

CENTRIFUGAL FANS BLOWERS AND ACCESSORIES

Industrial
Air Technology Corp.



ABOUT US

Industrial Air Technology Corp. services the industrial fan market with a complete line of centrifugal industrial fans and industrial blowers. We understand the rigorous requirements particular to industrial air movement applications. The fans we produce are designed and built for users who value quality craftsmanship and reliable performance. The Industrial Air Technology standard product offering includes backward inclined, industrial exhauster, radially tipped, and high pressure/turbo series fans. We also have a vast offering of **abrasion resistant** options available for material handling fans to provide longer life in abrasive environments, as well as **stainless steel construction** for corrosive and **high temperature** applications for each of our fan models.

VALUE ADDED SERVICES

- Quick delivery of standard and custom fans and accessories
- Expedited shipment services
- FEA and modal analysis
- Online access to our proprietary Fan Performance Curve Generator Program
- Installation and maintenance training
- Complete line of options and accessories
- Customer service product selection assistance
- Custom and made-to-order designs to suit your needs

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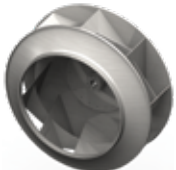






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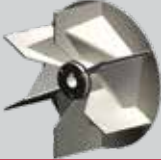









CENTRIFUGAL FANS AND BLOWERS – WHEEL TYPES

Industrial Air Technology Corp. manufactures many different types, models and sizes of Centrifugal Industrial Fans and blowers to meet the needs of most industrial applications. We are equally comfortable processing custom designs, as well as our standard designs.

FAN TYPE	SIZE	AMCA CLASS	VOLUME	PRESSURE	TEMPERATURE RANGE
 <p>GPBI General Purpose Backward Inclined Economical, modular design allows for short lead times and a competitive price while offering similar performance to our BISW line up to AMCA Class 3.</p>	12-1/4" - 36" Wheel Diameter	1, 2 & 3	Up to 47,000 CFM	Up to 18.5" WG	-30° to 600°F
 <p>BISW Backward Incline Single Wide Wheels have flat, backwardly inclined, single thickness blades. Non-overloading high efficiency design generates low to moderate pressures.</p>	12-1/4" - 98-1/4" Wheel Diameter	2, 3, 4 & 5	Up to 445,000 CFM	Up to 28" WG	-30° to 800°F
 <p>AFSW Airfoil Single Wide Wheels have aerodynamically shaped blades providing non-overloading, highly efficient performance for relatively clean air applications.</p>	18-1/4" - 89" Wheel Diameter	2, 3 & 4	Up to 315,000 CFM	Up to 26" WG	-30° to 800°F
 <p>BCHS Backward Curved High Speed Wheel Wheels have backward curved blades providing non-overloading, highly efficient performance for relatively clean air applications.</p>	18-3/4" - 90-3/4" Wheel Diameter	Construction Class 30 & 40	Up to 215,000 CFM	Up to 42" WG	-30° to 800°F
 <p>BIDW Backward Incline Double Wide Wheels have flat, backwardly inclined, single thickness blades. Non-overloading high efficiency design used for relatively clean air applications with little or no particulate in the airstream.</p>	18-1/4" - 73" Wheel Diameter	2 & 3	Up to 330,000 CFM	Up to 18" WG	-30° to 200°F
 <p>IRO (Paddle Wheel) Industrial Exhauster Paddle wheel design used for material handling applications where moderate pressure and CFM are required.</p>	12-1/4" - 85-1/4" Wheel Diameter	Construction Class 15, 30 & 50	Up to 200,000 CFM	Up to 50" WG	-30° to 1000°F
 <p>IRF (Radial Blade) Industrial Exhauster Wheel with flat radial blades and flat back plate design prevent stringy or fibrous material from hanging up and wrapping around the blades, and are used for light to medium material handling applications.</p>	12-1/4" - 57-1/2" Wheel Diameter	Construction Class 15, 30 & 50	Up to 92,000 CFM	Up to 45" WG	-30° to 1000°F

CENTRIFUGAL FANS AND BLOWERS – WHEEL TYPES

FAN TYPE	SIZE	AMCA CLASS	VOLUME	PRESSURE	TEMPERATURE RANGE
 <p>IRW (Radial Blade) Industrial Exhauster Back plated and box gusseted wheels are used for moderate pressure and for heavier fibrous material handling applications (paper, plastic, metal, and wood).</p>	19-1/8" - 36-1/2" Wheel Diameter	Construction Class 30 & 50	Up to 35,000 CFM	Up to 45" WG	-30° to 1000°F
 <p>IRV (Radial Blade) Industrial Exhauster Wheels are back plated with machined blade edges and bull-nose hub for stringy material handling applications.</p>	19-1/8" - 36-1/2" Wheel Diameter	Construction Class 30 & 50	Up to 35,000 CFM	Up to 45" WG	-30° to 1000°F
 <p>IRT (Radial Tip) Industrial Exhauster Radial tip designed wheels are used for moderate pressure for higher efficiency in moderately dust-laden air.</p>	19-1/8" - 85-1/4" Wheel Diameter	Construction Class 15, 30 & 50	Up to 140,000 CFM	Up to 45" WG	-30° to 1000°F
 <p>RTS Radially Tipped Wheels are a heavy duty, high efficiency design suitable for applications involving large volume gas streams at moderate pressure. Self-cleaning wheel can handle dirty air without fouling.</p>	27" - 80-3/4" Wheel Diameter	Construction Class 30	Up to 375,000 CFM	Up to 40" WG	-30° to 800°F
 <p>PB Pressure Blowers Shrouded optimized bladed design offers efficient and stable performance over a wide range of pressure and volume requirements. Inlet and outlet flanges are round for easy standard pipe duct connections. Suitable for a wide range of applications including combustion air, drying, conveying, cooling, and other process air systems.</p>	14" - 26" Wheel Diameter	Construction Class 60	Up to 10,250 CFM	Up to 66" WG	-30° to 600°F
 <p>BCLS Backward Curved Lower Volume Wheels are backwardly curved for high efficiency, low noise used for low - medium and medium - high pressure applications where clean to lightly loaded air is present. Applications include: primary air supply, product cooling, combustion air, drying, glass blowing and cooling, gas boosting, and pneumatic conveying.</p>	27" - 73" Wheel Diameter	Construction Class 100	Up to 95,000 CFM	Up to 80" WG	-30° to 1000°F
 <p>TROH Turbo Radial Open High Radially bladed wheel is designed for very stable operation to shut off. Suitable for high temperature and high volume turndown applications. Extremely rugged, high pressure construction with round inlet and outlet connections, for standard pipe duct connections. Applications include: combustion air, cooling, gas boosting, water stripping, fluid beds, glass blowing, textile fiber stripping, product drying, and pneumatic conveying.</p>	20" - 58" Wheel Diameter	Construction Class 100	Up to 34,000 CFM	Up to 80" WG	-30° to 1000°F
 <p>TROL Turbo Radial Open Low Radially bladed wheel is designed for very stable operation to shut off. Suitable for high temperature and high volume turndown applications. Extremely rugged, high pressure construction with round inlet and outlet connections, for standard pipe duct connections. Applications include: combustion air, cooling, gas boosting, water stripping, fluid beds, glass blowing, textile fiber stripping, product drying, and pneumatic conveying.</p>	20" - 60" Wheel Diameter	Construction Class 100	Up to 15,000 CFM	Up to 85" WG	-30° to 1000°F

GPBI—GENERAL PURPOSE BACKWARD INCLINED

Economical, modular design allows for short lead times and a competitive price while offering similar performance to our BISW line up to AMCA Class 3.

- Sizes 12 ¼" – 36 ½" wheel diameter
- AMCA class 1, 2 & 3
- Volume up to 47,000 CFM
- Pressure up to 18.5" WG
- Temperature range -30°F to 600°F
- Arrangements 1, 4, 4V, 8, 9, 10



WHEEL TYPE GPBI

Aluminum Wheel

- For clean air applications at all volumes
- Tapered shroud
- Backward inclined blades
- Operating temperatures up to 200°F
- Riveted construction

Steel Wheel

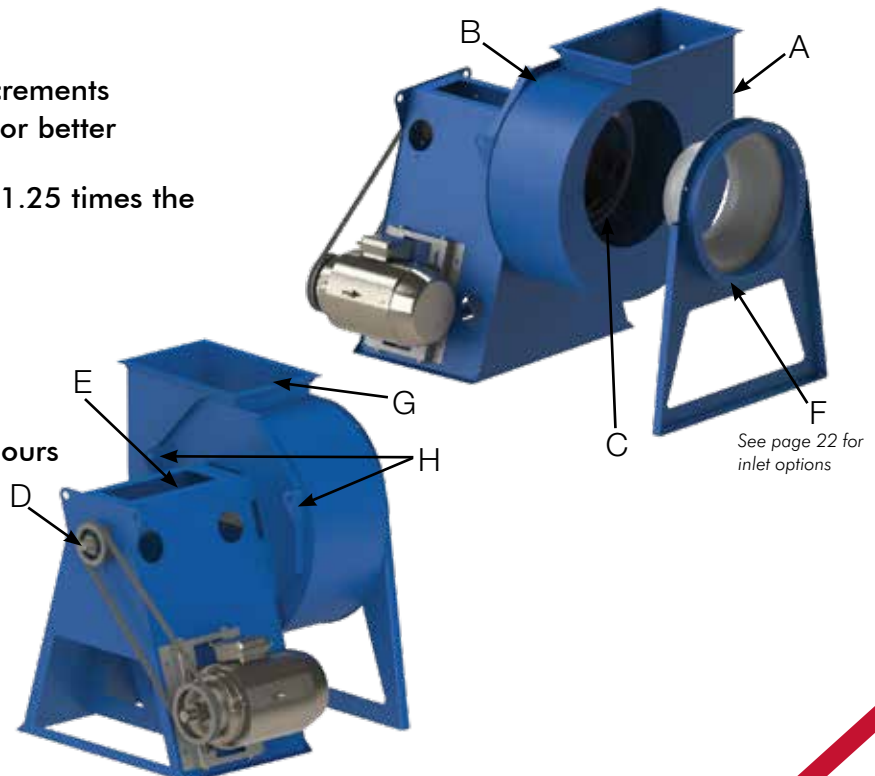
- For relatively clean air applications with little or no particulate
- Tapered shroud
- Backward inclined blades
- Operating temperatures up to 600°F
- Welded construction



Steel Wheel Option

GPBI

- A. Continuously welded steel housing
- B. Reversible / rotatable housing in 45° increments
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction flange bearings
 - Reduced shaft sizes
 - Better support of overhung loads
 - Provides shaft seal
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes
- H. Lifting lugs for use in installation



ADDITIONAL FEATURES

- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

AFSW-AIRFOIL SINGLE WIDE

Wheels have aerodynamically shaped blades providing non-overloading, highly efficient performance for relatively clean air applications.

- Sizes 18 1/4" – 89" wheel diameter
- AMCA class 2, 3 & 4
- Volume up to 315,000 CFM
- Pressure up to 26" WG
- Temperature range -30°F to 800°F
- Arrangements 1, 3, 4, 4V, 7, 8, 9



Arrangement 1 Shown

WHEEL TYPE AFSW

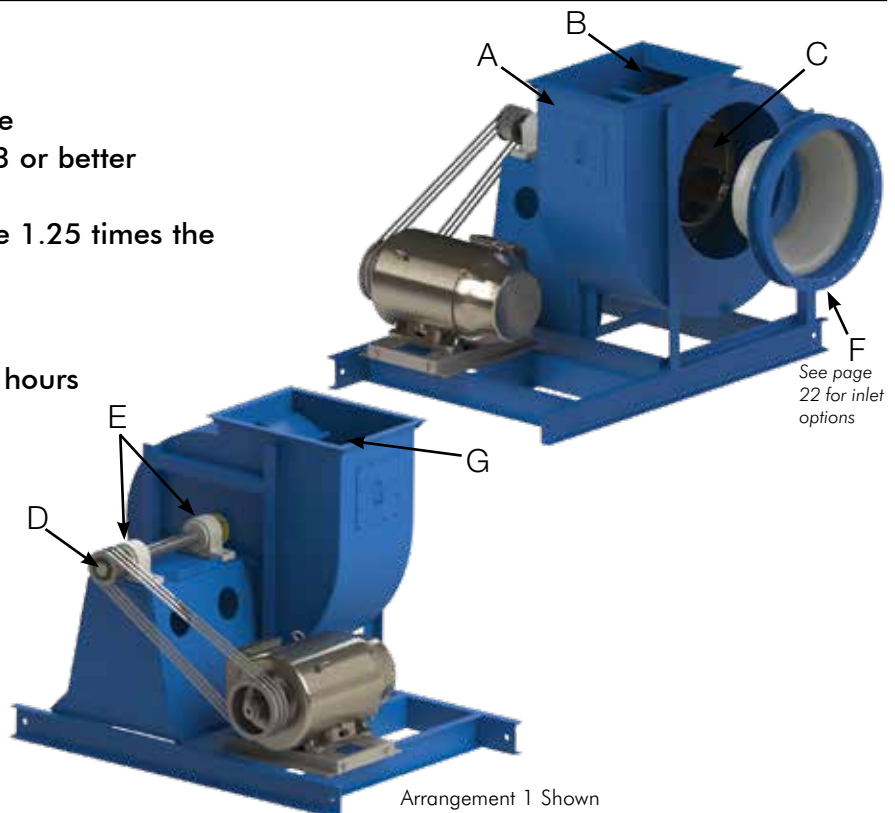
Steel Wheel

- For relatively clean air applications with little or no particulate
- Tapered shroud
- Airfoil shaped backward inclined blades
- Operating temperatures up to 800°F



AFSW

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

Arrangement 1 Shown

ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

BCHS—BACKWARD CURVED HIGH SPEED

Wheels have backward curved blades providing non-overloading, highly efficient performance for relatively clean air applications.

- Sizes 18 3/4" – 90 3/4" wheel diameter
- Construction class 30 & 40
- Volume up to 215,000 CFM
- Pressure up to 42" WG
- Temperature range -30°F to 800°F
- Arrangements 1, 3, 7, 8, & 9



Arrangement 1 Shown

WHEEL TYPE BCCHS

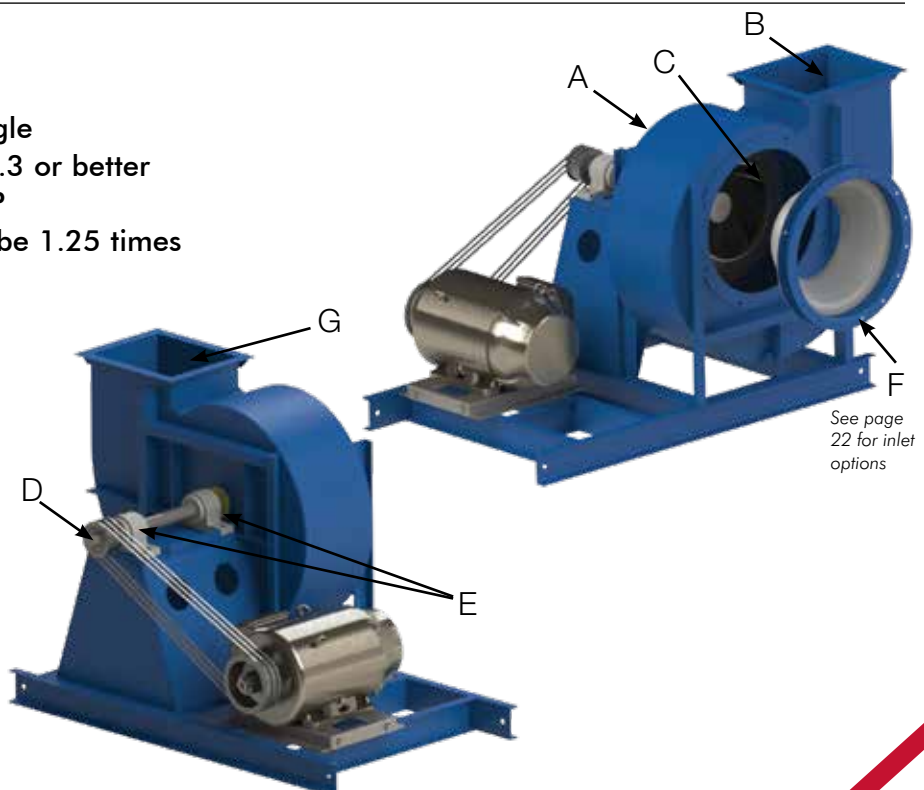
Steel Wheel

- For relatively clean air applications with little or no particulate
- Tapered shroud
- Backward curved blades
- Operating temperatures up to 800°F



BCCHS

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

BISW-BACKWARD INCLINED SINGLE WIDE

Wheels have flat, backwardly inclined, single thickness blades. Non-overloading high efficiency design generates low to moderate pressures.

