REP Blower Briefs REP

Rotating Engineered Products, Inc. - Volume I No. 1 August 1990

INTRODUCTION

Welcome to the 1st edition of REP's newsletter, Blower Briefs. The purpose of this newsletter is to inform and educate those individuals who own, operate, maintain, purchase or specify blowers and vacuum pumps. Some of the topics which will be covered in this and future issues include nomenclature, selection and sizing criteria, applications, maintenance tips and requirements as well as new product offerings and product developments.

The newsletter will be formatted in a manner which will encourage you to place them in a three-ring binder or other binding medium so that they can become a part of your reference library. Blowers and vacuum pumps are typically a mystery and their theory of operation is unclear. This newsletter will hopefully provide greater insight into this type equipment.

REP is a Georgia corporation formed to fulfill the needs of those who own, operate or specify blowers and vacuum pumps for air and gas systems. REP offers extensive application knowledge on these types of systems and we hope to share what we know with you. Our goal is to offer you the best possible service at competitive prices.

PRODUCTS

REP offers a full line of services including design, engineering, blower and vacuum pump packages, repair and rebuild services. Quality new and used units and parts are available from our inventories in Georgia and Tennessee. A large inventory of **Sutorbilt® Blowers and Vacuum Pumps and Gardner-Denver® Cycloblowers®** are warehoused by the manufacturer in Memphis, Tennessee providing quick deliveries to locations in Georgia and Tennessee.

REP can provide systems utilizing components from most major blower and vacuum pump manufacturers including Roots, M.D. Pnuematics, Aerzen and many others.

REP is currently an authorized representative for the following manufacturers:

Blowers & Vacuum Pumps
Sutorbilt®
Gardner-Denver® Cycloblowers®
Duroflow® (WWT only)

Aftercoolers (Custom Built)
ASECO

Portable Pneumatic Conveying
Dunbar Kapple

Waste Water Systems
Wascon SampleMaster Fluid Sampling
Wascon Hydro-pneumatic Systems

REP wants to be your single source for blowers and vacuum pumps for air and gas applications.

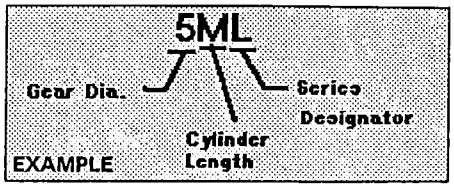
BLOWER NOMENCLATURE

There is usually some confusion involved in determining what information is required to order or specify a blower. If you are replacing an existing blower or vacuum pump, it is essential that the proper information is provided to your supplier so that you are not surprised when the replacement unit arrives.

Sutorbilt® utilizes three types of naming conventions for their products. The first thing which must be identified is which series is installed. The primary series are: California Legend, California F, California B, 4500, 5000, 6000 and 3100 series. The California series has been designed to be backward compatible from the mounting and performance perspective. The Legend series is the current production model and it was preceded by the F series which replaced the B series. The Legend series offers a broader band of performance in both flow and pressure while still being able to bolt into an

existing models installation.

Sutorbilt® utilizes specific model designators that tell much about the unit installed. The California series utilizes a convention which places the nominal gear diameter as the first place holder. Three letter designators are used: H for high pressure or short impeller length, M for medium pressure and medium impeller length, and L for low pressure and a long impeller length. The pressure designator is then followed by the series designator, which is either L, F or B. If the unit is a vertical configuration (explained later) the series designator may be preceded by a V.

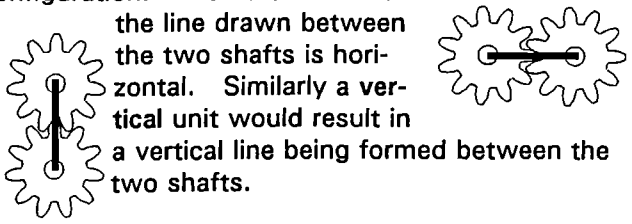


The 4500, 5000 and 6000 series utilize a naming convention used by many of the blower manufacturers in North America. A three or four number system is used. In a three number system, the first number indicates the nominal gear diameter and the last two represent the nominal impeller length. The four number system assigns the nominal gear diameter to the first two numbers and the nominal impeller length to the last two.

