From: Agosto, Giselle

Sent: 8/10/2015 5:25:34 PM

To: TTAB EFiling

CC:

Subject: U.S. TRADEMARK APPLICATION NO. 79078661 - OMEGA - N/A - Request for Reconsideration Denied - Return to TTAB - Message 1 of 3

****

Attachment Information:

Count: 13

Files: WebA.jpg, WebB.jpg, WebC-1.jpg, WebC-2.jpg, WebD-1.jpg, WebD-2.jpg, WebE-1.jpg, WebE-2.jpg, WebF-1.jpg, WebF-2.jpg, WebG-1.jpg, WebH-01.jpg, 79078661.doc

UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)
OFFICE ACTION (OFFICIAL LETTER) ABOUT APPLICANT'S TRADEMARK APPLICATION

U.S. APPLICATION SERIAL NO. 79078661

MARK: OMEGA

CORRESPONDENT ADDRESS:
STEWART J BELLUS

COLLARD & ROE PC

1077 NORTHERN BLVD

ROSLYN, NY 11576

GENERAL TRADEMARK INFORMATION:

http://www.uspto.gov/trademarks/index.jsp

APPLICANT: KAESER KOMPRESSOREN SE

CORRESPONDENT'S REFERENCE/DOCKET NO:

N/A

CORRESPONDENT E-MAIL ADDRESS:

REQUEST FOR RECONSIDERATION DENIED

ISSUE/MAILING DATE:

INTERNATIONAL REGISTRATION NO. 0908647

The trademark examining attorney has carefully reviewed applicant's request for reconsideration and is denying the request for the reasons stated below. *See* 37 C.F.R. §2.63(b)(3); TMEP §§715.03(a)(ii)(B), 715.04(a). The following refusal made final in the Office action dated 1/9/2015 is maintained and

continue to be final: a Section 2(d) likelihood of confusion refusal. *See* TMEP §§715.03(a)(ii)(B), 715.04(a).

In the present case, applicant's request has not resolved all the outstanding issue(s), nor does it raise a new issue or provide any new or compelling evidence with regard to the outstanding issue(s) in the final Office action. In addition, applicant's analysis and arguments are not persuasive nor do they shed new light on the issues. Accordingly, the request is denied.

If applicant has already filed a timely notice of appeal with the Trademark Trial and Appeal Board, the Board will be notified to resume the appeal. *See* TMEP §715.04(a).

If no appeal has been filed and time remains in the six-month response period to the final Office action, applicant has the remainder of the response period to (1) comply with and/or overcome any outstanding final requirement(s) and/or refusal(s), and/or (2) file a notice of appeal to the Board. TMEP §715.03(a)(ii)(B); *see* 37 C.F.R. §2.63(b)(1)-(3). The filing of a request for reconsideration does not stay or extend the time for filing an appeal. 37 C.F.R. §2.63(b)(3); *see* TMEP §§715.03, 715.03(a)(ii)(B), (c).

Section 2(d) Refusal is Maintained

Applicant does not dispute the first prong of the likelihood of confusion test. The marks are highly similar in sound, appearance, meaning and commercial impression. The top level domain name (TLD) .com is a generic top level domain name denoting an entity on the internet. gTLDs generally indicate the type of entity using a given domain name, and therefore serve no source-indicating function. Thus, the addition of .COM to the term OMEGA does not distinguish the registration from the application. Accordingly, OMEGA and OMEGA.COM are virtually identical and are confusingly similar. Where the marks of the respective parties are identical or virtually identical, the relationship between the relevant goods and/or services need not be as close to support a finding of likelihood of confusion. *See In re Shell Oil Co.*, 992 F.2d 1204, 1207, 26 USPQ2d 1687, 1689 (Fed. Cir. 1993); *In re House Beer, LLC*, 114 USPQ2d 1073, 1077 (TTAB 2015); *In re Davey Prods. Pty Ltd.*, 92 USPQ2d 1198, 1202 (TTAB 2009); TMEP §1207.01(a).

