Bulletin 2300

# North American Series 2300 Turbo Blowers

## 4-44 OSI & 55-11,500 CFM for standardized product
## 4-60 OSI, up to 100,000 CFM for custom product

## FEATURES

- **Direct drive blowers specifically for combustion applications**, which are also an excellent choice for uses such as pressurized air supply, drying, conveying and other application in process industries.
- Available in **singe or multiple stage designs at 1800 rpm or 3600 rpm;** the Series 2300 blowers are capable of performances not achieved by any other comparable blower design.
- Horsepower and impeller selection designed to achieve "flat" pressure performance curves to minimize variations over the operating range of the blower.
- All **60 Hz blowers are equipped with Premium Energy Efficient Motors** which meet the requirements of EISA (except units with fractional 56 frame and see Series 2300-50 cycle for 50 Hz motor standards).
- Full array of accessories includes filters, silencers, filter/silencers, inlet and outlet adapters, flexible sleeves, inlet vane dampers, AC frequency drives, combination motor starters and fusible disconnects. These options offer the protection needed to keep operational costs down while increasing blower life expectancy.

**Blower shown with optional 2923 filter**

## SELECTION

**Pressures and volume flow at air density of 0.075* pounds per cubic foot** are shown on the following pages of this bulletin. It is wise to allow some capacity safety margin when choosing a blower based on the calculated cfm requirements-unanticipated piping leaks, variation in burner capacity, changing process back pressure and other unforseen factors could cause motor overload unless there is some cushion. Without prior knowledge of leakage and other conditions, a 10% safety margin is considered minimum.

It is also important to allow for pressure losses in piping, fittings and valves which reduce pressure available at the burner (or other end use).

For volume flows greater than shown in the bulletin consult North American for custom selections designed to the exact requirements of the application-see "2300 Custom" section of this bulletin.

Altitude, air temperature and composition affect blower ratings-pressure, capacity and horsepower. For blower selection/performance at elevated temperature or altitude significanlty above sea level, the blower section of the *North American Combustion Handbook* is recommended as a guide to select the proper blower/motor combination. Generally standard motors can be used up to 3300 feet above sea level; special construction is recommended above 3300 feet.

Do not use Series 2300 blowers above 200 degrees F. See Bulletin 2600 for applications that require operational temperatures greater than 200 degrees F.

***Air density @ 1 ATM @ 70° F. fan industry standard temperature**

## CONSTRUCTION

Series 2300 blowers are available in coupled drive (AMCA Arrangement 8), and belt drive (AMCA Arrangement 9), but most users select the standard direct drive design where the impeller is mounted on the motor shaft (AMCA Arrangement 4) for simplicity with minimal maintenance.

All metal construction including mild steel, cast aluminum, or corrosion resistant stainless steel creates a nearly indestructible blower allowing for years of trouble-free service.

**F**abricated aluminum or steel impeller designs based on lightweight ærospace technology provide significant benefits; high motor bearing life which extends the life of the overall motor; low starting inertia which allows fast starting times and hence dœs not require the oversized motors of some alternate designs. All Series 2300 impellers are low stress and in the case of multi-stage units significantly reduce stress by dividing pressure generation between multiple impellers.

Individual impeller dynamics are assured, by either single or two plane balancing to ISO Grade 2.5, minimizing vibration and assuring longer bearing life. Completed blowers are individually tested prior to shipment to assure correct and trouble free operation.

Strategically positioned mounting locations allow for in-field rotation of casing discharge position, see page 5.

Standard shaft motors on most single stage blowers reduce replacement downtime in the field.

Inlet or outlet adapters are not included as standard supply but may be specified at an additional cost.

The oulet is available with a threaded (female) flange on blowers with 6" and smaller discharge pipe size. An SW connection is available for 8" and larger, or may be specified for smaller sizes.

An SW inlet (unthreaded) for sleeve or welding connection is available. A threaded female inlet may be specified for 3" through 6" inlets. For an open inlet, an inlet guard should be specified. Blowers should not be operated without inlet protection.

