

36-1 DP

**PLEASE READ
BEFORE
USING THIS EQUIPMENT**

ECON[®]LINE

ECONOLINE

OPERATING INSTRUCTIONS & PARTS MANUAL

BLAST CABINET

READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, OPERATE OR SERVICE THE BLAST CABINET. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!

RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

Unpacking

When unpacking blast cabinet inspect unit carefully for any damage that may have occurred during transit.

General Safety Information

Follow all electrical and safety codes, as well as the national electric code (NEC) and OSHA.

Do Not operate cabinets, or air flow with cabinet door or top open.

Do Not use fluids, or mix fluids with blast media for blasting. This cabinet is designed to accommodate dry blasting media only.

Keep floor around machine cleaned of media. Most forms of blasting materials are very fine and consequently slippery.

Important - check and clean dust collector unit frequently (see instructions included with machine).

Do not exceed maximum operating pressure of 125 PSI.

WARNING: DO NOT OPERATE CABINETS, OR AIR FLOW WITH CABINET DOOR OR TOP OPEN. THIS COULD RESULT IN SKIN DAMAGE, SERIOUS EYE DAMAGE OR BLINDNESS IF THE BLAST WERE TO COME IN CONTACT WITH UNPROTECTED PARTS OF THE BODY.

WARNING: THIS IS A DRY-BLAST UNIT, IT IS NOT MADE TO ACCOMMODATE MOISTURE OF FLUIDS OF ANY KIND USED SEPARATELY OR AS A MIX WITH BLAST MEDIA.

DP 36-1
Assembly Instructions

**PLEASE READ INSTRUCTIONS COMPLETELY
BEFORE STARTING**

We thank you for purchasing the DP-36 pressure system. This system has been specifically designed for the Dry Blast user who wishes to achieve quality results on a number of surfaces for both low and high volume requirements. Below you will find instructions on how to assemble your unit upon receipt. If you have any questions on how to proceed with any steps, contact **Econoline Technical Service** by phone at **1-800-253-9968** or **fax** at **1-616-846-6341**.

NOTICE:

The **DP36** is delivered skid-mounted to assure safe arrival. If any damage is evident upon receipt, contact the carrier immediately to file your claim.

STEP 1 – Unpacking

Cut the packing straps by using heavy-duty scissors or wire cutter. Remove the protective plastic wrap and cardboard. Open the front door by unlatching and remove the light assembly, regulator and foot pedal. Using a crescent wrench, remove the bolts to loosen the unit from the skid. With assistance of others, slide unit gently off the skid and place unit in desired work area.

STEP 2 – Light Fixture Installation

Unwrap the fluorescent light fixture and attach to the top of the cabinet with hardware provided. Be sure to place the plastic protective sheet between the light fixture and the cabinet to protect the light source from abrasive damage during blasting.

STEP 3 – Window

Loosen wing nuts to remove window frame and peel protective covering off from the window. Re-install and firmly tighten wing nuts to prevent leakage around window.

STEP 4 – Dust Collector set-up

Unpack the dust collector and place within a few feet of the sandblast cabinet. (Note: vacuum hose is packed in bottom barrel of dust collector.) Attach one end of the plastic hose to the air inlet of the vacuum system and attach the other end to the air outlet on the rear of the blasting cabinet. Plug the dust collector line cord into outlet on the back of the lamp box. See your dust collector manual for details and operation of your dust collector.

STEP 5 – Regulator and gauge installation

Connect regulator and gauge assembly (nos.1 & 9) to the inlet ball valve (no. 3). Be sure to place Teflon tape on the thread to assure a leak-free fit. Using a pipe wrench, tighten the connection. When the regulator and gauge has been installed, place the pipe tee (no. 2) and filter to the left of the regulator and gauge.

STEP 6 – Foot operated blast gun installation

Connect the black hose from the foot pedal valve to the brass hose barb in the ¼ inch air filter (no. 12). Connect the red hose to the brass hose barb on the media valve (no. 11).

DO NOT USE QUICK DISCONNECTS

STEP 7 – Attaching air line to sandblast system

NOTE: WE STRONGLY SUGGEST YOU HAVE A WATER / AIR SEPARATOR PLACED BEFORE THE REGULATOR TO ASSURE NO MOISTURE ENTERS THE SYSTEM. MOISTURE MAY LEAD TO CLOGGING OF ABRASIVE MEDIA.

Close your air inlet ball valve (no. 3) and attach the airline from your compressor to the pipe (1/2 inch NPT pipe thread) from your regulator and gauge (or water / air separator if you have installed one). The “open” position of the air inlet ball valve is when the lever is positioned over the length of the valve. The “closed” position is when the lever is perpendicular to the ball valve. When attaching the air supply to the **DP-36** the following assembly instructions are important for your system to function properly.

*Air to the plumbing of your unit should be supplied by hose or pipe with a **minimum of 3/8" I.D.** and we strongly suggest 1/2" I.D.

