M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .
M A G U I R E P R O D U C T S , I N C .

E L E V E N C R O Z E R V I L L E R D .
A S T O N , P A . 6 1 0 4 5 9 - 4 3 0 0

LOW PRESSURE DRYER

AUGUST 6, 2004

T E C H N I C A L I N F O R M A T I O N

S P E C I F I C A T I O N S

F E A T U R E S

T E C H N I C A L I N F O R M A T I O N
T E C H N I C A L I N F O R M A T I O N
T E C H N I C A L I N F O R M A T I O N

S P E C I F I C A T I O N S
S P E C I F I C A T I O N S
S P E C I F I C A T I O N S

F E A T U R E S
F E A T U R E S
F E A T U R E S

LPD (R)

*

M A G U I R E P R O D U C T S , I N C .

LOW PRESSURE DRYER

TABLE of CONTENTS

MAGUIRE PRODUCTS, INC.
11 Crozerville Road
Aston, Pennsylvania 19014
610-459-4300
FAX # 610-459-2700

LOW PRESSURE DRYER

ANALYSIS of POTENTIAL ANNUAL COST SAVINGS
100 POUNDS/HOUR

Energy savings $2,400
scale up or down for other throughputs.
for example: 1000 #/hr = $24,000 savings/year (thats right)

Based on these assumptions:
Usage: 5000 hours per year.
(3 shifts @ 40 hours = 6240 hrs)
Rate: 6 cents per kilowatt.
LPD-100 requirement: 2 KW
Typical Desiccant Dryer requirement: 10 KW

Value of production time gained $33,280

Based on these assumptions:
Cold start-up (Monday morning),
Additional lost time after one hour warm up of molding machine:
Desiccant dryer: 2 hours
LPD dryer: 0 hours

Color or material changes per week: Two
Lost time caused by dryer, each time:
Desiccant dryer: 3 hours
LPD dryer: 0 hours

Value of Machine time: $80.00/hour

Losses due to material Left unused $7,800

This is the lost value of material placed in storage due to not correctly anticipating color changes.

Based on these assumptions:

Material changes per week: Three.
Plan ahead time: LPD dryer 1 hour.
Desiccant dryer 3 hours.
Customer actually plans ahead on average 1 hour.
Dryer capacity is 100 pounds per hour.
Material is worth $0.50 per pound.
Material placed in storage looses half its value due to spillage, contamination, labor and warehouse costs.

Maintenance Costs savings $1,000

Based on these assumptions:

Contaminated desiccant replaced every 6 months, labor, material, and down time.
LPD dryer, no desiccant.

TOTAL ANNUAL SAVINGS $44,480

Additional potential cost savings

** If your desiccant dryers are taking 8 hours per week away from production time, then LPD dryers allow expansion of plant capacity by 6.6 percent. No added square footage, no added capital costs, no added employees, just 6.6 percent added production. The gross profit of this added capacity goes right to the bottom line.

** Routine desiccant maintenance also entails lost production time adding to the higher cost of a conventional desiccant dryer.

** As desiccant deteriorates, product quality suffers. With LPD dryers, no desiccant means no fear of deteriorating product quality. Performance of a vacuum dryer never deteriorates.

** Shortened drying time avoids prolonged exposure to heat, helping to maintain correct physical properties of the resin.

** Labor costs to clean out hoppers for a color or material change are reduced. LPD dryers require less then 10 minutes total time to clean. Desiccant dryers can take up to an hour.

** Some materials can not effectively be dried twice. If you must empty the hopper of 300 pounds of material and save it for later use, the re-drying of the material may destroy physical properties, or may, in some cases, require twice the time to be dried again.

** Desiccant dryers require the hopper be at least half full for proper air flow. If usage is low for a particular mold, extended exposure to heat in a conventional dryer may degrade the material.

** Customers report fewer rejected parts using our dryer versus a desiccant dryer. Reported reject rates of 15 percent and 7 percent were reduced to less then 1 percent.