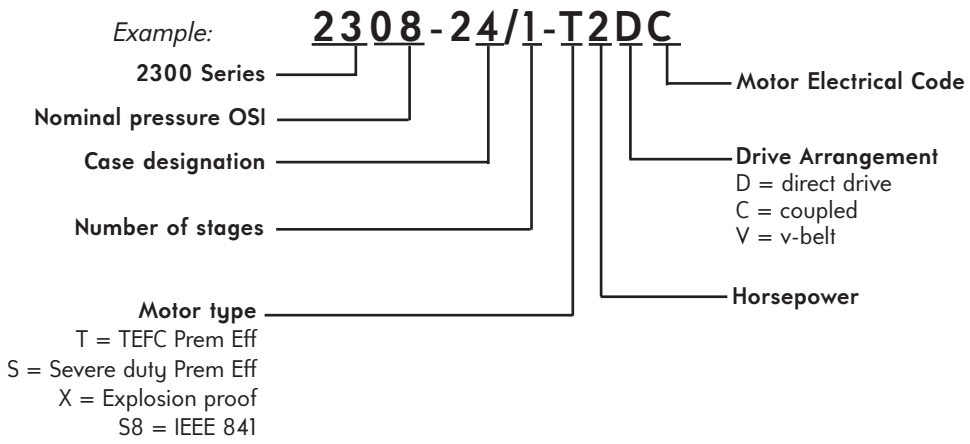
| Nominal pressure osi/"wc | Blower designation | Discharge Position Group | cfm at 100% of motor rating | 3600 rpm TEFC 1.15 SF motor | Inlet nominal pipe size | Outlet nominal pipe size | Intake Filter designation | Intake Silencer 2936- | Intake Filter Silencer designation | Approx. weight, lb | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 60 Hz Direct drive (D) | 50 & 60 Hz V-Belt drive ( V ) | 60 Hz Coupled drive (C) |
| 4 osi 6.92"wc | 2304-11/1-T.3 | C | 110 | T.33-C36T1SC | 3 | 2 | 2923-8-11A | None | 2942-8-11A | 40 | 100 | 100 |
| 8 osi 13.84"wc | 2308-11/3-T.5 | C | 55 | T.50-C36T1L4.0C | 3 | 2 | 2923-8-11A | None | 2942-8-11A | 50 | 110 | 110 |
| | 2308-14/1-T.5 | C | 60 | T.50-C36T1SC | 3 | 3 | 2923-8-14A | " | 2942-8-14A | 80 | 230 | 210 |
| | 2308-14/1-T.75 | C | 170 | T.75-C36T1SC | 3 | 3 | 2923-8-14A | " | 2942-8-14A | 80 | 230 | 210 |
| | 2308-17/1-T1 | C | 220 | T1.0-C36T1SC | 3 | 4 | 2923-8-17A | " | 2942-8-17A | 90 | 320 | 260 |
| | 2308-14/1-T1 | C | 250 | T1.0-C36T1SC | 3 | 3 | 2923-8-14A | " | 2942-8-14A | 80 | 230 | 210 |
| | 2308-17/1-T1.5 | C | 390 | T1.5-C36T1SC | 4 | 6 | 2923-10-17A | None | 2942-10-17A | 120 | 320 | 260 |
| | 2308-24/1-T2 | E | 460 | T2.0-C36T1SC | 6 | 6 | 2923-10-24A | 8-24 | 2942-10-24A | 150 | 470 | 400 |
| | 2308-24/1-T3 | E | 770 | T3.0-C36T1SC | 6 | 8 | 2923-12-24A | 8-24 | 2942-12-24A | 170 | 490 | 420 |
| | 2308-31/1-T5 | E | 1200 | T5.0-D36T1SC | 8 | 10 | 2923-18-31A | 9-31 | 294218-31A | 240 | 700 | 500 |
| | 2308-31/1-T7.5 | E | 1900 | T7.5-D36T1SC | 8 | 10 | 2923-18-31A | 9-31 | 2942-18-31A | 280 | 750 | 550 |
| | 2308-21/1-T10 | B | 2600 | T10-D36T1SC | 10 | 12 | 2923-22-21A | 10-21 | 2942-22-21A | 570 | 950 | 700 |
| 10 osi 17.3"wc | 2310-11/4-T.5 | C | 80 | T.50-C36T1L5.2C | 3 | 2 | 2923-8-11A | None | 2942-8-11A | 60 | 120 | 210 |
