

ISD 73Q - 181Q

Ducted Split System Indoor Units

Installation & Maintenance

Dimensions (mm)

Not to Scale

Fig. 1

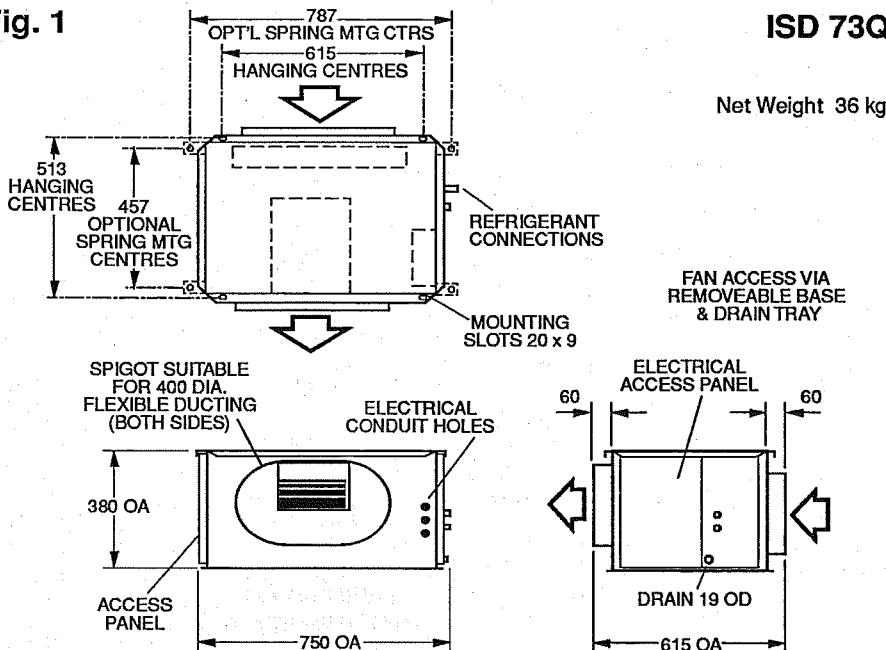
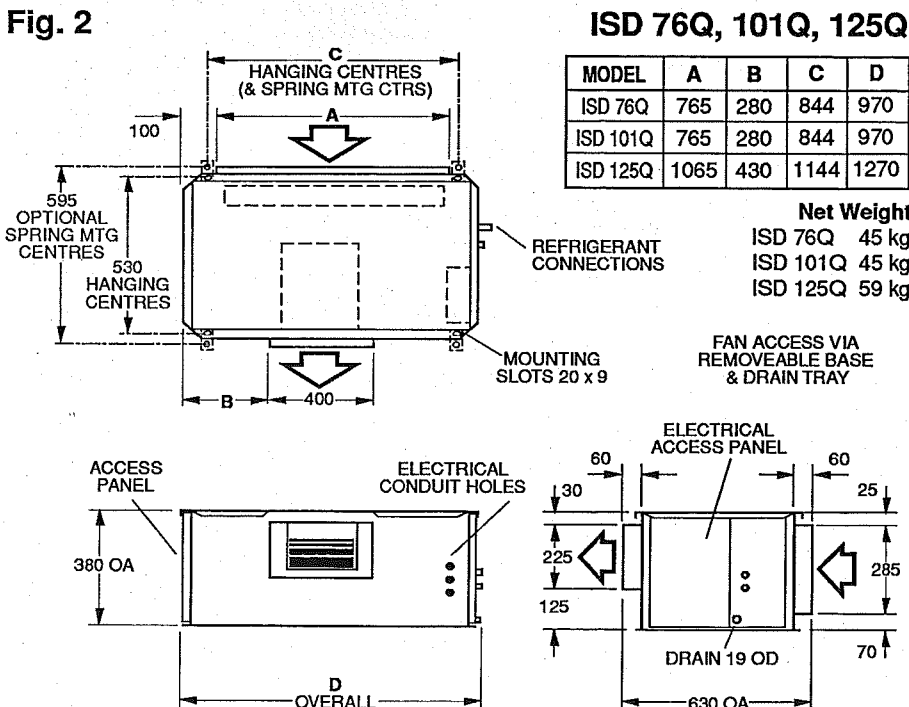


Fig. 2



NOTE

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

GENERAL

The ISD indoor units are designed to be coupled with the OSA outdoor units. Units must be installed in accordance with all national and local safety codes.

