

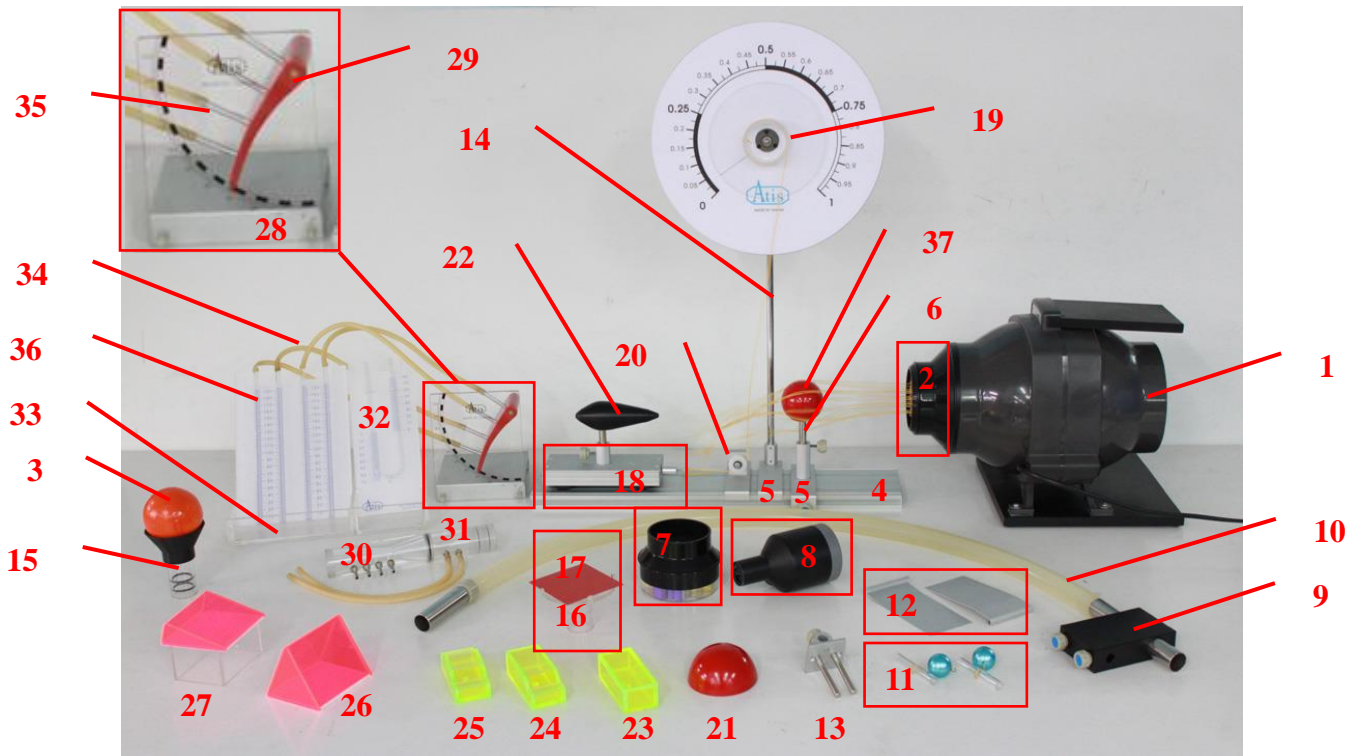
Fluid Mechanics Demonstration Kit

I. Experiment item :

1. Floating ball
2. Observe two balls when fluid passing.
3. Observe horizontally when fluid passes two curves
4. Observe when fluid passes plane.
5. Observe when fluid pass a ball.
6. The flow field and wind resistance when fluid passes a hemispheric
7. The flow field and wind resistance when fluid passes a round plane.
8. The flow field and wind resistance when fluid passes ball.
9. The flow field and wind resistance when fluid passes a cone.
10. The flow field and wind resistance when fluid passes a truck.
11. The flow field and wind resistance when fluid passes a van.
12. The flow field and wind resistance when fluid passes a car.
13. Measure Venturi tube wind pressure and Pitot-tube wind speed.
14. The flow field when fluid passes streamline tail.
15. Measure wind pressure in streamline tail.
16. Observe under gale in flat roof.
17. Observe under gale in pointed roof.