Regarding the second prong of the likelihood of confusion test, the examining attorney maintains that the parties' goods, although not identical, are considered related for likelihood of confusion purposes.

In this case, the parties' goods are identified broadly as "air blowers" and "rotary lobe blowers" without specification as to application or industry. In essence, air blowers are mechanical devices that produce a current of air. All blowers are defined as a rotary, positive displacement type of machine used to move gas and air with various applications. (See attached definition from <gardnerdenver.com>). There are several different types of air blowers, and the registration is not limited to a particular one.

As shown in the attachments, it is common in the industry for different types of blowers to be manufactured by the same entity. For example, Gardner Denver manufactures regenerative, reciprocating, rotary lobe and centrifugal blowers. (See attachment from <Gardnerdenver.com>). Republic Manufacturing is another entity that manufactures rotary lobe blowers and centrifugal air and gas handling blowers. (See attachment from <Republic-mfg.com>). Tuthill is yet another entity that manufactures a wide variety of blowers with a wide variety of applications. (See attachment from <Tuthillvacuumblower.com>). In fact, it seems that a rotary lobe blower is a type of air blower that has a particular design that originated with the Roots brothers who discovered the principle of the positive displacement blower and revised the technology by using lobes to reduce noise and vibration. (See attachment from <EfficiencyBlowers.com>).

There is nothing on the record and no new evidence provided by applicant to sufficiently distinguish applicant's rotary lobe blowers from registrant's air blowers. Nothing on the record limits registrant's products to any one particular type of air blower, so the registration is drafted broadly. It actually appears that not only are the products commercially related, but also there is an overlap in manufacturers. The identifications in the registration and in the application are also broad so that it is impossible to conclude that the channels of trade for the parties' goods really differ. The attachments from the manufacturers' websites discussed above support the conclusion that the parties' goods do travel through the same channels of trade. (See attachments).

Applicant's statements merely conclude that because applicant's products do not provide heat through blown or forced air, and because its blowers are highly specialized, they should not be considered related for likelihood of confusion purposes. However, the goods of the parties need not be identical or even competitive to find a likelihood of confusion. *See On-line Careline Inc. v. Am. Online Inc.*, 229 F.3d 1080, 1086, 56 USPQ2d 1471, 1475 (Fed. Cir. 2000); *Recot, Inc. v. Becton*, 214 F.3d 1322, 1329, 54 USPQ2d 1894, 1898 (Fed. Cir. 2000) ("[E]ven if the goods in question are different from, and thus not related to, one another in kind, the same goods can be related in the mind of the consuming public as to the origin of the goods."); TMEP §1207.01(a)(i).

The respective goods and/or services need only be "related in some manner and/or if the circumstances surrounding their marketing [be] such that they could give rise to the mistaken belief that [the goods and/or services] emanate from the same source." *Coach Servs., Inc. v. Triumph Learning LLC*, 668 F.3d 1356, 1369, 101 USPQ2d 1713, 1722 (Fed. Cir. 2012) (quoting *7-Eleven Inc. v. Wechsler*, 83 USPQ2d 1715, 1724 (TTAB 2007)); TMEP §1207.01(a)(i).

The attached evidence shows that air blowers are a broad category of industrial products so that registrant's goods could encompass any number of products. The attached evidence also shows that the circumstances surrounding the marketing of the parties' goods are such that consumers are likely to be confused into believing that OMEGA rotary lobe blowers and OMEGA.COM air blowers come from the same source.