***Do not** attach your air supply to the unit with quick connects, as this greatly reduces the volume of air to the system and will adversely affect the units performance.

*For your foot pedal and media valve to operate properly and to maximize the life of the media valve and diaphragm – air line pressure supplied to the regulator of the system must be maintained at a **constant 100 – 125 psi.** (Note: this pressure is required to close diaphragm in valve).

STEP 8 – Loading abrasive into pressure-pot

Pour the abrasive media into the pressure pot. Brush excess media into the vessel to avoid it being sprayed into the air when filling the system with air. The pressure pot holds up to 100 pounds of media for long uninterrupted blasting. When reusing any abrasive media, be sure to use a filter to remove any extraneous materials which could clog the abrasive metering valve or the sandblast nozzle.

STEP 9 – Filling pressure-pot with air

Grip the pressure pot handle located in the top of the pressure vessel and lift firmly to secure ball seal in the opening while simultaneously opening the air inlet ball valve (no. 3) slowly. A swishing sound will indicate that the vessel is being filled with air. After a few seconds, the handle will stay in place on its own. If this is not the case, open the ball valve further to allow the vessel to fully compress.

When the system is fully compressed, the ball valve should be in the fully opened position. Check your regulator and gauge to assure the PSI is still at the desired setting. If not, adjust the regulator by turning the control located on top. Next, make sure that ball valve (no. 5) is in the “open” position.

STEP 10 – Controlling the abrasive media flow

The pressure-pot is fitted with an abrasive metering valve (no. 5) located on the bottom of the vessel. To adjust the valve, align the valve lever perpendicular to the valve body (closed position). Now turn the lever down approximately 30 degrees. This should be a good position to begin adjusting the media flow. Slide your arms into the gloves in the arm ports of the cabinet, grip the blast hose firmly, and depress the foot pedal to begin blasting (it is normal when starting to blast that one or two spurts of abrasives come out of the nozzle before uniform blasting begins). Best blasting is achieved when the abrasive can barely be seen as a mist in the air/media stream from the nozzle. Too much abrasive in the flow will reduce the ability of the system to blast effectively and will cause surging. Too little abrasive flow will slow your blasting and yield poor results.

Opening the abrasive metering valve will put more media into the mix while closing it will deliver more air and less abrasive. Once the metering valve is properly set, it will require only occasional maintenance.

STEP 11 – Blasting

Best results are achieved by sandblasting between 20 and 80 psi and holding the nozzle at a 90 degree angle to the surface at about 4 to 8 inches away. Maintain a continuous, even movement of the nozzle to prevent the media from cutting too deep into your work surface.

NOTE: IF USING GLASS BEAD KEEP PRESSURE BELOW 40 PSI. GLASS BEAD SHATTERS INTO DUST ON CONTACT WITH ITS TARGET AT PRESSURES OF 40 PSI AND ABOVE.

To stop blasting, release the foot pedal and the air media valve will shut itself off automatically. To begin again, just press down on the foot pedal.

To shut down the system, simply close the air inlet ball valve (no. 3) and press down on the foot pedal. The pressure relief valve (no. 12) can be activated by pulling on the ring, however, depressing the foot pedal is easier and can be accelerated by pulling on the pressure relief valve simultaneously.

MAINTENANCE

To assure a long efficient life of the system, it is recommended to:

- A. Replace nozzle when compressor can't keep up, or media usage is excessive.
- B. Rebuild media valve when it starts to leak or doesn't shut off.
- C. Check abrasive metering valve when you can't get correct abrasive flow. If worn badly, replace.
- D. Check hose barbs after 20 hours of use. If worn badly, replace.
- E. Replace abrasive hose when it begins to soften or leaks media or air.

Water and/or oil in the air line will cause problems with the efficiency of your blasting. Before blasting, always drain water and/or oil from air line. We suggest that a quality water filter be installed in the air line between the compressor and the blast cabinet.

Good visibility speeds up work. Clean dust from window often and replace the plastic window underlayment and window when needed. The lamp shield will also become frosted and require replacement. Visibility is also affected by the condition of the dust collection system. The filter should be cleaned often and the dust emptied from the canister regularly (more than a gallon of debris is too much.)

If after extended use of the machine the gasket around the door or window becomes damaged or worn, it can be replaced (see diagram).

This equipment is engineered to the finest point of simplicity. With reasonable care it should give you many years of excellent service.

Blasting by its very nature is a high maintenance process. The same forces acting to separate materials from targeted pieces wear on the system itself.

Keep service parts in stock to avoid down time.

HELPFUL HINTS

1. **Air compressor choice:** Secure an air compressor that has the capacity to produce a high volume (cfm) and high-pressure (psi) of moisture –free air.

You must maintain a constant air pressure, not high one minute and low the next, it must be constant.