II. Experiment device

Experiment accessory list					
No.	Name	Qty.	No.	Name	Qty.
1.	wind tunnel blower	1	2.	linear flow field cover	1
3.	polystyrene ball	1	4.	aluminum track	1
5.	fixable joint sliding equipment	2	6.	steady bracket (50mm)	2
7.	rectification air shield	1	8.	small vent cover	1
9.	blowpipe device	1	10.	Silicone hose	1
11.	smaller ball with string	2	12.	parallel panel	2
13.	moveable double rack	1	14.	pillar (500mm)	1
15.	funneled Ventilation	1	16.	flat ventilation	1
17.	square flat	1	18.	aluminum slip car	1
19.	disc spring scale	1	20.	fixable sliding equipment with pulley	1
21.	hemisphere	1	22.	cone	1
23.	truck mold	1	24.	van mold	1
25.	car mold	1	26.	pointed roof mold	1
27.	flat roof mold	1	28.	tail base and angle scale with slide	1
29.	streamline tail	1	30.	Venturi tube device	1
31.	Pitot-tube device	1	32.	pitot U shape device	1
33.	tray and dish box device	1	34.	hose	6
35.	hose connector	4	36.	wind pressure meter	1
37.	circle of the sphere	1	38.	aluminum carry box	1



III. Note :

Updated installation instruction 1

NO.	Name accessory	Describe	Assemble
4	aluminum track	observe objects with accessory 4.5.6 as	
5	fixable connector sliding equipment	below list:	
6	fix bracket	Experiment 6. flow field in hemisphere	
21	hemisphere	Experiment 7. flow field in round plane	
22	corn	Experiment 8. flow field in round sphere	
23	truck	Experiment 9. flow field in corn	
24	van	Experiment 10. flow field in a trunk	
25	car	Experiment 11. flow field in a van	
26	pointed roof	Experiment 12. flow field in a car	
27	flat roof	Experiment 16. windage in flat roof	
36	round sphere	Experiment 17. windage in pointed roof	

1. Floating ball

Experiment describe :

Using wind tunnel blower directs a polystyrene ball to float upward. The floating ball keeps floating in the same level without blowing away. Underneath the ventilation in the blower when wind speed is big and atmospheric pressure will be small, it will create an attraction and offset to an active force of the gale toward out and up that makes the ball is floating in the air.

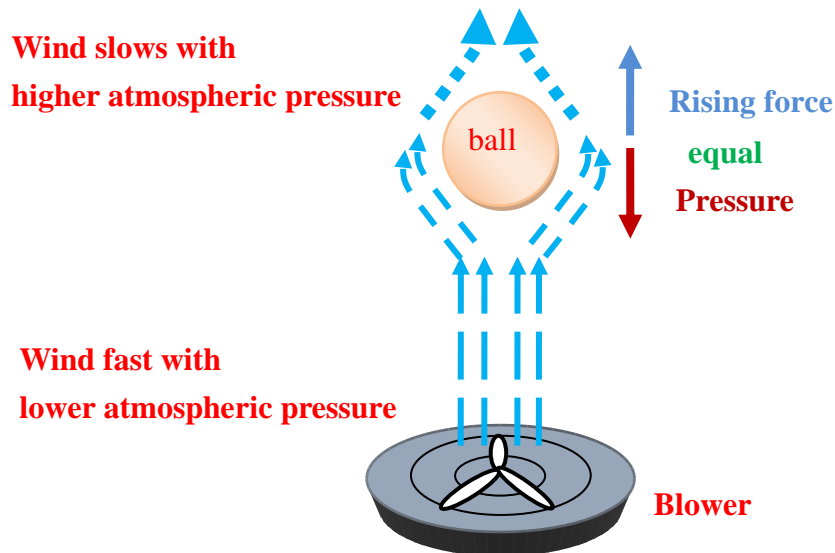


Image 1-1 Floating ball experiment

Experiment device :

Experiment accessory list					
No.	Name	Qty.	No.	Name	Qty.
1	wind tunnel blower	1	2	linear flow field cover	1
3	polystyrene ball	1			

We **stand the wind tunnel blower** and install **linear flow field cover** or **rectification air shield** as below image 1-2. We start the blower and put a **polystyrene ball** on top of vent. We observe the result and record.



