1-10D PORTABLE BLAST UNIT

SPECIFICATIONS

WHEELABRATOR UNIT

The 1-10D is equipped with one (1) 8 inch diameter cast wheel with four (4) integral blades and impeller. This wheel is belt driven by a 10 h.p., 3600 RPM motor. The wheel, with cast impeller and blades, makes for easier maintenance.

The one piece wheel and control cage are all precast of a special wear resistant alloy.

BEARING UNIT

A high speed, grease lubricated bearing unit.

BLAST HOUSING

Wheel outer housing is fabricated of $\frac{1}{4}$ inch manganese steel with replaceable $\frac{1}{2}$ inch wear resistant liners.

REBOUND PLENUM

The plenum is a continuous curvilinear design with a constant cross section fabricated of $\frac{1}{4}$ inch manganese steel for wear resistance. This method of transferring abrasive and contaminants from horizontal work surface to separator uses pure kinetic energy and no mechanical means.

MAGNETIC SEALS

Special designed magnetic seals are used to seal between the lower portion of the machine and the horizontal work surface to minimize loss of abrasive and contaminants. This method requires no brushes, rebound bars, or other high wear parts.

SEPARATOR

The separator is an airwash design with replaceable rebound plate. Its function is to remove dust, foreign materials, and pulverized abrasive from reuseable abrasive. When the contaminants are removed, they are transferred to the dust collector and good abrasive is returned to storage hopper for reuse.

1-10D SPECIFICATIONS (Cont'd)

DRIVE

This unit is self-propelled with a single front drive pneumatic wheel, using a ¼ h.p. DC motor and gear box to have a lineal travel speed from 0-70 feet per minute. When not under power and for ease of moving to the job, the drive has a quick release pin for free wheeling.

ELECTRICS

The 1-10D is equipped with a control panel to house starters, fuses, and other electrical components required to make the 1-10D function.

A. 10 h.p. wheel
B. ¼ h.p. DC drive motor
C. Wheel Motor Amp Meter
D. Forward/Reverse travel switch
E. Variable travel speed switch
F. Hour Meter

Voltage - 220 Volts, 3 Phase, 60 Hz
Total AMPS 29

Weight - 450 Lbs (approximately)

Dimensions - Length - 5'2" - Width - 1'4½" - Height - 2'10" (approximately)

554 ULTRA JET DUST COLLECTOR

SPECIFICATIONS

CARTRIDGE HOUSE

The cartridge house encloses five (5) paper element cartridges.

DUST BIN

There is one (1) conveniently sized dust bin located under the cartridge house which is removable for dumping.

CHASSIS

The entire unit is caster mounted. A swivel caster is mounted under the air inlet and two (2) rigid casters are mounted under the frame which houses the blower and compressor.

ELECTRICS

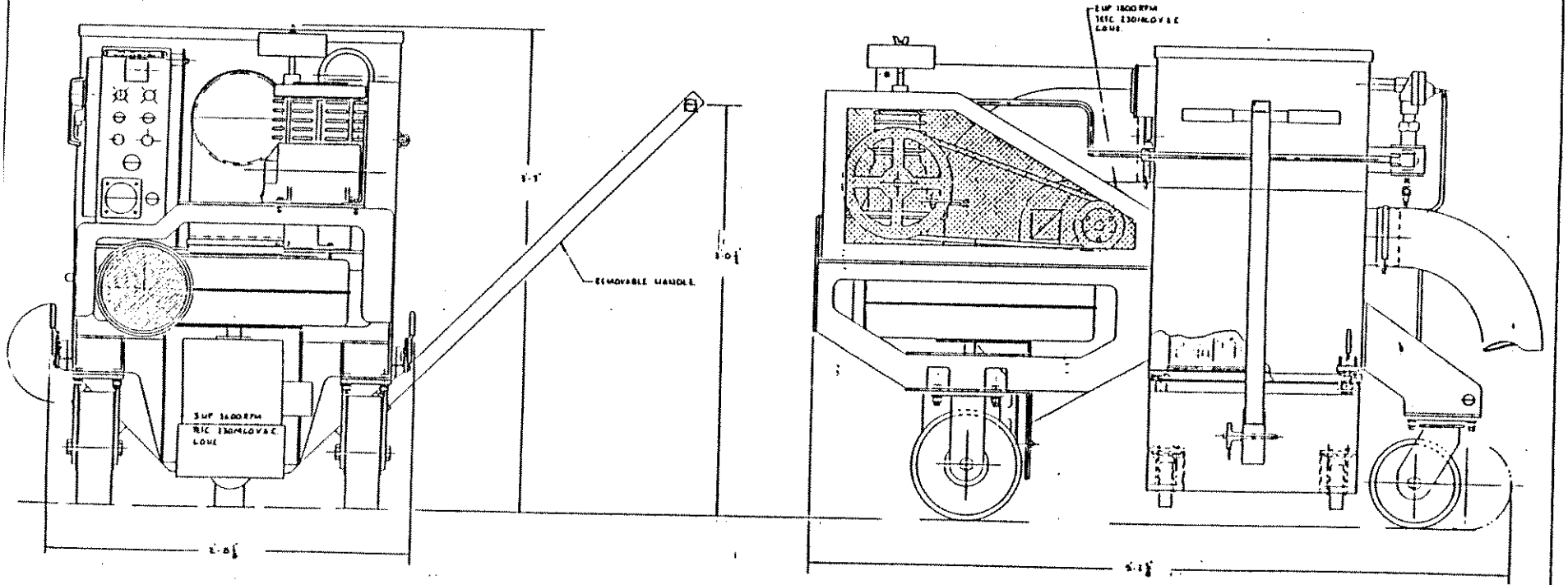
The 5-54 Ultra Jet is equipped with a master control panel to house starters, fuses, and other electrical components required to make the 5-54 and 1-10D function.

A. 5 h.p. blower motor
B. 2 h.p. compressor motor
C. Pulse time 10-20 seconds
D. Cartridge vacuum gauge
E. Blower hour meter

Voltage - 220 Volts, 3 Phase, 60 Hz
Total AMPS 22

Weight - 865 Lbs (approximately)

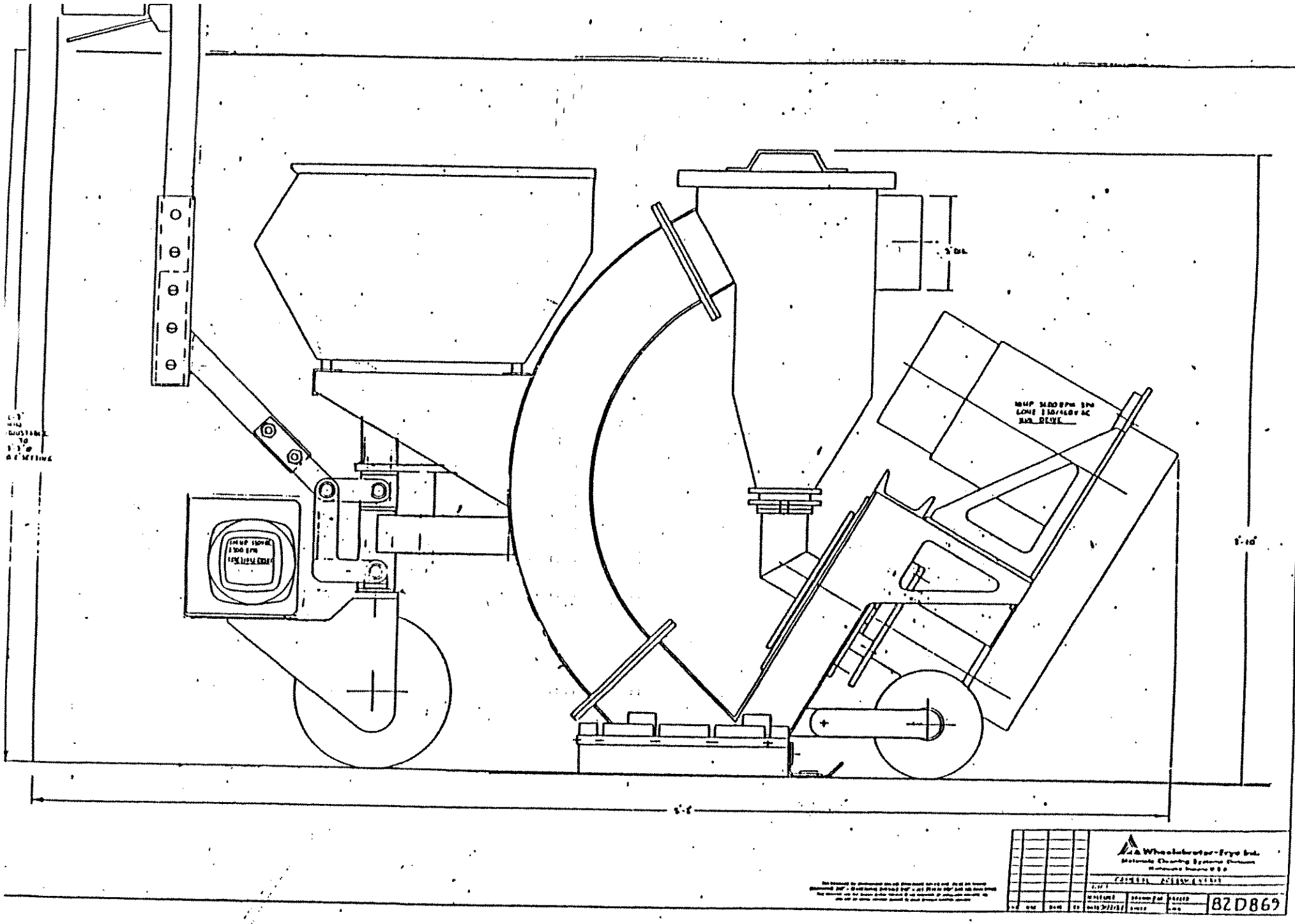
Dimensions - Length - 5'2½" - Width - 2'8" - Height - 3'7" (approximately)



Wheelabrator-Frye Inc.
Materials Cleaning Systems Division
Mishawaka, Indiana U.S.A.

BZ D1301

554 Collector



Wheelabrator-Frye Inc.
Materials Cleaning Systems Division

82D869

1-10D PORTABLE BLAST UNIT

SPECIFICATIONS

WHEELABRATOR UNIT

The 1-10D is equipped with one (1) 8 inch diameter cast wheel with four (4) integral blades and impeller. This wheel is belt driven by a 10 h.p., 3600 RPM motor. The wheel, with cast impeller and blades, makes for easier maintenance.

The one piece wheel and control cage are all precast of a special wear resistant alloy.

BEARING UNIT

A high speed, grease lubricated bearing unit.

BLAST HOUSING

Wheel outer housing is fabricated of $\frac{1}{4}$ inch manganese steel with replaceable $\frac{1}{2}$ inch wear resistant liners.

REBOUND PLENUM

The plenum is a continuous curvilinear design with a constant cross section fabricated of $\frac{1}{4}$ inch manganese steel for wear resistance. This method of transferring abrasive and contaminants from horizontal work surface to separator uses pure kinetic energy and no mechanical means.

MAGNETIC SEALS

Special designed magnetic seals are used to seal between the lower portion of the machine and the horizontal work surface to minimize loss of abrasive and contaminants. This method requires no brushes, rebound bars, or other high wear parts.

SEPARATOR

The separator is an airwash design with replaceable rebound plate. Its function is to remove dust, foreign materials, and pulverized abrasive from reuseable abrasive. When the contaminants are removed, they are transferred to the dust collector and good abrasive is returned to storage hopper for reuse.

1-10D SPECIFICATIONS (Cont'd)

DRIVE

This unit is self-propelled with a single front drive pneumatic wheel, using a ¼ h.p. DC motor and gear box to have a lineal travel speed from 0-70 feet per minute. When not under power and for ease of moving to the job, the drive has a quick release pin for free wheeling.

ELECTRICS

The 1-10D is equipped with a control panel to house starters, fuses, and other electrical components required to make the 1-10D function.

A. ¼ h.p. wheel
B. ¼ h.p. DC drive motor
C. Wheel Motor Amp Meter
D. Forward/Reverse travel switch
E. Variable travel speed switch
F. Hour Meter

Voltage - 220 Volts, 3 Phase, 60 Hz
Total AMPS 29

Weight - 450 Lbs (approximately)

Dimensions - Length - 5'2" - Width - 1'4½" - Height - 2'10" (approximately)

554 ULTRA JET DUST COLLECTOR

SPECIFICATIONS

CARTRIDGE HOUSE

The cartridge house encloses five (5) paper element cartridges.

DUST BIN

There is one (1) conveniently sized dust bin located under the cartridge house which is removable for dumping.

CHASSIS

The entire unit is caster mounted. A swivel caster is mounted under the air inlet and two (2) rigid casters are mounted under the frame which houses the blower and compressor.

ELECTRICS

The 5-54 Ultra Jet is equipped with a master control panel to house starters, fuses, and other electrical components required to make the 5-54 and 1-10D function.

A. 5 h.p. blower motor
B. 2 h.p. compressor motor
C. Pulse time 10-20 seconds
D. Cartridge vacuum gauge
E. Blower hour meter

Voltage - 220 Volts, 3 Phase, 60 Hz
Total AMPS 22

Weight - 865 Lbs (approximately)

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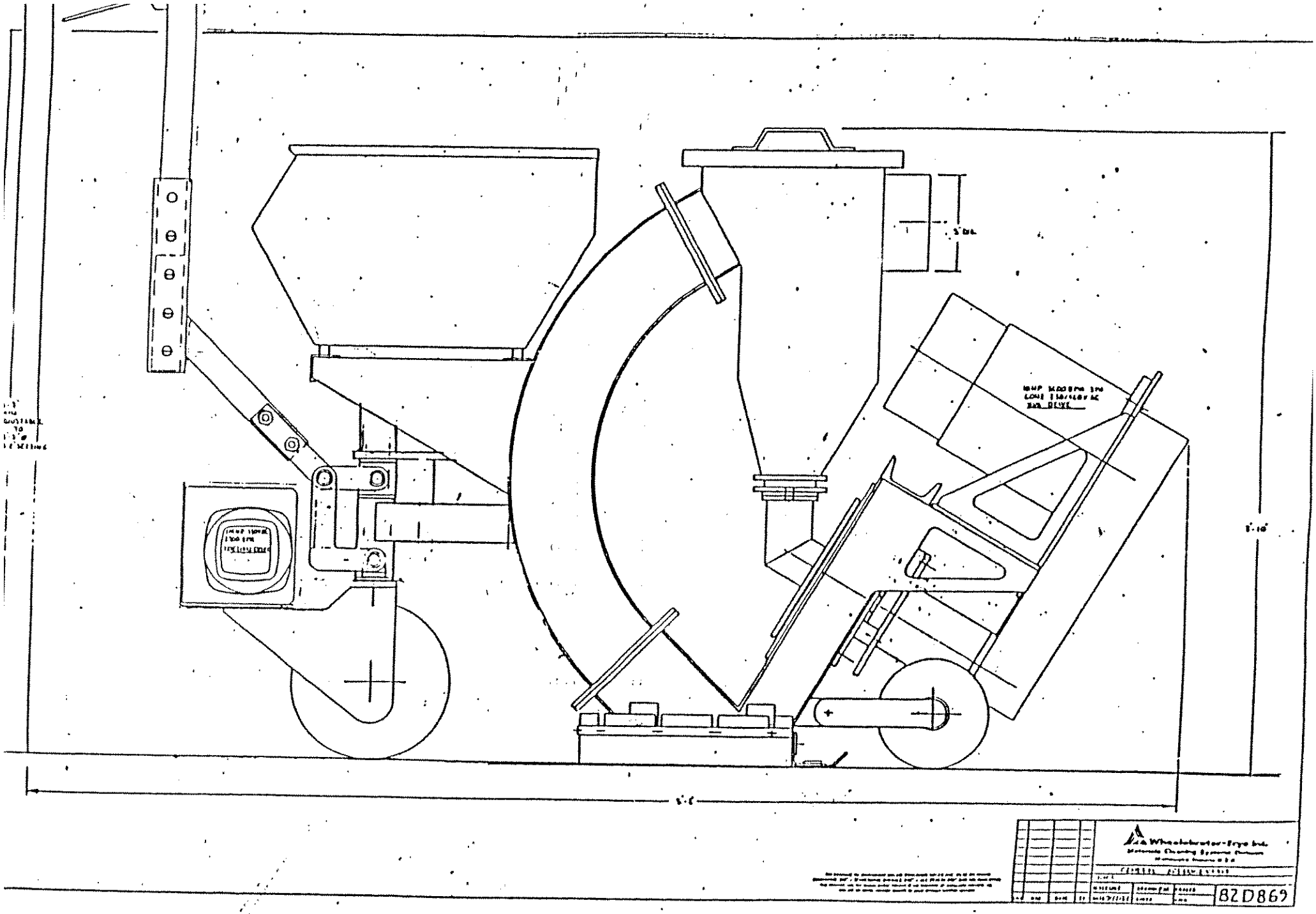

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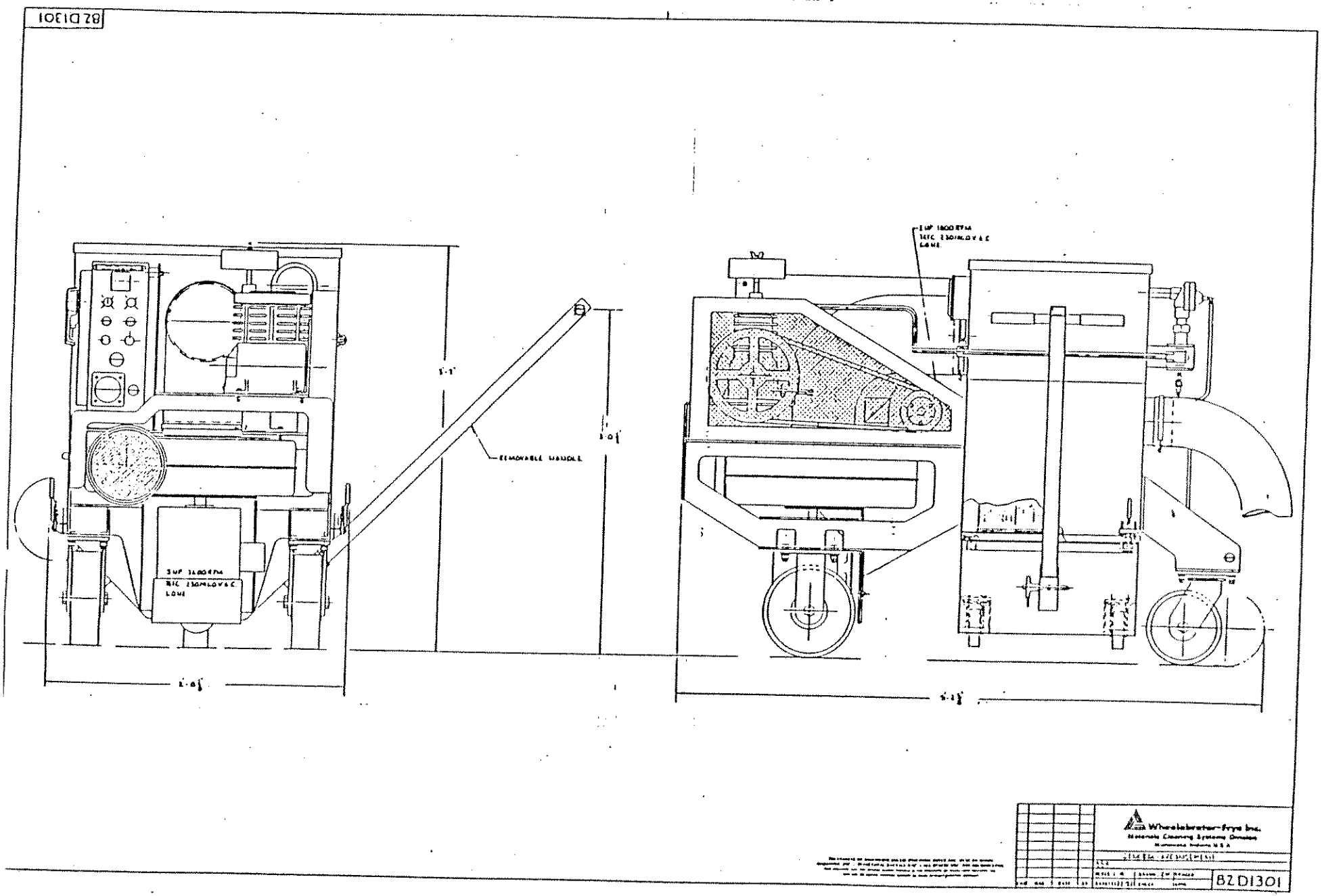


554 Collector

U. S. FILTER

BLASTRAC

HAZARDOUS MATERIALS

SAFETY WARNING

Some floor or deck surfaces may be coated with or contaminated by **hazardous material**. Typical examples of hazardous materials include tile mastic which is likely to contain **asbestos**, stained areas near electrical equipment which may contain **PCBs**, old paint, which may contain **lead**, stained or surface contaminated floor areas in chemical or other industrial facilities that may contain **pesticides**, **cleaning fluids**, **solvents**, or other **harmful chemicals**.

