ECONOLINE®

www.sandblasting.com

DP 850 Manual

Direct pressure / 850 CFM Dust collector / Reclaimer - Retro fit unit

Read this manual carefully before operating equipment

DO NOT THROW THIS MANUAL AWAY!

INSPECT UNIT FOR DAMAGE THAT MAY HAVE OCCURRED DURING TRANSIT!

WARNING!

Do not use sand or abrasive containing silica in Econoline machines. (failure to comply will result in a voided warranty.)

Page of contents

1.	Page of Contents	A Tribitation		•	pg.	1
	A Contents B Econoline contact inf	ormation			è	u de la companya de l
2.	Getting Started				pg.	2
	Safety Warnings				, -	_
3.	General Safety Info	mation & U	npacking		pg.	3
4,	Assembly	The second secon			pg.	4-5
5.	Start up & Operatio	n			pg.	6-7
	A. Set-up B. Starting and operating	the machine				6
	C. Adjusting the abrasiv					7
6.	Dust Collector Ov	erview		**	 pg.	8-12
	A. DP 850 Overview B. Main Body Diagram	For many A defining A code.				8
	C. Reclaimer Diagram					10
	D. Pressure Pot Diagran E. Motor Assembly Diag	5				11 12
7.	Maintenance				pg.	13
8.	Replacing Parts			•	pg.	
9.	Trouble-shooting				pg.	15-16
10.	Media				pg.	
11.	Warranty				pq.	18

Contact Information

Econoline Abrasive Products 401 N. Griffin Grand Haven, MI 49417

Toll free number: 1-800-253-9968

Fax: 1-616-846-6341

Website at www.sandblasting.com

Email: info@sandblasting.com

Getting Started

Please read the instructions carefully before attempting to assemble. operate or service the DP 850. Failure to comply with instructions could result in personal injury and/or property damage.

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Keep this manual for questions about maintenance, trouble-shooting, replacement parts ordering, and media information

Warnings:

Do not operate dust collector or air flow with the motor and fan assembly detached from the reclaimer. If the propelled media comes in contact with unprotected parts of the face, serious eye damage or blindness is possible.

Do not use sand or any abrasive This is a system designed for a containing silica. Use of compounds dry blast unit. It is not made to containing silica is a health hazard. accommodate moisture or fluids Free silica when inhaled can lead to silicosis, a potentially fatal disease.

of any kind used separately or mixed with blast media.

Keep these instructions for future reference.

General Safety Information

- Follow all local electrical and safety codes, as well as the national electric code (NEC).
- Do not use this dust collector as an independent vacuum cleaner.
- Do not use fluids, or mix fluids with blast media. This system is built to accommodate dry blast media only.
- Keep floor around machine clean of media. Most forms of media are fine and as a result slippery.
- Keep up with maintenance on a regular schedule.
- Do not exceed maximum operating pressure of 125 psi.
- Do not use any form of silica sand in system

Unpacking

- When you first receive your unit inspect the unit immediately for any damage that may have occurred in transit.
- Remove plastic covering from the unit.
- Unboil and remove from pallet.
- Make sure no parts are missing. Please refer to the parts list on pgs. (9-13)
 Report any missing parts as soon as possible to Econoline by calling 1-800-253-9968
- Place the system unit next to the blast cabinet on the left hand side.

 (With the front of the blast cabinet facing you)

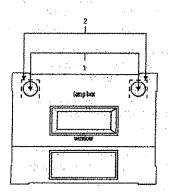
Assembly (page 1)

1. Installing the baffle (RETRO FIT ONLY!)

Step 1- Drill, burn, or cut two 6" holes in the top of your cabinet as shown in diagram 1-1 below.

Step 2- Weld the air baffles on the inside of the cabinet under the previously drilled holes. Be sure to place the baffles opening facing the front of the cabinet as shown below.