| | 2310-19/1-T.75 | C | 70 | T.75-C36T1SC | 3 | 3 | 2923-8-19A | " | 2942-8-19A | 90 | 300 | 300 |
| | 2310-19/1-T1 | C | 150 | T1.0-C36T1SC | 3 | 4 | 2923-8-19A | " | 2942-8-19A | 90 | 300 | 300 |
| | 2310-19/1-T1.5 | C | 290 | T1.5-C36T1SC | 4 | 6 | 2923-8-19B | " | 2942-8-19B | 130 | 340 | 340 |
| | 2310-19/1-T2 | C | 400 | T2.0-C36T1SC | 4 | 6 | 2923-10-19A | None | 2942-10-19A | 140 | 350 | 350 |
| | 2310-26/1-T3 | C | 580 | T3.0-C36T1SC | 6 | 6 | 2923-10-26A | 8-26 | 2942-10-26A | 190 | 500 | 500 |
| | 2310-26/1-T5 | C | 1000 | T5.0-D36T1SC | 6 | 8 | 2923-12-26A | 8-26 | 2942-12-26A | 210 | 520 | 520 |
| | 2310-35/1-T7.5 | C | 1500 | T7.5-D36T1SC | 8 | 10 | 2923-18-35A | 9-35 | 2942-18-35A | 430 | 800 | 600 |
| | 2310-21/1-T10 | B | 1900 | T10-D36T1SC | 10 | 12 | 2923-22-21A | 10-21 | 2942-22-21A | 580 | 950 | 700 |
| 12 osi 20.76"wc | 2312-11/4-T.5 | C | 50 | T.50-C36T1L5.2C | 3 | 2 | 2923-8-11A | None | 2942-8-11A | 60 | 120 | 120 |
| | 2312-19/1-T1 | C | 100 | T1.0-C36T1SC | 3 | 3 | 2923-8-19A | " | 2942-8-19A | 90 | 300 | 300 |
| | 2312-19/1-T1.5 | C | 220 | T1.5-C36T1SC | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 130 | 340 | 340 |
| | 2312-19/1-T2 | C | 340 | T2.0-C36T1SC | 4 | 6 | 2923-8-19B | " | 2942-8-19B | 140 | 350 | 350 |
| | 2312-26/1-T3 | C | 450 | T3.0-C36T1SC | 6 | 6 | 2923-10-26A | 8-26 | 2942-10-26A | 190 | 500 | 500 |
| | 2312-26/1-T5 | C | 850 | T5.0-D36T1SC | 6 | 8 | 2923-14-26A | 8-26 | 2942-14-26A | 210 | 520 | 520 |
| | 2312-35/1-T7.5 | C | 1400 | T7.5-D36T1SC | 8 | 8 | 2923-18-35A | 9-35 | 2942-18-35A | 430 | 800 | 600 |
| | 2312-35/1-T10 | C | 1700 | T10-D36T1SC | 8 | 10 | 2923-18-35A | 9-35 | 2942-18-35A | 450 | 820 | 620 |
| | 2312-21/1-T15 | B | 2600 | T15-D36T1SC | 14 | 12 | 2923-22-21B | 14-21 | 2942-22-21B | 600 | 1000 | 750 |