During the normal operation of shot blasting equipment, surface material is removed and dust is created. When the surface material is contaminated, the dust may contain hazardous material.

It is very probable that dust will be released during the normal operation of U. S. Filter/Blastrac equipment. If this dust contains hazardous material, there is a danger that exposure to this dust may pose a health risk.

Before using U. S. Filter/Blastrac equipment on any surface, the area must be inspected for possible contamination.

U. S. Filter/Blastrac does not warrant its equipment to be suitable for, or approved for, removing hazardous materials.

Before beginning any project involving the removal of hazardous materials, it is the responsibility of the contractor to ensure that the work site and equipment to be used have been inspected and the proposed work has been approved by the proper authorities. It is also the responsibility of the contractor to notify workers of any potential health risks and ensure that workers are properly protected from exposure to hazardous materials and from the long term effects of such exposure.

U. S. Filter/Blastrac Portable Shot Blast Cleaning Systems are not designed for use to remove, clean, profile, or alter any surface coated with or otherwise contaminated by hazardous material. U. S. Filter/Blastrac expressly disclaims any liability for injury, illness, death, or damage that might occur or result from such use.

INTRODUCTION

This manual has been prepared to assist the operator and maintenance personnel in understanding the machine so that it may be operated in the safest and most efficient manner and maintained in the best condition. Therefore, it is necessary that all personnel responsible for the operation and maintenance of the machine read and understand the manual.

Before attempting to operate, service or maintain the machine, the personnel should thoroughly familiarize themselves with the physical make-up of the machine. They should be familiar with the major components of the machine and have a general understanding of overall operations.

The operating and maintenance personnel must obey all the warnings and safety precautions posted on the machine and stated throughout this manual. Serious injury to personnel or severe damage to the equipment may result if the warnings and precautions are not followed.

You will be notified of any changes which occur after this manual is printed. We will send you manual revisions that should be inserted in the manual in accordance with instructions which will be forwarded with them.

Receipt of Machine

Examine the shipment carefully for possible damage that might have occurred while in transit. If any damage is noted, notify the transportation carrier immediately and advise U. S. Filter/Blastrac.

Section 1

Note: All operators and maintenance personnel should read this section and the safety instructions in Section 4 before operating or maintaining this equipment.

This Blastrac Operator's Manual has been specifically prepared for operating and maintenance personnel working with the 1 - 10D and 654 Dust Collector shotblasting system. The information in this manual is intended to provide an understanding of the equipment for safe operation and maintenance.

Safety Instructions

All operating and maintenance personnel must observe all warnings and precautions that are listed in this manual for the 1 - 10D and the 654 Dust Collector. All safety and warning labels posted on the machine must be followed as well as the safety program instituted by your individual management.

The Blastrac Model 1 - 10D has been manufactured for your specific floor preparation application. The engineering design of this airless media blast machine incorporates several basic elements. These include the airless media blast wheel, media recycling system and dust collection system. As a result of many years of operating and engineering experience, the features of these machines, when used with the proper operating and maintenance procedures, enable them to operate in a safe, efficient and trouble free manner.

A thorough understanding of your Blastrac machine will help ensure that the machine can be operated efficiently and safely. No instructions, written or verbal, can be effective without the use of sound judgment and good work practices in the operation and maintenance of the equipment. Listed below are the practices that should always be observed.

CAUTION

Always keep the abrasive valve control lever in the off/closed position except when the machine is actually blast cleaning. Whenever an irregular, unusual or hazardous performance of the machine occurs, immediately close the abrasive control valve, release the handle limit lever to deactivate the travel limit switch and shut off the blast wheel motor.

Before actual shotblasting can begin, the operator should be certain that the machine can clear all obstructions in the work area. Work areas must be dry and clean (no loose debris) before cleaning can begin.

Maintain all guards in place - Blastrac machines are equipped with guards or coverings for parts that may be hazardous.

All personnel in the immediate work area **must wear safety glasses with side shields** whenever the machine is blasting. Protective clothing is also recommended. Long sleeve shirts and safety shoes should be worn and loose clothing should be avoided. The abrasive used in the machine impacts the work surface at high velocity. Any leakage during normal operation can sting personnel in the surrounding area. The blast head must be sealed to the work surface during operation to prevent abrasive leakage.

MECHANICAL

1. Before performing any type of maintenance on your Blastrac equipment, be sure that all moving parts have completely stopped. The blast wheel, for example, may continue to rotate for a period of time once it has been deactivated.

    - Every power source that can produce mechanical movement has been deactivated and locked in the off position.
    - Potential energy sources must be minimized. (Ex.: Move the machine to level ground before performing any maintenance so machine cannot move by gravitational force.)
    - Loose or freely moveable parts of the machine must be secured against accidental movement.

2. All drive guards must be kept in place and in good condition except during maintenance or when repair work is being performed. Once maintenance or repair work is complete, be sure all guards are securely remounted.

3. Safety glasses with side shields should always be worn when working with or near equipment in use. Gloves, when applicable, can be worn for added protection.

4. Loose fitting clothing and gloves should not be worn when working near belts, chains, sprockets, shafts and other moveable components.

The blast machine and all areas around the machine should be kept clean. Loose media in particular can become hazardous for foot traffic. All abrasive leaks should be repaired **immediately** to help keep the work area free of loose abrasive.

6. Any condition(s) that may result in additional damage to the equipment or cause injury to nearby personnel should be repaired **immediately.**

7. Do not attempt to make adjustments to the feed spout or any control cage components while the machine is in motion or the blast wheel is operating. All adjustments must be made when the machine is stationary and the blast wheel is completely stopped.

8. Obey all safety and danger signs posted on the machine and all information posted where the machine is being operated.

9. **Do not operate Blastrac machinery in the rain or when heavy moisture is present. Do not expose the abrasive supply to any type of moisture.** Sticky, tar related and rubber surfaces should be avoided when using Blastrac machinery. Always drain unused abrasive from the machine and empty the dust collector hopper before transporting the equipment.

ELECTRICAL

1. Do not operate the equipment with the electrical panel door(s) open. A panel door interlock is designed to prevent anyone from opening a panel door unless the internal disconnect switch is in the off position.

2. Never use oversized fuses or bypass any fuses to operate the machinery. Always refer to the electrical drawings provided for the individual machines for proper size and type of fuses.

3. When replacing electrical components, care should be taken to use the exact component that was originally supplied with the machine. These parts are listed in the electrical section of this manual. Coils, contractors and relays must have the proper ratings determined by the motor nameplate.

4. **Disconnect all power connections** (lock out/tag out, if necessary) before attempting maintenance or repair of any electrical component.

5. Avoid all contact with rotating motor parts, drives or driven components.

6. Before energizing the equipment, check that the proper power source is connected (voltage, frequency and phase). Check the motors for proper rotation once the power source has been verified. Sustained improper motor rotation can damage machine components.

The Blastrac Model 1 - 10D and 654 Dust Collector can operate on either 230 or 460 volt, three phase, 60 Hertz power. Note that these voltage choices require wiring changes when converting from one voltage to the other. A list of these changes can be found in Section 10. Remember that proper electrical safety precautions should be taken when making these wiring changes, regardless of which voltage is being used. Handle all connectors, cables and junction boxes with caution. Avoid contacts with energized circuits. **Do not disconnect power plugs while any electrical circuits are energized.**

DUST COLLECTOR AND VENTILATION

All Blastrac abrasive blast equipment must be properly ventilated to be environmentally effective. This benefits the operator, machine efficiency and **contributes significantly to better wear and less maintenance.**

Dust collectors of all types should have their dust hoppers kept at the lowest practical level. The importance of checking the dust level during normal working conditions cannot be over-stressed. Doing so allows the blast system to help keep the abrasive as clean as possible, thereby eliminating the greatest cause of wear to the internal components of the machine.

Cleaning the dust hopper at the end of each working day or shift is also very important. Many types of dust (dependent on the surface being cleaned) have the potential to easily ignite when left stored. The hazards of fires and explosions are minimized when the dust is removed as recommended.

Section 2

Customer's Responsibilities

1. The customer shall provide one of the following electrical sources:

   ◊ A 460 volt, three phase, 60 Hertz, 30 Amp power source

   ◊ A 230 volt, three phase, 60 Hertz, 50 Amp power source.

   The estimated full load amperage of the entire system at **460 volts is 20 amperes**. The estimated full load amperage for the entire system at **230 volts is 40 amperes.**

   - **A 30 KW Generator or larger is recommended when using the 1 -- 10D and the 654 Dust Collector. Smaller generators will not handle the motor start-up amperage necessary for this equipment.**

2. The customer shall provide personnel who have been trained by a Blastrac Technician for the operation and maintenance of Blastrac equipment.

3. The customer shall provide the necessary blasting media in accordance with the recommendations of a Blastrac technician so that the machine will operate at maximum efficiency.

4. The customer shall be responsible for the observance of all safety precautions expressed in this manual.

5. The customer shall perform all maintenance and basic repair functions as stated and described in this manual.

6. The customer shall maintain an inventory of "wear parts" as outlined in this manual.

7. The customer shall dispose of all dust collector refuse.

8. The customer shall provide the following tools and accessories:

Hammer	Screwdrivers	Buckets	5/16" Allen Wrench
Wrench Set	VOM (Meter)	Brooms	

Section 3

Description and Function

General - Refer to Figure 1

The Blastrac model 1 -- 10D is a horizontal surface preparation, closed cycle, shotblasting machine. The machine directs high velocity metallic abrasive towards the work surface. The impact of each individual particle causes the surface to fracture and become loose. The abrasive and the loose surface particles are then directed upward due to the force of the impact and a strong air flow created by the dust collector. The mixture of shot and contaminants enters the rebound plenum and continues its upward movement until directed into a specially designed chamber called the separator. Inside this chamber, an air wash cleans the abrasive and allows the contaminants to be extracted back to the dust collector. The clean abrasive is then gravity fed to the blast wheel and the process repeats. The blast unit is self-propelled by a variable speed electric drive. Under normal blast cleaning conditions, a dust collector must always be used. The Model 1 -- 10D depicted in Figure 1 is composed of the following elements:

- Abrasive Cleaning Head
- Abrasive Control Valve
- Rebound Plenum
- Separator
- Abrasive Seals
- Chassis
- Control Panel

Abrasive Cleaning Head

The center of the patented abrasive cleaning head is the power driven, four bladed blast wheel that throws abrasive towards the surface being cleaned. This center fed centrifugal blast wheel propels the abrasive by centrifugal force at a speed of more than 200 mph.

This blast wheel is enclosed in an abrasive resistant housing that is also lined with abrasive resistant liners. These liners are located in areas where the most wear is present so the operator can change them periodically to protect the housing. The blast wheel itself is driven by an electric motor connected to a set of belts and sheaves that are in turn connected to a bearing unit.

The blast wheel is equipped with a cast in place impeller for easy maintenance. This impeller pre-accelerates the abrasive to the wheel blades in controlled portions. Abrasive that is gravity fed to the center of the wheel is accelerated in segments and directed through the control cage. The control cage determines where the abrasive is introduced onto the rotating blades of the wheel which in turn determines where the abrasive is being "aimed". The setting of the control cage is very important when setting up the "blast pattern" covered in Section 5.

The electric motor that drives the blast wheel has an in-line ammeter which determines how much abrasive is being delivered to the wheel. The motor will work harder when delivering more abrasive which causes the motor to draw more current. If the ammeter reads full amperage when blasting, the operation is at maximum efficiency. This rating is listed on the control panel for easy reference and can also be found on the motor name plate.

Abrasive Control Valve Refer to Drawing SD3103

The abrasive control valve regulates the amount of abrasive delivered to the blast wheel. The main component of this device is a butterfly valve surrounded by a ring of magnets which, when closed, seals off the abrasive flow. A slight gap exists between the disk on the butterfly assembly and the outer wall of the valve. When the disk is horizontal, the magnets provide a seal that closes the gap with steel shot and stops the flow of abrasive. The valve is manually operated from the right side of the control panel and can be adjusted so that the maximum amperage can be obtained by fully opening the valve. A series of mechanical stops are incorporated in the valve actuator which allows for this adjustment.

Rebound Chamber (Plenum)

Once the abrasive has impacted the work surface, the shot is directed into the rebound plenum. This curved portion of the machine absorbs a large percentage of the force exerted by the high velocity abrasive and helps dissipate the heat generated by the blast process. Once the abrasive and contaminant mixture reach the top of the rebound plenum, it enters the separator.

Separator

Once the contaminated abrasive leaves the rebound plenum, it enters the separator and immediately encounters the deflector plate. The deflector plate slows the abrasive down even more before it enters a tray at the bottom of the deflector plate. The contaminated abrasive hits the abrasive already at the bottom of the plate and effectively absorbs any residual force left in the moving mixture. The contaminated abrasive then falls through a curtain of high velocity clean air which physically separates the heavy abrasive and the lighter contaminants. The air wash pulls the contaminants through the separator towards the exhaust and eventually to the dust collector. The clean abrasive falls to the bottom of the separator to be reused.

Abrasive Seals

Magnetic seals are present on three sides of the rectangular opening at the bottom of the blast housing. These magnets draw loose abrasive onto their surface and provide a cushion to help contain the high impact abrasive from the surface being cleaned. The fourth side, located at the rear of the machine, has a skid plate attached which drags across the work surface and allows clean air to be drawn inside the machine for cooling and to assist in the reclamation process.

Chassis

All components on the blast unit (1 -- 10D) are mounted on a mobile transporter. This transporter or carriage is a three wheel, self-propelled unit powered by a 1/4 horsepower electric DC motor. This motor, with its self contained gear reducer, transfers power to the drive wheel via chain and sprocket. The speed of this motor is set by the operator by varying the setting of the speed control potentiometer located on the control panel. A quick release pin located on the drive wheel sprocket engages the chain drive and can be removed to allow the machine to free wheel.

The machine has two built in lifting holes located at the top of the rebound plenum and the motor mounting bracket. These lifting eyes allow the machine to be easily raised and lowered for maintenance and transportation.

Description and Function

The operator's handle (steering handle) contains a lifting cam to allow the operator to lift the blast seal over small obstructions. Once the machine is raised in this manner, gravity will force it down after the obstruction has been cleared.

Operator Controls

The control panel on the Model 1 -- 10D is provided with the following controls and instruments that are used to operate and monitor the unit.

- ◊ Speed Control Potentiometer - Regulates the input voltage to the SCR drive (KBIC board) which determines the motor speed.

- ◊ Forward/Reverse Switch - Used to activate forward or reverse relays which determine the polarity of the DC voltage supplied to the drive motor. The polarity of the voltage determines the motor direction. The switch has three positions. The center position is actually an off or brake position which sends a corresponding signal to the KBIC board to protect it from abrupt direction changes.

- ◊ Main Disconnect Switch - Removes or connects power to the blast unit. This switch must be in the off position to allow the panel lid to be opened.

- ◊ Hour Meter - Indicates the elapsed time for the wheel motor.

- ◊ Ammeter - Indicates how much current is being drawn by the wheel motor. and allows the operator to monitor proper abrasive flow.

- ◊ Motor Start/Stop Buttons - Allows operator to start or stop the wheel motor with 120 volt control voltage circuitry.

- ◊ Abrasive Control Valve Throttle - Used to open or close abrasive butterfly valve which controls the flow of abrasive.

- ◊ On/Off Switch (Deadman Switch) - This switch is not located on the control panel, but it is very important when operating the blast unit. This switch is located beneath the steering handle grip and is lever actuated. This switch enables/disables the forward or reverse relays in the control panel. If the steering handle is released by the operator, the directional relays are disabled and the drive cannot operate.

3

654 Dust Collector

The Blastrac Model 1 -- 10D shall not be used for blast cleaning unless it is attached to a proper air exhaust hose and dust collector. A special Pulse Jet Dust Collector, Model 654, has been designed to operate in conjunction with the 1 -- 10D unit.

The 654 Dust Collector is normally attached to the 1 -- 10D with 50 feet of 5 inch diameter flexible exhaust hose. This dust collector is designed to be able to fit through a 34 inch door opening and is mounted on a mobile chassis. During actual operation, the 1 -- 10D cleans in a radial area around the dust collector. Once an area is cleaned, the entire system is moved to an adjacent area to repeat the process. During some applications, the dust collector may be parked in an adjacent room and connected with a longer hose. This procedure is usually done on steel surfaces where less dust and contaminants are being removed. Blastrac does not recommend using more than 50 feet of hose on concrete surfaces. Consult with your Blastrac representatives if you have a particular application that requires a longer exhaust hose. The 654 Dust Collector is composed of the following elements:

- ◊ Filter Chamber
- ◊ Dust Bin
- ◊ Blower
- ◊ Minihelic Gauge
- ◊ Pulse/Pressure System
- ◊ Chassis
- ◊ Electrical Control Panel

Filter Chamber

The central part of the dust collector is the filter chamber. Dust laden air enters the chamber from the blast machine through the exhaust hose and into the vent hose connection located at the bottom left from the control panel. The dirty air passes through a plenum and flows through an array of six vertically mounted, specially designed filter cartridges. Dust is captured on the surface of these filters allowing clean air to pass to the clean air portion of the dust collector where it exhausts to the open atmosphere.

The dust that was trapped on the external surface of the filters is periodically removed by pulsing the filters with an internally supplied burst of compressed air. This momentary pulse of air allows the dust to fall to the bottom of the filter chamber. Two filters are pulsed (in sequence) at a time determined by a timer board located in the control panel. This timer board is usually set to pulse a two filter bank every 10 seconds and allows the pressurized air reservoir to drop about 30 PSI during each pulse. The timer board determines the time between pulses and the length of each pulse. Venturi valves are located above each filter for maximum filter cleaning efficiency.

Dust Bin "Hopper"

Once the dust falls to the bottom of the chamber, it collects in a special disposal mount that can be removed. The dust collector must be turned off before removing the dust bin from the machine for dust disposal. **Care should be taken to ensure that the dust bin does not overfill. Filter damage can occur if the dust level exceeds the top of the dust bin.**

The dust bin is equipped with wheels and a handle to assist when disposing of the dust. Care should be taken when loosening the clamps. A full dust bin can hold approximately 200 pounds of material.

Blower

The blower (exhaust fan) is mounted on top of the dust collector chassis and is powered by a five horsepower electric motor. The blower moves approximately 540 cubic feet of air per minute at peak efficiency.

Minihelic Gauge

A gauge is mounted on the electric control panel which measures the differential pressure across the filters. As the filters age and become saturated, the reading on this gauge will increase. During normal operation, this gauge should read between zero and four inches of water. A consistent reading between four and six inches of water signifies that the filters should be changed soon. A reading of more than six indicates that the filters need to be changed immediately.

Pulse Pressure System

A direct driven, 3/4 horsepower, maintenance free air compressor with external pressure regulation is mounted beneath the control panel on the dust collector. The pressure of this system is determined by the setting of the unloader valve located on the pressure side of the compressor. Compressed air is delivered to an air reservoir located inside the dust collector's clean air compartment.. Three Goyen (diaphragm) valves are located above the reservoir which are activated by a timer board located inside the control panel. The timer board actuates one of three sequentially operated solenoids which in turn creates a pressure difference sensed by the Goyen valves via the connected plastic tubing. When the Goyen valves are activated, they allow a pulse of air to be directed downward through the Venturi valves to pulse the filter cartridges. This air pulse cleans the filters sequentially as described in the filter chamber paragraph. The pressure setting on this system is set between 80 to 100 PSI. If the pressure goes above 125 PSI, an in-line pressure safety valve will open to the protect pressure components.

Chassis

The entire dust collector is mounted on a mobile chassis resting on four casters. Two swivel casters are mounted beneath the air inlet for ease in maneuverability and the opposite casters are rigid. The upper frame is equipped with four lifting eyes to help raise and lower the machine for transportation.

NOTE: The dust collector is not designed for vehicle towing or movement on roads.

Electrical Control Panel

The control panel for the 654 Dust Collector is mounted on the front chassis. This panel has the following controls and instruments used for operating the dust collector.

- ◊ Elapsed Time Meter - Indicates the total running hours for the blower motor only.
- ◊ Compressor Start/Stop Buttons - Engages or disengages the compressor motor contactor.
- ◊ Blower Start/Stop Buttons - Engages or disengages blower motor contactor. Also energizes timer board and associated circuitry. The dust collector will not pulse unless the blower is running.

Ventilation System

A controlled flow of air must pass through the Model 1 -- 10D and the 654 Dust Collector during normal operation for the reasons listed below:

- ◊ Cools blast machine components.
- ◊ Helps remove residual abrasive and dust from work surface.
- ◊ Collects and separates dust and contaminants from recycled abrasive.
- ◊ Transports dust and contaminants to dust collector.