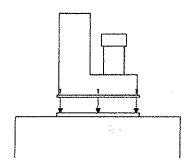
Diagram 4-1 (Top view of cabinet)



2. Installing the motor and fan assembly a

- The motor and fan assembly are shipped uninstalled and unattached to the dust collector. Unbolt the assembly from the pallet.
- After removing the motor from the pallet, bolt the motor/fan assembly on top of the main body with (8) 3/8 x 16 x 1 bolts (p#. 411512) each with a 3/8 x 1.75 washer (p#. 411526) as shown below.

Diagram 4-2 (Side view of dust collector)



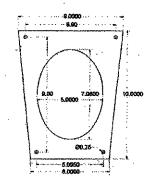
Assembly (page 2)

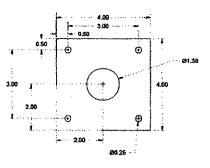
3. Installing the exit port (RETRO FIT ONLY)

- First weld a 5" media exit port (f) to the bottom left side of the cabinet hopper as shown.
- Burn out or cut steel inside of 5" exit port.

4. Installing the blast hose and nozzle (RETRO FIT ONLY!)

- Use a template to drill (4) 1/4" holes & (1) 2 1/2" hole in the right side of the hopper approximately 6" down from the top of the hopper and 10" from the front of the cabinet.
- Use (4) 1/4" x 20" x 1" bolts to mount hose plate to cabinet.
- Insert blast hose through rubber grommet in hose plate.
 Pull hose through enough to allow full range and movement of blast hose inside the cabinet.
- Attach nozzle holder to end of blast hose by pushing hose tight against nozzle and inserting (4) screws.
- Remove old siphon gun system from cabinet.
- Remove original foot pedal and valve assembly, air hoses, and pressure regulator and gauge from front of cabinet. Plug any remaining holes in hopper.



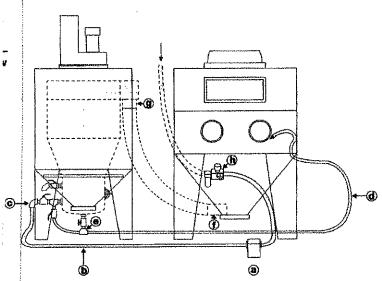


5. Hose Installation

- Set foot pedal assembly (a) on ground in front of the cabinet. Air hose (b) should be run to the left side of dust collector.
- Attach air hose (b) to fitting (c) located on the left side of the pressure pot.
- Attach blast hose (d) to the hose barb fitting (e) on the piping below the pressure tank. Secure with hose clamp.
- Use the two 5th adjustable hose clamps to secure the media pick-up hose from
 the exit port (f) on the cabinet hopper to the inlet (g) on the abrasive reclaimer.
 For optimal performance the media hose should be cut as short as possible
 allowing for the shortest route for media to travel.
- Attach your compressor airline to the left side of the pressure regulator assembly (h).

Diagram 5-1 (Assembly diagram)

l		Part		<u> </u>
	Description	Number		
а	Foot Pedal	203268yw	-	
b	Air Hose - 16.5 ' req.	413431		pto-secure and a secure and a s
С	Hose Nipple 3/4 x 5/8 clamp to attach hose to nipple	413433 413405		
d	Blast hose 1/2x1-1/8-15' req	413411	-	
,	nozzie 3/16 x 3/4 nps nozzie holder	416530 410461	17.75	
e	hose barb galv 1/2 x 5/8 clamp to attach 15' hose to barb	413421 413106	-	
f/g	Clamp for 5" blue hose	414516	©-	
	5" blue hose - 10' req.	414424	_ //	
h	Regulator	411127R	((
h	Filter I/v/metal	411151		
, h	Regulator Nut	411146		9
h	Gauge	411116G	;	



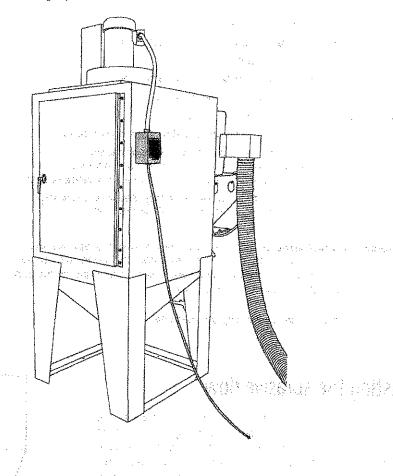
Start-up & Operations 2000 (South Control of the Co

Set-up

Electrical connections

Wire the power cord (highlight in grey) from the motor switch to a 230 volt, 1 phase service on a 20amp dedicated circuit.