- Sizes 12 1/4" – 98 1/4" wheel diameter
- AMCA class 2, 3, 4 & 5
- Volume up to 445,00 CFM
- Pressure up to 28" WG
- Temperature range -30°F to 800°F
- Arrangements 1, 3, 4, 4V, 7, 8, 9



Arrangement 1 Shown

WHEEL TYPE BISW

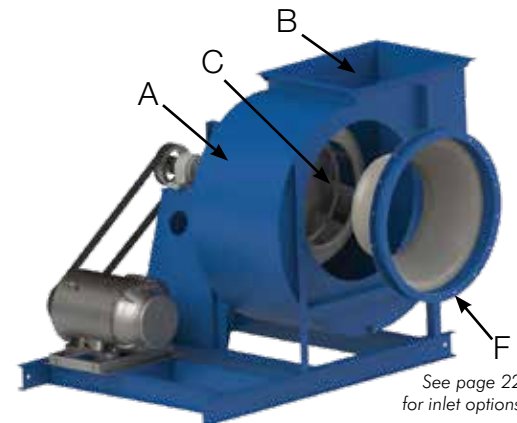
Steel Wheel

- For relatively clean air applications with little or no particulate
- Tapered shroud
- Flat, backwardly inclined, single thickness blades
- Operating temperatures up to 800°F



BISW

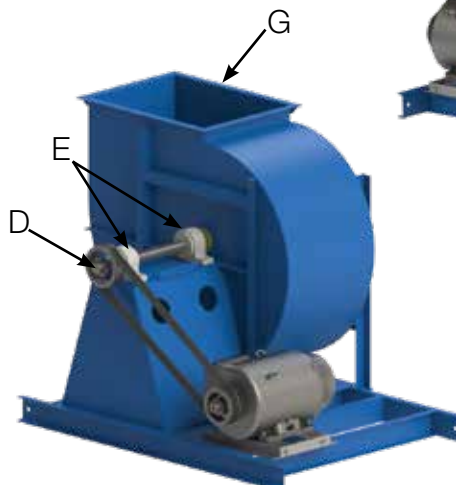
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



BIDW—BACKWARD INCLINED DOUBLE WIDE

Wheels have flat, backwardly inclined, single thickness blades
Non-overloading high efficiency design used for relatively clean air applications with little or no particulate in the airstream.

- Sizes 18 1/4" – 73" wheel diameter
- AMCA class 2 & 3
- Volume up to 330,000 CFM
- Pressure up to 18" WG
- Temperature range -30°F to 200°F
- Arrangements 3 & 7



Arrangement 3 Shown

WHEEL TYPE BIDW

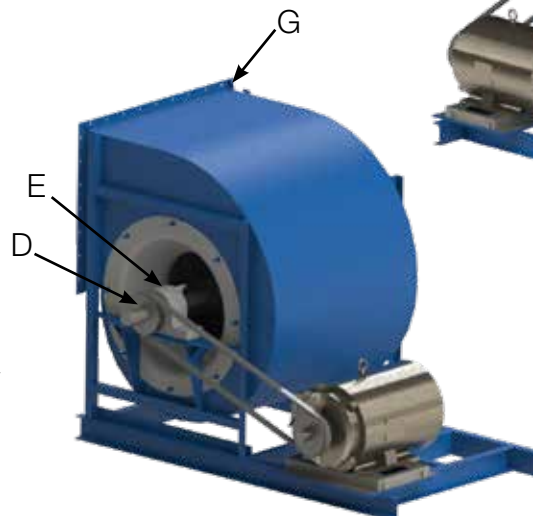
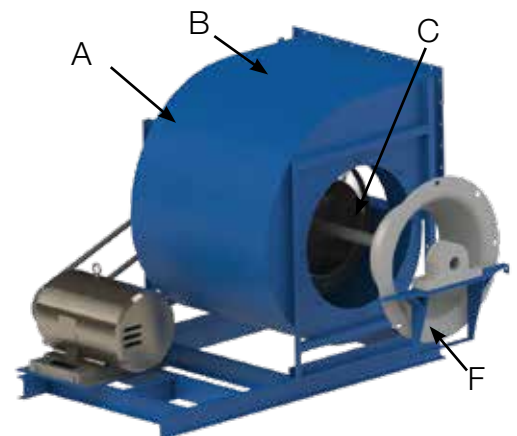
Steel Wheel

- For relatively clean air applications with little or no particulate
- Tapered shroud
- Backward inclined blades
- Operating temperatures up to 200°F



BIDW

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Open inlet
- G. Flanged outlet with mounting holes



ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

Arrangement 3 Shown

IRO (PADDLE WHEEL) INDUSTRIAL EXHAUSTER SERIES

Paddle wheel design used for light to medium material handling applications where moderate pressure and CFM are required.

- Sizes 12 1/4" – 85 1/4" wheel diameter
- Construction class 15, 30 & 50
- Volume up to 200,000 CFM
- Pressure up to 50" WG
- Temperature Range -30°F to 1000°F
- Arrangements 1, 8, & 9



Arrangement 1 Shown

WHEEL TYPE IRO

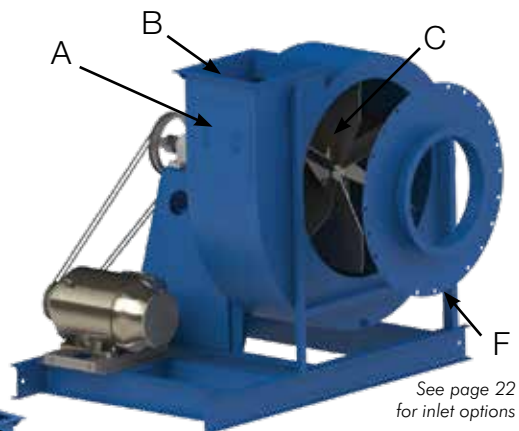
Steel Wheel

- For light to medium material handling applications
- No shroud
- Flat radial blades
- Operating temperatures up to 1000°F
- Wear liners or abrasion resistant materials available



IRO

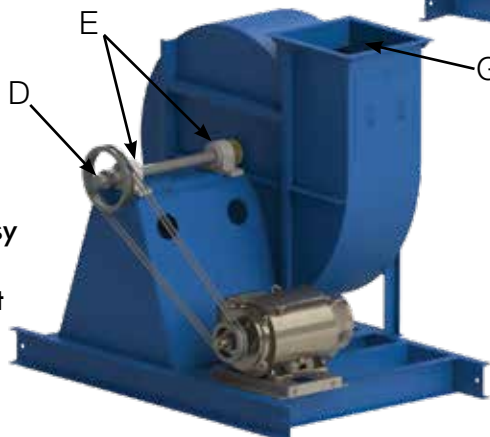
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

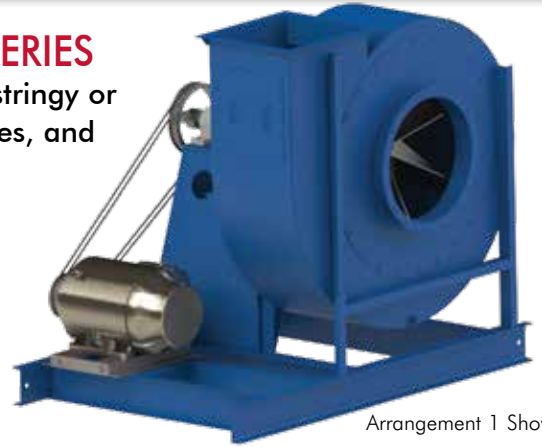
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



IRF (FLAT BACK PLATE) INDUSTRIAL EXHAUSTER SERIES

Wheel with flat radial blades and flat back plate design prevent stringy or fibrous material from hanging up and wrapping around the blades, and used for light to medium material handling applications.

- Sizes 12 1/4" – 57 1/4" wheel diameter
- Construction class 15, 30 & 50
- Volume up to 92,000 CFM
- Pressure up to 45" WG
- Temperature Range -30°F to 1000°F
- Arrangements 1, 4, 4V, 8, & 9



Arrangement 1 Shown

WHEEL TYPE IRF

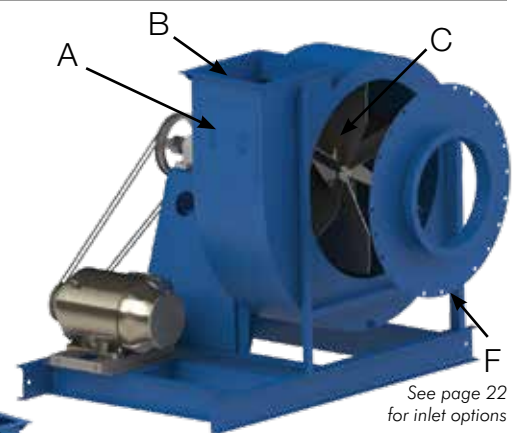
Steel Wheel

- For light to medium, stringy or fibrous material handling applications
- Flat back plate
- Flat radial blades
- Operating temperatures up to 1000°F
- Wear liners or abrasion resistant materials available



IRF

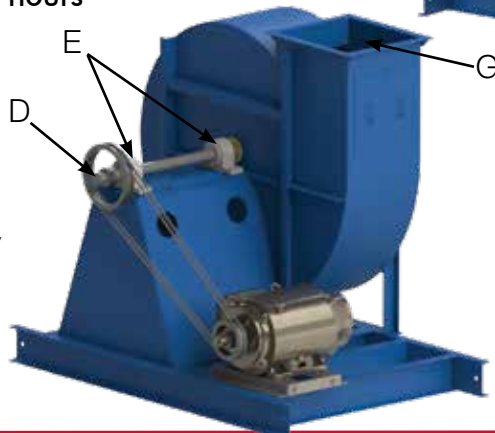
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

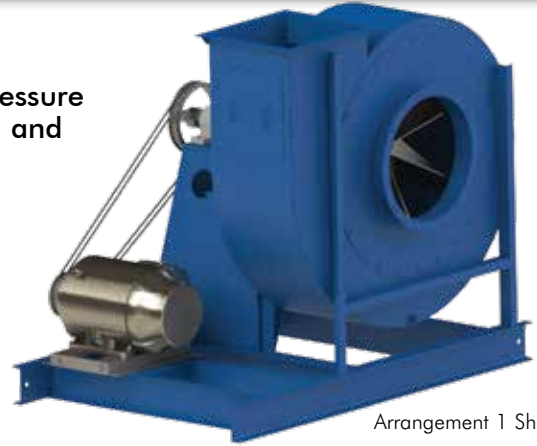
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



IRW (RADIAL) INDUSTRIAL EXHAUSTER SERIES

Back plated and box gusseted wheels are used for moderate pressure and for heavier fibrous material handling (paper, plastic, metal, and wood).

- Sizes 19" – 36 ½" wheel diameter
- Construction class 30 & 50
- Volume up to 35,000 CFM
- Pressure up to 45" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 4, 8, & 9

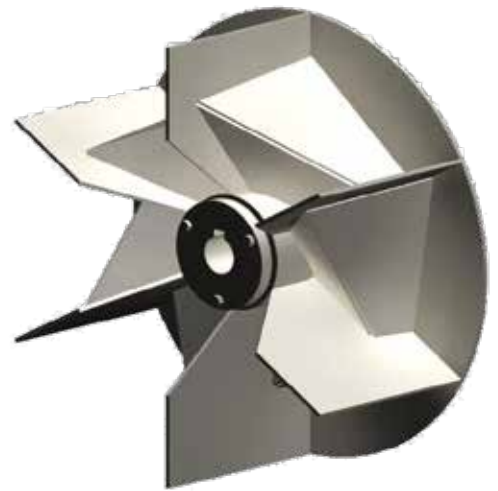


Arrangement 1 Shown

WHEEL TYPE IRW

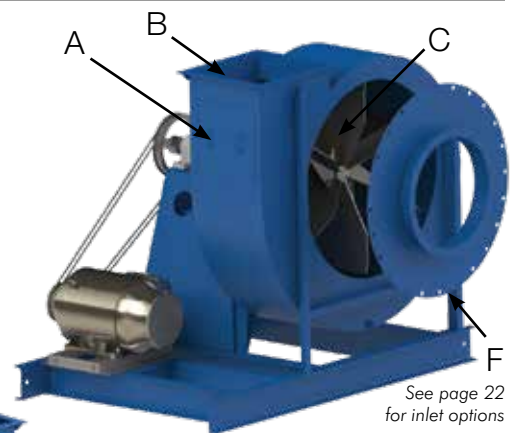
Steel Wheel

- For moderate to heavy fibrous material handling applications
- Flat back plate
- Flat radial blade with box gussets
- Operating temperatures up to 1000°F
- Abrasion resistant materials available



IRW

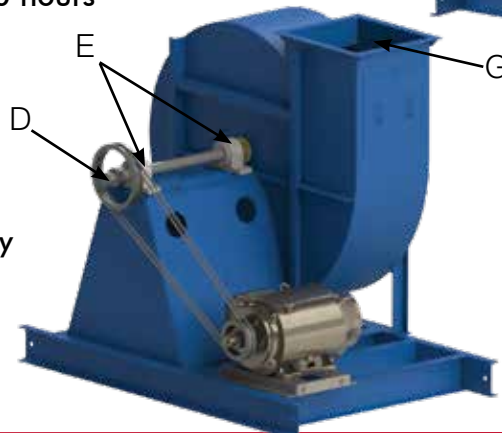
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



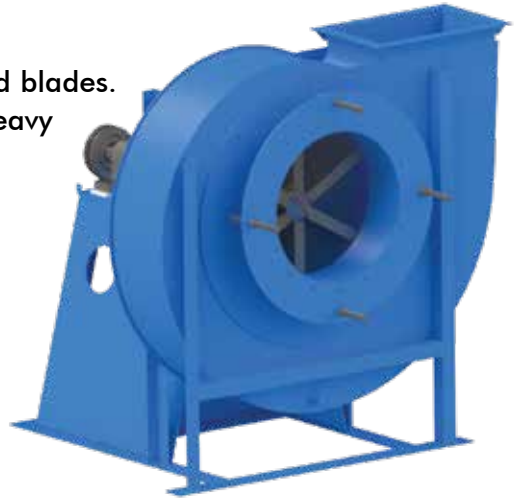
IRX - (RADIAL BLADE) CHOPPER FAN

Wheels are back plated with radial, bolt on hardened steel machined blades.

Airstream/performance: Radial blade (chopper wheel), medium to heavy material loading, low to medium volume, low to medium pressure applications.

Applications: High density bulk material, carton stock, paper trim, classifier, material reducing and material conveying fans.