Ventilation air must follow a designed path through the machine(s). Any irregularities in the path can affect the performance of the system. The air sequence follows:

1. Air enters the area around the rear skid seal of the 1 -- 10D at a high velocity and helps sweep residual abrasive and dust from the work surface.
2. This air traverses up the rebound plenum and into the separator. The air movement up the rebound plenum helps keep the abrasive and the chamber walls cool.
3. The separator also has three clean air ports that are used to direct clean air through the internal air wash. These ports are located at the sides and front of the separator.
4. The dust laden air from the air wash is directed through the separator and into the flexible hose.
5. The hose delivers the contaminated air to the dust collector where the air is filtered and returned to the atmosphere.

The ventilation system should be monitored on a regular basis. Bad or improper ventilation can lead to poor component life and premature wear on a number of ventilation related items on the equipment. Some of the more important areas to monitor relative to the ventilation system are:

- ◊ The skirts around the blast housing should be kept in good repair.
- ◊ The seals around the separator lid should be checked regularly.
- ◊ The hose connections to the 1 -- 10D and the 654 Dust Collector should be tight and held in place with metal clamps.
- ◊ The hose should be kept in good repair. Flat spots, holes and wear spots should be repaired immediately.

◊ Ventilation leaks on the blower assembly seal and especially the dust bin seal should be minimized. The dust bin seal can be checked by holding a lit cigarette (where possible) near the seal and watching the smoke direction.

Any ventilation irregularities can have an adverse effect on the overall performance and efficiency of the system. Improper ventilation can cause poor abrasive cleaning which in turn increases blast wheel and liner wear. An important fact that is often ignored or misunderstood is:

The steel abrasive causes minimum wear on the internal blast components. The dust and contaminants are the principal cause of component wear. A well maintained ventilation system can minimize abrasive contamination which helps reduce operating costs and increases the overall efficiency of the shotblasting system.

Section 4

Start-Up Procedure

Note:

All operating and maintenance personnel assigned to this machinery should read and understand all "Warnings and Safety Instructions" found in Section 1 of this manual before attempting any operational or maintenance work on the 1 -- 10D or 654 Dust Collector. Also, Blastrac highly recommends that all operating and maintenance personnel receive a thorough training regimen from an authorized Blastrac representative before attempting to operate or maintain this equipment.

4

Start-Up

1. The 1 -- 10D and the 654 Dust Collector should be moved to the cleaning site. Both machines can be hand towed or moved by lift truck. Check the dust bin of the 654 Dust Collector to be sure that it is empty. Check the shot hopper of the 1 -- 10D to be sure that the shot has been drained. At the end of each job, the shot hopper and the dust bin should be emptied. Before moving the 1 -- 10D by hand, disconnect the drive pin from the traction drive hub.

2. Check the blast wheel, control cage, feed spout, liners, seals and hopper parts for wear. Replace parts where necessary.

3. Inspect the electrical cables for cuts, abrasions or wear. Also check the exhaust hose for holes, deformities or potential leaks. Repair or replace all defective items before continuing this procedure.

4. Connect the exhaust hose and clamps to the blast unit and the dust collector. Be sure the clamps are secure.

5. Check inside the electrical control panel of each machine to verify the location of the fanning strips. The fanning strip location determines which voltage the machine(s) is wired for. Details for this can be found in Section 10. Check the voltage source you will be using to operate the machine. Use a reliable voltmeter for this check. Blastrac machines should operate normally on a plus or minus 15 volt range. The overload settings should also be checked whenever the fanning strips are moved.

Start-Up Procedure

230 Volt Operation	460 Volt Operation
Minimum Voltage - 215 V	Minimum Voltage - 445 V
Maximum Voltage - 245 V	Maximum Voltage - 475 V

6. Plug the 1 -- 10D Blastrac electrical cable into the receptacle located on the side of the 654 Dust Collector control panel.

7. Check the disconnect switches on both machines. Be sure they are both in the "OFF" position.

8. Check the power source again. Be sure that the voltage is correct. If the voltage is labeled 230 V., check it with a voltmeter anyway. Follow the same procedure for a 460 V source. Blastrac recommends a minimum amperage rating of 50 amps for 230 voltage and 30 amps for 460V operation. Be sure that these requirements are met. Shut down the power source once the voltage has been checked and connect the dust collector power cord to the power source. Be certain that the green ground wire is properly connected. Once the power cord is connected and checked, energize the power source.

9. Check the area you are about to clean. Be sure that it is free of all debris that can clog or damage the equipment. Be sure that the surface is moisture free. Blastrac machinery is designed to work on clean, dry surfaces only.

10. Make certain that the abrasive valve operator on the right side of the control panel is in the closed position. Remove the separator lid and check that the shot hopper is free of debris and abrasive. Remove the screens and check the butterfly valve at the bottom of the hopper. It should be in the horizontal position. Replace the screens and add approximately 40 pounds of abrasive. The level of this abrasive should reach the bottom of the boxed screen. **Do not overfill.** Replace the separator lid.

11. Turn on the dust collector and disconnect the switch. Engage the start button for the blower and compressor, then check the motor rotation. If the rotation is backwards, engage the stop buttons for the blower and compressor and turn off the disconnect switch. Return to the customer furnished disconnect power source and disengage. Swap any two of the three "hot" power cord leads (not the green ground wire) and reactivate the disconnect switch. The rotation of both motors should reverse.

CAUTION: BE SURE ALL ELECTRICAL DISCONNECTS ARE LOCKED IN THE "OFF" POSITION AND THAT THE ROTATING PARTS ARE FULLY STOPPED BEFORE WORKING IN PANELS.

12. Once the motor rotation has been verified, check the operation of the dust collector. The air pressure should build up to 80 - 100 PSI and the filters should be pulsed every 10 - 11 seconds. The pulse duration and the time between air pulses is determined by the timer board setting which is located inside the control panel. The air pressure is determined by the setting of the unloader (pilot) valve located next to the compressor.

13. Turn on the disconnect switch located on top of the 1 -- 10D control panel. Engage the motor start button and check the rotation of the blast wheel motor. **If the rotation is backwards, immediately engage the motor stop button and turn the disconnect switch off on both the 1 -- 10D and the 654 Dust Collector.** To reverse the motor rotation, swap any two of the three power connections at the top of the 1 -- 10D disconnect switch. The motor direction should reverse. **NOTE:** New Blastrac machines are factory tested so both machines should have the same motor rotation. Changing the two hot leads at the power source should reverse the motor rotation of all three electrical motors. However, if machines are mated with machines other than the original pair, they may rotate in opposite directions. Always check the motor rotation of both machines before starting up at a new job site or whenever moving from the original customer furnished power source. *The rotation can change from different locations inside the same building so be sure to always make this critical check.*

14. The motor rotation has been verified. Engage the start buttons for the blower, the compressor and the blast wheel.

15. Insert the traction drive pin into the traction drive sprocket of the 1 -- 10D. At the operator's station, set the travel speed at about midpoint for normal operation. Engage the traction drive using the limit switch located below the steering handle. Once the machine is moving, ease the abrasive valve open and observe the ammeter. Do not exceed the recommended amperage which is determined by the operating voltage (12 amps at 460V/24 amps at 230 V). The opening of the abrasive valve determines how much abrasive enters the blast wheel. As more abrasive flow is selected, the motor amperage will increase since the motor has to work harder. The abrasive control valve operator can be adjusted so that the fully open position can coincide with the full load amperage of the motor. This setting can vary from machine to machine and with the size abrasive being used.

16. After cleaning a five foot test strip, close the abrasive valve and stop the machine and check the cleaned area.

17. If the brightness or texture of the test strip is uneven, refer to Section Five (Blast Pattern) to adjust the "HOT SPOT" .

Blast Cleaning

- Engage the traction drive by compressing the lever actuated limit switch below the steering handle. Ease the abrasive valve open while monitoring the ammeter reading. Do not exceed the amperage rating for the operating voltage. The operator will be walking backwards to operate the machine in the forward direction.

- If the cleaning is too severe or inadequate, adjust the travel speed. A faster setting will result in a lighter surface profile while a slower speed will be more aggressive and permit a deeper profile. If irregular surfaces are encountered, adjust the speed accordingly. (See Section 6 - Equipment Calibration)

- The 1 -- 10D is maneuvered so that the dust collector is centrally located. Blasting in straight lines will always give the best, most consistent results. Blasting during a turn will create an uneven profile. Once an area has been cleaned, the blast unit and the dust collector can be moved to an adjacent location to continue cleaning.

Caution: Do not allow any type of equipment to run over the power cable or the exhaust hose. Always avoid long power cord extensions. Contact a Blastrac representative for extension cord details.

- The 1 -- 10D will clear small obstructions by pushing down on the steering handle. Caution should be observed when clearing obstructions because the abrasive seal above the work surface may be broken which can allow high velocity abrasive to escape.

Shut Down

- Close the abrasive valve.
- Release the limit switch lever on the steering handle to stop the forward progress of the machine.
- Turn off the blast wheel and move the disconnect switch to the "Off" position.

Start-Up Procedure

- Go to the dust collector and turn off the blower and the compressor. Move the disconnect switch to the "Off" position.

SETTING THE CORRECT BLAST PATTERN

Setting the correct blast pattern is essential before an even , clean profile can be achieved when shotblasting with a Blastrac machine.

An uneven blast pattern can leave shadows on either side of the floor surface and can cause premature wear to the internal components. The importance of setting the proper blast pattern cannot be overstressed.

There are four major factors that can affect the blast pattern. They are:

1. Wheel Rotation - The blast wheel must be rotating in the proper direction, indicated on the housing that surrounds the blast wheel. Most Blastrac machines rotate in a counter-clockwise direction when looking at the machine from the operator's position.

2. Worn Wheel Kits - Wheel kit components such as blades, impellers and control cages vary in different machines but perform similar functions. These kits must be periodically replaced to ensure that they provide the proper blast pattern and to eliminate excessive wear which can cause internal component and bearing unit damage.

3. Abrasive Size - The size of the abrasive can affect the blast pattern. Different sized abrasives have different mass characteristics which can alter the "hot spot" setting. See figure B.

4. Control Cage Setting -The setting of the control cage is the most critical factor in determining where the blast pattern is directed. Ideally, the blast pattern is centered so that the area being cleaned receives a consistent, even distribution of high velocity abrasive. Altering the setting of the control cage can move the blast pattern to the left or right depending on which direction the control cage is moved. Moving the control cage too far in either

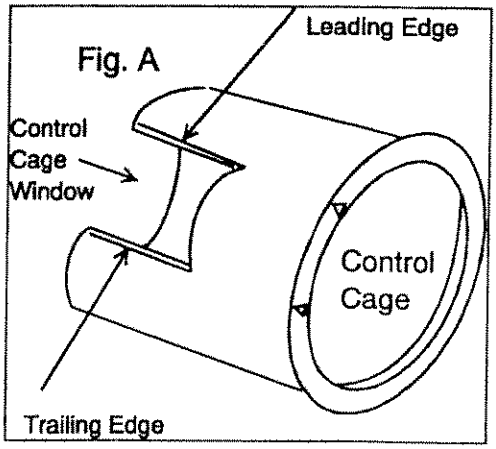


Fig. A

direction will direct the abrasive blast pattern to the side of the machine and cause premature wear to the internal components. The exact positioning of the control cage is done by trial and error. The initial setting of a machine rotating in a counter-clockwise direction should be between 11:30 and 9:30 as indicated in the illustrations. The final setting will be determined by the resultant cleaning path. **Note: (Machines that rotate in a clockwise direction, such as the Model 1 -- 20D, will have an initial setting between 12:30 and 2:30.)** These settings can vary with the abrasive size and the surface being cleaned. Once the proper control cage setting is obtained, the blast pattern should remain consistent. If the pattern begins to vary, check the blast wheel components for wear.

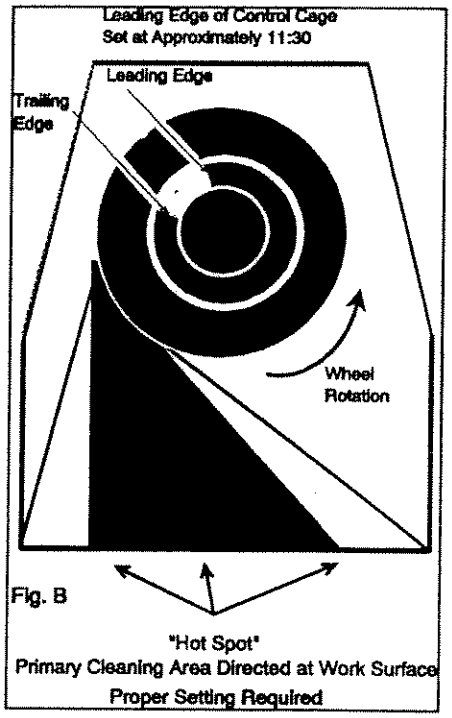


Fig. B

Control Cage "Trial and Error" Setting

The initial setting of the control cage for a machine that has the blast wheel rotating in a counter-clockwise direction is between 11:30 and 9:30. The leading edge should be at 11:30. Refer to Figures A, B and C. The resulting "hot spot" should be centered as it appears on Figure B. If the "hot spot" is too far to the left, rotate the control cage in a counter-clockwise direction about 1/4" and recheck the blast pattern on the test strip. Small changes in the rotation of the control cage can move the "hot spot " significantly. If the "hot spot" is too far to the right, rotate the control cage in a clockwise direction. Once again, move the control cage in small increments until the blast pattern ("hot spot") is centered. **Note:** If the blast pattern cannot be centered, check the blast wheel and be sure it is properly mounted and seated on the wheel hub located behind the blast wheel. The two pins on the hub must be seated on the back of the blast wheel before the wheel can be secured. This check must be made whenever the blast wheel is changed.

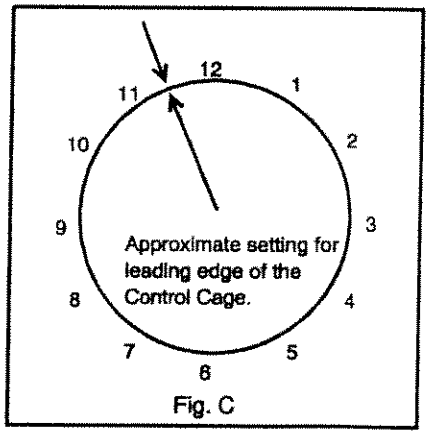


Fig. C

Section 6

Equipment Calibration

The following list of recommended set-up adjustments and reference values should be used to help obtain the optimal performance from your blast cleaning system. These should be used as starting points and can be fine tuned after trial and observation.

CAUTION: CALIBRATION OF ITEMS 1, 2, 6 AND 7 MUST BE MADE WITH ALL ELECTRICAL DISCONNECTS IN THE "OFF" POSITION. ALL MOVING PARTS MUST BE COMPLETELY STOPPED BEFORE MAKING ANY ADJUSTMENTS OR PERFORMING MAINTENANCE.

1. Blast Housing Height - The bottom of the blast housing (magnets) should be between 1/8" to 1/2" above the surface being cleaned. A smaller clearance can be obtained for smooth surfaces and the height may need to be higher for rough surfaces.

2. Control Cage Setting - See Section 5, Setting the Correct Blast Pattern; figures A, B and C.

3. Abrasive Selection Recommendations (Steel Shot Size)
   - Brush blast of smooth concrete: S-170 to S-280 (smaller size will produce a brighter etch.)
   - Rough concrete etch for coatings: S-330 to S-460
   - Heavy concrete removal: S-460
   - Cleaning scale or paint on steel: S-460

4. Travel Speed Suggestions (Speed Control Potentiometer)
   - Brush blasting: 40 to 80 (higher speeds)
   - Heavy concrete blast: 15 to 40 (medium speeds)
   - Steel surface cleaning: 10 to 15 (slow speeds)

5. Exhaust Hose Length - 50 feet of 5 inch diameter exhaust hose; Longer or shorter sections of hose may affect abrasive consumption or abrasive cleaning. Contact your Blastrac representative before changing the exhaust hose length.

Equipment Calibration

6. Dust Collector Pulse Timer - Set for approximately 10 seconds for concrete cleaning; 15 seconds for steel cleaning.

7. Compressor Pressure Setting - 80 PSI min.; 100 PSI max.; The unloader adjustment determines pressure. (30 PSI drop for Pulse)

8. Pressure Drop Across Filters - Minihelic gauge should read between 1 and 4 inches of water. Above 4 indicates that the filters are dirty.

9. Dust Bin Change Interval - Inspect at 1/2 hour intervals to estimate fill time. Do not allow dust bin to overfill.

Section 7

Wear Parts

Certain portions of the 1 - 10D Blastrac are continuously exposed to high velocity abrasive. These areas and their corresponding parts must be periodically inspected for wear and erosion to keep from damaging components that are not normally exposed to the abrasive blast. These parts are identified on the service drawings later on in this manual along with part numbers. All are designed for relatively easy replacement by maintenance personnel who should monitor these areas on a regular basis. The following list outlines these areas and the time intervals involved.

Wear Parts Chart

Part	Inspection Interval	Wear Indication
Blast Wheel	5 Hrs.	Blades worn half thickness or more
Feed Spout	50 Hrs.	Thin at Wheel Entry
Control Cage	5 Hrs.	Eroded Edges
Rebound Plenum	100 Hrs.	Thin Portions; Wear on Welds.
Deflector Plate	50 Hrs.	This Sections; Wear at Welds
Separator	100 Hrs.	Thin Sections; Wear at Welds; Warpage; Screen Wear
Liners	100 Hrs	Thin Sections; Warpage
Blast Wheel Hub	When Changing Blast Wheel	Pins Missing or Worn; Wear
Top Cover	50 Hrs.	Inside Edge Erosion
Blast Housing	When Changing Liners	Liners Worn Through; Corners Eroded

Keep in mind that other portions of the machine require periodic inspections and maintenance. The parts mentioned above are associated with the internal abrasive blast. Electrical cable and exhaust hose for example, also require close inspection and maintenance.

Section 8

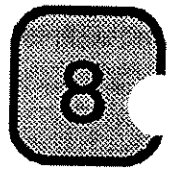
Blast Wheel Replacement

CAUTION: ALL ELECTRIC POWER MUST BE DISCONNECTED AND ALL ROTATING PARTS MUST BE COMPLETELY STOPPED BEFORE ATTEMPTING THIS PROCEDURE.

1. Release the two locking cams that secure the feed spout and slide the straps away. Remove the feed spout.

2. Remove the two control cage clamps and then remove the control cage.

3. Outline the area around the control cage mounting assembly with a marking pen or pencil. This will allow for easier alignment when reinstalling this part later during this procedure. Remove the 4 mounting nuts, flat washers and lock washers that secure the control cage mounting assembly to the blast housing. Do not loosen any other screws on the control cage mounting assembly since they are used to set the gap between the blast wheel and the control cage. Remove the control cage mounting assembly.



4. Remove the socket head cap screw and spherical washers from the blast wheel and remove the blast wheel.

5. Check the wheel hub for wear and replace if necessary.

6. Install new blast wheel using the new socket head cap screw and spherical washers that are included in the wheel kit. Be sure that the new blast wheel is seated properly on the wheel hub before tightening the socket head cap screw.

7. Reinstall the control cage mounting assembly to the blast housing using the outline made before removing the assembly.

8. Install the new control cage that was included with the wheel kit. Rotate the wheel by hand to be sure the control cage and the wheel do not make contact. The initial window setting for the control cage should be between 9:30 and 11:30.

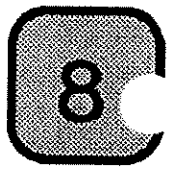
9. Reinstall the feed spout.

Blast Wheel Replacement

10. Energize the blast motor momentarily to check for good balance and proper clearance before shotblasting.

11. See Section 5, "Blast Pattern" before adjusting the control cage for the correct blast pattern.

The assembly of the blast wheel and its associated parts is illustrated on the following page. These parts must be maintained in good operating condition to enhance the life of the bearing unit and electric motor used to deliver power to the blast wheel. Blastrac parts are supplied in a state of accurate balance with machined surfaces for safe reliable operation.



Section 9

Lubrication

The bearing unit located directly behind the blast wheel, outside the blast housing must receive periodic lubrication. This unit operates at a relatively high temperature (200 degrees Fahrenheit) and requires the use of a high temperature lithium based grease. Mobilux 77 EP-2 is one example. **The bearing unit should receive several pumps of this high temperature, lithium based grease at least every 50 hours.** Several pumps of grease from a standard grease gun should be sufficient.

The grease needs to be inserted at both ends of the bearing unit where the grease fittings are located. Once the unit is greased, run the blast wheel for 10 - 15 minutes to purge any excess grease. Do not over-grease this unit.

Section 10

Troubleshooting

NOTE: ALL SERVICE OF BLASTRAC EQUIPMENT REQUIRES A THOROUGH AWARENESS OF THE WARNINGS AND PRECAUTIONS IN SECTION 1 OF THIS MANUAL..