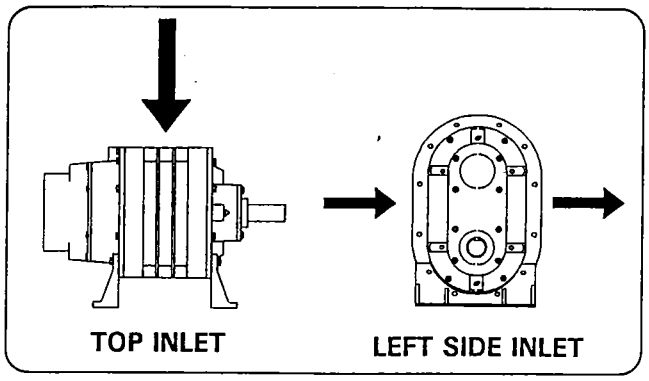
Knowing the gear diameter and impeller length tells us a great deal about the blower or vacuum pump. Total displacement can be estimated with these values. If the nameplate of the unit is missing, measure the cylinder length and center distance between gears or shafts. With a few other features of construction, the model, size and manufacturer can usually be determined.

The serial number of the unit can be extremely helpful in identifying your blower configuration. A serial number history is maintained to quickly identify the unit. This number should be provided to your supplier whenever possible.

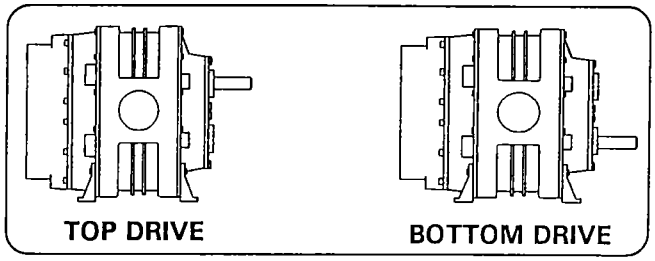
Blowers are identified as either horizontal or vertical configuration. A unit is horizontal if the line drawn between the two shafts is horizontal. Similarly a vertical unit would result in a vertical line being formed between the two shafts.



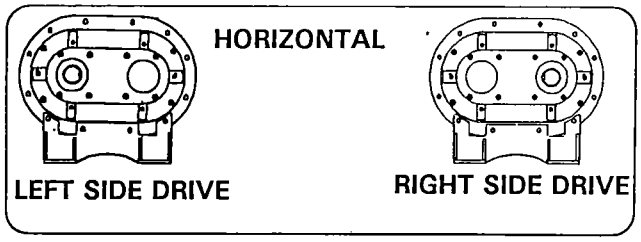
The inlet and discharge locations are critical so the proper unit can be supplied. You must specify whether you have a top, bottom, left or right discharge.



Shaft location is also important. If the unit is vertical you may have a top or bottom drive shaft.



If the unit is horizontal, then the shaft location would be either left or right side.



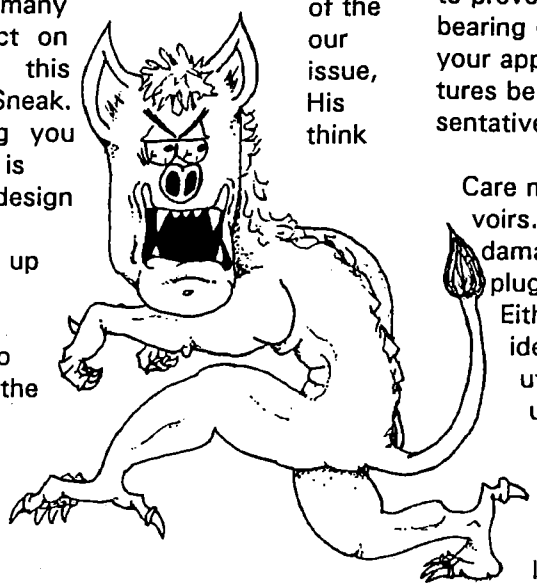
The type of gas the unit handles is also very important. Mechanical seals, packing or special sealing arrangements may be utilized on various models. This information must be provided to insure that the replacement utilizes seals appropriate for the application.

Many units utilize either splash lubrication or a combination of splash and grease lubrication. Some units however, utilize pressure lubrication. Pressure lubrication can usually be identified by the presence of a shaft driven lube oil pump, usually on the gear end, and the associated piping running to both the drive and gear ends.

Many blowers are designed to operated in either rotation. These units are referred to as center timed. Center timed refers to the method to which the internal clearances are set. Some units are timed for operation in only one direction. Timing in only one directions allows for better operating efficiencies in some cases. However, it should be noted that operation in the opposite direction could result in damage to the unit and ultimately to failure.

