



***Diamond Digital***

**Diamond Digital**

**DV150J/JB**

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**Colour TFT LCD Monitor**

**15" (38 cm) LCD Panel Size**

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## Reference Information

For future reference, write the following information about your monitor in the space below. The serial number is found on the back of the product or on the bottom of its stand.

### Monitor Information

Product Name: DV150J/JB

Serial Number:

Date of Purchase:

### Dealer Information

Dealer:

Telephone  
Number:

Address:



## Important Safety Instructions

Please read the following safety instructions before installing or cleaning your Diamond Digital monitor:

1. Unplug the monitor's power cable from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a soft cloth to clean the monitor housing.
2. Slots and openings on the back or top of the cabinet are provided for ventilation. They must not be blocked or covered. This product should never be placed near or over a radiator or other heat source, or used in a built-in installation unless proper ventilation is provided.
3. Never push objects of any kind, or spill liquid of any kind into this product.
4. Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages or other hazards.
5. Do not apply pressure to the LCD screen. Excess pressure can damage the LCD panel.
6. If any abnormal operation or accident (such as dropping the unit) occurs, disconnect the monitor from the wall power outlet and contact qualified service personnel.
7. Turn the audio volume control of the built-in speakers to minimum (0) and turn the monitor off before connecting or disconnecting any audio cable.

# Features

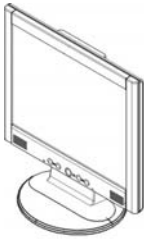
Your DV150J/JB Monitor features:

- ◆ **XGA (1024 x 768 pixel) Resolution LCD Panel**
- ◆ **High Brightness Level – 250 cd/m<sup>2</sup> (typical)**
- ◆ **High Contrast Ratio – 450:1 (typical)**
- ◆ **True Colour Display**  
With 16.2M (6bit + FRC) colour, the DV150J/JB monitor offers you better image quality.
- ◆ **High Quality Ratiometric Expansion**  
With any resolution within the monitor's specified range, your Diamond Digital DV150J/JB monitor can expand the image to full screen.
- ◆ **Plug and Play Compatibility with Microsoft® Windows® 95, 98, 2000, Me and XP**
- ◆ **Space Saving - only 204 mm deep**
- ◆ **Light Weight - only 3 kg**
- ◆ **Lower Power Consumption**  
30W maximum during operation with audio.
- ◆ **Power Saving**  
Power management complies with VESA DPMS standard. When the system is idle (in monitor off mode), the monitor automatically cuts its power consumption to less than 3 W.
- ◆ **On Screen Display**  
Allows you to adjust all settings simply using on-screen menus.
- ◆ **Support Kensington security locks**

# 3 Unpacking the Monitor

Please check that the following items are included with your monitor. If they are missing or damaged, please contact your place of purchase immediately.

**LCD monitor**



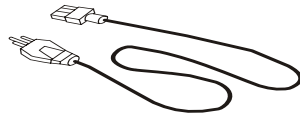
**User's Manual**



**VGA Cable**



**Power Cord**



Locate the model name and the serial number label on the back of your monitor, and write the details of the monitor and your place of purchase in the space on page (ii) of this manual for future reference.

# 4 Hardware Installation

## Connecting the Monitor Base

Remove the base from the packing box and place it on the desk. Next, remove the LCD display and carefully seat it on the base. (See fig.1-1 )



Figure 1-1

## Viewing Angle Adjustment

The LCD Monitor is designed to allow users to adjust the viewing angle. The screen angle can be tilted from  $-5^{\circ}$  to  $+30^{\circ}$ .(See fig. 1-2)

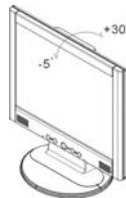


Figure 1-2

## Connecting the Display to your Computer Using the VGA cable

1. Power off your computer.
2. Connect one end of the VGA signal cable to the LCD Monitor's VGA port. (See Fig 1-3)
3. Connect the other end of the signal cable to the VGA port on your PC.
4. Make sure connections are secure.