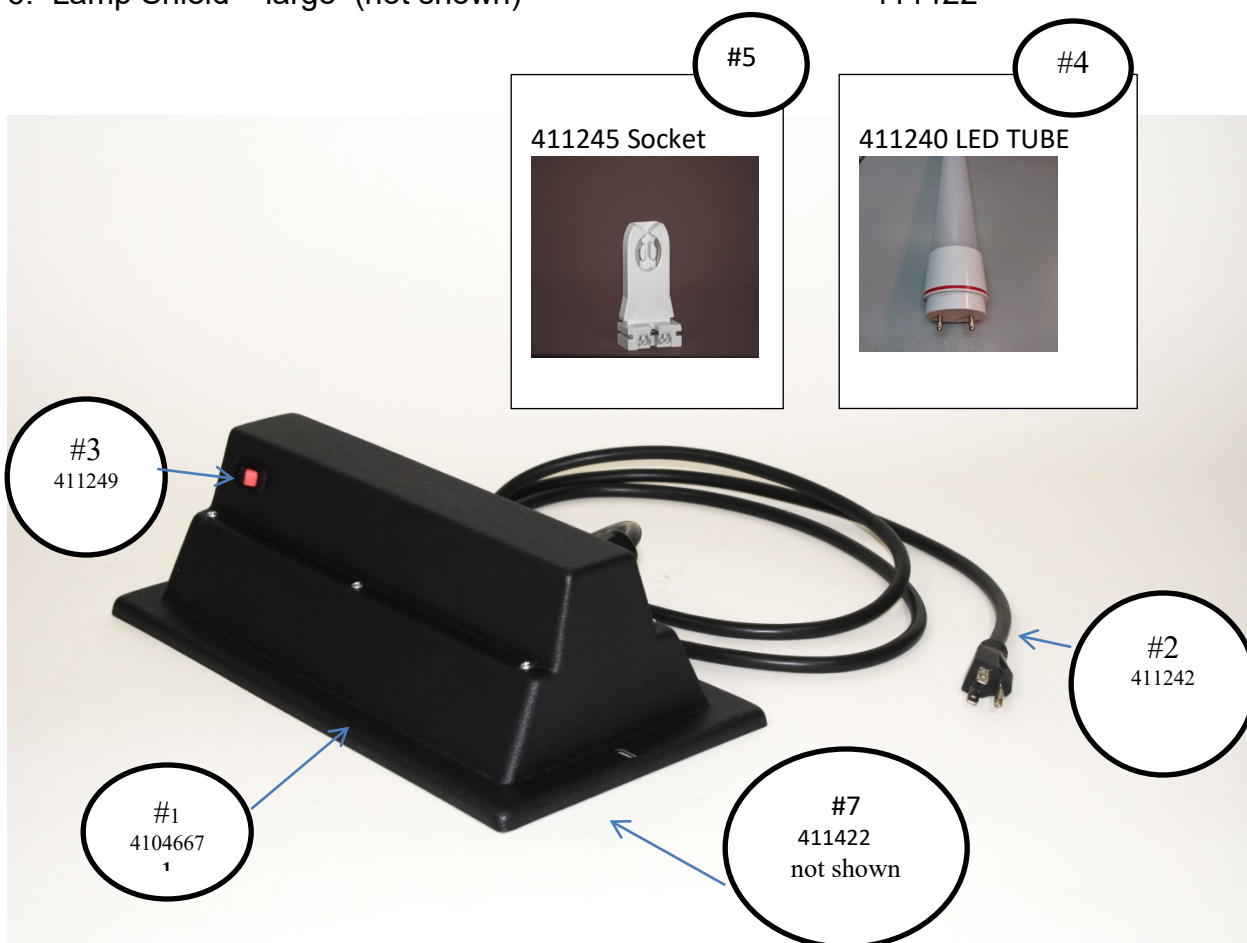
2. **Air supply line:** Keep the air lines as short as possible. **DO NOT** reduce the air line down to a quick disconnect when attaching it to your blast equipment. In order to maintain the high CFM and PSI you need at the blast nozzle; we suggest using a minimum ½” I.D. air line from your compressor to the blast machine.

3. **Blast Nozzles:** the blast nozzle size and design will determine the cfm of air required. The larger the nozzle, the greater the cfm needed.

4. As you begin blasting, record all data, compressor delivery pressure, nozzle size (I.D.), regulator pressure, and abrasive type and mesh size. When you are totally satisfied with your results, be sure to record all data for future use and reference.