Combinations

- One ISD 73Q with one OSA 73
- One ISD 76Q with one OSA 73
- One ISD 101Q with one OSA 100/101
- One ISD 125Q with one OSA 125
- One ISD 146QB with one OSA 146 B
- One ISD 150Q with one OSA 150
- One ISD 180Q/181Q with one OSA 180

Options

1. Filter Box (not available for ISD 73Q).
2. Spring Mounting Kit.
3. Electric Heater Box.

FILTER BOX (Option)

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 135 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 60 mm. A separate page of installation instructions is supplied with the Kit.

UNPACKING UNITS

In an area adjacent to the installation site remove from the ISD unit from its carton and examine it carefully for any damage which may have occurred in transit. Record any damage on the carrier's delivery documents and refer the matter immediately to the manufacturer's nearest Sales Office.

INSTALLATION

Positioning & Mounting

Provide 500 mm minimum clearance to both ends of the unit. If the filter box option is to be used, allow adequate clearance for the filter to be withdrawn to its full length.

If the Electric Heat Kit option is to be used, allow adequate clearance for servicing.

If low noise is a critical factor in the installation, refer to Figure 8 for noise isolation recommendations.

Fig. 3
ISD 146QB, 150Q,
180Q, 181Q

| MODEL | A | B | C | D | E | F | G |
|-----------|------|-----|------|------|-----|-----|-----|
| ISD 146QB | 1065 | 200 | 1144 | 1270 | 380 | 125 | 285 |
| ISD 150Q | 1065 | 200 | 1144 | 1270 | 380 | 125 | 285 |
| ISD 180Q | 1415 | 375 | 1494 | 1620 | 380 | 125 | 285 |
| ISD 181Q | 1185 | 185 | 1265 | 1390 | 445 | 185 | 350 |