Diagram 6-1 (Electric diagram)



Air hose connection

The blast cabinet must be supplied with compressed air delivered through a minimum of a 3/4" LD, air hose or piping. Distances greater than 50 feet require a 1" LD, with an air inlet using a 3/4" female thread. Usual blast pressure is 50 psi.

Air requirements

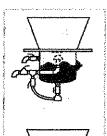
Nozzle I.D 40	psi 50 psi 6	0 psi 70 psi	1 17 m
1/8" 10	12 1	4 16	Litera
3/16" 22	26 3	0 33	T CEMPANY
1/4" 41	47 5	4 61	CFM Required
5/16° () 65	77 8	9 101	J

Starting & operating the machine

- 1. To begin turn on the cabinet lampbox and DP 850 system.
- 2. Charge the machine with media.
 - a- Open the top lid of cabinet
 - b- With the dust collector running, **slowly** poor 100 pounds of media through the floor and into the hopper
 - c- Avoid over-filling the machine with media. To double check look at the diagram 7-1
- Set pressure regulator to désired pressure
 - If unsure of desired pressure, begin at 40 psi and adjust up or down until desired results are achieved.
 - Operating the machine at the lowest pressure will lengthen the life of the media and blast hose lowering operation cost.
- 4. Adjust valve for slight vibration of vibrating screen
- Put hands in gloves, grip the blast nozzle firmly and aim at targeted piece.
 - Different attack angles are necessary, depending on your application.
 Experimentation is often needed before finding the correct angle for your particular job. Generally a 45 degree angle in relation to your work piece is best.
 - The distance from the blast nozzle to the work piece may also vary according to the application desired. Generally a distance of 4-6" works best.
- 6. Depress the foot pedal
 - Once abrasive flow stabilizes, begin passing the nozzle over the desired area.
 Once the desired effect is achieved remove pressure from foot pedal to stop the abrasive flow. Abrasive flow will not stop immediately. Keep a firm grip on the gun until the pressure "bleeds" out the remaining pressure.

Turn the power switch's off when done operating the machine.

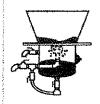
Correct media level



Machine off







Depressurized (not blasting)



Adjusting the abrasive flow

The abrasive mixing valve (a) is threaded directly into the bottom of the pressure tank (b). By turning the T-handle clockwise, less abrasive will flow from the nozzle. The valve should be adjusted for a light consistent spray of abrasive from the nozzle. A heavy, dark stream of abrasive should be avoided. Too heavy of a flow will break down the abrasive quickly and wear out the blast nozzle and hose prematurely. Abrasive backing up in the bottom hopper of the cabinet may be the result of abrasive flow set too heavy.

The air proportioning valve (c) controls the amount of air flowing from the nozzle. For most blasting this should be set to approximately 3/4" open. The air proportioning valve may require some adjustment if any pulsating of abrasive flow from the nozzle occurs.

