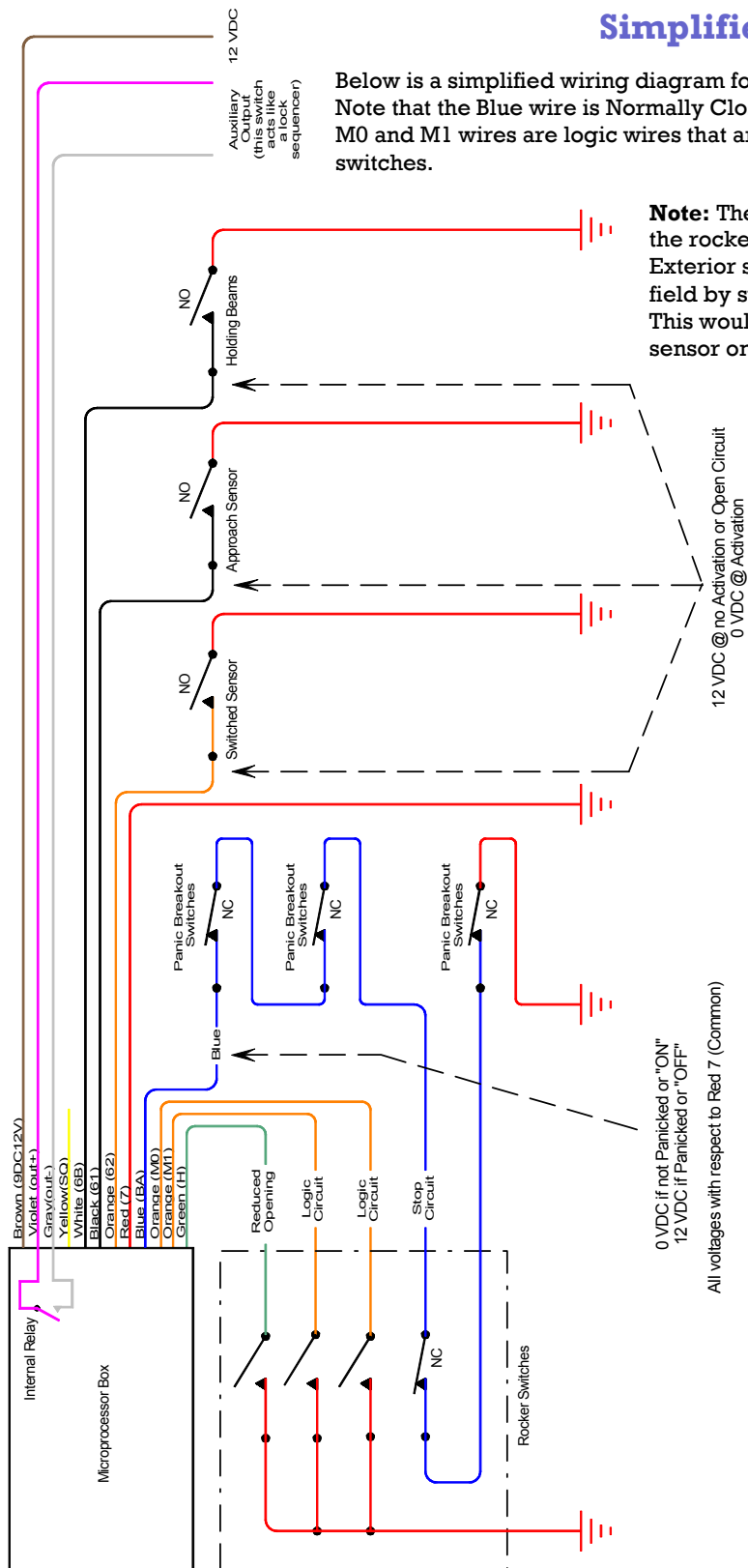
Register now to be assured of a seat!

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Simplified GT-1175 Wiring

Below is a simplified wiring diagram for the GT-1175 slider with U04 to U16 series control. Note that the Blue wire is Normally Closed. Opening this circuit "stops" the door. The orange M0 and M1 wires are logic wires that are used to achieve the various functions on the rocker switches.