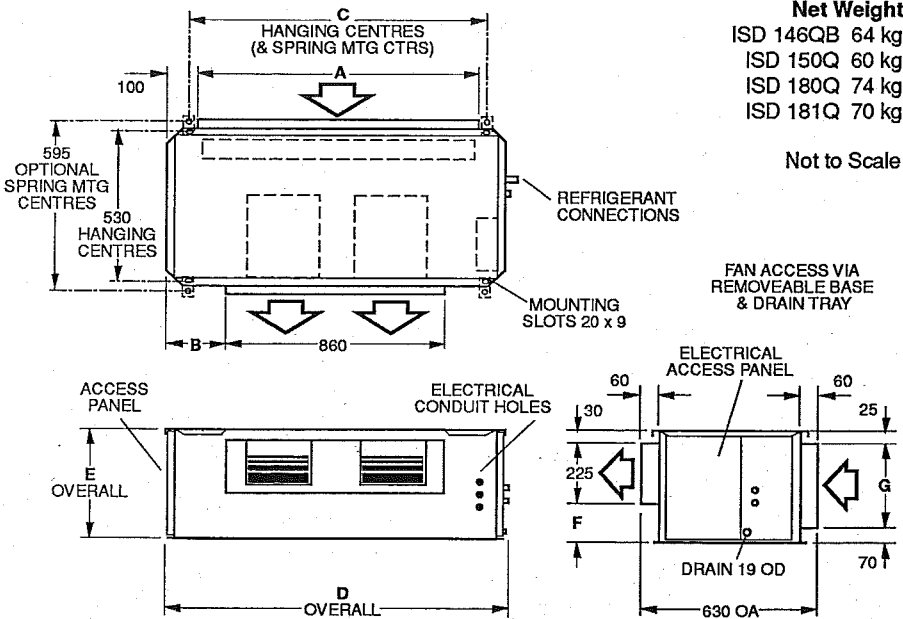


Fig. 4 Spring Mounting

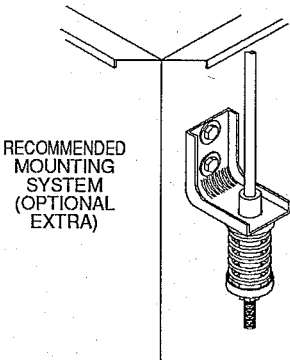


Fig. 5 Solid Mounting

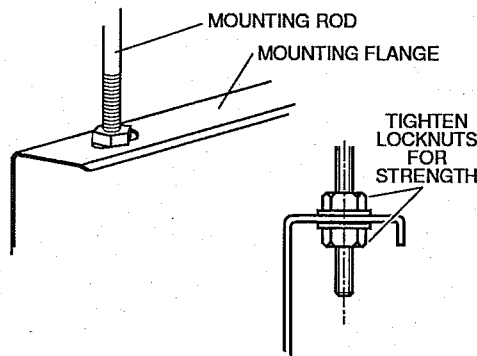


Fig. 6

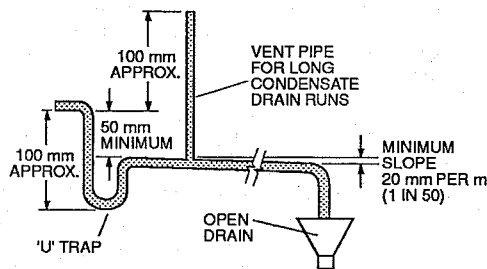
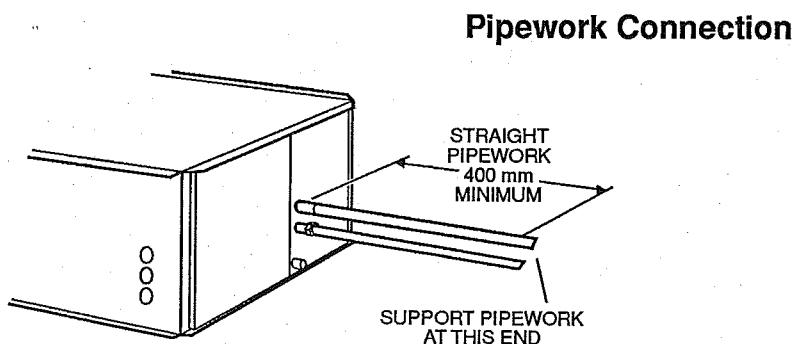


Fig. 7



It is recommended that the unit be mounted using the spring mounting system, supplied as an optional extra (Fig.4). 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) and use locknuts (not supplied), as shown in Figure 5.

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. 5).

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.6).

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. Remove the drain tray's securing screws behind each access panel to release it.

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 on this pamphlet.

REFRIGERATION PIPING

Pipe Connection Sizes (mm OD) & Type

| Model | Liquid | Suction |
|-----------|-----------------|-------------------|
| ISD 73Q | 10 (3/8") flare | 16 (5/8") flare |
| ISD 76Q | 10 (3/8") flare | 16 (5/8") flare |
| ISD 101Q | 10 (3/8") flare | 16 (5/8") flare |
| ISD 125Q | 10 (3/8") flare | 19 (3/4") sweat |
| ISD 146QB | 10 (3/8") flare | 16 (5/8") flare |
| ISD 150Q | 13 (1/2") flare | 19 (3/4") sweat |
| ISD 180Q | 13 (1/2") flare | 28 (1 1/8") sweat |
| ISD 181Q | 13 (1/2") flare | 28 (1 1/8") 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 pressure by loosening the flare nut pipe connection. **Warning:** Failure to do so may cause injury.

Allow a minimum of 400 mm straight pipework directly out from where the pipes exit the unit (Fig.7). This will permit easier access for future servicing.

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).

It is recommended electricians run two spare wires between Outdoor Unit and Indoor Unit in case one or both of the following options becomes a requirement.
Note: Leave the wires unconnected until required.

Option 1. Indoor Fan Off During De-Ice (Reverse Cycle Systems only)

Connect one of the spare wires mentioned above and remove the loop wire from terminal 'N' to terminal '1'.

Option 2. Electric Boost Heat.

Connect one of the spare wires mentioned above from Indoor Unit terminal '18' to Outdoor Unit terminal '18'.

INDOOR FAN SPEED

The fan speed can be set to LOW, MED, or HIGH - whichever best suits the application.

THERMOSTATS

For options, refer to the **temperzone** pamphlet 'ISD 73Q-300Q - Approved Thermostats' Data Sheet. A dedicated neutral line is required where electronic or anticipator thermostats are used when you choose to have indoor fan off in de-ice.

COOLING OPERATION

An Outdoor Unit HP Fan Speed Controller (4 amp), available from **temperzone**, is recommended where indoor cooling is required at ambient conditions below 20°C.

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 for free drainage.
5. Run the unit in cooling and heating modes.

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 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.

NOTE

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

WARNING

This unit is designed for use **ONLY** with the refrigerant HCFC-22. 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.