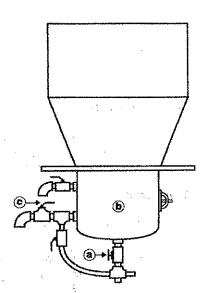


Diagram 7-2 (Abrasive flow diagram)

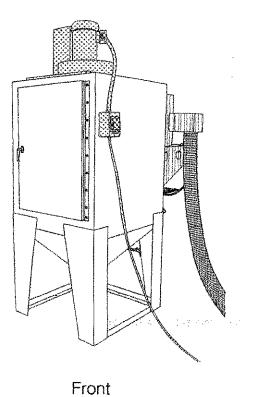
DP 850 Overview

- 1. Main Body
- □ pg 9
- m pg 11 3. Reclaimer

2. Motor Assembly 🗟 pg 10

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- 4. Pressure Pot
- pg 12



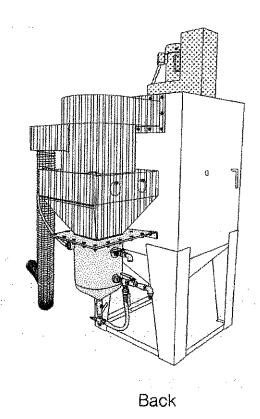
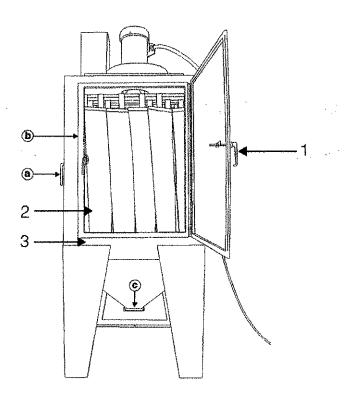


Diagram 8-1 (Overview diagram)

8

Main Body (Dust chamber)

Diagram 9-1



Parts List

part description

part #

1 Handle

Tube Filter

Hose clamp

2

the million of 100

(30 required)

411707 414435

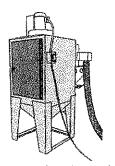
(30 required)

414510

*Hose clamps are found inside the dust chamber holding the tube filters securely to rings welded on the dust chamber floor.

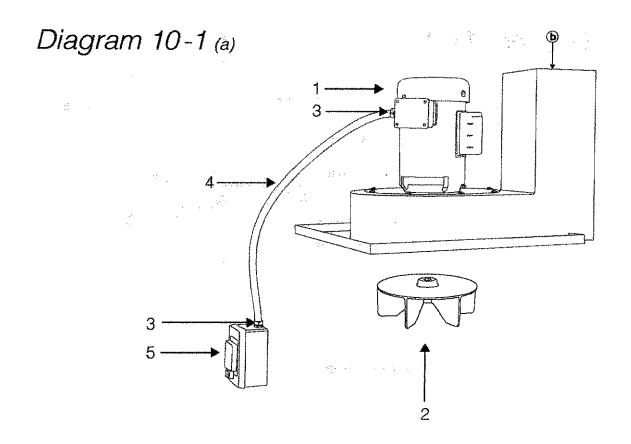
Information & Operation

- (a) Shaker handle Attaches to shaker cage and makes manual cleaning of dust bags possible. Bags must be shaken each day after the machine is shut down. Failure to do this will shorten filter bags life span.
- (b) Dust Bag Chamber Enclosed in this chamber are 30 tubular bags each measuring 40 inches in length with a 5 inch diameter giving this blaster a filtering capacity of 145 sq. ft. Chamber door must remain closed during operation.
- (c) Trap door hinged dump door with latch allows for easy removal of dust from the dust collector unit.



The highlighted area shows location of dust chamber on the unit.

Motor assembly

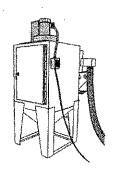


Parts List

	part description		part#
1	Motor 3hp		414537
2	Fan blade 14 inc	her in the state of the	411226
3	Connector		414540
4	Wire 12/3 AWG	(10' required)	414539
5	Switch 240 volt		414538

