SSR UP5-4, UP5-5.5, UP5-7.5, UP5-11c
50 Hz
SSR UP6-5, UP6-7.5, UP6-10, UP6-15c
60 Hz
OPERATION AND MAINTENANCE MANUAL

This manual contains important safety information and must be made available to personnel who operate and maintain this machine.

Refer all communications to the nearest Ingersoll Rand Full Service Distributor.
AIR COMPRESSOR GROUP
BONDED WARRANTY & REGISTERED START UP

Warranty
The Company warrants that the equipment manufactured by it and delivered hereunder will be free of defects in material and workmanship for a period of twelve months from the date of placing the Equipment in operation or eighteen months from the date of shipment from the factory, whichever shall first occur. The Purchaser shall be obligated to promptly report any failure to conform to this warranty, in writing to the Company in said period, whereupon the Company shall, at its option, correct such nonconformity, by suitable repair to such equipment or, furnish a replacement part F.O.B. point of shipment, provided the Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations of the Company. Accessories or equipment furnished by the Company, but manufactured by others, shall carry whatever warranty the manufacturers have conveyed to the Company and which can be passed on to the Purchaser. The Company shall not be liable for any repairs, replacements, or adjustments to the Equipment or any costs of labor performed by the Purchaser or others without Company’s prior written approval.

The effects of corrosion, erosion and normal wear and tear are specifically excluded. Performance warranties are limited to those specifically stated within the Company's proposal. Unless responsibility for meeting such performance warranties are limited to specified tests, the Company’s obligation shall be to correct in the manner and for the period of time provided above.

THE COMPANY MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

Correction by the Company of nonconformities whether patent or latent, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of the Company for such nonconformities whether based on contract, warranty negligence, indemnity, strict liability or otherwise with respect to or arising out of such Equipment.

The purchaser shall not operate Equipment which is considered to be defective, without first notifying the Company in writing of its intention to do so. Any such use of Equipment will be at Purchaser’s sole risk and liability.

Note that this is Ingersoll Rand standard warranty. Any warranty in force at the time of purchase of the compressor or negotiated as part of the purchase order may take precedence over this warranty.

Register on-line at http://air.ingersollrand.com

Ingersoll Rand
Industrial Air Solutions
Swan Lane
Hindley Green
Wigan WN2 4EZ

Ingersoll Rand Asia Pacific
C/O Ingersoll Rand South East Asia (Pte) Ltd.
42 Benoi Road
Singapore 629903

Ingersoll Rand
Industrial Air Solutions
P.O. Box 1840
800–D Beaty Street
Davidson, NC 28036
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### ABBREVIATIONS & SYMBOLS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>###</td>
<td>Contact Ingersoll Rand for serial number</td>
</tr>
<tr>
<td>-&gt;###</td>
<td>Up to Serial No.</td>
</tr>
<tr>
<td>###-&gt;</td>
<td>From Serial No.</td>
</tr>
<tr>
<td>*</td>
<td>Not illustrated</td>
</tr>
<tr>
<td>†</td>
<td>Option</td>
</tr>
<tr>
<td>NR</td>
<td>Not required</td>
</tr>
<tr>
<td>AR</td>
<td>As required</td>
</tr>
<tr>
<td>SM</td>
<td>Sitemaster/Sitepack</td>
</tr>
<tr>
<td>HA</td>
<td>High ambient machine</td>
</tr>
<tr>
<td>WC</td>
<td>Watercooled machine</td>
</tr>
<tr>
<td>AC</td>
<td>Aircooled machine</td>
</tr>
<tr>
<td>ERS</td>
<td>Energy recovery system</td>
</tr>
<tr>
<td>T.E.F.C.</td>
<td>Totally enclosed fan cooled motor (IP5)</td>
</tr>
<tr>
<td>O.D.P.</td>
<td>Open drip proof (motor)</td>
</tr>
<tr>
<td>ppm</td>
<td>parts per million</td>
</tr>
</tbody>
</table>
The intended uses of this machine are outlined below and examples of unapproved usage are also given, however Ingersoll Rand cannot anticipate every application or work situation that may arise.

**IF IN DOUBT CONSULT SUPERVISION.**

This machine has been designed and supplied for use only in the following specified conditions and applications:

- Compression of normal ambient air containing no known or detectable additional gases, vapours or particles.
- Operation within the ambient temperature range specified in the GENERAL INFORMATION section of this manual.

**The use of the machine in any of the situation types listed in table 1:-**

- Is not approved by Ingersoll Rand.
- May impair the safety of users and other persons, and
- May prejudice any claims made against Ingersoll Rand.

**TABLE 1**

Use of the machine to produce compressed air for:

- Direct human consumption.
- Indirect human consumption, without suitable filtration and purity checks.

Use of the machine outside the ambient temperature range specified in the GENERAL INFORMATION SECTION of this manual.

Use of the machine where there is any actual or foreseeable risk of hazardous levels of flammable gases or vapours.

**THIS MACHINE IS NOT INTENDED AND MUST NOT BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES, INCLUDING SITUATIONS WHERE FLAMMABLE GASES OR VAPOURS MAY BE PRESENT.**

Use of the machine fitted with non Ingersoll Rand approved components.

Use of the machine with safety or control components missing or disabled.

The company accepts no responsibility for errors in translation of this manual from the original English version.

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INGERSOLL RAND
**ISO SYMBOLS**

**GRAPHIC FORM AND MEANING OF ISO SYMBOLS**

<p>| | | |</p>
<table>
<thead>
<tr>
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<tr>
<td><img src="#" alt="Circle" /></td>
<td><img src="#" alt="Square" /></td>
<td><img src="#" alt="Triangle" /></td>
</tr>
<tr>
<td>Prohibition / Mandatory</td>
<td>Information / Instructions</td>
<td>Warning</td>
</tr>
</tbody>
</table>

- **![WARNING](#):** Electrical shock risk
- **![WARNING](#):** Pressurised vessel.
- **![WARNING](#):** Hot surface.
- **![WARNING](#):** Pressurised component or system.
- **![WARNING](#):** Air/gas flow or Air discharge.
- **Do not breathe the compressed air from this machine.**
- **Use fork lift truck from this side only.**
- **RESET**
- **Do not use fork lift truck from this side.**
- **Emergency Stop.**
- **On (power).**
- **Off (power).**
- **Read the Operation and Maintenance manual before operation or maintenance of this machine is undertaken.**
- **Do not operate the machine without the guard being fitted.**
- **Lifting point.**
- **ROTATION**
- **AIR DISCHARGE**
- **COOLANT FILTER**

---

**http://air.ingersollrand.com**
<table>
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<th>MAINTENANCE</th>
<th>MAINTENANCE PROHIBITED</th>
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<tr>
<td>COOLANT DRAIN</td>
<td>CONDENSATE DRAIN</td>
<td>FILTER</td>
</tr>
<tr>
<td>FRAGILE</td>
<td>KEEP DRY</td>
<td>THIS WAY UP</td>
</tr>
<tr>
<td>USE NO HOOKS</td>
<td>NO SIDE CLAMPS</td>
<td>HOURS</td>
</tr>
<tr>
<td>Pinch point hazard. Keep hands clear.</td>
<td>POWER</td>
<td>INSPECT</td>
</tr>
<tr>
<td>Every X months, if sooner than required by operating hours</td>
<td>CHANGE / REPLACE</td>
<td>CLEAN</td>
</tr>
<tr>
<td>POWER INLET (AC)</td>
<td></td>
<td></td>
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</tbody>
</table>
ANSI SYMBOLS

GRAPHIC FORM AND MEANING OF ANSI SYMBOLS

⚠️ DANGER

INTAKE AIR. Can contain carbon monoxide or other contaminants. Will cause serious injury or death. Ingersoll Rand air compressors are not designed, intended or approved for breathing air. Compressed air should not be used for breathing air applications unless treated in accordance with all applicable codes and regulations.

⚠️ WARNING

HAZARDOUS VOLTAGE. Can cause serious injury or death. Disconnect power and bleed pressure from tank before servicing. Lockout/Tagout machine. Compressor must be connected to properly grounded circuit. See Grounding Instructions in manual. Do not operate compressor in wet conditions. Store indoors.

RISK OF FIRE OR EXPLOSION. Electrical arcing from compressor components can ignite flammable liquids and vapors which can result in serious injury. Never operate the compressor near flammable liquids or vapors. If used to spray flammable materials, keep compressor at least 20ft (6m) away from the spray area.

HIGH PRESSURE AIR. Rusted tanks can cause explosion and severe injury or death. Receiver under pressure. Operator should relieve tank pressure before performing maintenance. In addition to automatic drain, operate manual drain valve weekly. Manual drain valve located at bottom of the tank.


HOT SURFACES. Can cause serious injury. Do not touch. Allow to cool before servicing. Do not touch hot compressor or tubing.

EXPOSED MOVING BELTS AND SHEAVES. Can cause severe injury or death. Do not operate without guard in place. Disconnect power before servicing. Lockout/Tagout machine.

Air flow exhaust may contain flying debris. Safety protection should be worn at all times.

Pinch point hazard. Keep hands clear.
<table>
<thead>
<tr>
<th>Item</th>
<th>ccn</th>
<th>Qty.</th>
<th>Description</th>
<th>Item</th>
<th>ccn</th>
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<td>22547145</td>
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<td>Base mount only</td>
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<tr>
<td>3</td>
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<td>1</td>
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<td>14</td>
<td>22459200</td>
<td>1</td>
<td>Decal, total air system</td>
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<tr>
<td>4</td>
<td>22501</td>
<td>1</td>
<td>Decal, warning hot surface</td>
<td>15</td>
<td>SPEC</td>
<td>1</td>
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<tr>
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<th>Item</th>
<th>ccm</th>
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<td>Decal, use guards when running</td>
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<td>Decal, wiring schematic diagram</td>
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<td>22529291</td>
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<td>Decal, facia Round hourmeter</td>
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<td>Decal, Ingersoll Rand logo Base mount only</td>
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<tr>
<td></td>
<td>22435713</td>
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<td>Decal, Ingersoll Rand logo Receiver mount only</td>
<td>28</td>
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<td></td>
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<td>92930668</td>
<td>1</td>
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<td>29</td>
<td>54618681</td>
<td>1</td>
<td>Decal, condensate drain</td>
</tr>
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</table>

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SAFETY

DANGER
Hazard that WILL cause DEATH, SEVERE INJURY or substantial property damage if ignored. Instructions must be followed precisely to avoid injury or death.

WARNING
Hazard that CAN cause DEATH, SEVERE INJURY or substantial property damage if ignored. Instructions which must be followed precisely to avoid injury or death.