PARTS LIST FOR LARGE LIGHT BOX COMPLETE ASSEMBLY #202835-LED

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1. Light Box cover only	410466
2. Power Cord	411242
3. Light Switch (on/off)	411249
4. LED tube 7W / T8 / 5000K (2 required)	411240
5. Socket	411245
6. Lamp Shield – large (not shown)	411422

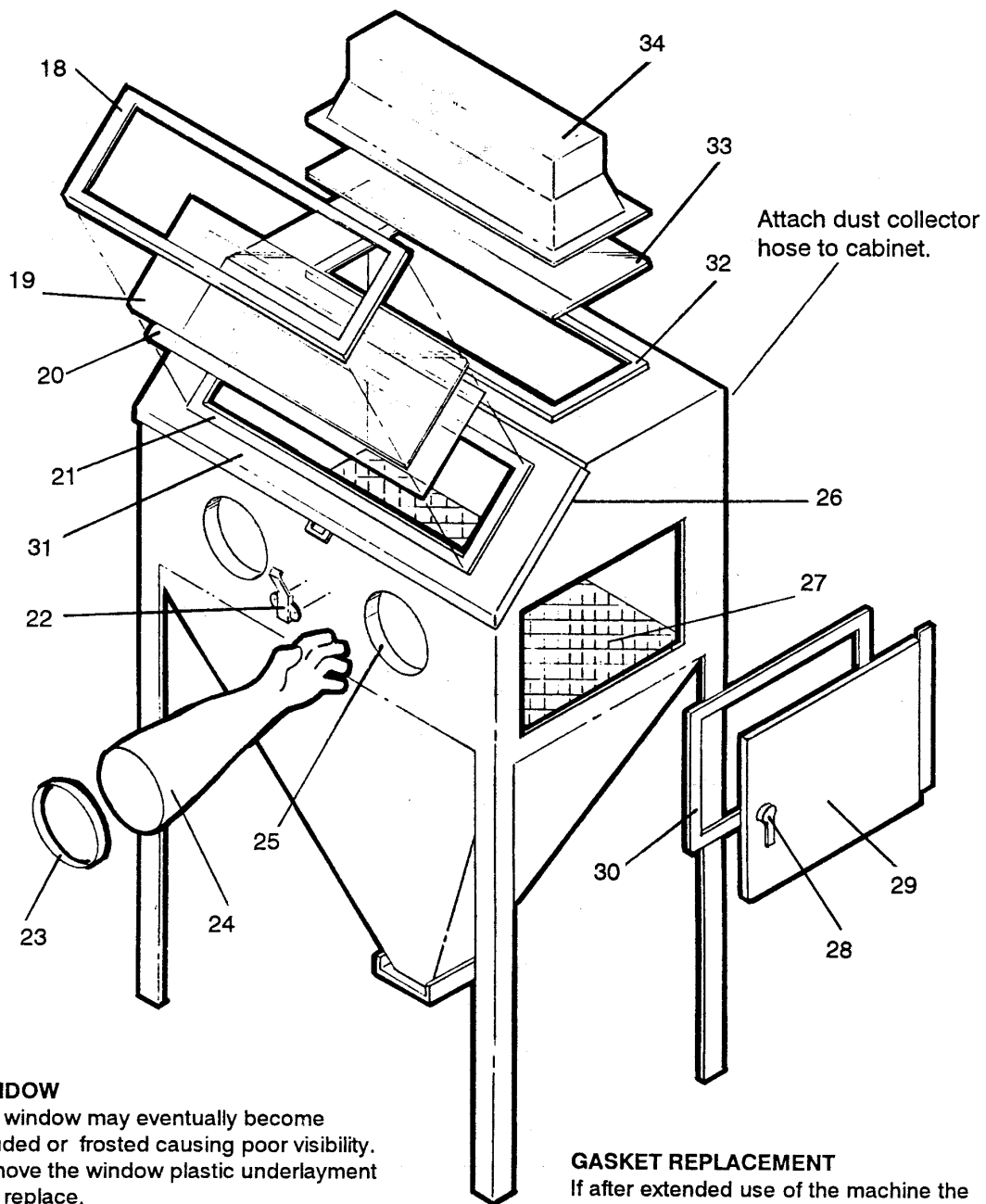


WARNING: This fixture has been modified and no longer operates fluorescent lamps. Ballast has been removed and there is line voltage being supplied to sockets. **DO NOT INSTALL FLUORESCENT LAMPS.**

PARTS LIST FOR BLAST CABINET

DESCRIPTION	Part #
18. Window frame	309344-66
19. Window plexi-glass 12" x 24"	411405
20. Window underlayment	
1 piece 24" x 120"	311535
10 pieces 12" x 24"	313286
21. Window gasket material (Specify number of feet required)	411403
22. Latch assembly front door	411712
23. Glove clamp (1 pair)	414511-2
24. Gloves 24" x 6" seamless rubber (pair)	412402
left hand only	412402-L
right hand only	412402R
25. Armhole gasket	411402
26. Front door gasket	411403
27. Work table (expanded metal)	201345
28. Side door handle assembly (set)	
Consists of: Handle	411701
Latch	411702
29. Side door	201326-66
30. Side door gasket	411403
31. Lamp box gasket material	411403
32. Lamp shield	411422
33. Lamp box assembly complete	202835-LED
NOT SHOWN: Trap door spring	411601
Trap door gasket	410545

