

FAIRBANKS MORSE  
**DEFENSE**

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# FANS & BLOWERS PRODUCT Product Catalog

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# FANS & BLOWERS PRODUCT CATALOG

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# American Fan Overview

American Fan provides air movement solutions with Axial and Centrifugal Fans and Blowers for industrial, commercial and marine/offshore applications worldwide. We are the primary supplier of shock-qualified fans for U.S. Navy surface ships, and its products and services are specified in 30 U.S. Navy shipbuilding programs, including LCS, LPD, LHA, DDG, and FFG. We understand the needs of the modern

marine and naval industry, and the requirements of the consulting engineers and contractors who serve it. Additionally, our industrial centrifugal fans meet the needs of customers in a wide variety of industries, but not limited to, aviation, boiler/furnace, conveyance and textile.

# FMD – Overview

Stacking the decks with best-in-class marine technologies and service solutions. Fairbanks Morse Defense has mastered that balance over more than a century, configuring the delivery of every customer engagement to meet the needs of the moment. We deliver an advantage to the U.S. Fleet with a growing array of best-in-class marine technologies, OEM parts, and turnkey services – all from a single, trusted source.



# Facilities Overview

## **Manufacturing & Machining Capabilities**

Our fan and blower products are manufactured in our 127,000 sq. ft. facility in Fairfield, Ohio. Our key capabilities at this facility include cutting, fabricating, welding, painting, assembly, and testing. With state-of-the-art equipment and testing laboratory, American Fan is positioned to support the defense industry.

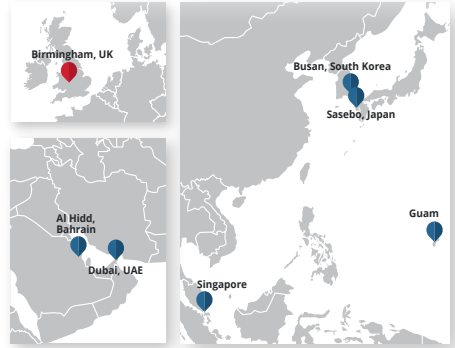
### **Facility Highlights:**




- 191,000 sq. ft.
- Test Laboratory Accredited to AMCA 210

### **Key Capabilities:**

- Laser & High Definition Plasma Cutting
- Flange Rolling & Punching Machines
- 18 Welding Booths, Plus Automated Seam Welding
- Combined Wet Coat & Power Coat Paint Line
- Dedicated Assembly Cells for Navy, Commercial Marine, and Industrial Products
- Final Trim Balance & Mechanical Run Testing

# Our Locations



-  Service Centers
-  Manufacturing Facilities
-  International Service Partners

## Fairbanks Morse Defense

701 White Avenue  
Beloit, WI 53511  
Phone: 1-800-356-6955

[www.FairbanksMorseDefense.com](http://www.FairbanksMorseDefense.com)

## American Fan

Phone: 1-866-771-6266

## Federal Equipment Co.

Phone: 1-877-435-4723

## Hunt Valve Company

Phone: 1-800-321-2757

## Maxim Watermakers

Phone: 1-318-629-2460

## Research Tool & Die Works

Phone: 1-310-639-5722

## Ward Leonard

Phone: 1-860-283-5801

## Welin Lambie

Phone: +44 1384-78294





**MILITARY/MARINE  
SOLUTIONS**



# MILITARY/MARINE SOLUTIONS

Leveraging innovations in technology, we develop shipboard ventilation fan designs that help improve air quality, reduce noise and enhance overall safety. This has led to full approval by the U.S. Navy and U.S. Maritime Administration for standard fan products. In addition to supporting standard fan products, our engineers custom design and build fans to meet the special requirements of your application. Every American Fan product enters a strict quality assurance program via our fully certified testing facility. This ensures that our solutions meet the toughest requirements in performance, sound, structure borne, sassing transmission and type testing. Powered by Fairbanks Morse Defense, American Fan works with our customers to navigate the critical aspects of ventilation systems and stay on course over the long haul with solutions for efficient and reliable operations.

Marine applications include military vessels, yacht, oil platforms, and cruise ships. American Fan utilizes a broad range of onboard air moving applications from compartment ventilation to gas turbine air supply. Our military product line is shock rated to meet military use requirements.

## **Product Specifications:**

- Vaneaxial /Centrifugal Fans & Motors IAW Military Specs
- Fan motors units Shock and Vibration qualified to Mil Specs
- Stringent Airborne and Structure borne Noise requirements
- Commercial Marine Fans/Motors built to IEEE-45 and/or ABS Specs


## **Product Applications**

- Machinery Room Cooling/ Ventilation
- Main & Auxiliary Gas Turbine Module Cooling
- Collective Protection System (CPS) for Nuclear Biological Chemical (NBC) Warfare protection
- Super Quiet Fans
- General Shipboard Ventilation
- Crankcase Exhaust
- Main Gas Turbine Damper
- Force Draft blowers for Boilers
- Shutoff dampers – non-combatant vessels

