

Build Document for Proof of Concept Ventilator Assembly Version 1.2

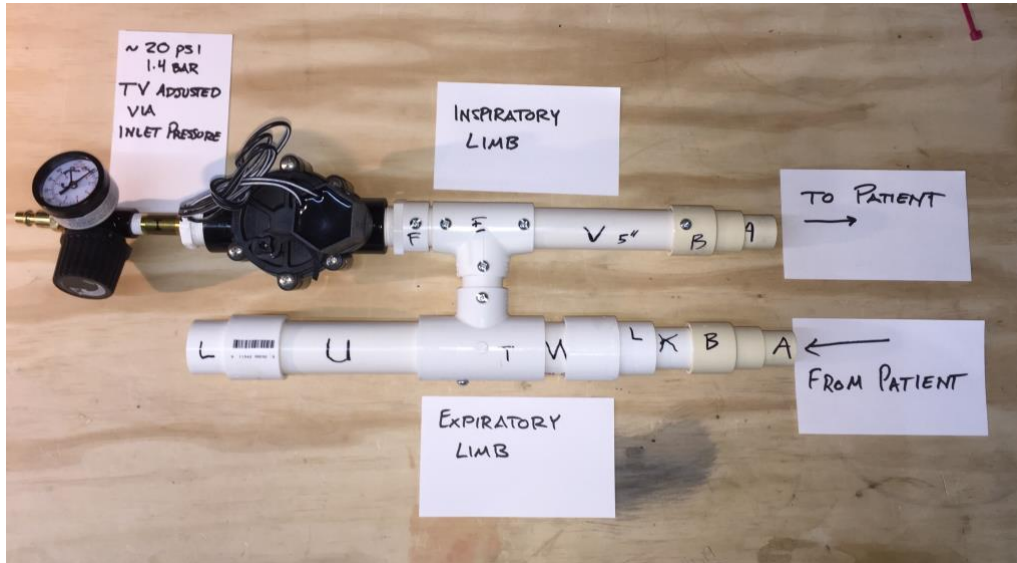


Fig 1. Assembled Ventilator V1.2

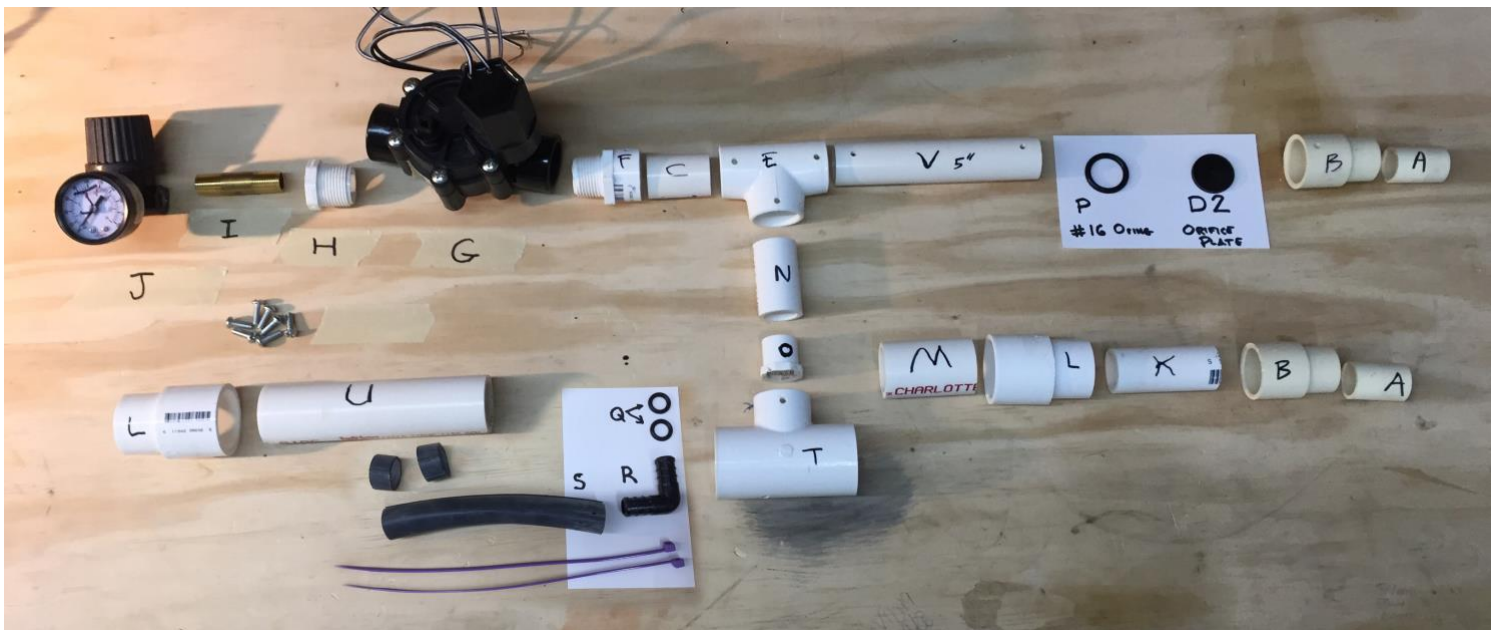


Fig2. Exploded Assembly

- Part H has a 1/2" hole to fit part I (1/4" NPT double ended male nipple)