- Sizes 19-1/8" – 36-1/2" wheel diameter
- Construction Class 50
- Volume up to 19,800 CFM
- Pressure up to 39" WG
- Temperature Range -30° to 200°F
- Arrangements 1, 4, 8, 9



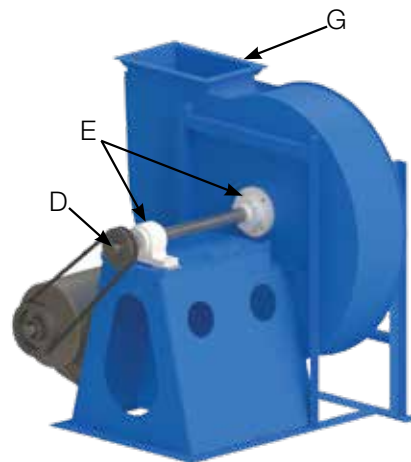
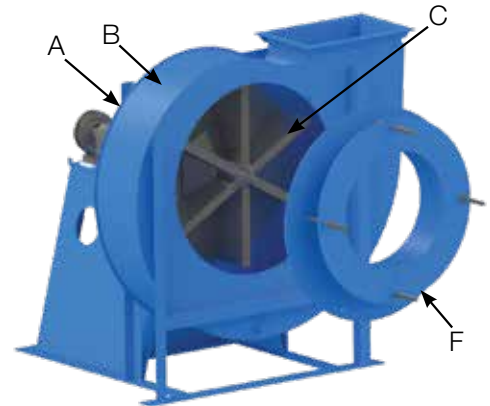
WHEEL TYPE IRX

- For Material Reducing Applications
- Flat Back Plate
- Flat Radial Blades with Gussets and Replaceable Hardened Steel Leading Edges
- Operating Temperatures up to 200 °F



IRX

- A Continuously Welded Steel Housing
- B Fixed Housing with Any Discharge Angle
- C All Wheels are balanced to Grade G6.3 or Better
- D Shafting is 1045 Bearing Grade TG&P
 - Maximum L3/D4 ratio of less than 10 to ensure a stout robust design
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E Split Pillow Block and Flanged Bearing Used in Tandem
 - Flange bearing used as fan side bearing to promote longer bearing life and higher critical shaft speeds
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F Axially Adjustable Inlet (shown)
 - Inlet allows for clearance between the wheel and inlet to be adjusted for various materials to prevent build up
- G Flanged Outlet with Mounting Holes



ADDITIONAL FEATURES

- Lifting Lugs for use in installation
- Extended Lubrication Lines for Easy Maintenance
- IATC Industrial Blue Enamel Paint

IRX - (RADIAL BLADE) CHOPPER FAN

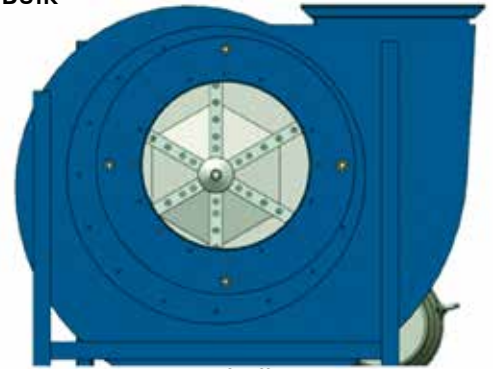
Material Applications

- Cardboard, Paper Trim, Corrugated board, Aluminum, Low Density Bulk Materials, etc.

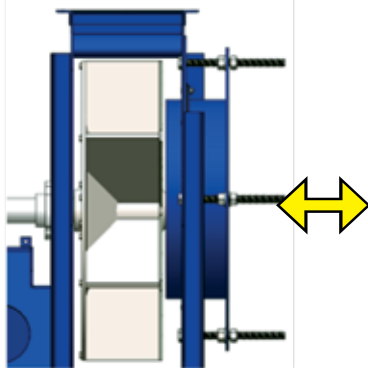
Features and Benefits

Adjustable Offset Inlet Cylinder

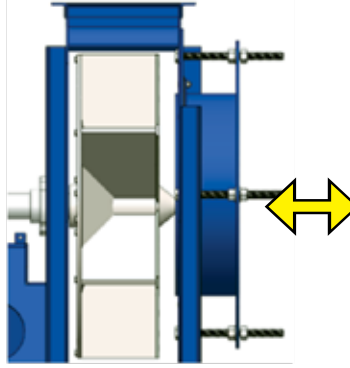
- The inlet is offset exposing more of the blade resulting in better reduction of material
- The adjustable inlet allows for the clearance between the wheel and inlet to be set for various materials, preventing build up or optimizing reduction. (See two positions below)



View of Offset Inlet



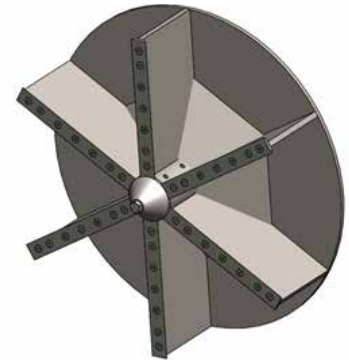
Inlet Cylinder positioned 3/8" from wheel



Inlet Cylinder positioned 1.75" from wheel

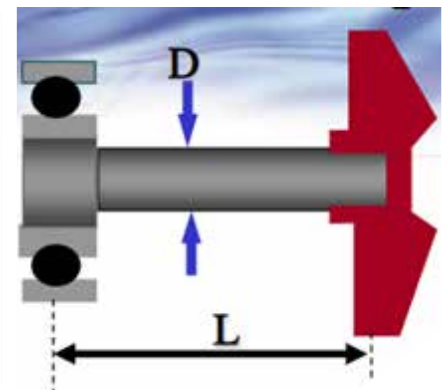
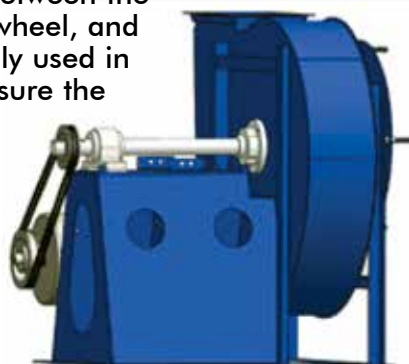
Replaceable Cutter Blades

- The hardened tool steel blades create a resilient, durable design.
- The blades are tapered to create a sharp cutting edge. (rotatable)
- Blades can be replaced in lieu of sharpening welded on blades or a replacement wheel



Non-Drive End Flange Bearing

- Using a flange bearing on the non-drive end of the fan decreases the distance between the bearing and the overhung load (the wheel).
- This smaller distance creates a more robust design by decreasing the L3/D4 ratio. It is the ratio of the length between the support and center of mass of the wheel, and the diameter of the shaft. Commonly used in centrifugal pumps and fans to measure the stiffness of a system.
- This design is built to handle the force and loading from impact of larger particles or material as they move through the air stream



IRV (RADIAL) INDUSTRIAL EXHAUSTER SERIES

Wheels back plated with machined blade edges and bull-nose hub for stringy material handling applications.

- Sizes 19" – 36 ½" wheel diameter
- Construction class 30 & 50
- Volume up to 35,000 CFM
- Pressure up to 45" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 4, 8, & 9

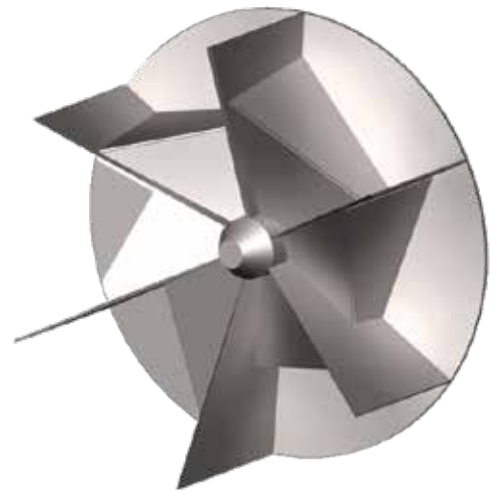


Arrangement 1 Shown

WHEEL TYPE IRV

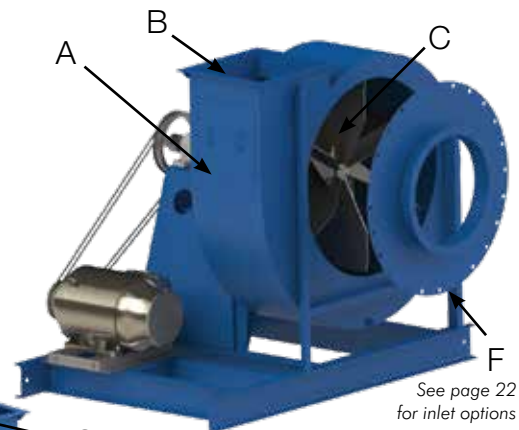
Steel Wheel

- For light to medium material handling applications
- Flat back plate
- Flat radial blades with machined leading edge with box gussets
- Operating temperatures up to 1000°F
- Chopper wheel design
- Abrasion resistant materials available



IRV

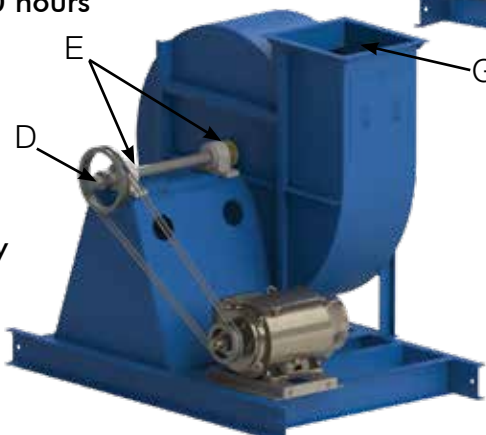
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

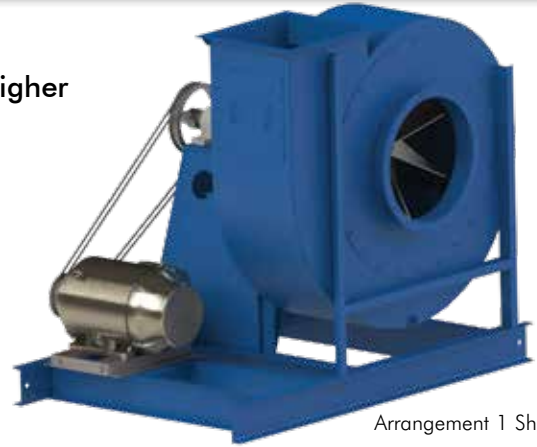
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



IRT (RADIAL TIP) INDUSTRIAL EXHAUSTER SERIES

Radial tip designed wheels are used for moderate pressure for higher efficiency in moderately dust-laden air.

- Sizes 19 1/8" – 85 1/4" wheel diameter
- Construction class 15, 30 & 50
- Volume up to 140,000 CFM
- Pressure up to 45" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 3, 4, 7, 8, & 9



Arrangement 1 Shown

WHEEL TYPE IRT

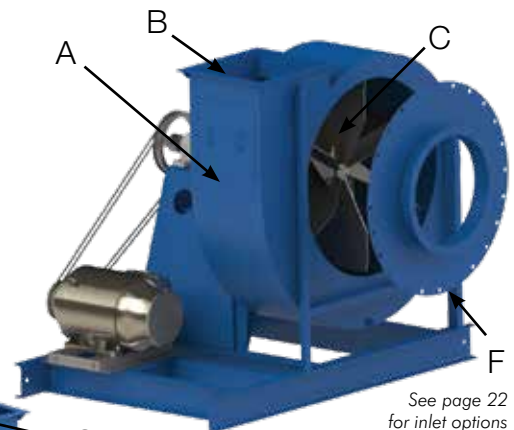
Steel Wheel

- For light to medium dust laden applications
- Tapered shroud
- Radial tip blades
- Operating temperatures up to 1000°F
- Abrasion resistant materials available



IRT

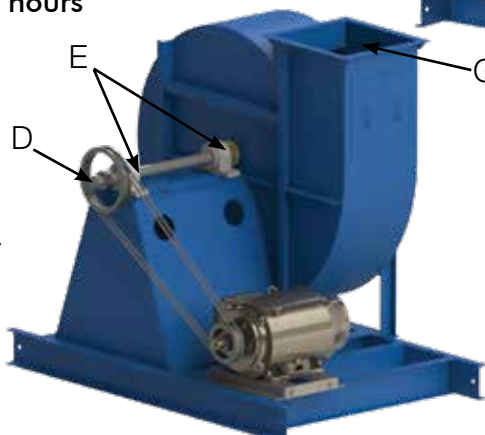
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22
for inlet options

ADDITIONAL FEATURES

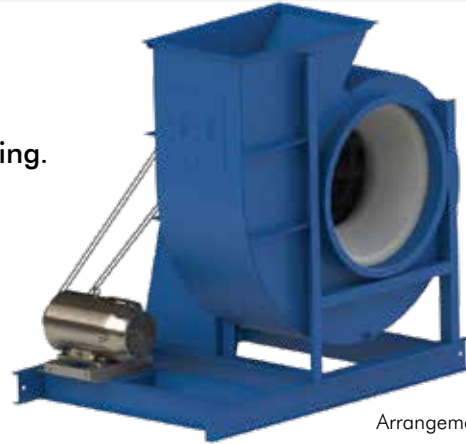
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



RTS–RADIALLY TIPPED

Wheels are a heavy duty, high efficiency design suitable for applications involving large volume gas streams at moderate pressure. Self-cleaning wheel can handle dirty air without fouling.

- Sizes 27" – 80 ¾" wheel diameter
- Construction class 30
- Volume up to 375,000 CFM
- Pressure up to 40" WG
- Temperature range -30°F to 800°F
- Arrangements 1, 3, 7, 8, & 9



Arrangement 1 Shown

WHEEL TYPE RTS

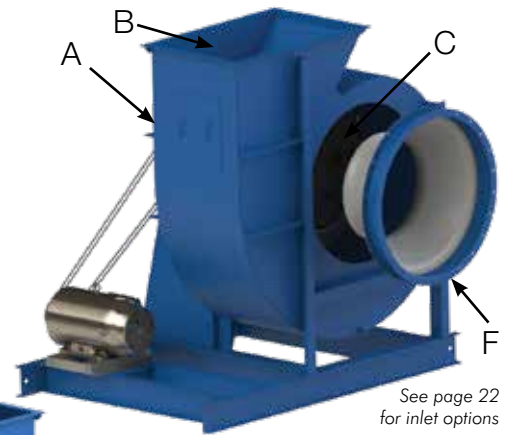
Steel Wheel

- For clean to moderately dirty applications
- Tapered shroud
- Radially tip blades
- Operating temperatures up to 800°F
- Abrasion resistant materials available



RTS

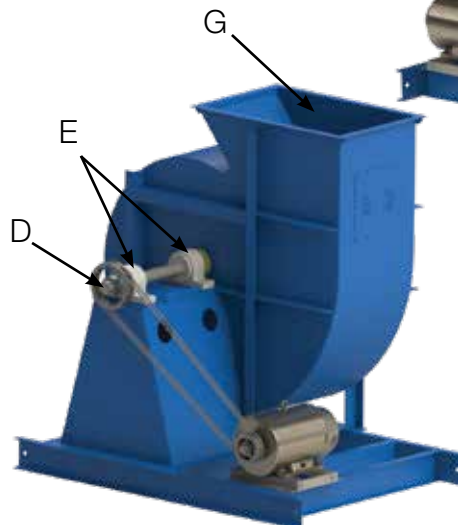
- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



See page 22 for inlet options

ADDITIONAL FEATURES

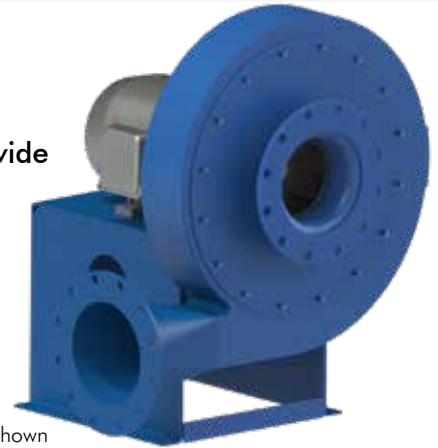
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint



PB-PRESSURE BLOWERS

Shrouded optimized bladed design offers efficient and stable performance over a wide range of pressure and volume requirements. Inlet and outlet flanges are round for easy standard pipe duct connections. Suitable for a wide range of applications including combustion air, drying, conveying, cooling, and other process air systems.