Applicant goes on to say that its goods are more in line with superchargers so that they are distinguishable from registrant's goods. As applicant states, the terms supercharger and blower can be used interchangeably. And, while superchargers and blowers, such as the Roots blower, both compress air, they may not operate with the same technology or necessarily have the same applications. Yet, these differences are not sufficient to overcome a likelihood of confusion because the likelihood of confusion test does not require that the parties' goods be identical. Applicant references 18 cases in which the TTAB found that albeit similarities in the goods, the similarities were not enough to find a likelihood of confusion. However, prior decisions and actions of other trademark examining attorneys in registering other marks have little evidentiary value and are not binding upon the USPTO or the Trademark Trial and Appeal Board. TMEP §1207.01(d)(vi); *see In re Midwest Gaming & Entm't LLC*, 106 USPQ2d 1163, 1165 n.3 (TTAB 2013) (citing *In re Nett Designs, Inc.*, 236 F.3d 1339, 1342, 57 USPQ2d 1564, 1566 (Fed. Cir. 2001)). Each case is decided on its own facts, and each mark stands on its own merits. *See AMF Inc. v. Am. Leisure Prods., Inc.*, 474 F.2d 1403, 1406, 177 USPQ 268, 269 (C.C.P.A. 1973); *In re Binion*, 93 USPQ2d 1531, 1536 (TTAB 2009). The facts in this case show that applicant's goods, namely rotary lobe blowers, are a type of air blower, so that the parties' goods are commercially related and may be manufactured by the same entity.

Assuming applicant's goods are in nature of rotary lobe blowers being superchargers, the fact remains that, in the industry, superchargers are really nothing more than air blowers, as stated in the attachments from <HowStuffWorks.com> and <Jegs.com>. It is just that superchargers have a particular application. It follows that rotary lobe blowers, and superchargers are a type of air blower then. So, while the goods in the application and registration are not identical, there is evidence that they are commercially related because applicant's goods are a type of air blower. Absent restrictions in an application and/or registration, the identified goods and/or services are "presumed to travel in the same channels of trade to the same class of purchasers." *In re Viterra Inc.*, 671 F.3d 1358, 1362, 101 USPQ2d 1905, 1908 (Fed. Cir. 2012) (quoting *Hewlett-Packard Co. v. Packard Press, Inc.*, 281 F.3d 1261, 1268, 62

USPQ2d 1001, 1005 (Fed. Cir. 2002)). Additionally, unrestricted and broad identifications are presumed to encompass all goods and/or services of the type described. *See In re Jump Designs, LLC*, 80 USPQ2d 1370, 1374 (TTAB 2006) (citing *In re Elbaum*, 211 USPQ 639, 640 (TTAB 1981)); *In re Linkvest S.A.*, 24 USPQ2d 1716, 1716 (TTAB 1992).

In this case, the identifications set forth in the application and registration have no restrictions as to nature, type, channels of trade, or classes of purchasers. Therefore, it is presumed that these goods travel in all normal channels of trade, and are available to the same class of purchasers. Further, the registration uses broad wording to describe the goods as "air blowers," and this wording is presumed to encompass all goods of the type described, including those in applicant's more narrow identification.

Finally, applicant submits that the term OMEGA is diluted so that it is weak and deserving of little protection. In support of this argument, applicant refers to UPSTO database results for various registrations and applications incorporating the term OMEGA for Class 7 goods. None of these co-existing registrations are for "rotary lobe blowers" or "air blowers." Also, it is hard to determine whether any of the registrations are for products in the same industry or for the same application as applicant and registrant's products, since applicant and registrant's products are identified broadly without specification of industry or field.

Applicant has submitted printouts of third-party registrations for marks containing the wording OMEGA to support the argument that this wording is weak, diluted, or so widely used that it should not be afforded a broad scope of protection. The weakness or dilution of a particular mark is generally determined in the context of the number and nature of similar marks *in use in the marketplace* in connection with *similar* goods and/or services. *See Nat'l Cable Television Ass'n, Inc. v. Am. Cinema Editors, Inc.*, 937 F.2d 1572, 1579-80, 19 USPQ2d 1424, 1430 (Fed. Cir. 1991); *In re E. I. du Pont de Nemours & Co.*, 476 F.2d 1357, 1361, 177 USPQ 563, 567 (C.C.P.A. 1973).

