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CONDOR SIGNAL & COMMUNICATIONS INC.

CONDOR SIGNAL & COMMUNICATIONS INC.

PRODUCT CATALOGUE

Providing Rail and Transit Solutions for over 25 years

- Project Management
- Signal System Design and Consulting
- Control and Communication Systems
- Signal System Wiring, Testing, Installation and Maintenance
- Grade Crossing Warning Systems, Installation
- Metal Fabrication including Signal Housings and Structures
- Snow Protection Equipment
- Field service

Message from the President & CEO ……

As a former Signal Supervisor with the Canadian National Railway on the Toronto commuter corridor, I am well aware of the different challenges that one encounters on optimum safety, performance, and above all to “keep ’em moving”.

Primarily, when John Conti, Head of Engineering, and I founded Condor Signal & Communications Inc. (formerly A.M. Signal Systems & Advanced Railway Concepts Ltd.), our mission was based on providing superior signal solutions at a competitive price. Since then we have evolved into a business providing you solutions for winter switch clearing, signal system design and maintenance, PC based train movement management, crossing systems and maintenance to name a few.

Over the years we have researched your needs and in order to meet your requirements for superior signal performance to “keep ’em moving”, we have built a strong portfolio of products which are exceptional in quality, design, performance, safety and economical; keeping in mind, the budgets that are under tremendous pressure, forcing your team to optimize resources and review your operating plans to meet business constraints.

We take pride in our entire switch clearing products that have been designed with your needs in mind to provide exceptional snow clearing performance while dramatically reducing overall cost of ownership and maintenance. Needless to say, this all leads to improvements in your operating ratios and performance benchmarks.

We welcome you to contact us to discuss your challenges and our team of ***Real People*** with ***Real Vision*** committed to creating ***Real Results*** will be available to provide you with the best solution for your needs. Our commitment begins the moment our relationship does.

Keep ‘em moving!

Mike Sullivan
President & CEO
Condor Signal & Communication Inc.

Table of Contents

T1000 and T2000 High Velocity Cold Air Blowers

The **T1000 High Velocity Cold Air Blower** was developed to keep railway switch point areas clear of snow and ice buildup. This is achieved by utilizing a motor driven, high efficiency fan to generate a high volume of ambient air flow in excess of 3300 CFM. The basic control system consists of an ON/OFF switch, overload protection and phase protection.

T1000	
Description	**Part Number**
5HP, 230V, Single Phase	T152301PWH
5HP, 230V, Three Phase	T152303PWH
5HP, 460V, Three Phase	T154603PWH
5HP, 575V, Three Phase	T155753PWH
7.5HP, 230V, Single Phase	T1752301PWH
7.5HP, 230V, Three Phase	T1752303PWH
7.5HP, 460V, Three Phase	T1754603PWH
7.5HP, 575V, Three Phase	T1755753PWH

The design of the **T2000** has been improved to offer the same performance as the T1000, while offering a design that is conducive to an unprotected area that may be susceptible to theft or vandalism. These improvements include an enclosed outer box that encases the motor and a protected air intake. Even though these improvements prevent tampering with the unit, it also protects the unit from severe winter conditions and extreme snow accumulation.

T2000	
Description	**Part Number**
5HP, 230V, Single Phase	T252301PWH
5HP, 230V, Three Phase	T252303PWH
5HP, 460V, Three Phase	T254603PWH
5HP, 575V, Three Phase	T255753PWH
7.5HP, 230V, Single Phase	T2752301PWH
7.5HP, 230V, Three Phase	T2752303PWH
7.5HP, 460V, Three Phase	T2754603PWH
7.5HP, 575V, Three Phase	T2755753PWH

AVAILABLE OPTIONS FOR BOTH THE T1000 AND T2000 BLOWERS

- ON/OFF Switch
- Motor Overload Protection
- Phase Protection
- Local/Remote Switch
- Temperature Controller
- Snow Sensor
- 3 Position Switch
- 4 Position Switch
- Delay Timer
- Indication Contacts
- Radio Controller

T3400 Chinook –Dual-Mode Hot/Cold Air High Velocity Blower

The **T3400 Chinook** is a combination of our reliable hot and cold air blowers into ONE highly efficient and extremely reliable snow clearing system. Featuring independently controlled high velocity cold air blowers into one package allows you to pick the performance profile that best matches your winter conditions.

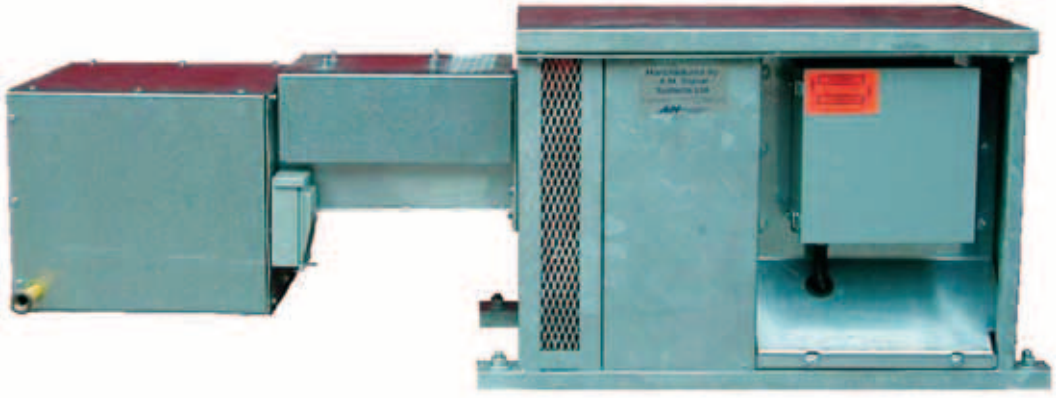
BENEFITS OF THE T3400 CHINOOK

- Dual Mode provides backup insurance
- Combines exceptional performance with optimal fuel economy
- Low maintenance, quick installation
- Saves up to 70% in utility costs
- Eliminates the need for cumbersome track ducts
- Available in Natural Gas or Electric