- Sizes 14" - 26" wheel diameter
- Construction class 60
- Volume up to 10,250 CFM
- Pressure up to 66" WG
- Temperature range -30°F to 600°F
- Arrangements 1, 4, 4V, 8, 9, 10



Arrangement 1 Shown

WHEEL TYPE PB

Aluminum Wheel

- For clean air applications at all volumes
- Tapered shrouds
- Radial blades (slightly backward inclined)
- Operating temperatures up to 200°F
- Riveted construction



Aluminum Wheel Construction

Steel Wheel

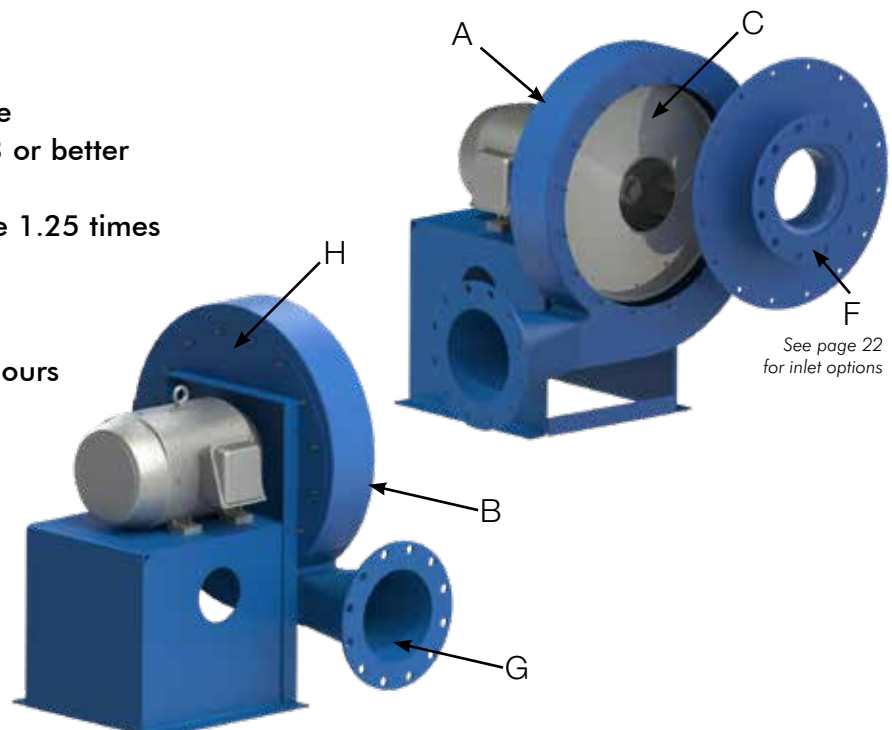
- For dust and light particulate applications
- Flat shrouds
- Radial blades
- Operating temperatures up to 600°F
- Welded construction



Steel Wheel Construction

PB

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 40,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes
- H. Lifting lugs for use in installation



See page 22
for inlet options

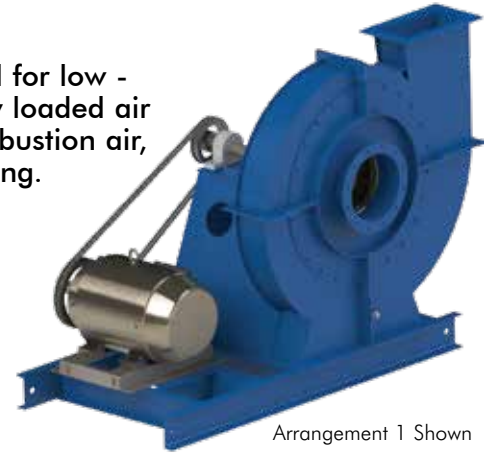
ADDITIONAL FEATURES

- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

BCLS–BACKWARD CURVED LOWER VOLUME

Wheels are backwardly curved design for high efficiency, low noise used for low - medium and medium - high pressure applications where clean to lightly loaded air is present. Applications include primary air supply, product cooling, combustion air, drying, glass blowing and cooling, gas boosting, and pneumatic conveying.

- Sizes 27" – 73" wheel diameter
- Construction class 100
- Volume up to 95,000 CFM
- Pressure up to 80" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 4 & 8



Arrangement 1 Shown

WHEEL TYPE BCLS

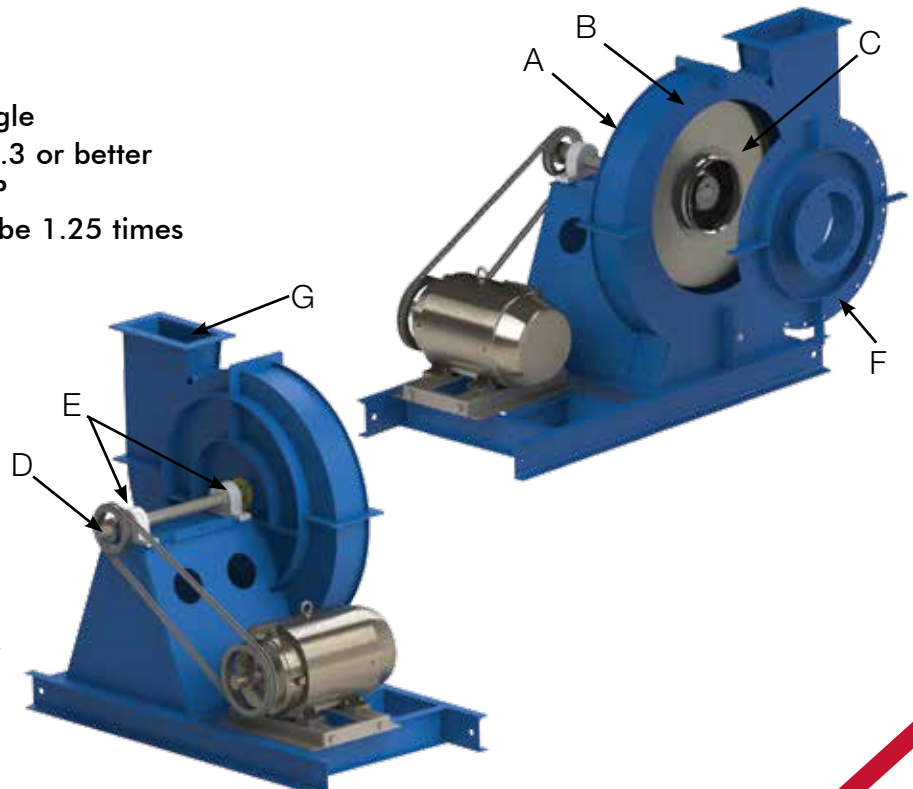
Steel Wheel

- For relatively clean air applications with little or no particulate
- Flat shroud
- Backward curved blades
- Operating temperatures up to 1000°F



BCLS

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



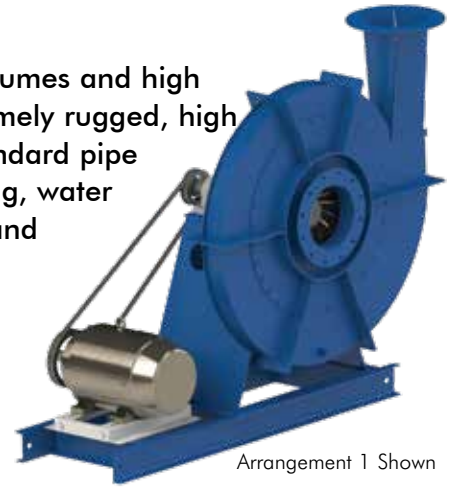
ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

TROH-TURBO RADIAL OPEN HIGH

Radially bladed wheel design for very stable operation at relatively low volumes and high pressures. Suitable for high temperature and turndown applications. Extremely rugged, high pressure construction with round inlet and outlet connections, for easy standard pipe duct connections. Applications include combustion air, cooling, gas boosting, water stripping, fluid beds, glass blowing, textile fiber stripping, product drying, and pneumatic conveying.

- Sizes 20" – 58" wheel diameter
- Construction class 100
- Volume up to 34,000 CFM
- Pressure up to 80" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 4, 8 & 9



Arrangement 1 Shown

WHEEL TYPE TROH

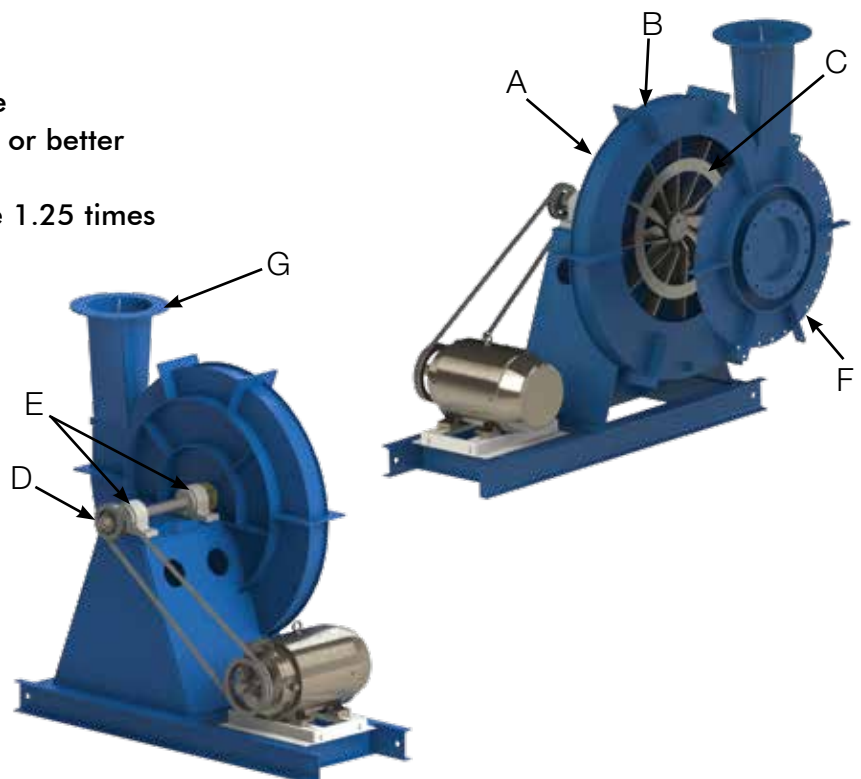
Steel Wheel

- For relatively clean air applications with little or no particulate
- No shroud
- Radial blades
- Operating temperatures up to 1000°F



TROH

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



ADDITIONAL FEATURES

- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

TROL-TURBO RADIAL OPEN LOW

Radially bladed wheel design for very stable operation at low volumes and high pressures. Suitable for high temperature and turndown applications. Extremely rugged, high pressure construction with round inlet and outlet connections, for easy standard pipe duct connections. Applications include combustion air, cooling, gas boosting, water stripping, fluid beds, glass blowing, textile fiber stripping, product drying, and pneumatic conveying.

- Sizes 20" – 60" wheel diameter
- Construction class 100
- Volume up to 15,000 CFM
- Pressure up to 85" WG
- Temperature range -30°F to 1000°F
- Arrangements 1, 4, 8 & 9



WHEEL TYPE TROL

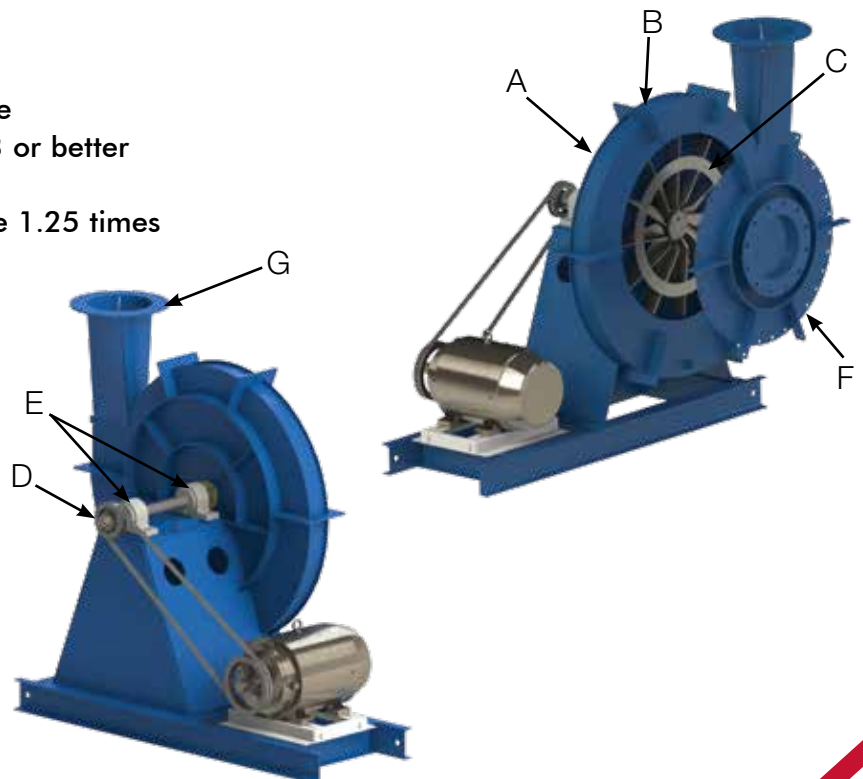
Steel Wheel

- For relatively clean air applications with little or no particulate
- No shroud
- Radial blades
- Operating temperatures up to 1000°F



TROL

- A. Continuously welded steel housing
- B. Fixed housing with any discharge angle
- C. All wheels are balanced to grade G6.3 or better
- D. Shafting is 1045 bearing grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-friction pillow block bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged outlet with mounting holes



ADDITIONAL FEATURES

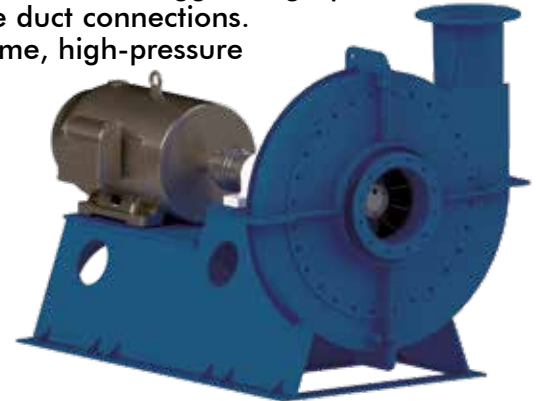
- Lifting lugs for use in installation
- Extended lubrication lines for easy maintenance
- Standard IATC blue enamel paint

HPRS-HIGH PRESSURE RADIAL SHROUDED

Shrouded, back-plated, and radially bladed wheel, designed for very stable operation at low volumes and very high pressures. Suitable for high temperature and turndown applications. Rugged, high-pressure construction with round inlet and outlet connections for standard pipe duct connections.

Airstream/Performance: Clean air to light duty dust loading, low volume, high-pressure applications. Applications: Pneumatic conveying, supply and exhaust fans, combustion air, distribution air, process, corrosive and high temperature applications.