FEATURES

You have purchased the most innovative dryer to be made available to the plastics industry in over 50 years (at least that's what we think). This is a dryer that does not use dry air to dry material. Instead, it uses reduced pressure (more commonly called vacuum) to lower the boiling point of water, thereby causing moisture to rapidly "boil" off at temperatures well below the normal boiling point of water.

Here is why this dryer is so much better:

1. The capital cost of this technology is comparable to that of desiccant dryers.

2. Operating cost is always less then half that of a desiccant dryer and in many cases only 20 percent of a desiccant dryer.

3. Your "Monday morning" start up time is cut from 4 hours to under an hour.

4. Your material change over time is reduced to ZERO if you plan ahead about one hour. Color changes can be made "On the fly" with NO lost time.

5. The routine desiccant maintenance associated with desiccant dryers is eliminated. Our dryer has no "routine" maintenance items.

6. For those who sometimes forget to plan ahead, your unused inventory of blended material is 40 minutes, not 4 hours.

7. Some materials loose physical properties when exposed to high heat for extended periods. Our dryer dramatically shortens this heat time, minimizing or eliminating these problems.

8. Plastics normally dried at higher temperatures can now be dried at lower temperatures. PET previously at 350f (180c) can now be dried at 300f (150c).

9. Some desiccant driers operating at temperatures above 210f (100c) require water for cooling. LPD dryers do not.

10. Drying at higher temperatures, in some cases, prevents the addition of color concentrates (masterbatch) prior to drying rather then after drying. This may require the purchase of an additional dryer to handle the color.

11. Pre blended materials often separate during the three hour residence time passing through a large hopper. LPD hoppers are 1/9 the volume and fill and empty in distinct and complete batches. Separation is not a problem.

12. LPD dryers require less plant floor space.

13. Throat mounted hoppers are not part of the LPD system. These top heavy drying hoppers are an installation problem, difficult to access for service, and can be a safety issue.

14. Desiccant driers, to assure performance, require expensive dew-point meters and dew-point controls. Without these items performance is not assured. LPD dryers are equipped, as standard, with all necessary controls to ASSURE performance.

We did not invent vacuum drying,

But...
We did invent the multi stage process used in our LPD dryers. We are the first to bring Vacuum drying technology to the plastics industry in a package that is affordable, reliable, and simple to operate.

We hope you are as proud as we are to be a part of this revolution in drying technology.

MAGUIRE "LPD" Dryers are protected by U.S. patent 6,154,980.
Additional U.S. and International patents are pending.

LPD DRYERS - AVAILABLE MODELS

MODEL	30	100	200	500*	1000
#/hr **	33	110	220	550	1100
kg/hr **	15	50	100	250	500
FRAME					
height	54"	56	65	71	75
width	20	28	31	48	58
depth	23	28	30	48	58
CHAMBER					
diameter	6"	10	12	20	24
height	24	28	36	40	56
cu/ft	.34	1.05	2.0	5.5	10.9
empty wt.	8	19	28		
removable	yes	yes	yes	no	no
HEAT					
watts	1740	5000	5000		35,000
enclosure	tube	tube	tube		tube
BLOWER					
hp	.5 - .75	1 - 2.5	2.5-3.5	3 - 5	5 - 7
FILTERS					
#	1	1	1	2	2 - 3
VACUUM	ven.	ven.	ven.	ven.	ven.
AMP LOAD @230 volt					

* in development

** Throughputs listed here are nominal. Actual throughput depends on the material and drying requirements.

NOTE to Competitors:

Our would-be competitors will, no doubt, be among the first to read this manual. We wish to tell them that all inventive aspects of this new technology are subject to domestic and international patents now issued or pending. We intend to aggressively pursue our rights under these patents at such time when they issue.

EXTRA COST OPTIONS

HIGHER HORSEPOWER BLOWER

If vacuum drying cycle time can be short (less then 20 minutes) but the material does not reach the desire uniform temperature in this time, a larger blower should be substituted to shorten the heat time and assure full uniform heating. Under these circumstances this option increases throughput.