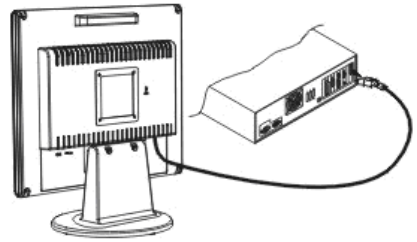


Figure 1-3

## Connecting the AC Power

1. Connect the power cord to the monitor. (See Fig. 1-4)
2. Connect the power cord to an AC power source.

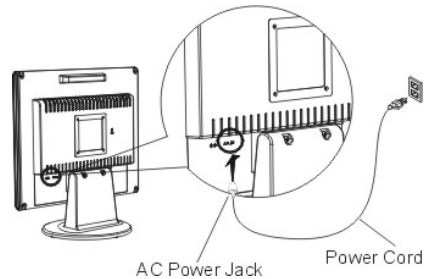


Figure 1-4

## Connecting the Audio Cable

1. Connect the audio cable to the "LINE OUT" jack on your PC's audio card or to the front panel's "AUDIO OUT" jack of your CD ROM drive. (See Fig. 1-5)
2. Connect the other end of the audio cable to the LCD Monitor's "LINE IN" jack.

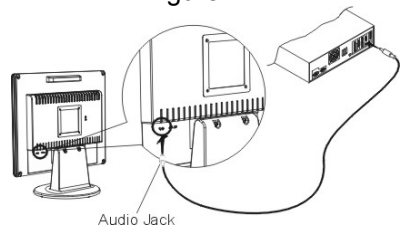


Figure 1-5

## Instructions for VESA Mounting

To detach the LCD Monitor from its stand, unscrew the two screws ❶ for the monitor stand and pull it downwards to remove, then unscrew the two screws ❷ for the monitor stand bracket and pull this down to remove.

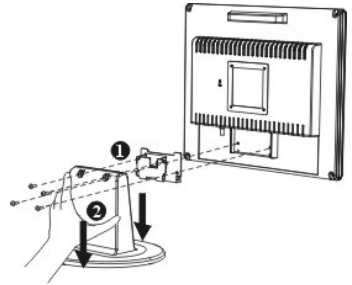


Figure 1-6

## Interface for Arm Applications

Before installing the mounting device, please refer to Fig.1-6.

The rear of this LCD display has four integrated 4 mm, 0.7 pitch threaded nuts, as well as four 5mm access holes in the plastic covering as illustrated in Figure 1-7. (These specifications meet the VESA Flat Panel Monitor Physical Mounting Interface Standard).

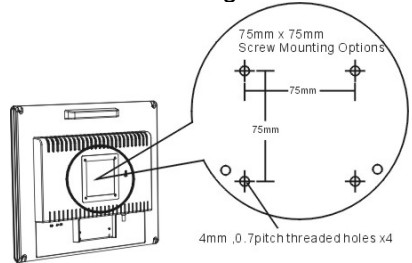


Figure 1-7

# 5 Windows driver Installation

The DV150J/JB is fully Windows Plug and Play compatible so no specific Windows drivers are required for installation.

## **Windows 98, ME, and 2000**

The first time you start Windows after connecting your new monitor, the system will detect the monitor and automatically start the **Add New Hardware** wizard. Just follow the prompts to load the native Plug and Play drivers.

## **Windows XP**

The first time you start Windows after connecting your new monitor Windows XP will automatically load the native Plug and Play drivers.

# Setting the Display Resolution

## Choosing The Best Resolution

All Liquid Crystal Displays (LCDs) have a fixed resolution that is the same as the maximum resolution that may be displayed on the LCD. In the case of the DV150J/JB the LCD resolution is 1024 x 768 pixels. This is also known as the “native” resolution of the monitor. Lower resolutions can be displayed at full screen through an interpolation circuit. Because the lower resolution must be expanded, the quality of the displayed image is not as good as that available when the native resolution is displayed. For optimal performance from any LCD monitor, you must use the monitor’s native resolution.

If you are using Windows 95, 98, 2000, Me, XP or NT 4.0, you can change the resolution as follows:

1. Double-click the **Display** icon in the control panel.
2. From the **Display Properties** dialogue box, select the **Settings** tab.  
There is a slider that alters the displayed resolution.  
Set the resolution to 1024 x 768.
3. *For Windows NT users only:* select a refresh rate of 60Hz and click **Test**.  
A test pattern will be displayed. Make sure that there are no error messages shown by the monitor. If an error message is displayed, check the resolution and refresh rate settings or choose a different refresh rate.
4. Click **OK** to close **Display Properties**.