# NAVY VANEAXIALS

Product Lines	Advantages	Sizes	Applications
<p>JM Aerofoil</p> 	<ul style="list-style-type: none"> <li>• Compact Size</li> <li>• Low Cost</li> <li>• High Efficiency</li> <li>• Rugged Design</li> </ul>	<ul style="list-style-type: none"> <li>• 18 Fan Diameters Available</li> <li>• From 12.4 in. to 88.2 in.</li> </ul>	<ul style="list-style-type: none"> <li>• Hull Ventilation</li> <li>• Engine Room Ventilation</li> </ul>
<p>Navy Type A</p> 	<ul style="list-style-type: none"> <li>• Cast Aluminum Wheel</li> <li>• All-Welded Galvanized Steel Casing</li> <li>• Direct-Connected A.C. Motor</li> <li>• Enclosed Spraytight Construction</li> <li>• Explosion-Proof and Non-Magnetic Features Available</li> <li>• 2-Part Epoxy Coated to Navy Spec</li> </ul>	<ul style="list-style-type: none"> <li>• 28 Sizes</li> <li>• Capacities up to 40,000 CFM</li> </ul>	<ul style="list-style-type: none"> <li>• General Ship Ventilation</li> <li>• Mechanical Room Ventilation</li> </ul>
<p>Navy Type A High Pressure</p> 	<ul style="list-style-type: none"> <li>• Cast Aluminum Wheel</li> <li>• All-Welded Galvanized Steel Casing</li> <li>• Direct-Connected A.C. Motor</li> <li>• Enclosed Spraytight Construction</li> <li>• Sound Levels Equal to or better than specified per MIL-PRF-24775</li> </ul>	<ul style="list-style-type: none"> <li>• 5 Sizes Available</li> <li>• 1,200 CFM to 5,940 CFM</li> <li>• 13 and 14 in. w.g</li> </ul>	<ul style="list-style-type: none"> <li>• Higher Pressure Applications</li> </ul>

# NAVY CENTRIFUGAL

Product Lines	Advantages	Sizes	Applications
Navy Type CC Fans 	<ul style="list-style-type: none"> <li>• Non-Overloading, Direct-Drive</li> <li>• Fan Impeller Overhung on Motor Shaft</li> <li>• Type CC Navy Standard</li> <li>• Built per MIL-F-19004</li> </ul>	<ul style="list-style-type: none"> <li>• 11 Sizes Available</li> <li>• 300 CFM to 14,000 CFM</li> <li>• Up to 6 in. w.g.</li> </ul>	<ul style="list-style-type: none"> <li>• General Ventilation</li> <li>• Supply and Exchange Systems</li> <li>• A/C Systems</li> </ul>
Arrangement 4 BCS	<ul style="list-style-type: none"> <li>• Backward Curve</li> <li>• Full Line of Accessories</li> <li>• AMCA-Certified Air and Sound Performance</li> <li>• Non-Overloading Horsepower Characteristic</li> </ul>	<ul style="list-style-type: none"> <li>• 14 Sizes</li> <li>• 12 in. to 40 in. Wheel Diameter</li> <li>• Up to 56,000 CFM and 17 in. SP w.g.</li> </ul>	<ul style="list-style-type: none"> <li>• Supply Air</li> <li>• Return Air</li> <li>• Exhaust Air</li> <li>• Mechanical Spaces Ventilation</li> </ul>
Model AF	<ul style="list-style-type: none"> <li>• Rugged, Lightweight, Rust-Proof Cast Aluminum Housing</li> <li>• Available in Direct or Belt-Drive</li> <li>• Accessories Available</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity up to 5,000 CFM</li> <li>• Pressure up to 26 in. SO w.g.</li> </ul>	<ul style="list-style-type: none"> <li>• Hull Venting</li> <li>• Bathroom Exhaust</li> <li>• Spark-Resistant Applications</li> <li>• Small Spaces</li> <li>• Storage and Pump Rooms</li> </ul>
SC Blowers	<ul style="list-style-type: none"> <li>• Multivaned Forward Curve Wheel</li> <li>• High-Volume, Low-Noise</li> <li>• Flange or Base Outlet Mounting</li> <li>• Special Configurations Available</li> <li>• Compact Design</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity up to 1,400 CFM</li> <li>• Pressure up to 4 in. SP w.g.</li> </ul>	<ul style="list-style-type: none"> <li>• Where Quiet Compact Blower is Required</li> </ul>



**INDUSTRIAL SOLUTIONS**





# INDUSTRIAL SOLUTIONS

## Product Specifications

- Axial & Centrifugal
- Temps = Up to 500+ F
- Pressure = Up to 100 in. WG
- Flow = Up to 100,000 ACFM
- Al, Carbon Steel, SS, Corten, Specialty Alloys
- Arrgt. type, duct, silencer, motor, sensor
- Custom Paints, coatings, weld

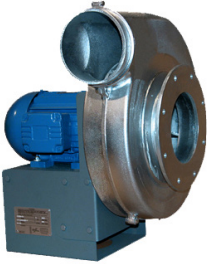
## Product Applications:

- Dust Collection (AF, VP, BCS, RB)
- Boiler/Furnace Air (AF, BC, VP, RB)
- Exhaust (IE, JM, AF, SMB/SMD)
- Wind Tunnel (VAX, JM, Joy)
- Conveyance (AF, RB)
- Aviation (AF, RB, BC, VP)
- Rail/Transit (AF, IE)
- HVAC (JM, AF, Joy)
- Textiles (BC, QBCS, VP, OVP)

Product	Product Lines
Cast Aluminum Centrifugals	AF Series
Configured Fabricated Centrifugals	BC, RB, VP, Cfi, TP



# PRESSURE & UTILITY BLOWERS



## **AF cast aluminum pressure blowers**

- Volumes to 3,800 CFM
- Pressures to 20" WG
- Available in direct driven and belt driven configurations
- Wheel types: Backward curved, forward curved and radial blade
- Corrosion and spark resistant aluminum wheels
- Light weight and rugged split cast aluminum field rotatable housings. Available with fabricated steel wheels and housing as option
- Available in six basic fan sizes
- Customized options available



