U S E R'S M A N U A L
for
AMBIENT AIR BREATHING APPARATUS (AABA) PUMPS

P/N 9806
P/N 9821
P/N 9832
P/N 9833
P/N 9846
P/N 9850

ALLEGRO®
INDUSTRIES

Read and understand all instructions before using this product. Open carton carefully and inspect product for damage caused by carrier. If any damage is found, report and submit claim to carrier.

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INTRODUCTION

This manual provides instructions for the use and maintenance of Allegro Ambient Air Breathing Apparatus (AABA) Pumps. You must read and understand this manual and be trained in the proper use of the equipment before using it in a contaminated atmosphere.

There are many federal, state, and local codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary. Allegro cannot be held responsible for how the products are used and installed. Before purchase and use, the buyer must review the product application, be sure that the product installation and use will comply with those regulations.

For more information and assistance on Allegro Products, contact Allegro Technical Service Department at (800) 622-3530 or email techsvc@allegrosafety.com.

DESCRIPTION

Allegro AABA pumps are designed to pump clean, breathable air from an ambient source to a NIOSH approved Type C, Continuous Flow Supplied Air Respirator.

WARNINGS AND LIMITATIONS

CAUTION

NIOSH-approved respirators and corresponding hose lengths must function at pressures generated by air pumps. Use only Type C (constant flow, low pressure) respirators with AABA pumps.

WARNING!

Exhaust filter DOES NOT remove dangerous organic vapors, gases, or particulate. DO NOT use this equipment if dangerous organic vapors, gases, or particulates are present.

WARNING!

Ambient air breathing pumps should only be used in areas containing sufficient oxygen to support life. Do not use where contaminants are Immediately Dangerous to Life and Health (IDLH).

SAFETY PRECAUTIONS

FOLLOW ALL WARNINGS AND CAUTIONS

ALL PUMPS:

DO NOT place oil-less air pump in an area that cannot GUARANTEE clean Grade D, breathable air, per OSHA 29 CFR 1910.134 to the AABA inlet. See below for Grade D requirements.
DO NOT attempt to service the air pump while it is running or while it is connected to electrical or air power.
DO NOT oil or lubricate the pump.
DO NOT kink power cord, and never allow the cord to come in contact with oil, grease, hot surfaces, or chemicals.
DO NOT use ungrounded electrical receptacles.
DO NOT use undersized electrical extension cords or wiring.
DO NOT use the pump as an air-filtering device for vapors, gases, or particulates.
DO NOT start pump without respirator(s) and hose(s) connected to pump.
DO NOT use Vortex type cooled respirators with Allegro pumps.
DO check all airline hoses for weakness and wear before use.
DO protect all power cords from damage.
DO use grounded electrical connections.
DO disconnect power source before attempting to service the pump.
DO change the inlet filter every 200 running hours or if the pressure gauge shows a drop in pressure.
DO ensure all hose and plumbing connections are secure.
DO ensure the power source conforms to the requirements of your equipment.
DO remove aluminum canister on exhaust filter assembly and ensure the exhaust filter is firmly seated in place before startup.

AIR DRIVEN PUMP (P/N 9850):

DO NOT attempt to service the air pump or air motor while it is in operation, or connected to air source.
DO NOT run air motor with less than 75 cfm at 80 psi.
DO NOT use less than ½" I.D. inlet air supply hose.
DO NOT run air motor with dirty particulate filter.
DO NOT run air motor without the proper inline lubrication to the motor.
DO run air motor with inline lubrication properly filled and adjusted.
DO ensure the air pressure and volume conforms to the requirements of your equipment.

EXPLOSION PROOF PUMP: (P/N 9833)

DO NOT remove plug or cord from motor. Hazardous location plug and receptacle must be used at all times.
DO NOT place pump's inlet filter (or extension) in a hazardous location.
DO ensure proper electrical power to motor.
DO ensure proper cooling for electrical motor, to avoid heat sources in a hazardous location.

NOTE

Allegro Industries does not include a NEMA rated electrical socket with our Explosion Proof products. They are equipped with a NEMA rated EX plug which allows the unit to be connected directly into appropriate hazardous location receptacles. It is important to check the regulations for your specific application as to the proper electrical connection for this device. If you find you need an EX socket to install for your application, request them by calling 800-622-3530 or contact us on our website www.allegrosafety.com.