T3400 CHINOOK	
Description	**Part Number**
5HP, 230V, Single Phase	T52301PWHCHC
5HP, 230V, Three Phase	T52303PWHCHC
5HP, 460V, Three Phase	T54603PWHCHC
5HP, 575V, Three Phase	T55753PWHCHC
7.5HP, 230V, Single Phase	T752301PWHCHC
7.5HP, 230V, Three Phase	T752303PWHCHC
7.5HP, 460V, Three Phase	T754603PWHCHC
7.5HP, 575V, Three Phase	T755753PWHCHC

AVAILABLE OPTIONS FOR BOTH THE T3400 CHINOOK

- ON/OFF Switch
- Motor Overload Protection
- Phase Protection
- Local/Remote Switch
- Temperature Controller
- Snow Sensor
- 3 Position Switch
- 4 Position Switch
- Delay Timer
- Indication Contacts
- Radio Controller



T2400 and T4000 Hot Air Blowers

The **T2400 and T4000 Hot Air Blowers** were developed to keep railway switch areas clear of snow and ice buildup from the switch points. The unit performs this task by utilizing a motor driven, high efficiency fan. The heated air flow is directed through a uniquely designed ducting system to produce high velocity jet streams of air blowing directly into the switch points and tie cribs containing switch machine operating rods.

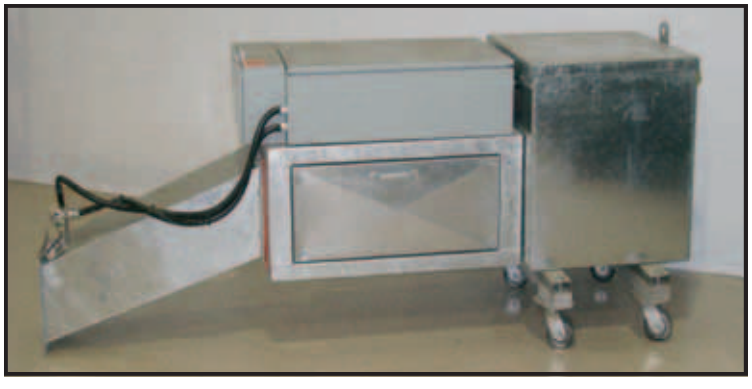
The **T2400-Electric Hot Air Blower** utilizes a 48kW duct heater to generate high volume hot air.

Complete T2400 Basic Controls	
Description	**Part Number**
2HP, 575V	T2EHAB

AVAILABLE OPTIONS FOR THE T2400

- ON/OFF Switch
- Local/Remote Switch
- PLC
- Duct Temp. Sensor for Energy Mgmt.
- Available in Stainless Steel

The **T4000 Natural Gas Hot Air Blower** utilizes a Blue Flame High Efficiency Natural Gas Burner to generate high volume hot air and produces two high velocity jet-streams of approximately 200F-250F hot air at 1500 SCFM.

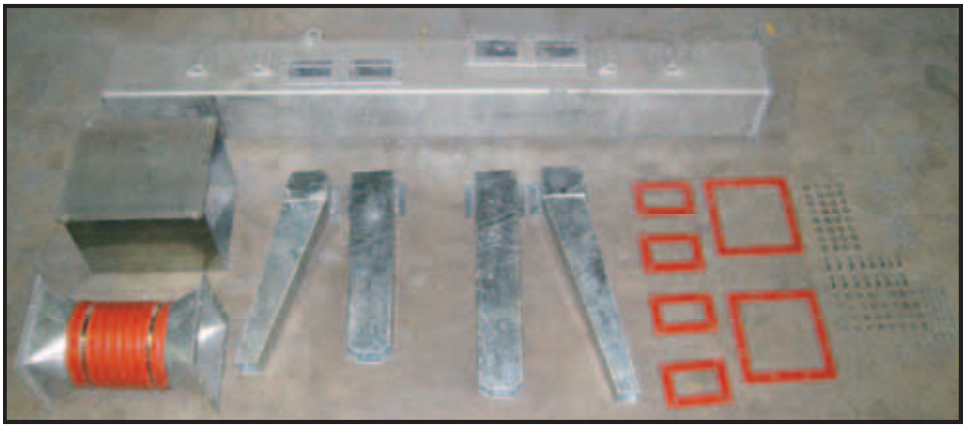


Complete T4000 Basic Controls	
Description	**Part Number**
3HP, 575V, Three Phase	T435753

AVAILABLE OPTIONS FOR THE T4000

- ON/OFF Switch
- Flame Monitoring System
- Main Gas Control Valves
- Local/Remote Switch
- PLC
- Snow Sensor
- Convenience Receptacle
- Available in Stainless Steel