## **Turbo Pressure Blowers**

- Volumes to 9,200 CFM
- Pressures to 86" WG
- Available in direct driven and belt driven configurations
- Wheel types: Backward curved and radial blade
- Continuously welded, heavy gauge housings
- Available in eight basic fan sizes
- Customized options available



## **RB Pressure Blowers**

- Volumes to 12,000 CFM
- Pressures to 110" WG
- Available in direct driven and belt driven configurations
- Wheel type: Radial blade
- Continuously welded, heavy gauge housings
- Available in twenty-five basic fan sizes
- Customized options available

# PRESSURE & UTILITY BLOWERS



## **SMB/SMD Curved Utility Blowers**

- Volumes to 4,800 CFM
- Pressures to 3" WG
- Available in belt driven and direct driven configurations
- Wheel type: Forward curved
- Continuously welded, field rotatable housings
- Packaged utility set
- Available in six basic fan sizes
- Customized options available



## **SC Forward Curved Volume Blowers**

- Volumes to 1,400 CFM
- Pressures to 4" WG
- Available in belt driven and direct driven configurations
- Wheel type: Forward curved
- Light weight and rugged split cast aluminum field rotatable housings
- Available in four basic fan sizes
- Customized options available

# BACKWARD-INCLINED FANS



## **BCA, BCS Backward-Inclined Fans – Single Width**

- Volumes to 100,000 CFM
- Pressures to 25" WG
- AMCA certified for air and sound performance
- Available in belt driven and direct driven configurations
- Wheel types: Backward curved and airfoil blade
- Continuously welded, heavy gauge, field rotatable housings (Rotatable on fan sizes 122 thru 330 only)
- Available in eighteen basic fan sizes
- Customized options available



## **QBCA, QBCS Backward-Inclined Fans – Square Housed**

- Volumes to 43,000 CFM
- Pressures to 17" WG
- AMCA certified for air and sound performance
- Available in belt driven & direct driven configurations
- Wheel types: Backward curved & airfoil blade
- Compact continuously welded, heavy gauge, field rotatable square housings (Rotatable to four discharge positions)
- Available in fourteen basic fan sizes
- Customized options available

# BACKWARD-INCLINED FANS



## **PBCA, PBCS Backward-Inclined Plug Fans**

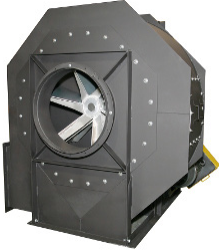
- Volumes to 90,000 CFM
- Pressures to 12" WG
- Available in belt driven configuration only
- Wheel types: Backward curved & airfoil blade
- Continuously welded insulated plug for high or low temperature applications
- Available with or without housing, inlet venturi and venturi supports
- Available in sixteen basic fan sizes and three standard plug depths
- Customized options available



## **DBCA, DBCS Backward-Inclined Fans – Double Width**

- Volumes to 190,000 CFM
- Pressures to 20" WG
- Available in belt driven configuration only
- Wheel types: Backward curved & airfoil blade
- Continuously welded, heavy gauge, field rotatable housings (Rotatable on fan sizes 122 thru 330 only)
- Available in sixteen basic fan sizes
- Also available in DQBCA & DQBCS compact square design
- Customized options available

# INDUSTRIAL EXHAUSTERS



- Volumes to 40,000 CFM
- Pressures to 23" WG
- Available in belt driven and direct driven configurations
- Wheel type: Radial blade Continuously welded, heavy gauge, field rotatable and reversible housings (Rotatable, reversible on fan sizes 7 Air handling or severe duty material handling applications)
- Available in twelve basic fan sizes
- Customized options available

# AXIAL FANS



## JM Aerofoil Fans

- Volumes to 425,000 CFM
- Pressures to 10.5" WG
- Available in both tube axial and vane axial designs
- AMCA certified for air performance on direct drive fans
- Available in direct driven and belt driven configurations
- Impeller type: Adjustable pitch (at rest) cast aluminum
- Compact, low cost, high efficiency, rugged design
- Available in twenty-one basic fan sizes
- Smoke exhaust applications
- Customized options available



## Evase JMG Fans

- Volumes to 150,000 CFM
- Pressures to 10.5" WG
- Available in direct driven configuration only
- Impeller type: Adjustable pitch (at rest) cast aluminum
- Saves energy and space by incorporating a built-in outlet cone
- Available in eleven basic fan sizes
- Customized options available



# AXIAL FANS

## High Temperature Solutions

- Designed for operation up to 2000°F (1,093°C)

## Product Applications

- Heat Treating
- Glass Melting
- Steel Reheat
- Forging
- Homogenizing
- CCR Platforming (PCOG)
- Incineration
- Industrial & Technical Ceramics and Refractory Materials
- Solar Wind Turbines

## Materials of Construction

- 304, 309, 316L/H and RA330 high nickel stainless
- Inconel 600, 625, Hastalloy C-276 and Haynes HR120 low-cobalt superalloys.
- Haynes 25 and Stellite-31 high cobalt superalloys

Temperature	Product Lines
2,000°F Max	RF-2 Radial FF Forward Curved PF-2 Axial Plug Fan
1,000°F Max	BF Backward Inclined
600°F Max	HSR (High Static Radial) RT Radial Tip
Specialty Blower	RB Shrouded Twisted Radial

## Radial Blade Fans (RF2)

The most versatile centrifugal fan available, radial blade fans handle temperatures up to 2000°F. Rugged construction, adaptability to hostile atmospheres, and wide-ranging capacity make this fan effective in a wide range of environments.

