

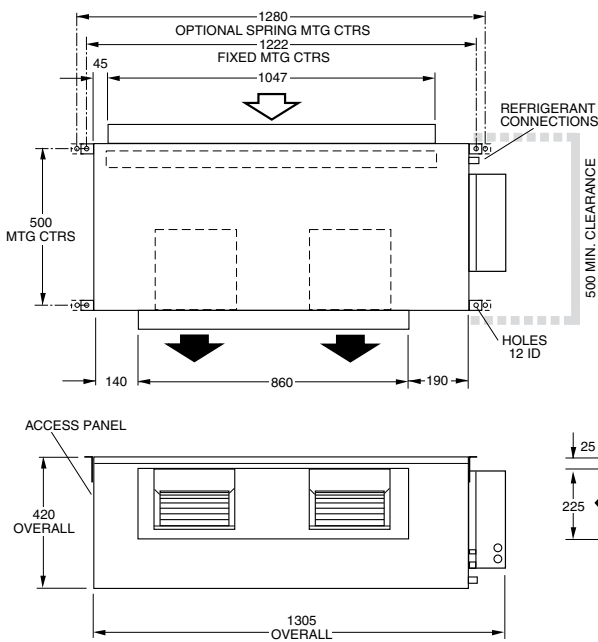
# ISD 175KG-DN (Digital c/w TZT-701 Controller)

## Ducted Split System R410A Indoor Units

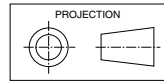
## Installation & Maintenance

**Fig. 1 Dimensions (mm)**

Not to Scale



### ISD 175KDG



Net Weight 108 kg

### GENERAL

These ISD 175KG-DN indoor units are designed to be coupled with the OSA 175RKTHG outdoor units. The '-DN' indicates the unit is supplied complete with TZT-701 room temperature controller and safety drain tray.

Units must be installed in accordance with all national and local safety codes.

### Options

1. Filter Box c/w polypropylene net filter
2. Spring Mounting Kit
3. Electric Heater Box
4. Supply & Return Air Plenums
5. TZT-701 Accessories (refer overleaf).

### SAFETY DRAIN TRAY

The unit is supplied with a safety drain tray to protect your ceiling against accidental damage. The safety drain tray is best secured to the ISD unit **after** the unit has been suspended in the ceiling, however it is possible to fit it **before** if circumstances make this easier.

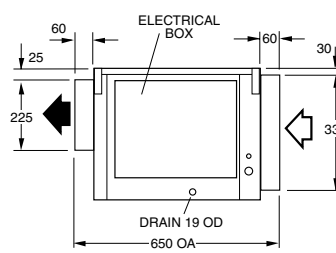
### AIR FILTRATION / FILTER BOX (Option)

As air filtration requirements vary, filters are not supplied with the unit. Filters should ideally be installed on the return air side of the unit, no closer than 500mm from the back of the unit and easily accessible for cleaning. To maximise the efficiency of air flow, the return air filter should be twice the area of the ISD unit's return air spigot/s. If efficiency is less of a concern a Filter Box is available.

The Filter Box is installed by unscrewing the return air spigot and replacing it with the Filter Box's filter-integrated spigot. The filter may be accessed from either side of this spigot. This new spigot has a depth of 140 mm, instead of 60 mm.

### ELECTRIC HEATER BOX (Option)

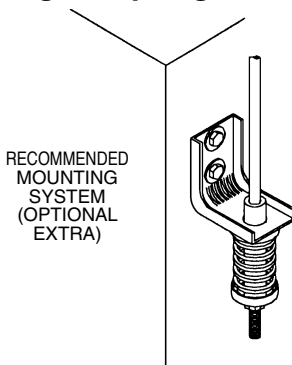
The Electric Heater Box is installed by unscrewing the supply air spigot and replacing it with the Electric Heat Box's element-integrated spigot. This new spigot has a depth of 195 mm, instead of 55 mm. A separate page of installation instructions is supplied with the Kit.