If you are using an Apple Macintosh, change the resolution by doing the following:

#### MacOS 8.x/9.x

1. Click the Apple icon at the top, left corner of the screen, select **Control Panel** and then select **Monitors**.
2. Select a resolution of 1024 x 768 pixels with between 60Hz and 75Hz refresh rate.
3. If refresh rates of 60Hz or 75Hz are not available, click **Recommended** in the **Show** drop-down box and change it to **All**. Select the resolution and refresh rate as above.

A colour depth of either **Thousands** or **Millions** is recommended.

#### MacOS X

1. Click the Apple icon at the top, left corner of the screen, select **System Preferences** and then select **Displays**.
2. Select a resolution of 1024 x 768 pixels with between 60Hz and 75Hz refresh rate.
3. A colour depth of either **Thousands** or **Millions** is recommended.

### **Supported Graphics Modes and Refresh Rate Selection**

There is no need to choose the highest possible refresh rate when using an LCD monitor. It is not technically possible for an LCD monitor to flicker. Even at a refresh rate of 60 Hz you will get an absolutely flicker-free image.

For best results, it is important that you set the graphics adaptor to use one of the monitor's preset display modes shown in **Table 1** on the next page. Other graphics signals may be displayed poorly or not at all. Note that the DV150J/JB's preset modes correspond to VESA or Apple Macintosh standard graphics signals for these resolutions. All recent models of graphics adaptors

should be able to support these modes. For the native resolution of 1024 x 768 pixels, for example, refresh rates of 60, 70 and 75 Hertz are supported.

With Windows 95, 98, ME, 2000 or XP you can change the refresh rate of the graphics signal as follows:

1. Double click the **Display** icon in the control panel.
2. From the **Display Properties** dialogue box, select the **Settings** tab and click the **Advanced Properties** button.
3. For Windows 95, 98, and ME select the **Adapter** tab, for 2000 and XP select the **Monitor** tab. The refresh rate selection field is located in the centre, at the bottom of the dialogue box.
4. Choose a refresh rate that corresponds with one of the factory modes from the table below.
5. Click **Apply**, and then **OK** twice.

**Please Note:**

- Graphics modes that are not listed in the table may not be supported. For an optimal picture it is recommended that you choose a graphics mode with a resolution of 1024 x 768 pixels that is listed in **Table 1** on the next page. Resolutions of 640 x 480, 800 x 600 and 1024 x 768 pixels are supported. The default setting may require some adjustment before use.
- The displayed image may show some distortion or noise that can be caused by the signal from the VGA card if it does not correspond with the usual standard. This is not however, a problem with the monitor. If it is still visible after using the Automatic adjustment, you can usually improve the displayed image by manually adjusting the phase, clock and horizontal position settings using the OSD. See Chapter 7, **Adjusting the Monitor**, for more details.
- When you shut Windows down you may see interference lines on your screen. This caused by the manner in which Windows controls the graphics card at this point and is normal with all LCD monitors.
- To extend the service life of the product, we recommend that you use your computer's power management functions to turn the monitor off after extended idle periods.

**Table 1****Standard Timing Table**

If the selected timing is NOT included in table below, this LCD monitor will use the most suitable available timing.

<b>Resolution</b>	<b>H. Freq. (KHz)</b>	<b>V. Freq. (Hz)</b>	<b>Pixel Freq. (MHz)</b>	<b>H/V Sync. Polarity</b>	<b>Mode</b>
640 x 350	31.469	70.087	25.175	+/-	VGA-350
640 x 400	24.830	56.420	21.050	-/-	NEC PC9801
640 x 400	31.469	70.087	25.175	-/+, -/-	VGA-400-GRAPH NEC PC9821
640 x 480	31.469	59.940	25.175	-/-	VGA-480
640 x 480	37.861	72.809	31.500	-/-	VESA - 480 - 72Hz
640 x 480	37.500	75.000	31.500	-/-	VESA - 480 - 75Hz
720 x 400	31.469	70.087	28.322	-/+	VESA-400-TEXT
800 x 600	35.156	56.250	36.000	+/+	SVGA
800 x 600	37.879	60.317	40.000	+/+	VESA-600-60 Hz
800 x 600	48.077	72.188	50.000	+/+	VESA-600-72 Hz
800 x 600	46.875	75.000	49.500	+/+	VESA-600-75 Hz
832 x 624	49.725	74.55	57.2832	-/-	APPLE MAC-800
1024x 768	48.363	60.004	65.000	-/-	XGA
1024x 768	53.964	66.132	71.664	+/+	COMPAQ-XGA
1024x 768	56.476	70.069	75.000	-/-	VESA-768-70 Hz
1024x 768	60.023	75.029	78.750	+/+	VESA-768-75 Hz