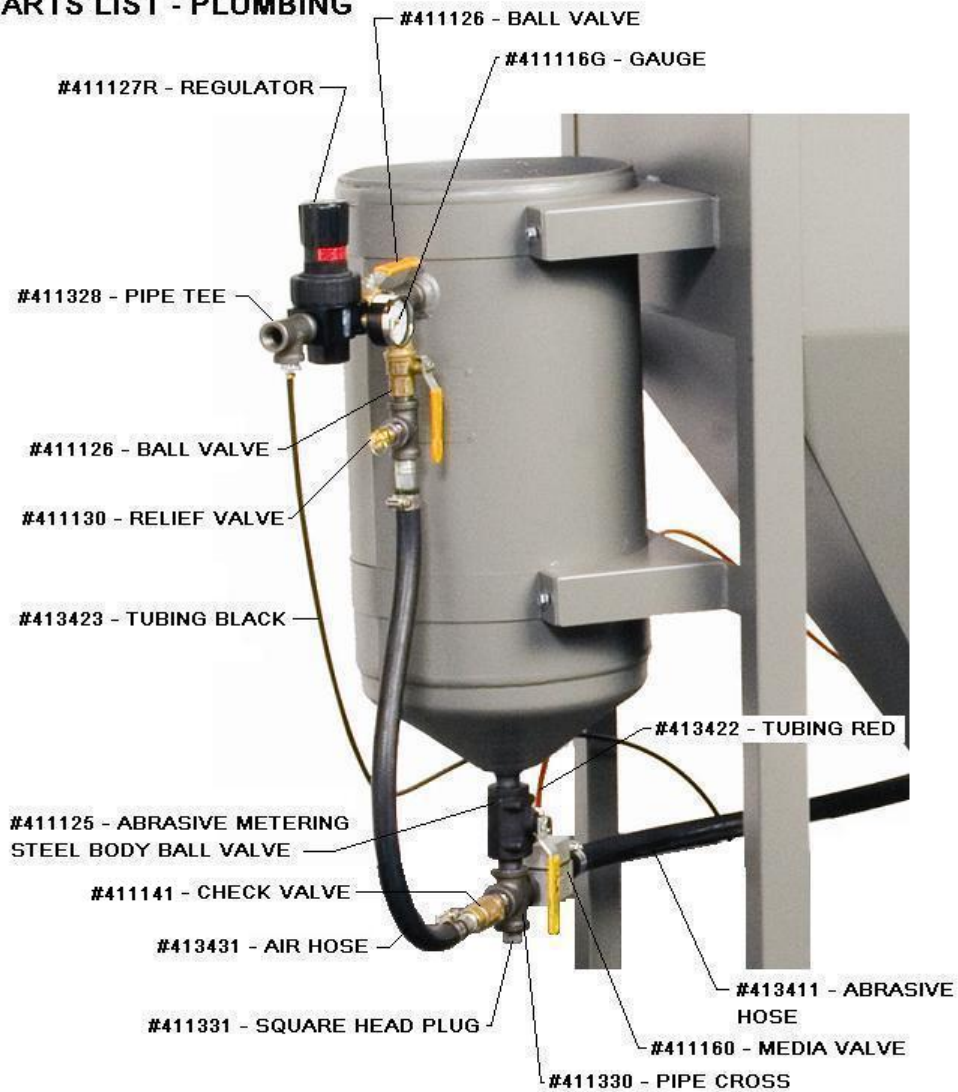
ASSEMBLY DIAGRAM FOR BLAST CABINET



PARTS LIST FOR AIR SYSTEM – PLUMBING

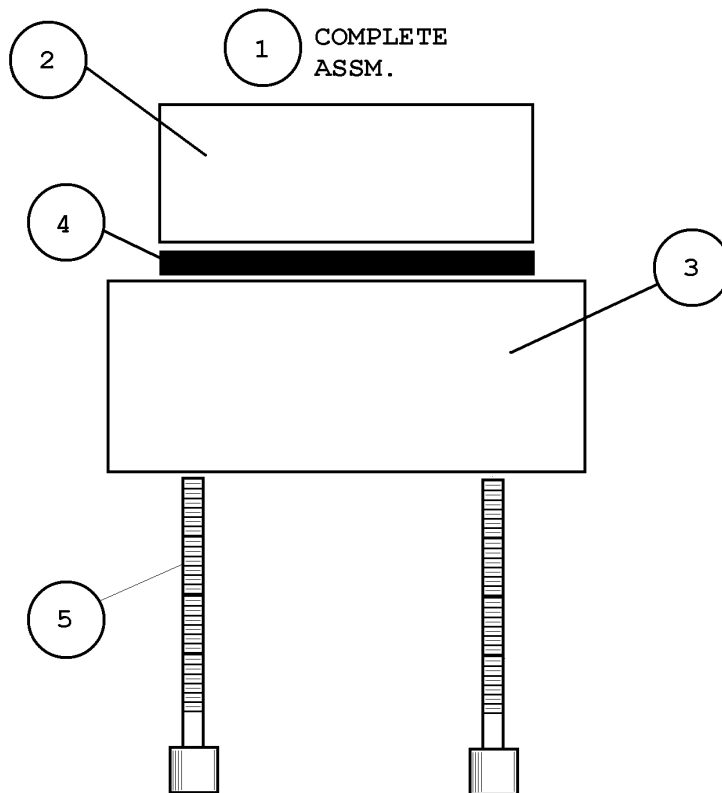
DESCRIPTION	PART NO.
1. Regulator	411127
2. Pipe Tee	411328
3. Inlet Ball Valve	411126
4. Air Hose ½” I.D.	413431
5. Choke Ball Valve	411126
6. Abrasive Metering Valve	411125
7. Pipe Cross	411330
8. Square Head Pipe Plug	411331
9. Gauge	411116G
10. Abrasive Hose (8’ required)	413411
11. Media Valve	411160
12. Pressure Relief Valve	411130
14. Check Valve	411141
15. Foot Pedal Valve	411131
15A. Foot Pedal – Complete	201719YW
16. Tubing (black)	413423
17. Tubing (red)	413422