NOTE

For further information on how to operate Allegro AABA pumps with various NIOSH approved respirators, please contact our Technical Service Center at (800) 622-3530, or techsvc@allegrosafety.com.

WARNING!

DO NOT run pump without attaching the breathing hose and respirator. Failure to do so may result in a “back pressure” causing damage and/or stalling the pump.

USER’S INSTRUCTIONS

1. Ensure the pump (or inlet extension filter) is in a clean uncontaminated air environment.
   - If clean air CANNOT be guaranteed at the pump inlet at all times, use the Inlet Extension Hose Kit (P/N: 9700-65). See instructions on the Inlet Extension Kit below.
2. Ensure canister on the discharge filter assembly is firmly seated and secure before startup.
   - Discharged air passes through the HEPA outlet filter located inside the discharge filter assembly.
   - HEPA filter is NOT for use as protection against vapors and gases.
   - D.O.P. efficiency: 99.97% (0.3-0.6 micron particles)
3. Attach respirator/hood and air breathing hose to pump.
   - Check respirator manufacturer’s recommendation for inspection/operation procedures.
   - Never start pump without hose and respirator attached. This may result excessive back pressure that will lead to pump damage.
4. Ensure air hoses are not tightly coiled or kinked.
   - This may cause some restriction of the air flow causing the pump to run at a higher PSI and overheat.
5. Plug the pump into proper electrical outlet and turn on the power switch.
6. Properly adjust pressure relief valve (see instruction for PRV below).

- Pumps are designed for multiple users and may require an adjustment to the pressure relief valve to fit the number of workers using the system.

7. Don the respirators as instructed per manufacturer user's instructions.
8. Ensure all users are receiving sufficient air to the respirator.
   - Use Allegro P/N 9900-40 Flow Test Kit to verify proper airflow (CFM) to the respirator.
   - Ambient Air Pump Gauge indicates the dynamic air pressure (back pressure), NOT air volume.
9. Enter work/contaminated area.

PRESSURE RELIEF VALVE (PRV):

1) To adjust the relief valve, loosen the lock nut.
2) Turn the adjustment knob counterclockwise to "bleed-off" air.
   - This will decrease pump output to the respirators.
   - It is important to set the proper air flow to the respirator, too much air will over work the pump motor, causing it to overheat. Too little air will not provide sufficient air to the user.
3) Turn the adjustment knob clockwise to decrease air being bled off.
   - This will increase the pressure and air flow to respirators.
   - Care must be taken to ensure the respirator and air hose are not disconnected while pump is running, when the PRV is set to this setting. Pump damage will occur.
4) Tighten lock nut.
   - PRV must be readjusted each time the number of users, respirator type or length of air hose is changed.

NOTE

Ambient Air Pump Gauge indicates the dynamic air pressure (or the back pressure) being delivered to the respirator. Use Allegro P/N 9900-40 Flow Test Kit, to verify proper CFM to the respirator.

INLET EXTENSION KIT: (P/N 9700-65)

1) Locate the Inlet filter where breathing air CANNOT be contaminated by harmful vapors, gases, or particulate and where it will be protected from excessive moisture.
   - Inlet hose extensions may be used to increase distance from the inlet filter to the pump up to 250 feet.
   - Respirators must be supplied with clean breathable air at all times, per OSHA 29 CFR 1910.134.
2) Remove the inlet filter assembly from the pump.
3) Install inlet extension hose to the pump inlet port, using the supplied reducers/ adapters.
4) Install the inlet filter assembly on the other end of the extension hose.
5) The A-300 pump will require an inlet filter assembly (P/N: 9700-08) for use with the extension hose.
   - Place the extension hose in a clean, uncontaminated environment.

NOTE

The use of the remote Inlet Extension Hose will help to reduce the noise produced by the ambient air pump. The noise will travel down the hose to the end where the Inlet Filter is located.

TOLERANCES AND SPECIAL PUMPS

Allegro Ambient Air Pumps are precision pumps that have only .0015-.003 clearance between the top of the rotor and cylinder bore, and .003 or less clearance between end of the rotor and the end plate. Any thrust in the shaft from mishandling or dropping the pump on its end will tend to close these clearances, causing the rotor to jam. Foreign particles, excessive dirt or dust build up may cause sluggish performance and eventual “jamming” of the pump. The pumps have carbon vanes and grease packed bearings. They MUST NOT be lubricated or flushed with petroleum base solvents.