Evidence of weakness or dilution consisting solely of third-party registrations, such as those submitted by applicant in this case, is generally entitled to little weight in determining the strength of a mark, because such registrations do not establish that the registered marks identified therein are in *actual use* in the marketplace or that consumers are accustomed to seeing them. *See AMF Inc. v. Am. Leisure Prods., Inc.*, 474 F.2d 1403, 1406, 177 USPQ 268, 269 (C.C.P.A. 1973); *In re Davey Prods. Pty Ltd.*, 92 USPQ2d 1198, 1204 (TTAB 2009); *In re Thor Tech, Inc.*, 90 USPQ2d 1634, 1639 (TTAB 2009); *Richardson-Vicks Inc. v. Franklin Mint Corp.*, 216 USPQ 989, 992 (TTAB 1982). Furthermore, the goods listed in the third-party registrations submitted by applicant are different from those at issue and thus do not show that the relevant wording is commonly used in connection with the goods at issue.

The examining attorney maintains that upon encountering OMEGA and OMEGA.COM in commerce for related goods, consumers are likely to be confused and mistakenly believe that the respective goods come from a common source, or that there is some sort of affiliation, association or sponsorship between the parties.

The overriding concern is not only to prevent buyer confusion as to the source of the goods, but to protect the registrant from adverse commercial impact due to use of a similar mark by a newcomer. See In re Shell Oil Co., 992 F.2d 1204, 1208, 26 USPQ2d 1687, 1690 (Fed. Cir. 1993). Therefore, any doubt regarding a likelihood of confusion determination is resolved in favor of the registrant. TMEP §1207.01(d)(i); see Hewlett-Packard Co. v. Packard Press, Inc., 281 F.3d 1261, 1265, 62 USPQ2d 1001, 1003 (Fed. Cir. 2002); In re Hyper Shoppes (Ohio), Inc., 837 F.2d 463, 464-65, 6 USPQ2d 1025, 1026 (Fed. Cir. 1988).

Accordingly, given the marks are virtually identical and given the close relationship of the goods, there is a likelihood of confusion as to the source of the goods. Having conformed to both steps in the Section 2(d) analysis, the examining attorney herein makes the refusal to register because Applicant's mark so resembles the mark in U.S. Registration No. 2412722, as to be likely to cause confusion when used on or in connection with the goods identified in the application.

/Giselle Agosto-Hincapie/

Attorney Advisor

Trademarks - Law Office 102

Tel: (571) 272-5868

Informal inquiries only: giselle.agosto@uspto.gov

Product Types

- Brands Overview
- Products Overview
- Air Audits
- Blowers
- Compressors
- Dry-Break Couplings
- Ejectors
- Fueling Systems
- Loading Arms
- Priming Valves
- Pumps
- Safety Access Equipment
- Storage Tank Equipment
- Tank Truck Equipment
- Transmissions & PTOs
- Vacuum Pumps & Systems
- Water Jetting

BLOWERS

A blower is a rotary, positive displacement type of machine used to move gas and air and is used in a variety of methods. Rotary blowers and positive displacement blowers are just two of several types that are available. Gardner Denver offers a wide range of blowers such as regenerative, reciprocating, rotary lobe and centrifugal blowers. They are available in single or multistage versions.

All Gardner Denver blowers, as different in size, performance or technology as they might be, offer reliable service for our customers' applications

- CENTRIFUGAL
- OIL FREE
- POSITIVE DISPLACEMENT
- RADIAL
- SIDE CHANNEL

WORLDWIDE

With locations in 34 countries, Gardner Denver is strategically positioned to support its customers anywhere in the world.

FIND YOUR LOCAL GD SUPPORT

Copyright 2014 © Gardner Denver, Inc.