Information & Operation

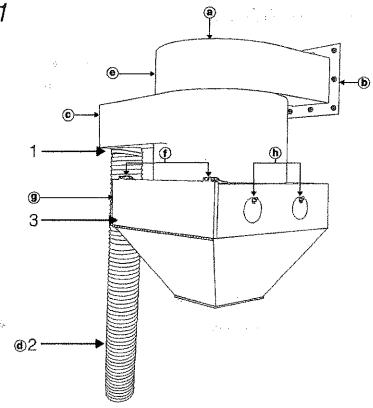
- (a) Blower Motor & Fan Assembly Standard electrics on this motor are 230 volt, 60 cycle, single phase. Always check for damage due to improper handling during shipment. Be sure impeller fan moves freely before bolting to bag chamber with six nuts and washers provided.
- (b) Blower Motor Exhust Stack For proper operation, this must remain open. The inside is lined with a fiberglass material to lower the sound level. If dust or abrasive is visable stop operation! Check bags inside bag chamber for tears or saturation. Replace if necessary.



Highlighted area shows location of motor assembly on the unit.

Reclaimer





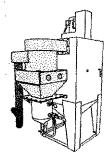
Parts List

	part description	part#
1	Hose clamp	414516
2 (d)	Hose 5 inch diameter (10' required)	414424
3	Media screen	310008-A

Information & Operation

- (a) Tuning port Sliding plate which covers a hole in the top of the abrasive separator.

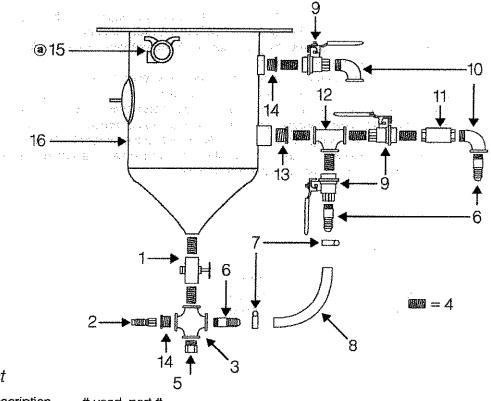
 Normally kept closed during operation. It may be opened slightly when using fine medias to prevent good media being pulled out by the dust collector.
- (b) Exhaust Port After separation of dust from operating media takes place, broken down media and dust are drawn out of reclaiming chamber at this point.
- (c) Entry Flange Abrasive media is pulled from machine hopper through media hose entering the reclaimer at this point.
- (d) Suction tube As abrasive separation takes place, the dust is pulled out through this tube.
- (e) Reclaimer housing Abrasive separation takes place here. (#2 on part list)
- (f) Access Door Latch Latch for access door
- (g) Access Door The vibrating filter screen is located behind this door and should be cleaned once a week to prevent blockage.
- (h) Sliding plates Set of four sliding plates covering holes below abrasive separator. Normally closed during operation. May be opened to pull out more fine media into dust collector.



Highlighted area shows location of

Pressure pot

Diagram 12-1



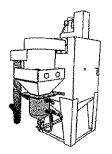
Parts List

part description	# USEC	nart	#

1	Media control valve	1	201270-A
2	Hose barb 1/2 x 5/8		413421
3	Cross 3/4 npt	1	411330
4	Nipple 3/4	7	411338
5	Plug	1	411331
6	Hose Barb 3/4 x 5/8	3	413433
7	Hose clamp	2	413405
8	Air hose 5/8		413431
9	Ball valve 3/4	3	411121
10	Street elbow 3/4	2	411323
11	Check valve 3/4	1	411123
12		12	411318
13	Reducer 1 x 3/4	1	411320
14	Bushing 1/2 x 3/4	2	411329
15	Vibrator	1	410111
16	Pressure pot		410462
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Information & Operation

(a) - Pnuematic Vibrator shakes pressure tank and particle screen to assure media flow.