| Nominal pressure osi/"wc | Blower designation | Discharge Position Group | cfm at 100% of motor rating | 3600 rpm TEFC 1.15 SF motor | Inlet nominal pipe size | Outlet nominal pipe size | Intake Filter designation | Intake Silencer 2936- | Intake Filter Silencer designation | Approx. weight, lb 60 Hz Direct drive (D) | 50 & 60 Hz V-Belt drive ( V ) | 60 Hz Coupled drive (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2316-14/2-T1 | C | 90 | T1.0-C36T1L5.5C | 3 | 3 | 2923-8-14A | None | 2942-8-14A | 100 | 250 | 230 |
| | 2316-14/2-T1.5 | C | 150 | T1.5-C36T1L5.5C | 3 | 3 | 2923-8-14A | " | 2942-8-14A | 140 | 290 | 270 |
| | 2316-17/2-T1.5 | C | 150 | T1.5-C36T1L6.7C | 4 | 4 | 2923-8-17B | " | 2942-8-17B | 110 | 345 | 285 |
| | 2316-19/1-T2 | C | 150 | T2.0-C36T1SC | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 140 | 350 | 350 |
| | 2316-17/2-T2 | C | 220 | T2.0-C36T1L6.7C | 4 | 4 | 2923-8-17B | None | 2942-8-17B | 140 | 340 | 380 |
| | 2316-26/1-T3 | C | 290 | T3.0-C36T1SC | 6 | 6 | 2923-8-26A | 8-26 | 2942-8-26A | 300 | 605 | 490 |
| | 2316-17/2-T3 | C | 340 | T3.0-C36T1L6.0C | 4 | 6 | 2923-10-17A | None | 2942-10-17A | 160 | 360 | 400 |
| | 2316-19/1-T3 | C | 340 | T3.0-C36T1SC | 4 | 6 | 2923-10-19A | " | 2942-10-19A | 160 | 370 | 370 |
| | 2316-24/2-T3 | E | 350 | T3.0-C36T1L7.0C | 6 | 6 | 2923-10-24A | 8-24 | 2942-10-24A | 205 | 510 | 435 |
| | 2316-24/2-T5 | E | 600 | T5.0-C36T1L7.0C | 6 | 6 | 2923-10-24A | 8-24 | 2942-10-24A | 220 | 530 | 470 |
| 16 osi 27.68"wc | 2316-28/1-T5 | C | 600 | T5.0-D36T1SC | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 215 | 720 | 570 |
| | 2316-26/1-T5 | C | 620 | T5.0-D36T1SC | 6 | 6 | 2923-12-26A | 8-26 | 2942-12-26A | 220 | 530 | 530 |
| | 2316-31/2-T7.5 | E | 850 | T7.5-D36T1L8.3C | 8 | 8 | 2923-14-31A | 9-31 | 2942-14-31A | 320 | 790 | 590 |
| | 2316-28/1-T7.5 | C | 950 | T7.5-D36T1SC | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 235 | 810 | 630 |
| | 2316-26/1-T7.5 | C | 1000 | T7.5-D36T1SC | 6 | 8 | 2923-14-26A | 8-26 | 2942-14-26A | 260 | 570 | 570 |
| | 2316-31/2-T10 | E | 1200 | T10-D36T1L8.3C | 8 | 8 | 2923-18-31A | 9-31 | 2942-18-31A | 340 | 810 | 610 |
| | 2316-35/1-T10 | C | 1300 | T10-D36T1SC | 8 | 8 | 2923-18-35B | 9-35A | 2942-18-35B | 460 | 830 | 630 |
| | 2316-21/1-T15 | B | 1950 | T15-D36T1SC | 10 | 10 | 2923-22-21A | 10-21 | 2942-22-21A | 425 | 1150 | 885 |
| | 2316-35/1-T15 | C | 2000 | T15-D36T1SC | 8 | 10 | 2923-18-35B | 9-35A | 2942-18-35B | 490 | 860 | 660 |
| | 2316-21/1-T20 | B | 2700 | T20-D36T1SC | 10 | 10 | 2923-22-21A | 10-21 | 2942-22-21A | 670 | 1050 | 820 |
| | 2316-33/1-T25 | B | 3300 | T25-D36T1SC | 12 | 12 | 2923-22.5-33A | 12-33 | 2942-22.5-33A | 1100 | 1900 | 1400 |
| | 2316-33/1-T30 | B | 4100 | T30-D36T1SC | 12 | 14 | 2923-30-33A | 12-33 | 2942-30-33A | 1200 | 2000 | 1500 |
| | 2320-19/2-T1.5 | C | 100 | T1.5-C36T1L6.7C | 3 | 3 | 2923-8-19A | None | 2942-8-19A | 160 | 370 | 370 |
| | 2320-19/2-T2 | C | 170 | T2.0-C36T1L6.7C | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 170 | 380 | 380 |
| | 2320-19/2-T3 | C | 290 | T3.0-C36T1L7.0C | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 190 | 400 | 400 |
| | 2320-26/2-T5 | C | 500 | T5.0-D36T1L7.0C | 6 | 6 | 2923-10-26A | 8-26 | 2942-10-26A | 260 | 570 | 570 |
| | 2320-26/2-T7.5 | C | 720 | T7.5-D36T1L7.0C | 6 | 6 | 2923-12-26A | 8-26 | 2942-12-26A | 300 | 610 | 610 |
| 20 osi 34.60"wc | 2320-35/1-T10 | C | 1000 | T10-D36T1SC | 8 | 8 | 2923-14-35B | 9-35A | 2942-14-35B | 470 | 840 | 640 |