SEARCH OUR SITE

Enter keyword or sku

[All Categories]

[All Manufacturers]

Search All (Quick)

SEARCH

SHOP BY PART

[All Categories]

SEARCH

SHOP OUR SITE

- AIR KNIFE SYSTEMS
- BLOWERS
- FILTERS
- LUBRICANTS
- MOTORS
- PARTS
- RELIEF VALVES
- VACUUM PUMPS
- VANES

Roots Positive Displacement Blowers

Dresser Roots manufactures a full line of rotary-lobe and centrifugal air and gas handling blowers as well as vacuum pumps. In 1854, Roots pioneered the rotary-lobe blower design and has extensive experience with a wide range of applications and industries. Roots centrifugal units range from 2 cfm to 250,000 cfm, with pressures up to 30 psig, and single stage vacuums up to 28"Hg.

URAI Style Blowers

RAM Blowers

RCS Blowers

2015 Republic Manufacturing. All rights reserved. | eCommerce & ERP Integration by Website Pipeline

MD Pneumatics Blowers

Kinney Vacuum Pumps
MD Pneumatics Blowers
Remanufactured Vacuum Pumps & Blowers

Competitor Blowers

Competitor rotary blowers are designed to be interchangeable with equivalent sizes of competitive models.

Equalizer Blowers

Equalizer Blowers are high flow, compact blowers in popular 4.5" and 6" gear diameters.

MD Pneumatics Blower Packages

MD Pneumatics Blower Packages Standard Packages & Custom Sytems for your application

MD Pneumatics Vacuum Boosters

MD Pneumatics™ Vacuum Boosters

PD Plus Blowers

PD Plus Blowers are premium, heavy-duty blowers renowned for their quality, dependability and outstanding performance.

Qx Blowers

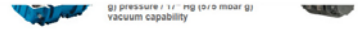
A high performance, energy efficient and low-noise line designed for long operating life at maximum operating conditions.

TI850 Blowers

High-performance single-stage blowers with up to 20 PSIG (1.38 bar g) pressure / 17" Hg (575 mbar g)

Truck Blowers

Tuthill Truck Blowers



vacuum capability

Danny Sanders Joins Tuthill

Danny Sanders has joined Tuthill Vacuum & Blower Systems as Director of International Sales.

About Tuthill's Journey

Tuthill is up to something special that reaches far beyond manufacturing rock solid products. We inspire the hearts and souls of customers, families, and employees...

Shraddha Jayakumar Joins

Shraddha Jayakumar has joined Tuthill Vacuum & Blower Systems as Engineer.

Tuthill Websites

Fill-Rite
Sotera
Tuthill Pump
Tuthill Vacuum & Blower
Tuthill Plastics
T.O.P.S.

Register your Product

Product Registration

Social

Legal

Terms
Terms and Conditions
Privacy Policy
Disclaimer
Copyright Notice

Excellence at work. Excellence in life.

Search

Your search for **"air blower"** returned 3 results

Qx 3200, 4600, 6000 Manual

CONGRATULATIONS on your purchase of a new Qx® Rotary Positive Displacement **Air Blower** from Tuthill Vacuum & Blower. Systems. Please examine the ...

http://www.tuthillvacuumblower.com/ProductCatalog/3131.pdf

Product Manual for Tuthill Qube Rotary Positive Displacement Air ...

Tel 417 865-8715 800 825-6937 Fax 417 865-2950 www.tuthillvacuumblower. com. Rotary Positive Displacement. **Air Blower** System. Models. 400. 800. 1600.

http://www.tuthillvacuumblower.com/dam/3129.pdf

Product Manual for M-D Pneumatics™ PneuMax II Series Rotary ...

Displacement **Air Blower** Package from Tuthill Vacuum & Blower Systems. Please examine for shipping damage, and if any damage is found, report it ...

http://www.tuthillvacuumblower.com/dam/3128.pdf

Shraddha Jayakumar Joins

Shraddha Jayakumar has joined Tuthill Vacuum & Blower Systems as Engineer.

Relationships: My Awakening

Dictionary.com describes "relationship" as "a connection, association, or involvement" I must admit that definition has been my perspective...

About Tuthill's Journey

Tuthill is up to something special that reaches far beyond manufacturing rock solid products. We inspire the hearts and souls of customers, families, and employees...

