

**J.T. MAHAJAN POLYTECHNIC, FAIZPUR**

Department of Mechanical Engineering.

**Name of Laboratory: - FLUID POWER. (Hydraulic Machinery)****Built Up Area 218.96sqm**

Sr. No.	Name of equipments	Purchased quantity	Cost	Remark
01	Overhead Tank 2m Deep (5mx5m To 8mx8m As Desired), 15m Gross Head With Water Level Indicator System And Adequate Piping For Uptake, Downtake And Spilage.			Pumps are used from sump to achieve head req.
02	Internal Water Circulatory System Through Laboratory Pipes And Valves/Fittings	01		Cost included in pipe friction
03	Underground Sump 7.5mx7.5m X 3m Deep Partitioned Into 3 Compartments And Provided With Drainage, Seprrated Strong C.I. Covers And Flanges For Pump Connection.	01	5500	
04	Apparatus For Demonstration Of Bernoulli's Theorem	02	4000	
05	Reynolds Apparatus For Demonstration Of Laminar &. Turbulent Flows.	02	11000	
06	Impact Of Jet On Vanes Apparatus	02	2750	
07	Vertical Orifice Apparatus With Tank	01	4000	
08	Pipe For Evaluation Of 1) Pipe Friction 2) For Studying Minor (Or Local) Losses In Valves &. Fittings 3) For Study Of Flow Measuring Devices Such As Venturimeters Orificemeters.	01 01 Set  02 02	9819  1556	For fist three instruments
09	Hele-Shaw Tank For Flow Visualisation.	01	3600	
10	10m. Wide X 6m Long X 0.5 M Deep Tilting Flume (Demonstration Model).	01	112800	
11	Expemental Set Up For Calibration Of V- Notch, (Including Set Of 10 Notches)	01	7117	
12	Centrifugal Pump Directly Coupled To Variable Speed Motor Capacity 25 Lps & Head 20 M., 5 H. P. Motar	01	19236	-
13	Reciprocating Pump With Facility For Speed Variation -Motorised	01	8296	
14	Gear Pump	01	23166	
15	Hydraulic Ram.	03	16900	
16	Francis Turbine, 10 -12 M Head Provided With Rope Dynamometer.	01	66083	
17	Centrifugal Pump For Supplying Water To Francis Turbine In Item Above. 15 H.P.	01		Included in above cost
18	Pelton Wheel With Suitable Dynamometer Arrangement (Working At 60m. Head).	01	47880	

19	Centrifugal Pump To Suit The Above Pelton Wheel (15 H.P.)	01		Included in above cost
20	Kaplan Turbine 5hp With Rope Brake Or Peony Brake To Work At 6-10 M. Head.	01	129725	
21	Centrifugal Pump, To Supply Water To Kaplan Turbine (20 H. P.)	01		Included in above cost
22	Cavitation Apparatus Including Water Pump 5 H. P. And Vacuum Pump.	01	31000	
23	Low Speed Open Circuit Wind Tunnel, 60 X 60 Cm Test Section & Speed Variable From 5 M/S To 50 M/S With D.C. Motor Speed Control & Suitable Instrumentation. With 10 H. P. Motar, And 1 H. P. Motar One Each	01 Set	41500	
24	Current Meter From 1- 10 Cm/S & From 8-15 Cm/S	03	8088	
25	Tool Kits With Assortedtools Cotaining Pipe Winches Spanner Set Screw Drivers Hammers Chian Spanner Adjustible Wrinch Plyer	02 06 01 01 02 01 01	272 200 60 103 580 60 30	
26	Micrometers.	01	194	
27	Pressure Measuring Devices. A] Piezometers B] Differential Manometers C] Manometers [Inverted U Tube] D] Precision Manometers [Prandtl Type] E] Incuned Tube Manometer F] Bourden Type Pressure Gauge [Different Ranges] G] Vacuum Gauge H] Micrometer Contraction Gauge I] Mechanical Pressure Gauge	  07 02 03 02 04 04 01 08	  2400 1200 1175 1275 2302 900 519 1600	
28	Flow Measuring Devices: A] Rain Gauge: B] Water Meters [Diff.Sizes] C] Air Flow Meters [Cup Anemometer & Impeller Type Anemometer.]	03 01 01	2876 330 1732	
29	Velocily Measuring Devices Pitot Tubes With Traverse [Diff. Types]	01	259	
30	Time Measurement: A] Stop Watches With 0.1 Sec. L.C. Digital Stop Watches B] Digital Tachometers	05 02	1750 6456	
31	Water Level Measurement A] Meter Scales B] Hook Gauge [Diff. Type]	03 14	215 5765	

32	Temps. Measurement: Thermometer	02	24	
33	Redwood Viscometer For Measurement Of Viscosity	01	3680	
34	Stokes Law App. For Measurement Of Viscosity	01	231	
35	Water Hammer Surge App.	01	8800	
36	Laminar Flow Apparatus	01	15000	
37	Turbulent Flow Apparatus.	01	16000	
38	Electrical Analogy App. For Drawing Flow Nets	01	8000	
39	Darcy's Law Verification App.	01	3200	
40	5 Hp Monoblock Pump	01	3850	
41	Metacentric Height Apparatus	01	1080	
42	Vernier Calliper.	01	1450	
43	Foot Valve.	02	100	
44	Cocks 50, 25, 15mm	17	2390	
45	Self Priming Pump	01	12803	
46	Models:			
	A] Franos Turbine	01	1247	
	B] Impulse Turbine	01	316	
	C] Kaplan Turbine	01	706	
	D] Centrifugal Pump	01	2090	
	E] Reoprocating Pump	01	2090	
	F] Mixed Flow Runner	01	795	
	G] Axial Flow Runner	01	795	
	H] Radial Flow Runner	01	795	
	I] Kaplan Runner	01	795	
	J] Francis Runner	01	835	
	K] Self Priming Runner	01	317	
	L] Centrifugal Runner	01	691	
	M] Pelton Wheel Runner	01	1151	
	N] Hydrauc Press	01	647	
	O] Gear Pump	01	1446	
	P] Rotary Pump	01	1151	
	Q] Centrifugal Pump	01	436	
	R] Tubewell Pump	01	1126	
	S] Deepwell Trubine Pump	01	2022	
	T] Submercible Pump	01	1230	
	U] Delavel Turbine	01	1039	
47	Hydraulic Accumulator Intensifier & Press	01	62688	
48	Blower Test Ring Apparatus With 3 H. P. Motar	01	37620	
49	Spring Balance (Round Type) Range 0 – 25 Kg	03	1740	
	Spring Balance (Round Type) Range 0 – 50 Kg	01	580	
		TOTAL	7,87,225	