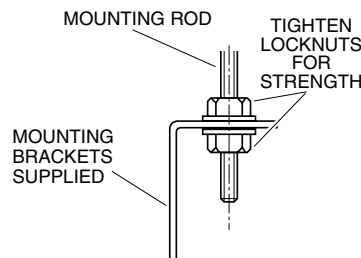
### NOTE

The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

**Fig. 2 Spring Mounting**

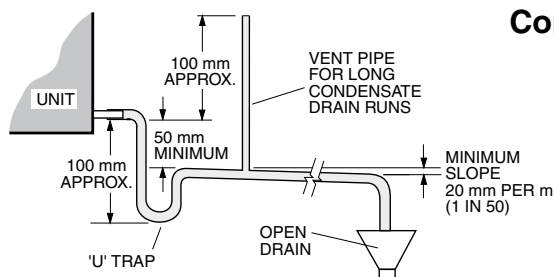


**Fig. 3 Solid Mounting**



**Fig. 4**

### Condensate Drain



### INSTALLATION

#### Positioning & Mounting

Provide 500 mm minimum clearance to both ends of the unit.

If the Electric Heat Kit or Filter Box options are to be used, allow adequate clearance for servicing.

If low noise is a critical factor in the installation, refer to Figure 6 for noise isolation recommendations.

It is recommended that the unit be mounted using the spring mounting system, supplied as an optional extra (Fig.2). This system minimises transfer of vibration into the building structure.

If a more rigid installation can be tolerated, then suspend the unit from four threaded rods (not supplied) attached to the ceiling. Four 'L' shaped brackets are supplied on the unit to facilitate this method. These brackets must first be unscrewed, reversed and resecured to enable rod attachment.

The unit has a built-in sloping drain tray, therefore mount it level.

When finally positioned, tighten the lock nuts on the mounting rods from above and below the mounting flange to give a firm installation (see Fig. 3).

### Condensate Drain

The condensate drain should be trapped outside the unit cabinet. The trap should have a vertical height of at least 50 mm. The drain should have a slope of at least 1 in 50 and must not be piped to a level above the unit drain tray. (Refer Fig.4).

For long condensate pipe runs, fit a vent pipe near the drain trap. The top of the vent pipe must be at least 100 mm above the ISD unit's drain tray.

It is essential that the drainage system for the evaporator is checked by pouring water in the drain tray and seeing that it discharges at the end of the drain and does not overflow the drain tray.

**Note:** The built-in drain tray can be removed for cleaning (or fan access) by first removing the unit's base.

### INDOOR-OUTDOOR UNIT CONNECTIONS

Refer to the relevant OSA Outdoor Unit 'Installation & Maintenance' pamphlet for piping instructions. For wiring connections, refer to the Outdoor Unit wiring diagram in conjunction with the ISD wiring diagram in this pamphlet.

### REFRIGERATION PIPING

#### Pipe Connection Sizes (mm OD) & Type

Liquid : 13 mm OD ( $\frac{1}{2}$ " ) flare

Suction : 22 mm OD ( $\frac{7}{8}$ " ) sweat

The ISD is shipped from the factory with a pressurised holding charge of nitrogen. Immediately before removing any brazed pipe connection's seal, reduce the holding charge to atmospheric.

**Warning:** Failure to do so may cause injury.

Refer to the Outdoor Unit 'Installation & Maintenance' pamphlet for evacuation procedure and piping requirements.

### ELECTRICAL WIRING

The electrical supply required (via the Outdoor Unit) is specified on the Outdoor Unit's wiring diagram.

Electrical work must be carried out by a qualified electrician in accordance with local supply authority regulations and the wiring diagram.

In a free blow or low resistance application, beware of exceeding the fan motor's full load amp limit (refer Outdoor Unit's wiring diagram).

**Note:** The TZT-701 Controller can automatically switch the indoor fan off during de-ice, if selected, therefore no additional wiring is required to achieve this result.

### INDOOR FAN SPEED

If the air returning to the indoor unit is regularly expected to be above 50%RH, then the coil face velocity should be limited to be 2.5 m/s or less (refer Air Handling graph in Technical Data pamphlet).

High humidity levels can occur in tropical or subtropical conditions, and/or when heavily moisture laden fresh air is introduced. Select a fan speed that avoids water carry-over problems.