Tie Duct Kit



(COMPLETE TIE DUCT KIT)

(TIE DUCT HARDWARE KIT)

Complete Tie Duct Kit

- Specifically designed to provide exceptional snow clearing performance when coupled with Cold or Hot Air Switch Blowers
- Internal baffling is utilized to enhance performance
- 4 nozzle design ensures maximum switch protection
- No maintenance required
- Quick and easy to install
- Sturdy I-Beam construction, hot dipped galvanizing after fabrication
- Eliminates the need for duct removal during mechanized ballast tamping
- Designed to perform as a tie
- Can be tamped with results similar to those achieved with wooden ties
- Reduces switch pumping
- Utilizes Pandrol® rail attachment system
- Provides electrical isolation between rails

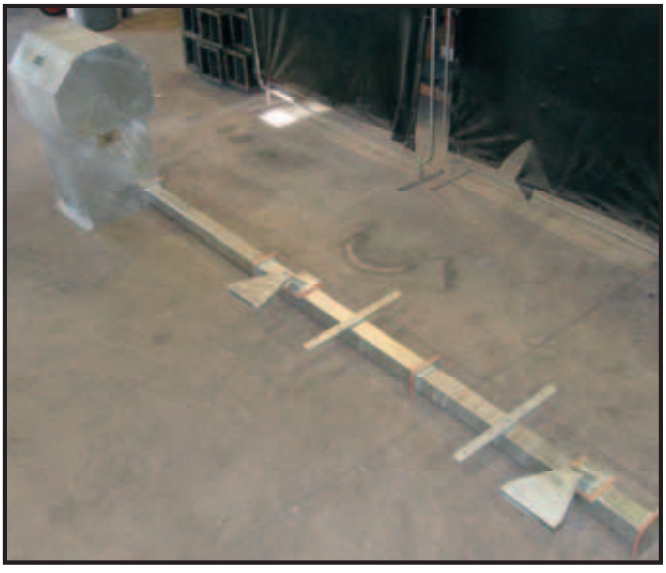
Complete System Consists of the following:

- Tie Duct
- Flex Duct with Cover (Stainless Steel available w/o cover at an additional cost)
- 4 nozzles
- All necessary gaskets & hardware

COMPLETE TIE DUCT KIT	
Description	**Part Number**
Tie Duct Kit (incls. 1 Hardware Kit)	TDE2055KIT
Tie Duct Hardware Kit	TDKITHRW

T2100-HBD Hot Box Detector

The **T2100-HBD** employs the same design principles as those used on the well-proven T2000 Switch Clearing Blower Unit. Two steady streams of high velocity ambient temperature air moving along both sides of the scanner keep falling and blowing snow from interfering with the proper functioning of the scanner. Note, because the air does not enter the scanner chambers, there is no risk of moisture-laden air causing problems in the scanners.



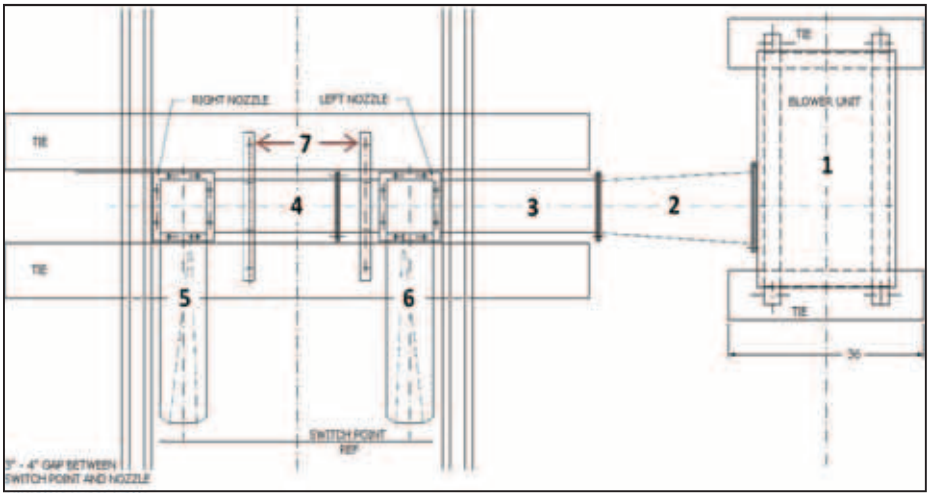
Features of the T2100-HBD

- Airflow is parallel to the rail and away from the apertures
- The motor will restart automatically after a power interruption
- The motor has full overload and phase protection
- Design allows for universal application (Either side of track, either direction of nozzle position)
- Custom extension ducts can be supplied for installations where the blower sub assembly cannot be mounted in the standard location
- Constructed from heavy gauge cold rolled steel for all nozzles, ductwork and blower housing
- Designed for ease of maintenance