# AXIAL FANS



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**Processes:**

- Air or gas recirculation
- Incinerators
- Glass furnaces
- Exhausting
- CCR

**Technical data:**

- Maximum volume: 105,000 CFM
  - Maximum temperature: 2000 °F
  - Wheel diameters: 14" to 93 7/9"
  - Plug units: Yes
- 

## Backward Inclined Fans (BF)

Backward inclined fans offer a full range of sizes for optimal fan selection to meet exact performance requirements. These non-overloading designed fans and are suited for systems with fluctuating resistance. They are a popular choice for rugged, efficient service in a variety of industrial applications.



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**Processes:**

- Recirculation
- Exhausting
- Drying/curing
- Incinerators
- Paint finishing/coil coaters

**Technical data:**

- Maximum volume: 182,000 CFM
  - Maximum temperature: 1000 °F
  - Wheel diameters: 12" to 73"
  - Plug units: Yes
- 

## Forward Curved Fans (FF2)

Forward curved fans offer a small package for high volume, high temperature applications. These fans operate at a slower speed, with less noise and relatively low stress – particularly good for high temperature uses. They are restricted to low dust environments because the curve blade tends to trap

# AXIAL FANS

and retain dust and other particles.



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**Processes:**

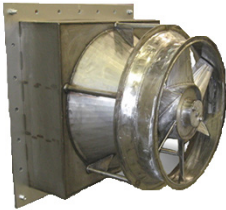
- Air recirculation
- Homogenizing
- Preheating
- Annealing
- Float furnaces

**Technical data:**

- Maximum volume: 459,195 CFM
  - Maximum temperature: 2000 °F
  - Wheel diameters: 13.5" to 73"
  - Plug units: Yes
- 

## Propeller Plug Fans (PF2)

Propeller plug fan units feature six-bladed impellers, which can handle large volumes of gases at relatively low static pressures. These fans help eliminate costly ductwork in oven applications.



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**Processes:**

- Air recirculation
- Homogenizing
- Preheating

**Technical data:**

- Maximum volume: 182,000 CFM
  - Maximum static pressure: 4" WG
  - Maximum temperature: 2000 °F
  - Wheel diameters: 24" to 72"
  - Plug units: Yes
-

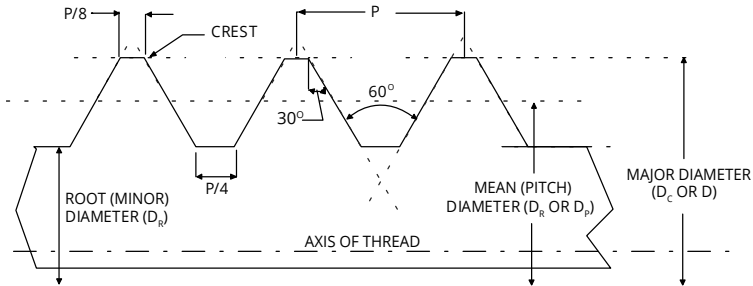


# RESOURCES



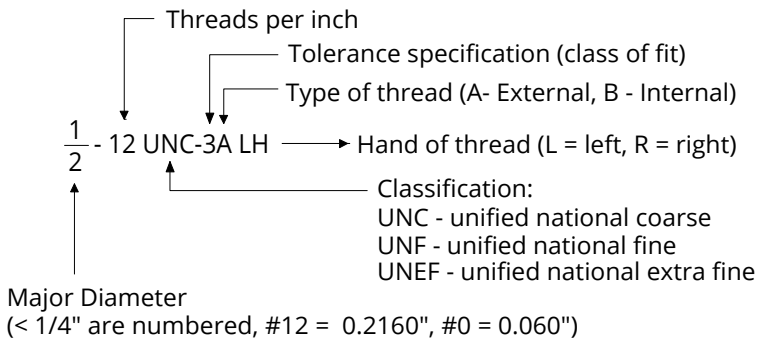
# THREAD STANDARDS

## UNIFIED AND ISO THREAD GEOMETRY

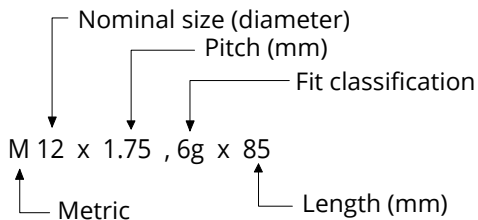


CLASS	UNIFIED		METRIC	
	EXTERNAL THREAD	INTERNAL THREAD	EXTERNAL THREAD	INTERNAL THREAD
LOOSE	1A	1B	8G	7H
STANDARD	2A	2B	6G	6H
CLOSE	3A	3B	4G	5H