### TZT-701 CONTROLLER

The following components are supplied loose inside the electrical box:

1. TZT-701 Wall Control plaque, including wall mounting plate and battery.
2. 10 m interface lead (electrical box-to-plaque).
3. 10 m interconnecting power lead (ISD indoor unit-to-OSA outdoor unit); 5 core.
4. TZT-701 Installation Instructions booklet.
5. TZT-701 User's Operating Instructions.

Optional

1. Remote return air sensor c/w 5m lead and no case.
2. Remote return air sensor c/w case.
3. Remote return air temperature sensor lead; 1.5, 6, 12 or 25 m.
4. 20 m extended interface lead (electrical box-to-plaque).
5. ISD indoor unit-to-OSA outdoor unit interconnecting power lead; 12.5 m or 25 m; 7 core.

### Installation

The TZT-701 Controller PCB is supplied pre-installed in the ISD unit's electrical box.

1. Isolate the ISD unit from power supply, then remove electrical box cover.
2. Remove the TZT-701 Wall Plaque box supplied loose inside the electrical box.
3. Follow the instructions supplied in the TZT-701 Installation document supplied.

### SAFETY DRAIN TRAY

The safety drain tray is best secured to the ISD unit **after** the unit has been suspended in the ceiling, however it is possible to fit it **before** if circumstances make this easier.

1. Unscrew the supporting brackets from their temporary shipping position, inside the drain tray, and retain the screws.
2. The drain tray has pre-drilled holes designed to align with the screws on the unit. One at a time, remove a screw from each bottom corner of the ISD unit and fit a bracket using the same screws.
3. Position the drain tray's pipe exit so it is at the same end as the ISD unit's drain pipe exit.
4. Supporting the drain tray from underneath, then secure the drain tray to each bracket using the supplied screws.

5. Connect the drain pipe to a suitable drain line with an appropriate slope to allow free drainage. This drain line does not require trapping. Test the drain with water to ensure it clears safely.

**DO NOT** let the ISD unit's condensate drain exit into this safety drain tray.

### ISD/OSA SYSTEMS WITH ELECTRIC HEATER BOX

Replace the systems external fuse with the size recommended in the table on the Outdoor Unit's wiring diagram.

### COMMISSIONING

Indoor Unit

1. Check that the thermostat is correctly wired and set at the desired temperature.
2. Check that the air filter (if fitted) is clean.
3. Check that the fan runs freely without vibration.
4. Check condensate drain and safety drain tray for free drainage.

Refer to Outdoor Unit Installation Instructions in order to complete the start-up and commissioning procedure for the complete air conditioning system.

Demonstrate the TZT-701 Wall Control to the owner/user, after having first thoroughly familiarised yourself with the User's Operating Instructions. This document is to remain with the owner/user.

### MAINTENANCE

#### Weekly For First Four Weeks

1. Check air filter (if fitted); vacuum clean as necessary.
2. Check condensate drain for free drainage.

#### Monthly

Check air filter (if fitted); vacuum clean as necessary.

#### Six Monthly

1. Check condensate drain and safety drain tray for free drainage.
2. Check heat exchanger coil; vacuum or brush clean as necessary.
3. Check the tightness of the fan.
4. Check that fan motor is free running.
5. Check tightness of electrical connections.
6. Check air supply at diffuser outlets.

### WARNING

This unit is designed for use **ONLY** with the refrigerant HFC-410A (R410A). The use of other refrigerants is **NOT** authorised or approved by the manufacturer and may cause operational problems such as poor performance and efficiency, loss of capacity, degradation of materials and refrigerant leaks.

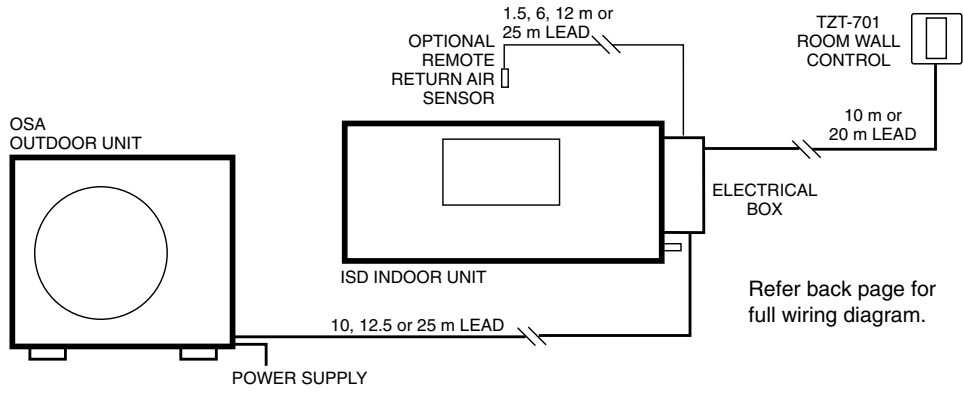
**The use of flammable or explosive materials as a refrigerant creates the additional risks of fire and explosion which may result in property damage, personal injury or death.**