- Sizes 18" – 71" wheel diameter
- Construction Class 100
- Volume up to 23,000 CFM
- Pressure up to 125" WG
- Temperature Range -30° to 1000°F
- Arrangements 1, 4, 8, 9



WHEEL TYPE HPRS

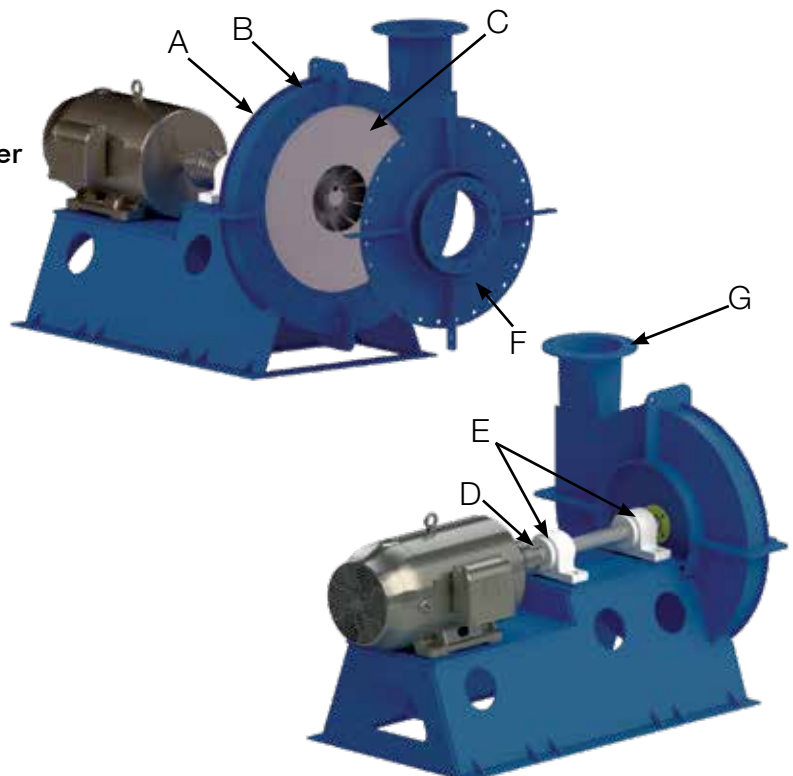
Steel Wheel

- For Relatively Clean Air Applications with Little or No Particulate
- Shrouded & Back-plated
- Radial blades
- Operating temperatures up to 1000°F



HPRS

- A. Continuously Welded Steel Housing
- B. Fixed Housing with Any Discharge Angle
- C. All Wheels are balanced to Grade G6.3 or Better
- D. Shafting is 1045 Bearing Grade TG&P
 - Sized for the first critical speed to be 1.25 times the max speed or higher
- E. Anti-Friction Pillow Block Bearings
 - Premium grease lubrication
 - Rated bearing life (L10) of 100,000 hours
- F. Inlet (flange style shown)
- G. Flanged Outlet with Mounting Holes



ADDITIONAL FEATURES

- Lifting Lugs for use in installation
- Extended Lubrication Lines for Easy Maintenance
- IATC Industrial Blue Enamel Paint

ARRANGEMENT FOR FAN DRIVE POSITION

The term "Arrangement" is used to describe position of the motor relative to the fan. Main criteria which may influence your choice:

- Fan performance (temperature, contents of airstream, etc.)
- Size/location (footprint size of unit, access to various components on the fan, etc.)
- Drive method (belt or direct)

Belt Drive Pros:

- Allows fan to operate at "non-motor" speeds
- Easier to change fan speed & performance
- Motor positioning flexibility

Belt Drive Cons:

- Requires more maintenance
- Drive losses due to belt slippage
- May have horsepower limitations
- Belt noise

Direct Drive Pros:

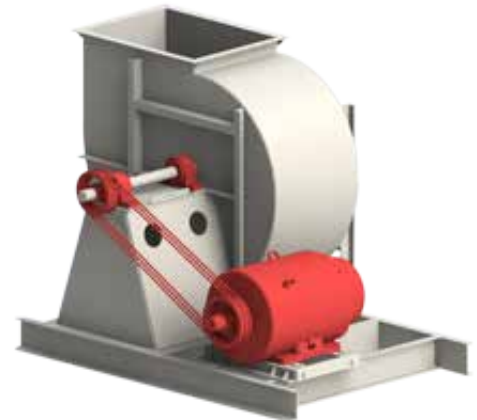
- Usually more compact (size/footprint)
- Less components to maintain/balance
- No drive losses

Direct Drive Cons:

- VFD required to change speed or performance
- More expensive to change speed or performance
- Precise alignment of motor/coupling/shaft is critical
- Without a VFD, fan selection is limited to motor speed

Arrangement 1 – Belt Drive (overhung)

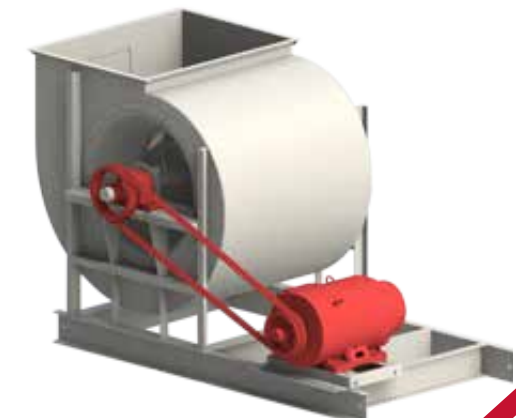
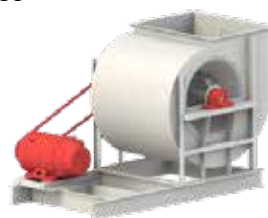
Overhung wheel on shaft and bearing assembly isolates fan bearings from the airstream. Motor mounts independently from fan, typically on a unitary base as shown.



All guards and safety devices are not shown.

Arrangement 3 – Belt Drive (center hung)

Wheel supported between bearings is compact and suitable for clean, dry-air service. This compact drive arrangement does not require a bearing pedestal. Suitable for ambient, clean air stream for either single or double inlet fans. Inlet boxes required for heated air streams.



All guards and safety devices are not shown.

Arrangement 4 – Direct Drive (overhung)

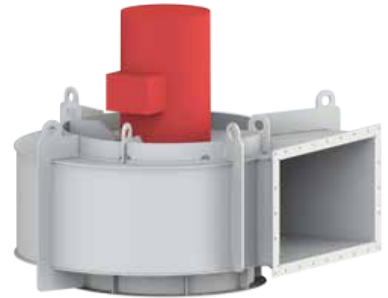
Wheel mounted directly on motor shaft to provide the most compact design. Elimination of shaft and bearings for minimum maintenance. Temperature restriction of 180°F due to close proximity of the motor to the housing.



All guards and safety devices are not shown.

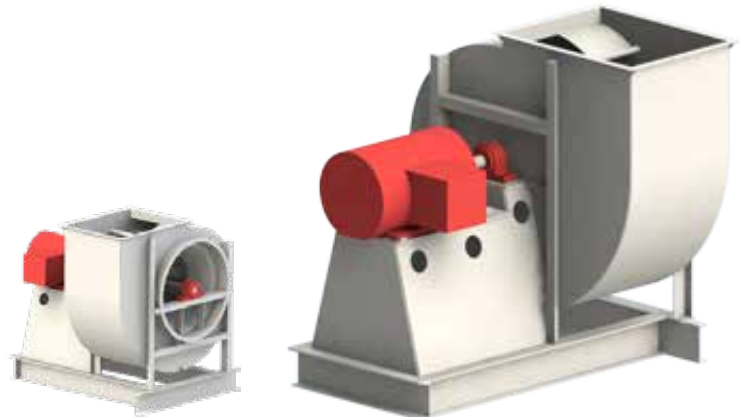
Arrangement 4V – Direct Drive (vertical)

Wheel mounted directly on motor shaft to provide the most compact design. Elimination of shaft and bearings for minimum maintenance. Motor shaft is vertically oriented. Temperature restriction of 180°F due to close proximity of the motor to the housing.



Arrangement 7 – Direct Drive (center hung)

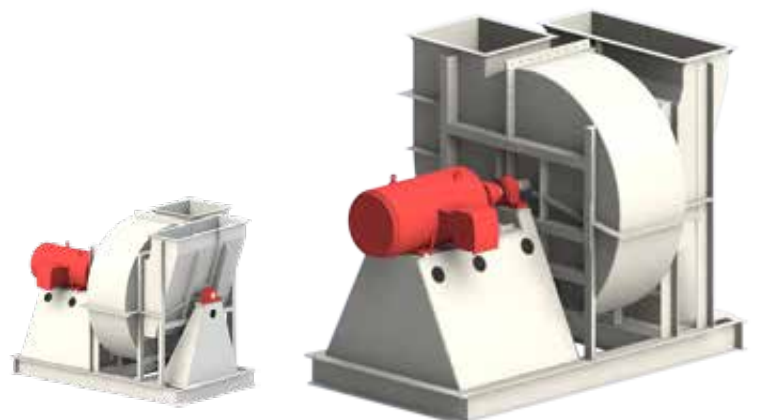
Wheel supported between bearings is compact and suitable for clean, dry-air service.



All guards and safety devices are not shown.

Arrangement 7 – Direct Drive (center hung)
(shown with optional inlet box)

Wheel supported between bearings is compact and suitable for clean, dry-air service. An optional inlet box may be purchased to allow for bearings to be placed outside the airstream for dirty or high temperature air streams.



All guards and safety devices are not shown.

Arrangement 8 – Direct Drive (overhung)

Integral pedestal furnished for the motor and coupling. Most flexible of the direct drive arrangements allowing for larger motors, fan sizes and accessories.



All guards and safety devices are not shown.

Arrangement 9 – Belt Drive (overhung)

An adjustable motor mount featured on this arrangement provides a compact grouping of motor, drive belt and fan. Similar to Arrangement 1, but with motor mounted on side of fan pedestal reducing overall size.



All guards and safety devices are not shown.

Arrangement 10 – Belt Drive (overhung)

Compact, packaged design with motor mounted within the fan pedestal.



All guards and safety devices are not shown.

FAN INLET CONFIGURATIONS

Inlet Types for:

AFSW, BISW, BCHS, RTS, IRO, IRF, IRT, IRW, IRV fans.



Flanged with mounting holes



Slip collar

Inlet Types for:

PB Blower



Flanged with mounting holes



PB slip collar inlet



PB venturi inlet

Industrial
AIT Technology Corp.

HIGH TEMPERATURE FANS AND BLOWERS

CONSTRUCTION
OPTIONS



INDUSTRIAL AIR TECHNOLOGY CORP. HIGH TEMPERATURE COMPONENTS

Proper fan specification is crucial to successful air handling applications. Harsh temperature applications require components designed to limit and reduce heat transfer to critical components for extended life in these environments. To help simplify your selection process, Industrial Air Technology, Corp. has developed standard & customizable high-temperature product offerings to promote air circulation for a cooling effect in critical component areas with interfaces sized for thermal expansion.

High Temperature Door Gasket

– Woven fiberglass tape to form the seal in higher temperature environments.

High Temperature Shaft Guard – Expanded metal to facilitate air circulation around the bearings

High Temperature Shaft – High alloy shafting resists creep and high cycle fatigue at elevated temperatures.

Shaft Coolers – Finned aluminum disk attached to the shaft between the housing and inboard bearing. Designed to dissipate heat before it reaches the bearing. Also causes air circulation around the bearings and through the shaft guard.

Copper Lube Lines – Extended lubrication lines that won't melt or soften

Heat Slot / Gap – Provides clearance for the shaft cooler wheel. Causes a torturous path for heat conduction from the housing to the bearing pedestal top plate. If left open, can cause air circulation under the bearing pedestal top plate.

■ **Ceramic Felt Shaft Seal** – ¼ inch thick Alumina Silicate Ceramic Felt is designed to tolerate elevated temperatures, or

■ **Extended Ceramic Felt Shaft Seal** – The ceramic felt and steel shaft seal cover are sized to approximately the same width and height as the shaft guard. The intent is to slow the heat transfer into the space under the shaft guard and keep the air surrounding the bearings cooler, or

■ **Stuffing Box** – Provides additional shaft sealing and insulation to limit heat transfer.

■ **High Temp Pedestal** – Encourages convective currents to circulate under and around the pedestal to remove heat as well as reducing heat transfer. (Detached Pedestal Option not shown)

■ **High Temp Hub** – Averts the problem of temperature cycling causing taperlock hubs to loosen. Includes a plate screwed into the shaft to eliminate wheel movement.

■ **High Temp materials for the fan wheel, housing and inlet cone** – Higher yield strength steels maintain the required strength at elevated temperatures.

■ **High Temp Gasketing** – Primarily for use around the inlet cylinder as a sealant to reduce leakage.

■ **Housing Insulation** – Contains the radiant heat developed from the air stream to prevent excessive ambient temperature rise around the motor and bearings.

HIGH TEMPERATURE FAN PACKAGES

Industrial Air Technology Corp. has developed pre-engineered high temperature fan packages grouped according to operating temperature ranges. The packages contain features selected for each fan model, with progressively higher temperature ranges requiring additional elements to meet more severe demands. All standard high temperature designs anticipate clean to lightly loaded airstreams with a rate of temperature change not exceeding 15° F per minute. Additionally, the packages are designed for ambient air conditions that do not exceed 110° F. Customers can mix and match package features with various models for a “customized” package. For applications beyond those requirements, Industrial Air Technology Corp. will help guide you with the proper selection.

201°– 300°F Degree Package Includes

- Ceramic Felt Shaft Seal
- High Temp Guard
- High Temp Gaskets

301°– 400°F Degree Package Includes

- Ceramic Felt Shaft Seal
- High Temp Guard
- High Temp Gaskets
- Heat Slot/Gap
- Shaft Cooler
- High Temp Paint

401°– 600°F Degree Package Includes

- Extended Ceramic Felt Shaft Seal
- High Temp Guard
- High Temp Gaskets
- High Temp Silicone
- Heat Slot/Gap
- Shaft Cooler
- High Temp Pedestal
- High Temp Paint

601°– 800°F Degree Package Includes

- Stuffing Box
- High Temp Guard
- High Temp Gaskets
- High Temp Silicone
- Heat Slot/Gap
- Single or Double Shaft Cooler(s)
- High Temp Pedestal
- High Temp Paint
- High Temp Shaft
- High Temp Hub and Wheel
- High Temp Housing and Inlet Cone
- Housing Insulation
- High Temp Bearings
- High Temp Lubrication
- Copper Lubrication Lines

801°– 1000°F Degree Package Includes

- Stuffing Box
- High Temp Guard
- High Temp Gaskets
- High Temp Silicone
- Single or Double Shaft Cooler(s)
- High Temp Detached Pedestal
- High Temp Paint
- High Temp Shaft
- High Temp Hub and Wheel
- High Temp Housing and Inlet Cone
- Housing Insulation
- High Temp Bearings
- High Temp Lubrication
- Copper Lubrication Lines

Industrial
Air Technology Corp.

STAINLESS STEEL FANS AND BLOWERS

CONSTRUCTION
OPTIONS



Industrial Air Technology, Corp. Stainless Steel Fan packages are designed for non-sanitary requirements where corrosion resistance is desired. These packages are ideal for wash down applications or to minimize contamination.

As a standard, all housing cheeks and scrolls are continuously welded on the exterior of the housing.

Surfaces and welds may include pits, scratches, crevices, and small pockets, which does not meet 3A and FDA sanitary compliance. When making finish selections, be aware that the higher the grade of finish, the more costly the package will be.