Maintenance Corner

REP is pleased to introduce the Blower Gremlin Collection. Through the coming years they have agreed to show us many of the problems they inflict on our equipment. In this issue, please meet the Sneak. His speciality is making you think that your equipment is operating within its design conditions and then insiduously sneaking up to cause problems.



His favorite trick is to make you think that the oil is at the proper level and providing adequate lubrication, when in reality it is in desparate need of change.

LUBRICATION

The oil in the gearbox should be drained flushed and replaced every 1500 hours under normal operating conditions. If the unit is operating at higher vacuums and pressure (greater then 10"Hgg or 12 psig) levels, it should be replaced more often. This interval may be every 500 hours or when the oil becomes discolored. Environments where there are suspended solids in the air also require more frequent oil changes due to particulates passing past the seals and into the bearings.

A high quality oil should be used. For applications having a discharge temperature from 32°F to 100°F should use an SAE 20(viscosity of 65 centistokes @ 40°C) grade oil. This oil would typically be used in very cold weather or applications which require very little vacuum or pressure rise capabilities. For applications which have discharge temperatures in the 100°F to 275°F range an SAE 40 (viscosity of 150 centistokes @ 40°C)grade oil is required. When the discharge temperature exceeds 275°F an SAE 50 (viscosity of 250 centisokes at 40 °C)grade oil is recommended. For those applications with extreme variations in discharge temperature a multi-viscosity oil may be used. A 20W-50W SAE grade multiple viscosity oil is recommended.

Many of the units utilize grease lubrication on the drive end bearings. The bearings will have a grease fitting. These bearings should be greased every 500 hours. When regreasing, the old grease will be forced out the vents during operation. The old grease must be removed to keep the vents clear to prevent damage to the seals. A Number 2 bearing grease should be used on Sutorbilt units. If your application operates with discharge temperatures below 32°F, please consult your local representative for the grease which would be best suited.

Care must be taken to properly fill the oil reservoirs. Too much or too little oil may result in damage to the unit. Typically a vented oil fill plug is removed for access to the oil reservoir. Either a sight glass or a oil level plug is used to identify the oil fill level. If an oil level plug is utilized, remove the plug and fill the reservoir until oil begins to drip out. If a sight glass is used, fill until the oil is at the midpoint of the sight glass.

INLET FILTER

If an inlet or inline filter is utilized to filter the air and gas, it should be cleaned at regular service intervals. If the filter is not cleaned, excessive pressure drop across it will be experienced resulting in higher blower or vacuum pump discharge temperatures. High discharge temperatures can result in failure of the machine due to excessive thermal growth causing the impellers to grow into the headplates. Excessive pressure drop also results in higher horsepower requirements to meet your system requirements. Clean filters are like putting money in the bank.

Many filters have replaceable cartridge type filters or panel filters. Typical materials of construction are paper, felt or wire mesh. The paper filters are usually discarded, but can be cleaned with soap and water and reused once if care is taken. Filters that utilize felt are not washable and should be discarded. Wire mesh filters can be cleaned with warm water and mild detergent or a solvent such as kerosene. The filter must be allowed to dry completely, which can be accelerated with com-

pressed air. A wire mesh filter will typically need to be recharged with Filter Adhesive or by dipping in standard motor oil. If oil is used, use SAE30-50 and allow element to drain thourghly before putting to use.

An inexpensive filter restriction gauge can be used as a convenient method to monitor the pressure drop across the filter. This gauge can be a valuable tool to indicate when a filter needs to be changed.

If you are not using an inlet filter of some kind, you are taking a significant risk. So please consider one for your installation.

EXCHANGE PROGRAM

Interested in a blower or vacuum pump exchange program? Give Jim a call at (404)320-6323 or send us a fax. Let us know what equipment you have and if possible, we will endeavour to support it.

BLOWER REGISTRATION

We are currently reviewing inventory requirements and we need your help. In an effort to serve you better, please drop us a line or give us a call with the following information about your equipment:

Manufacturer
Model/Series
Serial Number
Size

We will make every effort to place the parts, new and used equipment you require in our inventory for quick access.

USED EQUIPMENT ??

If you have blowers or vacuum pumps which are no longer needed, let us know, we may be interested!

Editors Notes:

Please let us know how you like the newsletter. We value your opinions and would like to integrate your ideas in future issues.
If you would like to have specific areas, regarding blower performance, systems, maintenance or accessories covered, please let us know.

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