240/60, 400/50, 480/60, 3 PHASE

Blower and controller are wired for 3 phase current. Optional on 30 models. Standard on all larger models.

HIGH HEAT OPTION

Nylon, PET, and other difficult to dry, high temperature resins dry more rapidly at higher temperatures. The High heat option increases throughput rate considerably for these resins. High heat option has all temperature sensitive parts replaced with high temperature materials, and a different heat sensor with additional circuitry is used.

DRYING TIMES

This table shows the latest recommended specifications for drying conditions. If the material you are running is not on this list, please contact Maguire to arrange testing.

MATERIAL	FINAL MOISTURE % *	CYCLE TIME (MINUTES)**	DRYING TEMPERATURE***	
			°C	°F
ABS	0.10	20 - 25	80 - 85	180 - 190
ABS/PC	0.02	25 - 30	100	210
LCP	0.02	20 - 50	150	300
PA	0.20 - 0.10	20 - 30	80 - 85	180 - 190
PBT	0.02	20 - 25	120	250
PC	0.02	20 - 25	120	250
PC/PBT	0.02	20 - 25	125	250
PEEK	0.20 - 0.10	25 - 30	150	300
PEI	0.02	40 - 60	150	300
PES	0.05 - 0.02	25 - 30	150	300
PET (Molding Grade)	0.010	30 - 35	150	300
PET (Preform, Ext.)	0.005	30 - 35	150	300
PMMA (Acrylic)	0.02 - 0.04	30	85	185
POM (Acetal)	0.20 - 0.10	25	80 - 110	180 - 230
PPO	0.02	25	100 - 120	210 - 250
PPS	0.02	25	150	300
PUR	0.02	25	125 - 140	260 - 280
PSU	0.02	25 - 30	150	300
SAN	0.20 - 0.10	20 - 40	80	180

INSTALLATION REQUIREMENTS

1. Units up to and including 1 HP require a 230 volt SINGLE PHASE power source. Over 1 HP requires three phase 240 or 480 volts.

   You may wire the power cord permanently into a wall mounted safety switch, or attach a plug for easy connection to a 230 volt receptacle. Maximum full amperage load on the 100 series is 22 amps at 230 volts. The blower motor pulls more amps during start up. Connection should be to a minimum 30 amp power source (at 230 volts).

2. An air supply of 75 to 80 psi air is required. This air is used to generate the required vacuum as well as operate all air cylinders. To conserve plant air, the vacuum generator is cycled on and off during operation to maintain a minimum vacuum of 25/27 inches. To serve multiple dryer installations, a vacuum pump may be preferable or required if air supply is not sufficient.

3. Provision for conveying material to the dryer is NOT provided. A hopper is provided mounted above the dryer as standard. You can mount your own vacuum loader on this hopper, or a Maguire Weigh Scale Blender with loaders.

1. Fill the hopper on top of the dryer with material.

2. Set the TEMPERATURE - (TEMP thumbwheel switches)

   USE THE SAME temperature setting recommended by the resin manufacturer for conventional desiccant dryers.
   DO NOT exceed it unless you are sure the material will not soften and stick together.

   Standard heat models can be set as high as 260 f (120c).
   High heat models can be set to 300f (150c).

3. Set the CYCLE TIME - (CYCLE thumbwheel switches)

   See RECOMMENDED CYCLE TIMES, next page.

   These are suggested starting points only. Run moisture tests to determine correct cycle times, or submit your material to us for determination.

4. OPERATOR STATION, on right side:

   On the POWER box:
   a. Turn MAIN POWER on. (RED switch)

   On the CONTROLLER:
   b. Turn MODE switch to AUTO.
   c. Press CYCLE START.
   d. Two timed cycles must be completed before material is available to be conveyed. When material is available, turn the CONVEY switch to ON.

NOTE: If you ever run material that does not require drying, set both Temperature and Cycle time to 000. This keeps the heater off and allows indexing as required.

STANDARD OPERATING SEQUENCE

This section will help you understand what the dryer is doing as it runs.