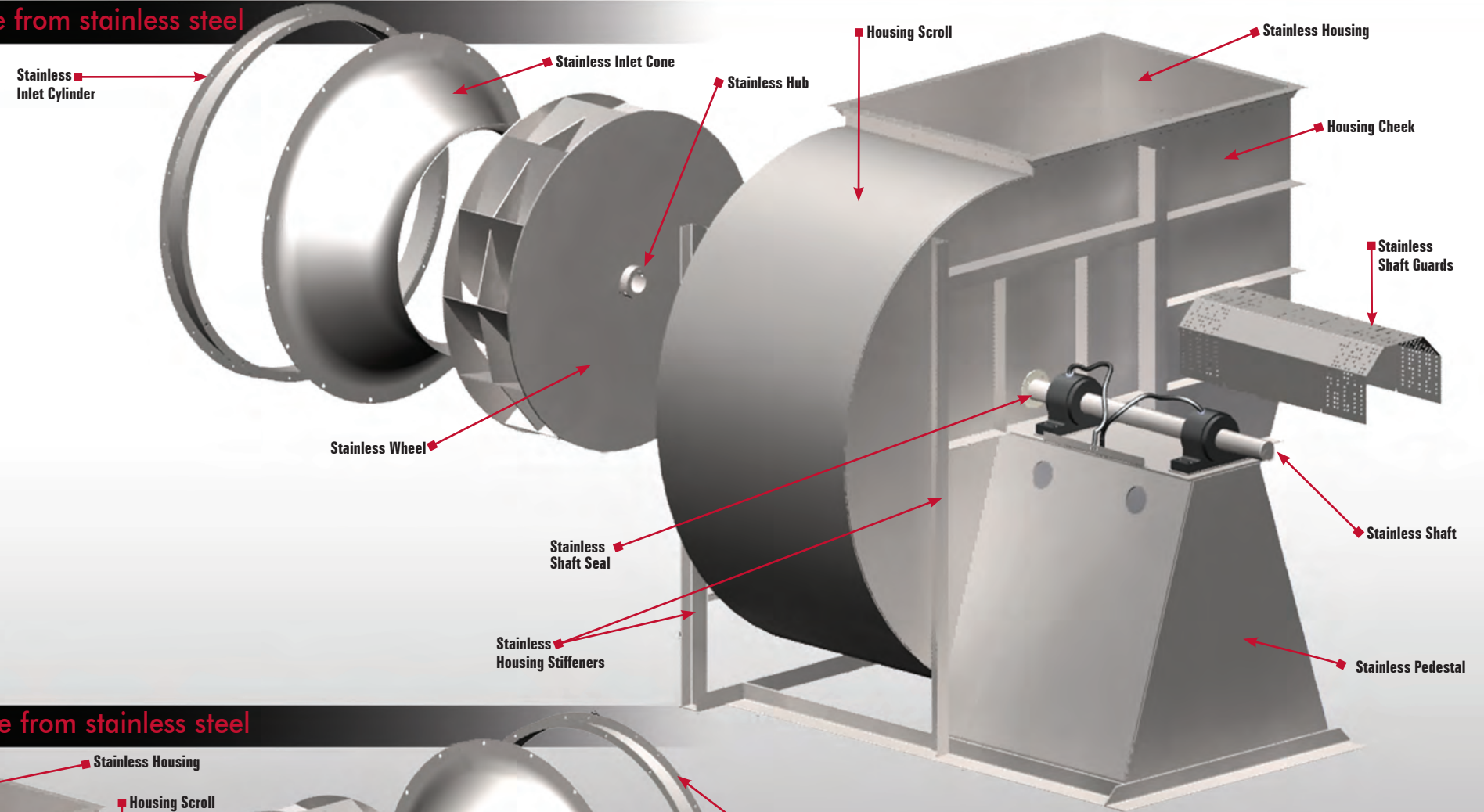
Four standard finish options are available both inside and outside the air stream. These options allow for the selection of different finishes on the inside and outside of the air stream, depending on the application requirement.

SELECTION PROCESS

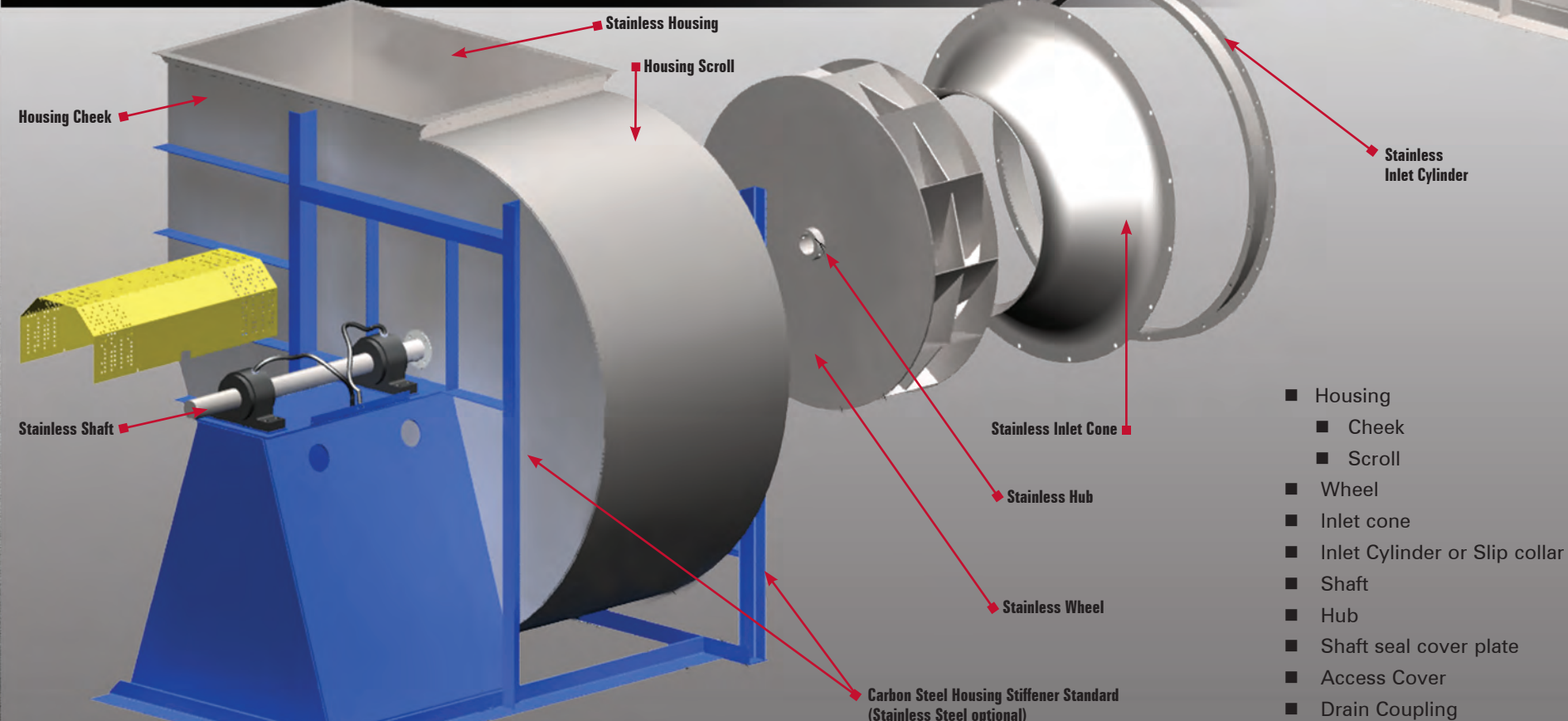
1. Carefully consider the requirements of your application
2. Determine what material you require (304 or 316)
3. Determine which package you require (Air Stream, Entire Fan, Accessory)
4. Determine the surface options for your applications.
 - A. Surface finish (Standard, Plus, Deluxe)
 - a-1. Inside the air stream finish option
 - a-2. Outside the air stream finish option
 - B. Surface treatment
 - b-1. Inside the air stream surface treatment
 - b-2. Outside the air stream surface treatment
5. Determine if passivation is required
6. Determine what options are needed
 - a. Gasket material type
 - b. Type of drain plug coupling (if required)
 - c. Motor type - stainless or wash down (if required)
 - d. Drive package - stainless or wash down (if required)
7. Determine what fan accessories are needed
8. Contact IATC or one of our qualified representatives for a quote.

Entire Fan Package Components made from stainless steel

- Housing
 - Cheek
 - Scroll
- Wheel
- Inlet cone
- Inlet Cylinder or Slip collar
- Shaft
- Shaft Guard (except arrangement 4)
- Hub
- Shaft seal cover plate
- Belt Guard (arrangements 1, 3, 9)
- Pedestal
- Motor Base (arrangements 1, 3, 9)
- Access Cover
- Drain Coupling



Air Stream Package Components made from stainless steel



- Housing
 - Cheek
 - Scroll
- Wheel
- Inlet cone
- Inlet Cylinder or Slip collar
- Shaft
- Hub
- Shaft seal cover plate
- Access Cover
- Drain Coupling

SURFACE OPTIONS

Premium 125 RA micro finish

- Weld splatter removed
- Welds may include pits, scratches, crevices, and small pockets
- Welds are continuous to minimize crevices and reduce the risk of contamination
- Welds are ground to reduce surface imperfections typical of most welds
- Welds are polished to a 125 RA micro finish further improving the surface
- Welds are polished to a 250 RA micro finish further improving the surface



Deluxe 250 RA micro finish

- Weld splatter removed
- Welds may include pits, scratches, crevices, and small pockets
- Welds are continuous to minimize crevices and reduce the risk of contamination
- Welds are ground to reduce surface imperfections typical of most welds
- Welds are polished to a 125 RA micro finish further improving the surface
- Welds are polished to a 250 RA micro finish further improving the surface



Plus No finish spec – Continuous weld

- Weld splatter removed
- Welds may include pits, scratches, crevices, and small pockets
- Welds are continuous to minimize crevices and reduce the risk of contamination
- Welds are ground to reduce surface imperfections typical of most welds
- Welds are polished to a 125 RA micro finish further improving the surface
- Welds are polished to a 250 RA micro finish further improving the surface



Standard No finish spec – As fabricated

- Weld splatter removed
- Welds may include pits, scratches, crevices, and small pockets
- Welds are continuous to minimize crevices and reduce the risk of contamination
- Welds are ground to reduce surface imperfections typical of most welds
- Welds are polished to a 125 RA micro finish further improving the surface
- Welds are polished to a 250 RA micro finish further improving the surface



Surface Treatment

- Sand Blast – Specified surfaces will be sand blasted which results in a rougher surface texture, removes weld heat discoloration and provides a consistent light grey “flat or matte” appearance
- Bead Blast – Specified surfaces will be bead blasted which results in a slightly smoother surface texture, removes weld heat discoloration and provides a consistent deeper grey “semi-gloss” appearance
- Primer Only – Specified surfaces will be primed with 2-3 mils DFT, which provides a paint ready surface
- Prime and Paint – Specified surfaces will be primed and painted with total coverage of 3-6 mils DFT



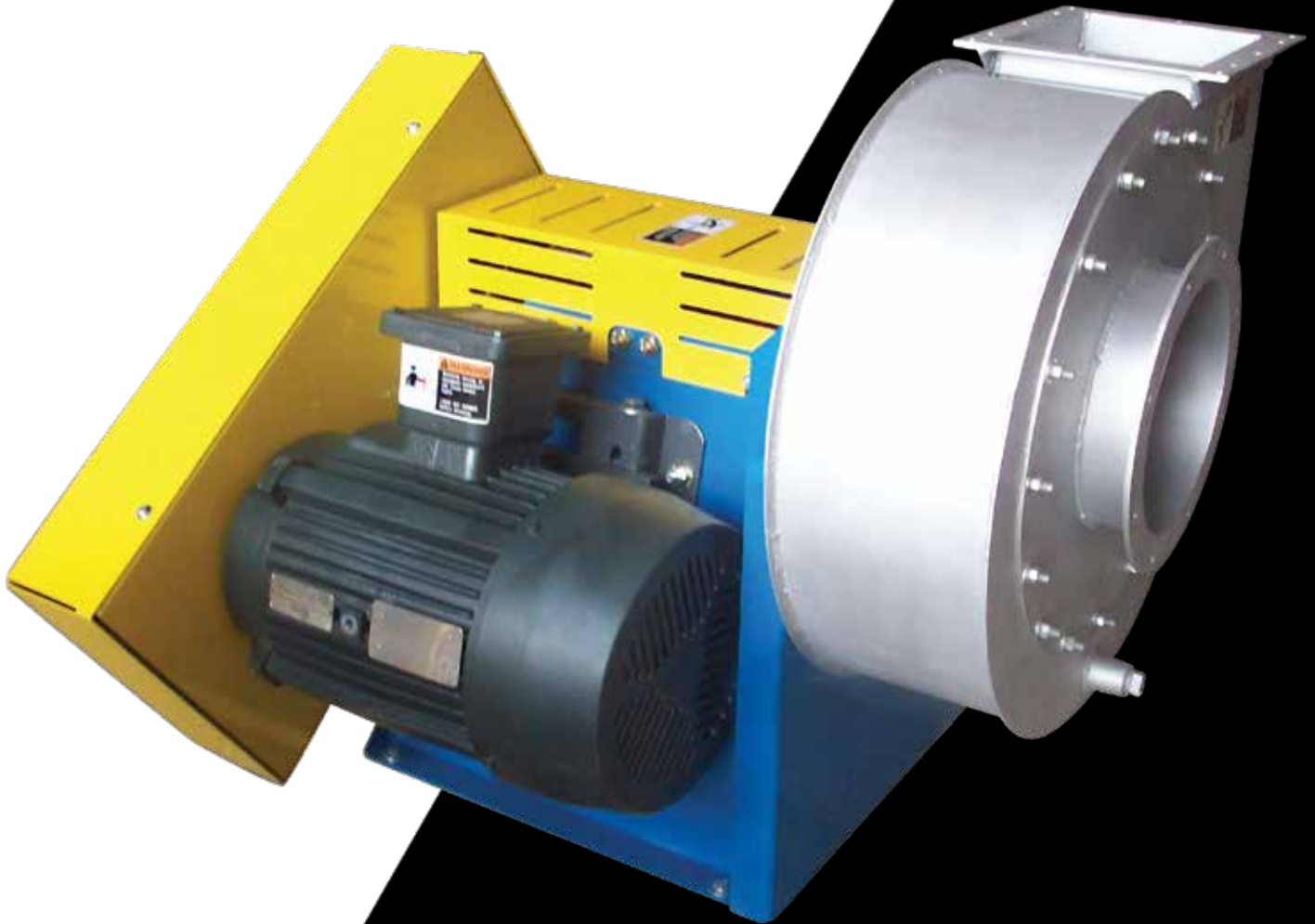
Passivation

Passivation improves the corrosion resistance properties of components made of precipitation-hardened, austenitic, ferritic and martensitic steels. Passivation treatments improve the surface condition of stainless steel by dissolving iron that has been imbedded in the surface during forming or machining. If allowed to remain, the iron can corrode and give the appearance of rust spots on the stainless steel.

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SPARK RESISTANT FANS AND BLOWERS

CONSTRUCTION
OPTIONS



SPARK RESISTANT OPTIONS

Fan and damper applications may involve the handling of potentially explosive or flammable particles, fumes, or vapors. Such applications require careful consideration of all system components to insure the safe handling of such gas streams. The AMCA Standard 0401 deals only with the fan and/or damper unit installed in that system. The Standard contains guidelines which are to be used by both the manufacturer and user as a means of establishing general methods of construction. The exact method of construction and choice of alloys is the responsibility of the manufacturer; however, the customer must accept both the type and design with full recognition of the potential hazard and the degree of protection required.

- AMCA A construction
- AMCA B construction
- AMCA C construction

The use of the AMCA Standard in no way implies a guarantee of safety for any level of spark resistance. "Spark resistant construction also does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in a system."



SPARK RESISTANT CONSTRUCTION

AMCA A Construction:

All parts of the fan or damper in contact with the air or gas being handled and subject to impact by particles in the airstream shall be made of nonferrous material. Ferrous shafts/axles and hardware exposed to the airstream shall be covered by non-ferrous materials.

Fans only: Steps must also be taken to assure that the impeller, bearings, and shaft are adequately attached and/or restrained to prevent a lateral or axial shift in these components.

Dampers only: Construction shall ensure that linkages, bearings, and blades are adequately attached or restrained to prevent independent action. Ferrous containing bearings are acceptable if the bearings are located out of the airstream and shielded from particle impact.

AMCA B Construction:

Fans only: The fan shall have a nonferrous impeller and nonferrous ring about the opening through which the shaft passes. Ferrous hubs, shafts, and hardware are allowed provided construction is such that a shift of impeller or shaft will not permit two ferrous parts of the fan to rub or strike. Steps must also be taken to assure that the impeller, bearings, and shaft are adequately attached and/or restrained to prevent a lateral or axial shift in these components.

Dampers only: Construction shall ensure that linkages, bearings, and blades are adequately attached or restrained to prevent independent action. Damper blades shall be non-ferrous.

AMCA C Construction:

Fans only: The fan shall be so constructed that a shift of the impeller or shaft will not permit two ferrous parts of the fan to rub or strike.

Dampers only: Construction shall ensure that linkages, bearings, and blades are adequately attached or restrained to prevent independent action. Damper blades shall be non-ferrous.