### NOTE

The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

This pamphlet replaces the previous issue no. 2983 dated 10/08. 10m lead now supplied with TZT-701 (Item 3).

**Fig. 5 TZT-701 Control Wiring**

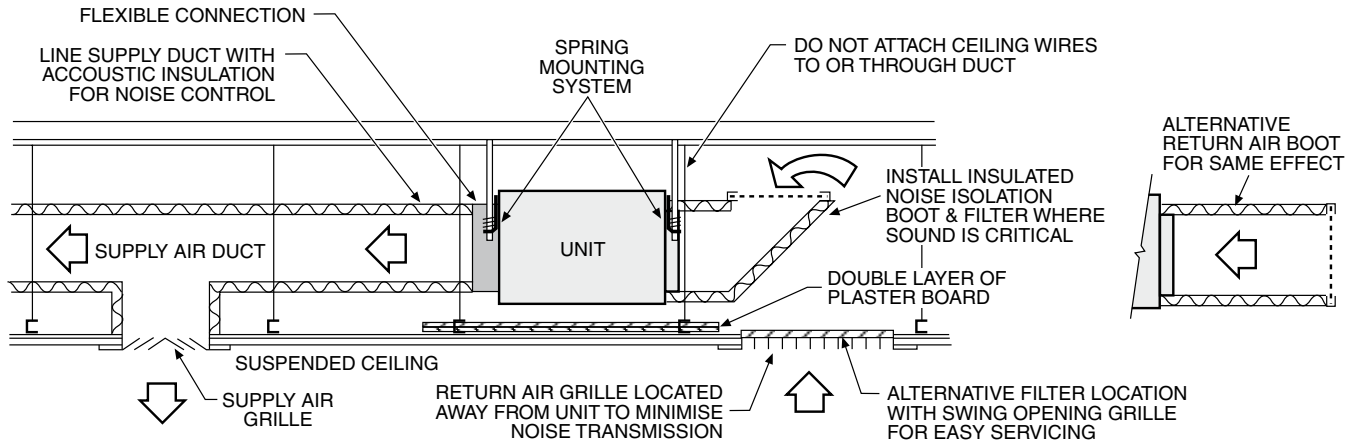
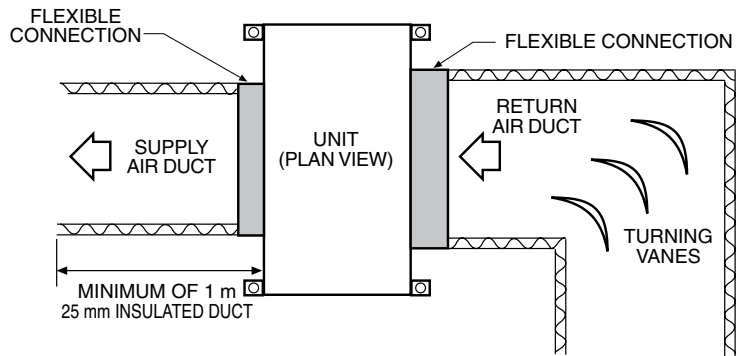