Replacing parts

Plunger valve and seal replacement

- 1. It is recommended to replace the ring seal (a) and pipe nipple (c) with the plunger valve.
- 2. Remove the dval access door (d) on the side of the pressure tank.
- Using a pipe wrench, loosen the pipe nipple (c) and unthread from the elbow fitting.
 The plunger can now be removed.
- 4. Using pliers, grab the ring seal (a) from inside the tank and pull down firmly. The ring seal will pull free from the holding channel
- 5. Install the new ring seal (a) by pushing into the holding channel with your hand.
- 6. Place shaft of the new plunger through a new nipple and thread nipple back into the elbow fitting. Secure the nipple snuggly into the elbow fitting with a pipe wrench. Do not over tighten. Note: if using a nipple that is not from a factory, it must have the same length as the original nipple.
- 7. Reinstall the access door (d) to the pressure tank.

Internal Parts List

	Part Description	Part #
1 a.	Plunger Ring Seal	411427
2 b.	Steel Plunger	410462-c
3 c.	Pipe Nipple	XXXXXXXX

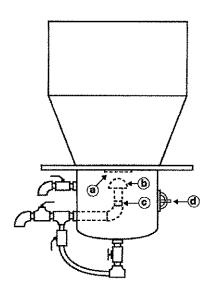


Diagram 13-1 (part replacement diagram)

Maintenance



Before beginning maintenance make sure all machinery is off and air flow is stopped.

Always wear NIOSHA approved respiratory protection when servicing dust laden areas of dust collector.

Daily Maintenance

- 1- Move filter bag shaker handle back and forth to knock dust loose from filter bags and into dust hopper.
 - 2- Wait several minutes for dust to settle in the hopper then empty dust into container. Be sure to relatch hopper door securely
 - 3- Replace protective plastic liner under viewing windows in the blast cabinet (underlayment)
 - 4- Check particle screen located below abrasive separator and remove any debris.
 - 5- Remove particle screen and shine a flashlight down into the pressure tank. The top of the plunger valve should be visible above the media. Add media if low. Avoid over filling with media. Replace particle screen
 - 6-Inspect the blast hose for holes. Areas of hose that are not straight will wear faster. Replace worn hoses immediately
 - 7-Inspect blast gloves for holes and replace if necessary before operating cabinet
 - 8- Inspect media conveying hose for wear. Replace worn hose immediately

Weekly Maintenance

- 1- Inspect nozzle for wear. Nozzles should be replaced when I.D. is 5/16" or larger
- 2- Inspect the nozzle washer and replace if worn
- 3-Inspect quick coupling gaskets where blast hose is connected to pressure tank. Replace gaskets if worn
- 4- Re-adjust mixing valve if needed to maintain light media flow from nozzle.
- 5- Check air pressure on gauge located on the pressure regulator. Most blasting is done at around 50 psi. Adjust if needed

Monthly

- 1- Open access port to pressure tank and inspect pop-up valve for wear. Typical wear is one or more grooves worn into round top of pop-up valve. Replace if needed. Ring seal should be replaced when pop-up valve is replaced.
- 2-Inspect rubber tube inside media mixing valve. Replace tube if wall is thin.
- 3-Inspect inside of steel tee located at the bottom of mixing valve. Replace if wall is thin.
- 4-Inspect blast cabinet door and top lid gaskets. Replace if torn or leaking.
- 5- Replace plastic lamp shield under lamp box on top of blast cabinet.

6 month

- 1- Drain media from pressure tank and clean out tank interior. Re-fill with new media
- 2- Remove bags and inspect filter bags in dust collector for holes and replace if needed. Using compressed air, blow filter bags clean and reinstall
- 3- Check vacuum hoses for cracks or wear spots replace if worn.
- 4- Check electrical cords for cuts or fraying replace if worn.

Lubrication - 414537 - 3HP -7/8 Shaft - Single Phase

This is a ball bearing motor. The bearings have been lubricated at the factory. Motors that do not have regrease capability are factory lubricated for the normal life of the bearings.

Relubrication Intervals (For motors with regrease capability)
New motors that have been stored for a year or more should be relubricated. Lubrication is also recommended at these intervals:

Relubrication Intervals

NEMA (IEC) Frame Size	Rat			
414537	3600rpm	1800rpm	1200rpm	900rpm
Up to 210 incl. (132)	5500Hrs.	12000Hrs.	18000Hrs.	22000Hrs.