| | 2320-21/1-T15 | B | 1500 | T15-D36T1SC | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 625 | 1150 | 885 |
| | 2320-35/1-T15 | C | 1700 | T15-D36T1SC | 8 | 8 | 2923-18-35B | 9-35A | 2942-18-35B | 550 | 920 | 720 |
| | 2320-21/1-T20 | B | 2100 | T20-D36T1SC | 10 | 10 | 2923-22-21A | 10-21 | 2942-22-21A | 680 | 1050 | 830 |
| | 2320-33/1-T25 | B | 2900 | T25-D36T1SC | 12 | 12 | 2923-22.5-33A | 12-33 | 2942-22.5-33A | 1100 | 1900 | 1400 |
| | 2320-33/1-T30 | B | 3400 | T30-D36T1SC | 12 | 12 | 2923-22.5-33A | 12-33 | 2942-22.5-33A | 1200 | 2000 | 1500 |
| | 2320-33/1-T40 | D | 4500 | T40-D36T1SC | 12 | 14 | 2923-30-33A | 12-33 | 2942-30-33A | 1250 | 2050 | 1550 |
| | 2320-33/1-T50 | D | 5800 | T50-D36T1SC | 12 | 14 | 2921-1202-6/33 | 12-33 | 2941-1202-6/33 | 1800 | 2400 | 2300 |
| | 2324-14/3-T1.5 | C | 80 | T1.5-C36T1L9.0C | 3 | 3 | 2923-8-14A | None | 2942-8-14A | 160 | 310 | 290 |
| | 2324-14/3-T2 | C | 120 | T2.0-C36T1L9.0C | 3 | 3 | 2923-8-14A | " | 2942-8-14A | 170 | 320 | 300 |
| | 2324-19/2-T3 | C | 210 | T3.0-C36T1L7.0C | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 100 | 400 | 400 |
| | 2324-26/2-T5 | C | 370 | T5.0-D36T1L7.0C | 6 | 6 | 2923-10-26A | 8-26 | 2942-10-26A | 260 | 570 | 570 |
| | 2324-26/2-T7.5 | C | 600 | T7.5-D36T1L7.0C | 6 | 6 | 2923-12-26A | 8-26 | 2942-12-26A | 300 | 610 | 610 |
| | 2324-35/2-T10 | C | 810 | T10-D36T1L8.3C | 8 | 8 | 2923-14-35A | 9-35 | 2942-14-35A | 520 | 890 | 690 |
| 24 osi 41.52"wc | 2324-35/2-T15 | C | 1400 | T15-D36T1L8.3C | 8 | 8 | 2923-18-35A | 9-35 | 2942-18-35A | 550 | 920 | 720 |
| | 2324-21/1-T20 | B | 1800 | T20-D36T1SC | 10 | 10 | 2923-18-21A | 10-21 | 2942-18-21A | 680 | 1050 | 830 |
| | 2324-33/1-T25 | B | 2400 | T25-D36T1SC | 12 | 12 | 2923-22-33A | 12-33 | 2942-22-33A | 1100 | 1900 | 1400 |
| | 2324-33/1-T30 | B | 2800 | T30-D36T1SC | 12 | 12 | 2923-22-33A | 12-33 | 2942-22-33A | 1200 | 2000 | 1500 |
| | 2324-33/1-T40 | D | 3700 | T40-D36T1SC | 12 | 12 | 2923-30-33A | 12-33 | 2942-30-33A | 1250 | 2050 | 1550 |
| | 2324-33/1-T50 | D | 5200 | T50-D36T1SC | 14 | 14 | 2921-1402-6/33 | 14-33 | 2941-1202-6/33 | 1350 | 2150 | 1650 |
| | 2324-33/1-T60 | D | 6200 | T60-D36T1SC | 14 | 14 | 2921-1402-8/33 | 14-33 | 2941-1402-8/33 | 1400 | 2200 | 1700 |
| | 2332-19/3-T3 | C | 90 | T3.0-C36T1L10.6C | 4 | 4 | 2923-8-19B | None | 2942-8-19B | 190 | 400 | 400 |
| | 2332-19/3-T5 | C | 260 | T5.0-D36T1L10.6C | 4 | 4 | 2923-8-19B | " | 2942-8-19B | 210 | 420 | 420 |
| | 2332-28/2-T7.5 | C | 330 | T7.5-D36T1L8.3C | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 380 | 650 | 700 |
| | 2332-28/2-T10 | C | 600 | T10-D36T1L8.3C | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 400 | 670 | 720 |
| | 2332-28/2-T15 | C | 900 | T15-D36T1L8.3C | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 430 | 700 | 750 |
| | 2332-21/2-T20 | B | 1100 | T20-D36T1L10.0C | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 680 | 1050 | 830 |
| 32 osi 55.36"wc | 2332-21/2-T25 | B | 1500 | T25-D36T1L10.7C | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 710 | 1100 | 860 |
| | 2332-21/2-T30 | D | 1800 | T30-D36T1L10.7C | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 780 | 1150 | 930 |
| | 2332-21/2-T40 | D | 2400 | T40-D36S1L10.7C | 10 | 8 | 2923-22-21A | 10-21 | 2942-22-21A | 810 | 1200 | 960 |
| | 2332-33/2-T50 | D | 3200 | T50-D36T1L12.0C | 12 | 12 | 2923-22.5-33A | 12-33 | 2942-22.5-33A | 1450 | 2250 | 1750 |
| | 2332-33/2-T60 | D | 3900 | T60-D36T1L12.0D | 12 | 12 | 2923-30-33A | 12-33 | 2942-30-33A | 1500 | 2300 | 1800 |