# 7 Adjusting the Monitor

## User Controls

A brief description and the location of all LCD Monitor function controls and indicators:

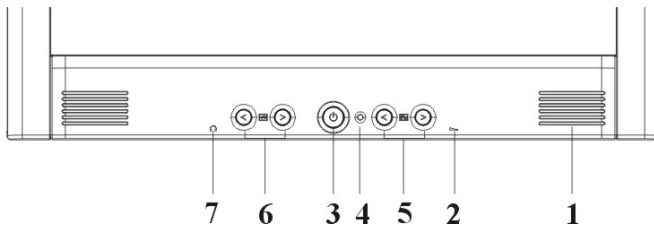


Figure 2-1

1	<b>Stereo Speakers</b>	PC Audio Stereo output.
2	<b>Speaker Volume Control</b>	Increase Volume - Turn knob clockwise. Decrease Volume - Turn knob counter clockwise
3	<b>DC Power Switch</b>	Press the power switch to switch the monitor ON/OFF.
4	<b>DC Power-On Indicator</b>	LED lights Green color --- Power is ON. LED lights Yellow --- Monitor is in "Power Saving Mode". LED is off --- Power is OFF.
5	<b>Function Select Buttons</b>	Press either left or right control button for OSD (On Screen Display) menu selection.
6	<b>Adjustment Control Buttons</b>	Press the left button to decrease the OSD setting and press the right button to increase the OSD setting.
7	<b>External Headphone Jack</b>	The monitor speakers will be disabled when using an external headphone or external speakers.

## Adjusting the Monitor's Display

### OSD Function Menu

To access the OSD Main menu, simply press one of the Function Select control buttons, and the menu diagram will pop up on the screen as shown on Fig. 2-2.

Continue pressing the Function Select buttons to scroll through the available menu items, then press the Adjustment Control buttons to adjust the setting of a selected item.

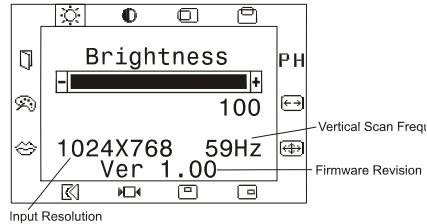


Figure 2-2

### Function Description

Icon	Function	Function Description
	Brightness	This function increases or decreases the brightness of the image.
	Contrast	This function increases or decreases the difference between the dark and light colour.
	H-Position	This function shifts the entire display image left or right.
	V-Position	This function shifts the entire display image up or down.
<b>PH</b>	Phase	This function is to adjust the focus and clarity of the display.
	Clock	This function carries a frequency tracking feature that offers the user to have better stability and clarity. Increasing Clock value can be up to +50 scales. Decreasing Clock value can be down to -50 scales.
	Auto Adjustment	This function will adjust the display size automatically to fit full screen.
	OSD H-Position	This function moves the OSD menu window left or right.
	OSD V-Position	This function moves the OSD menu window up or down.
	Graph Text	This function is to choose a display that allows maximum graphics text quality. The resolution selection can either be 640 x 400 or 720 x 400. Please refer to Chapter 6 "Standard Timing" Table for of different timing modes.
	Recall	The recall function will return all adjusted parameters to factory preset values.
	Language	Five OSD language options are available: English, German, French, Spanish and Italian. Press the left or right Adjustment Control button to select other language.
	Colour Temperature	Colour Temp.: Push the (+ -) button to select a different colour temperature. Please see the diagram below for function and description.
	Save Exit	Saves the values of this setting and exits the OSD menu function.

Icon	Function	Description
<b>9300</b>	CIE coordinated Color Temperature of 9300°K	Sets the CIE coordinate color temperature to 9300°K
<b>6500</b>	CIE coordinated Color Temperature of 6500°K	Sets the CIE coordinate color temperature to 6500°K
<b>User</b>	Three colors (Red, Green, Blue) can be adjusted from the OSD menu	Sets the settings to a by user defined CIE Temperature.

## **Picture Optimisation**

The easiest way to obtain an optimal picture is by using the **Auto Adjustment** function in the OSD menu. This only works reliably if the graphics adaptor is set to use one of the monitor's factory modes (see **Table 1** in the previous chapter) and if you are displaying a suitable stationary image (such as the Windows desktop).