Description	Part Number
1 HP, 220V, Single Phase	T2HBD
Hot Box Nozzle	HBNZ

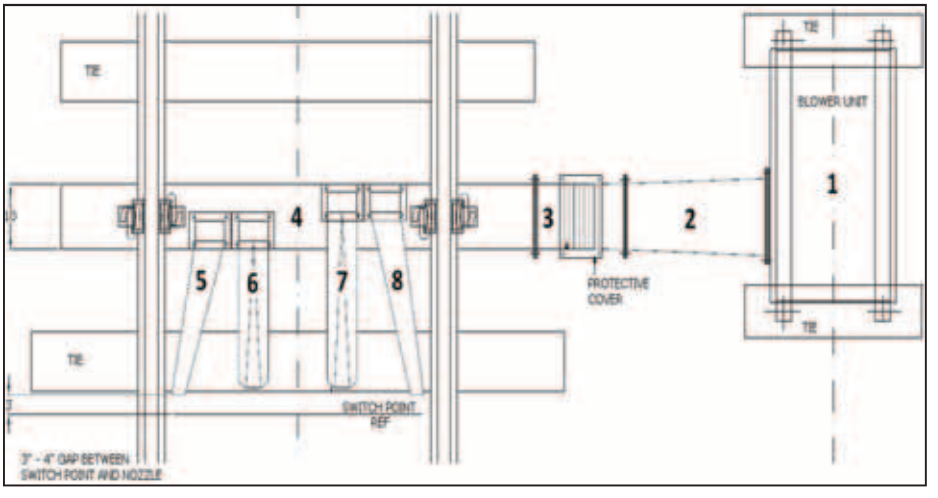
Standard Schematic of Track Layouts

STANDARD DUCT LAYOUT



STANDARD DUCT LAYOUT ORDERING GUIDE		
No.	DESCRIPTION	PAGE
1	Blower Unit	4-6
2	Reducer Duct	13
3	Open End Duct	11
4	Closed End Duct	11
5	Left Nozzle—Standard	12
6	Right Nozzle—Standard	12
7	Support Straps	11

TIE DUCT LAYOUT



TIE DUCT LAYOUT ORDERING GUIDE		
No.	DESCRIPTION	PAGE
1	Blower Unit	4-6
2	Reducer Duct	13
3	Flex Duct (Stainless Steel or Rubber)	13
4	Tie Duct	7
5	Tie Duct Nozzle (short)	12
6	Tie Duct Nozzle (short centre)	12
7	Tie Duct Nozzle (long)	12
8	Tie Duct Nozzle (long centre)	12

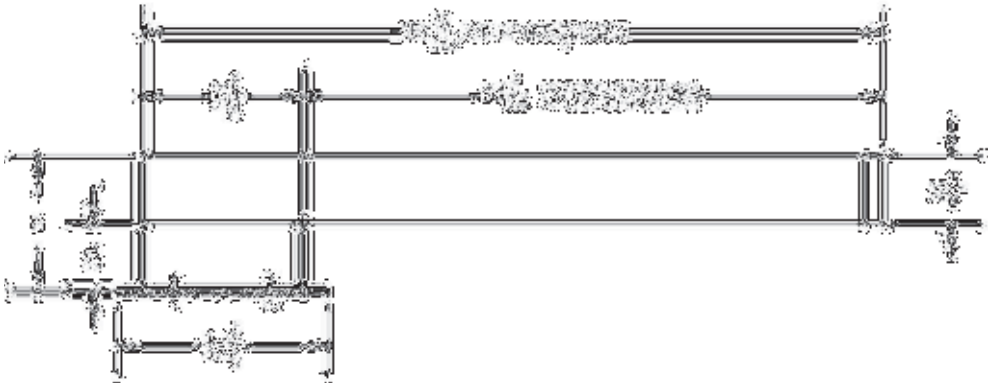
Motor Ordering Guide for Blowers

- 5HP for turnouts up to #14
- 7.5HP for turnouts above #14

Blowers available for Single Phase with 230vac or Three Phase with 230, 460 or 575vac

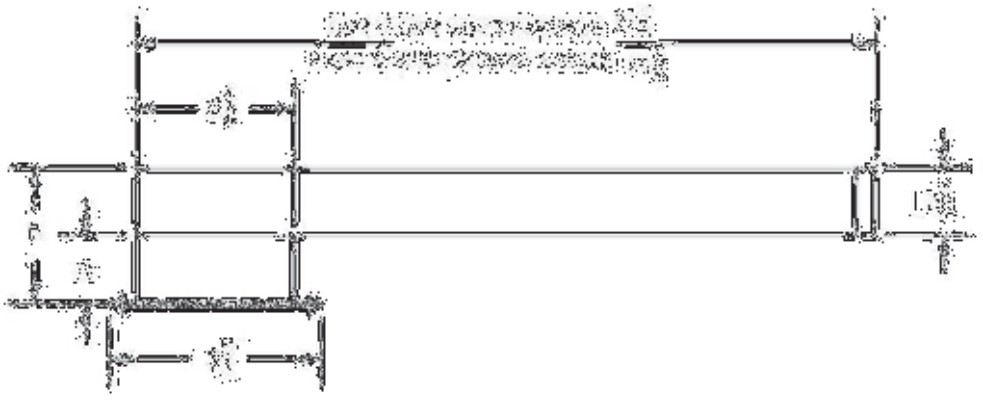
Standard and Tie Duct Nozzle Dimensions

STANDARD DUCT NOZZLE



Type	A	B
High Step Nozzle	3-5/8”	7-3/16”
Low Step Nozzle	2-1/2”	6-1/16”
No Step Nozzle	0	3-9/16”

TIE DUCT NOZZLE



Type	A	B
High Step Nozzle	2-1/8”	5-5/8” + 1-1/4” riser on duct = 6-7/8” total height from top tie
Low Step Nozzle	0	3-1/2” + 1-1/4” riser on duct = 4-3/4” total height from top tie

Ducting and Nozzles (Continued)