Troubleshooting List...1 - 10D...Mechanical Malfunctions

Trouble	Probable Cause	Remedy
Excessive vibration- usually indicates that the blast wheel is out of balance. This condition will eventually cause bearing failure in the motor or bearing unit.	Unevenly worn wheel	Replace wheel kit, Check separator and ventilation system.
	Chipped, broken blades	Chipped or broken blades will permanently unbalance the blast wheel and can cause damage to other components. Change wheel kit immediately.
Excessive noise. Usually indicates misaligned components which causes premature wear and components failure.	Improper clearances or alignments between rotating parts, usually the control cage and the blast wheel.	Check alignment of control cage and wheel. Allow sufficient clearance between rotating parts.
	Loose bolts or misalignment	Check bearing unit, belts, sheaves, motor mounting, wheel housing and any other associated parts to be sure of alignment and that they are firmly secured.
Increased cleaning time	Improper abrasive feed to wheel	Check ammeter reading. Low reading indicates insufficient abrasive getting to wheel.
	Storage hopper	Check abrasive level

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	Contaminated abrasive	Abrasive may contain substantial percentage of fines and contaminants. Check ventilation
	Abrasive feed and abrasive control valve	Check for obstructions in the abrasive feed, i.e. feed spout, abrasive control valve, separator screen
	Wheel impeller, control cage wear	Replace wheel kit
	Drive belt	Check belt for proper tension , alignment or wear
	Loss of consistent blast pattern, "hot spot"	Check blast patter and check the blast wheel for proper seating with the wheel hub
	Choked wheel	Close abrasive valve and gradually reopen. Check abrasive valve operation, check overamping blast wheel.
Excessive wear on blast housing rebound chamber / liners	Improper setting of control cage	Abrasive is being misdirected into internal components instead of work area. Check blast pattern and readjust.
Abrasive leakage	Improper sealing	Check all seals for wear
	Improper control cage setting	Abrasive rebounding from side of machine. Check blast pattern
Machine will not drive	Speed control potentiometer worn / drive board faulty / For/Rev switch faulty / limit switch	Vary speed control to change speeds. Replace potentiometer, drive board or other faulty

	faulty / 120 V missing	component if necessary.
Machine hang-up	Uneven work surface / floor obstruction	Push down on steering handle to raise machine to clear small obstructions or uneven work surfaces. Shut abrasive valve if obstruction can be cleared. Reverse direction to clear. **Use caution when raising seal due to high velocity abrasive exposure.**
Loss of cleaning action	Machine travel speed too fast Blast wheel rotation backwards	Adjust travel speed potentiometer Have electrician reverse motor direction

Ventilation System (654 Dust Collector)

Note: Once the 654 Ultra-Jet Dust Collector has been in operation for several hours, a stable operating level will result. Sudden changes in operation can usually be traced to a malfunction.

Trouble	Probable Cause	Remedy
Contaminated abrasive - fines and contaminants not being removed from abrasive	Very soft concrete removal. Excessive dust quantities entering system (Will cause excessive component wear) Insufficient flow of air being delivered by exhaust fan	Increase machine speed to reduce the amount of concrete removal or reduce abrasive flow to wheel Check fan rotation, check exhaust hose and connections Check air control gate
Visible dust discharge	Torn punctured or improperly installed filter cartridges	Check filters (clean air section should show which filter is faulty) Replace or reinstall. (New machines will allow small amounts of dust through

		filters for about 1/2 hour until filters are broken in.)
High differential pressure	Clogged filters	Check filter pulsing and pressure. Pressure should be 80 to 100 PSI and drop about 30 PSI for each pulse occurring once every 10 - 11 seconds. Do not allow dust bin to overfill. Filters old and saturated - replace filters
	Screen Clogged / Dirty	Clean / Replace screen located inside filter chamber
Pressure loss	Pressurized air leak	Check all high pressure air connections
	Goyen diaphragm stuck open	Check solenoid valve operation Replace if necessary. Check diaphragm(s) Clean or replace if necessary
	Unloader valve not holding pressure	Adjust or replace unloader valve
	Compressor not building air properly	Repair or replace compressor
	Timer board malfunction	Check "tell-tale" lights on timer board, replace if necessary

Vacuum Adjustment

Operating Tips

The vacuum adjustment gate on the 654 Dust Collector is used to reduce or increase the suction through the hose between the dust collector and the blast machine. Closing the vent increases the suction.

For normal concrete surfaces, Blastrac does not recommend using more than the 50 feet of exhaust hose supplied with the blast system. Adding additional hose can cause insufficient suction which will allow unwanted dust and contaminants to accumulate in the abrasive, thereby causing premature wear to the blast wheel and liners. Additional hose can only be added when cleaning steel surfaces. Contact your Blastrac representative for your specific steel cleaning application.

Normal shotblasting with the 1 -- 10D will usually be accomplished with the vacuum adjustment gate partially open. Too much suction will sometimes allow abrasive to be pulled from the blast unit and deposited into the dust pan. This is particularly true when using small sizes of abrasive such as S - 170 and S - 230.

When using the 654 Dust Collector with the 1 - 15D, the vacuum adjustment gate should be fully closed for maximum suction. The 1 - 15D cleans a wider area and generates more dust which necessitates the maximum possible suction.

A period of trial and error may be necessary for specific job applications. Generally speaking, the more dust generated by your shotblasting unit, the greater the suction you will need from the dust collector to keep the abrasive as clean as possible.

Electrical Troubleshooting

Qualified electricians or trained Blastrac representatives should be the only persons permitted to troubleshoot any electrical malfunction. Dangerous voltages are present throughout the shotblasting equipment and can cause severe injury or death to any individual not familiar with electrical circuitry. Extreme caution should be maintained even by qualified individuals working on live circuits.

Trouble	Probable Cause	Remedy
Electric motor(s) do not start	Main Power disconnected at source	Check main power . Must be 230 / 460 volt, 60 Hz. 3 phase power. Check machine wiring.
	Circuit breaker tripped	Check circuit breaker
	Overload relay tripped	Reset
Electric motors do not come up to speed	One leg of 3 phase power missing	Check power connection / fuses
Circuit breakers continuously trip	Overloaded circuit / low voltage source	Shut equipment down / check voltage source
Wheel motor ammeter reading unsteady	Abrasive level low	Check abrasive level / refill if necessary
	Loose connection	Inspect wiring for irregularities
	Abrasive system clogged or damaged	Clean and or repair
	Belt loose	Check belt for proper tension
Panel lights will not illuminate	Main circuit breaker tripped	Check power source / reset
	Fuses blown in disconnect switch circuitry	Check disconnect switch for blown fuse
	Panel door open	Disconnect switch must be off to open panel

Section 11

Specifications

Blastrac Model 1 -- 10D

Length	5 feet 3 inches
Width	1 foot 5 inches
Height	3 feet 4 inches
Weight	706 pounds
Wheel	8 inches
Motors: Wheel Traction Drive	 10 horsepower 1/4 horsepower
Cleaning Width	10 inches
Bearing Unit: Operating RPM Grease	 6800 RPM High temperature lithium base

Blastrac Model 654 Dust Collector

Length	4 feet 4 inches
Width	2 feet 9 inches
Height	5 feet 3 inches
Weight	850 pounds
Filter Cartridges	6 (6 inches - diameter; 16 inches in length)
Total Filter Area	324 square feet
Air Flow	540 CFM
Motors Compressor Fan	 3/4 horsepower 5 horsepower

Section 12

ELECTRICAL CONVERSIONS
230/460, 3 PHASE, 60 HERTZ

The Model 654 Dust Collector and the 1 - 10D Blastrac can be wired to operate on either a 230 volt or 460 volt, three phase , 60 hertz, grounded power source. The availability of 230 volt or 460 volt, three phase power will change from job site to job site, making it necessary to have a shot cleaning system that converts from one voltage source to the other.

When operating at 230 volts, the 1 - 10D and 654 Dust Collector together will draw approximately 40 amps of current; a minimum 50 amp service is recommended. When operating at 460 volts, the two machines will draw approximately 20 amps; a minimum 30 amp service is recommended.

The conversion to either 230 volt or 460 volt operation is not difficult. The following step by step procedures and wiring illustrations should be followed whenever a change in operating voltage is needed.

230 VOLT TO 460 VOLT CONVERSION

1. Check the power source that the Model 654 Dust Collector will be connected to. Verify that the voltage is 460 volt, three phase power with a minimum service rating of 30 amps. **CHECK THE VOLTAGE WITH A METER! CONNECTING THE MACHINES TO THE WRONG VOLTAGE WILL DAMAGE THE EQUIPMENT.**

2. **Turn off the disconnect switches on both the Model 654 Dust Collector and the 1 - 10 Blastrac. Turn off the disconnect switch at the customer furnished power source and lock it shut. If the power cord from the dust collector has not been connected to the power source, leave it unconnected and continue. FAILURE TO FOLLOW THESE STEPS WILL CREATE A SHOCK HAZARD TO ANYONE CHANGING THE WIRING INSIDE THE CONTROL PANELS!!!**

MODEL 654 DUST COLLECTOR CONVERSION TO 460 VOLTS

3. Open the control panel to the Model 654 Dust Collector and locate Terminal Block 1C and Fanning Strip 1C. Terminal Block 1C should have a total of fifteen (15) terminals. Fanning strip 1C will have twelve (12) terminals. **(SEE FIGURE 1 , Page 7)** The entire fanning strip is designed to move as a unit. Do not try to move individual terminals. Loosen the center screws that secure the fanning strip to the terminal board. Gently pull the fanning strip away from the terminal board and reinsert the fanning strip three (3) positions down so that fanning strip terminal one (1) is inserted into terminal strip number four (4). Fanning strip number twelve (12) will be inserted into terminal block number fifteen (15). Once the entire fanning strip is moved to the proper location, tighten **all** the center connectors.

   This operation has changed the wiring to the compressor motor and the control transformer. **DO NOT ATTEMPT TO CHANGE THE TRANSFORMER WIRING. BY MOVING THE FANNING STRIP YOU HAVE ACCOMPLISHED THE NECESSARY WIRING CHANGE FOR 460 VOLT OPERATION.**

NOTE: FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS.

4. Locate Terminal Block 1B and Fanning Strip 1B. Terminal block 1B has nine terminals. Fanning strip 1B has six (6) terminals. **(SEE FIGURE 2, Page 8)** Again, the fanning strip is designed to be moved as a unit. Do not attempt to move the terminals individually. Loosen the center screws and gently pull the fanning strip away from the terminal block. Reinsert the fanning strip into the terminal block three (3) spaces down so that fanning strip number one (1) is now inserted into terminal block number four (4). Fanning strip number six (6) will now be inserted into terminal block number nine (9). Tighten all center screws once the fanning strip has been moved. By moving this fanning strip, the wiring to the blower motor has been changed to operate at 460 volts.

NOTE: FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS.

5. Check the settings on the overload relays located at the bottom of the two motor controllers. The overload settings should coincide with the full load amperage rating of the blower and compressor motors for the chosen operating voltage. For 460 volt operation, the blower motor overload setting should be six (6) amps or the lowest setting on the overload relay. The overload relay setting for the compressor motor should be one and two tenths (1.2) amps or the lowest setting. Once you have made the above changes, the Model 654 Dust Collector should be ready to operate at 460 volts.

1 - 10D BLASTRAC CONVERSION TO 460 VOLTS

6. The wiring change to the 1 - 10D Blastrac is very similar to the wiring change made to the Model 654 Dust Collector. Open the electrical panel and locate Terminal Block 1A and Fanning Strip 1A. Terminal block 1A has a total of fifteen (15) terminals. Fanning strip 1A has a total of twelve (12) terminals. **(SEE FIGURE 3, Page 9)** The fanning strip is designed to be moved as one unit. Do not attempt to move individual terminals. Loosen the center screws on terminal block 1A and gently pull out fanning strip 1A. Reinsert the fanning strip three (3) positions down so that fanning strip terminal one (1) is inserted into terminal block number four (4). Fanning strip terminal twelve (12) should slide into terminal block terminal fifteen (15).

Tighten all center screws once the fanning strip has been moved. By moving fanning strip 1A, the wiring to the 10 H.P. wheel motor and the control transformer have been changed to operate at 460 volts. **DO NOT ATTEMPT TO ALTER THE WIRING TO THE TRANSFORMER. BY MOVING THE FANNING STRIP YOU HAVE ACCOMPLISHED THE WIRING CHANGE NECESSARY FOR 460 VOLT OPERATION .**

NOTE: **FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS .**

7. Check the setting of the overload relay located at the bottom of the motor controller for the blast wheel. The full load amperage for this motor at 460 volts is twelve (12) amps. This overload relay should be

set at twelve (12) amps or its lowest setting. Once these changes have been made the
1 - 10D should be operational at 460 volts.

BOTH MACHINES SHOULD BE READY FOR 460 VOLT OPERATION. AS A FINAL PRECAUTION, CHECK ALL MOTORS FOR PROPER ROTATION.

460 VOLT TO 230 VOLT CONVERSION

1. The procedure for converting a machine to operate at 230 volts is very similar to the previous steps. Check the power source that will be used to operate the machine. Verify that the voltage is 230 volt, three phase power with a minimum service rating of 50 amps. **CHECK THE VOLTAGE WITH A METER! CONNECTING THE MACHINES TO THE WRONG VOLTAGE WILL DAMAGE THE EQUIPMENT.**

2. **Turn off the disconnect switches on both the Model 654 Dust Collector and the 1 - 10 Blastrac. Turn off the disconnect switch at the customer furnished power source and lock it shut. If the power cord from the dust collector has not been connected to the power source, leave it unconnected and continue. FAILURE TO FOLLOW THESE STEPS WILL CREATE A SHOCK HAZARD TO ANYONE CHANGING THE WIRING INSIDE THE CONTROL PANELS!!!**

MODEL 654 DUST COLLECTOR CONVERSION TO 230 VOLTS

3. Open the control panel to the Model 654 Dust Collector and locate Terminal Block 1C and Fanning Strip 1C. Terminal Block 1C should have a total of fifteen (15) terminal locations. Fanning strip 1C will have twelve (12) terminals. **(SEE FIGURE 1, Page 7)** Loosen the center screws that secure the fanning strip to the terminal board. The fanning strip is designed to move as a unit. Do not try to move individual terminals.

Gently pull the fanning strip away from the terminal board and reinsert the fanning strip three (3) positions up so that fanning strip terminal one (1) is inserted into terminal block number one (1). Fanning strip number twelve (12) will be seated into terminal block number twelve (12). Once the entire fanning strip is moved to the proper location, tighten all the center screws. This operation has changed the wiring to the compressor motor and the control transformer. **DO NOT ATTEMPT TO CHANGE THE TRANSFORMER WIRING. BY MOVING THE FANNING STRIP YOU HAVE ACCOMPLISHED THE NECESSARY WIRING CHANGE FOR 230 VOLT OPERATION.**

NOTE: FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS.

4. Locate Terminal Block 1B and Fanning Strip 1B. Terminal block 1B has nine terminals. Fanning strip 1B has six (6) terminals. (**SEE FIGURE 2, Page 8)** Again, the fanning strip is designed to be moved as a unit. Do not try to move individual terminals. Loosen the center screws and gently pull the fanning strip away from the terminal block. Reinsert the fanning strip into the terminal block three (3) spaces up so that fanning strip number one (1) is now inserted into terminal block number one (1). Fanning strip number six (6) will now be inserted into terminal block number six (6). Tighten all center screws once the fanning strip has been moved. By moving this fanning strip, the wiring to the blower motor has been changed to operate at 230 volts.

NOTE: FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS.

5. Check the settings on the overload relays located at the bottom of the motor controllers. The overload settings should coincide with the full load amperage rating of the blower and compressor motors at the chosen operating voltage. For 230 volt operation, the blower motor overload setting should be twelve (12) amps. The overload relay setting for the compressor motor should be two and four-tenths (2.4) amps. Once you have made the above changes, the Model 654 Dust Collector should be ready to operate at 230 volts.

1 - 10D BLASTRAC CONVERSION TO 230 VOLTS

6. The wiring change to the 1 - 10D Blastrac is very similar to the wiring change made to the Model 654 Dust Collector. Open the electrical panel and locate Terminal Board 1A and Fanning Strip 1A. Terminal block 1A has a total of fifteen (15) terminals. Fanning strip 1A has a total of twelve (12) terminals. **(SEE FIGURE 3, Page 9)** The fanning strip is designed to be moved as a unit. Do not try to move individual terminals.

Loosen the center screws on terminal board 1A and gently pull out fanning strip 1A. Reinsert the fanning strip three (3) positions up so that fanning strip terminal one (1) is inserted into terminal block number one (1). Fanning strip terminal twelve (12) will connect to terminal block number twelve (12). Tighten all center screws once the fanning strip has been inserted into the new location. By moving fanning strip 1A, the wiring to the 10 H.P. wheel motor and the control transformer have been changed to operate at 230 volts. **DO NOT ATTEMPT TO ALTER THE WIRING TO THE TRANSFORMER. BY MOVING FANNING STRIP YOU HAVE ACCOMPLISHED THE NECESSARY WIRING CHANGE FOR 230 VOLT OPERATION.**

NOTE: FAILURE TO TIGHTEN ALL CENTER SCREWS WILL RESULT IN ELECTRICAL MALFUNCTIONS.

7. Check the setting of the overload relay located at the bottom of the motor controller for the blast wheel. Full load amperage for this motor is twenty-four (24) amps. This overload relay should be set at twenty-four (24) amps to operate at 230 volts. Once these changes have been made, the 1 - 10 D should be operational at 230 volts.

BOTH MACHINES SHOULD BE READY FOR 230 VOLT OPERATION. AS A FINAL PRECAUTION, CHECK ALL MOTORS FOR PROPER ROTATION.