### UNIFIED NATIONAL:



### METRIC:



# THREAD DIMENSIONS

## AND TAP DRILL SIZES

Size	Threads Per Inch		Outside Diameter Inches	Pitch Diameter Inches	Root Diameter Inches	Tap Drill Approx. 75% Full Thread	Decimal Equiv. Of Tap Drill
	NC UNC	NF UNF					
0	—	80	.0600	.0519	.0438	3/64"	.0469
1	64	—	.0730	.0629	.0527	53	.0595
1	—	72	.0730	.0640	.0550	53	.0595
2	56	—	.0860	.0744	.0628	50	.0700
2	—	64	.0860	.0759	.0657	50	.0700
3	48	—	.0990	.0855	.0719	47	.0785
3	—	56	.0990	.0874	.0758	46	.0810
4	40	—	.1120	.0958	.0795	43	.0890
4	—	48	.1120	.0985	.0849	42	.0935
5	40	—	.1250	.1088	.0925	38	.1015
5	—	44	.1250	.1102	.0955	37	.1040
6	32	—	.1380	.1177	.0974	36	.1065
6	—	40	.1380	.1218	.1055	33	.1130
8	32	—	.1640	.1437	.1234	29	.1360
8	—	36	.1640	.1460	.1279	29	.1360
10	24	—	.1900	.1629	.1359	26	.1470
10	—	32	.1900	.1697	.1494	21	.1590
12	24	—	.2160	.1889	.1619	16	.1770
12	—	28	.2160	.1928	.1696	15	.1800
1/4"	20	—	.2500	.2175	.1850	7	.2010
1/4"	—	28	.2500	.2268	.2036	3	.2130
5/16"	18	—	.3125	.2764	.2403	F	.2570
5/16"	—	24	.3125	.2854	.2584	I	.2720
3/8"	16	—	.3750	.3344	.2938	5/16"	.3125
3/8"	—	24	.3750	.3479	.3209	Q	.3320
7/16"	14	—	.4375	.3911	.3447	U	.3680
7/16"	—	20	.4375	.4050	.3726	25/64"	.3906
1/2"	13	—	.5000	.4500	.4001	27/64"	.4219
1/2"	—	20	.5000	.4675	.4351	29/64"	.4531
9/16"	12	—	.5625	.5084	.4542	31/64"	.4844
9/16"	—	18	.5625	.5264	.4903	33/64"	.5156
5/8"	11	—	.6250	.5660	.5069	17/32"	.5312
5/8"	—	18	.6250	.5889	.5528	37/64"	.5781
3/4"	10	—	.7500	.6850	.6201	21/32"	.6562
3/4"	—	16	.7500	.7094	.6688	11/16"	.6875
7/8"	9	—	.8750	.8028	.7307	49/64"	.7656
7/8"	—	14	.8750	.8286	.7822	13/16"	.8125
1"	8	—	1.0000	.9188	.8376	7/8"	.8750
1"	—	12	1.0000	.9459	.8917	59/64"	.9219
1 1/8"	7	—	1.1250	1.0322	.9394	63/64"	.9844
1 1/8"	—	12	1.1250	1.0709	1.0168	1 3/64"	1.0469
1 1/4"	7	—	1.2500	1.1572	1.0644	1 7/64"	1.1094
1 1/4"	—	12	1.2500	1.1959	1.1418	1 11/64"	1.1719
1 3/8"	6	—	1.3750	1.2667	1.1585	1 7/32"	1.2187
1 3/8"	—	12	1.3750	1.3209	1.2668	1 19/64"	1.2969
1 1/2"	6	—	1.5000	1.3917	1.2835	1 11/32"	1.3437
1 1/2"	—	12	1.5000	1.4459	1.3918	1 27/64"	1.4219
1 3/4"	5	—	1.7500	1.6201	1.4902	1 9/16"	1.5625
2"	4 1/2	—	2.0000	1.8557	1.7113	1 25/32"	1.7812
2 1/4"	4 1/2	—	2.2500	2.1057	1.9613	2 1/32"	2.0313
2 1/2"	4 1/2	—	2.5000	2.3376	2.1752	2 1/4"	2.2500
2 3/4"	4	—	2.7500	2.5876	2.4252	2 1/2"	2.5000
3"	4	—	3.0000	2.8376	2.6752	2 3/4"	2.7500
3 1/4"	4	—	3.2500	3.0876	2.9252	3"	3.0000
3 1/2"	4	—	3.5000	3.3376	3.1752	3 1/4"	3.2500
3 3/4"	4	—	3.7500	3.5876	3.4252	3 1/2"	3.5000
4"	4	—	4.0000	3.3786	3.6752	3 3/4"	3.7500