Note: The "Switched" sensor is the one that is switched out when the rocker switch is put into One Way (EXIT) mode. This is the Exterior sensor by factory default. This can be changed in the field by switching which sensor connects to the Orange 62 wire. This would be done if it was desired to switch out the interior sensor on a One Way Entrance door for instance.



MICROPROCESSOR LOGIC TABLE - MODELS U04 AND HIGHER

H (GREEN)	M0 (ORANGE)	M1 (ORANGE)	BA (BLUE)	MODE
OFF	OFF	OFF	ON	AUTO (FULL OPEN)
OFF	ON	OFF	ON	ONE WAY (FULL OPEN)
OFF	ON	ON	ON	HOLD OPEN (FULL OPEN)
ON	OFF	OFF	ON	AUTO (REDUCED OPEN)
ON	ON	OFF	ON	ONE WAY (REDUCED OPEN)
ON	ON	ON	ON	HOLD OPEN (REDUCED OPEN)
ON/OFF	OFF	ON	ON	NIGHT

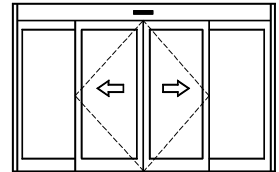
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General Information

1. All "U" series microprocessor controls from U04 to U16 are compatible. One control can be interchanged for another in the field with no wiring modifications.
2. When setting the stroke of a door while using the Handy Terminal, the door must be at a complete stop or you cannot advance to the second screen. The Handy Terminal will lock up until the door comes closed. The Handy Terminal will also lock up if the panic breakout circuit is open or if the door is turned OFF.
3. We are revising our parts catalog and publishing the new catalog sections on our web site as they are completed. Have a look for the most up to date information !!
4. We mentioned this in our previous newsletter but it is worth mentioning again. We have developed a test jumper troubleshooting kit to assist technicians in isolating circuits for diagnostics. The part number of the kit is: 11-10431. The kit includes jumpers for isolating main harnesses on analog, Magnum and U series microprocessor controls, and 1100 sliders. There are also jumpers to isolate rocker switches and panic switches. The price of the kit is \$ 56.00 LIST.

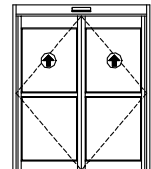
Sliders

1. All our automatic sliders now come with a single Optex Infrared Holding Beam as a detection back-up system. The module is installed at the factory and all you have to do is route the cables from the module down the sidelite stiles and connect the wire from the beam head to the cable. But be careful when connecting the wires! You must color match the cable jackets.
2. Due to a glitch in the rocker switch wiring, if both the "Exit" and "Night" mode rocker switches on the control panel switch assembly are engaged at the same time, the door is set to into "Hold Open" mode. This will be changed in upcoming versions of the rocker switch.
3. There are now different part numbers for full open bottom roller guides assemblies for narrow and medium stile doors. The part numbers are 21-9053-01 for Narrow Stile doors & 21-9053-02 for Medium Stile doors. The roller diameter was narrowed to accommodate medium stile units. The medium stile unit is distinguished by a dull finish on the edge of the wheel. The retaining clips on the roller assemblies have been replaced with steel spacers for reduced wear.
4. Power Hold Close can be set on One Way traffic sliding doors to increase security. This is done via the Handy Terminal. Go to SPECIAL FUNCTION/HOLD CLOSE on the Handy Terminal and choose Y



Swingers

1. A reinforced cast end cap for GT400/500 headers will be re-introduced this year. Until that time the headers will continue to be ½" longer than standard due to the older extruded double end caps used.
2. To eliminate wear on woodruff keys, we are now welding the #1 gear on all swing operator gearboxes.
3. The GT-7310 (GT-710 in a GT-300 OHC header) requires a modified top door track to allow the door to open to a full 90 degrees due to output spindle location. With a standard track the door will only open approx 70 degrees.
4. On U series microprocessor swingers with door mounted ACUGARD sensors that are only activated by means of a card reader or wall switch, it is possible to "lock out" the door sensors until the wall switch or card reader is activated. This will keep the ACUGARD door sensors out of the circuit when the door is used manually or if





NABCO TECHNICAL TIPS

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continued ...

cross traffic triggers the ACUGARD sensors while the door is closed. No special lockout is required. Simply order rocker switch wiring harness part # 11-10551 and plug it in series between the rocker switch harness and the main microprocessor harness. Then switch the door to NIGHT mode. The sensors will now be out of the circuit until a wall switch is pushed.