CAUTION
Cautions call attention to instructions which must be followed precisely to avoid damaging the product, process or its surroundings.

NOTES
Notes are used for supplementary information.

BREATHING AIR PRECAUTION
Ingersoll Rand air compressors are not designed, intended or approved for breathing air. Compressed air should not be used for breathing air applications unless treated in accordance with all applicable codes and regulations.

GENERAL INFORMATION

Ensure that the operator reads and understands the decals and consults the manuals before maintenance or operation.

Ensure that the Operation and Maintenance manual is not removed permanently from the machine.

Ensure that maintenance personnel are adequately trained, competent and have read the Maintenance Manuals.

Do not point air nozzles or sprayers toward anyone.

Compressed air and electricity can be dangerous. Before undertaking any work on the compressor, ensure that the electrical supply has been isolated and the compressor has been relieved of all pressure.

Wear eye protection when operating or servicing compressor.

All persons positioned near to operating machinery should be equipped with hearing protection and given instructions on its use in accordance with workplace safety legislation.

Make sure that all protective covers are in place and that the canopy/doors are closed during operation.

The specification of this machine is such that the machine is not suitable for use in flammable gas risk areas. Installation of this compressor must be in accordance with recognised electrical codes and any local Health and Safety Codes.

The use of plastic bowls on line filters can be hazardous. Their safety can be affected by either synthetic lubricants, or the additives used in mineral oils. Ingersoll Rand recommends that only filters with metal bowls should be used on a pressurised system.

COMPRESSED AIR

Compressed air can be dangerous if incorrectly handled. Before doing any work on the unit, ensure that all pressure is vented from the system and that the machine cannot be started accidentally.

WARNING

Imposing a normal or emergency stop on the compressor will only relieve pressure upstream of the minimum pressure valve on top of the separator tank. If maintenance work is required downstream of this valve, ensure that all pressure is relieved at the process vent point external to the compressor.

Ensure that the machine is operating at the rated pressure and that the rated pressure is known to all relevant personnel.

All air pressure equipment installed in or connected to the machine must have safe working pressure ratings of at least the machine rated pressure.

If more than one compressor is connected to one common downstream plant, effective isolation valves must be fitted and controlled by work procedures, so that one machine cannot accidentally be pressurised / over pressurised by another.

Compressed air must not be used for a direct feed to any form of breathing apparatus or mask.

The discharged air contains a very small percentage of compressor lubricant and care should be taken to ensure that downstream equipment is compatible.

If the discharged air is to be ultimately released into a confined space, adequate ventilation must be provided.

When using compressed air always use appropriate personal protective equipment.

All pressure containing parts, especially flexible hoses and their couplings, must be regularly inspected, be free from defects and be replaced according to the Manual instructions.

Compressed air can be dangerous if incorrectly handled. Before doing any work on the unit, ensure that all pressure is vented from the system and that the machine cannot be started accidentally.

Avoid bodily contact with compressed air.

All safety valves located in the separator tank must be checked periodically for correct operation.
SAFETY

Do not over-pressurize the receiver tank or similar vessels beyond design limits.

Do not use a receiver tank or similar vessels that fail to meet the design requirements of the compressor. Contact your distributor for assistance.

Do not drill into, weld or otherwise alter the receiver tank or similar vessels.

Before servicing the unit, vent pressure before removing the power to ensure that the gauge reads zero pressure.

MATERIALS

The following substances are used in the manufacture of this machine and may be hazardous to health if used incorrectly:

- preservative grease
- rust preventative
- compressor coolant

AVOID INGESTION, SKIN CONTACT AND INHALATION OF FUMES

TRANSPORT

When loading or transporting machines ensure that the specified lifting and tie down points are used.

Lifting equipment must be properly rated for the weight of the compressor.

Do not work on or walk under the compressor while it is suspended.

ELECTRICAL

Keep all parts of the body and any hand-held tools or other conductive objects, away from exposed live parts of the compressor electrical system. Maintain dry footing, stand on insulating surfaces and do not contact any other portion of the compressor when making adjustments or repairs to exposed live parts of the compressor electrical system.

OPERATION AND MAINTENANCE MANUAL

WARNING

Any electrical connections or adjustments should only be made by a suitably qualified electrician.

Close and lock all access doors when the compressor is left unattended.

Do not use extinguishers intended for Class A or Class B fires on electrical fires. Use only extinguishers suitable for class BC or class ABC fires.

Attempt repairs only in clean, dry, well lighted and ventilated areas.

Connect the compressor only to electrical systems that are compatible with its electrical characteristics and that are within its rated capacity.

CONDENSATE DISPOSAL

As waste water regulations vary by country and region it is the responsibility of the user to establish the limitations and regulations in their particular area. Ingersoll Rand and its associated distributors are happy to advise and assist in these matters.

For further information, consult Material Data Sheets for ULTRA.

The above information contains data supplied in support of United Kingdom Control of Substances Hazardous to Health (C.O.S.H.H.) regulations.
<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filter, air</td>
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<tr>
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<td>Valve, air inlet</td>
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<td>Air end assembly</td>
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<td>Motor</td>
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<td>5</td>
<td>Relay, motor overload</td>
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<td>Tank, separator - coarse</td>
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<td>7</td>
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<td>Valve, minimum pressure</td>
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<td>Switch, pressure</td>
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<td>13</td>
<td>Filter, coolant</td>
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<td>14</td>
<td>Thermostat</td>
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<td>15</td>
<td>Cooler, oil</td>
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<td>16</td>
<td>Valve, pilot</td>
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<td>Valve, relief</td>
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<td>Valve, drain</td>
<td>38</td>
</tr>
<tr>
<td>19</td>
<td>Screen, scavenge</td>
<td>39</td>
</tr>
<tr>
<td>20</td>
<td>Valve, solenoid</td>
<td>40</td>
</tr>
</tbody>
</table>
KEY

1FU, 2FU, 3FU  Fuse control circuit
4FU, 5FU  Fuse
1Ma  Contact, auxiliary starter
1Mb  Contact, auxiliary starter
CPT  Transformer, control 120/1/50–60
See transformer nameplate for wiring connection requirements
CR  Relay, control
CRa  Contact, control relay
CS  Customer supplied 115v / 1 / 60hz
DO  Dryer option
DM  Motor, dryer
EDV  Valve, electric drain 120/1/50–60
E-STOP  Button, emergency stop
G  Power on light
HM  Hourmeter
HM1  Indicator, maintenance
HATS  Switch, high air temperature
M  Coil motor starter
MIO  Indicator, maintenance option
(Instead of standard hourmeter)
MOT  Motor
OL  Overload, motor starter
PS  Switch, pressure
ST  Push button, start
TP  Terminal points
TS  To supply
W  Standby light

NOTES
1. (*) Furnished, mounted and wired outside of control panel, if required by order.
2. Circuit shown in normal position de–energized.
3. All wiring to be marked in accordance with this schematic.
4. All wiring to be in accordance with NEC.
**KEY**

1FU, 2FU  
Fused, primary

3FU  
Fuse, secondary

4FU, 5FU  
Fuse, dryer

1LT  
Light, power on indicator (green)

2LT  
Light, auto restart indicator (white)

1M  
Contactor, main

1Ma, b, c  
Contacts, auxiliary. Main contactor

2M  
Contactor, delta

2Ma, b  
Contacts, auxiliary. Delta contactor

1S  
Contactor, star

1Sa, b  
Contacts, auxiliary. Star contactor

1SV  
Valve, solenoid (nc)

CPT  
Transformer, control

CR  
Relay, control

CRa  
Contact, control relay

CS  
Customer supplied 115v / 1 / 60hz

DM  
Motor, dryer

DO  
Dryer option

EDV  
Valve, electric drain (optional)

E–STOP  
Switch, emergency stop

**HATS**  
Switch, high air temperature

**HM**  
Hourmeter

**HM1**  
Indicator, maintenance

**MIO**  
Indicator, maintenance option

(Instead of standard hourmeter)

**MTR**  
Motor, compressor

**OL**  
Overload, main motor

**OLA**  
Contact, main motor overload

**PS**  
Switch, pressure

**ST**  
Push button, start

**TD**  
Relay, delta starting (10 sec)

**TDC**  
Relay, delay off, contact

**NOTES**

1. (*) Furnished, mounted and wired outside of control panel, if required by order.

2. Circuit shown in normal position de–energized.

3. All wiring to be marked in accordance with this schematic.

4. All wiring to be in accordance with NEC.
KEY

1FU, 2FU, 3FU
4FU, 5FU
1Ma
1Mb
CPT
CR
CRA
CS
DM
DO
EDV
E-STOP
G
HM
HM1
M
MIO
MTR
OL
PS
ST
TP
TS
W

Fuse control circuit
Fuse, dryer
Fuse, dryer
Contact, auxiliary starter
Contact, auxiliary starter
Transformer, control 120/1/50–60 see Transformer nameplate for wiring Connection requirements Relay, control Contact, control relay Customer supplied 115v / 1 / 60hz Motor, dryer Dryer option Valve, electric drain Switch, emergency stop Power on light Hourmeter Indicator, maintenance

Coil motor starter
Indicator, maintenance option
Motor, compressor
Overload, motor starter
Switch, pressure
Push button, start
Terminal points
To supply
Standby light

NOTES
1. (*) Furnished, mounted and wired outside of control panel, if required by order.
2. Circuit shown in normal position de-energized.
3. All wiring to be marked in accordance with this schematic.
4. All wiring to be in accordance with NEC.
KEY

1FU | Fuse, secondary
2FU, 3FU | Fuse, primary
4FU, 5FU | Fuse, dryer
CR | Relay, control
CS | Customer supplied 230v / 1 / 50hz
DM | Motor, dryer
DO | Dryer option
EDV | Valve, electric drain
ES | Switch, emergency stop
HATS | Switch, high air temperature
HM | Hourmeter
HM1 | Indicator, maintenance
KM | Contactor, main
KM–1,2 | Contacts, auxiliary. Main contactor
LT1 | Light, power on indicator (green)
LT2 | Light, auto restart indicator (white)

MIO | Indicator, maintenance option (Instead of standard hourmeter)
MM | Motor, compressor
MOL | Overload, main motor
MOL-1 | Contact, main motor overload
PS | Switch, pressure
ST | Push button, start
T1 | Transformer, control
TP | Terminal points
TS | To supply

NOTES

1. (*) Furnished, mounted and wired outside of control panel, if required by order.
2. Circuit shown in normal position de–energized.
3. All wiring to be marked in accordance with this schematic.
4. All wiring to be in accordance with NEC.
KEY