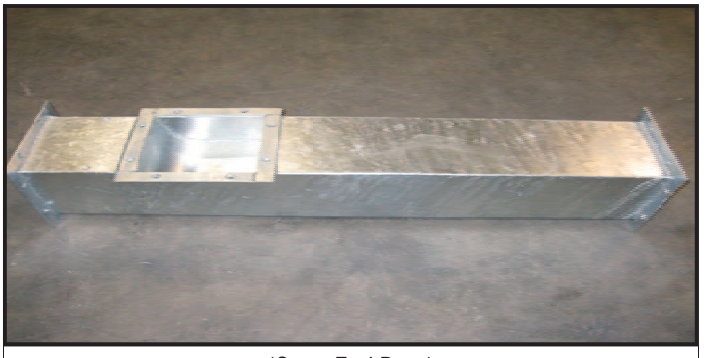
Closed End Duct & Accessories

These ducts are usually used in conjunction with an open end duct. They run parallel to the ties and sit between two ties. Strap supports are used to secure each duct to the ties.

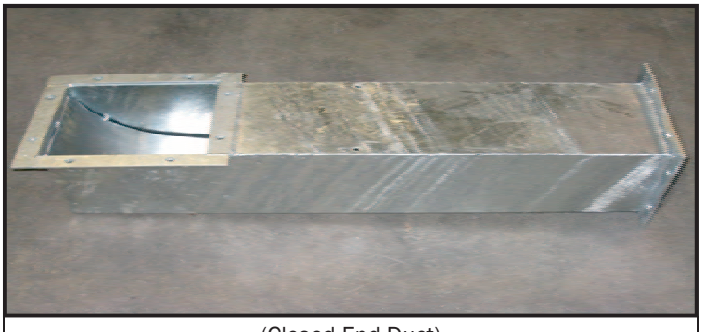
Open End Duct & Accessories

These ducts are usually used in conjunction with a closed end duct. They run parallel to the ties and sit between two ties. Strap supports are used to secure each duct to the ties.

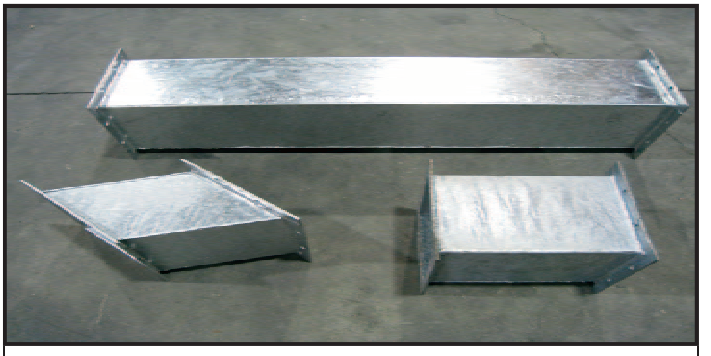
OPEN END DUCTS AND RELATED PARTS	
Description	**Part Number**
2 Nozzle	T-OPND
3 Nozzle	T-OP3N
Swivel Nozzle	T-OPSW
Lap Switch	T-OPLP
Support Bars	TBRS
Hot Box	T-HBOPND
CLOSED END DUCTS & RELATED PARTS	
2 Nozzle	T-CLSD
3 Nozzle	T-CL3N
Swivel Nozzle	T-CLSW
Lap Switch	T-CLLP
Support Bars	TBRS
Hot Box	T-HBCLSD
EXTENSION DUCTS	
Up to 12”	T-EXT01
13” to 24”	T-EXT02
25” to 36”	T-EXT03
37” to 48”	T-EXT04
49” to 60”	T-EXT05
61” to 72”	T-EXT06
73” to 84”	T-EXT07
85” to 96”	T-EXT08
97” to 108”	T-EXT09
109” to 120”	T-EXT10
Hot Box	T-HBEXT



(Open End Duct)



(Closed End Duct)



(Extension Duct)

** CUSTOM DUCTING AVAILABLE UPON REQUEST

Ducting and Nozzles (Continued)

Nozzles

Nozzles come in various shapes and sizes according to the application required. All nozzles are made with 11 gauge cold rolled steel and are hot dipped galvanized after fabrication.
Custom nozzles are available upon request.

Standard Nozzles	
Description	**Part Number**
High Step Nozzle—Left	SNZ-HS-L
High Step Nozzle—Right	SNZ-HS-R
Low Step Nozzle—Left	SNZ-LS-L
Low Step Nozzle—Right	SNZ-LS-R
No Step Nozzle—Left	SNZ-NS-L
No Step Nozzle—Right	SNZ-NS-R
Swivel Nozzle—Left	SNZ-SN-L
Swivel Nozzle—Right	SNZ-SN-R
Custom 40” - 60” —Left*	SNZ-CUS-L-## (add length into ##)
Custom 40” - 60” —Right*	SNZ-CUS-R-## (add length into ##)
Custom 61” - 80” —Left*	SNZ-CUS-L-## (add length into ##)
Custom 61” - 80” —Right*	SNZ-CUS-R-## (add length into ##)
*When ordering a custom nozzle please remember to specify your required length within the part number	