Not shown - Gasket Closure 3” dia. – red	411427

**DRAWING #37 DP-PLUMBING
ASSEMBLY DIAGRAM - AIR SYSTEM
PARTS LIST - PLUMBING**



PARTS LIST AND ASSEMBLY DIAGRAM - MEDIA VALVE

DESCRIPTION	PART NO.
1. MEDIA VALVE COMPLETE _____	411160
2. MEDIA VALVE TOP _____	411154
3. MEDIA VALVE BOTTOM _____	411153
4. DIAPHRAGM	
HEAVY DUTY - HIGH PRESSURE _____	411157
MEDIUM DUTY - LOW PRESSURE _____	411164
5. 1/4 x 20 HEX CAP SCREW _____	411540



MEDIA VALVE

USED ON DP-36-1

PLEASE READ

For optimum performance, we have included two different media valve diaphragms.

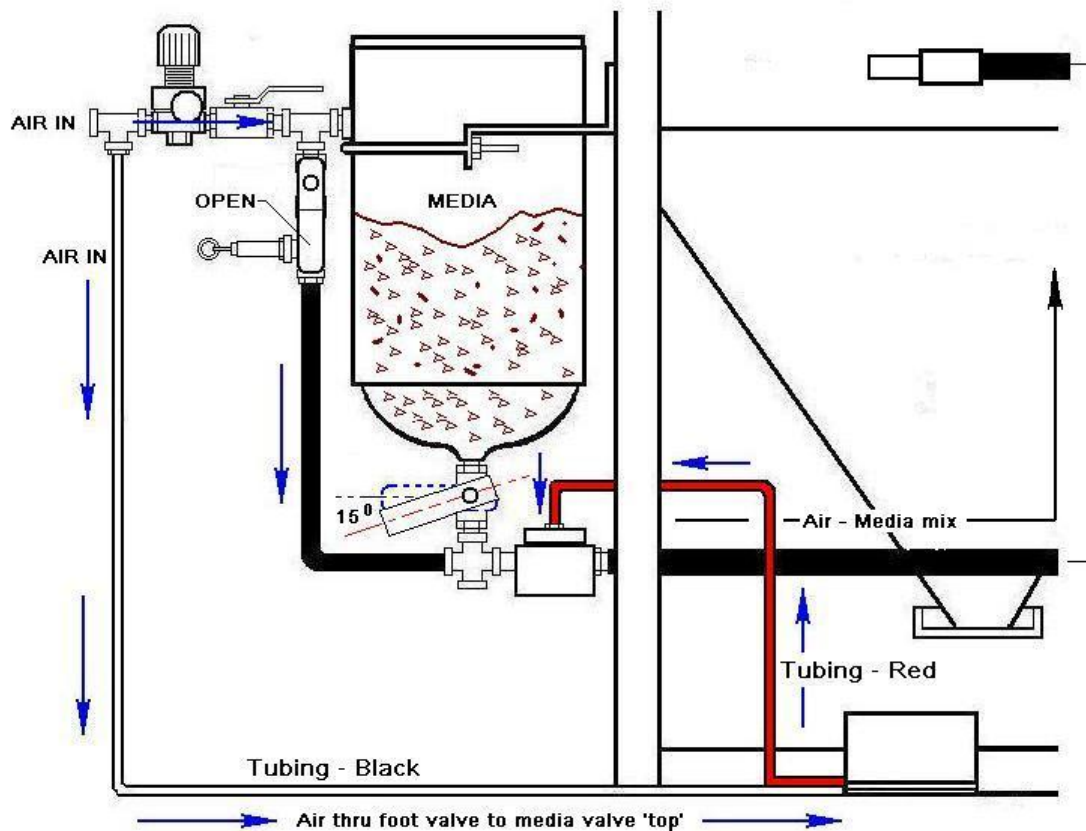
Installed in the media valve is our high-pressure diaphragm part #411157.