Lubricant

Baldor motors are pregreased, normally with Polyrex EM (Exxon Mobil). If other greases are preferred, check with a local Baldor Service Center for recommendations.

Procedure

Clean the grease fitting (or area around grease hole, if equipped with slotted grease screws). If motor has a purge plug, remove it. Motors can be regreased while stopped (at less than 80°C) or running.

Apply grease gun to fitting (or grease hole). Too much grease or injecting grease to quickly can cause premature bearing failure. Slowly apply the recommended amount of grease, taking 1 minute or so to apply. Operate motor for 20 minutes, then reinstall purge plug if previously removed.

Caution: Keep grease clean. Mixing dissimilar grease is not recommended.

Amount of Grease to Add

Wt of grease to add-ounce/gram	Volume of gr	ease to add
.30oz. (8.4 gram)	0.6 inches	2.0 teaspoon

Trouble Shooting

Problem

- 1. Pulsating of media through Nozzle
 - a- Media/air mixture too rich. Adjust the air proportioning valve until pulsation stops.
 - b- Operating with damp or wet media. Change media and drain airline water filter.

 If problem persists, an air filter dryer may be necessary
- 2. No flow of compressed air or media
 - a- Nozzle may be clògged. Remove nozzle and clear obstruction
 - b- Blast hose may be clogged
 - b1. Close media regulator
 - b2. Open air proportioning valve fully
 - b3. Step on foot pedal. This will blow out most minor obstructions
- 3. Air flow through nozzle but no media flow
 - a- Improper air proportioning valve adjustment
 - b- Moist media packed at bottom of pressure pot
 - b1. Open side access port and scoop out wet media
 - b2. Drain airline water filter
 - b3. Load machine with fresh dry media
 - c- Moist media clogging media valve
 - c1, open side access port and scoop out wet media.
 - c2. unscrew nesessary fittings and remove wet media from media valve and adjacent areas
- 4. Loss of fresh media into dust chamber
 - a- Too much abrasive in the system
 - b- If abrasive is extremely fine, open tuning port slightly.
- 5: Slow production
 - a- Insufficient air supply. Check inlet air pressure gauge, 50 psi must be maintained. Be sure air compressor output and supply line is large enough.
 - b- Media is tob fine. Be sure media is suitable for application
 - c- Media flow is light. Adjust media mixing valve for adequate media flow. Too heavy of a flow must be avoided.
 - d- Blast nozzle inner diameter is too large. Media velocity can drop off if nozzle is worn too large.
 - Nozzle should be replaced when inner diameter reaches 5/16"

Trouble Shooting (continued)

Problem

6. Inconsistent or no media flow

- a- Debris or moisture in pressure tank, empty tank and clean interior.
- b- Dirty particle screen inside separator trapping media and preventing tank re-filling
- c- Hole in blast hose, inspect and replace if worn
 - d- Worn out plunger valve and/or o-ring in pressure tank. Inspect and replace.
 - e- Media level in pressure tank too low. Add more media. 100 lbs should be maintained
 - f Too much media in tank. Reduce level to 100 lbs
 - g- Debris in mixing valve. Inspect and clean.
 - h- Debris lodged behind nozzle. Inspect and clean
 - i Media backing up on particle screen because vibrator off or malfunctioning. Inspect and clean vibrator or replace if defective
- j Foot valve does not open. Repair or replace
- k-Pressure regulator leaks air. Repair or replace

7. Media backing up in cabinet hopper during blasting

- a- Media flow from nozzle is too heavy. Adjusting media mixing valve for lighter media flow.
- b-Blast pressure too high. Adjust pressure regulator to 60 psi or less.
- c-Wear hole in abrasive conveying hose. Inspect and replace.
- d-Turning port at top of separator is open. Close port.
- e- Dust collector filters too dirty. Increase frequency of filter bag shakedown using the shaker handle on dust collector.
- f Access door of separator and/or dust collector not completely closed and latched.
- g- Gasketing of separator and/or dust collector missing or damaged. Inspect and replace
- h- Media sleeve at bottom of cabinet hopper is down or missing. Inspect and replace.