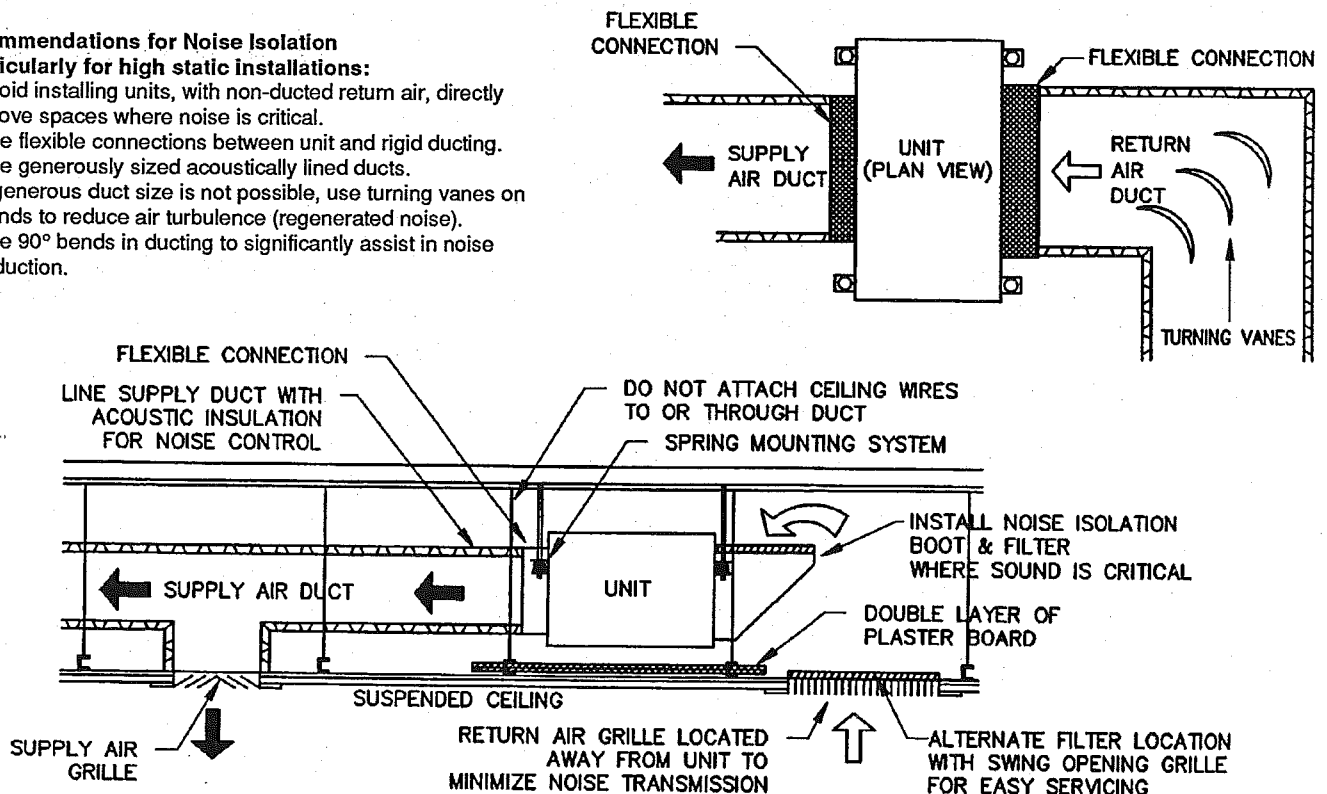
The use of flammable or explosive materials as a refrigerant creates the additional risks of fire and explosion which may result in property damage, personal injury or death.

This pamphlet replaces the previous issue no. 1414 dated 10/97. ISD 181Q included.

