3nd Ind Tref 15+ 14 1× VS T 6 Z 0 777 X-1 0 R 12" 0 SAMUE KON 49 brann time as measured solume AND SEL tor prosence REAL 3/4 57 Door FULL DOOR AL NA MERNAL V COURLE WITH GENERATOR STEW Stop Hth Sth now over PITCH BLOCK ENTRY Jart

This manifold is the most expensive thing at 28 dollars. I am sure we could print or even fabricate a manifold with a single $\frac{1}{2}$ " input and four $\frac{1}{4}$ " outputs with barbed style connectors it would make it significantly cheaper.





\$0.28 per ft.	Part Number 5233K56			
For Use With	Air, Water	Material PVC Plastic		
Trade Name	Masterkleer			
Hardness Rating		Soft		
End Type	Without Fittings			
Connection Type		Tube		
For Connection Style		Barbed		
Clarity	Clear			
ID	1/4"			
OD	3/8"			
Wall Thickness1/16"				
Bend Radius	1"			
Maximum Pressure		35 psi @ 72° F		
Maximum Vacuum		Not Rated @ Not Rated		
Color	Clear			



\$0.50 per ft. Part Number 5233K66					
For Use With	Air, Water	Material	PVC Plastic		
Trade Name	Masterkleer				
Hardness Rating		Soft			
End Type	Without Fitti	ngs			
Connection Type		Tube			
For Connection Style		Barbed			
Clarity	Clear				
ID	1/2"				
OD	5/8"				
Wall Thickness1/16"					
Bend Radius	2 3/4"				
Maximum Pressure		20 psi @ 72°	F		
Color	Clear				



Straight Type	Reducer For U	Air, Water		
Tube Connection (A)				
Connection Style		Barbed		
Barbed Connection Type		Clamp On		
Barb Style	Standard			
Number of Barbs		Multiple		
Gender	Male			
For Tube ID (A)		1/2"		
Tube Connection (B)				
Connection Style		Barbed		
Barb Style	Standard			
Barbed Connection Type		Clamp On		
Number of Barbs		Multiple		
Gender	Male			
For Tube ID (B)		1/4"		
Material	Nylon Plastic (Color	White	
Clarity	Semi-Clear			



Straight Type	Adapter For Use With		Air, Water		
Tube Connection					
Connection Style		Barbed			
Barbed Connection Type		Clamp On			
Barb Style	Standard				
Number of Barbs		Multiple			
Gender	Male				
For Tube ID	1/2"				
Pipe Connection					
Connection Style		Threaded			
Gender	Male				
Thread Type	NPT				
Pipe Size	1				
Material	Nylon Plastic				
Color	White				
Clarity	Semi-Clear				
Maximum Pressure		75 psi @ 72° F	:		
Temperature Range		32° to 140° F			



Fixed screw holes

Unit : mm (1" = 25.4mm)



If we are going to make our own propriety container then a box $6'' \times 6'' \times 48''$ would allow us to show the effect of water height on outlet pressure by installing the straight adapter in the center of one $6'' \times 6''$ area and one directly across to create vent path. Do the same with two opposing $6'' \times 48''$ sides. Adapters will be plugged with tapered plug when not in use.

I have sketched some parts but I am missing the final dimensions for watermill height and length of the open channel since width is governed by size of tubing. I have not had the time to do the math for flow rate versus watermill size to make it spin in the undershot or least efficient method of watermill. Starting with height of water column versus output is a good start followed by adding air pressure to create head. Then shifting to the same total length and cross-sectional area but one is all ½" the entire length and the other becomes four ¼" outputs. The last three have to do with work output using the

watermill in three different configurations undershot, overshot, and pitchback. Here is a link. <u>https://www.alternative-energy-tutorials.com/hydro-energy/waterwheel-</u>

design.html#:~:text=The%20Overshot%20Water%20Wheel%20Design,common%20type%20of%20wate rwheel%20design.&text=This%20type%20of%20water%20wheel,used%20to%20produce%20output%20 power.