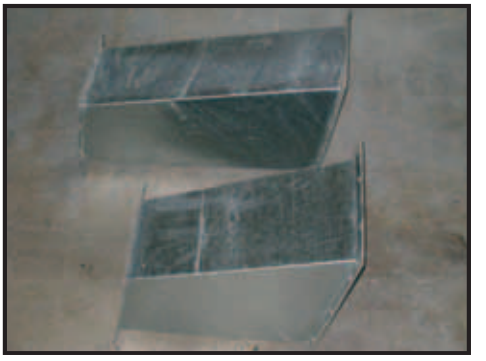
Tie Duct Nozzles	
Tie Duct Nozzle—Left	TDNZ-L
Tie Duct Nozzle—Right	TDNZ-R
Tie Duct Nozzle—Left Center	TDNZ-LC
Tie Duct Nozzle—Right Center	TDNZ-RC

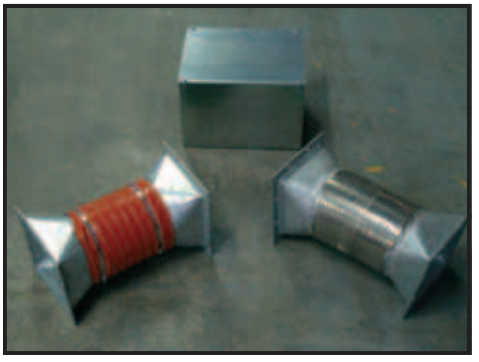
Lap Switch Nozzles	
Lap Switch—Standard	LSNZ-STD
Lap Switch—Small	LSNZ-SML

*See page 10 for Standard and Tie Duct Nozzle Dimensions

Reducer Ducts & Flex Ducts

Reducer ducts are used to step down from a larger blower flange to a smaller duct flange in order to connect the two (2) together. The flex duct is placed after the reducer and is used to allow flexing in the system caused by passing trains.





Reducer Ducts & Flex Ducts	
Description	**Part Number**
5HP Reducer Duct to Tie Duct	T5RCR
7.5HP Reducer Duct to Tie Duct	T75RCR
5 HP Reducer to Standard Duct Work	T5STDCR
7.5 HP Reducer to Standard Duct Work	T75STDCR
Flex Duct with Cover– Rubber	TDPC18R
Flex Duct – Stainless Steel	TDPC18SS

Hardware & Gasket Kits

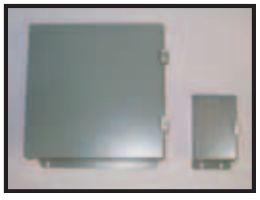
These kits come fully completed with all the necessary bolts, nuts, washers and gaskets needed for different applications. Each blower kit and duct kit include these hardware and gasket kits already.

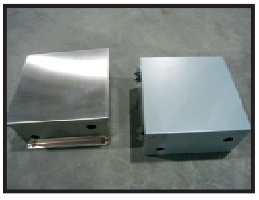
Hardware & Gasket Kits	
Description	**Part Number**
Hot Box Kit (incl. gaskets)	HBKIT
Hardware Kit 5HP (incl. gaskets)	5KIT
Hardware Kit 7.5HP (incl. gaskets)	75KIT
Hardware Kit Extension Duct (incl. gaskets)	EXTKIT
Nylon Insulator	NIS
Nut and Bolt Assembly	NB38
Blower Assembly Gasket—5 HP	5PWRG
Blower Assembly Gasket—7.5 HP	75PNRG
Cross Duct Gasket	CDG
Nozzle Gasket	NG
Cover Plate for Nozzle Opening in Ductwork	22PLT
Anti-Vandal Kit	ANVND

Control Components

Control Boxes

These NEMA 3 approved enclosures are used indoors and outdoors to protect the enclosed controls from dust, dirt, oil and water. Made with 16 Gauge steel and finished with a heat fused polyester powder coat. *Available in many sizes as well as Stainless Steel.

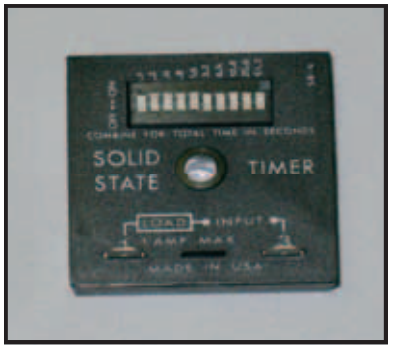




Control Boxes (W/O Controls)	
Description	Part Number
Control Box Standard	TCB4X
Control Box Stainless Steel	TCBSTL4X

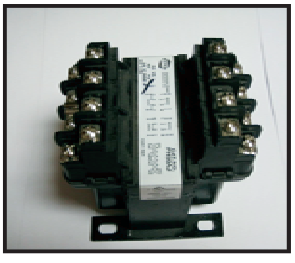
Timers

These solid state timers are great for adding a staggered time feature to multiple groups of blowers in the same area.