The monitor will remember the settings obtained by the auto calibration settings and use them whenever you turn the monitor on. Note that you may need to readjust the monitor if it is connected to a different computer or if the computer's graphics adaptor is replaced.

If you are still not satisfied with the result, you can enhance the image by using the monitor's manual adjustment functions.

## **Manual Picture Adjustment**

Adjustments to the displayed image and audio volume are made using the On-Screen Display (OSD), and the buttons on the front of the monitor.

To manually adjust the image:

1. Display your operating system desktop
2. Open the OSD menu by pressing one of the Function keys on the monitor.
3. Press ► or ◀ to select the **Clock** function.
4. Press ► or ◀ to increase or decrease the sampling clock to get the optimum picture. Look closely at the picture displayed, especially

surrounding text and icons, for any movement or change. Adjust the **Clock** setting and see how this affects this “noise” or movement. Make sure that in correcting noise in one part of the screen the setting does not create it in another. You should, with careful adjustment, be able to obtain a picture with no visible noise in any section of the screen.

5. If some noise or distortion is still visible select **Phase (PH)** using the **Fn▶** or **◀** buttons.
6. With the **Clock** set to the optimal value adjust the **Phase** to further optimise the displayed image. You should now be able, with a combination of the Phase and Clock settings, to obtain a perfectly stable image.
7. Finalise the manual adjustment using the **H-Position** and **V-Position** functions

If you are still not satisfied with the result, try repeating the above procedure using a graphics signal that has a different refresh rate.

### **Please Note:**

You must use one of the factory modes when manually adjusting the picture. If you are having difficulties generating a supported mode, ask your computer dealer or the distributor or manufacturer of your graphics card for assistance.

The procedures described in this chapter should be performed for every resolution and type of graphics signal that you wish to use. For example, if a particular application requires a resolution of 800 x 600 pixels, but all other applications use the monitor’s native resolution, you will need to display the test pattern and make adjustments twice.

The monitor will remember your settings and use them whenever you turn the monitor on. Note that you may need to re-adjust the monitor if it is connected to a different computer or if the computer’s graphics adaptor is replaced.

# 8 Frequently Asked Questions

## **The image is blurred, how can I get the best quality picture?**

- ◆ Read chapter 6, *Setting the Display Resolution*, and select a graphics signal with the correct resolution and refresh rate. Then read chapter 7, *Adjusting the Monitor*, and make adjustments to the displayed image based on these instructions.
- ◆ Have you used a VGA extension cable?

If so, remove the extension cable and check the displayed image. Has the image quality improved? Optimise the image using the procedures in chapter 7 with the extension cable removed. Reconnect the extension cable once the image has been optimised. Depending on the characteristics and type of the extension cable, some blurring or distortion may occur due to conduction losses of the extension cable. You can minimise these losses by using an extension cable with better conduction quality or with a built-in booster.

- ◆ Does the blurring only occur at resolutions lower than the native (maximum) resolution?

Please read chapter 6, *Setting the Display Resolution*. Select a graphics signal that uses the monitor's the native resolution (1024 X 768 pixels).

## **Why does the image look yellow, blue or pink instead of showing the correct colours?**

- ◆ The most common cause of this problem is a loose VGA signal cable or connector. Check that the cable is securely connected to the computer.
- ◆ Check the VGA signal cable for damage. If any pins are bent or broken off, contact your dealer or an authorised Mitsubishi Electric service agent (see Chapter 10 for details).

### **No image is displayed, what can I do?**

- ◆ Check that the light (LED) next to the monitor's power button is lit and is green in colour. If the LED is green, press one of the Function Select buttons on the monitor to access the On Screen Display. If the message *NON PRESET MODE* appears there, please read chapter 6, *Setting the Display Resolution* and reset the graphics card to one of the monitor's supported graphics signals.
- ◆ If the LED is orange the monitor is in power saving mode. Press a button on the computer keyboard or move the mouse to wake the computer. If that does not help, check that the VGA cable is securely plugged into the computer. Also check the pins of the VGA cable's connector. If any pins are bent or broken off, then contact your dealer (see Chapter 10 for details).
- ◆ If the LED is not lit at all, check that the monitor is plugged into the power supply mains socket and that the power switch is turned on. Check that the monitor's power switch is also turned on.