-
- No bearings, drive components or electrical devices shall be placed in the air or gas stream unless they are constructed or enclosed in such a manner that failure of that component cannot ignite the surrounding gas stream.
 - The user shall electrically ground all fan and/or damper parts.
 - For this Standard, nonferrous material shall be any material with less than 5% iron or any other material with demonstrated ability to be spark resistant.
 - All structural components within the airstream, including non-metallic materials, must be suitable for conducting static charge safely to ground, thus preventing buildup of electrical potential. Dampers with non-metallic bearings must include means by manufacturer of transferring electrical charge from the blades to suitable ground.
 - The use of aluminum or aluminum alloys in the presence of steel which has been allowed to rust requires special consideration. Research by the U.S. Bureau of Mines and others has shown that aluminum impellers rubbing on rusty steel may cause high intensity sparking.

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ABRASION RESISTANT FANS AND BLOWERS












CONSTRUCTION
OPTIONS

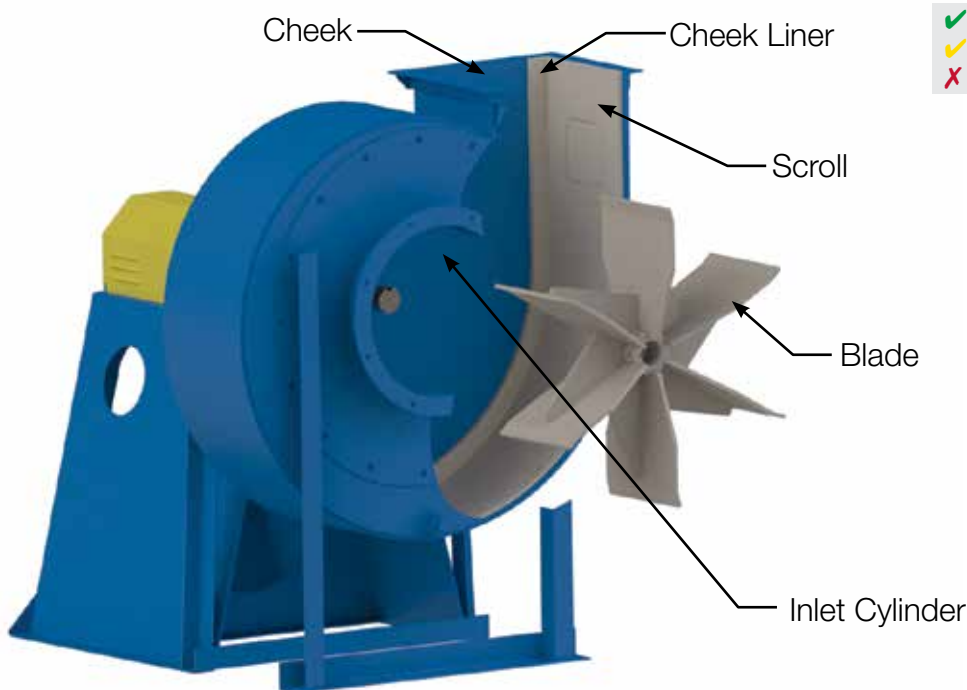


ABRASION RESISTANT OPTIONS

Material in the airstream of a fan can cause wear and greatly diminish the service life of a fan. The first step is to choose the appropriate fan wheel type. After that, depending on the type of material being handled, size, volume, and abrasiveness, it is wise to consider upgrading the primary wear surfaces of the air stream to combat the detrimental effects of wear.

Adding abrasion resistant options to your material handling fan can enhance the service life of your fan. Shown below are some of the options available that will provide enhanced wear resistance to the fan wheel and housing of the fan. Generally, there are two basic ways to incorporate more abrasion resistant materials. One is to make the components from abrasion resistant materials that are structurally sound. The other is to use abrasion resistant materials as liners. Refer to the chart and image below as a reference, then please contact one of our Customer Service Representatives to discuss your application and what options are available to extend your fan service life.

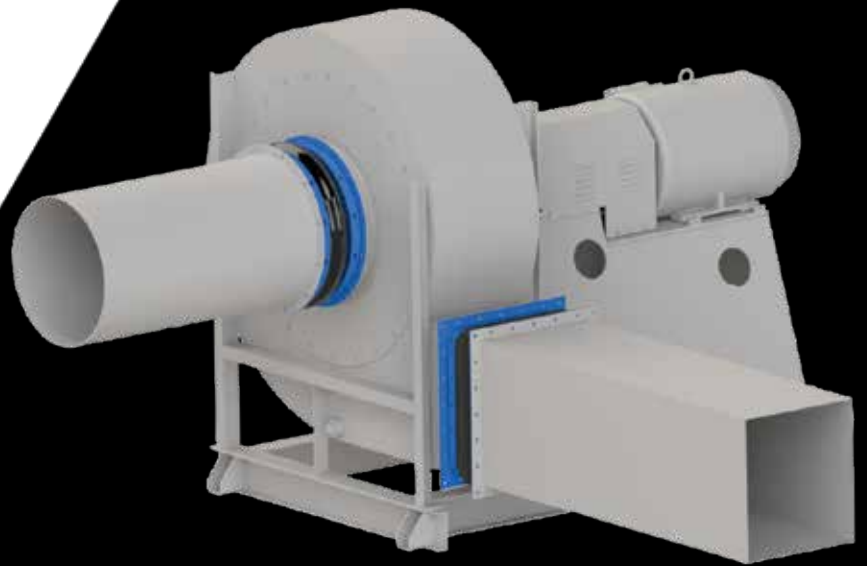
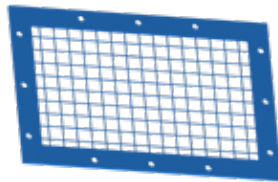
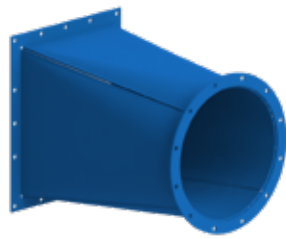
		Wear Resistance	Wheel Blades	Cheek Liner	Scroll	Maximum Temperature
Standard Steel	Mild Steel		✓	✓	✓	800
	A588 (Corten)		✓	✓	✓	900
Specialty Steel Quenched and Tempered	A514 (T1)		✓	✓	✓	800
	AR-400		✗	✓	✗	400
	AR-500		✗	✓	✗	400
	AR Structural Alloy - 400		✓	✓	✓	450
	AR Structural Alloy - 450		✓	✓	✓	450
	AR Structural Alloy - 500		✓	✓	✓	450
Overlain Steel	Carbide Overlay - 60		✓	✓	✓	900
	Carbide Overlay - 74		✓	✓	✓	800
	Hard Faced Pattern		✓	✗	✗	900



- ✓ ABRASION RESISTANT OFFERING
- ✓ LIMITED APPLICATIONS
- ✗ NOT AVAILABLE

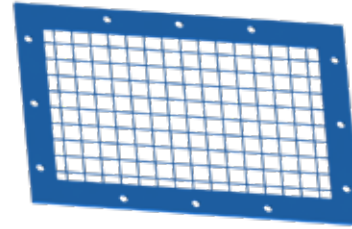
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ACCESSORIES FOR FANS AND BLOWERS



SCREENS

The purpose of screens is to restrict larger objects or debris from entering the air stream, while still allowing air to flow. Screens are available in any size for both inlets and outlets of fan, dampers, and silencers.



INLET BOXES

IATC inlet boxes are designed to fit in tight footprints and direct air uniformly into fan inlets. Similar to our fans, IATC inlet boxes are designed for reliable performance, have predicted pressure drops for efficient fan operation and available with many options including access doors, drains, split housing, paint coatings and materials of construction. In combination with parallel dampers are an excellent choice for airflow control.



SHAFT COOLERS

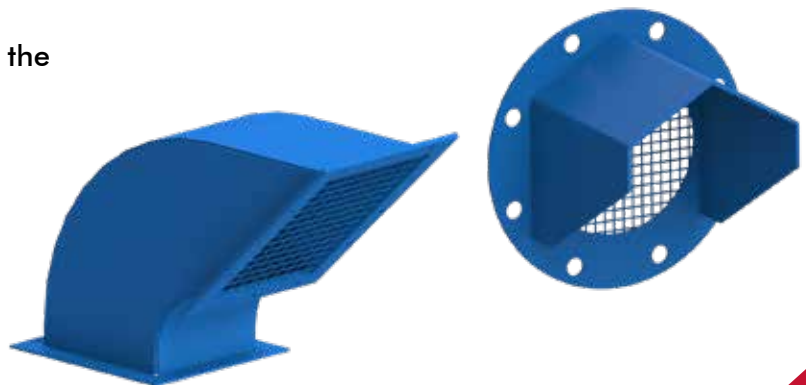
Shaft coolers mount to the fan shaft in front of the inboard bearing and provide air flow to slow heat transfer along the shaft, pedestal structure and help cool the bearings.

- Available in standard sizes from 7-1/2" to 18" diameter
- Custom sizes available



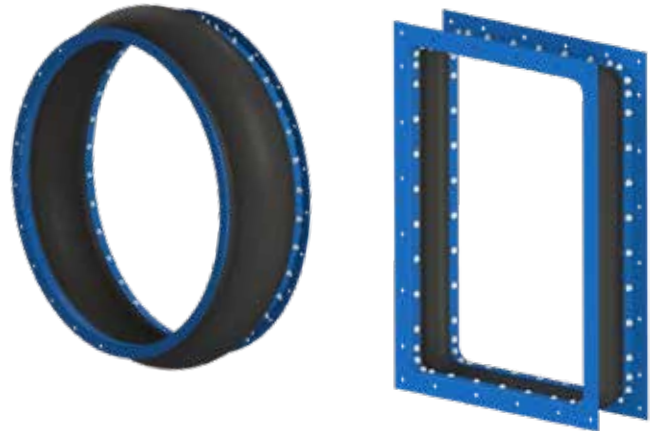
WEATHER HOODS

Covers fan or duct inlets or outlets to impede the entrance of rain or snow into the air stream.



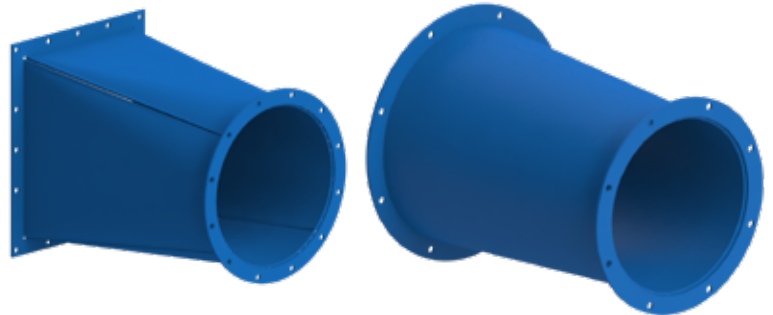
FLEXIBLE CONNECTORS

Used to isolate loads and vibration transmission on inlets and outlets, while also allowing for minor misalignment of connections. Flex material comes in a variety of compounds. For negative pressure applications, dirty airstreams or higher velocity flow rates, flex connectors often require internal deflectors to protect fabric. Flanges are constructed from carbon steel, zinc plated carbon steel, or stainless steel.



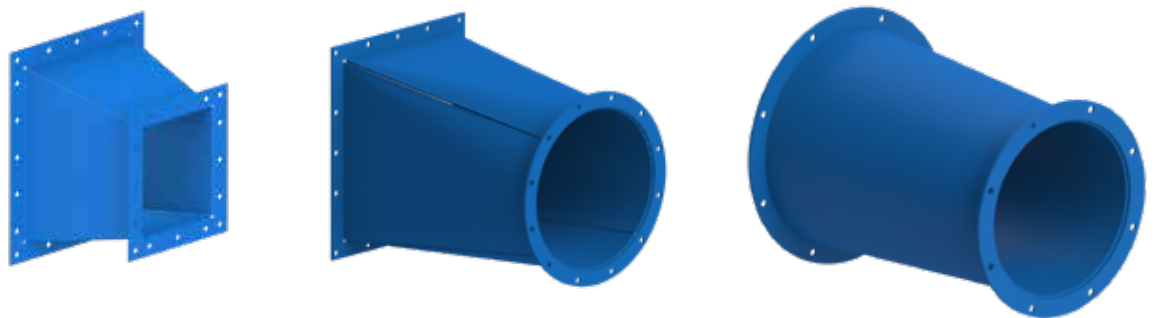
INLET TRANSITIONS

Transitions connect fan inlets to inlet duct and other components. They are typically used when the inlet size is different than the duct or other component being attached to the fan inlet. Available in round to round or round to square configurations.



OUTLET TRANSITIONS

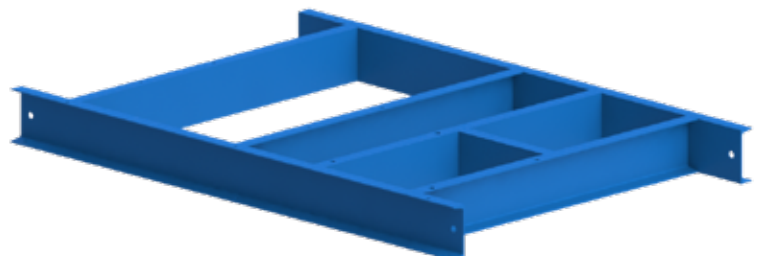
Transitions connect fan outlets to outlet ducts and other components. They are typically used when the outlet size is different than the duct or other component being attached to the fan outlet. Available in rectangle to round, rectangle to square, round to round, and round to square configurations.



FAN BASES

Provides common mounting platform for fan, motor, and inlet boxes.

- Unitary Base – Rigid mount C-channel construction ready to install to foundation.
- Inertia Base – Sturdy construction frame with rebar ready for on-site installation of concrete to provide vibration dampening.



SENSORS

IATC offers a variety of sensors to help meet your preventative maintenance requirements. We can supply temperature and vibration sensors that can then be integrated into your monitoring controls to help keep your fans running trouble free.

- Speed Sensors - IATC offers Zero-Speed switches when installed will alert end users if fan quits rotating and for simple rpm history.
- Temperature Sensors - Installed on bearings we offer a variety of RTD's, thermistors or thermocouples based on your preferences.
- Vibration Sensors - IATC offers accelerometers that can be installed on individual bearings or simply located between bearings.

VIBRATION ISOLATORS

Isolator mounts are used to isolate and reduce transient vibrations generated by floor-mounted mechanical equipment located in non-critical areas.

Housed Spring - High deflection, color-coded springs with built in restraints to resist lateral forces without restraining vertical movement. Telescoping housing with ribbed isolation pad assists with noise reduction, as well. Slots or holes are provided for adjustment.

Rubber in Shear (RIS) - Suitable for low load vibration. Narrow width and height rubber mounts provide excellent damping qualities and sound absorption. RIS isolators are easy to install in small spaces and do not require adjustment.

INSULATION

Thermal Insulation

Thermal insulation is added in cases where the temperature of the air being transferred or stored is impacted by the temperature of the ambient air. Some systems are insulated to maintain process temperatures for both cold and hot systems, to provide burn protection, and energy savings.