654 Dust Collector Compressor / Transformer Wiring Fanning Strips

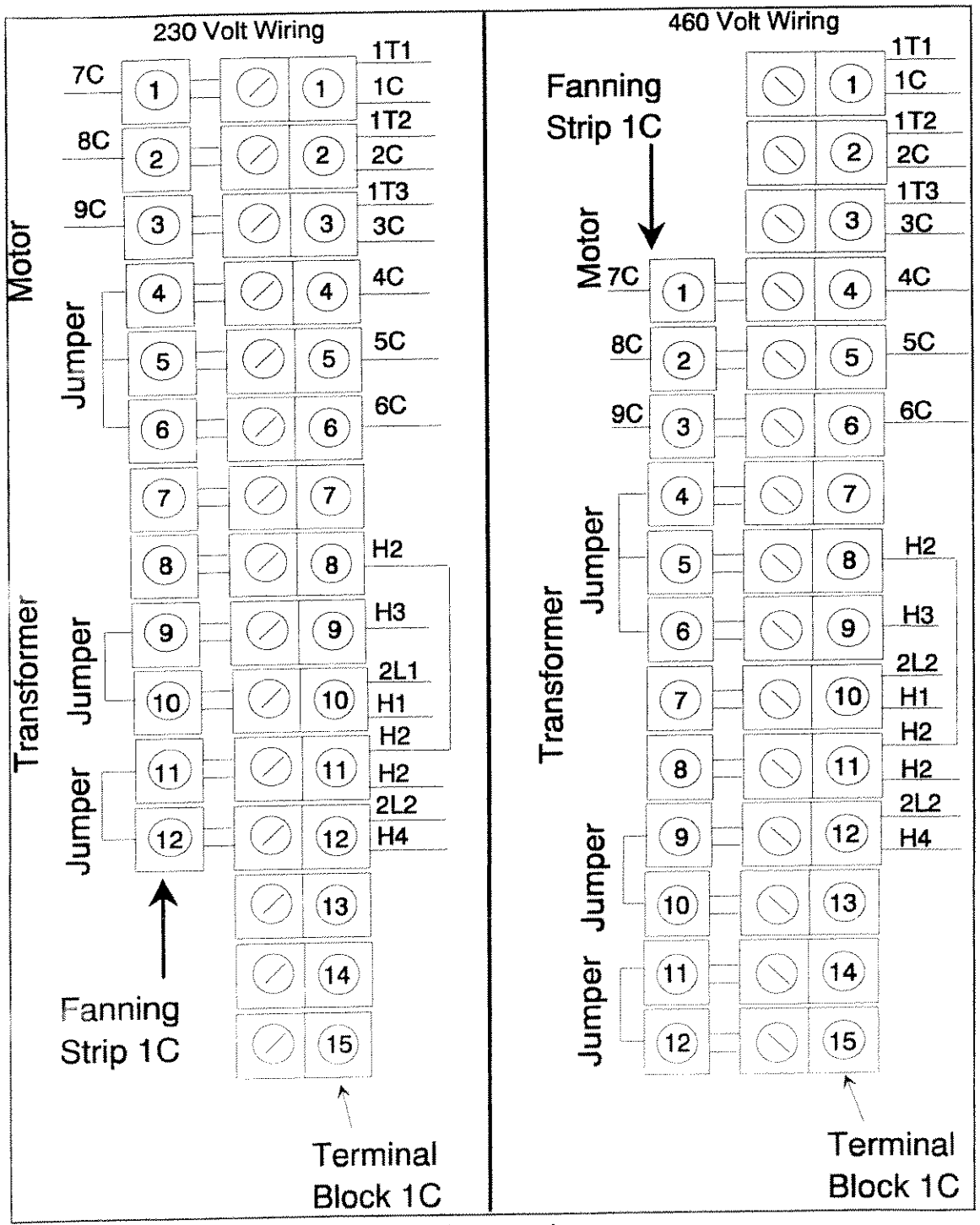


Figure 1

12

654 Dust Collector Exhaust Fan Wiring
Fanning Strip

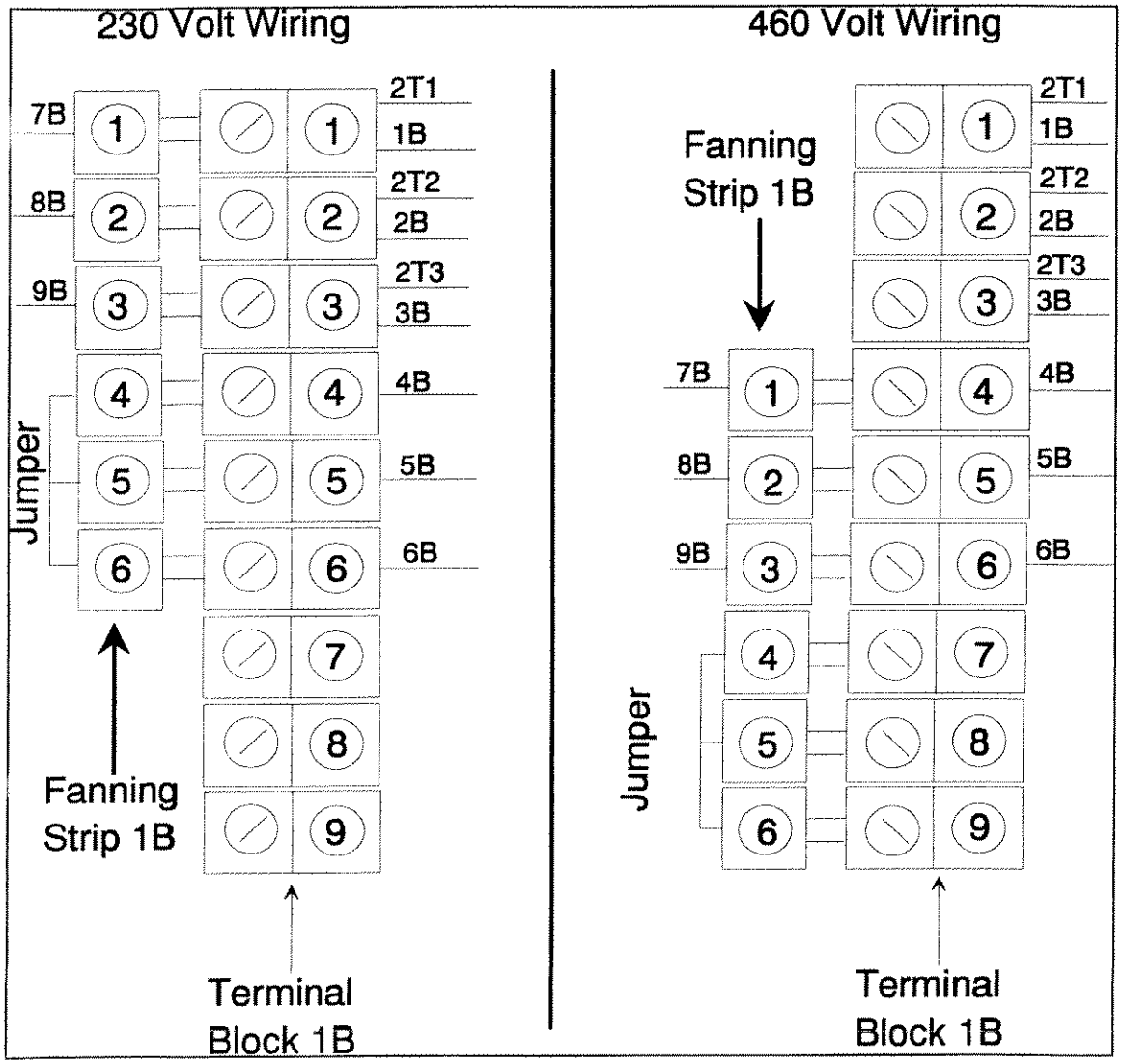


Figure 2

12

1 -- 10D Blast Motor / Transformer Wiring
Fanning Strip

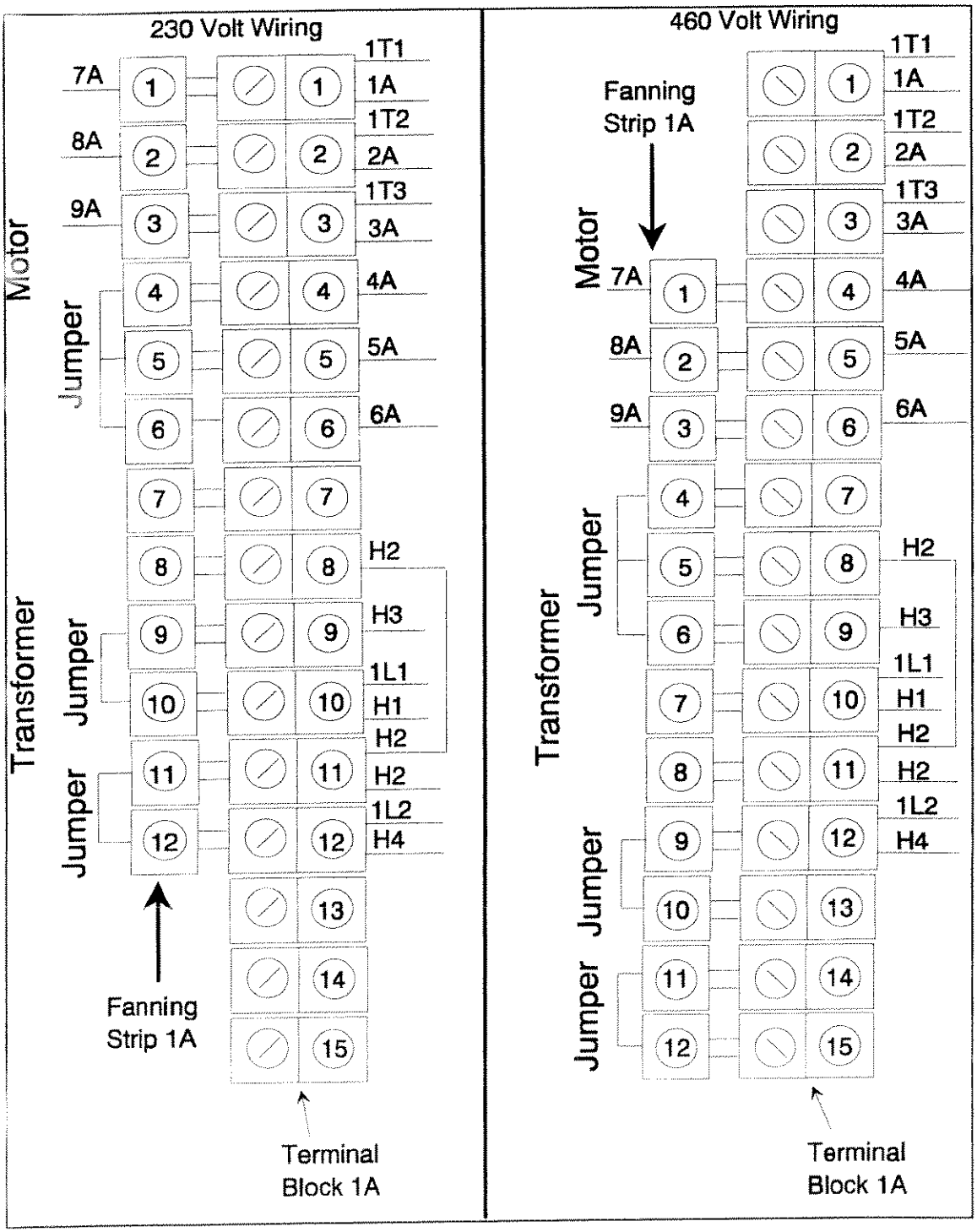


Figure 3

12

Electrical Parts
1 -- 10DS

QUANTITY	DESCRIPTION	PART #
1	1 - 10DS ELECTRICAL CONTROL PANEL	687272
1	MAINLINE DISCONNECT, 3 POLE, 30 AMP RATED, THRU THE DOOR OPERATING HANDLE	677598
1	CONTROL CIRCUIT TRANSFORMER, 230/460 TO 120 VAC 375 VA WITH FUSE KIT	495119
1	FUSE, DUAL ELEMENT, 125 VOLT, 5 AMP	497598
1	CONTACTOR, 3 POLE WITH 1 AUX	677699
1	OVERLOAD RELAY	677179
2	FOR/REV RELAY	489744
1	RESISTOR, 10 OHM, 25 WATTS (WITH MOUNTING BRACKET)	489745
1	SCR CONTROLLER /KBIC BOARD	489685
34	TERMINAL BLOCKS	284732
1	PUSH-BUTTON (BLACK) A-B ON	672922
1	PUSH-BUTTON (RED) A-B OFF	672923
1	SELECTOR SWITCH (3 POS) FOR/OFF/REV	494822
1	5 K-OHM SPEED CONTROL POTENTIOMETER	687122
1	SPEED CONTROL OPERATOR (KNOB AND DIAL)	687123
1	AMMETER / 0-30 AMPS	493460
1	ELAPSED TIME METER	494823
55 FT	4 COND #8 AWG TYPE W CABLE	490198
1	PLUG, 60 AMP, 600VAC, 3W,4P APPLETON ACP6034BC	687879
2	CORD GRIP 1" TO 1.125" RANGE CG-1018	422989
7 FT	10 COND #10 AWG TYPE SO CABLE	687119
5 FT	3 COND #16 AWG TYPE SO CABLE	417012
2	CORD GRIP, .375" TO .5" RANGE CG-408	489953
1	CORD GRIP 1.125" TO 1.250 RANGE 90 DEG. CG-1020-90	687121
1	DC DRIVE MOTOR	493516
1	LIMIT SWITCH (INCLUDES 4 COND # 16AWG CABLE)	486110
1	10 HP WHEEL MOTOR	491587

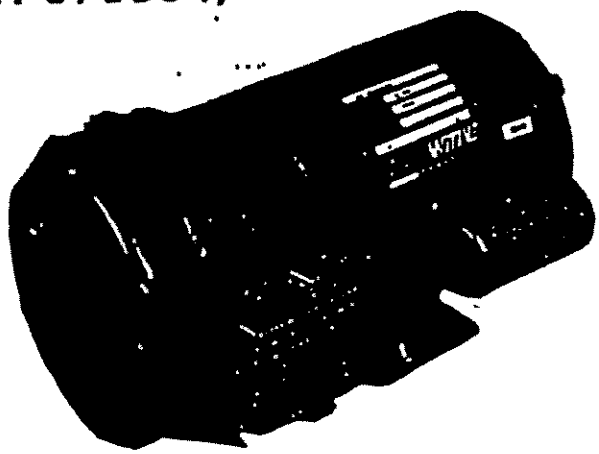
Electrical Parts
654 Dust Collector

QUANTITY	DESCRIPTION	PART #
1	MODEL 654 DUST COLLECTOR ELECTRICAL CONTROL PANEL	687273
1	MAINLINE DISCONNECT SWITCH, 3 POLE, 60 AMP FUSIBLE WITH THRU THE DOOR OPERATING HANDLE	678217
1	CONTROL CIRCUIT TRANSFORMER, 230/460 TO 120 VAC 375 VA WITH FUSE KIT	495119
1	FUSE, DUAL ELEMENT, 125 VOLT, 3 AMP RATED	497599
3	FUSES, DUAL ELEMENT, 600 VOLT, 60 AMP RATED	464493
3	FUSES, DUAL ELEMENT, 600 VOLT, 20 AMP RATED	463862
2	PILOT LIGHT AMBER LENS	463182
2	PUSH-BUTTON (BLACK) ON	672922
2	PUSH-BUTTON (RED) OFF	672923
1	ELAPSED TIME METER	494823
3	SOLENOID, PILOT VALVE	493410
1	RECEPTACLE, APPLETON ACR6034, 60 AMP, 600 VOLT 3W-4P	687880
1	CORD GRIP, 1.0" TO 1.125" RANGE, CG-1018	422989
1	CONTACTOR , 3 POLES WITH 1 AUX (1M) AB	677698
1	CONTACTOR 3 POLES WITH 1 AUX (2M) AB	678216
1	OVERLOAD RELAY (1M) AB	676080
1	OVERLOAD RELAY (2M) AB	676523
29	TERMINAL BLOCKS, 2 POLE 50 AMP, 600 VOLTS	284732
1	SOLID STATE TIMER BOARD 1-3 OUTPUT 120 VAC	487270
1	FUSE BLOCK	292613
75 FT	4 COND #6 AWG TYPE W CABLE	422987
1	CORD GRIP .500" TO .625 RANGE 90 DEGREE CG-610-90	492007
1	CORD GRIP .625" TO .750" RANGE 90 DEGREE CG-612-90	678255
1	CORD GRIP .500" TO .625" CG-610	490195
3 FT	10 COND #14 AWG TYPE SDN CABLE (BLOWER)	687113
5 FT	10 COND #16 AWG TYPE SDN CABLE (COMPRESSOR)	687114
1	PLUG WITH CONTACTS (CTI)	687115

Quantity	Description	Part#
1	CABLE CLAMP (USED WITH 687115) (CTI)	687116
1	PANEL MOUNTED RECEPTACLE (CTI)	687117
1	DUST CAP WITH CHAIN (USED WITH 687117) (CTI)	687118
1	COMPRESSOR	676554
1	FANNING STRIP	687274
1	MELTRIC PLUG (USED FOR BLOWER ON MACHINES WITHOUT FANNING STRIP VOLTAGE CHANGE CAPABILITY)	678381
1	MELTRIC RECEPTACLE (USED FOR BLOWER CONNECTION ON MACHINES WITHOUT FANNING STRIP VOLTAGE CHANGE CAPABILITY)	678382
2	FUSES , BUSSMAN KTKR3 , 3 Amp, 600 Volt	696240
1	RELAY / CONTACTOR 3 POLE w/ 1 AUX AB 100A45N-3	678389

BLASTRAC MODEL 1-10D/6-54DC
AIR COMPRESSOR TA-6102
(BLASTRAC PART NUMBER 676554)

Installation, Operation, Parts List and Maintenance



GENERAL

Operation and maintenance instructions as well as parts information presented herein relate to the following motor mounted, piston air compressor and vacuum pump models:

AIR COMPRESSORS

TA-3052	TA-4102
TA-4052	TA-5102
TA-5052	TA-6102
TA-6052	

VACUUM PUMPS

TA-3V2	TA-4V2

OPERATION

AMBIENT CONDITIONS: Pumps should be operated in a well ventilated area where the surrounding air is relatively clean, dry, and temperatures are consistently within the range of 35°F to 95°F.

ELECTRICAL: For connection of electric power, remove the cover plate located on the rear surface of the motor. Connect wire leads as shown on wiring diagram secured to rear surface of the cover plate. Reinstall cover plate prior to operating pump.

The electric motors have been designed to operate within a ± 10% range from rated nameplate voltage. In- that electric power source is the same as shown on .or nameplate. Single phase motors are equipped .ch automatic reset type thermal protectors.

W. .NING - Disconnect electric power before servicing. Thermal protector can automatically start motor when the device resets.

FILTERS: Do not operate pumps without an inlet air filter. Excessive dirt, foreign particles, moisture, or liquids entering the pump can contribute to poor performance and/or premature failure. Dirty filters reduce pump performance by restricting air flow. Inspect filter elements periodically and clean or replace when necessary.

CAUTION:
DO NOT CLEAN FILTER ELEMENTS WITH PETROLEUM BASED PRODUCTS.

Vacuum Pumps:
Always use an inlet filter on vacuum models to prevent foreign material from entering pump. PNEUMOTIVE part number S62240, inline filter is recommended for this purpose.

WARNING— These Products are suitable for pumping only atmospheric air. As defined in Compressed Gas Association Pamphlet G-7, Page 3, atmospheric air is a mixture of elements and compounds where nitrogen and oxygen comprise more than 99% with all other trace gases comprising less than 1%. DO NOT USE THIS PRODUCT IN CONTAMINATED ENVIRONMENTS OR FOR PUMPING MIXTURES OTHER THAN ATMOSPHERIC AIR.

WARNING

PNEUMOTIVE OFFERS OIL-LESS AIR COMPRESSORS WHICH PROVIDE CLEAN, OIL-LESS DISCHARGE AIR. HOWEVER, OSHA SPECIFICATIONS REQUIRE ALL BREATHING AIR SYSTEMS TO MEET THE STANDARDS AS SPECIFIED FOR "TYPE 1, GROUP D AIR," AS FURTHER DEFINED IN CGA PAMPHLET G-7. 1. THEREFORE, ALL COMPRESSED AIR BREATHING SYSTEMS MUST INCLUDE AIR FILTRATION EQUIPMENT FROM COMPRESSOR INTAKE TO FINAL RESPIRATOR DEVICE.

AIR COMPRESSOR and VACUUM PUMP MAINTENANCE

Only a few basic maintenance details are required to insure trouble free operation.

FILTRATION:

Dirty filters reduce pump performance. Periodically check inlet air filter. To clean filter, disassemble filter housing and use compressed air to blow dirt particles from the filter element. Replace filter when element can no longer be cleaned with this method.

LUBRICATION:

The Taskair line of piston products is a dry, oil-less compressor/ pump design. This product uses sealed grease-packed bearings and does not require additional lubrication.

CAUTION:
DO NOT LUBRICATE. Adding greases or petroleum products to this unit will reduce performance and can potentially damage the product.

SERVICE KITS

PNEUMOTIVE has available from stock minor service kits for Taskair series motor compressors and vacuum pumps. To obtain these service kits please contact the factory for the Taskair representative nearest you.

Minor Service Kits include: Piston rings, springs, skirt, cylinder head gaskel, cylinder gasket, valve plate, and (2) valve reeds. NOTE: ORDER ONE KIT PER CYLINDER.

KIT NO.	MODELS
C85493-P	All models.

Note: For complete compressor/pump rebuild, order (1) one minor service kit plus appropriate piston/rod assembly. *(See chart, pg. 2)*

WARRANTY

A. WARRANTY - Pneumotive warrents that at the time of shipment, the products manufactured by Pneumotive will be free from defects in material and workmanship.

B. Warranty Adjustment

1. Pneumotive agrees to repair or at Pneumotive option, replace part or parts which within twelve (12) months from date of original startup or sixteen (16) months from date of factory shipment, whichever occurs first, shall upon examination by Pneumotive prove defective.

2. Buyer shall notify Pneumotive of any defect within this warranty period and deliver such defective parts no later than thirty (30) days after defect is discovered.

3. No product will be accepted for return or replacement without authorization by Pneumotive. Upon such authorization in accordance with instructions from Pneumotive, the product will be returned to Pneumotive, shipping charges prepaid by Buyer. Products return to Pneumotive to be addressed as follows:

Pneumotive
4501 Central Avenue
Monroe, Louisiana 71203
ATTN: RGA (Obtained Returned Authorization Number)

Repair or replacement under this warranty will be returned freight pre-paid.

C. Exclusions From Warranty

1. The foregoing warranty is limited solely as set forth herein and applies only for the period designated above.

2. Pneumotive shall not be liable for any loss, damage, special of consequential mage of any kind whether based upon warranty, contract, or negligence, arising in connection with the sale, use or repa r of the product.

3. The maximum liability of Pneumotive under this warranty (or under any other warranty, expressed, implied, statutory, or otherwise) shall not in any case exceed the ntract price for the product claimed to be defective.

4. Pneumotive shall not be liable for removal or installation of product claimed to be defective.

5. This warranty does not extend to any product manufactured by Pneumotive which has been subjected to misuse, neglect, accident, improper installation, or use in a manner contrary to Pneumotive instruction.

6. This warranty does not extend to or apply to any product or part of products which have been repaired or altered at any place other than Pneumotive Factory or factory authorized service centers nor to any unit the serial number, model number, or identification of which has been removed, defaced, or changed.

7. Components manufactured by any supplier other than Pneumotive shall bear only that warranty made by the manufacturer of the product.

Modification

Unless otherwise provided, Pneumotive reserves the right to modify the specifications of the products ordered by the Buyer, providing that the modification will not materially affect the performance.