5. If you are installing an automatic swing door for Two Way Traffic and require the exterior sensor to be turned off at night, you should use the U16 microprocessor control and then order the optional rocker switch assy 21-9823 with extension harness 22-9186-02. This switch assembly has the EXIT function to turn off the exterior sensor at night.

WE SELL REBUILT PARTS !!

We have a very active Rebuilding Division that can supply you with **factory quality** rebuilt parts at a reduced price. Our prices are very competitive. You get a warranty on rebuilt parts that is the **same as our new parts warranty**. Turn around times are normally less than a week but if you need it sooner just let us know and we will ship it out the same day and you can send us the core after the fact. *See next page for a list of Rebuilt Parts.*

Give us a try, you will be glad you did.

NABCO ENTRANCES INC.
S82 W18717 Gemini Drive
Muskego, WI

Phone: 877-622-2694
Fax: 888-679-3319

Web: [http:// www.NabcoEntrance.com](http://www.NabcoEntrance.com)
Email: CustomerService@NabcoEntrances.com

Thank you for taking time to read our newsletter. We hope you liked it. The best and fastest way to receive this newsletter is by email. If you are not on our mailing list and would like to be, please contact Jan Grabowski @ 1-877-622-2694 ext 514 or by email: JGrabowski@NabcoEntrances.com

We appreciate your questions & suggestions and will endeavor to make this a publication that you will find helpful in keeping you informed and up to date. For comments and suggestions contact:

Mike Buckley
Email: MBuckley@NabcoEntrances.com
Tel: 1-866-622-8325

NABCO TECHNICAL TIPS

Rebuilt Gyro Tech Parts List

PRT #	DESCRIPTION	LIST	PRT #	DESCRIPTION	LIST
10-3501-R	REBUILT MODULE, MODEL 110	\$100.00	24-5516-R	REBUILT MOTION DETECTOR MDL 4400	\$145.20
10-3504-R	REBUILT TIME DELAY, 170, TESTED	\$96.80	24-5650-R1	REBUILT LCN RH OPERATOR MODEL GT710	\$150.00
10-3505-R	REBUILT LOCKOUT MODULE MOD 850, TESTED	\$100.00	24-5650-R2	REBUILT LCN LH OPERATOR MODEL GT710	\$150.00
10-3506-R	REBUILT LOCKOUT, MODEL 870, TESTED	\$200.00	24-7208-R	REBUILT 4300 SENSOR - PRESENCE	\$181.50
10-3507-R	REBUILT LOCKOUT MODULE, MODEL 950	\$108.90	24-8382-R	REBUILT REPLACEMENT MOTOR FOR RAE	\$321.42
10-3508-R	REBUILT HOLDING BEAM EMITTER, MODEL 1200	\$50.00	24-8720-01-R	REBUILT HYDRAULIC CLOSER - RH GT700	\$230.00
10-3509-R	REBUILT HOLDING BEAM DETECTR, MODEL 1200	\$50.00	24-8720-02-R	REBUILT HYDRAULIC CLOSER - LH GT700	\$230.00
10-3514-R	REBUILT UNIVERSAL CONTROL BOX MDL #3400	\$327.80	24-8901-10R	REBUILT CONTROLLER MICROPROCESSOR- U10	\$300.00
10-3515-R	REBUILT OPTIC BRD, SFTY SIDE, MDL 4000S	\$484.00	24-8901-11R	REBUILT CONTROLLER MICROPROCESSOR - U11	\$300.00
10-3516-R	REBUILT OPTIC BRD, APPR SIDE, MDL 4000A	\$242.00	24-8901-12R	REBUILT CONTROLLER MICROPROCESSOR- U12	\$300.00
10-3519-R	REBUILT LOCKOUT 4100, TESTED	\$100.00	24-8901-U1R	REBUILT CONTROLLER MICROPROCESSOR - U1	\$300.00
11-1390-R	REBUILT SWING OPERATOR ASSY - RH	\$560.00	24-8901-U3R	REBUILT CONTROLLER MICROPROCESSOR - U3	\$300.00
11-1391-R	REBUILT SWING OPERATOR ASSY - LH	\$560.00	24-9800-02 R	MAGNUM CONTROL BOARD-02 REBUILT	\$300.00
11-9942-R	REBUILT ACUSENSOR 2 ASSY	\$175.00	24-9800-R	REBUILT MAGNUM CONTROL	\$300.00
14-10213-R	REBUILT ACUSENSOR 1A WITHOUT HARNESS	\$175.00	41-1512-R	REBUILT CONTROL BOX MODEL 1400	\$200.00
14-5487-R	REBUILT SENSOR, MOTION - VG047	\$181.50	41-1837-R	REBUILT P.A.C. CONTROL BOX	\$266.20
14-5524-R	REBUILT SENSOR, MOTION - BI-DIRECT	\$145.20	41-2208-R	REBUILT CNTRL BOX FOR SLOW MODE OPER	\$200.00
14-5553-R	REBUILT SENSOR, MOTION-UNIDIRECT, VG087	\$145.20	41-2342-R	REBUILT CONTROL BOX ASSY CSA	\$200.00
14-8703-R	REBUILT MTR, LG FRAME 115 VDC PERM. MAG.	\$150.00	41-3800-R	REBUILT CONTROL BOX POPC MODEL 2600	\$200.00
14-8902-R	REBUILT ACUSENSOR 1A ASSY	\$175.00	41-4332-R	REBUILT OPERATOR POPC - RH	\$544.50
14-8903-R	REBUILT HANDY TERMINAL ASSY	\$250.00	41-5638-01R	REBUILT GT710 OPERATOR ASSY, RH	\$350.00
14-9869-R	REBUILT ACUSENSOR 2 WITHOUT HARNESS	\$375.00	41-5638-02R	REBUILT GT710 OPERATOR ASSY, LH	\$350.00
21-5210-R	OBSOLETE, REBUILT ELEC LOCK ASSY MODULE	\$100.00	41-7327-R	REBUILT OPERATOR, SC, RH, MODEL 410024	\$400.00
21-8133-R	REBUILT AUXILIARY CONTROL BOX	\$220.00	41-7328-R	REBUILT OPERATOR, SC,LH,MODEL 410025	\$400.00
21-8355-R	REBUILT AUXIL CTRL, 1100 WS, CANADA	\$220.00	41-7329-R	REBUILT OPERATOR, PAC, RH, MODEL 410051	\$400.00
21-8735-R	REBUILT CONTROL BOARD ASSY, 710	\$200.00	41-7330-R	REBUILT OPERATOR, PAC, LH, MODEL 410052	\$400.00
21-9206-R	REBUILT MOTOR, SHORT FRAME WITH ENCODER	\$160.00	41-7331-R	REBUILT OPERATOR, POSC, RH, MODEL 410026	\$544.50
21-9528-R	REBUILT 1175 OPERATOR ASSY W/ENCODER	\$510.00	41-7332-R	REBUILT OPERATOR, RH, POPC,RH,MDL 413608	\$544.50
21-9530-R	REBUILT 1175 OPERATOR ASSY W/O MOTOR	\$350.00	41-7334-R	REBUILT OPERATOR,WS,MODEL 22865	\$350.00
21-9922-R	REBUILT - ULTRA ELEC LOCK ASSY, F/SAFE	\$500.00	41-8327-R	REBUILT POPC LH OPERATOR MODEL 414374	\$544.50
21-9923-R	REBUILT - ULTRA ELEC LOCK ASSY, F/SECURE	\$500.00	41-8354-R	REBUILT CNTRL BOX, POPC, CAN. MDL 2900	\$200.00
22-0575-R	REBUILT MOTOR & COUPLING-SWING/SLIDER	\$181.50	41-8987-01R	REBUILT SWING OPERATOR ASSY W/ENCODER LH	\$560.00
22-8263-R	REBUILT HOLDING BEAM, EMITTER ONLY-1300	\$50.00	41-8987-02R	REBUILT SWING OPERATOR ASSY W/ENCODER RH	\$560.00
22-8264-R	REBUILT HOLDING BEAM, DETECTOR ONLY-1300	\$50.00	41-8987-03-R	REBUILT BI FOLD OPERATOR ASSY W/ENC LH	\$560.00
22-8625-R	REBUILT 1100 OPERATOR ASSY W/O MOTOR	\$435.60	41-8987-04-R	REBUILT BI FOLD OPERATOR ASSY W/ENC RH	\$560.00
24-1978-14R	REBUILT MOTION DETECTOR-WIDE BEAM	\$150.00	41-8987-05R	REBUILT ANTISLAM SWING OPERATOR LH	\$560.00
24-2250-R	REBUILT MOTION DETECTOR, NARROW BEAM	\$150.00	41-8987-06R	REBUILT ANTISLAM SWING OPRTOR W/SHT FR RH	\$560.00
24-3425-R	REBUILT TIME DELAY MODULE MODEL 2000	\$90.00	44-0392-R	REBUILT OPERATOR HOUSING, SWGR	\$242.00