# PIPE DIMENSIONS

## US AND METRIC

NOMINAL PIPE SIZE	OD	SCHEDULE DESIGNATIONS			WALL THICKNESS		WEIGHT		ID	
		IN. MM	IN. MM	ASME	IN.	MM	LBS/FOOT	KG/METER	IN.	MM
1/8 6	0.405 10.3	10	10S	0.049	1.24	0.19	0.28	0.307	7.82	
		STD 40	40S	0.068	1.73	0.24	0.37	0.269	6.84	
		XS 80	80S	0.095	2.41	0.31	0.47	0.215	5.84	
1/4 8	0.540 13.7	10	10S	0.065	1.65	0.33	0.49	0.410	10.40	
		STD 40	40S	0.088	2.24	0.43	0.63	0.364	9.22	
		XS 80	80S	0.119	3.02	0.54	0.80	0.302	7.66	
3/8 10	0.675 17.1	10	10S	0.065	1.65	0.42	0.63	0.545	13.80	
		STD 40	40S	0.091	2.31	0.57	0.84	0.493	12.48	
		XS 80	80S	0.126	3.20	0.74	1.10	0.423	10.70	
1/2 15	0.840 21.3	5	5S	0.065	1.65	0.54	0.80	0.710	18.00	
		10	10S	0.083	2.11	0.67	1.00	0.674	17.08	
		STD 40	40S	0.109	2.77	0.85	1.27	0.622	15.76	
		XS 80	80S	0.147	3.73	1.09	1.62	0.546	13.84	
		160		0.188	4.78	1.31	1.95	0.464	11.74	
3/4 20	1.050 26.7	XX		0.294	7.47	1.72	2.55	0.252	6.36	
5		5S	0.065	1.65	0.69	1.03	0.920	23.40		
10		10S	0.083	2.11	0.86	1.28	0.884	22.48		
STD 40		40S	0.113	2.87	1.13	1.69	0.824	20.96		
XS 80		80S	0.154	3.91	1.48	2.20	0.742	18.88		
1 25	1.315 33.4	160		0.219	5.56	1.95	2.90	0.612	15.58	
		XX		0.308	7.82	2.44	3.64	0.434	11.06	
		5	5S	0.065	1.65	0.87	1.29	1.185	30.10	
		10	10S	0.109	2.77	1.41	2.09	1.097	27.86	
		STD 40	40S	0.133	3.38	1.68	2.50	1.049	26.64	
1-1/4 32	1.660 42.2	XS 80	80S	0.179	4.55	2.17	3.24	0.957	24.30	
		160		0.250	6.35	2.85	4.24	0.815	20.70	
		XX		0.358	9.09	3.66	5.45	0.599	15.22	
		5	5S	0.065	1.65	1.11	1.65	1.530	38.90	
		10	10S	0.109	2.77	1.81	2.69	1.442	36.66	
1-1/2 40	1.900 48.3	STD 40	40S	0.140	3.56	2.27	3.39	1.380	35.08	
		XS 80	80S	0.191	4.85	3.00	4.47	1.278	32.50	
		160		0.250	6.35	3.77	5.61	1.160	29.50	
		XX		0.382	9.70	5.22	7.77	0.896	22.80	
		5	5S	0.065	1.65	1.28	1.90	1.770	45.00	
2 50	2.375 60.3	10	10S	0.109	2.77	2.09	3.11	1.682	42.76	
		STD 40	40S	0.145	3.68	2.72	4.05	1.610	40.94	
		XS 80	80S	0.200	5.08	3.63	5.41	1.500	38.14	
		160		0.281	7.14	4.86	7.25	1.338	34.02	
		XX		0.400	10.15	6.41	9.55	1.100	28.00	
2-1/2 65	2.875 73.0	5	5S	0.065	1.65	1.61	2.39	2.245	57.00	
		10	10S	0.109	2.77	2.64	3.93	2.157	54.76	
		STD 40	40S	0.154	3.91	3.66	5.44	2.067	52.48	
		XS 80	80S	0.218	5.54	5.03	7.48	1.939	49.22	
		160		0.344	8.74	7.47	11.11	1.687	42.82	
3 80	3.500 88.9	XX		0.436	11.07	9.04	13.44	1.503	38.16	
		5	5S	0.083	2.11	2.48	3.69	2.709	68.78	
		10	10S	0.120	3.05	3.53	5.26	2.635	66.90	
		STD 40	40S	0.203	5.16	5.80	8.63	2.469	62.68	
		XS 80	80S	0.276	7.01	7.67	11.41	2.323	58.98	
3-1/2 90	4.000 101.6	160		0.375	9.53	10.02	14.92	2.125	53.94	
		XX		0.552	14.02	13.71	20.39	1.771	44.96	
		5	5S	0.083	2.11	3.03	4.52	3.334	84.68	
		10	10S	0.120	3.05	4.34	6.46	3.260	82.80	
		STD 40	40S	0.216	5.49	7.58	11.29	3.068	77.92	
4 100	4.500 114.3	XS 80	80S	0.300	7.62	10.26	15.27	2.900	73.66	
		160		0.438	11.13	14.34	21.35	2.624	66.64	
		XX		0.600	15.24	18.60	27.68	2.300	58.42	
		5	5S	0.083	2.11	3.48	5.18	3.834	97.38	
		10	10S	0.120	3.05	4.98	7.41	3.760	95.50	
4-1/2 115	5.000 127.0	STD 40	40S	0.226	5.74	9.12	13.57	3.548	90.12	
		XS 80	80S	0.318	8.08	12.52	18.64	3.364	85.44	
		XX		0.636	16.15	22.87	34.03	2.728	69.30	
		5	5S	0.083	2.11	3.92	5.84	4.334	110.08	
		10	10S	0.120	3.05	5.62	8.37	4.260	108.20	
5 120	5.562 141.3	160		0.156	3.96	7.24	10.78	4.188	106.38	
		188		0.188	4.78	8.67	12.91	4.124	104.74	
		STD 40	40S	0.237	6.02	10.80	16.08	4.026	102.26	
		XS 80	80S	0.337	8.56	15.00	22.32	3.826	97.18	
		120		0.438	11.13	19.02	28.32	3.624	92.04	
6 150	6.315 160.4	160		0.531	13.49	22.53	33.54	3.438	87.32	
		XX		0.674	17.12	27.57	41.03	3.152	80.06	
		4-1/2	40S	0.247	6.27	12.55	18.67	4.506	114.46	
		XS 80	80S	0.355	9.02	17.63	26.24	4.290	108.96	
		XX		0.710	18.03	32.56	48.45	3.580	90.94	