1SV  Valve, solenoid (nc)
CR   Relay, control
CR-1 Contact, control relay
CS   Customer supplied 230v / 1 / 50hz
DM   Motor, dryer
DO   Dryer option
EDV  Valve, electric drain
HATS Switch, high air temperature
HM   Hourmeter
HM1  Indicator, maintenance
MM   Motor, compressor
P    Switch, pressure
ES   Switch, emergency stop
FU1, FU2 Fuse, primary
FU3  Fuse, secondary
FU4, FU5 Fuse, dryer
KM1  Contactor, main
KM-1,2,3 Contacts, auxiliary. Main contactor
KM2  Contactor, delta
KM2-1,2 Contacts, auxiliary. Delta contactor
KM3  Contactor, star
KM3-1,2 Contacts, auxiliary. Star contactor
LT1  Light, power on indicator (green)
LT2  Light, auto restart indicator (white)
MIO  Indicator, maintenance option
(Instead of standard hourmeter)
MOL  Overload, main motor
MOL-1 Contact, main motor overload
ST   Push button, start
T1   Transformer, control
TM1  Relay, delta starting (10sec)
TM1-1 Relay, delay off, contact

NOTES
1. (*) Furnished, mounted and wired outside of control panel, if required by order.
2. Circuit shown in normal position de–energized.
3. All wiring to be marked in accordance with this schematic.
4. All wiring to be in accordance with NEC.
KEY
A Package pre-filler
B Hole, incoming power supply conduit
C Gauge, pressure
D Yellow stand–by light
E Green power–on light
F Green start push button
G Emergency stop button
H Hourmeter
I Starter box
J Lifting points
K Mounting holes (4 x 14.00mm [0.550"] diameter)
L Filter, air inlet
M Motor
N Integrated dryer (Optional)
O Compressor and cooling air intake
P Filter, coolant
Q Cartridge, coolant separator
R Valve, airend relief
S Plug, coolant filler
T Sight–glass
U Plug, coolant drain
V Valve, pilot
W Switch, pressure
X Cooling air exhaust

NOTES
1. Foundation or floor must be level and support all mounting bolt locations equally. If necessary, shim or grout the fourth bolt location.
2. Foundation bolts should protect thru nuts a minimum of 13mm (0.50") to allow for levelling.
3. Allow a minimum clearance of 1100mm (42") on the front and 920mm (36") on the top, left right and rear of the package for proper air circulation and serviceability.
5. External piping shall not exert any unresolved moments or forces on the unit. Use pipe size as large or larger at discharge connection.
6. There should be no plastic or pvc piping attached to this unit or used for any lines downstream.
7. Do not pipe into a common header with a reciprocating compressor, unless the reciprocating compressor utilizes a discharge pulsation damper.
8. Sizing of electrical components not supplied by Ingersoll Rand is the responsibility of the customer and should be done in accordance with the information on the compressor data plate and national and local electrical codes.

NOTE
All dimensions are in millimetres (inches) unless otherwise stated.

Ensure that the correct fork lift truck slots or marked lifting points are used whenever the machine is lifted or transported.

UNPACKING

The compressor will normally be delivered with a polythene cover. If a knife has to be used to remove this cover ensure that the exterior paintwork of the compressor is not damaged.

Ensure that all transport and packing materials are discarded in a manner prescribed by local codes.
KEY

A  Package pre-filler
B  Hole, incoming power supply conduit
C  Gauge, pressure
D  Yellow stand–by light
E  Green power–on light
F  Green start push button
G  Emergency stop button
H  Hourmeter
I  Starter box
J  Lifting points
K  Mounting holes (4 x 17.5mm [0.68"] x 44.5mm [1.75"] slots)
L  Filter, air inlet
M  Motor
N  Integrated dryer (Optional)
O  Compressor and cooling air intake
P  Filter, coolant
Q  Cartridge, coolant separator
R  Valve, airend relief
S  Plug, coolant filler
T  Sight–glass
U  Plug, coolant drain
V  Valve, pilot
W  Switch, pressure
X  Cooling air exhaust
1A  Valve, ball 0.75” N.P.T.
1B  Air receiver (Ø 620.0mm x 1168.4mm LG) ( Ø 24.40” x 46.00” LG)
1C  Location for manual receiver drain
1D  Valve, receiver relief
1E  0.25” discharge port for optional electric drain valve

NOTES

1. Foundation or floor must be level and support all mounting bolt locations equally. If necessary, shim or grout the fourth bolt location.
2. Foundation bolts should protect thru nuts a minimum of 13mm (0.50”) to allow for levelling.
3. Allow a minimum clearance of 1100mm (42”) on the front and 920mm (36”) on the top, left right and rear of the package for proper air circulation and serviceability.
4. Approximate package weight: 420kg (925lbs).
5. External piping shall not exert any unresolved moments or forces on the unit. Use pipe size as large or larger at discharge connection.
6. There should be no plastic or pvc piping attached to this unit or used for any lines downstream.
7. Do not pipe into a common header with a reciprocating compressor, unless the reciprocating compressor utilizes a discharge pulsation damper.
8. Sizing of electrical components not supplied by Ingersoll Rand is the responsibility of the customer and should be done in accordance with the information on the compressor data plate and national and local electrical codes.

NOTE

All dimensions are in millimetres (inches) unless otherwise stated.

Ensure that the correct fork lift truck slots or marked lifting points are used whenever the machine is lifted or transported.

UNPACKING

The compressor will normally be delivered with a polythene cover. If a knife has to be used to remove this cover ensure that the exterior paintwork of the compressor is not damaged.

Ensure that all transport and packing materials are discarded in a manner prescribed by local codes.
KEY

A Package pre-filler
B Hole, incoming power supply conduit
C Gauge, pressure
D Green stand–by light
E Green power–on light
F Green start push button
G Emergency stop button
H Hourmeter
I Starter box
J Lifting points
K Mounting holes (4 x 17.5mm [0.68"] x 44.5mm [1.75"] slots)
L Filter, air inlet
M Motor
N Integrated dryer (Optional)
O Compressor and cooling air intake
P Filter, coolant
Q Cartridge, coolant separator
R Valve, airend relief
S Plug, coolant filler
T Sight–glass
U Plug, coolant drain
V Valve, pilot
W Switch, pressure
X Cooling air exhaust
1A Valve, ball 0.75" N.P.T.
1B Air receiver (Ø 618.0mm x 1701.0mm LG) (Ø 24.33" x 67.00" LG)
1C Location for manual receiver drain
1D Valve, receiver relief
1E 0.25" discharge port for optional electric drain valve

NOTES

1. Foundation or floor must be level and support all mounting bolt locations equally. If necessary, shim or grout the fourth bolt location.
2. Foundation bolts should protect thru nuts a minimum of 13mm (0.50") to allow for levelling.
3. Allow a minimum clearance of 1100mm (42") on the front and 920mm (36") on the top, left right and rear of the package for proper air circulation and serviceability.
4. Approximate package weight: 430kg (946lbs).
5. External piping shall not exert any unresolved moments or forces on the unit. Use pipe size as large or larger at discharge connection.
6. There should be no plastic or pvc piping attached to this unit or used for any lines downstream.
7. Do not pipe into a common header with a reciprocating compressor, unless the reciprocating compressor utilizes a discharge pulsation damper.
8. Sizing of electrical components not supplied by Ingersoll Rand is the responsibility of the customer and should be done in accordance with the information on the compressor data plate and national and local electrical codes.

NOTE

All dimensions are in millimetres (inches) unless otherwise stated.

Ensure that the correct fork lift truck slots or marked lifting points are used whenever the machine is lifted or transported.

UNPACKING

The compressor will normally be delivered with a polythene cover. If a knife has to be used to remove this cover ensure that the exterior paintwork of the compressor is not damaged.

Ensure that all transport and packing materials are discarded in a manner prescribed by local codes.
KEY
A Package pre-filler
B Hole, incoming power supply conduit
C Gauge, pressure
D Yellow stand–by light
E Green power–on light
F Green start push button
G Emergency stop button
H Hourmeter
I Starter box
J Lifting points
K Mounting holes (4 x 17.5mm [0.68"] x 44.5mm [1.75"] slots)
L Filter, air inlet
M Motor
N Integrated dryer (Optional)
O Compressor and cooling air intake
P Filter, coolant
Q Cartridge, coolant separator
R Valve, airend relief
S Plug, coolant filler
T Sight–glass
U Plug, coolant drain
V Valve, pilot
W Switch, pressure
X Cooling air exhaust
1A Valve, ball 0.75” N.P.T.
1B Air receiver ( Ø 600.0mm x 1111.0mm LG) ( Ø 23.62” x 43.74” LG)
1C Location for manual receiver drain
1D Valve, receiver relief
1E 0.25” discharge port for optional electric drain valve

NOTES
1. Foundation or floor must be level and support all mounting bolt locations equally. If necessary, shim or grout the fourth bolt location.
2. Foundation bolts should protect thru nuts a minimum of 13mm (0.50”) to allow for levelling.
3. Allow a minimum clearance of 1100mm (42”) on the front and 920mm (36”) on the top, left right and rear of the package for proper air circulation and serviceability.
4. Approximate package weight: 400kg (880lbs).
5. External piping shall not exert any unresolved moments or forces on the unit. Use pipe size as large or larger at discharge connection.
6. There should be no plastic or pvc piping attached to this unit or used for any lines downstream.
7. Do not pipe into a common header with a reciprocating compressor, unless the reciprocating compressor utilizes a discharge pulsation damper.
8. Sizing of electrical components not supplied by Ingersoll Rand is the responsibility of the customer and should be done in accordance with the information on the compressor data plate and national and local electrical codes.

NOTE
All dimensions are in millimetres (inches) unless otherwise stated.

Ensure that the correct fork lift truck slots or marked lifting points are used whenever the machine is lifted or transported.

UNPACKING
The compressor will normally be delivered with a polythene cover. If a knife has to be used to remove this cover ensure that the exterior paintwork of the compressor is not damaged.