All models have precision ground vanes inside the pump that take up their own wear and will last approximately 3,000 hours, depending upon workload, maintenance, speed and degree or pressure. Excessive dirt, foreign particles, or moisture could cause the vanes to stick in the rotor slots and even break. Periodic “flushing” could prevent this. Use the Allegro Flushing Cleaner (P/N: 9700-11) in the pump chamber only.

CAUTION

The basic materials used in the pumps are cast iron and steel. Consequently, any moisture will tend to corrode the interior, especially when pump stands idle for extended periods.

***AIR PUMP:* (9850)**

- The motor for the Air Driven Pump is a precision built rotary-type motor. The vanes for this motor take up their own wear and will last 5,000 to 15,000 hours depending upon speed, operating pressure, and the precautions taken in maintaining the motor.
- The type of shaft seal used does not lend itself to operating above 100 psi (6.89 bar).
- The air motor requires a minimum of 75 cfm at 80 psi inlet pressure and volume to operate pump delivered via minimum ½” I.D. inlet air supply hose.
- The starting torque is less than the running torque and could vary depending on the position at which the vanes stop in relation to the air intake port.
- The speed and torque can be regulated by using the pressure regulator or shut-off ball valve to obtain desired power.

EXPLOSION PROOF PUMP: (9833)

- This Ambient Air Pump is rated for use in hazardous locations, however the user must ensure the following guidelines are followed:
  - The Inlet Filter (or Extension) must not be in a hazardous environment; this will endanger the respirator user. The Inlet Filter must be in a clean uncontaminated environment at all times.
  - Testing of ambient location where Inlet Filter is placed is strongly recommended, to ensure it meets CGA specifications of grade D or higher.
- The 9833 pump is rated to be used in the following hazardous locations:
  - Class I, Division 1 & 2, Group D
  - Class II, Division 1 & 2,Group F and G
- Verify your location classification.
  - Ensure the pump design meets the hazardous class and group classifications of job site.
  - The National Electric Code divides these locations into Classes and Groups according to the type of explosive gas/agent, which maybe present.
  - For specific information, consult the National Electric Code.
- The Hazardous Location plug and receptacle must be used to hardwire the pump to the power source. Consult a qualified electrician and the National Electric Code.

DANGER!

The "Hazardous Location Plug" supplied with Allegro Explosion Proof Blowers, must be used with an approved Hazardous Location Receptacle for operation in a specific Hazardous Location Atmosphere. Use of any Non-Hazardous Locations Atmosphere receptacle in a Hazardous Location could create a random spark. Such an occurrence can be the ignition source of an explosion, resulting in property damage and/or personal injury or death.

CAUTION

Hazardous location equipment may be required in any area where the presence of flammable gases, vapors or finely pulverized dust in the atmosphere is sufficient to create a threat of explosion or fire. It may also be required where easily ignitable fibers are present.

SPECIFICATIONS

The table shows the maximum allowable number of tight-fitting respirators or loose-fitting hoods.

MODEL NO.	PART NO.	MAX # RESP.	MAX # HOODS	POWER REQUIRED	LBS	HP	PSI	CFM
A-300	9806	1	0	5.5A 115V/230V	33	¼	0-15	0-5
A-750	9821	2	1	8.3A 115V/230V	53	¾	0-15	0-10
A-1500TE	9832	3	2	12.4A 115/230V	97	1 ½	0-15	0-20
A-1500EX	9833*	3	2	10.6A 115/230V	122	1 ½	0-15	0-15
A-3000ATE	9846	6	4	30A 115/230V	217	3	0-15	0-32
A-4000AD	9850	4	3	75 CFM@80 PSIG	83	4(3,7kW)	0-15	0-20

* Single Phase Explosion Proof Motor, complete with Hazardous location type plug

INSPECTION

ALL PUMPS:
Regular inspection, cleaning filters, and ”flushing” may prevent extensive repairs. Dirty or clogged filter elements can cause overheating (in excess of 200°F) and possible pump failure.