# AMERICAN WIRE GAUGE

## CONDUCTOR SIZE TABLE

AWG	Diameter [inches]	Diameter [mm]	Area [mm <sup>2</sup> ]	Resistance [Ohms/1000 ft]	Resistance [Ohms / km]	Max Current [Amperes]	Max Frequency
0000 (4/0)	0.46	11.684	107	0.049	0.16072	302	125 Hz
000 (3/0)	0.4096	10.40384	85	0.0618	0.202704	239	160 Hz
00 (2/0)	0.3648	9.26592	67.4	0.0779	0.255512	190	200 Hz
0 (1/0)	0.3249	8.25246	53.5	0.0983	0.322424	150	250 Hz
1	0.2893	7.34822	42.4	0.1239	0.406392	119	325 Hz
2	0.2576	6.54304	33.6	0.1563	0.512664	94	410 Hz
3	0.2294	5.82676	26.7	0.197	0.64616	75	500 Hz
4	0.2043	5.18922	21.2	0.2485	0.81508	60	650 Hz
5	0.1819	4.62026	16.8	0.3133	1.027624	47	810 Hz
6	0.162	4.1148	13.3	0.3951	1.295928	37	1100 Hz
7	0.1443	3.66522	10.5	0.4982	1.634096	30	1300 Hz
8	0.1285	3.2639	8.37	0.6282	2.060496	24	1650 Hz
9	0.1144	2.90576	6.63	0.7921	2.598088	19	2050 Hz
10	0.1019	2.58826	5.26	0.9989	3.276392	15	2600 Hz
11	0.0907	2.30378	4.17	1.26	4.1328	12	3200 Hz
12	0.0808	2.05232	3.31	1.588	5.20864	9.3	4150 Hz
13	0.072	1.8288	2.62	2.003	6.56984	7.4	5300 Hz
14	0.0641	1.62814	2.08	2.525	8.282	5.9	6700 Hz
15	0.0571	1.45034	1.65	3.184	10.44352	4.7	8250 Hz
16	0.0508	1.29032	1.31	4.016	13.17248	3.7	11 k Hz
17	0.0453	1.15062	1.04	5.064	16.60992	2.9	13 k Hz
18	0.0403	1.02362	0.823	6.385	20.9428	2.3	17 kHz
19	0.0359	0.91186	0.653	8.051	26.40728	1.8	21 kHz
20	0.032	0.8128	0.518	10.15	33.292	1.5	27 kHz
21	0.0285	0.7239	0.41	12.8	41.984	1.2	33 kHz
22	0.0254	0.64516	0.326	16.14	52.9392	0.92	42 kHz
23	0.0226	0.57404	0.258	20.36	66.7808	0.729	53 kHz
24	0.0201	0.51054	0.205	25.67	84.1976	0.577	68 kHz
25	0.0179	0.45466	0.162	32.37	106.1736	0.457	85 kHz
26	0.0159	0.40386	0.129	40.81	133.8568	0.361	107 kHz
27	0.0142	0.36068	0.102	51.47	168.8216	0.288	130 kHz
28	0.0126	0.32004	0.081	64.9	212.872	0.226	170 kHz
29	0.0113	0.28702	0.0642	81.83	268.4024	0.182	210 kHz
30	0.01	0.254	0.0509	103.2	338.496	0.142	270 kHz
31	0.0089	0.22606	0.0404	130.1	426.728	0.113	340 kHz
32	0.008	0.2032	0.032	164.1	538.248	0.091	430 kHz
33	0.0071	0.18034	0.0254	206.9	678.632	0.072	540 kHz
34	0.0063	0.16002	0.0201	260.9	855.752	0.056	690 kHz
35	0.0056	0.14224	0.016	329	1079.12	0.044	870 kHz
36	0.005	0.127	0.0127	414.8	1360	0.035	1100 kHz
37	0.0045	0.1143	0.01	523.1	1715	0.0289	1350 kHz
38	0.004	0.1016	0.00797	659.6	2163	0.0228	1750 kHz
39	0.0035	0.0889	0.00632	831.8	2728	0.0175	2250 kHz
40	0.0031	0.07874	0.00501	1049	3440	0.0137	2900 kHz

**Current (ampacity) Notes:** The current ratings shown in the table are for power transmission and have been determined using the rule of 1 amp per 700 circular mils, which is a very conservative rating

# FRACTION - DECIMAL

## CONVERSION CHART

	IN	MM
	$\frac{1}{64}$	.015625 .3969
$\frac{1}{32}$	$\frac{2}{64}$	.03125 .7938
	$\frac{3}{64}$	.046875 1.1906
$\frac{1}{16}$	$\frac{5}{64}$	.0625 1.5875
	$\frac{7}{64}$	.078125 1.9844
$\frac{3}{32}$	$\frac{9}{64}$	.09375 2.3813
	$\frac{11}{64}$	.109375 2.7781
$\frac{1}{8}$	$\frac{13}{64}$	.125 3.1750
	$\frac{15}{64}$	.140625 3.5719
$\frac{5}{32}$	$\frac{17}{64}$	.15625 3.9688
	$\frac{19}{64}$	.171875 4.3656
$\frac{3}{16}$	$\frac{21}{64}$	.1875 4.7625
	$\frac{23}{64}$	.203125 5.1594
$\frac{7}{32}$	$\frac{25}{64}$	.21875 5.5563
	$\frac{27}{64}$	.234375 5.9531
$\frac{1}{4}$	$\frac{29}{64}$	.250 6.3500
	$\frac{31}{64}$	.265625 6.7469
$\frac{9}{32}$		.28125 7.1438
		.296875 7.5406
$\frac{5}{16}$		.3125 7.9375
		.328125 8.3344
$\frac{11}{32}$		.34375 8.7313
		.359375 9.1282
$\frac{3}{8}$		.375 9.5250
		.390625 9.9219
$\frac{13}{32}$		.40625 10.3188
		.421875 10.7157
$\frac{7}{16}$		.4375 11.1125
		.453125 11.5094
$\frac{15}{32}$		.46875 11.9063
		.484375 12.3032
$\frac{1}{2}$		.500 12.7001