Ensure that all transport and packing materials are discarded in a manner prescribed by local codes.
KEY

A  Package pre-filler
B  Hole, incoming power supply conduit
C  Gauge, pressure
D  Yellow stand–by light
E  Green power–on light
F  Green start push button
G  Emergency stop button
H  Hourmeter
I  Starter box
J  Lifting points
K  Mounting holes (4 x 17.5mm [0.68"] x 44.5mm [1.75"] slots)
L  Filter, air inlet
M  Motor
N  Integrated dryer (Optional)
O  Compressor and cooling air intake
P  Filter, coolant
Q  Cartridge, coolant separator
R  Valve, airend relief
S  Plug, coolant relief
T  Sight–glass
U  Plug, coolant drain
V  Valve, pilot
W  Switch, pressure
X  Cooling air exhaust
1A  Valve, ball 0.75” N.P.T.
1B  Air receiver (Ø 610.0mm x 1866.0mm LG) ( Ø 24.02” x 73.46”LG)
1C  Location for manual receiver drain
1D  Valve, receiver relief
1E  0.25” discharge port for optional electric drain valve

NOTES

1. Foundation or floor must be level and support all mounting bolt locations equally. If necessary, shim or grout the fourth bolt location.
2. Foundation bolts should protect thru nuts a minimum of 13mm (0.50") to allow for levelling.
3. Allow a minimum clearance of 1100mm (42") on the front and 920mm (36") on the top, left right and rear of the package for proper air circulation and serviceability.
4. Approximate package weight: 455kg (1000lbs).
5. External piping shall not exert any unresolved moments or forces on the unit. Use pipe size as large or larger at discharge connection.
6. There should be no plastic or pvc piping attached to this unit or used for any lines downstream.
7. Do not pipe into a common header with a reciprocating compressor, unless the reciprocating compressor utilizes a discharge pulsation damper.
8. Sizing of electrical components not supplied by Ingersoll Rand is the responsibility of the customer and should be done in accordance with the information on the compressor data plate and national and local electrical codes.

NOTE

All dimensions are in millimetres (inches) unless otherwise stated.

Ensure that the correct fork lift truck slots or marked lifting points are used whenever the machine is lifted or transported.

UNPACKING

The compressor will normally be delivered with a polythene cover. If a knife has to be used to remove this cover ensure that the exterior paintwork of the compressor is not damaged.

Ensure that all transport and packing materials are discarded in a manner prescribed by local codes.

http://air.ingersollrand.com
KEY

1. Compressor
2. Air Receiver
3. Air Dryer
4. Compressed air filters
5. System demand points

NOTE
Items [2] to [5] are optional or may be existing items of plant. Refer to your Ingersoll Rand distributor / representative for specific recommendations.

LOCATION IN THE PLANT
The compressor can be installed on any level floor capable of supporting it. A dry, well ventilated area where the atmosphere is clean is recommended. A minimum of 1m (3ft) should be left all around machine for adequate service access and ventilation.

Adequate clearance needs to be allowed around and above the machine to permit safe access for specified maintenance tasks.

Ensure that the machine is positioned securely and on a stable foundation. Any risk of movement should be removed by suitable means, especially to avoid strain on any rigid discharge piping.

CAUTION
Screw type compressors [1] should not be installed in air systems with reciprocating compressors without means of isolation such as a common receiver tank. It is recommended that both types of compressor be piped to a common receiver using individual air lines.

CAUTION
The use of plastic bowls on line filters and other plastic air line components can be hazardous. Their safety can be affected by either synthetic coolants or the additives used in mineral oils. Ingersoll Rand recommends that only filters with metal bowls should be used on any pressurised system.

CAUTION
The standard compressor unit is not suitable for operation in temperatures liable to cause freezing as condensate water is liable to be produced in the after cooler and receiver where fitted.

Refer to your Ingersoll Rand distributor for further information.

DISCHARGE PIPING
Discharge piping should be at least as large as the discharge connection of the compressor. All piping and fittings should be suitably rated for the discharge pressure.

It is essential when installing a new compressor [1], to review the total air system. This is to ensure a safe and effective total system. One item which should be considered is liquid carryover. Installation of air dryers [3] is always good practice since properly selected and installed they can reduce any liquid carryover to zero.

It is good practice to locate an isolation valve close to the compressor and to install line filters [4].

It is a requirement for air dryers covered under AirCare that correctly sized Ingersoll Rand pre and afterfilters are installed.
## OPERATING PRESSURE

<table>
<thead>
<tr>
<th>Model</th>
<th>UP6 5</th>
<th>UP6 7</th>
<th>UP6 10</th>
<th>UP6 15c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure PSIG (bar)</td>
<td>125 (8.6)</td>
<td>150 (10.3)</td>
<td>125 (8.6)</td>
<td>150 (10.3)</td>
</tr>
<tr>
<td>Flow rate CFM (m³/Min)</td>
<td>18.5 (0.52)</td>
<td>16.0 (0.45)</td>
<td>28.0 (0.79)</td>
<td>25.0 (0.71)</td>
</tr>
</tbody>
</table>

### Factory set reload pressure PSIG (bar)

<table>
<thead>
<tr>
<th>Model</th>
<th>UP6 5</th>
<th>UP6 7</th>
<th>UP6 10</th>
<th>UP6 15c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure PSIG (bar)</td>
<td>110 (7.58)</td>
<td>130 (8.96)</td>
<td>110 (7.58)</td>
<td>130 (8.96)</td>
</tr>
<tr>
<td>Flow rate CFM (m³/Min)</td>
<td>18.5 (0.52)</td>
<td>16.0 (0.45)</td>
<td>28.0 (0.79)</td>
<td>25.0 (0.71)</td>
</tr>
</tbody>
</table>

## AIREND DISCHARGE TEMPERATURE TRIP POINT

228°F (109°C)

## AMBIENT OPERATING TEMPERATURE

36°F (+2°C) → 105°F (+40°C)

### MOTOR

#### Nominal Power

<table>
<thead>
<tr>
<th>Model</th>
<th>UP6 5</th>
<th>UP6 7</th>
<th>UP6 10</th>
<th>UP6 15c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>5HP</td>
<td>7.5HP</td>
<td>10HP</td>
<td>15HP</td>
</tr>
<tr>
<td>Insulation class</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL DATA

- Residual coolant content: 3ppm (3 mg/m³)
- Separator vessel capacity: 0.8 gallons (3 Litres)
- Coolant capacity: 1.2 gallons (4.5 Litres)
- Sound pressure level to CAGI-PNEUROP: 65 dB(A)
- Weight-base mount unit: 295kg (650lb)
- Weight-80 gallon Receiver mounted: 420kg (925lb)
- Weight-120 gallon Receiver mounted: 436kg (960lb)

### CAUTION

230/460 Dual voltage machines are fitted with a decal to advise the correct voltage as connected from the factory. There is a decal fitted to the starter door describing the procedure to change the connections for the alternative voltage. Rewiring should only be effected by a competent Electrician.
## INSTALLATION / HANDLING

<table>
<thead>
<tr>
<th></th>
<th>50Hz</th>
<th>UP5 4</th>
<th>UP5 5</th>
<th>UP5 7</th>
<th>UP5 11c</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPRESSOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating pressure PSIG (bar)</td>
<td>115 (8)</td>
<td>145 (10)</td>
<td>210 (14.5)</td>
<td>115 (8)</td>
<td>145 (10)</td>
</tr>
<tr>
<td>Factory set reload pressure PSIG (bar)</td>
<td>100 (7.58)</td>
<td>125 (8.96)</td>
<td>--</td>
<td>100 (7.93)</td>
<td>125 (9.66)</td>
</tr>
<tr>
<td>Flow rate CFM (m³/MIN)</td>
<td>19.5 (0.55)</td>
<td>16.0 (0.45)</td>
<td>--</td>
<td>29.0 (0.82)</td>
<td>26.0 (0.74)</td>
</tr>
</tbody>
</table>

Airend discharge temperature trip point: 228°F (109°C)

Ambient operating temperature (min.) → (max.): 36°F (+2°C) → 105°F (+40°C)

### MOTOR

<table>
<thead>
<tr>
<th>Motor enclosure</th>
<th>TEFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal power</td>
<td>4KW</td>
</tr>
<tr>
<td>Speed</td>
<td>2900 RPM</td>
</tr>
<tr>
<td>Insulation class</td>
<td>F</td>
</tr>
</tbody>
</table>

### GENERAL DATA

| Residual coolant content | 3ppm (3 mg/m3) |
| Separator vessel capacity | 0.8 gallons (3 Litres) |
| Coolant capacity | 1.2 gallons (4.5 Litres) |
| Sound pressure level to CAGI-PNEUROP | 65 dB(A) | 65 dB(A) | 68 dB(A) | 69 dB(A) |
| Weight-base mount unit | 295kg (650lb) |
| Weight-272 Litres Receiver mounted | 420kg (925lb) |
| Weight-500 Litres Receiver mounted | 454kg (1000lb) |

### DRYER ENGINEERING DATA

<table>
<thead>
<tr>
<th>60Hz</th>
<th>50Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical supply</td>
<td>115V - 1ph - 60Hz</td>
</tr>
<tr>
<td>L.R.A. current (Amps)</td>
<td>30.0</td>
</tr>
<tr>
<td>F.L.A. current (Amps)</td>
<td>5.0</td>
</tr>
<tr>
<td>Total installed power (kW)</td>
<td>0.46</td>
</tr>
<tr>
<td>Electrical protection class (std)</td>
<td>NEMA 1 (IP 20)</td>
</tr>
<tr>
<td>Factory refrigerant charge (lb/g)</td>
<td>0.78 lb</td>
</tr>
<tr>
<td>Refrigeration type</td>
<td>134 A</td>
</tr>
</tbody>
</table>

### CAUTION

230/460 Dual voltage machines are fitted with a decal to advise the correct voltage as connected from the factory. There is a decal fitted to the starter door describing the procedure to change the connections for the alternative voltage. Rewiring should only be effected by a competent Electrician.

### ELECTRICAL DATA-UP6 5

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### ELECTRICAL DATA-UP6 7.5

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>230V/1PH</th>
<th>200V</th>
<th>230V/3PH</th>
<th>460V</th>
<th>575V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>34.1A</td>
<td>22.7A</td>
<td>19.7A</td>
<td>9.9A</td>
<td>7.9A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>50A</td>
<td>35A</td>
<td>35A</td>
<td>15A</td>
<td>12A</td>
</tr>
<tr>
<td>Recommended wire size AWG See note 2</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

### ELECTRICAL DATA-UP6 10

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>230V/1PH</th>
<th>200V</th>
<th>230V/3PH</th>
<th>460V</th>
<th>575V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>-</td>
<td>29.8A</td>
<td>26.0A</td>
<td>13.0A</td>
<td>10.3A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>-</td>
<td>50A</td>
<td>45A</td>
<td>20A</td>
<td>15A</td>
</tr>
<tr>
<td>Recommended wire size AWG See note 2</td>
<td>-</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

### ELECTRICAL DATA-UP6 15c

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>230V/1PH</th>
<th>200V</th>
<th>230V/3PH</th>
<th>460V</th>
<th>575V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>-</td>
<td>43.2A</td>
<td>37.6A</td>
<td>18.8A</td>
<td>15.1A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>-</td>
<td>75A</td>
<td>65A</td>
<td>30A</td>
<td>25A</td>
</tr>
<tr>
<td>Recommended wire size AWG See note 2</td>
<td>-</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

1. If a circuit breaker is selected it should only be a magnetic trip type, set above the anticipated starting current of the machine, but below the maximum prospective fault current for the circuit. The circuit breaker or fuseable disconnect must be capable of breaking the prospective fault current at its terminals.