It is normal for the pump surface and immediate output air temperatures to reach 200°F when the unit is run continuously under a heavy load or high pressure settings.
- If there is evidence of overheating or excessive noise, stop immediately.
- High-pressure operation will shorten pump’s life.
- Keep external surfaces clean for proper heat dissipation.
- Do not allow pump to operate in ambient air temperatures excess of 40° C (104°F).

Failures due to pressure buildup may include the following:
- Improper setting of pressure relief valve
- Leaks in airline connections
- Damaged filter canister threads
- Collapsed or kinked air lines, dirty filter elements
- Vanes sticking in the rotor slots

ELECTRICAL MOTORS:

Some electrical motors are equipped with a thermal protector that shuts motor down automatically when subjected to mechanical or electrical overloads. Ensure electrical power source corresponds to what is on the motor name plate.

AIR DRIVEN MOTORS:

The air coming out of the discharge port will cool as it expands. It is important that the PVC extension (included with the blower) is used to extend the muffler from the motor discharge port. This will help prevent ice from forming on the muffler due to moisture in the air.

MAINTENANCE

FILTERS:
- Change Inlet Filter every 200 running hours or if the pressure gauge shows a drop in pressure.
- Change discharge filter every 200 running hours or if the pressure gauge shows an increase in pressure.

FLUSHING INSTRUCTIONS:
1. Perform this procedure in a well ventilated area.
2. Wear solvent resistant gloves and eye protection while performing the flushing procedure.
3. Disconnect airline hose and respirator to prevent contamination.
4. Remove inlet filter assembly and pressure relief valve, to prevent damage to pump from back pressure.
5. Add 10-15 squirts of flushing solvent, Allegro P/N: 9700-11, through the inlet port opening.
6. Turn pump on and let run for 1 minute to flush out contaminants.
7. Repeat flushing procedure if pump is extremely dirty or is under performing.
8. Replace inlet filter assembly and pressure relief valve.

9. Replace exhaust filter and inlet filter.
10. Reconnect airline hose and respirator, do not use respirator until all steps complete.
11. Turn pump on for 10 minutes, this allows the flushing solution to dry out completely.

AIR DRIVEN MOTOR: (P/N 9850)

1. Disconnect inlet plumbing from pump and muffler assembly.
2. Add 10-15 squirts of solvent, Allegro P/N: 9700-11, into the inlet port.
3. Rotate the shaft by hand in both directions for a few minutes.
4. Reassemble plumbing and reconnect the inlet air supply line and slowly apply pressure.
5. Flushing liquid should slowly exit the exhaust port, let run for 10 minutes.
6. Reassemble exhaust assembly.

WARNING!

Keep face away from exhaust port. DO NOT flush unit with KEROSENE OR OTHER COMBUSTIBLE LIQUIDS. Personal injury and/or property damage will result.

LUBRICATION: (For Air Driven Pump Only P/N: 9850)
To lubricate the air motor (which drives air driven Model: A-400AD), use a detergent SAE #10 automotive engine oil. DO NOT lubricate air pump. For proper operation and maximum service-life, an automatic air line lubricator has been installed inline just before the air motor.

- The lubricator should be adjusted to feed one drop of oil per minute.
- Lubrication is necessary for all internal moving parts and rust prevention.
- Excessive moisture in the air line can cause rust formation in motor and might also cause ice to form in the muffler due to expansion of air through the motor.
- The moisture problem can be corrected by installing an additional moisture separator inline.

VANE REPLACEMENT: (Consult factory prior to replacing vanes.)
To replace vanes or inspect the pump interior:

1. Remove only the endplate by removing the six bolts holding the endplate to the body.
2. Remove the endplate and the four vanes, pay attention to the direction the vanes are facing.
3. Do not remove the rotor or loosen any electric motor “through-bolts”.
4. Inspect used vanes for signs of cracking due to backpressure.
5. Inspect interior surface of chamber and rotor for any signs of scaring or metal to metal contact.
6. Ensure surface is smooth and free of rust or contaminants, sand down surface if needed.
7. Clean with appropriate flushing solution (Allegro P/N: 9700-11).
8. If necessary align body to set proper clearance.
9. Insert the vanes with the beveled edge fitting the contour of the body bore of the pump.
10. The rotor should be turned while setting clearance to assure all points on the rotor clear the body.
11. Replace the endplate and endplate bolts securely. (Do not over-tighten).