	IN	MM
	$\frac{33}{64}$	.515625 13.096
$\frac{17}{32}$	$\frac{35}{64}$	.53125 13.493
	$\frac{37}{64}$	.546875 13.890
$\frac{9}{16}$	$\frac{39}{64}$	.5625 14.287
	$\frac{41}{64}$	.578125 14.684
$\frac{19}{32}$	$\frac{43}{64}$	.59375 15.081
	$\frac{45}{64}$	.609375 15.478
$\frac{5}{8}$	$\frac{47}{64}$	.625 15.875
	$\frac{49}{64}$	.640625 16.271
$\frac{21}{32}$	$\frac{51}{64}$	.65625 16.668
	$\frac{53}{64}$	.671875 17.065
$\frac{11}{16}$	$\frac{55}{64}$	.6875 17.462
	$\frac{57}{64}$	.703125 17.859
$\frac{23}{32}$	$\frac{59}{64}$	.71875 18.256
	$\frac{61}{64}$	.734375 18.653
$\frac{3}{4}$		.750 19.050
		.765625 19.447
$\frac{25}{32}$		.78125 19.843
		.796875 20.240
$\frac{13}{16}$		.8125 20.6375
		.828125 21.0345
$\frac{27}{32}$		.84375 21.431
		.859375 21.8282
$\frac{7}{8}$		.875 22.2251
		.890625 22.6220
$\frac{29}{32}$		.90625 23.0188
		.921875 23.4157
$\frac{15}{16}$		.9375 23.8126
		.953125 24.2095
$\frac{31}{32}$		.96875 24.6063
		.984375 25.0032
1		1.000 25.4001

# SHEET METAL GAUGE CHART

Gauge	Steel	Galvanized Steel	Stainless Steel	Aluminium	Electrical Steel
	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
3	0.2391 (6.07)	—	—	—	—
4	0.2242 (5.69)	—	—	—	—
5	0.2092 (5.31)	—	—	—	—
6	0.1943 (4.94)	—	—	0.162 (4.1)	—
7	0.1793 (4.55)	—	0.1875 (4.76)	0.1443 (3.67)	—
8	0.1644 (4.18)	0.1681 (4.27)	0.1719 (4.37)	0.1285 (3.26)	—
9	0.1495 (3.80)	0.1532 (3.89)	0.1563 (3.97)	0.1144 (2.91)	—
10	0.1345 (3.42)	0.1382 (3.51)	0.1406 (3.57)	0.1019 (2.59)	—
11	0.1196 (3.04)	0.1233 (3.13)	0.1250 (3.18)	0.0907 (2.30)	—
12	0.1046 (2.66)	0.1084 (2.75)	0.1094 (2.78)	0.0808 (2.05)	—
13	0.0897 (2.28)	0.0934 (2.37)	0.094 (2.4)	0.072 (1.8)	—
14	0.0747 (1.90)	0.0785 (1.99)	0.0781 (1.98)	0.0641 (1.63)	—
15	0.0673 (1.71)	0.0710 (1.80)	0.07 (1.8)	0.057 (1.4)	—
16	0.0598 (1.52)	0.0635 (1.61)	0.0625 (1.59)	0.0508 (1.29)	0.0625 (1.59)
17	0.0538 (1.37)	0.0575 (1.46)	0.056 (1.4)	0.045 (1.1)	0.0560 (1.42)
18	0.0478 (1.21)	0.0516 (1.31)	0.0500 (1.27)	0.0403 (1.02)	0.0500 (1.27)
19	0.0418 (1.06)	0.0456 (1.16)	0.044 (1.1)	0.036 (0.91)	0.0453 (1.15)
20	0.0359 (0.91)	0.0396 (1.01)	0.0375 (0.95)	0.0320 (0.81)	0.0375 (0.952)
21	0.0329 (0.84)	0.0366 (0.93)	0.034 (0.86)	0.028 (0.71)	0.0340 (0.860)
22	0.0299 (0.76)	0.0336 (0.85)	0.031 (0.79)	0.025 (0.64)	0.0310 (0.787)
23	0.0269 (0.68)	0.0306 (0.78)	0.028 (0.71)	0.023 (0.58)	0.0280 (0.711)
24	0.0239 (0.61)	0.0276 (0.70)	0.025 (0.64)	0.02 (0.51)	0.0250 (0.635)
25	0.0209 (0.53)	0.0247 (0.63)	0.022 (0.56)	0.018 (0.46)	0.0220 (0.559)
26	0.0179 (0.45)	0.0217 (0.55)	0.019 (0.48)	0.017 (0.43)	0.0185 (0.470)
27	0.0164 (0.42)	0.0202 (0.51)	0.017 (0.43)	0.014 (0.36)	0.0170 (0.432)
28	0.0149 (0.38)	0.0187 (0.47)	0.016 (0.41)	0.0126 (0.32)	0.0155 (0.394)
29	0.0135 (0.34)	0.0172 (0.44)	0.014 (0.36)	0.0113 (0.29)	0.0140 (0.356)
30	0.0120 (0.30)	0.0157 (0.40)	0.013 (0.33)	0.0100 (0.25)	0.0125 (0.318)
31	0.0105 (0.27)	0.0142 (0.36)	0.011 (0.28)	0.0089 (0.23)	0.0100 (0.254)
32	0.0097 (0.25)	—	—	—	—
33	0.0090 (0.23)	—	—	—	—
34	0.0082 (0.21)	—	—	—	—
35	0.0075 (0.19)	—	—	—	—
36	0.0067 (0.17)	—	—	—	—
37	0.0064 (0.16)	—	—	—	—
38	0.0060 (0.15)	—	—	—	—
33	0.0071	0.18034	0.0254	206.9	678.632
34	0.0063	0.16002	0.0201	260.9	855.752
35	0.0056	0.14224	0.016	329	1079.12
36	0.005	0.127	0.0127	414.8	1360
37	0.0045	0.1143	0.01	523.1	1715
38	0.004	0.1016	0.00797	659.6	2163
39	0.0035	0.0889	0.00632	831.8	2728
40	0.0031	0.07874	0.00501	1049	3440





# American Fan

Powered by **FAIRBANKS MORSE**  
**DEFENSE**

## American Fan

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