Image 1-2 Experiment installation image

2. Experiment when fluid passes two balls

Experiment describe :

Experiment when fast fluid passes two balls. When airflow passes two balls rapidly, the inside of the fluid velocity is faster than outside, so it makes that two balls attract each other.

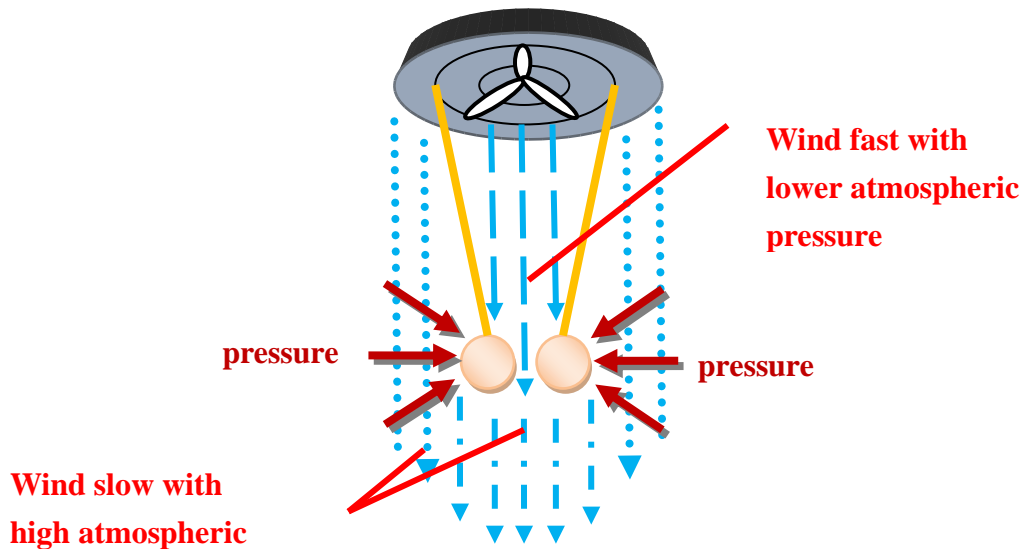


Image 2-1 when fluid passes rapidly between two balls.

Experiment device :

Experiment accessory list					
No.	Name	Qty.	No.	Name	Qty.
1	wind tunnel blower	1	4	aluminum track	1
5	fixable joint sliding equipment	1	7	rectification air shield	1
8	small vent cover	1	9	blowpipe device	1
10	silicone hose	1	11	smaller ball with string	2
13	moveable double rack	1	14	pillar (500mm)	1

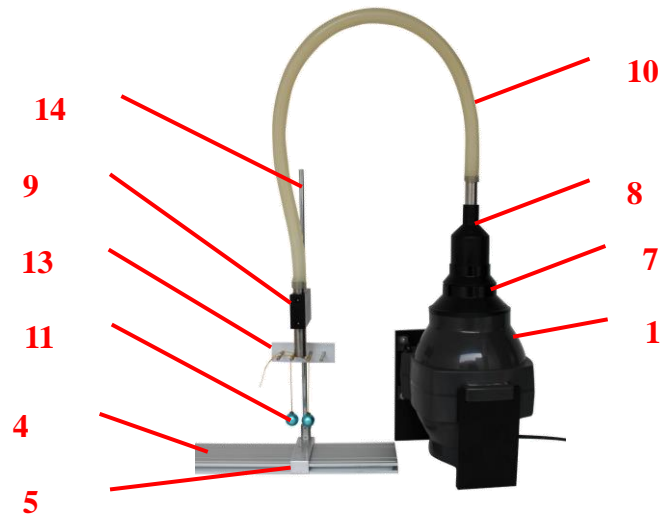


Image 2-2 Experiment installation image

We stand the wind tunnel blower and install rectification air shield and small vent cover and connect to silicone hose that fix on pillar with blowpipe device as below image 1-2. We start the blower and match between two curve planes from air-out bottom. We observe and discuss the result as image 2-3.