Non Waiver

Any failure at any time of Pneumotive to enforce any provision of the sales agreement shall not constitute a waiver of such provisions or prejudice the right of Pneumotive to enforce such provisions at any subsequent time.

Limitation of Liability

Pneumotive will not be liable for any loss or damage, cost of repairs, incidental, special or consequential damages of any kind, whether or not based upon express warranty or implied warranty (except for obligations assumed by Pneumotive under the product warranty clause), contract negligence or strict liability arising in connection with the design, manufacture, sale, use or repair of the product. In no event will Pneumotive be liable to Buyer for any amount in excess of the purchase price of the product claimed to be defective.

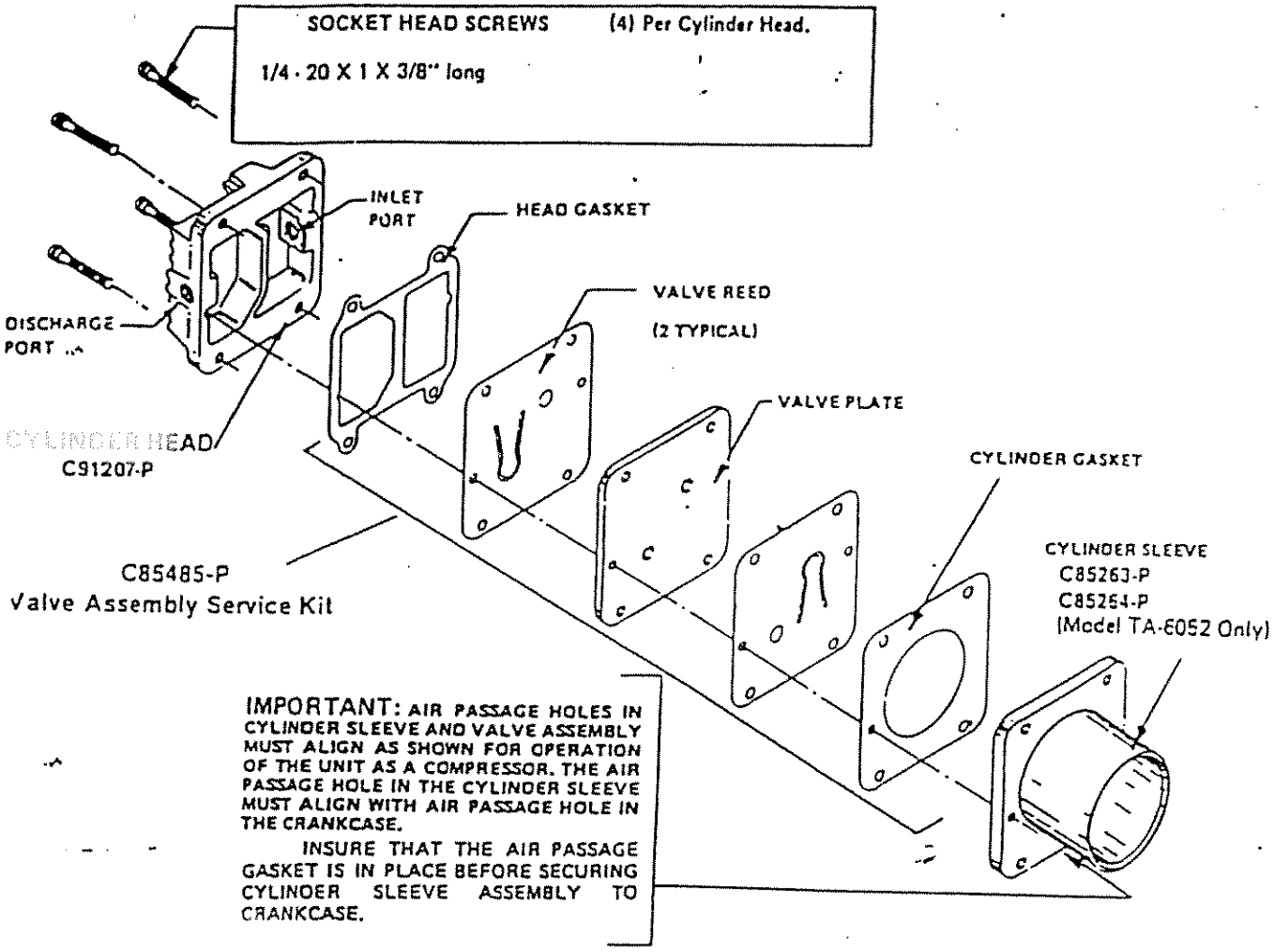
AIR COMPRESSOR TA-6102
(BLASTRAC PART NUMBER 676554)

MODEL	HP (PRESSURE)	PISTON/R ASSEMBI
100 PSIG		
TA-6102	3/4	C87226

TWO CYLINDER EXPLODED VIEW

BLASTRAC MODEL 1-10D/6-54DC
AIR COMPRESSOR TA-6102
(BLASTRAC PART NUMBER 676554)

CYLINDER HEAD ASSEMBLIES

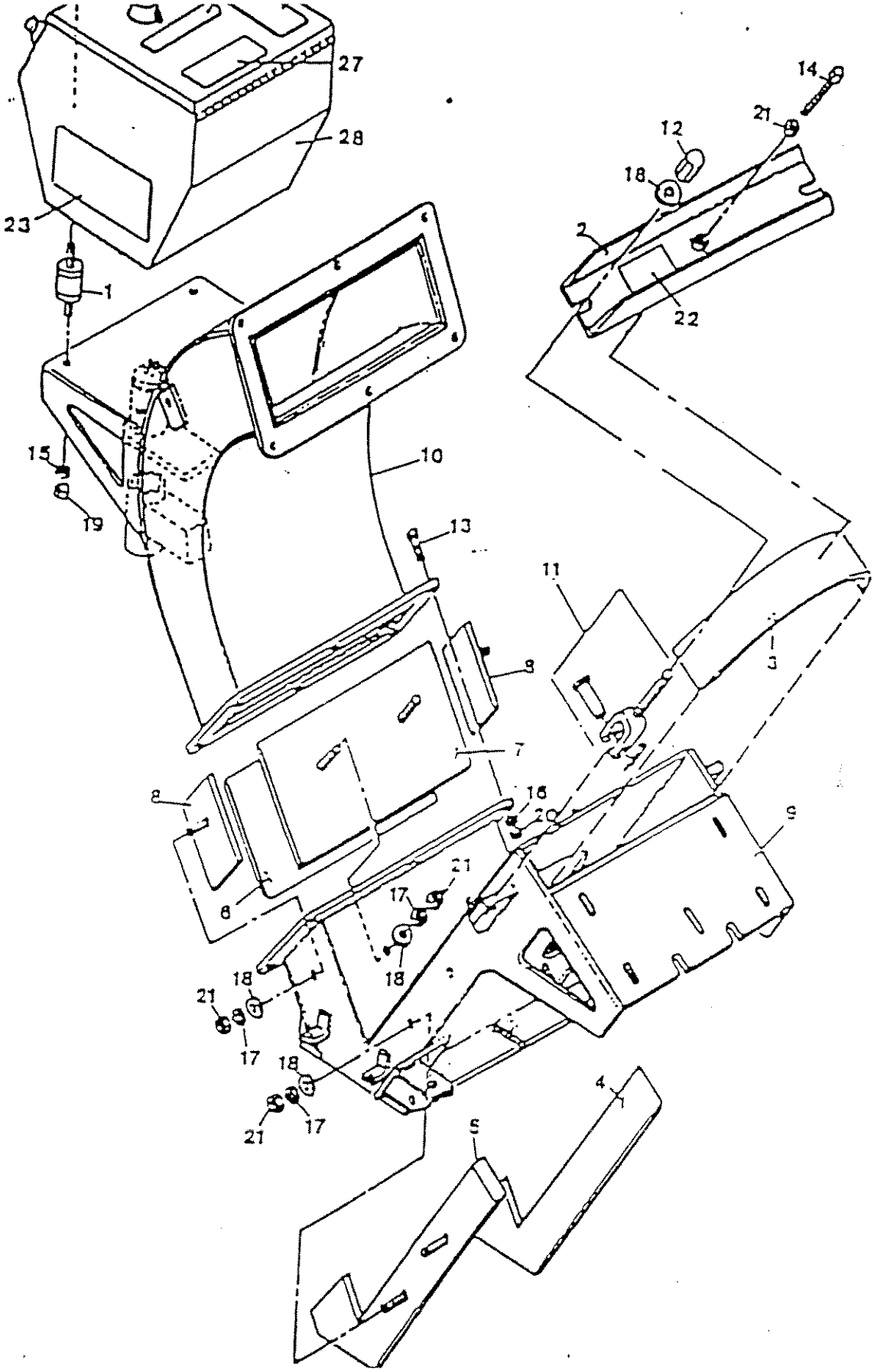


SECTION 14

DRAWINGS

DRAWINGS

Model 654 Ultra-Jet Dust Collector Machine Assembly Drawings		88D0327
Electrical Diagrams	1 - 10D Blastrac	93D587
	654 Dust Collector	93D588
Model 1 - 10D Abrasive Blast Wheel Assembly		SD3102
Model 1 - 10D Abrasive Valve and Separator		SD3103
Model 1 - 10D Housing, Liners, Plenum		SD3094
Model 1 - 10D Steering Assembly		SD3095
Model 1 - 10D Traction Drive and Idler Wheel Assembly		SD3096
Model 1 - 10D Magnet and Seal Assembly		SD3098
Model 1 - 10D Blast Wheel Motor Drive Assembly		SD3104

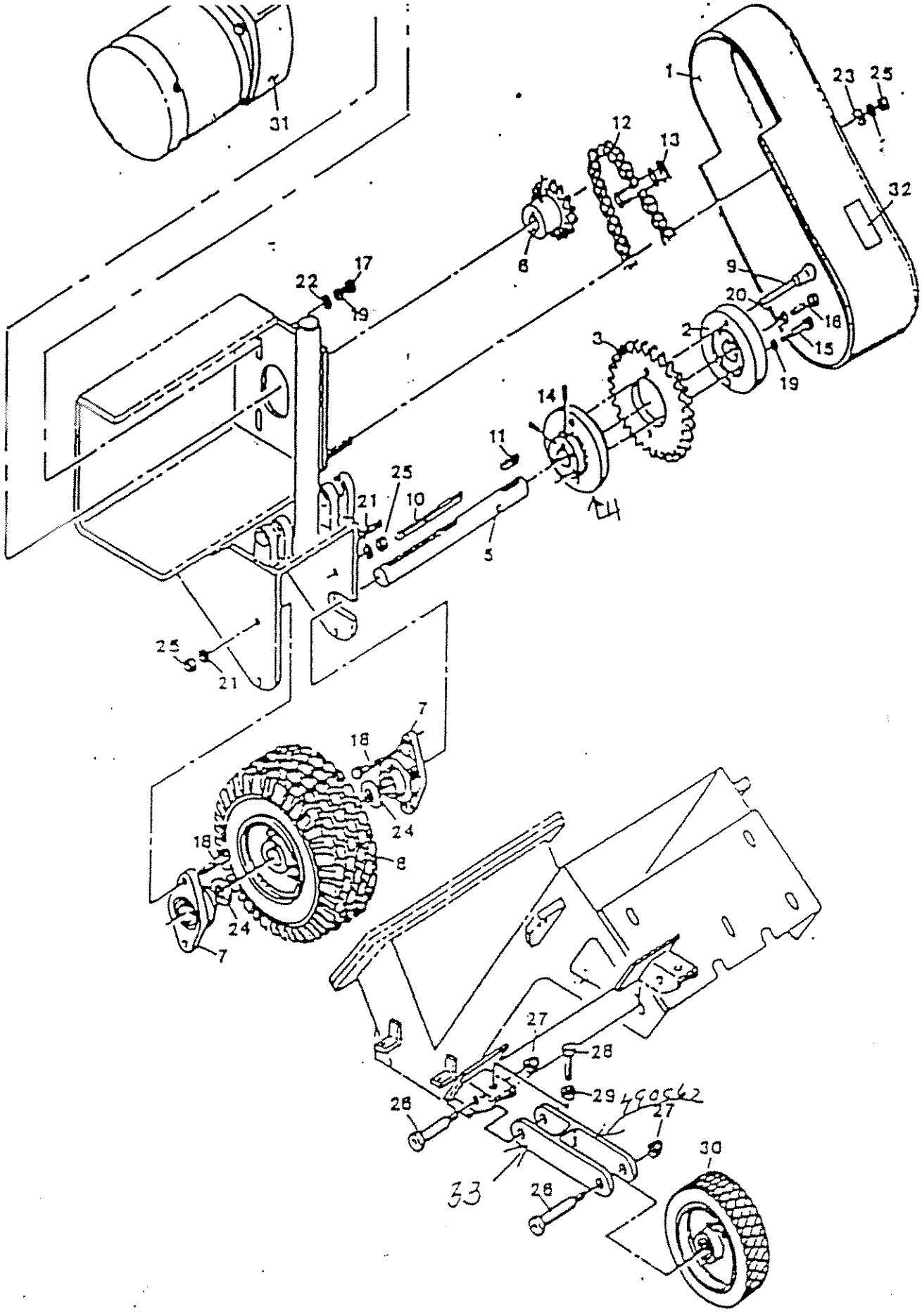


SD 3094 - Housing, Liners, Plenum & Panel for Model 1-10D

CONTROL PANEL, HOUSING AND PLENUM ASSEMBLY - SD 3094

ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	4	456550		MOUNT
2	1	490060	82B0888	COVER
3	1	489946	82B0516	LINER #1
4	1	489947	82B0517	LINER #2
5	1	489948	82B0518	LINER #3
6	1	489949	82B0876	LINER #4
7	1	490044	82B0877	LINER #5
8	2	490045	82B0878	LINER #6
9	1	489940	82D1277	HOUSING
10	1	489943	82D1278	PLENUM
11	2	236591	64A0597	CLEVIS ASY. (INCL. CLEVIS & PIN)
12	2	198457	60A0597	1/2-13 CAP NUT HARD
13	6	500768		3/8-16 X 1-1/4 HEX HEAD CAP SCREW
14	1	500627		1/2-13 X 2 SQ. HEAD SET SCREW
15	8	500114		5/16 LOCKWASHER
16	6	500115		3/8 LOCKWASHER
17	10	500115		3/8 LOCKWASHER
18	10	500104		3/8 PLAIN LOCKWASHER
19	8	500590		5/16-18 HEX NUT
20	6	500060		3/8-16 HEX NUT
21	10	076291		3/8 CAP NUT HARD
22	1	494044	84A0418	SIGN/HAZARD MECH.
23	2	490092	82B0897	SIGN/BLASTRAC
24	1	494036	83B0496	SIGN/BEARING UNIT
25	1	494150	83B0510	SIGN/LOCKOUT POWER
26	1	494151	83B0511	SIGN/GLASSES
27	1	494149	83A0431	SIGN/VERIFY ROTATION
28	1	491976		ELECTRICAL PANEL
29	1	500071		NUT/JAM 1/2-13 IN.

When ordering P/N 490060, Item #2, also order P/N 494044, Item #22.