NABCO ENTRANCES INC.

S82 W18717 Gemini Drive

P.O. Box 906

Muskego, WI 53150

Phone: 877-622-2694

Fax: 888-679-3319

Technical Assistance: 866-622-8325

www.nabcoentrances.com

Email: info@nabcoentrances.com

Diagnostic Daughter Board Instruction Sheet



Part # 14-10597-10

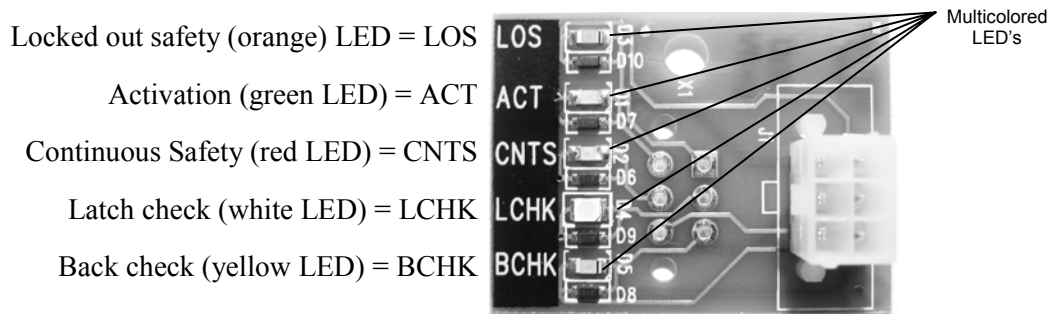
June 14, 2004

OVERVIEW:

Refer to Figure 1. The Diagnostic Daughter Board (DDB) is designed to be a visual aid to assist installers and service technicians to determine the status of signals that are being sent to the Magnum control. The DDB can work with all Magnum Controls. The DDB does not require an external power supply. To use the DDB, remove the six pin Molex connector at J1 on the Magnum 2 or Magnum 3 control (J4 on the Magnum 1 control) and insert the cable from the DDB into the empty plug. The six pin Molex connector is then reconnected to the DDB. The multicolor LED's on the board are now easily viewable and will light up when their respective signal is applied.