| Nominal pressure osi/"wc | Blower designation | Discharge Position Group | cfm at 100% of motor rating | 3600 rpm TEFC 1.15 SF motor | Inlet nominal pipe size | Outlet nominal pipe size | Intake Filter designation | Intake Silencer 2936- | Intake Filter Silencer designation | Approx. weight, lb 60 Hz Direct drive (D) | 50 & 60 Hz V-Belt drive ( V ) | 60 Hz Coupled drive (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 osi 76.12"wc | 2344-28/3-T15 | C | 640 | T15-D36T1L13.5C | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 510 | 780 | 830 |
| | 2344-28/3-T20 | C | 900 | T20-D36T1L13.5C | 8 | 6 | 2923-14-28A | 9-28 | 2942-14-28A | 580 | 850 | 900 |
| | 2344-21/2-T30 | D | 1400 | T30-D36T1L10.7C | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 780 | 1150 | 930 |
| | 2344-21/2-T40 | D | 1900 | T40-D36S1L10.7C | 10 | 8 | 2923-18-21A | 10-21 | 2942-18-21A | 810 | 1200 | 960 |
| | 2344-21/2-T50 | D | 2500 | T50-D36S1L10.7C | 10 | 8 | 2923-22-21A | 10-21 | 2942-22-21A | 900 | 1300 | 1050 |
| **1800 rpm** | | | | | | | | | | | | |
| 8 osi 13.84"wc | 2308-44/1-T10 | D | 2700 | T10-C18T1SC | 16 | 16 | 2923-30-44A | 16-44 | 2942-30-44A | 1400 | 2100 | 2000 |
| | 2308-44/1-T15 | D | 4100 | T15-C18T1SC | 16 | 16 | 2923-30-44A | 16-44 | 2942-30-44A | 1450 | 2150 | 2050 |
| | 2308-44/1-T20 | D | 5500 | T20-C18T1SC | 16 | 18 | 2921-1602-6/44 | 16-44 | 2941-1602-6/44 | 1500 | 2200 | 2100 |
| | 2308-44/1-T25 | D | 6500 | T25-C18T1SC | 16 | 18 | 2921-1602-8/44 | 16-44 | 2941-1602-8/44 | 1650 | 2300 | 2200 |
| | 2308-44/1-T30 | D | 7200 | T30-C18T1SC | 16 | 18 | 2921-1602-8/44 | 16-44 | 2941-1602-8/44 | 1650 | 2350 | 2250 |
| | 2308-47/1-T40 | D | 10000 | T40-C18T1SC | 24 | 24 | 2921-2403-12/47 | 24-47 | 2941-2403-12/47 | 1800 | 2100 | 2100 |
| | 2308-47/1-T50 | D | 12500 | T50-D18T1SC | 24 | 24 | 2921-2403-12/47 | 24-47 | 2941-2403-12/47 | 1850 | 2200 | 2200 |
| 10 osi 17.30"wc | 2310-47/1-T40 | D | 8000 | T40-D18T1SC | 24 | 20 | 2923-2403-12/47 | 24-47 | 2941-2403-12/47 | 1800 | 2100 | 2100 |
| | 2310-47/1-T50 | D | 10500 | T50-C18T1SC | 24 | 24 | 2923-2403-12/47 | 24-47 | 2941-2403-12/47 | 1850 | 2200 | 2200 |
| 12 osi 20.76"wc | 2312-41/1-T20 | D | 4000 | T20-C18T1SC | 16 | 16 | 2923-30-41A | 16-41 | 2942-30-41A | 1500 | 2200 | 2100 |
| | 2312-41/1-T25 | D | 4900 | T25-C18T1SC | 16 | 16 | 2923-30-41A | 16-41 | 2942-30-41A | 1600 | 2300 | 2200 |
| | 2312-41/1-T30 | D | 5500 | T30-C18T1SC | 16 | 16 | 2921-1602-6/41 | 16-41 | 2941-1602-6/41 | 1650 | 2350 | 2250 |
| | 2312-47/1-T40 | D | 7100 | T40-C18T1SC | 24 | 18 | 2921-2403-12/47 | 24-47 | 2941-2403-12/47 | 1900 | 2200 | 2200 |
| | 2312-41/1-T40 | D | 7300 | T40-C18T1SC | 16 | 18 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | 1750 | 2450 | 2350 |
| 16 osi 27.68"wc | 2316-41/1-T20 | D | 3000 | T20-D18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | 1500 | 2200 | 2100 |
| | 2316-41/1-T25 | D | 3700 | T25-D18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | 1600 | 2200 | 2100 |
| | 2316-41/1-T30 | D | 4500 | T30-D18T1SC | 16 | 16 | 2923-30-41A | 16-41 | 2942-30-41A | 1650 | 2250 | 2150 |
| | 2316-41/1-T40 | D | 5500 | T40-D18T1SC | 16 | 16 | 2921-1602-6/41 | 16-41 | 2941-1602-6/41 | 1750 | 2350 | 2250 |
| | 2316-41/1-T50 | D | 7000 | T50-D18T1SC | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | 1800 | 2400 | 2300 |
| | 2316-47/1-T75V | D | 11500 | T75-C18T1SD | 20 | 24 | 2921-2403-12/47 | 24-47 | 2941-2403-12/47 | – | 2400 | – |
| 20 osi 34.6"wc | 2320-41/1-T25 | D | 2600 | T25-D18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | 1600 | 2200 | 2100 |
| | 2320-41/1-T30 | D | 3300 | T30-D18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | 1650 | 2250 | 2150 |
| | 2320-41/1-T40 | D | 4500 | T40-C18T1SC | 16 | 16 | 2923-30-41A | 16-41 | 2942-30-41A | 1750 | 2350 | 2250 |
| | 2320-41/1-T50 | D | 5800 | T50-C18T1SC | 16 | 16 | 2921-1602-6/41 | 16-41 | 2941-1602-6/41 | 1800 | 2400 | 2300 |
| | 2320-41/1-T60 | D | 7300 | T60-D18T1SD | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | 1900 | 2500 | 2400 |
| 24 osi 41.52"wc | 2324-41/1-T30V | D | 2300 | T30-C18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | – | 2250 | – |
| | 2324-41/1-T40V | D | 3500 | T40-C18T1SC | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | – | 2350 | – |
| | 2324-41/1-T50V | D | 4700 | T40-C18T1SC | 16 | 16 | 2923-30-41A | 16-41 | 2942-30-41A | – | 2400 | – |
| | 2324-41/1-T60V | D | 6200 | T60-C18T1SD | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | – | 2500 | – |
| | 2324-41/1-T75V | D | 7900 | T75-C18T1SD | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | – | 2550 | – |
| 32 osi 55.36"wc | 2332-41/2-T75C | D | 4500 | T75-C18T1SD | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | – | – | 2850 |
| | 2332-41/2-T100C | D | 6200 | T100-C18T1SD | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | – | – | 2900 |
| | 2332-41/2-T125C | D | 7100 | T125-C18T1SD | 16 | 16 | 2921-1602-8/41 | 16-41 | 2941-1602-8/41 | – | – | 3100 |
| 38 osi 65.74"wc | 2338-41/2-T75C | D | 3800 | T75-C18T1SD | 16 | 12 | 2923-30-41A | 16-41 | 2942-30-41A | – | – | 2850 |
| | 2338-41/2-T100C | D | 5600 | T100-C18T1SD | 16 | 12 | 2921-1602-6/41 | 16-41 | 2941-1602-6/41 | – | – | 2900 |