Tuthill Websites

Fill-Rite
Solera
Tuthill Pump
Tuthill Vacuum & Blower
Tuthill Plastics
T.O.P.S.

Register your Product

Product Registration

Social

Legal

Terms
Terms and Conditions
Privacy Policy
Disclaimer
Copyright Notice

Excellence at work. Excellence in life.

Search

Your search for **"lobe blower"** returned 2 results

Technical Bulletin #40_0310.indd

... 2587 rpm, a 3.5% increase; BHP is 29.4, a 2.4% increase. If for some reason a 3 **lobe blower** is preferred then the 3 lobe Qx™ would be the blower of choice.

http://www.tuthillvacuumblower.com/dam/598.pdf

TECHNICAL BULLETIN #26

A precision rotary **lobe blower** is designed to run faster not slower. There are no inherent speed limitations on any of the bearings, gears or seals on any M-D ...

http://www.tuthillvacuumblower.com/dam/589.pdf

Danny Sanders Joins Tuthill

Danny Sanders has joined Tuthill Vacuum & Blower Systems as Director of International Sales.

Shraddha Jayakumar Joins

Shraddha Jayakumar has joined Tuthill Vacuum & Blower Systems as Engineer.

About Tuthill's Journey

Tuthill is up to something special that reaches far beyond manufacturing rock solid products. We inspire the hearts and souls of customers, families, and employees...

Tuthill Websites

Fill-Rite
Solera
Tuthill Pump
Tuthill Vacuum & Blower
Tuthill Plastics
T.O.P.S.

Register your Product

Product Registration

Social

Legal

Terms
Terms and Conditions
Privacy Policy
Disclaimer
Copyright Notice

Excellence at work. Excellence in life.

Cookies help us deliver our services. By using this site, you agree to the use of cookies. We do not store any personal details. Learn more Accept

FAQ

- When did Atlas Copco introduce the ZS screw type air blower?
- How old is lobe technology?
- What do we mean with screw type blower technology?
- Is the screw compression element by itself responsible for reducing energy consumption by up to 30 per cent compared to a 'Roots' type rotary lobe blower?
- For what industries, sectors and applications can screw type blowers be used?
- How much money can a customer typically save by using screw type blowers?
- Besides energy-efficiency, are there any other benefits that screw type blowers offer to customers?

When did Atlas Copco introduce the ZS screw type air blower?
Since Atlas Copco introduced the ZS screw type air blower in 2008, the company has focused on optimising and extending the range even further. By using screw type blowers instead of the widely used 'Roots' type rotary lobe blowers, customers can reduce energy consumption of their air blowing application by up to 30 per cent.

After the positive feedback following the introduction of the ZS in 2008 and the results of the TÜV test, Atlas Copco has decided to withdraw its ZL lobe technology blower range. The manufacturer believes the traditional 'Roots' type rotary lobe blower is no longer suitable in today's low carbon economy.

Back to top

How old is lobe technology?
The Roots brothers discovered the principle of the positive displacement blower in 1854. Small developments to reduce pulsation noise and vibrations were implemented when tri-lobe technology was introduced. Over time, only minor efficiency improvements have been made.

Back to top

What do we mean with screw type blower technology?
Atlas Copco refers to technology as the core compression component of an air compressor or blower such as piston, lobe, screw, scroll, centrifugal, tooth or vain. At the heart of a screw type blower is a screw compression element, consisting of a male and female rotor contained within a housing. Screw type technology should not be confused with twisted lobe technology, sometimes offered by other manufacturers.

Back to top

Is the screw compression element by itself responsible for reducing energy consumption by up to 30 per cent compared to a 'Roots' type rotary lobe blower?
The screw compression element has a big impact on energy-efficiency but is not solely responsible for the total amount of energy savings. Atlas Copco also includes a direct drive integrated gearbox instead of a belt/pulley system to reduce transmission losses. Furthermore, by using its experience in integrated components design, it is able to produce a complete blower package with minimal pressure drops across the air circuit. The combination of all these elements, which are all fully optimised and specifically designed for its use, result in a reduced energy consumption of up to 30 per cent.