The text adjoining the five LED's is as follows:

LOS - Locked out safety	This is the signal on the White wire at connector # 4 on the Magnum 3 terminal block
ACT - Activation	This is the signal on the Black wire at connector # 6 on the Magnum 3 terminal block
CNTS - Continuous Safety	This is the signal on the Violet wire at connector # 3 on the Magnum 3 terminal block
LCHK - Latch check	This is the signal on the Orange wire at the latchcheck or door closed switch
BCHK - Back check	This is the signal on the Blue wire at the backcheck switch

Figure 1

To use the DDB, follow the steps below:

- Step 1 Remove the six pin wiring harness connector from plug J1 (or J4 for Magnum 1) on the Magnum control board.
- Step 2 Gently insert the male connector on the cable from the DDB into the empty plug on the Magnum control board.
- Step 3 Insert the wiring harness connector into the plug marked J1 on the DDB.
- Step 4 Observe the signals on the DDB. The LED's will only illuminate while a signal is present. There is no time delay applied to the LED's so if a signal is only momentary it might be difficult to observe especially under bright daylight conditions.

LOS	The orange LED will illuminate during the presence of a signal from a header mounted presence sensor.
ACT	The green LED will illuminate during the presence of a signal from an activation device such as a header mounted motion sensor or <u>approach</u> side door mounted sensor such as an ACUGARD 2 sensor.
CNTS	The red LED will illuminate during the presence of a signal from a <u>swing</u> side door mounted sensor such as an ACUGARD 2 sensor or from a panic breakout switch.
LCHK	The white LED will illuminate while the door is in latch check.
BCHK	The yellow LED will illuminate while the door is in back check.

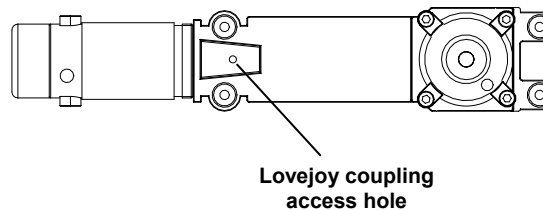
Once the diagnostic procedures are carried out, the DDB can be left connected to the Magnum control or removed at the technician's discretion. Note: The Diagnostic Daughter Board does not display Current Limit conditions or other conditions not outlined above.

USING THE DDB TO CORRECTLY PRE-LOAD AND INSTALL THE SWING ARM ON A GT-300/400/500 OPERATOR

The DDB can be used to easily install the arm in the correct location on the operator spindle. To install the arm perform the following steps:

- Step 1 Connect the DDB as outlined on the previous page.
- Step 2 Set the DIP switch # 4 on the Magnum control to OFF. When the switch is OFF, the door is in the sequential mode. One activation opens the door, a second activation is needed for the door to close.
- Step 3 Make all 120 VAC and activation switch connections to the unit. Adjust CLOSE speed on the Magnum control to approximately 12 O'clock. Adjust the LCHK speed on the Magnum control to approximately 9 o'clock. Both the white "LCHK" LED and the yellow BCHK LED will be on at this point.
- Step 4 Drill and tap the holes for installation of the arm mounting bracket or inswing track on the face of the door. With the arm off, activate the Magnum control. The green "ACT" LED will light while the wall switch is depressed, and the control will engage the operator. The operator spindle will turn until the spring is fully wound and the operator stops turning. At this point the LCHK LED will be off and the yellow BCHK LED will be on.
The operator is now fully wound and will remain this way until another activation is received.
- Step 5 While holding a 1/8" Allen wrench or similar item, activate the Magnum control again. The control will now allow the operator to release. Observe the LED's on the DDB. The spindle will begin unwinding at a relatively fast speed as dictated by the CLOSE potentiometer. As soon as the white LCHK Led comes on, stop the arm with your hand and using your other hand, insert the Allen wrench into the Lovejoy coupling access hole from the underside of the operator as shown in Figure 2 below. The operator is now pinned at the point at which the door goes into latch check when closing.

Figure 2



- Step 6 Open the door approximately 10 degrees and install the arm on the spindle so that the arm mounting bracket contacts the face of the door at the correct location.
- Step 7 Remove the Allen wrench from the Lovejoy coupling access hole and set the DIP switch # 4 on the Magnum board to ON for Timer Mode if required.
- Step 8 Re-apply power to the control. Readjust CLOSE and LCHK speeds as desired.

If you have questions contact Technical Services at 866-622-8325