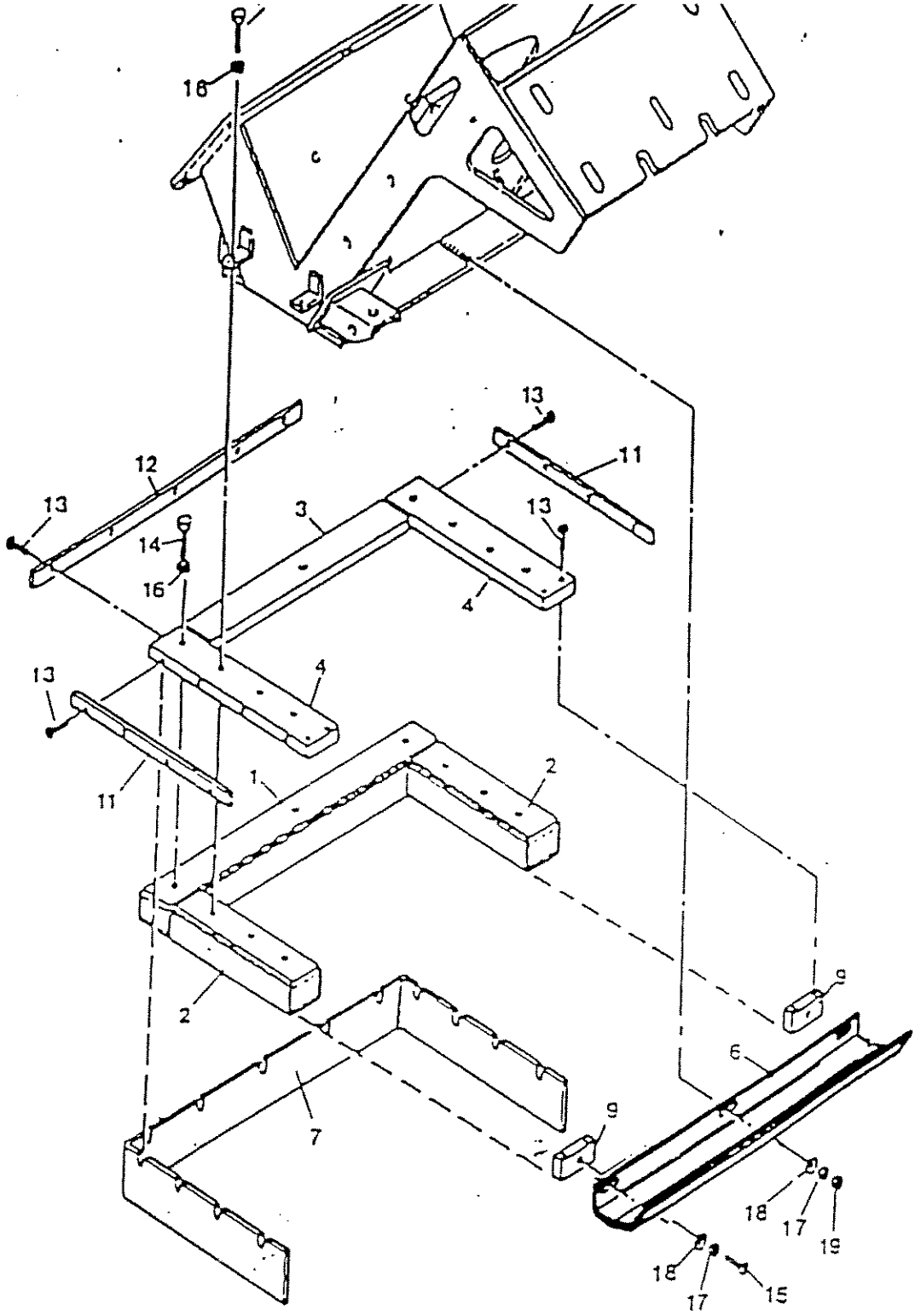


SD3096 - Traction Drive & Wheel Assembly for Model 1-10D

TRACTION DRIVE AND IDLER WHEEL ASSEMBLY - SD 3096

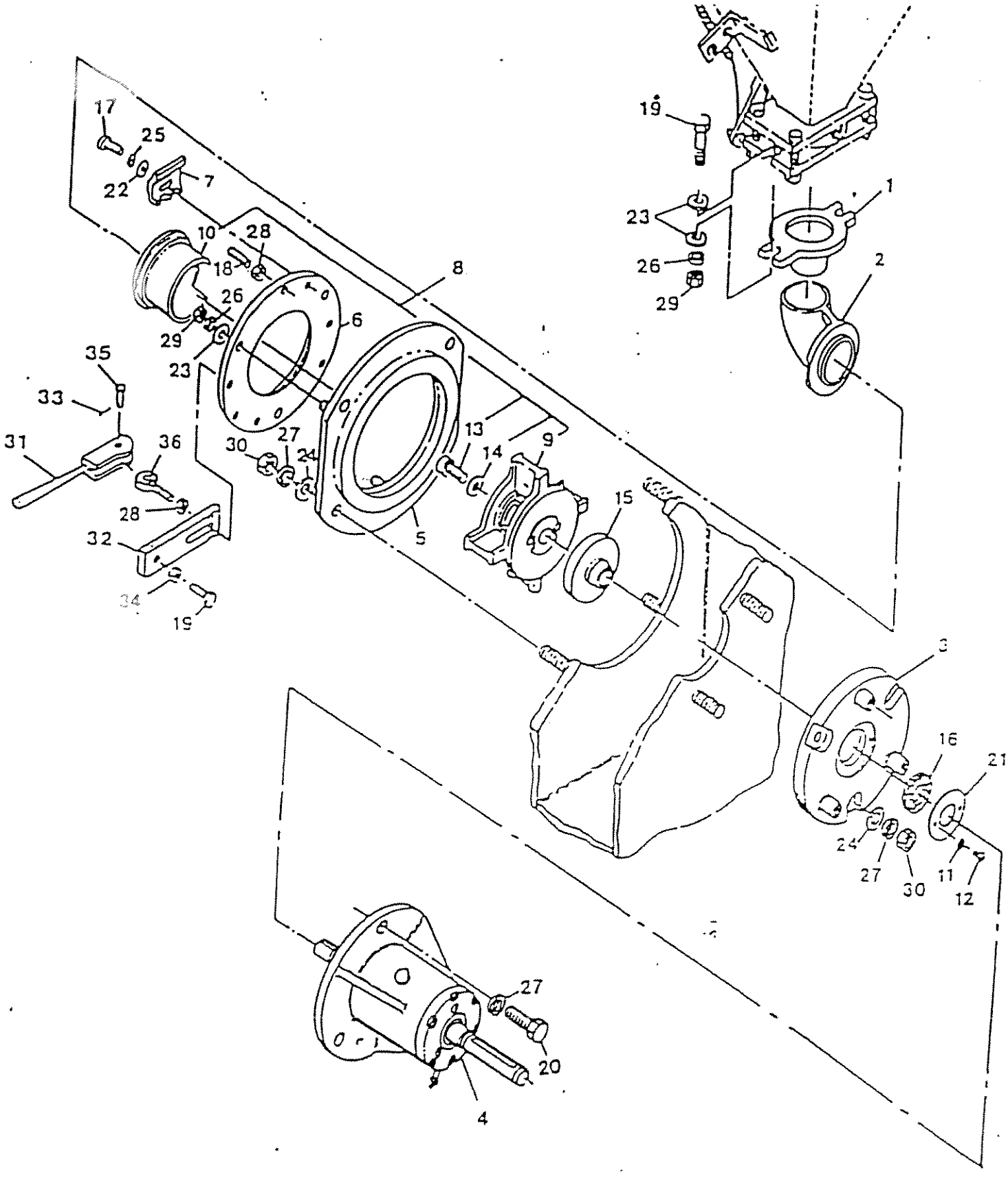
ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	1	490077	82D1280	GUARD
2	1	477630	80B0257	RETAINER
3	1	477631	80B0258	SPROCKER-SHAFT
4	1	477629	80B0256	HUB
5	1	490072	82B0894	SHAFT
6	1	84234		SPROCKET - MOTOR
7	2	205571		BEARING 34 IN. BORE
8	1	490079		TIRE ASSEMBLY
9	1	478198		QUICK RELEASE PIN
10	1	501907	78D0689	KEY 3/16 X 3/16 X 3
11	1	501902	78D0698	KEY 3/16 X 3/16 X 1
12	1	492011		CHAIN ASA #40
13	1	452836		LINK
14	2	500689		#10-24 X 3/8 ALLEN HD.SET SCREW
15	4	500174		1/4-20 X 3/4 HEX HD. CAP SCREW
16	1	500458		5/16-18 X 3/4 HEX HD. CAP SCREW
17	4	482237		1/4-28 X 1 HEX HD. CAP SCREW
18	4	500768		38-16 X 1-1/4 HEX HD. CAP SCREW
19	8	500953		1/4 IN. LOCKWASHER
20	1	500114		5/16 IN. LOCKWASHER
21	4	500115		3/8 IN. LOCKWASHER
22	4	500103		5/16 IN. PLAIN LOCKWASHER
23	2	500081		3/8 IN. LOCK NUT
24	2	500108		3/4 IN. PLAIN WASHER
25	6	500060		3/8-16 HEX NUT
26	4	492023		1/2-13 X 2-1/2 SOC.HD.SHOULDER S
27	4	500082		1/2-13 LOCK NUT
28	2	500630		1/2-13 X 2-3/4 SQ.HD.SET SCREW
29	2	500071		1/2-13 HEX.JAM NUT
30	2	490084		WHEEL 6 IN. DIA. X 5/8 IN. BORE
31	1	483516		MOTOR DC W/GEAR REDUCER
32	1	494044	83A0418	SIGN/HAZARD MECH.
33	1	490062		BRACKET/IDLER WHEEL

When ordering P/N 490077, Item #1, also order P/N 494044, Item #32.



SD3098 - Magnet & Seal Assembly for Model 1-10D

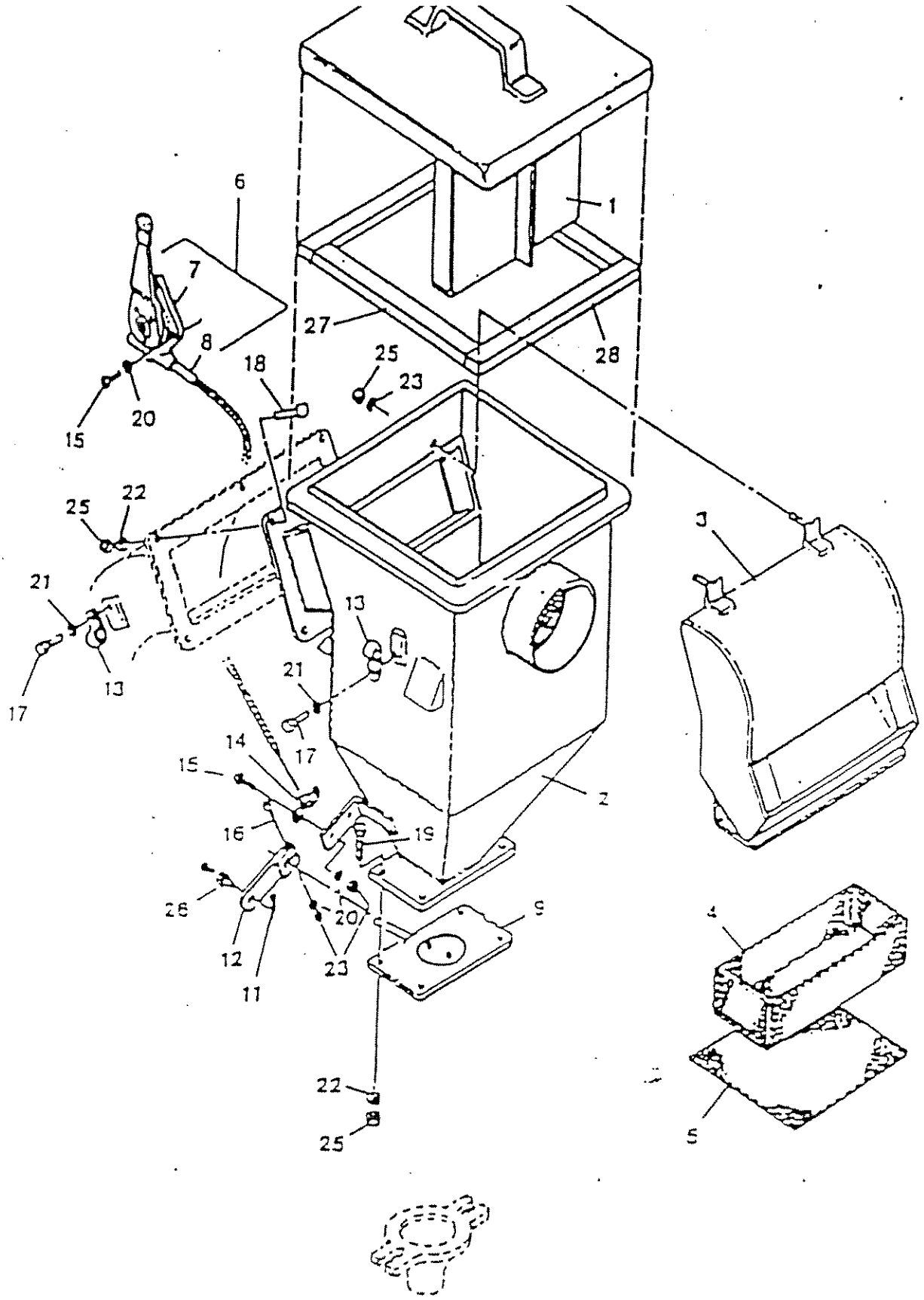
ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	1	490049	82C0529	FRONT MAGNET
2	2	490047	82B0880	SIDE MAGNET
3	1	490046	82B0879	INSULATOR-FRONT MAGNET
4	2	489945	82B0515	INSULATOR-SIDE MAGNET
6	1	679674	90C0079	SKID - SEAL
7	1	490050	82B0881	SEAL - MAGNETS
9	2	481350	80A0649	SPACER
11	2	490051	82B0882	RETAINER - SIDE MAGNET SEAL
12	1	490053	82B0884	RETAINER - FRONT MAGNET SEAL
13	17	500972		1/4-20 X 1 BUTTON HD.CAP SCREW
14	9	501565		5/16-18 X 1 HEX HD SCREW S.S.
15	2	501199		1/4-20 X 3/4 RND HD MACH SCREW
16	9	500114		5/16 LOCKWASHER
17	3	500953		1/4 LOCKWASHER
18	3	500102		1/4 PLAIN WASHER
19	1	500058		1/4-20 HEX HD NUT



SD3102 - 8" Dia Blast Wheel Assembly for Model 1-10D

BLAST WHEEL ASSEMBLY - SD 3102

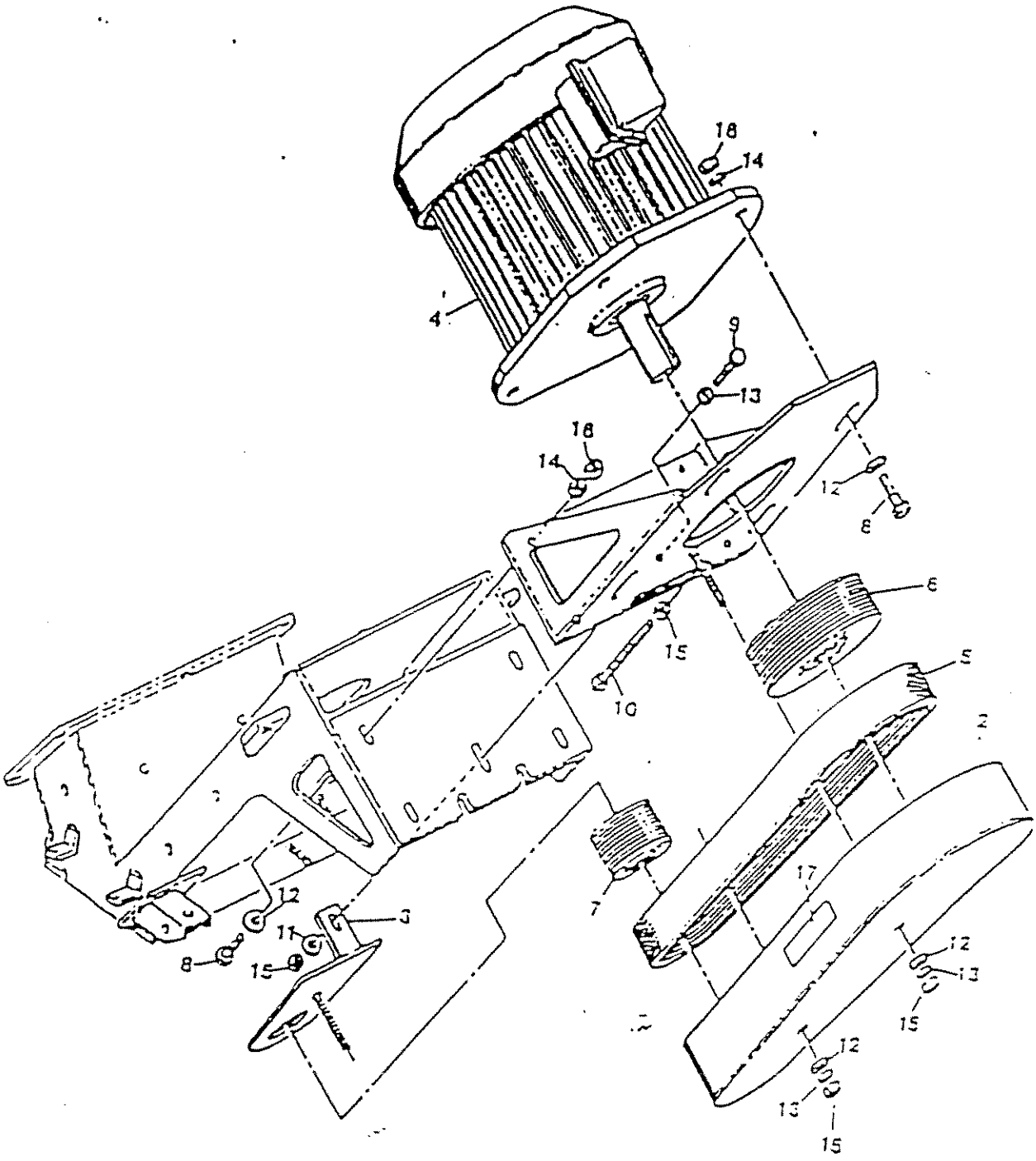
ITEM NO	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	1	493698	93C0383	ADAPTER/FEED SPOUT
2	1	493700	83C0385	FEED SPOUT
3	1	495943	84C0195	MOUNT/BEARING UNIT
4	1	489295	82D0868	BEARING UNIT ASSEMBLY
5	1	495941	84B0175	BRACKET/MTG CONTROL CAGE SUPPORT
6	1	495942	84B0176	BRACKET/CONTROL CAGE SUPPORT
7	2	414699	72A0664	CLAMP/CONTROL CAGE
8	1	497778		WHEEL KIT - INCLUDES ITEMS 9, 10, 13, AND 14
9	1	493701	83D0652	WHEEL/8 INCH
10	1	493699	83C0384	CONTROL CAGE
11	2	500113		3/16 LOCK WASHER
12	2	500045		#10-24 X 3/8 RD.HD.MACH.SCREW
13	1	500465		3/8-16 X 1-1/4 SOC.HD.CAP SCREW
14	1	483947		SPHERICAL WASHER
15	1	495940	84B0174	HUB
16	1	495938	84A0167	SEAL/FELT
17	2	500189		5/16-18 X 3/4 HEX HD.CAP SCREW
18	3	501231		5/16-18 X 3/4 ALLEN HD.CUP POINT
19	4	500768		3/8-16 X 1-1/4 HEX HD.CAP SCREW
20	3	500220		1/2-13 X 1-1/4 HEX HD.CAP SCREW
21	1	495937	84A0166	RETAINER/FELT SEAL
22	2	500103		5/16" PLAIN WASHER
23	7	500104		3/8" PLAIN WASHER
24	7	500106		1/2" PLAIN WASHER
25	3	500114		3/16" LOCK WASHER
26	5	500115		3/8" LOCK WASHER
27	10	500116		1/2" LOCK WASHER
28	5	501402		5/16-18 JAM NUT
29	2	500060		3/8-16 HEX NUT
30	7	500062		1/2-13 HEX NUT
31	2	493965		CAM
32	2	493966		STRAP
33	2	500596		1/8 X 1 COTTER PIN
34	2	500070		3/8-16 JAM NUT
35	2	493964		CLEVIS PIN
36	2	493963	83A0410	ROD END



SD3103 - Abrasive Valve & Separator Assembly for Model 1-10D

ABRASIVE VALVE AND SEPARATOR ASSEMBLY - SD 3103

ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	1	490068	82C0790	LID
2	1	489541	82D0870	SEPARATOR
3	1	490056	82C0530	DEFLECTOR
4	1	490058	82C0531	BASKET
5	1	492005	83A0133	SCREEN
6	1	487220	82B0082	ABRASIVE CONTROL ASSEMBLY (Use P/N 487263 & 487264)
7	1	487263		OPERATOR
8	1	487264		CABLE ASSEMBLY
9	1	680020	90C0109	ABRASIVE VALVE ASSEMBLY
11	1	500596		1/8 X 1 COTTER PIN
12	1	478461	80A0351	LINKAGE
13	2	491956		CLAMP/ELECTRICAL CABLE
14	1	452394		CLAMP
15	6	501502		#10-24 X 5/8 ALLEN HD.CAP SCREW
16	1	501617		#10-24 X 1 ALLEN HD.CAP SCREW
17	2	500177		1/4-20 X 1-1/2 HEX HD.CAP SCREW
18	6	500768		3/8-16 X 1-1/4 HEX HD.CAP SCREW
19	4	500769		3/8-16 X 1-3/4 HEX HD.CAP SCREW
20	7	500113		3/16 IN. LOCKWASHER
21	2	500953		1/4 IN. LOCKWASHER
22	12	500115		3/8 IN. LOCKWASHER
23	2	500104		3/8 IN. PLAIN WASHER
24	3	500901		#10-24 HEX NUT
25	11	500060		3/8-16 HEX NUT
26	1	491726	83A 85	PIVOT (INCLUDES #10-32 X 3/8 RD. HD. MACH. SCREW)
27	2	493291 ~~439291~~	84A0323	SEAL/SEPARATOR LID
28	2	493386	84A0322	SEAL/SEPARATOR LID

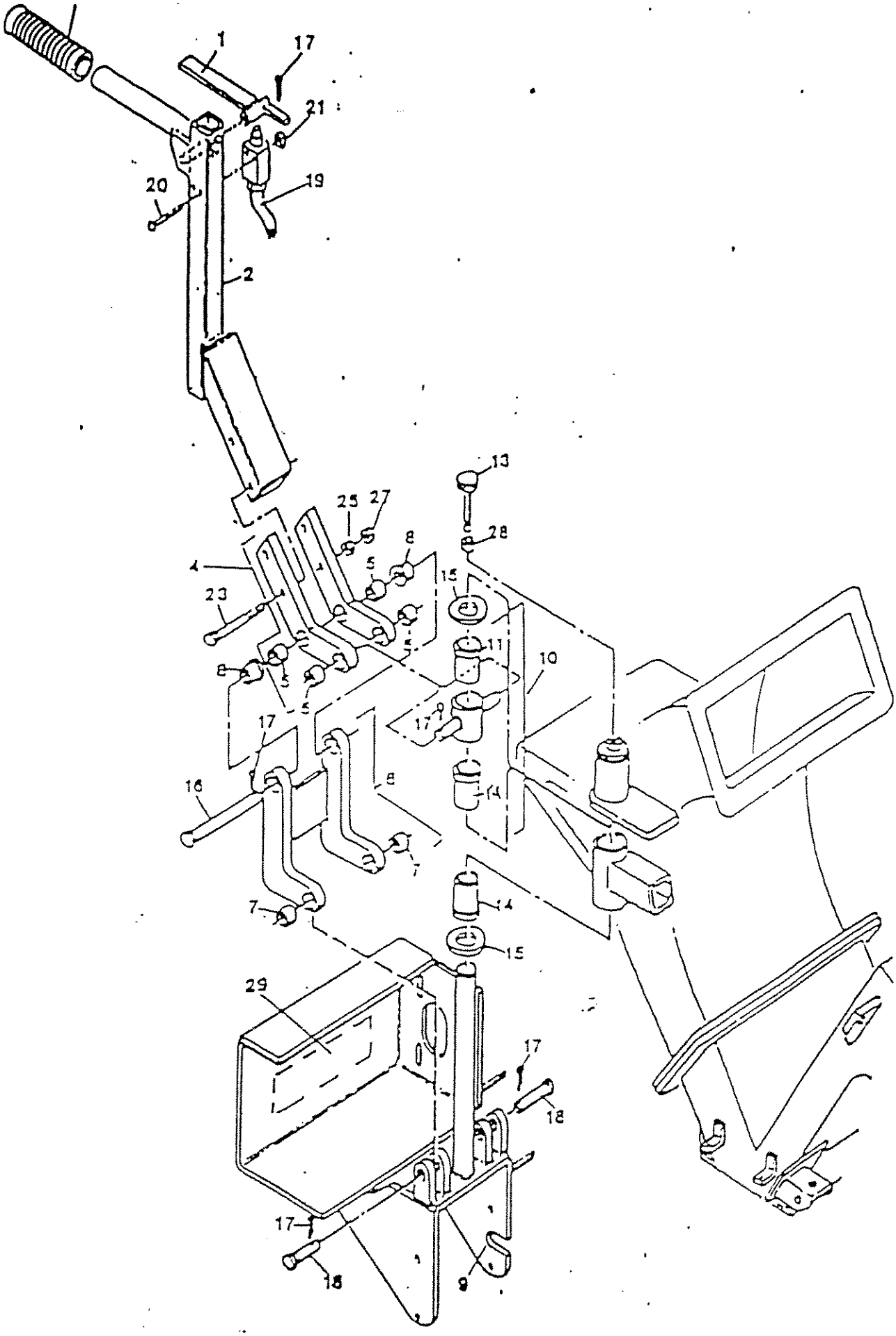


SD3104 - Blast Wheel Drive Assembly for Model 1-10D

BLAST WHEEL MOTOR ASSEMBLY - SD 3104

ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
1	1	491767	83D0167	BRACKET
2	1	491741	83C0078	GUARD
3	1	491744	83B0109	BACKPLATE
4	1	491587		MOTOR 10 HP SPECIAL
5	1	493263		BELT
6	1	493265		SHEAVE - MOTOR
7	1	493264		SHEAVE - BEARING UNIT
8	8	500221		1/2-13 X 1-1/2 HEX HD. CAP SCREW
9	1	500769		3/8-16 X 1-3/4 HEX HD. CAP SCREW
10	2	500888		3/8-16 X 4 SQ. HD. SET SCREW CUP
11	1	500104		3/8 PLAIN WASHER
12	10	500106		1/2 PLAIN WASHER
13	3	500115		3/8 LOCKWASHER
14	8	500116		1/2 LOCKWASHER
15	5	500060		3/8-16 NEX NUT
16	8	500062		1/2-13 HEX NUT
17	1	494044	83A0418	SIGN/HAZARD MECH.