Back to top

For what industries, sectors and applications can screw type blowers be used?

For what industries, sectors and applications can screw type blowers be used?
Screw type blowers will have an impact on a wide variety of segments and industries that rely on low pressure air blowing applications operating within a pressure range between 0.3 and 1 bar. Some specific industries/segments and corresponding types of applications that will benefit from screw type blowers are:

Industry/Sector	Application
Municipal wastewater treatment	Aeration System
Industrial wastewater treatment	Aeration System
Power generation (coal-fired)	Flue Gas Desulphurization
Chemicals	Pneumatic Conveying
Pharmaceuticals	Pneumatic Conveying, fermentation
Food & Beverage	Waste Water Treatment, Pneumatic Conveying, Drying, Aeration of final product
Non-woven textiles	Spunbond Meltblown Spunbond (SMS)
Pulp & Paper	Process Air
Cement	Pneumatic Conveying, Silo Fluidization
Mining	Lagoon aeration,Waste Water Treatment,Leaching (CIL), Combustion air (kilns/ roasters/ fluidized beds), Pneumatic Conveying ,Coal bed methane

Back to top

How much money can a customer typically save by using screw type blowers?
For this example we will use a typical municipal wastewater treatment plant that replaces lobe type blowers with screw type blowers and has a population equivalent to 100,000. Population equivalent expresses the strength of organic material in wastewater.

Such a plant normally has four working blowers and one additional blower on standby. A lobe type blower uses 75 kilowatt per hour (kWh). With four working blowers this adds up to 300 kWh. The typical running time of a municipal wastewater treatment plant is 8,000 hours. When we set the price of one kWh on a realistic 0.07 € this creates the following calculation:

300kWh * 8,000 hrs * € 0.07 – € 168,000

Typical energy savings with a ZS are on average 30 per cent compared to a lobe type blower. This means a ZS uses 52.5 kWh. With four working blowers this adds up to 210 kWh and creates the following calculation:

210kWh * 8,000 hrs * € 0.07 = € 117,600

In this example the cost savings on energy consumption for one year, just by replacing lobe type blowers with ZS blowers, amounts to ***€ 50,400***.

Back to top

Besides energy-efficiency, are there any other benefits that screw type blowers offer to customers?
Atlas Copco has over 50 years of experience with screw technology that complies with the requirements of ISO 9001 standard. Over time, the technology has been proven to be reliable. Industry proven element coating creates closer tolerances and increased lifetime with bearings that are designed for continuous operation. With the ZS+ VSD, customers can also benefit from cost savings on installation, as this blower comes as a complete plug-and-run unit with an integrated controller.

Back to top

Sustainable Productivity

Legal Notice, Privacy Policy, Copyright © 2010-2015 Atlas Copco Airpower NV. All rights reserved.

howstuffworks
Search HowStuffWorks
Adventure | Animals | Auto | Culture | Entertainment | Health | Home & Garden | Lifestyle | Money | Science | Tech | Video | Shows | Quizzes
Auto Basics | Tech and Transport | Auto Parts & Systems | Auto Racing | Buying & Selling | Car Models | Driving & Safety | Fuel Efficiency | Motorcycles | Trucks
Under the Hood
Home / Auto / Under the Hood / Engines / Engine Performance

How Superchargers Work

by William Harris

Page
1
2

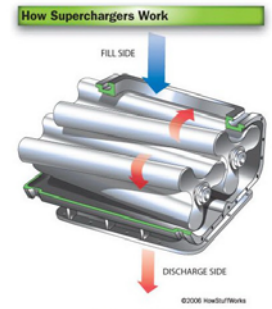
Roots Superchargers

There are three types of superchargers: Roots, twin-screw and centrifugal. The main difference is how they move air to the intake manifold of the engine. Roots and twin-screw superchargers use different types of meshing lobes, and a centrifugal supercharger uses an impeller, which draws air in. Although all of these designs provide a boost, they differ considerably in their efficiency. Each type of supercharger is available in different sizes, depending on whether you just want to give your car a boost or compete in a race.