If the media valve does not shut off immediately upon releasing the foot pedal, you may need to change the diaphragm.

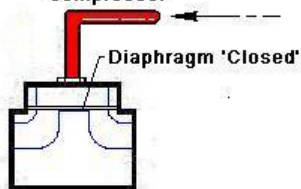
For lower pressure uses we recommend installing the low-pressure diaphragm part #411164

Whenever the media does not shutoff, you should first inspect the diaphragm for wear.

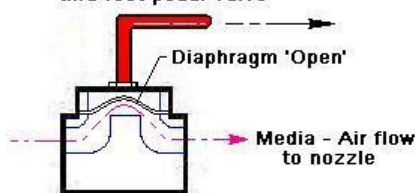
DRW #37A
DP- WORKING DIAGRAM



Air thru foot pedal from air compressor

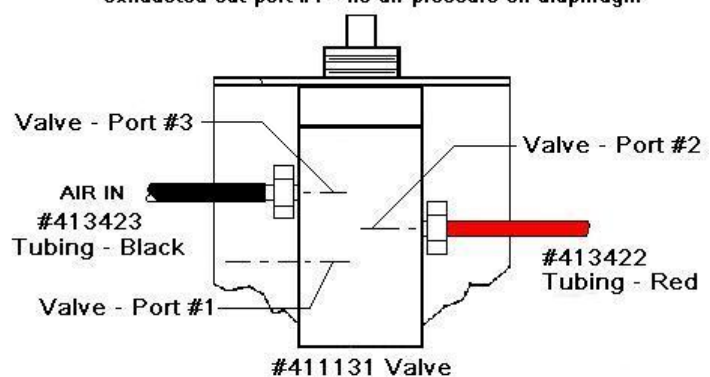


Air above Diaphragm released thru foot pedal valve



Media Valve #411160

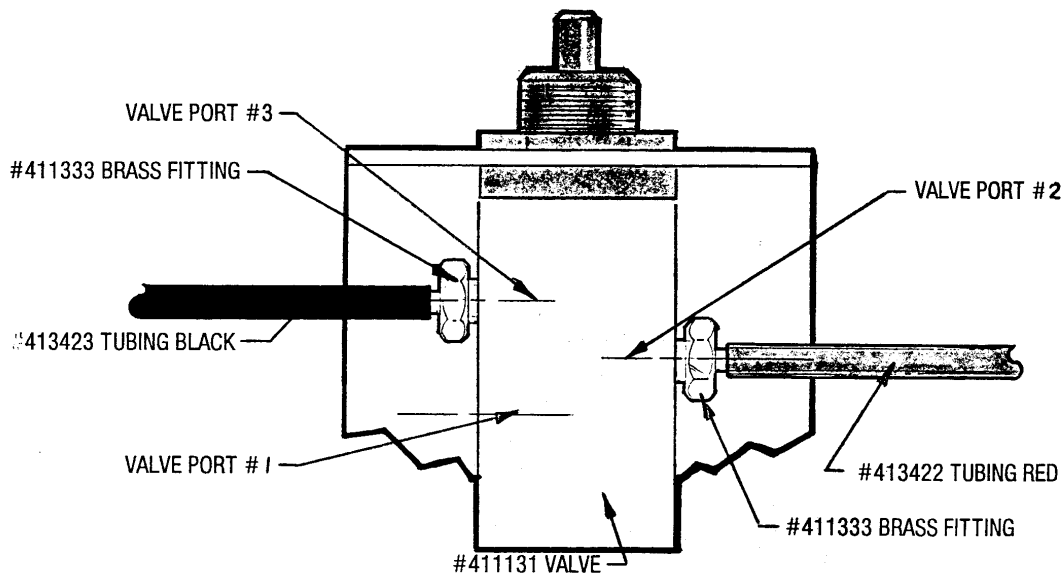
When foot pedal is depressed the air is cut and exhausted out port #1 - no air pressure on diaphragm



Detail - Foot Pedal Valve

ASSEMBLY DIAGRAM DP-36-1 FOOT VALVE

#201719YW FOOT PEDAL



NOTE: It is very important that the tubing connected to the brass fittings of this assembly be done as shown above. The tubing connected to fitting in valve port #3 must be **BLACK**. The tubing running from valve port #2 must be **RED**. This is important as reference is made to these colors in the operation manual.