### **The image is or distorted, flashes or flickers:**

- ◆ Check that the monitor's signal cable is securely connected to the computer.
- ◆ Read the chapters 6 and 7 of this manual, then select the correct resolution, refresh rate and make adjustments based on these instructions.

### **The image is displaced in one direction:**

- ◆ Use the **H- Position** (horizontal position) adjustment in the monitor's OSD to reposition the image.
- ◆ Read the chapters 6 and 7 and then select the correct resolution, refresh rate and make adjustments based on these instructions.



## Specifications

Model: **Diamond Digital DV150J/JB**

### **Display Characteristics**

<b>Display Type</b>	15" active matrix Thin Film Transistor Liquid Crystal Display
<b>Viewable Diagonal Area</b>	38 cm / 15"
<b>Native (Maximum) Resolution</b>	1024 x 768 pixels
<b>Colours</b>	16.2 million (6 bit + FRC)
<b>Contrast Ratio</b>	450:1 (typical)
<b>Brightness</b>	250 cd/m <sup>2</sup> (typical)
<b>Response Time</b>	16 ms (typical)
<b>Viewing Angle (Horizontal, Vertical)</b>	-60° ~ +60°, -60° ~ +40° (typical)
<b>Dot Pitch</b>	0.297mm x 0.297 mm

### **User Interface**

<b>Control</b>	Power switch with LED indicator
<b>On-Screen Display Functions</b>	Contrast, Brightness, Vert. & Hor. Position, Phase, OSD Position, Auto Adjustment, Clock, Graph/Text, Language, Recall, Colour temperature, Save and Exit.
<b>Microprocessor Controlled Graphics Modes</b>	16 Preset modes: Including 11 VESA & 4 DOS

## **Input Signal**

<b>Line Frequency</b>	24 – 61kHz multi-frequency
<b>Image Frequency (Refresh Rate)</b>	56 - 75Hz
<b>Video Signal</b>	RGB analogue (Positive polarity) 0.7 Vpp/75 Ohm
<b>Synchronization</b>	Separate TTL, composite TTL
<b>Signal Connection</b>	15-pin mini D-sub

## **Physical Characteristics**

<b>Power Management</b>	VESA DPMS, Energy Star
<b>Maximum Power Consumption</b>	30 Watts
<b>Power Saving Mode</b>	< 3 Watts
<b>Operating Voltage</b>	Automatic switched mode power supply, 100 - 240 V, 50 - 60 Hz
<b>Dimensions (W x H x D)</b>	353mm x 346mm x 204mm
<b>Weight</b>	3.0 kg
<b>Temperature (Operating)</b>	5°C - 40°C
<b>Air Humidity (Operating)</b>	20% - 80%

## **Regulatory Certification**

<b>Safety</b>	AS/NZS 60950:2000
<b>EMI/EMC</b>	AS/NZS CISPR22:2002 (C-Tick).
<b>Other</b>	ISO 13406-2

# **IO** Service Contacts

If problems remain after checking this manual, please contact your place of purchase or contact:

## **Australian Service Contacts**

Visit the Customer Support section of Mitsubishi Electric Australia's web site at

**[www.mitsubishielectric.com.au](http://www.mitsubishielectric.com.au)**

for details of your nearest Mitsubishi Electric Authorized Service Center or contact the Service Department for your state:

## **New South Wales and Australian Capital Territory**

348 Victoria Road

Rydalmere, NSW, 2116

Telephone: (02) 1300 651-808

Fax: (02) 9684-7684

## **Queensland**

Unit 12 / 469 Nudgee Road

Hendra, QLD, 4011

(Airlink Business Park)

Telephone: (07) 3623-2000

Fax: (07) 3630-1888

## **South Australia and Northern Territory**

77 Port Road

Hindmarsh, SA, 5007

Telephone: (08) 8340-0444

Fax: (08) 8340-0555

## **Victoria and Tasmania**

4 / 303 Burwood Hwy

East Burwood, VIC, 3151

Telephone: (03) 9262-9899

Fax: (03) 9262-9850

## **Western Australia**

5 / 329 Collier Road

Bassendean, WA, 6054

Telephone: (08) 9377-3411

Fax: (08) 9377-3499

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## **New Zealand**

Contact:

BDT New Zealand Ltd.

1 Parliament St.

Lower Hutt

Wellington

Telephone: (04) 560-9100

Fax: (04) 560-9140

Web site: [www.bdt.co.nz](http://www.bdt.co.nz)