PARTS & ACCESSORIES

All Models

- 9700-02 Exhaust Filter Element (each)
- 9700-11 Pump Flushing Liquid
- 9700-15 Exhaust Filter Canister (canister only)
- 9700-65 Universal Inlet Hose Kit (50 feet)
- 9700-68 3/8” Coupler, locking Hansen
- 9700-69 3/8” Coupler, Hansen
- 9700-71 ¼” Coupler, Schrader
- 9700-72 ½” Coupler, Hansen
- 9700-73 ¼” Coupler, OBAC
- 9700-74A 1/4” Coupler, Hansen

Model A-300

- 9700-04 Pressure Gauge
- 9700-07 Inlet Filter
- 9700-79 Pressure Relief Valve
- 9700-40 Service Kit (includes set of 4 vanes, filters & flushing liquid)
- 9512-02A Electric Power Cord

Models A-750, A-750TE

- 9700-01 Inlet Filter Element (each)
- 9700-04 Pressure Gauge
- 9700-03 Pressure Relief Valve
- 9700-05 Carrying Handle
- 9700-06 Rubber Feet (4 Ea. required)
- 9700-08 Inlet Filter Assembly
- 9700-09 Exhaust Filter Assembly (filter element included)
- 9700-50 Service Kit (includes set of 4 vanes, filters & flushing liquid)
- 9512-02 Electric Cord with integrated switch.

Models A-1500TE, A-1500EX, A-4000AD

- 9700-01 Inlet Filter Element (each)
- 9700-55 Service Kit (includes set of 4 vanes, filters & flushing liquid)
- 9700-76 Pressure Relief Valve
- 9700-77 Inlet Filter Assembly
- 9700-78 Exhaust Filter Assembly
- 9700-04 Pressure Gauge

Model A-3000ATE

- 9700-76 Pressure Relief Valve
- 9700-78 Exhaust Filter Assembly
- 9842-01 Inlet Filter Element (each)
- 9842-04 Pressure Gauge
- 9872-56 Service Kit (includes set of 4 vanes, filter & flushing liquid)
- 9842-75 Electrical Cord (30 Amp NEMA Plug)
- 9872-77 Inlet Filter Assembly

TROUBLESHOOTING

ELECTRIC MODELS:

WARNING!
Always shut down pump and unplug electrical connection before working on unit.

TROUBLE	CAUSE	WHAT TO DO
Output air is hot	Outlet pressure is too high	Adjust pressure relief valve. Use Allegro Flow Test kit 9900-40 to verify air flow rate
	Hose placement or condition	Un-coil hose and layout in an "S" pattern in the shade, use maximum airline of 100' per user, and keep away from external heat sources. Install/check Allegro Airline cooling system (P/N 9820-LP).
	Pump running hot	Check both filters for obstructions. Verify pump is running smoothly. Change location of pump so that the air input is cooler.
Pump becomes noisy	Back pressure from restricted/non-connected air hose	Check air flow through kinked hose(s) or open attachment(s).
		Verify that motor vanes can turn freely.
	Obstructions in pump	Remove pump from exposure to debris. If condition persists, follow flushing procedure or return to Allegro for service.
Motor overheats while running under load	Overload	Reduce load, use maximum airline of 100' per user.
	Dirt build-up, insufficient ventilation.	Clean and replace both filters.
Motor Fails to Start	Blown Fuses	Replace fuses at least 125 % of nameplate amperes.
	Noisy or Mechanical failure	Ensure motor and drive turn freely. Check bearings, lubrication, sticking vanes (replace if necessary), and/or flush pump.
	Short circuited stator	Indicated by blown fuses. Motor must be rewound.
	Motor overload or overheating	Thermally protected motor may stop running, reduce load and let cool for 15-20 minutes before restarting.
	Motor fails in extreme cold	Bring to room temperature before starting.
	Motor locks up	Ensure respirator and hose are properly connected. Loosen all six pump endplate bolts. If end plate does not separate from motor housing, tap lightly. Re-tighten all six bolts
	Defective capacitor	Check for short circuit, grounded or open capacitor, replace if necessary.