Timers	
Description	**Part Number**
Timer	TM30B

Transformers	
Description	**Part Number**
600V PRI - 240V Sec.	TMH50AM
480V PRI - 240V Sec.	TMT50CM



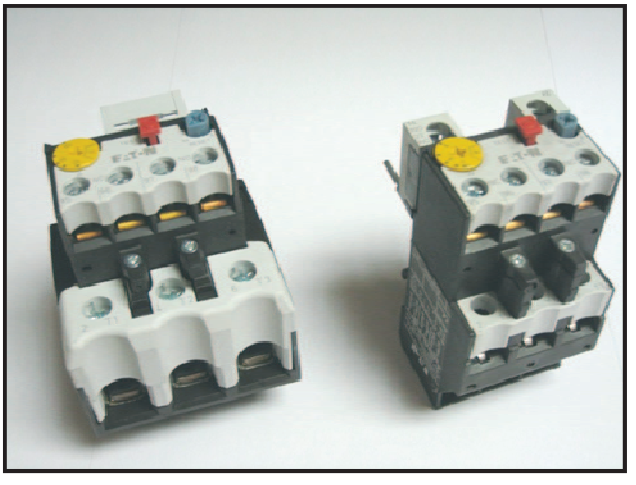
Selector Switches	
Description	**Part Number**
2 Position	TXF1
3 Position	TXG1
4 Position	TLDBN1

Magnetic Contactors

- Universal mounting plate is common through 75 amperes
- Variety of terminal styles for specific application needs
- Complete line of contactors from 15A to 360A for all your application needs

Magnetic Contactors	
Description	**Part #**
5HP, 230V, Single Phase	TCONT-52301
5HP, 230V, Three Phase	TCONT-52303
5HP, 460V, Three Phase	TCONT-54603
5HP, 575V, Three Phase	TCONT-55753
7.5HP, 230V, Single Phase	TCONT-752301
7.5HP, 230V, Three Phase	TCONT-752303
7.5HP, 460V, Three Phase	TCONT-754603
7.5HP, 575V, Three Phase	TCONT-755753

Thermal Overload Relays	
Description	**Part #**
5HP, 230V, Single Phase	TO/LS-52301
5HP, 230V, Three Phase	TO/LQ-52303
5HP, 460V, Three Phase	TO/LM-54603
5HP, 575V, Three Phase	TO/LM-55753
7.5HP, 230V, Single Phase	TO/LR-752301
7.5HP, 230V, Three Phase	TO/LS-752303
7.5HP, 460V, Three Phase	TO/LP-754603
7.5HP, 575V, Three Phase	TO/LP-755753



Control Components (Continued)

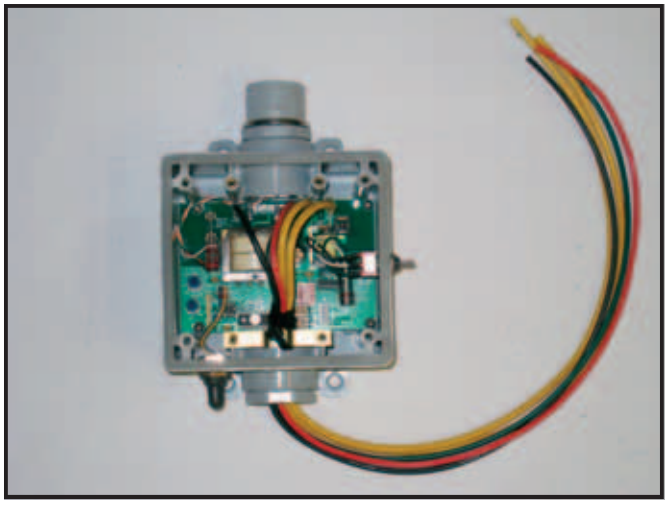
Temperature Controllers

Temperature controllers are used for controlling the operation of a blower. The controller can be programmed to turn on and off depending on the ambient air temperature. This makes the blower much more energy efficient.

Temperature Controllers	
Description	**Part Number**
Temperature Controller & Probe	TEKIT
Temperature Controller Separately	TE902
Probe Separately	TEPTC

Snow Sensor

Snow sensors create a more energy efficient blower.
When snow is detected on the grid surface, it causes the blower to turn on automatically.



Snow Sensors	
Description	**Part Number**
Complete Snow Sensor Kit	TSNOXT

Blower Wheels and Motors

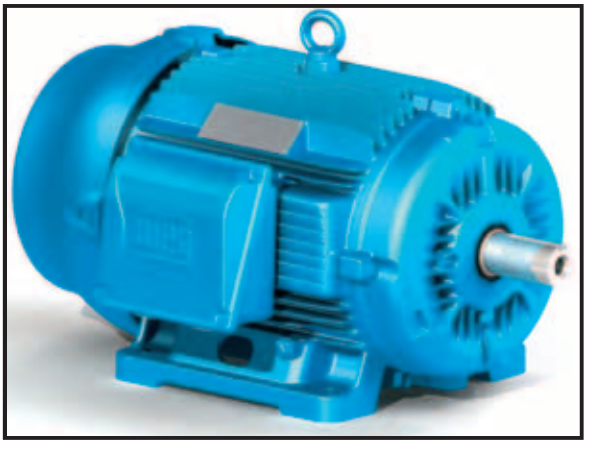
Heavy Duty Blower Wheels

These heavy duty blower wheels are made from high grade steel and powder coated to ensure minimal corrosion on the surface. Each wheel comes pre-balanced to a vibration level lower than 0.20 in/sec rms.

Blower Wheels	
Description	**Part Number**
1 HP	T2HB
2 HP	T224
3HP	T340
5HP	T513
7.5 HP	T515

Motors

Our motors come in a number of different voltages to suit your application. Both single phase and three phase motors are available.