The Roots supercharger is the oldest design. Philander and Francis Roots patented the design in 1860 as a machine that would help ventilate mine shafts. In 1900, Gottlieb Daimler included a Roots supercharger in a car engine.

Photo courtesy HowStuffWorks Shopper

The Eaton supercharger, a modified Roots supercharger.



Roots supercharger

As the meshing lobes spin, air trapped in the pockets between the lobes is carried between the fill side and the discharge side. Large quantities of air move into the intake manifold and "stack up" to create positive pressure. For this reason, Roots superchargers are really nothing more than air blowers, and the term "blower" is still often used to describe all superchargers.

MOST POPULAR
1 Do car interiors turn toxic in ?
2 Can a penny help you pass a r?
3 How Belly Tank Racers Work
4 Top 10 Causes of Car Fires
5 Quiz: The Worst Cars of the
Why can't we solve the Amelia Earhart mystery?
Best 10 All Wheel Drive Cars That Are Less Than $25,000
Kelley Blue Book

Free Shipping on Performance Auto Parts Order by 11 PM EST for Same Day Shipping!

JEGS 1-800-345-4545

CLEARANCE | Shop New Products | Shop by Brand | Product Index | Shop by Catalog | Free Catalog | Team JEGS

Search Part # or Keyword

Vehicle Search Year Make Model

Recent Searches

Shop By Category

JEGS Performance Parts
Air Filters & Cold Air Kits
Apparel, Hats & Shoes
Batteries
Bracket Racing
Brakes & Drivetrain
Cameras
Cams & Valvetrain
Car Care
Chassis, Steering, Suspension & Shocks
Chrome & Engine Dress-Up
Circle Track
Collectibles, Books, DVDs, Toys & Games
Computer Tuning
Cooling, AC & Heating
Engines & Components
Exhaust, Headers, Mufflers & Cat-Back Kits
Fasteners & Gaskets
Fittings & Hose
Fuel, Carbs & Intakes
Gauges & Tachs
Gift Certificates
Hoods, Scoops & Body
Ignition & Electrical
Interior Accessories
JEGS Easy Kits
Jeep Accessories
Jr. Dragster
LS / LT
Mopar Performance

SUPERCHARGERS

CLICK HERE TO SHOP

Everything You Want to Know About Superchargers

We'll Start With Supercharger Basics

There are currently three basic types of superchargers being sold in the performance market today: the Roots type, centrifugal, and "screw" type. We'll use the terms supercharger and blower interchangeably.

The centrifugal supercharger is very similar to a turbocharger, except the centrifugal supercharger is driven by a belt off the engine, while the turbocharger is driven by the force of the exhaust gases. These type of superchargers (or turbos) run at extremely high speeds. To achieve these high speeds in the centrifugal supercharger, there is an additional internal step-up drive inside the blower. Due to the design of these units, the faster the impeller spins the more boost the blower makes. As a result, these units typically do not produce much power at low engine speeds because the impeller is not spinning fast enough to make much boost. If it were even possible to gear the blower so that it would spin fast at low engine speeds, it would then make too much boost at higher engine speeds. Turbos employ a device called a "wastegate," which bypasses exhaust gas past the turbo when a certain boost limit is reached.

The screw type blower appears somewhat similar to a Roots type blower from the outside, but the internal rotors are quite different. In a screw type blower, the rotors interleave one another and as the outside air is drawn into the blower the rotors progressively compress the air inside the blower as it passes along the rotors. These rotors require an extremely high degree of tolerance and, as a result, the screw type supercharger is more expensive than a Roots.

The Roots blower is the simplest of all blowers and therefore is also the least

WHY BUY JEGS CLICK FOR DETAILS!

Free CATALOG

WEEKLY E-MAILS Sign Up Here

APPAREL SALE UP TO 60% OFF

FREE SHIPPING and HANDLING*

Google Trusted Store