Motor Stalls	Overloaded motor	Reduce load, check for minimum airline diameter of ½”.
	Low motor voltage	See that nameplate voltage is maintained.
	Open circuit	Fuses blown, check overload, relay, stator and reset-buttons.
Motor vibrates after corrections have been made	Motor misaligned	Realign or return for service.
	Weak foundations	Strengthen (tighten) base.
Scraping noise	Fan rubbing	Clear fan by removing or clearing interference.
	Fan striking housing insulation	Check alignment of motor and tighten any loose mounting bolts.

AIR DRIVEN PUMP:

WARNING!
Always shut down pump and unplug supplied air connection before working on unit.

Use the Electric Motor section for general motor issues.

TROUBLE	CAUSE	WHAT TO DO
Output air is hot	Outlet pressure is too high	Adjust pressure relief valve. Use Allegro Flow Test kit 9900-40 to verify air flow rate.
	Insufficient air pressure	Check diameter of inlet supply air for minimum of ½” I.D. hose.
	Pump running hot	Check lubricant. Verify pump is running smoothly. Change location of pump so that the air input is cooler.
Pump becomes noisy	Ice formed on muffler	Clear ice and debris from muffler. Check air supply for excessive moisture. Use muffler extension.
	Back pressure from restricted/non-connected air hose	Check air flow through hose or open attachment. Verify that motor vanes can turn freely. Remove pump from exposure to debris.
	Obstructions in pump	If condition persists, follow flushing procedure or return to Allegro for service.

ALLEGRO INDUSTRIES
LIMITED WARRANTY AND WARRANTY SERVICE AND RETURN POLICY

Express Warranty

The warranty obligations of Allegro Industries ("Allegro") are limited to the terms set forth below:

All products, equipment and parts (collectively "Product" or "Products") sold by Allegro, either directly to its customers, or indirectly from its suppliers or distributors to their customers, are warranted, to the original end-user purchaser who/that receives the original, unaltered Product ("Purchaser"), to be free from defects in workmanship and materials under normal use for one (1) year from the date of sale to the Purchaser, when installed properly and used normally and in accordance with written operation instructions, if any ("Limited Warranty") ("Warranty Period"). No other express or implied warranty is given, and no affirmation of Allegro, by words or action, will constitute a warranty.

This Limited Warranty is conditioned upon proper use of the Product by Purchaser and applies only to Products manufactured by or for Allegro that can be identified by the Allegro trademark, trade name or logo affixed to them. This Limited Warranty does not apply to or cover: (a) defects or damage caused by or resulting from external causes including, but not limited to, accident, carrier handling, improper packaging in shipment; abuse, misuse, neglect, unusual physical stress, cosmetic damage, flood, fire, earthquake or other natural disasters; (b) normal wear and tear; (c) any modification of any part of the Product; (d) damage caused by using the Product outside the permitted or intended uses described by Allegro or written instructions; (e) malfunctions resulting from the use of the Product in conjunction with accessories, products or ancillary/peripheral equipment not furnished or approved by Allegro; (f) defects or damage caused by improper testing, operation, maintenance, installation or adjustment; or (g) defects or damage caused by installation and/or service performed by anyone who is not authorized by Allegro.

Each Purchaser agrees and acknowledges that the use, installation and/or operation of the Products shall be at Purchaser's own risk and may result in severe injury, death and/or damage to persons or real and/or personal property.

No Allegro supplier, distributor, officer, agent or employee is authorized to make any modification, extension, change or amendment to this Limited Warranty without the express prior written consent and authorization by the President of Allegro.

Allegro reserves the right to make improvements or changes to its Products at any time, without incurring any obligation to Purchasers, suppliers, distributors or customers who/that previously purchased Products directly or indirectly from Allegro.

EXCEPT AS SET FORTH IN THE EXPRESS WARRANTY CONTAINED HEREIN, PURCHASER TAKES THE PRODUCT "AS IS." THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS BEYOND THOSE STATED IN THIS LIMITED WARRANTY STATEMENT. ALLEGRO DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OF THE PRODUCTS AND THEIR FITNESS FOR ANY PARTICULAR PURPOSE.

NOTHING CONTAINED IN ANY WRITTEN INSTRUCTIONS OR WRITTEN INSTRUCTION OR OPERATION MANUAL OR CATALOG SHALL BE CONSTRUED TO CREATE A WARRANTY OF ANY KIND WHATSOEVER WITH RESPECT TO THE PRODUCT.

