

3. Dosing operation

Data of a dosing operation using a HYSA-12 with water.

By controlling the position of the servo motor a very precise dosing operation can be executed.

Pump revolution : 30rpm Interval : 1 second

Model : HYSA-12 Liquid : Water

Theoretical discharge amount per operation : 0.5ml (0.074 rotation)

Discharge Duration : 0.147 second

Theoretical discharge amount per operation : 1ml (0.147 rotation)

Discharge Duration : 0.294 second

NO.	Weight(g)	Discharge Quantity (ml)	tolerance (%)
Initial	402.895		2.80
1	403.387	0.492	
2	403.886	0.499	
3	404.381	0.495	
4	404.876	0.495	
5	405.374	0.498	
6	405.880	0.506	
7	406.374	0.494	
8	406.873	0.499	
9	407.375	0.502	
10	407.876	0.501	
11	408.371	0.495	
12	408.871	0.500	
13	409.369	0.498	
14	409.861	0.492	
15	410.356	0.495	
16	410.853	0.497	
17	411.351	0.498	
18	411.849	0.498	
19	412.354	0.505	
20	412.850	0.496	

NO.	Weight(g)	Discharge Quantity (ml)	tolerance (%)
Initial	360.594		1.50
1	360.594		
2	361.588	0.994	
3	362.578	0.990	
4	363.571	0.993	
5	364.567	0.996	
6	365.566	0.999	
7	366.570	1.004	
8	367.569	0.999	
9	368.564	0.995	
10	369.555	0.991	
11	370.549	0.994	
12	371.540	0.991	
13	372.545	1.005	
14	373.544	0.999	
15	374.545	1.001	
16	375.540	0.995	
17	376.530	0.990	
18	377.525	0.995	
19	378.522	0.997	
20	379.523	1.001	

Theoretical discharge amount per operation : 6.79ml (1 rotation)

Discharge Duration : 2 second

Theoretical discharge amount per operation : 27.16ml (4 rotation)

Discharge Duration : 8 second

NO.	Weight(g)	Discharge Quantity (ml)	tolerance (%)
Initial	-100.568		0.13
1	-93.791	6.777	
2	-87.023	6.768	
3	-80.252	6.771	
4	-73.482	6.770	
5	-66.710	6.772	
6	-59.939	6.771	
7	-53.163	6.776	
8	-46.394	6.769	
9	-39.626	6.768	
10	-32.853	6.773	
11	-26.081	6.772	
12	-19.308	6.773	
13	-12.540	6.768	
14	-5.767	6.773	
15	1.005	6.772	
16	7.775	6.770	
17	14.544	6.769	
18	21.317	6.773	
19	28.087	6.770	
20	34.861	6.774	

NO.	Weight(g)	Discharge Quantity (ml)	tolerance (%)
Initial	-181.206		0.03
1	-154.124	27.082	
2	-127.040	27.084	
3	-99.957	27.083	
4	-72.872	27.085	
5	-45.791	27.081	
6	-18.705	27.086	
7	8.377	27.082	
8	35.464	27.087	
9	62.545	27.081	
10	89.632	27.087	
11	116.716	27.084	
12	143.799	27.083	
13	170.881	27.082	
14	197.967	27.086	
15	225.051	27.084	
16	252.132	27.081	
17	279.215	27.083	
18	306.302	27.087	
19	333.382	27.080	
20	360.465	27.083	

* The above data was collected by reading a electric scale after each cycle time.