SERVICE PARTS

TUNGSTEN CARBIDE NOZZLES - GENERAL ALL PURPOSE NOZZLE - DESIGNED FOR UP-CLOSE
BLASTING - DIRECT PRESSURE

Part No. **I.D. (BORE)**

4165331/16" (.062)

4165343/32" (.093)

4165291/8" (.125)

4165303/16" (.1875)

4165311/4" (.250)

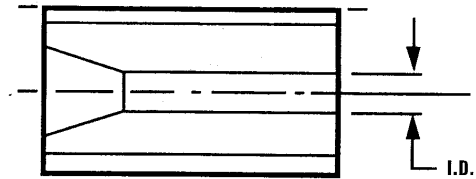
4165325/16" (.3125)

Thread nozzle into holder.

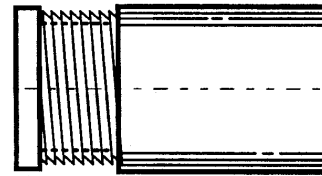
Nozzle **must** seat against Abrasive Hose.

DO NOT FORCE NOZZLE INTO HOLDER.

SECTION VIEW NOZZLE



3/4" - 14 N.P.S.

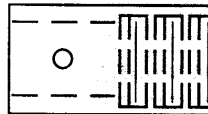


WASHER

ABRASIVE HOSE
#413411



NOZZLE HOLDER
#410461



NOZZLE



WASHER

**FAILURE TO ASSEMBLE NOZZLE FLUSH AGAINST ABRASIVE HOSE WILL RESULT IN
PREMATURE WEAR TO ALL OF THE ABOVE PARTS.**

The process and materials used to manufacture Abrasive Hose will cause variances in the outside diameter of the hose. When assembling the nozzle holder to the hose make sure there are no air leaks.

NOZZLE I.D.	NOZZLE PRESSURE (PSI)	50	60	70	80	90	100	125
1/8"	AIR (CFM)	12	13	15	18	19	21	26
	Abrasive lb/hr.	70	80	90	100	110	120	135
3/16"	AIR (CFM)	25	30	35	40	43	45	60
	Abrasive lb/hr.	150	170	200	215	75	260	320
1/4"	AIR (CFM)	50	55	60	70	75	80	95
	Abrasive lb/hr.	270	300	400	400	450	500	675
5/16"	AIR (CFM)	80	90	100	115	125	140	190
	Abrasive lb/hr.	470	530	600	675	750	825	1000

TROUBLESHOOTING TIPS

<u>PROBLEM</u>	<u>POSSIBLE SOLUTION</u>
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Surging of blast flow?

Air pressure too low-----	See "Lack of Air"
Too much media-----	Adjust media valve

Excessive media consumption?

Media valve open too far-----	Close slightly
Air pressure too low-----	Check pressure gauge

Clogging and plugging of blast flow?

Debris in media-----	Purge & screen
Media size too large-----	Use smaller grit size
Nozzle plugs-----	Use larger nozzle
Nozzle plugs-----	Adjust media valve
Wet media-----	Dry media, drain water from air

Moisture in abrasive media?

Wet media-----	Change or use dry media
Water in air-----	Drain water from air lines
Water in tank-----	Empty, dry out and refill

Humid weather?

Moderate humidity-----	Keep media dry as possible
Moderate humidity-----	Use dryer or moisture separator
High humidity-----	Avoid usage if possible

Overtaxed compressor?

Compressor too small -----	Restrict time used
Nozzle size too large -----	Use smaller size
Too many leaks in plumbing -----	Seal and tighten plumbing
Holes in abrasive hose-----	Replace
Air filter on compressor-----	Clean

Lack of air pressure?

Compressor too small -----	Use smaller nozzle
Supply valves not on full position---	Open valves
Nozzle size too large -----	Use smaller size
Leaks in plumbing-----	Seal & tighten plumbing
Holes in abrasive hose-----	Replace hose
Air filter on compressor plugged-----	Clean filter
Urethane gasket worn or dirty-----	Clean or replace gasket

Lack of abrasive flow?

Blaster tank empty-----	Fill tank
Moisture in media-----	Dry media
Not enough air pressure-----	Check system
Abrasive hose kinked -----	Straighten
Debris in media-----	Clean or screen media

WARRANTY

ECONOLINE

THIS PRODUCT HAS BEEN MANUFACTURED AND 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 COLLECT, WITH A LETTER OF EXPLANATION. ON ACCEPTANCE OF CLAIM ECONOLINE WILL REPLACE DEFECTIVE PART.

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 VALVE.

**OPERATION OF THIS UNIT WITH NATURAL
SAND SHALL RENDER THIS WARRANTY NULL
AND VOID.**

WARNING

DO NOT USE SAND OR ANY ABRASIVE CONTAINING SILICA. USE OF COMPOUNDS CONTAINING SILICA IS A HEALTH HAZARD.

FREE SILICA WHEN INHALED CAN LEAD TO SERIOUS, PERMANENT, DISABLING AND DEADLY DISEASE (SILICOSIS).