IN ADDITION, TO THE FULLEST EXTENT PERMISSIBLE BY APPLICABLE LAW, ALLEGRO SHALL NOT BE LIABLE FOR ANY INJURY OR DAMAGE TO PERSONS OR PROPERTY OF ANY KIND, OR FROM ANY LOSS OF TIME, INCONVENIENCE, OR LOSS OF USE, INCLUDING ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY OUT OF OR IN CONNECTION WITH THE USE, INSTALLATION AND/OR PERFORMANCE OF THE PRODUCT OR PRODUCTS, WHETHER SUFFERED BY SUPPLIER, DISTRIBUTOR, CUSTOMER, PURCHASER OR ANY OTHER PARTY, AND REGARDLESS OF THE LEGAL THEORY UPON WHICH THE CLAIM IS BASED, EVEN IF ALLEGRO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. WITHOUT OTHERWISE LIMITING THE FOREGOING, IN NO EVENT SHALL RECOVERY OF ANY KIND AGAINST ALLEGRO BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT. THIS WARRANTY GIVES YOU LIMITED SPECIFIC LEGAL RIGHTS.

Warranty Service and Return Policy during Warranty Period

The following requirements must be followed before returning any Product or Products to Allegro:

1. All Purchasers must obtain a Return Merchandise Authorization Number ("RMA#") before returning any Product to Allegro. Allegro will refuse to accept any Product returned that does not have the RMA# clearly marked on the outside of the package or box. The Purchaser may obtain this RMA# by telephoning Allegro's Customer Service number at (800) 622-3530, or by requesting it in writing by mailing the written request to Allegro Industries, 1360 Shiloh Church Road, Piedmont, South Carolina 29673, or by faxing the written request to Allegro Industries at (800) 362-7231.

2. Upon Allegro's issuance of RMA # to a Purchaser, the Purchaser must decontaminate and clean the Product to remove any hazardous materials which may have settled on the Product during use. Allegro reserves its rights to refuse, and will refuse, to accept any Product suspected of being contaminated and/or containing any dangerous chemical(s) or material(s), and will return that Product or those Products to the Purchaser, freight collect.

3. All Purchasers must return the Product or Products to Allegro freight prepaid, with the RMA# clearly marked on the outside of the box or package. Each Product to be returned should be packaged in its original Product packaging materials or equivalent, and be well padded, to prevent damage when in transit, and should be adequately insured by Purchaser. All Purchasers must bear the risk of loss of the Product during transit from Purchaser to Allegro. Inside the Product's package, please enclose your name, address, and telephone number, a description of the problem and a model and/or serial number for each Product returned.

Upon Allegro's receipt of a returned Product from a Purchaser that meets the above requirements, Allegro will determine in its sole discretion whether the Product is defective. If Allegro determines that the Product is not defective and/or does not meet the terms of this Limited Warranty, Allegro will return the Product to the Purchaser freight collect. If Allegro determines that the Product is defective, Allegro will determine in its sole discretion whether to repair or replace the defective Product covered by this Limited Warranty.

Each Purchaser's sole and exclusive remedy for defects in Products covered by this Limited Warranty is limited to Allegro's correction of the defect by repair or replacement.

4. Authorized returns of saleable merchandise, other than shipments made in error by Allegro, will be subject to a 20% restocking charge.

Warranty Terms

This Limited Warranty represents the complete and exclusive agreement covering this subject matter between Allegro and Purchaser and supersedes any prior agreements and/or communications regarding the subject matter hereof. The terms of this Limited Warranty shall be governed and construed in accordance with the laws of the State of California, without regard to any conflict of law principle that would result in the laws of any other jurisdiction governing this Limited Warranty. Any action or proceeding arising out of this Limited Warranty shall be litigated in the California Superior Court located in Orange County, California. Each Purchaser purchasing any Product from Allegro, directly or indirectly, shall be deemed to consent and submit to the jurisdiction of the state court located in Orange County, California. If any term or provision contained in this Limited Warranty is determined to be unenforceable in any respect, the enforceability of the term or provision in any other respect and of the remaining terms and provisions of this Limited Warranty shall not be impaired. This Limited Warranty shall not extend to anyone other than the original Purchaser of the Product(s) and shall be Purchaser's exclusive remedy. Each Purchaser acknowledges that this Limited Warranty will always be construed to be limited by its terms to the greatest extent as the law permits.

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