When ordering P/N 491741, Item #2, also order P/N 494044, Item #17.



SD3095 - Steering Assembly for Model 1-10D

STEERING ASSEMBLY SD 3095

Item No.	Quantity	Part No	DWG No	Description
1	1	490074	82B0895	Lever
2	1	490076	82C0792	Handle
4	2	491949	83B0152	Arm (Includes Item #5)
5	4	491846		Bushing 5-8 IN Bore
6	1	491848	83B0151	Linkage (Includes Items 7 & 8)
7	2	491846		Bushing 5/8 IN Bore
8	2	491847		Flange Bushing 5/8 IN Bore
9	1	490078	82D1281	Support Drive
10	1	491950	83A0126	Yoke (Includes Item #11)
11	1	491848		Flange Bushing 1-1/4 IN Bore
12	1	453290		Grip
13	1	672946		Swivel Screw
14	2	491848		Flange Bushing 1-1/4 IN Bore
15	2	492012		1-1/4 Plain Washer SAE SS
16	1	491969		5/8 X 6 Clevis Pin
17	6	500596		1/8 Cotter Pin
18	2	491968		5/8 X 3/4 Clevis Pin
19	1	486110		Switch
20	2	492070		10-32 X 2 1/4 Rd Hd Mach Screw
21	1	492020		10-32 SQ Nut
23	2	500209		3/8-16 X 5 Hex Hd Cap Screw
25	2	500115		3/8 Lockwasher
27	2	500060		3/8-16 Hex Nut
28	1	500590		5/16-18 Hex Nut
29	1	490092	82B0897	Sign/Blastrac

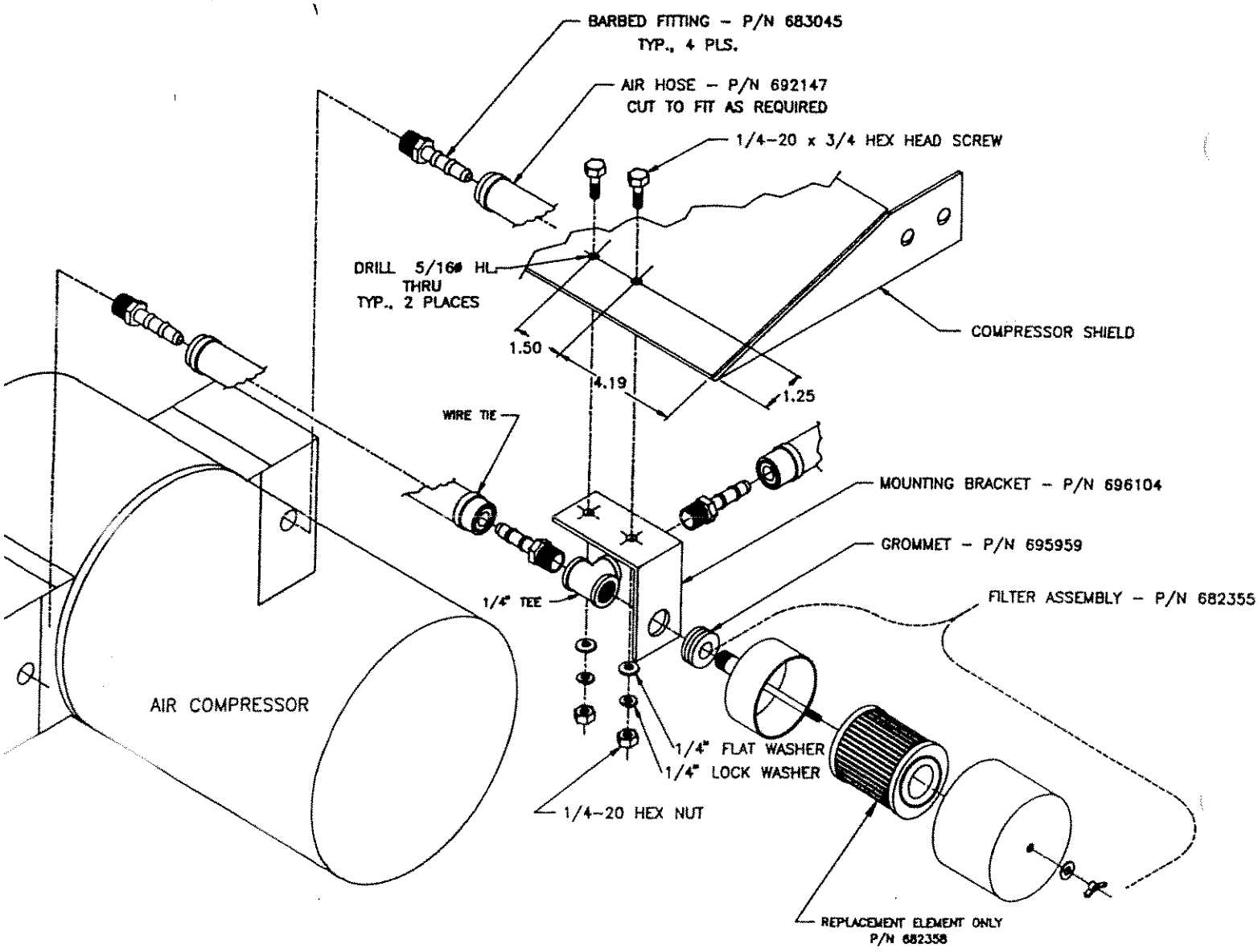
REMOTE AIR FILTER INSTALLATION KIT

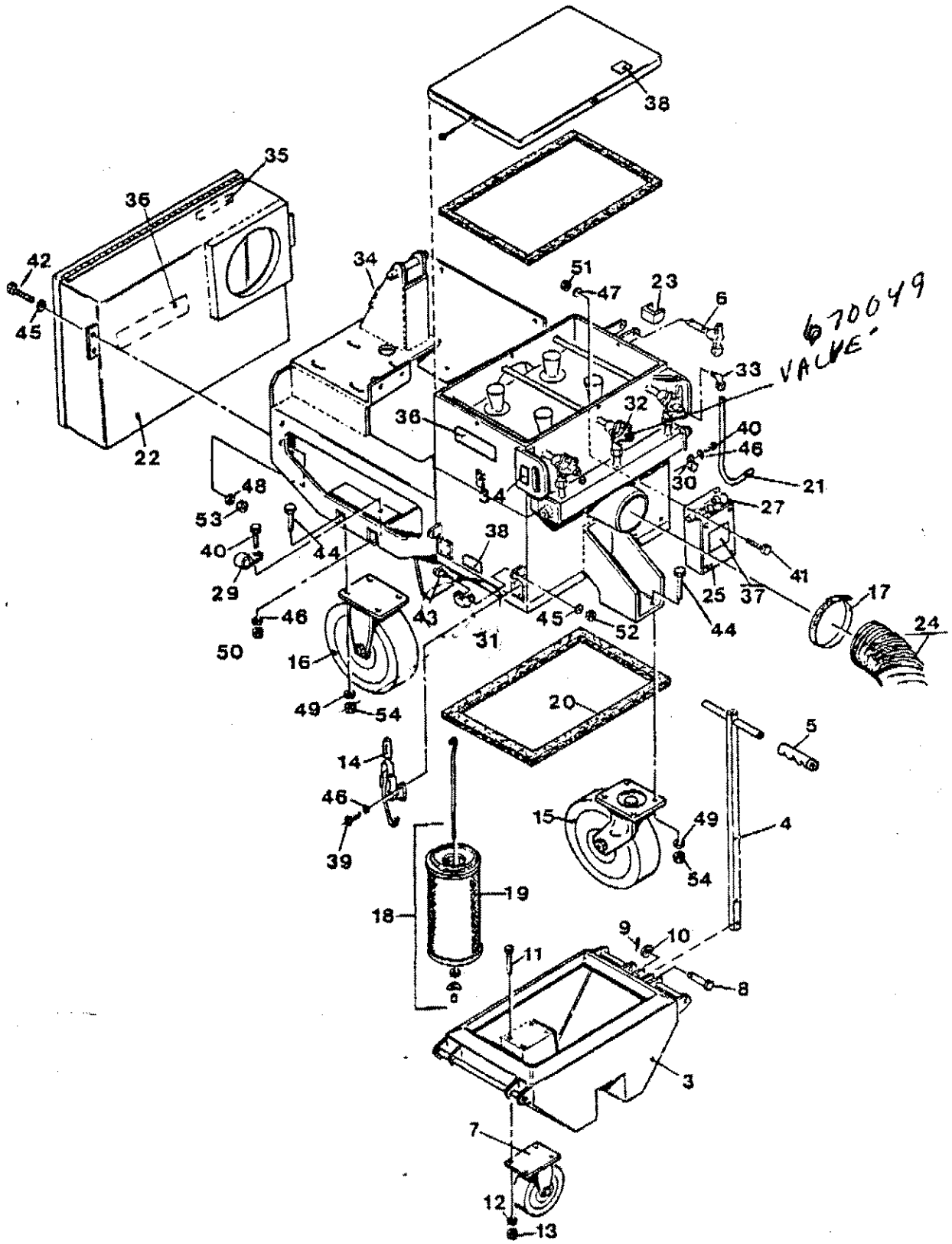
6–54 D/C P/N 696164

KIT PARTS			
ITEM	QTY.	P/N	DESCRIPTION
1	1	682355	FILTER ASSEMBLY
2	4	683045	BARBED FITTING
3	30"	692147	AIR HOSE – 3/8"
4	1	696104	BRACKET / FILTER MOUNTING
5	1	695959	GROMMET
6	1		1/4" TEE
7	4		WIRE TIES
8	2		1/4–20 x 3/4" HEX HEAD SCR
9	2		1/4" FLT WASH
10	2		1/4" LOCK WASHER
11	2		1/4–20 HEX NUT
12	1		COPY OF DRAWING 96C0342

INSTALLATION INSTRUCTIONS:

1. DRILL TWO 5/16ø HOLES AT SPECIFIED LOCATION
2. REMOVE EXISTING AIR FILTERS
3. INSTALL BARBED FITTINGS INTO COMPRESSOR
4. INSTALL FILTER MOUNTING BRACKET AS SHOWN
5. ASSEMBLE BARBED FITTINGS TO 1/4" TEE AS SHOWN
6. LOCATE GROMMET INTO MOUNTING BRACKET
7. LOCATE FILTER ASSEMBLY THRU GROMMET AND SCREW ON 1/4" TEE
8. CUT AIR HOSE TO LENGTH AND MOUNT TO BARBED FITTINGS
9. INSTALL WIRE TIES, TIGHTEN AND CUT SHORT



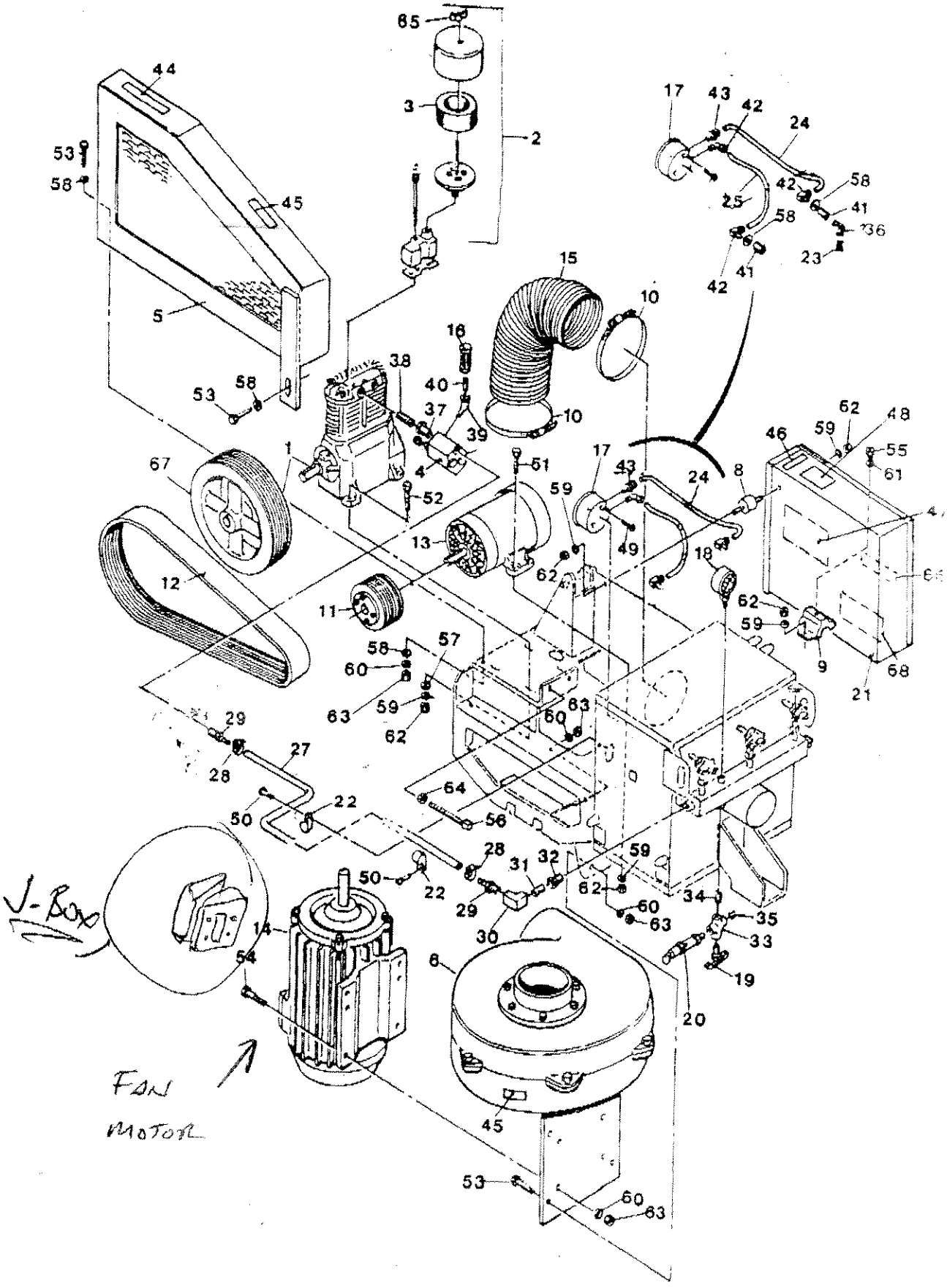


				HOUSING ASSEMBLY
				554 DC
				SCALE DRAWN TRACED

554 HOUSING ASSEMBLY

ITEM NO.	QTY.	PART NO.	DWG. NO.	DESCRIPTION
1	1	BM 490098	82 D 1286	Housing
2	1	BM 492307		Hopper Assy. (Includes Items #3 thru #13)
3	1	BM 490094		Hopper
4	1	BM 490097		Handle
5	2	453290		Grip
6	1	490694		Pin
7	2	490696		Caster
8	1	491967		1/2 x 2-1/4 Clevis Pin
9	1	500596		1/8 x 1 Cotter Pin
10	2	500106		1/2" Plain Washer
11	8	500189		5/16-18 x 3/4 Hex. Hd. Cap Screw
12	8	500114		5/16 Lock Washer
13	8	500059		5/16-18 Hex Nut
14	4	483551		Clamp - De-Staco 351
15	1	490697		Caster
16	2	490695		Caster
17	1	176038		Clamp
18	5	490803		Filter Element Assy. (Includes Item #19)
19	5	493206		Element/Filter
20	1	491809	83 B 119	Seal/Hopper
21	15 ft.	484810		Tubing
* 22	1	BM 492425	83 C 197	Silencer Assy.
23	1	BM 492742	83 A 266	Damper
24	2	492019		Duct 5"
25	1	491836		Timer Assy. (Includes Items #26 thru #28)

ITEM NO.	QTY.	PART NO.	DWG. NO.	DESCRIPTION
26	3	493410		Valve/Pilot
27	3	493397		Elbow
28	1	487270		Timer (not shown)
29	1	491955		Cleat/Cable 3/4"
30	1	491954		Cleat/Cable 1/2"
31	4	464548	78 A 284	Latch/Clamp
32	3	493398		Vlv./Rebuild Kit
33	3	493397		Elbow
34	3	487788	82 A 348	Sign/Lift
35	1	451666	76 A 327	Sign/Caution
36	3	493011	83 B 331	Sign/554
37	1	446275	75 A 365	Sign/Voltage
38	3	479830	80 A 676	Sign/Caution
39	16	500045		#10-24 x 3/8 Rd. Hd. Machine Screw
40	2	501144		#10-24 x 2 Rd. Hd. Machine Screw
41	4	500189		5/16-18 x 3/4 Hex. Hd. Cap Screw
42	4	500768		3/8-16 x 1-1/4 Hex. Hd. Cap Screw
43	4	414810		3/8 x 1-1/2 Soc. Hd. Shoulder Screw
44	12	500221		1/2-13 x 1-1/2 Hex. Hd. Cap Screw
45	8	500104		3/8 Plain Washer
46	16	500113		3/16 Lockwasher
47	4	500114		5/16 Lockwasher
48	4	500115		3/8 Lockwasher
49	12	500116		1/2 Lockwasher



				COMPRESSOR & BLOWER ASSEMBLY	
				554 DC	
				SCALE NTS	DRAWN LRM	TRACED

SD 3100

COMPRESSOR AND BLOWER ASSEMBLY - SD 3100

ITEM NO.	QUANTITY	PART NO.	DWG. NO	DESCRIPTION
1	1	490698		COMPRESSOR (INCLUDES ITEM #67)
2	1	497771		FILTER ASSY. (INCLUDES ITEM #3)
3	1	490804		ELEMENT/FILTER
4	1	490691		UNLOADER
5	1	490099	82D1287	GUARD
6	1	490693		BLOWER (INLCUDES ITEM #7)
7	1	493399		BLOWER WHEEL (NOT SHOWN)
8	2	456550		MOUNT
9	2	483464		INSOLATOR
10	2	223961		CLAMP
11	1	491824		SHEAVE
12	1	491825		BELT
13	1	265505		MOTOR 2 HP
14	1	491816		MOTOR 5 HP (SPECIAL)
15	1	490706	84A0370	DUCT 8 IN.
16	1	255861		MUFFLER
17	1	491837		GAUGE/MAGNEHELIC 0-10 IN.
18	1	126814		GAUGE/PRESSURE 0-160 PSI
19	1	484951		VALVE/DRAIN
20	1	483468		VALVE/SAFETY
21	1	491975		ELECTRICAL PANEL
22	2	491955		CLEAT/CABLE 3/4 IN.
23	1	441378		VENT
24	1	492050		TUBE
25	1	492051		TUBE
26	1	500550		ELBOW
27	1	492743		HOSE
28	2	205112		CLAMP/HOSE
29	2	146280		FITTING HOSE
30	1	500552		ELBOW 1/2 IN. 90 DEG.
31	1	500349		NIPPLE/PIPE 1/2 X 1-1/2 IN.
32	1	501697		REDUCER 1 X 1/2 IN.
33	1	500521		CROSS 1/4 IN.
34	1	500913		NIPPLE/CLOSE 1/4 IN.
35	1	500492		PLUG 1/4 IN. SQ. HD.
37	1	500539		REDUCER 1/2 X 3/8 IN.
38	1	500345		NIPPLE 3/8 X 8 IN.
39	1	500393		ELBOW/STREET 3/8 IN.
40	1	500343		NIPPLE/CLOSE 3/8 IN.
41	2	500365		COUPLING 1/8 IN.
42	3	483864		ELBOW 1/8 IN.
43	1	483862		CONNECTOR/MALE 1/8 IN.
44	1	494044	83A0418	SIGN/WARNING
45	2	472553	79A1015	SIGN/ROTATION
46	1	494149	83A0431	SIGN/CAUTION
47	1	494150	83B0510	SIGN/DANGER
48	1	493905	83B0489	SIGN/INSTRUCTIONS

FILTER HOUSING ASSEMBLY CONTINUED

ITEM NO.	QUANTITY	PART NO.	DWG. NO.	DESCRIPTION
47	4	500115		3/8 LOCKWASHER
48	12	500116		1/2 LOCKWASHER
49	2	500901		#10-24 HEX NUT
50	4	500059		5/16-18 HEX NUT
51	4	500080		5/16-18 FLEX LOCK NUT
52	4	500060		3/8-16 HEX NUT
53	12	500062		1/2-13 HEX NUT

When ordering P/N 492425, Item #22, also order P/N 494044, Item #35.