Inside the dryer enclosure are three identical material canisters which rotate through 3 stations:

Station 1 (right rear) is the FILL and HEAT station.
Station 2 (left rear) is the VACUUM or DRY station.
Station 3 (front) is the DISPENSE and CONVEY station.

With material in the hopper above the fill station, Press CYCLE START to begin the sequence.

The Canisters will index to a starting position based on the position when last shut down, and the lock will engage.

"Operation" begins only after lock engagement is confirmed by the "lock-engaged" switch.

"Operation" means the following actions occur:

1. The bottom heat plate under station 1 is raised, and the plate over station 1 is lowered.
2. The canister fill valve over station 1 opens, filling the canister. A sensor located under station 1 confirms the canister is in place before the fill valve can open.
3. The top and bottom vacuum plates at station 2 close.
4. The vacuum take-off pan under station 3 is raised.
5. Two small cylinders over station 3 extend to lower a cover disk on to the top of the canister. This keeps moist air out.
6. The air cylinder over station 3 extends to open the canister dispense valve located inside the canister at the bottom, to deliver material to the process. If the bottom sensor was not uncovered at the time of indexing, the fill valve will delay opening until the sensor becomes uncovered.
7. The vacuum generator turns on.
   If adequate vacuum is not reached within 90 seconds, the alarm activates and displays (VACUUM).
8. The blower turns on.
9. The heater turns on 2 seconds later.
   If rising temperature is not detected within 120 seconds, the heater turns off, the system stops, the alarm activates and displays (NO HEAT).

With the opening of the FILL valve, canister 1 begins to fill. Hot air enters the bottom of the canister to heat the material as it fills.

The heating process continues for the cycle time set (thumbwheel 2). Both blower and heater are sized to heat a single canister of material in about 20 minutes.

After the cycle time, the cycle ends and the canisters index.

The heated material has now moved to the vacuum, or number 2, station. Here the vacuum dries the full charge of heated material. Vacuum of at least 25 inches of mercury is usually sufficient, but a vacuum of 29 inches is attainable.

The vacuum cycle can or may be interrupted periodically by a hot air purge to clear moist air from the canister.

NOTE: The CYCLE TIMER only counts time when the heated air temperature is within 20 degrees of target, and the vacuum is up to 25 inches. Therefore, the first minute or so of each cycle does not count toward cycle time.

After the cycle time, the canisters index again, moving the dried material to the dispense and convey location, station 3.

Two cycles have passed and you are ready to start production.

From now on, indexing occurs at the end of each cycle time. This is the standard mode, "advance on time". if you have selected the "advance when empty" option, then indexing occurs only when the level sensor below station 3 indicates the dispensing canister is empty.

NOTE: If you are using "advance when empty" option you have the ability to set a short fill time. If the time to use the material in the canister is more then double the minimum cycle time (thumbwheel 2), we suggest you decrease the FILL time so that the canister does not hold so much material. Excessively long cycle times may allow dried material to begin to re-absorb moisture.

CHANGING COLORS - "ON THE FLY"

To CHANGE COLORS without stopping production:

PLAN AHEAD!

If your canisters are full, you have about ONE hour of material in the pipe line. So, you must plan far enough ahead to allow time to consume this material. So....

ONE hour before the change is required:

1. Set the MODE switch to "CLEAN". In this mode, canisters DO NOT INDEX automatically.
2. Shut off your feed system and clean the loader or blender supplying material. Be sure to clear the fill valve area under the loader or blender. Manually operate the FILL valve if necessary. Perform a full clean out and color change up to this point, the fill point above the canister.

   In the CLEAN mode, when the current supply canister is empty, the canisters will NOT index. The ALARM will sound and the display will say (CLEAN).

When the ALARM sounds:

1. Press "Alarm Silence" to preserve your sanity.
2. Remove, clean, and replace the canister; close door.
3. Press the INDEX button.
4. After Indexing occurs, begin the filling of the newly cleaned canister with the new color blend.