Acoustical Insulation

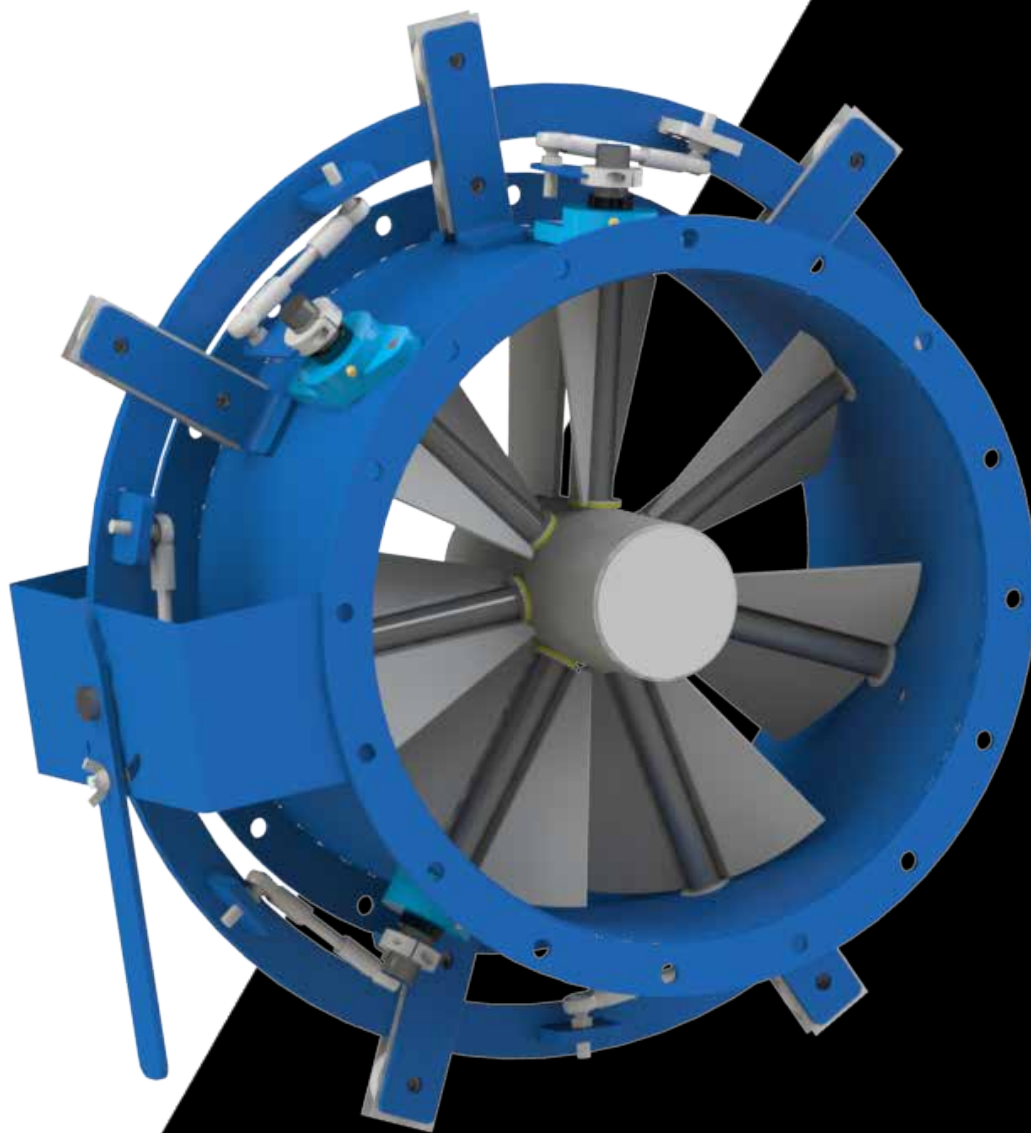
Acoustical insulation is added for noise reduction or sound attenuation.

OTHER ACCESSORIES

- Access doors (hinged, bolted, flush, raised) with gaskets
- Safety guards (belt, shaft and coupling)
- Drain / plugs
- Custom paint - enamel, epoxy, hi-temp, zinc-rich, and powder coating

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DAMPERS FOR FANS AND BLOWERS



DAMPERS

Industrial Dampers

IATC industrial dampers are used to control the flow of air through Centrifugal Industrial Fans. Dampers can be attached directly to fans, inlet boxes, or ducts. Many factors should be considered when choosing the appropriate damper for your application, such as airstream conditions, purpose and limits of airflow control, budget and even non-damper options such as VFD control. Additionally, each mounting position has its own operating characteristics which should be understood for a well-designed system and can effect fan selection.

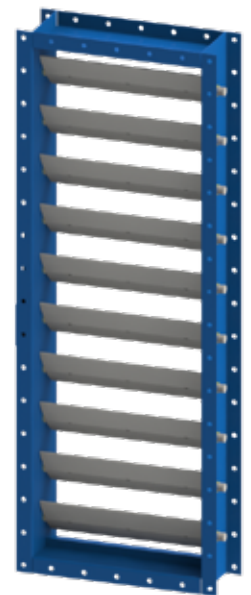
All damper models are available in corrosion resistant stainless steel construction, aluminum, abrasion resistant material, or high temperature heat resistant alloys. Standard dampers can be modified to suit system design requirements not mentioned here. IATC is experienced at damper fabrication and can also build custom dampers to your design.

Inlet Dampers

Dampers are often installed on the fan inlet as energy saving devices when the airflow needs to be modulated or run for extended periods of time at reduced flow. They are also effective for reducing the fan load at start-up or conditions with varying air densities.

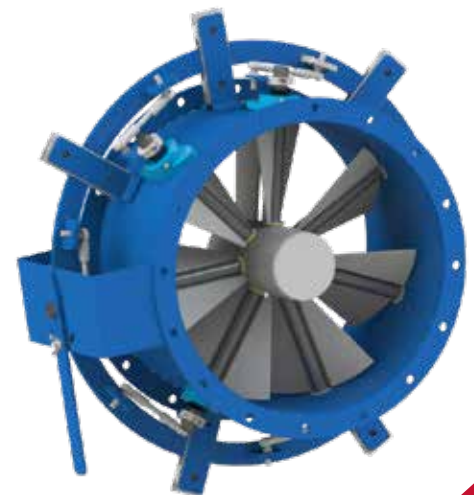
Parallel Blade

Parallel blade type inlet box dampers may be used to control the airflow through the system. The airfoil shaped blades are parallel to the fan shaft and remain parallel to each other as the damper is closed. Thus, in a partially closed position, a forced vortex with the same rotational direction as the fan impeller will be generated within the inlet box. The effect on the fan characteristics will be similar to that of a variable inlet vane control.



Variable Inlet Vane (VIV) Dampers

Variable inlet vane dampers (also called vortex dampers) are mounted on the fan inlet to conserve fan horsepower at reduced airflow conditions. They are arranged to generate an inlet vortex (pre-rotation) in the same direction as the fan impeller, causing a reduction in power, consumption as the air flow is reduced. This type of control is most effective when the fan is expected to operate at reduced performance conditions for extended time periods or if the system requires modulation during operation. It will alter the fan operating characteristics and reduce the likelihood of instability. A wide-open VIV will produce a system effect which must be accounted for in the original fan selection.



ADDITIONAL OPTIONS

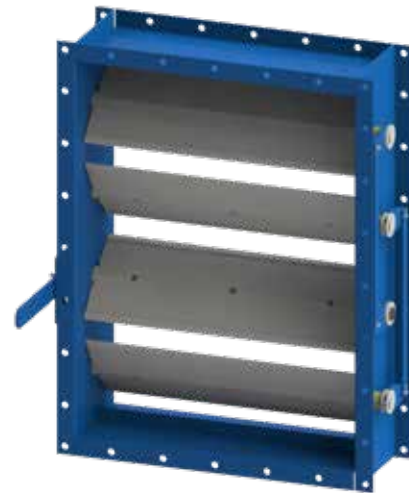
- Aluminum construction
- Stainless steel construction
- High temperature construction
- Abrasion resistant construction
- AMCA spark A, B, C construction
- Pneumatic and electric actuators

Outlet Dampers

Outlet dampers, also called volume control dampers, are basic elements which create a variable resistance within a system. If it is desirable to compensate for temporary air density or system resistance changes, an outlet damper may be appropriate. They are the least expensive, but also the least efficient of the traditional flow control devices. Because outlet dampers operate as a resistance in the system, they do not change the operating characteristics of the fan, but merely restrict its flow. Flow restrictions can cause Centrifugal Industrial Fan operation to become unstable and outlet damper use must be considered carefully. Due to efficiency and stability concerns, an outlet damper should not typically be used as a permanent flow restriction. IATC provides dampers for both ductwork and fan applications.

Opposed Blade Damper

Opposed blade dampers are built such that adjacent blades rotate in the opposite, or opposed, direction. This style of operation is the best selection for an outlet damper because it offers good control over the entire operating range and maintains an even distribution of air downstream from the damper. The blades are airfoil shaped to minimize the flow restriction of the damper in the open position. Commonly used for cold starting on many air and process gas systems, opposed blade dampers maintain even air distribution downstream of the damper.



Butterfly Dampers

Although butterfly dampers are normally associated with ductwork, there are applications in which they have been successfully used on the fan outlet. Generally, the damper would be wide open during normal operating conditions and closed only occasionally, such as at start-up. The fan typically would have a smaller outlet area, and produce a relatively low volume of airflow. IATC provides butterfly dampers for both ductwork and fan applications.

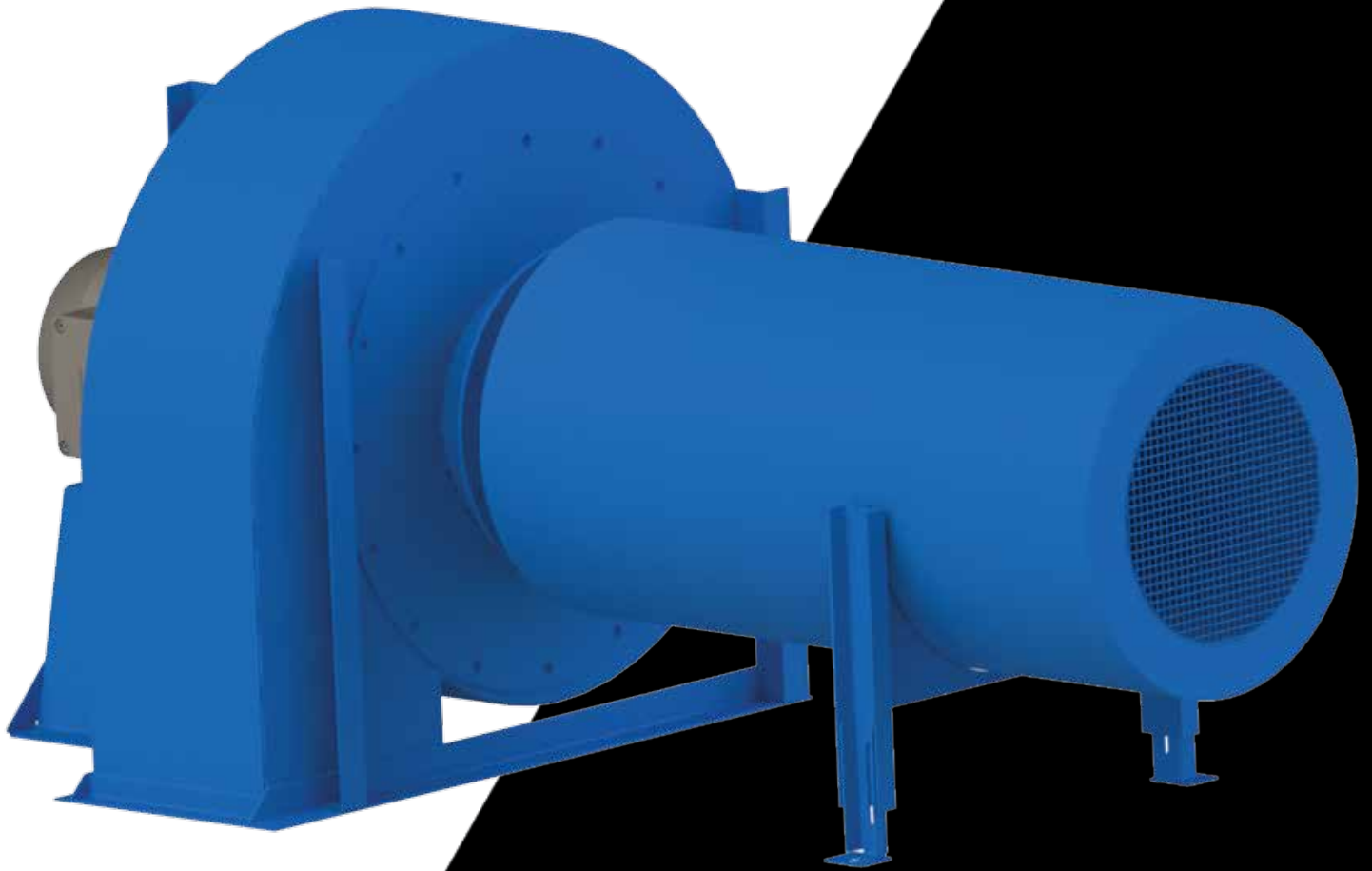


ADDITIONAL OPTIONS

- Aluminum construction
- Stainless steel construction
- High temperature construction
- Abrasion resistant construction
- AMCA spark A, B, C construction
- Pneumatic and electric actuators

Industrial
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SILENCERS FOR FANS AND BLOWERS



THE IATC INDUSTRIAL SILENCER SERIES

The IATC Industrial Silencer Series is suitable for many medium to heavy-duty industrial applications where it is desirable to reduce the air turbulence noise emanating from an air handling system. Introducing only a modest pressure drop to the system, these silencers provide good sound absorption characteristics at the medium and high noise frequencies generated by a centrifugal fan. These Dissipative (Absorptive) Silencers are the classical solution for fan noise attenuation in up to 450-degree air stream conditions.

IATC Construction Features:

- 12 Gauge Shell Construction Standard for Most Models (up to 3/8" thick)
- Lifting Lugs
- Support Brackets
- Welded Construction
- Fiberglass Acoustic Media Covered with Fiberglass Cloth or Mylar



Inlet Silencer



Outlet Silencer

Available Options:

- Custom Flange Bolt Patterns
- Inlet and Outlet Screens
- Weather Hoods
- Access Doors
- Drains
- Adjustable Support Legs (a silencer is not to be supported by a fan)
- Stainless Steel Construction
- Paint Finishes: Enamel, Epoxy, Zinc Rich, High Temperature, Powder Coat

Typical Fan Silencer Configurations

Silencers are available for fan inlets and outlets as well as other industrial ductwork applications.



**Note: In vertical applications, silencers should be supported to prevent loading on the fan housing from stack or duct weight, and wind loading. In some instances, installing a flexible connector between the fan and the silencer is recommended.*

A Properly Designed Silencer Will Meet The Following Criteria:

■ **Acoustic:** The silencer must be able to reduce incoming sound power by the desired amount with respect to frequency band, expressed as the Dynamic Insertion Loss (DIL). The environment in which the silencer will operate must be known since the acoustical performance is significantly affected by temperature, gas characteristics, system configuration and physical layout.

■ **Aerodynamic:** Airflow through a silencer will cause a pressure loss and will impact acoustic performance

■ **Geometrical:** The silencer must fit in the space that is available

■ **Mechanical:** Minimal maintenance should be required to keep a silencer operating near full efficiency for long periods of time. Sufficiently durable modifications to the silencer design must be available to allow it to handle elevated temperatures as well as exotic gases which may erode less durable materials.

■ **Economical:** Because these criteria are often in conflict with each other, it is important to work with a silencer vendor who understands industrial fan applications. IATC can help you find a solution in which all of the criteria are fulfilled to a satisfactory degree.

Silencer Performance: Silencers can reduce noise produced by air turbulence in a fan. However, only the airstream that passes through the silencer sees a noise reduction. Breakout noise through the fan housing and breakout noise through ductwork or flex connectors before the silencer will not see a reduction in noise. Vibration noise and mechanical noise generated by the motor and drive will also not be reduced by a silencer. Sound insulation or sound enclosures may be necessary to reduce noise levels that are outside the influence of a silencer.

Typical Models



VROS – Vertical Rectangular Outlet Silencer



VROS – Vertical Rectangular Outlet Silencer



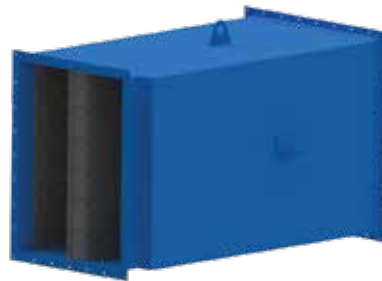
VROS – Vertical Rectangular Outlet Silencer



VCOS – Vertical Cylindrical Outlet Silencer



VIBS – Vertical Inlet Box Silencer



HRIS – Horizontal Rectangular Inlet Silencer



HCIS – Horizontal Cylindrical Inlet Silencer



HROS – Horizontal Rectangular Outlet Silencer



HCOS – Horizontal Cylindrical Outlet Silencer

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