- NO PVC GLUE, assembly is press fit
- #8-32 1/2" long screws hold high pressure assembly in place
- teflon tape on all threads

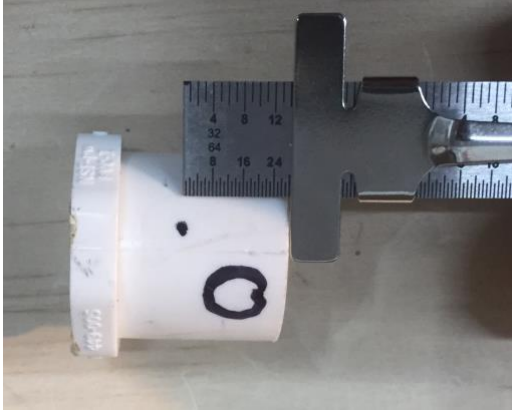
Exhalation Valve V2 final assembly:



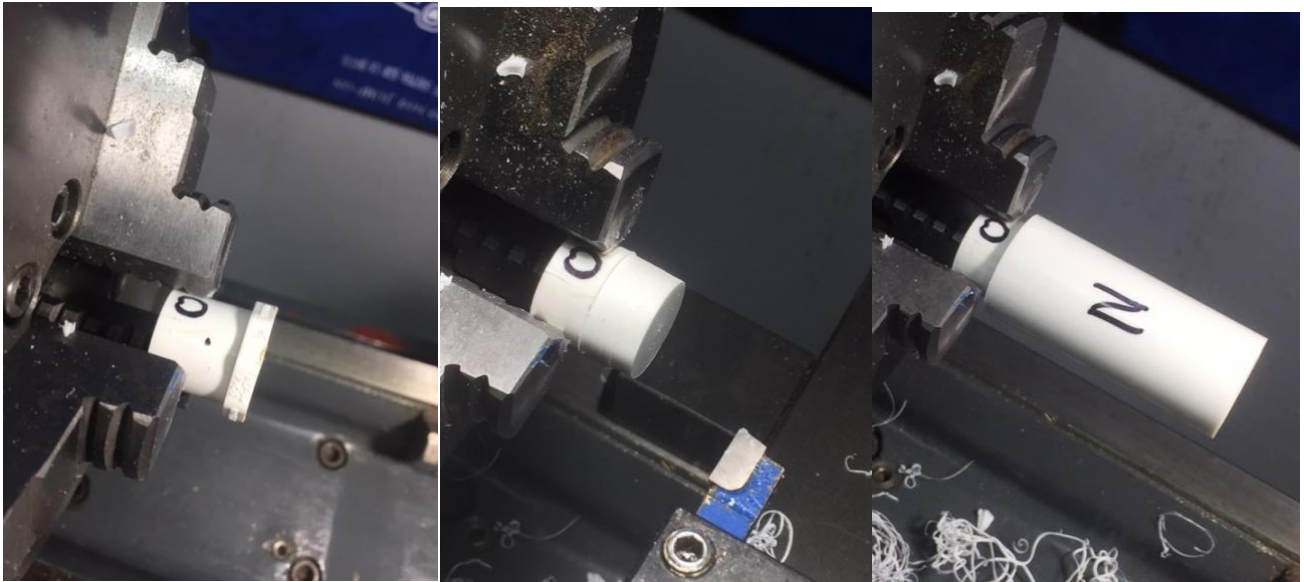
Inside Exhalation Valve V2:



Steps to prepare Exhalation Valve V2:



Mark  $14/32''$  to  $1/2''$  from edge of part O



Remove material for a tight fit part N into part O



1/2" Diameter hole in part O



Use silicone adhesive on mating surfaces of part N and O



Remove tabs from elbow part R



5" and two 1/2" sections of butyl rubber tube



Pinch and wrap 5" section around elbow, have 1/2" section in place.



Wrap 1/2" section of tube tightly around 5" section.

Cable tie over 1/2" section of tube. Cable tie must have no direct contact with 5" tube.

Add two #8 O-ring, OD 9/16", ID 3/8", Wall 3/32 to other side of elbow R.





Make an "S" bend in the 5" section of tube end, gently hold in vise



Slip ½" section of tube over S bend, pinch tightly and wrap around



Cable tie over ½" section of tube. Cable tie must have no direct contact with 5" tube.



Leak test. Do not overinflate, can be done underwater





O-rings (inside, not shown) form tight seal between elbow R and O.



Drill 9/64" diameter hole 14/32" to 1/2" from centerline of T as shown, install #8-32 x 1/2" screw



Hold exhalation bulb in place and slide in N and O assembly



#8-32 x 1/2" screw holds elbow against air pressure during inhalation



Version 1.2	Items in Fig. 2	QTY
A	3/4 in. CPVC Water Supply Pipe (CTS) AVG O.D.: 0.875 in (22.2 mm)	2
C	3/4 in. Schedule 40 PVC Pipe (O.D. 1.05 in. AVG ID 0.804 in.) 1.5" Long	3
M	1 in. Schedule 40 PVC Pipe (O.D. 1.315 in. AVG ID 1.029 in.) 2" Long	1
J	High Flow Regulator	1
B	3/4 in. x 3/4 in. CPVC Slip x Slip CPVC-to-PVC Adapter	2
E	3/4 in. PVC Sch. 40 S x S Tee	1
F	3/4 in. PVC Sch. 40 MPT x S Male Adapter	1
G1	Rain Bird 3/4 in. FPT Auto Inline Valve - Rain Bird CP075	1
H	3/4 in. PVC Sch. 40 Plug	1
T	1 in. x 1 in. x 3/4 in. PVC Sch. 40 S x S x S Reducing Tee	1
L	1 in. x 3/4 in. PVC Coupling	2
I	1/4 in.- 1/4 in. Male NPT Adaptor - two are here, not sold individually	1
K	Same as C	1
N	Same as C	1
P	1-1/16 in. O.D x 13/16 in. I.D x 1/8 in. Thickness Neoprene 'O' Ring	1
D2	Orifice Plate, 1" OD, 0.067" diameter hole, 1/8" thick, delrin	1
O	Charlotte Pipe Schedule 40 1/2 in. Spigot x 1/2 in. Dia. Slip PVC Plug	1
Q	#8 O-Ring, OD 9/16 in., ID 3/8 in., Wall 3/32 in.	2
R	1/2 in. Plastic PEX Barb 90-Degree Elbow	1
S	Bontrager Tube (27-inch, Schrader Valve)	1
U	same as M	1
V	3/4 in. Schedule 40 PVC Pipe (O.D. 1.05 in. AVG ID 0.804 in.) 5" Long	1
	#8x32 1/2" long screws	7
	teflon tape	
	nylon cable ties	2