Image 2-3 Two balls attract each other image.

3. Experiment when fluid passes two curve planes

Experiment describe :

We observe when airflow passes rapidly between two planes. When airflow passes through between the two planes, the inside of the flow velocity is faster than outside that makes the two planes attracting each other.

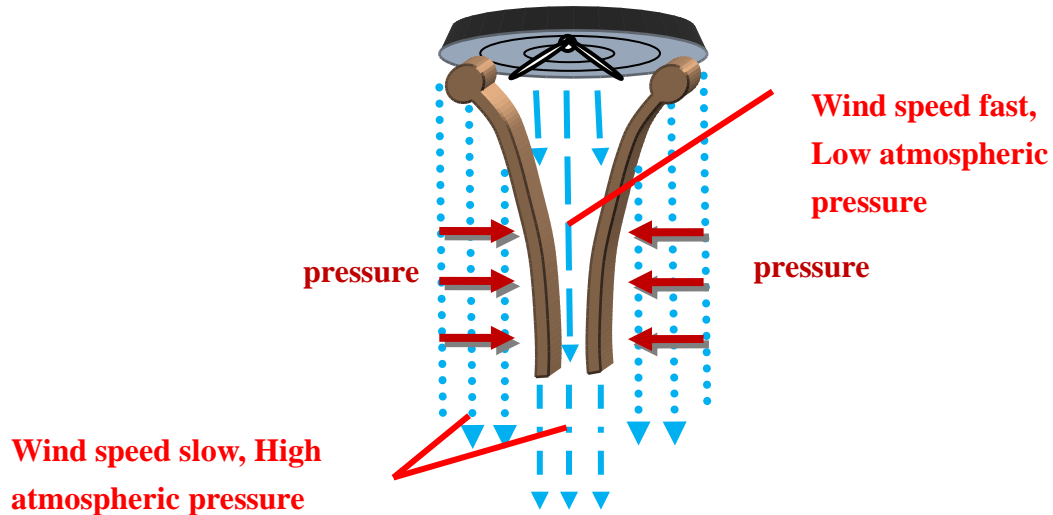


Image 3-1 wind speed passes between two planes image.

Experiment device :

Experiment accessory list					
No.	Name	Qty.	No.	Name	Qty.
1	wind tunnel blower	1	4	aluminum track	1
5	fixable joint sliding equipment	1	7	rectification air shield	1
8	small vent cover	1	9	blowpipe device	1
10	silicone host	1	12	curve plane	2
13	moveable double rack	1	14	pillar (500mm)	1

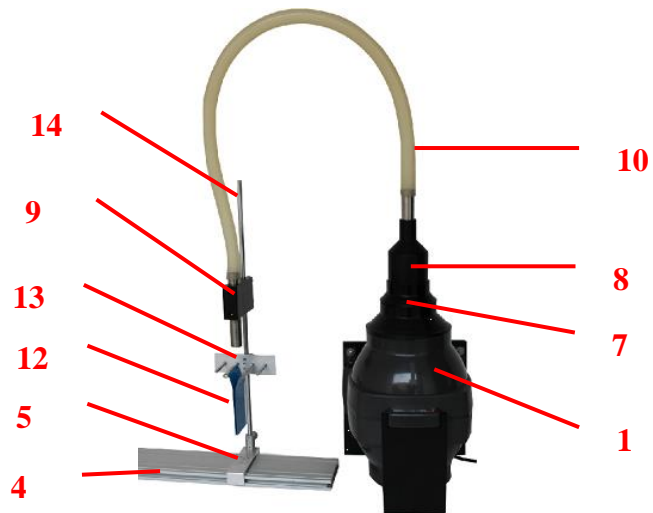


Image 3-2 Experiment installation image

We **stand the wind tunnel blower** and install **rectification air shield** and **small vent cover** and connect to **silicone hose** that fix on **pillar** with **blowpipe device** as upper image 3-2. We start the blower and match between two curve planes from air-out bottom. We observe and discuss the result as below image 3-3.



Image 3-3 Two planes attract each other image.



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