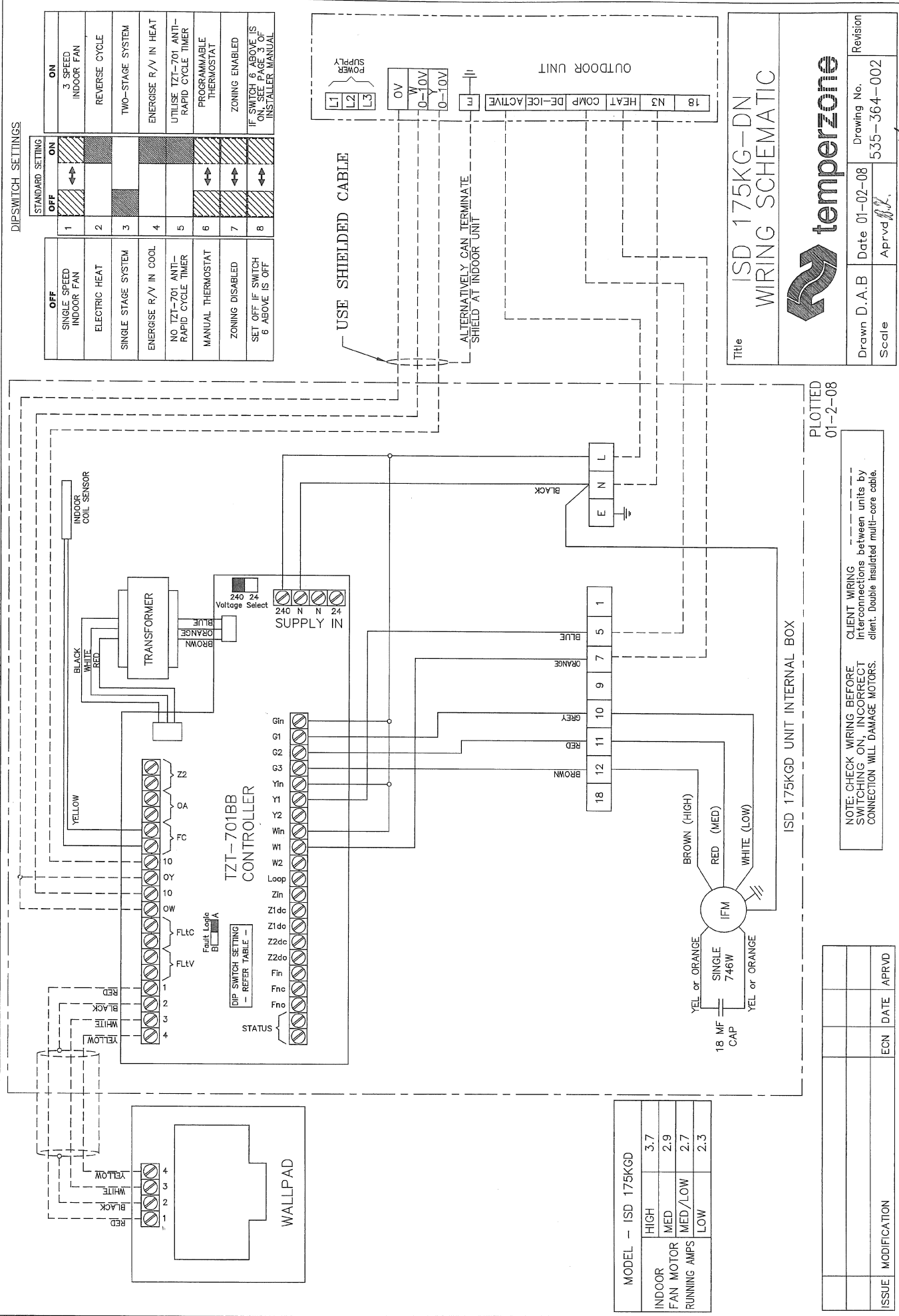
**Fig. 6 Application Considerations**

**Recommendations for Noise Isolation**

**- particularly for high static installations:**

1. Avoid installing units, with non-ducted return air, directly above spaces where noise is critical.
2. Use flexible connections between unit and rigid ducting.
3. Use generously sized acoustically lined ducts.
4. If generous duct size is not possible, use turning vanes on bends to reduce air turbulence (regenerated noise).
5. Use 90° bends in ducting to significantly assist in noise reduction.





Title: ISD 175KG-DN WIRING SCHEMATIC

Drawn D.A.B	Date 01-02-08	Drawing No. 535-364-002	Revision
Scale	Aprvd <i>[Signature]</i>		

PLOTTED 01-2-08

ISSUE	MODIFICATION	ECN	DATE	APRVD