2. PVC/PVC Type Calculated using the following conditions:
   - i) PVC insulated cable, armoured, copper conductors.
   - ii) Cable clipped to a wall, in free air.
   - iii) Ambient temperature of 40°C (104°F) and relative humidity of 40%.
   - iv) 20m (65ft) cable run.
   - v) Volt drop limited to –10% during starting, –4% during normal running.
   - vi) Protected by the circuit breaker listed above.

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### ELECTRICAL DATA-UP5 4

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>380V</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>8.9A</td>
<td>8.5A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>66</td>
<td>63</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td></td>
</tr>
<tr>
<td>Starts per hour (maximum)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>16A</td>
<td>16A</td>
</tr>
<tr>
<td>Recommended wire size See note 2</td>
<td>4 mm²Cu</td>
<td>4 mm²Cu</td>
</tr>
</tbody>
</table>

### ELECTRICAL DATA-UP5 5.5

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>380V</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>11.8A</td>
<td>11.2A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>100</td>
<td>95</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td></td>
</tr>
<tr>
<td>Starts per hour (maximum)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>16A</td>
<td>16A</td>
</tr>
<tr>
<td>Recommended wire size See note 2</td>
<td>4 mm²Cu</td>
<td>4 mm²Cu</td>
</tr>
</tbody>
</table>

### ELECTRICAL DATA-UP5 7.5

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>380V</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>16.9A</td>
<td>15.6A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>121 (94)</td>
<td>114 (52)</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td></td>
</tr>
<tr>
<td>Starts per hour (maximum)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>20A</td>
<td>20A</td>
</tr>
<tr>
<td>Recommended wire size See note 2</td>
<td>4 mm²Cu</td>
<td>4 mm²Cu</td>
</tr>
</tbody>
</table>

### ELECTRICAL DATA-UP5 11c

<table>
<thead>
<tr>
<th>Standard voltage</th>
<th>380V</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full load current (maximum)</td>
<td>23.0A</td>
<td>21.9A</td>
</tr>
<tr>
<td>Starting current DOL (Star Delta)</td>
<td>(79)</td>
<td>(75)</td>
</tr>
<tr>
<td>Starting time DOL (Star Delta)</td>
<td>3–5 Sec (7–10 Sec)</td>
<td></td>
</tr>
<tr>
<td>Starts per hour (maximum)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Control voltage</td>
<td>120VAC</td>
<td></td>
</tr>
<tr>
<td>Recommended fuse rating See note 1</td>
<td>32A</td>
<td>32A</td>
</tr>
<tr>
<td>Recommended wire size See note 2</td>
<td>6 mm²Cu</td>
<td>6 mm²Cu</td>
</tr>
</tbody>
</table>

1. If a circuit breaker is selected it should only be a magnetic trip type, set above the anticipated starting current of the machine, but below the maximum prospective fault current for the circuit. The circuit breaker or fuseable disconnect must be capable of breaking the prospective fault current at its terminals.

2. PVC/PVC Type Calculated using the following conditions:
   - PVC insulated cable, armoured, copper conductors.
   - Cable clipped to a wall, in free air.
   - Ambient temperature of 40°C (104°F) and relative humidity of 40%.
   - 20m (65ft) cable run.
   - Volt drop limited to –10% during starting, –4% during normal running.
   - Protected by the circuit breaker listed above.
If there are any deviations from the above, or special regulations apply, the installation must be planned by a competent, qualified engineer.

**NOTE**

All data applies to standard product only.

**ELECTRICAL DATA**

An independent electrical isolator or disconnect should be installed adjacent to the compressor.

Feeder cables/wires should be sized by the customer/electrical contractor to ensure that the circuit is balanced and not overloaded by other electrical equipment. The length of wiring from a suitable electrical feed point is critical as voltage drops may impair the performance of the compressor.

Feeder cables / wires connections to isolator or disconnect should be tight and clean.

The applied voltage must be compatible with the motor and compressor data plate ratings.

The control circuit transformer has different voltage tappings. Ensure that these are set for the specific applied voltage prior to starting.

**CAUTION**

Never test the insulation resistance of any part of the machines electrical circuits, including the motor without completely disconnecting the electronic controller (where fitted).

**CAUTION**

Ensure that the motor rotates in the correct direction as indicated by direction arrows.
OPERATING INSTRUCTIONS

GENERAL OPERATION

The compressor is an electric motor driven, single stage screw compressor, complete with accessories piped, wired and base plate mounted. It is a totally self contained air compressor package.

The standard compressor is designed to operate in an ambient range of 35.6°F - 104°F (2°C to 40°C). The maximum temperature is applicable up to a maximum elevation of 3280ft (1000m) above sea level. Above this altitude significant reduction in maximum allowable ambient temperature is required.

Compression in the screw type air compressor is created by the meshing of two (male & female) helical rotors.

The air/coolant mixture discharges from the compressor into the separation system. This system removes all but a few PPM of the coolant from the discharge air. The coolant is returned to the cooling system and the air passes through the aftercooler and out of the compressor.

Cooling air is moved through the coolers by the cooling fan and discharged from the machine.

CAUTION

Cooling air is drawn in at the rear of the machine package passing through the filter and cooler before being discharged from the top of the machine. Care should be taken to avoid blocking the airflow, or causing any restriction in excess of the maximum backpressure allowed for ducting.

Do not direct the airflow at face or eyes.

By cooling the discharge air, much of the water vapour naturally contained in the air is condensed and may be drained from the downstream piping and equipment.

The coolant system consists of a sump, cooler, thermostatic valve and a filter. When the unit is operating, the coolant is pressurized and forced to the compressor bearings.

The compressor load control system is automatic on-off line. This allows the compressor to maintain a set discharge line pressure by varying output capacity to match the system demand. The unit is provided with an automatic stop and restart system for use in plants where the air demand varies sufficiently to allow a compressor to shut down and save power. Significant system volume will assist this and is recommended.

When the compressor is equipped with the optional dryer, the dryer will cycle on and off with the compressor.

OPERATION AND MAINTENANCE MANUAL

WARNING

When the unit stops running as the result of low air demand, it may restart and return to load at any time.

Safety of operation is provided as the compressor will shut down if excessive temperatures or electrical overload conditions should occur.

CAUTION

This unit is not designed or intended to operate when contaminated with silicone. Lubricants, greases or other items containing silicone should not be used on this unit.

CAUTION

LOW DEMAND APPLICATIONS

During periods of low demand, the compressor may not reach its normal operating temperature. Sustained operation at low demand can result in the build up of condensate in the coolant. If this situation occurs, the lubricating characteristics of the coolant can be impaired which may lead to damage of the compressor.

THE COMPRESSOR SHOULD BE ALLOWED AMPLE LOADED RUNNING TIME OF AT LEAST 10 MINUTES PER HOUR DURING NORMAL DAILY USE.
COMPRRESSOR CONTROLS

Direct online starting:
The compressor is equipped for Automatic Start & Stop Control. When the receiver tank pressure reaches the factory pre-set maximum pressure, the pressure switch stops the unit. When the receiver tank pressure drops below the factory pre-set minimum. The pressure switch resets and restarts the unit.
The pressure switch cover can be removed by unscrewing the two screws holding the cover.

Pressure switch adjustment:
The compressor package will cut-in and cut-out at factory preset pressure settings. Adjust the pressure switch only if absolutely necessary.
Adjustments are to be carried out only when the switch is mounted, under pressure and voltage-free.

WARNING
High voltage is present at the pressure switch contacts when the power supply is connected. Disconnect, lock and tag main power supply before making adjustments.

WARNING
Do not adjust the pressure switch to exceed the maximum discharge pressure of the unit.

NOTE
When replacing the pressure switch cover, ensure the selector knob on the cover and the lever on the switch are both in the “OFF” position.

NOTE
When the compressor is equipped with the optional dryer and filters, the pressure switch differential should be increased 10psi to account for the added pressure drop of the filters and dryer.

DUAL CONTROL
Select either automatic start and stop control or constant speed control by adjusting the knob on the auxiliary valve. For automatic start and stop control, turn the knob on the auxiliary valve fully clockwise to disable the auxiliary valve. The pressure switch will then start and stop the unit.

NOTE
Automatic Start & Stop Control is intended for use when the motor will start no more than 6 times per hour.

When the receiver tank pressure reaches the factory pre-set maximum pressure, the pressure switch stops the unit. When the receiver tank pressure drops below the factory pre-set minimum, the pressure switch resets and restarts the unit.

NOTE
The auxiliary valve is factory pre-set at 5 psig (0,3 bar) lower than the factory pressure switch setting.

CAUTION
Running unloaded with no air demand, will cause the unit to be shutoff by the pressure switch.
1. **PRESSURE GAUGE**
   Indicates the system pressure.

   **WARNING**
   DO NOT operate the compressor at discharge pressures exceeding the maximum operating pressure.

2. **HOURMETER**
   Records the total running time of the compressor.

3. **STOP BUTTON / EMERGENCY STOP**
   When depressed will stop the compressor immediately. The 'Power on' indicator will remain illuminated. The STOP button must be released before the compressor can be restarted.

4. **ON PUSH BUTTON SWITCH**
   When depressed will cause the unit to start and run in a loaded condition if there is a demand for air. If there is no demand, the machine will stop automatically.

5. **POWER ON INDICATOR LIGHT (Green)**
   Indicates the presence of control voltage.

6. **STOPPED/AUTO RESTART INDICATOR LIGHT (Amber)**
   Will illuminate when the machine has shut-down due to low air demand. The machine will restart and load automatically as soon as the demand for air returns.

7. **DEW POINT INDICATOR (Dryer Option)**
   Green indicates good dew point. Red indicates dew point above 50°F (10°C) Blue indicates freezing.

**PRIOR TO STARTING**

1. Make visual check of the machine, ensure that all guards secure and that nothing is obstructing the proper ventilation of, or free access to the machine.
2. Check coolant level. Add if necessary.
3. Make sure air discharge valve is open.
4. Turn on electrical isolator or disconnect. The Power on (5) indicator will light, indicating that line and control voltages are available.
5. Check direction of rotation at initial start or following interruption in power supply.