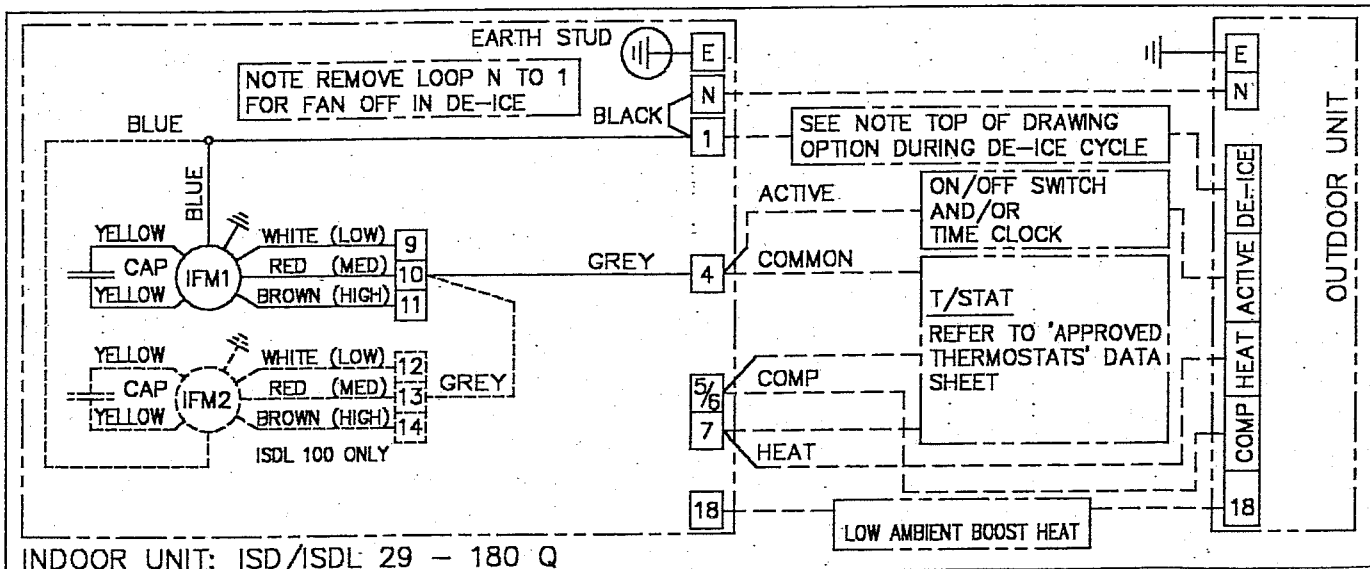
Fig. 8 Application Considerations

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.

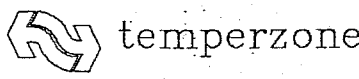


NOTE: FOR REVERSE CYCLE UNITS IT IS RECOMMENDED THE ELECTRICIAN RUN TWO SPARE WIRES BETWEEN OUTDOOR AND INDOOR UNITS. WARNING ! DO NOT CONNECT THESE IF OPTIONS BELOW ARE NOT REQUIRED. ONE WIRE IS USED FOR INDOOR FAN OFF IN DE-ICE CYCLE AND RUNS BETWEEN INDOOR TERMINAL No 1 AND OUTDOOR TERMINAL (DE-ICE). WARNING ! LINK BETWEEN TERMINALS (N AND No 1) IN THE INDOOR UNIT MUST BE REMOVED. SECOND WIRE IS FOR OPTIONAL LOW AMBIENT BOOST HEAT AND RUNS FROM INDOOR TERMINAL (No 18) TO OUTDOOR TERMINAL (No 18).
A DEDICATED NEUTRAL LINE IS REQUIRED WHERE ELECTRONIC OR ANTICIPATOR T/STATS ARE USED WHEN YOU CHOOSE TO HAVE INDOOR FAN OFF IN DE-ICE.



| MODEL | | ISDL | ISDL | ISDL | ISDL | ISD | ISD | ISDL | ISD | ISD | ISD | ISD | ISD | |
|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 29 | 36 | 45 | 71 | 73 | 76 | 100 | 101 | 125 | 146Q | 150 | 180 | 181 |
| INDOOR FAN MOTOR RUNNING AMPS | HIGH | 0.40 | 0.50 | 0.40 | 0.75 | 1.40 | 2.50 | 1.15 | 2.60 | 3.85 | 5.00 | 5.00 | 5.50 | 5.50 |
| | MED | 0.35 | 0.42 | 0.35 | 0.60 | 1.00 | 2.00 | 0.95 | 2.00 | 3.00 | 3.60 | 3.60 | 4.20 | 4.20 |
| | LOW | 0.30 | 0.35 | 0.30 | 0.52 | 0.80 | 1.50 | 0.82 | 1.50 | 2.40 | 2.30 | 2.30 | 3.00 | 3.00 |

| | |
|------|---------------------------------|
| CAP | CAPACITOR |
| IFM1 | INDOOR FAN MOTOR |
| IFM2 | INDOOR FAN MOTOR (ISDL100 ONLY) |



ISD/ISDL 29 - 181 Q
 WIRING SCHEMATIC

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NOTE: CHECK WIRING BEFORE SWITCHING ON, INCORRECT CONNECTION WILL DAMAGE MOTORS.

CLIENT WIRING
 Interconnections between units by client. Double insulated multi-core cable.

| | | | |
|-------|--------------------|-------------|----------|
| Drawn | Date | Drawing No. | Revision |
| M.D.S | 07-11-96 | 011780001 | B |
| Aprvd | <i>[Signature]</i> | | |