   Repeat these 4 steps as each of the remaining canisters empty.

   NOTE: To remove the canister, you must pull out the "canister release" knob, upper left.

   When canister is back in place press knob in to re-engage. Closing the door will also automatically press the knob in.

After the final canister is cleaned:

1. Clear the conveying line to the process machine.
2. Begin conveying the new color blend to the process.

CANISTER - DISASSEMBLY for CLEAN OUT

Canisters can be DISASSEMBLED for full access to the interior space and complete clean out.

To disassemble:

Set the canister on the floor, UPSIDE DOWN. Note the flat bottom disk. Using both hands, press down slightly on all four sides of this disk and rotate in either direction to release. Gloves are recommended.

Remove the disk. Grip the pin protruding from the perforated cone and lift the cone out by tilting to one side to clear protruding hardware.

You now have full access to the inside of the canister.

Do NOT remove any remaining parts. All mounting hardware has been sealed at the factory to be vacuum tight. DO NOT remove or tamper with any bolts.

To reassemble:
Install perforated cone first. This can be tricky. But remember, it came out, so it will go back in. Install the retaining disk. To twist disk into place, place pressure on all four engagement points while rotating the disk under the retaining bolt heads. Gloves are recommended.

VACUUM TAKE-OFF PAN - REMOVAL for CLEAN OUT

Located under the front canister is the vacuum take off pan, designed to allow material to be conveyed away from the dryer. The bottom of this pan can be lowered for clean out.

Lowering the pan will also allow you to empty a canister without removing it. Have a box ready to accept the flow of material.

CAUTION: Once lowered, the pan cannot be raised until the canister is empty.

THEORY OF VACUUM DRYING

Water boils at 212 F (100 C) degrees. However, this is only true at sea level, which is to say at standard atmospheric pressure, which is 14.7 pounds/sq.in. (1 bar), also expressed as 29.92 inches (760 mm) of Mercury (Hg).

At lower pressures the boiling point of water is reduced.

Standard atmospheric pressure can support a column of Mercury 29.92 inches (760mm) high. For this reason, if we pull a perfect vacuum above a column of Mercury, the column will be 29.92 inches high and the number we can expect to read on a vacuum gauge is likewise 29.92 inches. Lesser vacuums read lower numbers. No vacuum reads zero.

When water is subjected to a vacuum level of 25 inches (635mm) of mercury, it will boil at 133F (56C) degrees. When plastic pellets are heated to 160F (71C) degrees, or greater, and subjected to a vacuum of 25 inches (635mm), the water vapor within wants very much to boil. This increased molecular activity within the pellet and the greatly reduced pressure surrounding the pellet drives the moisture from the pellet in a remarkably short time. This then is the reason for the remarkable short drying time of a vacuum dryer.

Another way to understand why vacuum drying works so well is to look at the process of drying this way. Water vapor within each pellet or even in the atmosphere around us has its own "pressure". On a hot and humid day, even if the air outside is calm, opening a window will cause an immediate movement of "humidity" through the window into the air conditioned room. It is not a wind you feel, but the moisture has its own pressure and moves irresistibly from moist air to dry air when the opening is available. This movement is caused by the "vapor pressure differential" between outside and inside.

The same thing happens in a desiccant dryer. Vapor pressure causes the moisture in each pellet to move to the dry air surrounding the pellet with about as much force as the "wind" you feel when you open a window on a hot humid day, which is to say, with little real pressure. On the other hand, when the atmosphere around the pellet is a vacuum, the "vapor pressure differential" is much much greater. In this case we can see why moisture will move much more rapidly toward the low pressure atmosphere surrounding the pellet. In addition, moisture boils in the low pressure of a vacuum. The molecules expand into the vacuum into their gaseous state, vapor.

When it comes to drying, a dry "vacuum" is much better then just dry air.

PERFORMANCE

The true measure of a dryer's performance is determined by the moisture content of the resin after the dryer has done its job. The moisture content of resin, however, is not easily measured. So dryer manufactures have always used other criteria to assure performance.