   **WARNING**
   Make sure that all protective covers are in place.
   Cooling air flow exhaust may contain flying debris. Safety protection should be worn at all times to avoid injury.

**STARTING**

1. Press the START button. The compressor will start and then load automatically.

**NORMAL/EMERGENCY STOPPING**

1. Press STOP button (3) and the compressor will stop immediately.
2. Turn off electrical isolator or disconnect.

   **CAUTION**
   After shutdown never allow unit to stand idle with pressure in receiver/separator system.
## MAINTENANCE SCHEDULE

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each 24 hours operation</td>
<td>Check the coolant level and replenish if necessary.</td>
</tr>
<tr>
<td>Visual check of machine for any leaks,</td>
<td>Report immediately, contact Ingersoll Rand authorized distributor for assistance if in doubt.</td>
</tr>
<tr>
<td>dust build up or unusual noise or vibration</td>
<td></td>
</tr>
<tr>
<td>When compressor is receiver mounted</td>
<td>Drain air receiver of condensate, or check that automatic drain is operating.</td>
</tr>
<tr>
<td>Visual check condition of package pre-</td>
<td>Blow clean if needed.</td>
</tr>
<tr>
<td>filter</td>
<td></td>
</tr>
<tr>
<td>First 150 hours</td>
<td>Change the coolant filter.</td>
</tr>
<tr>
<td>Each month or 100 hours</td>
<td>Remove and clean package pre-filter, replace if needed.</td>
</tr>
<tr>
<td></td>
<td>Check the cooler(s) for build up of foreign matter. Clean if necessary by blowing out with air or by pressure washing.</td>
</tr>
<tr>
<td>Each year or 2000 hours</td>
<td>Check the operation of the high temperature protection switch (109°C).</td>
</tr>
<tr>
<td></td>
<td>Replace elements in IRGP and IRHE filters.</td>
</tr>
<tr>
<td></td>
<td>Change the coolant filter.</td>
</tr>
<tr>
<td></td>
<td>Check scavenge screen for blockage, clean if required.</td>
</tr>
<tr>
<td></td>
<td>Change the separator element.</td>
</tr>
<tr>
<td></td>
<td>Change the Air Filter element.</td>
</tr>
<tr>
<td></td>
<td>Take coolant sample for fluid analysis.</td>
</tr>
<tr>
<td></td>
<td>Change the package pre-filter.</td>
</tr>
<tr>
<td></td>
<td>Check Drive Belts.</td>
</tr>
<tr>
<td></td>
<td>Motors without grease fittings - Replace sealed bearings</td>
</tr>
<tr>
<td>1 year external and 6 years internal</td>
<td>Separator vessel and air receiver when fitted.</td>
</tr>
<tr>
<td>pressure vessel inspection.</td>
<td>Fully inspect all external surfaces, and fittings. Report any excessive corrosion, mechanical or impact damage, leakage or other deterioration.</td>
</tr>
<tr>
<td>Frequency may be otherwise defined by local</td>
<td></td>
</tr>
<tr>
<td>or national legislation.</td>
<td></td>
</tr>
<tr>
<td>Every two years or 8000 hours</td>
<td>Change drive belts.</td>
</tr>
<tr>
<td></td>
<td>Replace the Ultra at whichever interval occurs first.</td>
</tr>
<tr>
<td></td>
<td>Check and replace all items included within 2000 hour service.</td>
</tr>
<tr>
<td></td>
<td>Fit the following reconditioning parts as appropriate:</td>
</tr>
<tr>
<td></td>
<td>Solenoid valves</td>
</tr>
<tr>
<td></td>
<td>Inlet valve kit</td>
</tr>
<tr>
<td></td>
<td>Minimum Pressure valve kit</td>
</tr>
<tr>
<td></td>
<td>Thermostatic Valve Kit</td>
</tr>
<tr>
<td>Every 4 years or 16000 hours</td>
<td>Replace all hoses.</td>
</tr>
<tr>
<td></td>
<td>Check motors with grease fittings and grease per motor data tag</td>
</tr>
<tr>
<td></td>
<td>Fit replacement electrical contactor tips.</td>
</tr>
<tr>
<td></td>
<td>Motors without grease fittings - Replace sealed bearings</td>
</tr>
</tbody>
</table>
MAINTENANCE

ROUTINE MAINTENANCE

This section refers to the various components which require periodic maintenance and replacement.

It should be noted that the intervals between service requirement may be significantly reduced as a consequence of poor operating environment. This would include effects of atmospheric contamination and extremes of temperature.

The SERVICE/MAINTENANCE CHART indicates the various components' descriptions and the intervals when maintenance has to take place. Oil capacities, etc., can be found in the GENERAL INFORMATION section of this manual.

Compressed air can be dangerous if incorrectly handled. Before doing any work on the unit, ensure that all pressure is vented from the system and that the machine cannot be started accidentally.

Ensure that maintenance personnel are properly trained, competent and have read the Maintenance Manuals.

Prior to attempting any maintenance work, ensure that:-

- all air pressure is fully discharged and isolated from the system. If the automatic blowdown valve is used for this purpose, then allow enough time for it to complete the operation.
- the machine cannot be started accidentally or otherwise.
- all residual electrical power sources (mains and battery) are isolated.

OPERATION AND MAINTENANCE MANUAL

Prior to opening or removing panels or covers to work inside a machine, ensure that:-

- anyone entering the machine is aware of the reduced level of protection and the additional hazards, including hot surfaces and intermittently moving parts.
- the machine cannot be started accidentally or otherwise.

Prior to attempting any maintenance work on a running machine, ensure that:-

DANGER

Only properly trained and competent persons should undertake any maintenance tasks with the compressor running or with electrical power connected.

- the work carried out is limited to only those tasks which require the machine to run.
- the work carried out with safety protection devices disabled or removed is limited to only those tasks which require the machine to be running with safety protection devices disabled or removed.
- all hazards present are known (e.g. pressurised components, electrically live components, removed panels, covers and guards, extreme temperatures, inflow and outflow of air, intermittently moving parts, safety valve discharge etc.).
- appropriate personal protective equipment is worn.
- loose clothing, jewellery, long hair etc. is made safe.
- warning signs indicating that Maintenance Work is in Progress are posted in a position that can be clearly seen.

Upon completion of maintenance tasks and prior to returning the machine into service, ensure that:-

- the machine is suitably tested.
- all guards and safety protection devices are refitted and correctly working.
- all panels are replaced, canopy and doors closed.
- hazardous materials are effectively contained and disposed of in a manner compliant with local or National environmental protection codes.
WARNING
Do not under any circumstances open any drain valve or remove components from the compressor without first ensuring that the compressor is FULLY SHUT-DOWN, power isolated and all air pressure relieved from the system.

TOP UP COOLANT PROCEDURE
1. Slowly remove fill cap.
2. Pour coolant into spout until spout almost overflows.
3. Replace and tighten oil fill cap.
4. Start unit for about 10 seconds (until coolant drains out the bottom of the sight glass).
5. Slowly remove fill cap.
6. Re-fill into spout until spout almost overflows.
7. Replace and tighten oil fill cap.
8. Run unit.

NOTE
Coolant level is correct when a unit is showing coolant in bottom half of sight glass when up to operating temperature (ten minutes running loaded).

COOLANT CHANGE PROCEDURE
It is better to drain the coolant immediately after the compressor has been operating as the liquid will drain more easily and any contaminant will still be in suspension.

1. Stop the machine, electrically isolate and vent all trapped pressure.
2. Place a suitable container close to the drain valve.
3. Slowly remove fill cap.
4. Remove plug from drain valve.
5. Open the drain valve and drain coolant into container.
6. Close the drain valve.
7. Replace plug in drain valve.
8. Refill the machine following the "top up coolant" procedure above. After initial fill, to purge any airlocks, the machine should be run for a few minutes cycling between load and no load, before checking that the level is correct.
9. Replace and tighten oil fill cap.

COOLANT FILTER CHANGE PROCEDURE

1. Stop the machine, electrically isolate and vent all trapped pressure.
2. Loosen filter with the correct tool.
3. Remove the filter from the housing.
4. Place the old filter in a sealed bag and dispose of in a safe way.
5. Clean the mating face of the housing taking care to avoid any particles entering the machine.
6. Remove the new Ingersoll Rand replacement filter from its protective package.
7. Apply a small amount of lubricant to the filter seal.
8. Screw the new filter down until the seal makes contact with the housing, then hand tighten a further half turn.
9. Start the compressor and check for leaks.

AIR FILTER ELEMENT CHANGE PROCEDURE

1. Stop the machine, electrically isolate and vent all trapped pressure.
2. Unscrew the retaining cap and withdraw the old element.
3. Fit the new element.
4. Replace the retaining cap.

Ensure that SSR ULTRA is used. Failure to do so will void manufacturers warranty.
SEPARATOR ELEMENT CHANGE PROCEDURE

1. Stop the machine, electrically isolate and vent all trapped pressure.
2. Loosen separator element with the correct tool.
3. Remove the element from the housing; place it in a sealed bag and dispose of it safely.
4. Clean the mating face of the housing.
5. Remove the new Ingersoll Rand replacement element from its protective package.
6. Apply a small amount of lubricant to the element seal.
7. Screw the new element down until the seal makes contact with the housing, then hand tighten a further half turn.
8. Start the compressor and check for leaks.

**CAUTION**

This unit is not designed or intended to operate when contaminated with silicone. Lubricants, greases or other items containing silicone should not be used on this unit.

COOLER CLEANING PROCEDURE

1. Stop the machine, electrically isolate and vent all trapped pressure.
2. Remove the top cover to obtain access to the cooler.
3. Clean the cooler.
4. Rebuild in reverse order.

BELT CHECKING AND ADJUSTMENT PROCEDURE

Check belt tension occasionally, especially if looseness is suspected. A quick check to determine if adjustment is proper may be made by observing the slack side of the belt for a slight bow when the unit is in operation. If a slight bow is evident, the belt is usually adjusted satisfactorily.

A belt tension measurement device can be used to determine the tension of the belt.

Belt tensioning can be achieved by loosening the airenrd anchor screws, a belt tensioning bolt is provided to aid in moving the airenrd.

Follow the procedures outlined below to correctly set and measure belt tension.

1. Lay a straight edge across the top outer surface of the belt drive from pulley to sheave.
2. At the center of the span, perpendicular to the belt, apply pressure to the outer surface of the belt with a tension gauge. Force the belt to the deflection indicated in the table below, and compare the reading on the tension gauge to the figures shown.