8. Excessive dust in blast cabinet

- a- Poor quality media. Refer to media section of manual
- b- Open air inlets in separator slightly to draw more dust out of good media.
- c- Media flow from nozzle is too heavy. Adjust media mixing valve to reduce media flow to a light spray.
- d- Media backed up in cabinet hopper or media conveying hose blocking vacuum from dust collector.
 - Remove backed up media and take corrective action.
- e-Tuning port at top of abrasive separator is open, check and close port,

Media

Media description

Brown Aluminum oxide

Widely used as a cutting media. It can produce an "anchor" pattern in preparation for recoating. It's excellent for removing heavy foreign matter, de burring, frosting glass and lettering stone. It is extremely fast cutting, can be reused many times and is classified in various sizes for a wide selection of finishes.

Black Silica Carbide

When blasting silicon carbide is extremely fast cutting, this sharp media is used for cleaning very hard surfaces such as tungsten carbide.

Black Beauty

A cheaper alternative to aluminum oxide, it breaks down quickly but is ideal for light paint/rust removal from harder surfaces

Glass Bead

Available in a wide range of sizes, glass beads are generally the most popular media used in most cabinets today. This all-purpose media is used for honing, polishing, peening, blending, finishing, removing light burrs and cleaning most light foreign matter such as carbon and other surface residues from pistons and valves. Glass bead will not damage the base metal or change its dimensions. Weld and solder flaws can also be detected via glass bead blasting.

Corn Cob

Cleans metal, wood, tiberglass, plastic, masonry, and electric insulators. Won't frost glass, pit aluminum or damage surfaces. Corn cob is the softest media available.

Economix

A mixture of glass bead and aluminum oxide this media finds a nice middle ground. Able to remove corrosion glass bead is unable to but less agressive than pure aluminum oxide.

Media Comparison

*All media products sold by Econoline encompass finishing, cleaning/removal, and surface treatment.

Categories

7	Aluminum oxide	Glass Bead	Błack Silica Carbide
Cleaning Speed	High	Medium	Very High
Re-use	Med-High	High	Medium/Low
Dust Level	High	Low	Medium/Low
Metal Removal	Medium/High	Very Low	Medium/High
Hardness (M.O.H. Scale)	8-9	5.5	9
Typical Blast Pressure	20-90	20-55	20-90
Angular or Spherical	Angular	Spherical	Angular
	Corn Cob	Black Beauty	Economix
Cleaning Speed	Medium	Medium	Medium/High
Re-use	Medium High	Medium Low	Medium/High
Dust Level	Low	Medium	Medium
Metal Removal	Very Low	Medium/High	Medium
Hardness (M.O.H. Scale)	4.5	7-7.5	5-7
Typical Blast Pressure	20-90	20-90	20-75
Angular or Spherical	Angular	Angular	Both

Warranty

This product has been engineered to the highest standards.

Five year warranty

Econoline Abrasive Products guarantees its blast cabinets against defects in material and workmanship for a period of five years from the established purchase date. Econoline will repair or replace, free of charge, any defective parts determined to be covered under this warranty by our factory service personnel.

The parts must be returned to the factory, freight prepaid, with a letter of explanation.

Upon acceptance of claim, Econoline will replace the defective part.

Warranty conditions

This warranty does not apply if the unit has been misused, altered, or used for any purpose other than in accordance with the operating and assembly instructions provided.

This warranty does not cover transportation, interior or exterior finishes, hose assemblies, nozzles, air jets, windows, filters, lampshields or media valves.

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DO NOT THROW THIS MANUAL AWAY!

WARNING!

Do not use sand or abrasive containing silica in Econoline machines. (failure to comply will result in a voided warranty.)