Conventional "desiccant" dryers use DEW POINT as a measure of performance. This is a measure of the dryness of the air passing over the resin. It is NOT the dryness of the resin, just the air.

Using a particular ABS resin as an example: We know with a desiccant dryer that 180f (82c) degree air dried to -40f (-40c) dew point, and passed through the material for 4 hours, will reduce the moisture content of that resin to the required level of dryness.

Using a vacuum dryer, we know the same resin heated to 180f (82c) and exposed to a vacuum of 25 inches (635mm) for 20 minutes will also reduce the moisture content of that same resin to the same correct level of dryness.

Therefore, just as desiccant driers assure dry material by measuring TEMPERATURE and DEW POINT over TIME, we assure dry material by measuring temperature and VACUUM over time.

Furthermore, we should have more confidence in a VACUUM dryer for the following two reasons:

FIRST: In a desiccant dryer, air does not flow equally over ALL the resin in the hopper. Air flow frequently channels up the middle or up one side, and always misses certain "dead" spots in the hopper. Vacuum, on the other hand, reaches every corner and crevice. There are no "dead" spots with vacuum.

SECOND: Correct operation of a desiccant dryer requires material reside in the hopper, and air flow, for the full 3 or 4 hours specified. In reality, the material flow through the hopper is never uniform. There are flow dead spots in all hoppers, areas with little or no material movement. There is no way to know for sure how long any particular pellet is actually exposed to dry air. In a vacuum dryer, our "batch" system assures that residence time is fixed. With no flow, there is certainty of timing, and certainty of dryness for all pellets.

So Desiccant dryers offer dry air that MAY flow properly over MOST pellets in the hopper, but definitely not all pellets, and expose these pellets for a time that MAY be the required 3 or 4 hours, but is most likely some shorter time.

Vacuum drying exposes ALL pellets to the vacuum, for the FULL time required, no exceptions. Uncertain Air flow, and uncertain material flow are NOT factors.

In a vacuum dryer, we assure performance by monitoring temperature and vacuum levels. Of course, the final test is in the quality of the product you manufacture. We welcome your comments and observations.

PRINTER OUTPUT

As an aid to monitoring dryer performance and documenting operation, a printed output of dryer operation information may be obtained for each cycle. This is done by activating the *54 printer function and connecting a printer to the printer port.

A typical printout for each cycle looks like this:

```
08/23/2000  ID: 000  TARGET: 160 F  CYCLE: 020 m  FILL: 005 s
02:17:19 PM      0:00  TEMP: 133.7 F  HEAT:  26%  VAC:  5 in Hg.
02:17:39 PM      0:00  TEMP: 143.7 F  HEAT:  29%  VAC: 17 in Hg.
02:17:59 PM      0:00  TEMP: 153.6 F  HEAT:  29%  VAC: 21 in Hg.
02:18:19 PM      0:00  TEMP: 157.8 F  HEAT:  29%  VAC: 24 in Hg.
02:18:19 PM      0:00  TEMP: 157.8 F  HEAT:  29%  VAC: 24 in Hg.
02:18:28 PM      0:08  TEMP: 159.0 F  HEAT:  29%  VAC: 25 in Hg.
02:19:33 PM     10:08  TEMP: 160.1 F  HEAT:  23%  VAC: 28 OFF 2:23
02:21:22 PM     10:08  TEMP: 160.1 F  HEAT:  23%  VAC: 25 ON  6:23
02:23:28 PM      5:08  TEMP: 160.1 F  HEAT:  23%  VAC: 28 in Hg.
02:28:28 PM     10:08  TEMP: 160.1 F  HEAT:  23%  VAC: 28 in Hg.
```

The first line is a "header" line for each cycle:
Date, Unit ID number, and Thumbwheel settings.

```
08/23/2000  ID: 000  TARGET: 160 F  CYCLE: 020 m  FILL: 005 s
```