<table>
<thead>
<tr>
<th>BELT TENSION</th>
<th>5hp/4kw *</th>
<th>7.5hp/5.5kw *</th>
<th>10hp/7.5kw *</th>
<th>15hp/11kw **</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New</strong></td>
<td><strong>Used</strong></td>
<td><strong>New</strong></td>
<td><strong>Used</strong></td>
<td><strong>New</strong></td>
</tr>
<tr>
<td>60hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125 psig</td>
<td>75 Lb (34 Kg)</td>
<td>62 Lb (28 Kg)</td>
<td>110 Lb (50 Kg)</td>
<td>90 Lb (41 Kg)</td>
</tr>
<tr>
<td>150 psig</td>
<td>75 Lb (34 Kg)</td>
<td>62 Lb (28 Kg)</td>
<td>90 Lb (41 Kg)</td>
<td>75 Lb (34 Kg)</td>
</tr>
<tr>
<td>210 psig</td>
<td>75 Lb (34 Kg)</td>
<td>62 Lb (28 Kg)</td>
<td>90 Lb (41 Kg)</td>
<td>75 Lb (34 Kg)</td>
</tr>
<tr>
<td>50hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 bar</td>
<td>85 Lb (39 Kg)</td>
<td>70 Lb (32 Kg)</td>
<td>85 Lb (39 Kg)</td>
<td>70 Lb (32 Kg)</td>
</tr>
<tr>
<td>10 bar</td>
<td>90 Lb (41 Kg)</td>
<td>75 Lb (34 Kg)</td>
<td>85 Lb (39 Kg)</td>
<td>70 Lb (32 Kg)</td>
</tr>
<tr>
<td>14.5 bar</td>
<td>90 Lb (41 Kg)</td>
<td>75 Lb (34 Kg)</td>
<td>100 Lb (45 Kg)</td>
<td>80 Lb (36 Kg)</td>
</tr>
</tbody>
</table>

* "Krikit I" gauge or equal
** "Krikit II" gauge or equal
**Ensuring the pulley and sheave are properly aligned and the motor anchor screws are adequately retightened prior to restarting the compressor.**

**CAUTION**

Improper pulley/sheave alignment and belt tension can result in motor overload, excessive vibration, and premature belt and/or bearing failure.

To prevent these problems from occurring, ensure the pulley and sheave are aligned and belt tension is satisfactory after installing new belts or tensioning existing belts.

**ELECTRIC DRAIN VALVE (OPTIONAL)**

**PRODUCT DESCRIPTION**

The Electric Drain Valve removes condensed water and oil from the air receiver tank. Additional drains may be installed throughout your compressed air system, including aftercoolers, filters, drip legs and dryers.

The Electric Drain Valve operates on a timer which can be set to automatically drain the air receiver tank at operator-determined intervals.

Key features include:

- 100% continuous duty
- NEMA 4 enclosure
- Adjustable time on (0.5 - 10 seconds)
- Adjustable time off (0.5 - 45 minutes)
- Stainless steel operator
- LED to indicate electrical power is on
- LED to indicate valve is open
- Manual override

**OPERATION**

1. Open the strainer ball valve.

   ![Strainer Ball Valve](image)

   **OPEN**  **CLOSED**

2. Set the “time off” and “time on” knobs. See TIMER SETTINGS (below) for an explanation of the settings.

3. During compressor operation, check for air leaks.

**TIMER SETTINGS**

The “time off” setting determines the interval between cycles from 30 seconds to 45 minutes. The “time on” setting determines the actual time the compressor drains condensate.

The timer’s cycle rate and drain opening time should be adjusted to open just long enough to discharge the condensate. The timer is properly set when it opens and discharges condensate and then vents air for approximately one second before closing. Adjustments may be made depending on many factors, including humidity and duty cycle.

**TROUBLESHOOTING**

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>CAUSE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve will not close</td>
<td>Debris in solenoid valve prevents</td>
<td>Remove solenoid valve,</td>
</tr>
<tr>
<td></td>
<td>diaphragm from seating</td>
<td>disassemble, clean and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reassemble.</td>
</tr>
<tr>
<td></td>
<td>Short in electrical component.</td>
<td>Check and replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>power cord or timer as needed.</td>
</tr>
<tr>
<td>Timer will not activate</td>
<td>No electrical supply.</td>
<td>Apply power.</td>
</tr>
<tr>
<td></td>
<td>Timer malfunction</td>
<td>Replace timer.</td>
</tr>
<tr>
<td></td>
<td>Clogged port.</td>
<td>Clean valve.</td>
</tr>
<tr>
<td></td>
<td>Solenoid valve malfunction.</td>
<td>Replace solenoid valve.</td>
</tr>
<tr>
<td></td>
<td>Clogged strainer.</td>
<td>Clean strainer.</td>
</tr>
</tbody>
</table>

**MAINTENANCE**

Periodically clean the screen inside the valve to keep the drain functioning at maximum capacity. To do this, perform the following steps:

1. Close the strainer ball valve completely to isolate it from the air receiver tank.

2. Press the TEST button on the timer to vent the pressure remaining in the valve. Repeat until all pressure is removed.

**CAUTION**

High pressure air can cause injury from flying debris. Ensure the strainer ball valve is completely closed and pressure is released from the valve prior to cleaning.

3. Remove the plug from the strainer with a suitable wrench. If you hear air escaping from the cleaning port, STOP IMMEDIATELY and repeat steps 1 and 2.

4. Remove the stainless steel filter screen and clean it. Remove any debris that may be in the strainer body before replacing the filter screen.

5. Replace plug and tighten with wrench.

6. When putting the Electric Drain Valve back into service, press the TEST button to confirm proper function.
Before accessing live electrical parts, disconnect the power supply to the dryer using disconnect switch or disconnect the cable connections.

**Preventive maintenance**

For optimum performance from your dryer, follow the periodic maintenance schedule described below.

<table>
<thead>
<tr>
<th>WEEKLY</th>
<th>CONDENSATE DRAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Verify that the condensate drains are operating correctly.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EVERY 4 MONTHS</th>
<th>CONDENSER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remove any dust from the condenser fins.</td>
</tr>
</tbody>
</table>

| COMPRESSOR      | Make sure compressor power consumption complies with data plate specifications. |

<table>
<thead>
<tr>
<th>YEARLY</th>
<th>CONDENSATE DRAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely disassemble the drains and clean all their components.</td>
</tr>
</tbody>
</table>

| AIR FILTER      | Replace air filter element. |

**MOISTURE SEPARATOR MAINTENANCE**

The moisture separator will operate indefinitely under normal working conditions, however at some time it may be necessary to replace the seals should the housing leak.

1. Isolate the housing from the air supply.
2. Fully depressurize in drain bowl as appropriate.
3. Unscrew bowl and remove. If pressure has not been completely released from the housing, air will escape from the warning hole giving an audible alarm. Screw back bowl and repeat instruction 2 before attempting again. Should resistance to unscrewing be experienced, provision is made for a ‘C’ spanner to fit onto the ribs of the bowl.
4. Check condition of bowl seal and replace if necessary. Clean screw threads.
5. Refit bowl with ‘O’ ring seal.
6. Repressurize and check for leaks. If leaks occur they will most probably be from the bowl ‘O’ ring. Depressurize housing and remove ‘O’ ring as stated above and inspect and clean. Ensure that mating surfaces are clean and then refit ‘O’ ring and repressurize.

**AIR FILTER MAINTENANCE**

In order to ensure optimum compressed air quality the filter element should be replaced as follows. (Used filter elements must be disposed of in accordance with local regulations.)

Use only genuine Ingersoll Rand replacement elements.
DISASSEMBLING THE UNIT

The unit has been designed and constructed to guarantee continuous operation.

The long service life of some components such as the fan and compressor depends on good maintenance. The unit must only be disassembled by a refrigerant specialist.

Refrigerant liquid and lubricating oil inside the refrigeration circuit must be recovered in compliance with current norms in the country where the machine is installed.

<table>
<thead>
<tr>
<th>RECYCLING DISASSEMBLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame and panels</td>
</tr>
<tr>
<td>Heat exchanger (cooler)</td>
</tr>
<tr>
<td>Pipes</td>
</tr>
<tr>
<td>Insulation</td>
</tr>
<tr>
<td>Compressor</td>
</tr>
<tr>
<td>Condenser</td>
</tr>
<tr>
<td>Refrigerant</td>
</tr>
<tr>
<td>Valve</td>
</tr>
</tbody>
</table>

REFRIGERANT LEAKS IN THE REFRIGERATION CIRCUIT

The unit is despatched in perfect working order, already charged.

Refrigerant leaks may be identified by tripping of the refrigeration overload protector.

IF A LEAK IS DETECTED IN THE REFRIGERANT CIRCUIT, SEEK TECHNICAL ASSISTANCE.

REFRIGERANT CHARGING

THIS OPERATION MUST ONLY BE PERFORMED BY A REFRIGERANT SPECIALIST.

WHEN REPAIRING THE REFRIGERANT CIRCUIT, COLLECT ALL THE REFRIGERANT IN A CONTAINER AND DISPOSE OF IT IN THE APPROPRIATE MANNER.

CHARACTERISTICS OF REFRIGERANT R134A

In normal temperature and pressure conditions the above refrigerant is a colorless, class A1/A1 gas with TVL value of 1000 ppm (ASHRAE classification).

If a refrigerant leak occurs, thoroughly air the room before commencing work.

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>CAUSE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid condensate valve will not close.</td>
<td>Debris in solenoid valve prevents diaphragm from seating.</td>
<td>Remove solenoid valve, disassemble, clean and reassemble.</td>
</tr>
<tr>
<td></td>
<td>Short in electrical component.</td>
<td>Check and replace power cord or timer as needed.</td>
</tr>
<tr>
<td>Drain timer will not operate.</td>
<td>No electrical supply.</td>
<td>Apply power.</td>
</tr>
<tr>
<td></td>
<td>Timer malfunction</td>
<td>Replace timer.</td>
</tr>
<tr>
<td></td>
<td>Clogged port.</td>
<td>Clean valve.</td>
</tr>
<tr>
<td></td>
<td>Solenoid valve malfunction.</td>
<td>Replace solenoid valve.</td>
</tr>
<tr>
<td></td>
<td>Clogged strainer.</td>
<td>Clean strainer.</td>
</tr>
</tbody>
</table>

MAINTENANCE

Periodically clean the screen inside the valve to keep the drain functioning at maximum capacity. To do this, perform the following steps:

1. Close the strainer ball valve completely to isolate it from the air receiver tank.
2. Press the TEST button on the timer to vent the pressure remaining in the valve. Repeat until all pressure is removed.

CAUTION

High pressure air can cause injury from flying debris. Ensure the strainer ball valve is completely closed and pressure is released from the valve prior to cleaning.