## ORDERING INFORMATION

Standard 2300 Series Blower Designation Explanation

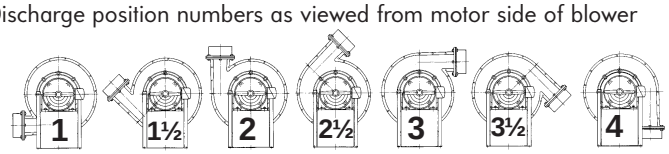



**Motor Electrical Code:** if this position is blank, this indicates standard voltage which for 60 Hz would be 230/460 volts 60 Hz 3 phase volts. Other typical electrical codes include:

| | |
|---|---|
| A | 115/230/60/1 |
| C | 230/460/60/3 |
| D | 460/60/3 |
| F | 208-230/460/60/3 |
| I | 575/60/3 |

For other electrical combinations, please contact North American.

Discharge position numbers as viewed from motor side of blower




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | x | x | x | x | x | x | x |
| B | x | x | x | x | x | x | x |
| C | x | | x | | x | | x |
| D | x | x | x | x | x | x | |
| E | x | | x | | x | | |

The letter assigned to each blower below indentifies the standard discharge positions available. Contact the Product Manager for other discharge positions (at extra cost and longer delivery).

# 2300 SERIES CUSTOM BLOWERS

For performance requirements greater than those of the standard 2300 Series Blowers (to **flows of 100,000 ACFM and pressures to 60 OSI)**, custom designed units are recommended. When flows and pressures become larger, designing a unit specifically for the duty (plus any required margin) **saves both initial cost and energy**.

## FEATURES

— **Designed specifically for the application requirements**, the 2300 Series Custom blower uses the **most appropriate/ highest efficiency impeller design including radial blade, backward curved, and airfoil**. Our designs include special low specific speed impellers for high pressure and low flow while operating at full load motor speeds. High efficiency designs not only save energy but reduce the acoustic output of the blower to a minimum. Directly connected designs (AMCA Arrangement 4) **provide simplicity and minimal maintenance**. Coupled designs (AMCA Arrangement 8 or 7 with inlet box) are incorporated on larger units where impeller characteristics do not lend themselves to mounting directly on the motor shaft. Other drive arrangements are available as are **designs for a range of operating voltages and frequencies.**

— Designed primarily for use in industrial combustion applications (including both forced draft and induced draft) but also applicable to many drying, heating and other process applications with air up to 200 degrees F (units above 200 F to 1200 F use a 2600 Series blower).