The header is followed by lines of information that print every 20 seconds until 25 inches of vacuum is reached, followed by lines of data every 5 minutes, as well as at the end of the cycle. In addition, a line prints every time the vacuum turns on and every time it turns off. Each line includes:

Time, accumulated cycle time, current temperature, heater duty cycle, and current vacuum.

```
02:28:28 PM     10:08  TEMP: 160.1 F  HEAT:  23%  VAC: 28 in Hg.
```

Vacuum ON/OFF lines also give the time the vacuum was ON or OFF.

```
02:19:33 PM     10:08  TEMP: 160.1 F  HEAT:  23%  VAC: 28 OFF 2:23
```

In this example, vacuum was OFF for 2 minutes, 23 seconds.

The PRINTER port is a standard DB25 (25 pin) parallel printer port (female) found on the back of most PC computers. A standard "off the shelf" PARALLEL printer will plug in here and operate with no additional modifications required.

PRODUCTION of FAULTY PRODUCT

This dryer is of a new design. We have had excellent results in all tests performed to date, but we HAVE NOT tested every material available to the Plastics industry.

Materials vary widely throughout the industry. We have not anticipated all materials or processing conditions. We are not certain that our equipment will perform properly in all instances. You must observe and verify the performance level of our equipment in your plant as part of your overall manufacturing process. You must verify to your own satisfaction that this level of performance meets your requirements. We CAN NOT be responsible for losses due to product not dried correctly, even when due to equipment malfunction or design incorrect for your requirements; and/or any consequential losses due to our equipment not drying material to your requirements.

We will only be responsible to correct, repair, replace, or accept return for full refund if our equipment fails to perform as designed, or we have inadvertently misrepresented our equipment for your application.

If, for any reason, this disclaimer is not acceptable to you, we will gladly take the equipment back for full refund, including freight costs both ways.

WARRANTY

MAGUIRE PRODUCTS offers THE MOST COMPREHENSIVE WARRANTY in the plastics auxiliary equipment industry. We warrant each MAGUIRE LPD DRYER manufactured by us to be free from defects in material and workmanship under normal use and service; excluding only those items listed below as 'excluded items'; our obligation under this warranty being limited to making good at our factory any Dryer which shall, within FIVE (5) YEARS after delivery to the original purchaser, be RETURNED intact to us, transportation charges PREPAID, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and MAGUIRE PRODUCTS neither assumes nor authorizes any other persons to assume for it any other liability in connection with the sale of its Dryers.

This warranty shall not apply to equipment repaired or altered outside MAGUIRE PRODUCTS INC. factory, unless such repair or alteration was, in our judgment, not responsible for the failure; nor which has been subject to misuse, negligence or accident, incorrect wiring by others, or installation or use not in accord with instructions furnished by Maguire Products, Inc.

Our liability under this warranty will extend only to equipment that is returned to our factory in Aston, Pennsylvania, PREPAID.

Please note that we always strive to satisfy our customers in whatever manner is deemed most expedient to overcome any problems they may have in connection with our equipment.

EXCLUDED ITEMS:

The ability of the canisters to hold vacuum will be compromised if the vacuum seal edge is damaged from mishandling. We do not warranty canisters damaged from improper handling.

DISCLAIMER - PRODUCTION of FAULTY PRODUCT

This dryer is of a new design. We have had excellent results in all tests performed to date, but we HAVE NOT tested every material available to the plastic's industry. We have not anticipated all possible materials, processing conditions, and requirements. We are not certain that our equipment will perform properly in all instances. You must observe and verify the performance level of this equipment in your plant as part of your overall manufacturing process. You must verify to your own satisfaction that this level of performance meets your requirements. We CAN NOT be responsible for losses due to product not dried correctly, even when due to equipment malfunction or design incorrect for your requirements; and/or any consequential losses due to our equipment not drying material to your requirements.

We will only be responsible to correct, repair, replace, or accept return for full refund, our equipment if it fails to perform as designed, or we have inadvertently misrepresented our equipment for your application. If for any reason this disclaimer is not acceptable, we will accept return of the equipment for full refund, including freight costs both ways.