Replacement Motors	
Description	**Part Number**
1HP, 230V, Single Phase	T12301M
2HP, 230V, Three Phase	T22303M
3HP, 575V, Three Phase	T35753M
5HP, 230V, Single Phase	T52301M
5HP, 230V, Three Phase	T52303M
5HP, 460V, Three Phase	T54603M
5HP, 575V, Three Phase	T55753M
7.5HP, 230V, Single Phase	T752301M
7.5HP, 230V, Three Phase	T752303M
7.5HP, 460V, Three Phase	T754603M
7.5HP, 575V, Three Phase	T755753M

Motor Ordering Guide for Blowers

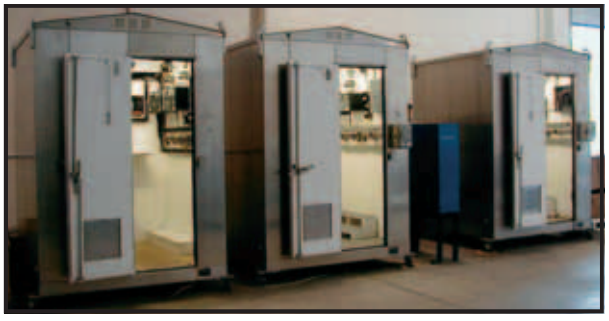
- 5HP for turnouts up to #14
- 7.5HP for turnouts above #14

Blowers available for Single Phase with 230vac or Three Phase with 230, 460 or 575vac.

Aluminum Signal Housings (Bungalows) and Cases

Condor's **Aluminum Signal Housings (Bungalows) and Cases** can be custom built to any size and are constructed according to the industry standards using high grade, premium quality industrial aluminum.
The interior contains rigid foam insulation, complete with aluminum foil vapor barrier.
The walls and floor are completely faced with painted plywood and the floor has two coats of acid resistant paint. The floor is lined with 3/16" thick non slip rubber safety matting.
Standard Interior setup contains an electrical panel complete with circuit breakers as required for AC power circuits, exhaust fan with thermostat, fluorescent lighting fixtures with wall switch and duplex convenience receptacle. A fan driven heater can also be installed if required.
Bungalows are fitted with two doors. One for entry, and one for field cable entry and access to rear of faraday cage or low impedance ground plane.
Cases can be single or double door.
The floors are covered with 3/16" thick non slip rubber safety matting which is corrosive resistant and electrically non conductive.
Bungalows are fitted with two separate doors, both doors swing out when facing the bungalow from outside. One door provides entrance to the bungalow and the other access to the rear of the main terminal board (Faraday Cage).
The lower portion of the front door is equipped with an air vent. Aluminum wire mesh covers the interior side of the vent. Both doors incorporate vandal- resistant latching assemblies.

Signal Cases	
Description	**Part Number**
Single Door Case	1SDC
Double Door Case	2DDC
Custom Signal Case	*Call for Pricing*
Bungalows	
Description	**Part Number**
6' x 6' Standard Bungalow	6x6BNG
Custom Sizes	*Call for Pricing*



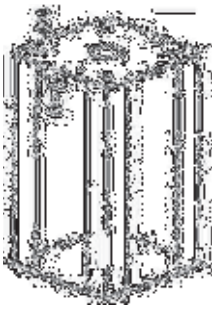
Signal and Gate Foundations

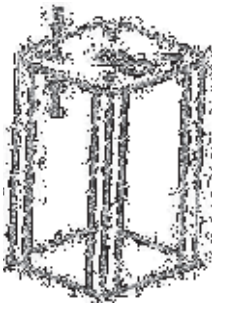
The **Signal Foundation** is constructed of 2-1/2” x 2-1/2” x 1/4” steel angle and 1/4” steel plate welded together and is galvanized after fabrication. Mounting bolt size is 3/4" -10 with a 2-3/4” projection.
These foundations will accommodate both 9-1/2” x 9-1/2” and 11-11/16” x 11-11/16” bolt spacing. They are also equipped with cable riser assemblies which provide a protective wire chase to either split or junction box type base.

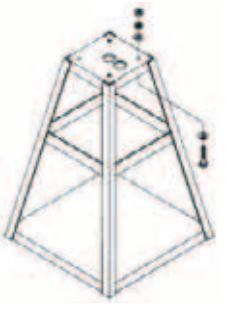
The **Gate Foundations** are constructed of steel angle and plate welded together and is galvanized after fabrication. The Square Type is constructed of 2-1/2” x 2-1/2” x 1/4” steel angle and 1/4” steel plate. Mounting bolt size is 1”-8 with a 3-1/4” projection. These foundations are designed for 11-11/16” x 11-11/16” bolt spacing; however, an adapter plate may be used to accommodate 19” x 19” bolt spacing. Both foundations are equipped with cable riser assemblies which provides a protective wire chase to either split or junction box type bases.

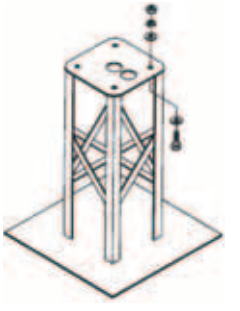

Instrument Case


Bungalow Pier


Wayside Signal Foundation


Crossing Flasher Foundation


Gate (pyramid type)


Gate (square type)

SIGNAL STANDS / FOUNDATIONS	
Description	**Part Number**
Instrument Case Foundation	ICS-SND
Bungalow Pier	BUNG-SND
Wayside Signal Foundation	WSI-SND
Crossing Flasher Foundation	FLSH-SND
Gate Foundation (Pyramid type)	PYR-GT-SND
Gate Foundation (Square type)	SQR-GT-SND

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