— Full array of accessories includes inlet boxes, inlet vane dampers, filters, silencers, inlet/outlet adapters, flexible sleeves and expansion joints, sound and thermal insulation, AC variable speed drives - these accessories are used to adapt and complete the installation to match the job-specific requirements.

## SELECTION

The following information is required for proper selection of a custom blower by our engineering staff:

— Flow at rating point, maximum required flow and volumetric turndown requirement
— Pressure at rated flow and minimum pressure expected
— Gas temperature (rated, minimum, maximum)
— Site altitude - indoor/outdoor location
— Gas source and gas composition when not air
— Voltage and frequency of power supply
— Type of motor enclosure, special features of motor if required
— Class, Division, Group and Temperature code if installed in hazardous area
— Allowable noise level
— Drive arrangement
— Rotation and discharge position if known
— Pipe size for inlet/outlet and adapters if required
— Other special requirements

## CONSTRUCTION

Blower casings and pedestals are of plate gage carbon steel construction while impellers are primarily of appropriate high strength low alloy steel. Units are available in alloy construction for high temperature (over 800 degree F) or for other special application.

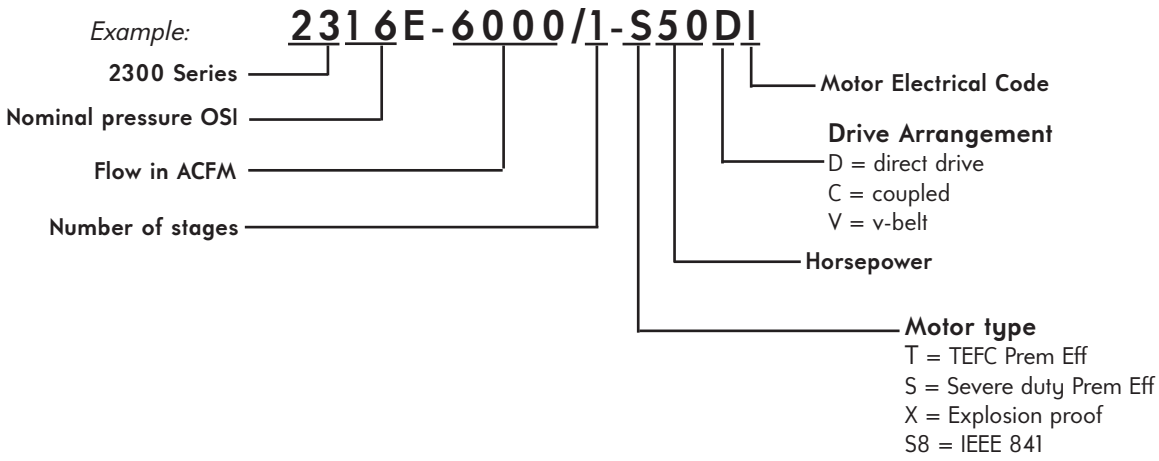
When required to limit noise transmission through the blower casing, the casings are constructed with thicknesses of ¼ to ½ inch. In those rare cases where ½ inch plate construction does not provide sufficient attenuation, acoustic insulation blankets are provided as part of the blower package.

Impellers are statically and dynamically balanced prior to installation in blower during assembly. Assuming compatibility with our electrical supply (200 HP and below), the entire unit is then test run and is subject to vibration analysis to assure that overall vibration does not exceed 0.15 inches / second filtered at operating speed. For units above 250 HP, after impeller is balanced, blowers are shop assembled, match marked and sufficiently disassembled to permit shipping and installation. Site assembly should in most cases be supervised by an experienced fan mechanic and a vibration survey of the assembled unit be performed (with trim balancing as necessary) prior to the unit being placed in service.

## ORDERING INFORMATION

Complete information regarding the design of the blowers is available at the time of quotation including dimensional information, weight, expected sound power and a performance curve.

Series 2300 Custom blowers use the following nomenclature:




**Motor Electrical Code:** if this position is blank, this indicates standard voltage which for 60 Hz would be 230/460 volts 60 Hz 3 phase. Other typical electrical codes include:

| | |
|---|---|
| A | 115/230/60/1 |
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| D | 460/60/3 |
| F | 208-230/460/60/3 |
| I | 575/60/3 |

For other electrical combinations, please contact North American.



fives ultimate machines ultimate factory

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