3. Remove the plug from the strainer with a suitable wrench. If you hear air escaping from the cleaning port, STOP IMMEDIATELY and repeat steps 1 and 2.
4. Remove the stainless steel filter screen and clean it. Remove any debris that may be in the strainer body before replacing the filter screen.
5. Replace plug and tighten with wrench.
6. When putting the Electric Drain Valve back into service, press the TEST button to confirm proper function.
## TROUBLE SHOOTING

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor fails to start</td>
<td>Mains power or Control voltage not available.</td>
<td>§ Check incoming power supply. § Check the control circuit fuse. § Check the transformer secondary windings for the control voltage.</td>
</tr>
<tr>
<td></td>
<td>Defective Star / Delta timer.</td>
<td>§ Change Star / Delta timer.</td>
</tr>
<tr>
<td>Machine shuts down periodically</td>
<td>High airend temperature.</td>
<td>Top up coolant.</td>
</tr>
<tr>
<td></td>
<td>Motor overload.</td>
<td>§ Set overload to correct value and switch to manual reset.</td>
</tr>
<tr>
<td></td>
<td>Line voltage variation.</td>
<td>§ Ensure voltage does not drop below 10% on start up and 6% running.</td>
</tr>
<tr>
<td>High current draw</td>
<td>Compressor operating above rated pressure.</td>
<td>Set pressure to correct rating for machine.</td>
</tr>
<tr>
<td></td>
<td>Separator cartridge contaminated.</td>
<td>Change air filter, and separator element.</td>
</tr>
<tr>
<td></td>
<td>Low voltage.</td>
<td>§ Ensure voltage does not drop below 10% on start up and 6% running.</td>
</tr>
<tr>
<td></td>
<td>Unbalanced voltage.</td>
<td>Correct incoming supply voltage.</td>
</tr>
<tr>
<td></td>
<td>Damaged airend.</td>
<td>† Change Airend.</td>
</tr>
<tr>
<td>Low current draw</td>
<td>Air filter contaminated.</td>
<td>Change air filter.</td>
</tr>
<tr>
<td></td>
<td>Compressor operating unloaded.</td>
<td>Set pressure to correct rating for machine.</td>
</tr>
<tr>
<td></td>
<td>High voltage.</td>
<td>Reduce site voltage to correct operating voltage.</td>
</tr>
<tr>
<td></td>
<td>Defective inlet valve.</td>
<td>† Fit inlet valve service kit.</td>
</tr>
<tr>
<td>High discharge pressure</td>
<td>Defective or incorrect pressure switch setting.</td>
<td>Replace or set pressure to correct rating for machine.</td>
</tr>
<tr>
<td></td>
<td>Blowdown valve defective.</td>
<td>† Fit blowdown solenoid service kit.</td>
</tr>
<tr>
<td></td>
<td>Inlet valve malfunction.</td>
<td>† Fit inlet valve service kit.</td>
</tr>
<tr>
<td>Low system air pressure</td>
<td>Separator cartridge contaminated.</td>
<td>Fit new Separator element.</td>
</tr>
<tr>
<td></td>
<td>Incorrect pressure transducer setting</td>
<td>Set pressure to correct rating for machine.</td>
</tr>
<tr>
<td></td>
<td>Minimum pressure valve malfunction.</td>
<td>† Fit Minimum pressure valve service kit.</td>
</tr>
<tr>
<td></td>
<td>Blowdown valve defective.</td>
<td>† Fit blowdown solenoid service kit.</td>
</tr>
<tr>
<td></td>
<td>Drive belt slipping.</td>
<td>Fit new belt.</td>
</tr>
<tr>
<td></td>
<td>Air system leaks.</td>
<td>† Fix leaks.</td>
</tr>
<tr>
<td></td>
<td>Inlet valve malfunction.</td>
<td>† Fit inlet valve service kit.</td>
</tr>
<tr>
<td></td>
<td>System demand exceeds compressor delivery.</td>
<td>Reduce demand or install additional compressor.</td>
</tr>
<tr>
<td></td>
<td>Compressed air filters contaminated.</td>
<td>Replace air filter elements.</td>
</tr>
<tr>
<td>High dewpoint</td>
<td>Refrigeration compressor not supplied power.</td>
<td>Check incoming power supply.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check the dryer protection fuse.</td>
</tr>
<tr>
<td></td>
<td>Condensate system malfunction.</td>
<td>Check operation of drain valve.</td>
</tr>
<tr>
<td></td>
<td>Condenser dirty.</td>
<td>Check operation of condensate check valves.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean condenser and replace panel filter element.</td>
</tr>
<tr>
<td>Ice formation in dryer</td>
<td>Low evaporator pressure.</td>
<td>Check hot gas valve setting.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor trips due to over temperature</td>
<td>Compressor operating above rated pressure.</td>
<td>Set pressure to correct rating for machine.</td>
</tr>
<tr>
<td></td>
<td>Cooler blocked.</td>
<td>Clean cooler.</td>
</tr>
<tr>
<td></td>
<td>Missing or incorrectly fitted enclosure panels</td>
<td>Ensure that all enclosure panels are correctly fitted.</td>
</tr>
<tr>
<td></td>
<td>Low coolant level.</td>
<td>Top up coolant and check for leaks.</td>
</tr>
<tr>
<td></td>
<td>High ambient temperature.</td>
<td>Re–site compressor.</td>
</tr>
<tr>
<td></td>
<td>Restricted cooling air flow.</td>
<td>Ensure correct air flow to compressor.</td>
</tr>
</tbody>
</table>

### Excessive coolant consumption

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separator element leak.</td>
<td>Fit new Separator element.</td>
</tr>
<tr>
<td>Blocked separator element drain.</td>
<td>† Remove fittings and clean.</td>
</tr>
<tr>
<td>Compressor operating below rated pressure.</td>
<td>Set pressure to correct rating for machine.</td>
</tr>
<tr>
<td>Coolant system leak.</td>
<td>† Fix leaks.</td>
</tr>
</tbody>
</table>

### Excessive noise level

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air system leaks.</td>
<td>† Fix leaks.</td>
</tr>
<tr>
<td>Airend defective.</td>
<td>† Change Airend.</td>
</tr>
<tr>
<td>Belts Slipping.</td>
<td>Replace belt and tensioner.</td>
</tr>
<tr>
<td>Motor defective.</td>
<td>† Replace motor.</td>
</tr>
<tr>
<td>Loose components.</td>
<td>† Retighten loose items.</td>
</tr>
</tbody>
</table>

### Shaft seal leaking

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defective shaft seal.</td>
<td>† Fit Airend shaft seal kit.</td>
</tr>
</tbody>
</table>

### Pressure relief valve opens

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defective switch or incorrect pressure switch setting.</td>
<td>Replace or set pressure to correct rating for machine.</td>
</tr>
<tr>
<td>Minimum pressure valve malfunction.</td>
<td>† Fit Minimum pressure valve service kit.</td>
</tr>
<tr>
<td>Blowdown valve defective.</td>
<td>† Fit blowdown solenoid service kit.</td>
</tr>
<tr>
<td>Inlet valve malfunction.</td>
<td>† Fit inlet valve service kit.</td>
</tr>
<tr>
<td>Pressure relief valve defective.</td>
<td>Check the setting of the pressure relief valve and the rated pressure.</td>
</tr>
</tbody>
</table>

### Black residue on belt guard/cooler box

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive belt slipping.</td>
<td>Replace belt and tensioner.</td>
</tr>
<tr>
<td>Pulleys misaligned.</td>
<td>Re–align pulleys.</td>
</tr>
<tr>
<td>Worn pulleys.</td>
<td>† Replace pulleys and belt.</td>
</tr>
</tbody>
</table>

### Safety valve blows when compressor goes on load

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum pressure valve stuck closed.</td>
<td>Strip minimum pressure valve, examine and repair if necessary.</td>
</tr>
<tr>
<td>Safety valve faulty</td>
<td>Check the setting of the safety valve and the rated pressure.</td>
</tr>
</tbody>
</table>

### Notes:

§ Must be carried out by a competent electrician.
† This work is recommended to be carried out only by an Ingersoll Rand authorized service technician.

### Caution

**Low Demand Applications**

During periods of low demand, the compressor may not reach its normal operating temperature. Sustained operation at low demand can result in the build up of condensate in the coolant. If this situation occurs, the lubricating characteristics of the coolant can be impaired which may lead to damage of the compressor.

The compressor should be allowed ample loaded running time of at least 10 minutes per hour during normal daily use.
LOOK WHAT INGERSOLL RAND CAN DO FOR YOU!

**Efficient Field Service**
We maintain a highly trained staff of technicians to service your equipment for preventive maintenance, or to assist you should emergencies ever occur.

**Complete Repair Service**
Our trained technicians will repair or overhaul your equipment to factory specifications, using only genuine Ingersoll Rand parts.

**Special Engineering Service**
We can help you identify and solve your problems by evaluating your needs and recommending the proper equipment to give your maximum efficiency.

**Spare Parts**
By stocking genuine Ingersoll Rand spare parts, we can help you avoid costly delays or substituting inferior parts. Using genuine Ingersoll Rand parts on your Ingersoll Rand equipment will help to keep even older equipment running in good-as-new condition.

**Complete Stock of Equipment**
We carry a complete line of Ingersoll Rand equipment and accessories designed to meet any compressed air application. We are backed by Ingersoll Rand’s prompt factory shipment to ensure you on-time delivery.

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A SUBSTITUTE IS NOT A REPLACEMENT!

Ensure you get peak performance and longevity out of your Ingersoll Rand product by insisting on genuine Ingersoll Rand replacement parts and maintenance kits. Not only are the replacement parts made to precise dimensions and OEM-specified metallurgy, but each part is backed by the Ingersoll Rand warranty. Your local Customer Center, Distributor, or direct Ingersoll Rand salesperson will work with you to ensure you get the parts you need to do the job right. Equip your machines with only the best Ingersoll Rand genuine parts.

NOTE: THE USE OF REPAIR PARTS OTHER THAN THOSE INCLUDED WITHIN THE INGERSOLL RAND COMPANY APPROVED PARTS LIST MAY CREATE UNSAFE CONDITIONS OR MECHANICAL FAILURES OVER WHICH INGERSOLL RAND COMPANY HAS NO CONTROL. INGERSOLL RAND COMPANY SHALL BEAR NO RESPONSIBILITY FOR EQUIPMENT ON WHICH NON-APPROVED REPAIR PARTS ARE INSTALLED.

The manufacturer reserves the right to make changes or add improvements without notice and without incurring any obligation to make such changes to products previously sold.