Katalog

THERMODYNAMICS LABORATORY

PHYSICS DEPARTMENT
FMNS UNIVERSITAS NEGERI SURABAYA

JURUSAN FISIKA FMIPA UNIVERSITAS NEGERI SURABAYA

KATALOG PERALATAN EKSPERIMEN LABORATORIUM TERMODINAMIKA

ADIABATIC GAS LAW

No	Equipment	Code
1	Adiabatic Gas Law Apparatus	TD-8565
2	Science Workshop 750 Interface	CI6500
3	Monatomic, Diatomic and Polyatomic Gases	Optional
4	Signal Cables 3.5 mm plug to 5-pin DIN	UI5219
5	Power Adapter 9 V DC @ 1 A	540007

Experiment Topics:
Measurement of Work to Compress Gases Adiabatically

Figure 1: Adiabatic Gas Law Apparatus

Figure 2: Power Adaptor 9V DC@1 A

Figure 3: Signal Cables 3.5 mm plug to 5-pin DIN

Figure 4: Nitrogren /Diatomic Gases

Figure 5 : Science Workshop 750 Interface

Figure 6: Equipment settings

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THERMAL EXPANSION (TD8856)

No	Equipment	Code
1	Digital Measurement Indicator	PS-2204
2	Steam Generator	TD-8556A
3	Thermistor Cable Assembly in Stereo Phone Port	PS-2552
4	Digital Meter	SE-9786
5	Patch Cords	EM-9745
6	PASCO Temperature Sensor	CI-6605A
7	Wireless AirLink	PS-3200

8	SPARKlink Air	PS-2011
9	550 Universal Interface	UI-5001
10	850 Universal Interface	UI-5000

Experiment Topics:

a) Thermal expansion

b) Thermal Conduction

Figure 1: Steam Generator

Figure 2: Digital Measurement

Figure 3:PASCO Temperature

Figure 4:Digital Meter

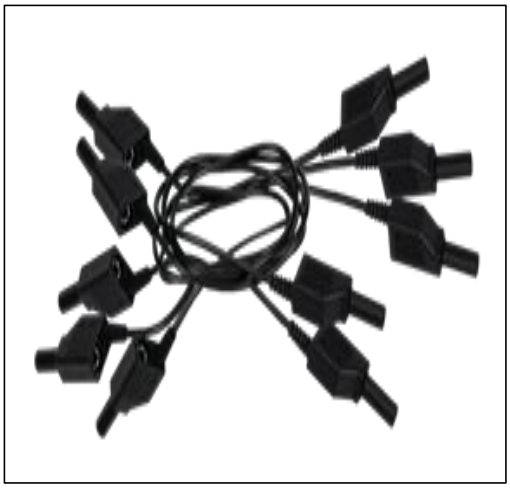

Figure 5:Patch Cords

Figure 6:Thermistor Cable

Figure 7:PS-3200 Wireless AirLink

Figure 8:SPARKlink Air

Figure 9:850 Universal Interface

Figure 10:550 Universal Interface

Figure 11: Equipment settings

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HEAT ENGINE CYCLES EXPERIMENT (EX-5530B)

No	Equipment	Code
1	Heat Engine and Gas Law Apparatus	TD-8572A
2	Large Rod Base	ME-8735
3	Mass and Hanger Set	ME-8979
4	3-Liter Plastic Tub (2-Pack)	ME-7559
5	Black Thread	ME-9875
6	90 cm Stainless Steel Rod	ME-8738
7	PASPORT Rotary Motion Sensor	PS-2120A
8	PASPORT Quad Temperature Sensor	PS-2143
9	PASPORT Dual Pressure Sensor	PS-2181
10	Explorer GLX	PS-2002

Experiment Topics:

1) Heat Engine Efficiency
2) Isothermal Processes
3) Isobaric Processes
4) Ideal Gas Law

Figure 1: Heat Engine and Gas Law Apparatus

Figure 2: Large Rod Base

Figure 3:Mass and Hanger Set

Figure 4:3-Liter Plastic Tub

Figure 5:Black Thread

Figure 6:90 cm Stainless Steel Rod

Figure 7:PASPORT Rotary Motion

Figure 8:PASPORT Quad Temperature

Figure 9:PASPORT Dual Pressure

Figure 10:Explorer GLX

Figure 11:Equipment settings

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THERMAL EFFICIENCY APPARATUS (EX-8564)

No	Equipment	Code
1	Energy Transfer-Thermoelectric	ET-6782
2	DC power supply capable of 2.5A at 12V	SF-9581
3	Quad Temperature Sensors	PS-2143
4	Ohmmeter	SB-9624
5	1 Ammeter (up to 3A)	SB-9624A
6	2 Voltmeters	SB-9624A
7	Patch Cords	SE-9750-5
8	Fast Response Temperature	PS-1235
9	Voltage - Current Sensors	PS-2115
10	Explorer GLX	PS-2002

Experiment Topics:

1) Heat Engine and Temperature Difference Heat
2) Engine Efficiency
3) Heat Pump Coefficient of Performance
4) Thermal Conductivity

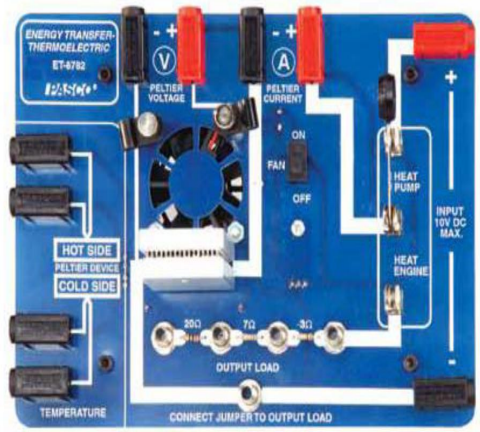

Figure 1: Energy Transfer-Thermoelectric

Figure 2: DC power supply capable of 2.5A at 12V

Figure 3:Ohmmeter

Figure 4:Quad Temperature Sensors

Figure 5:Fast Response Temperature

Figure 6:Voltage/Current Sensor

Figure 7:Ammeter

Figure 8:PASPORT Quad Temperature

Figure 9:Voltmeter

Figure 10:Explorer GLX

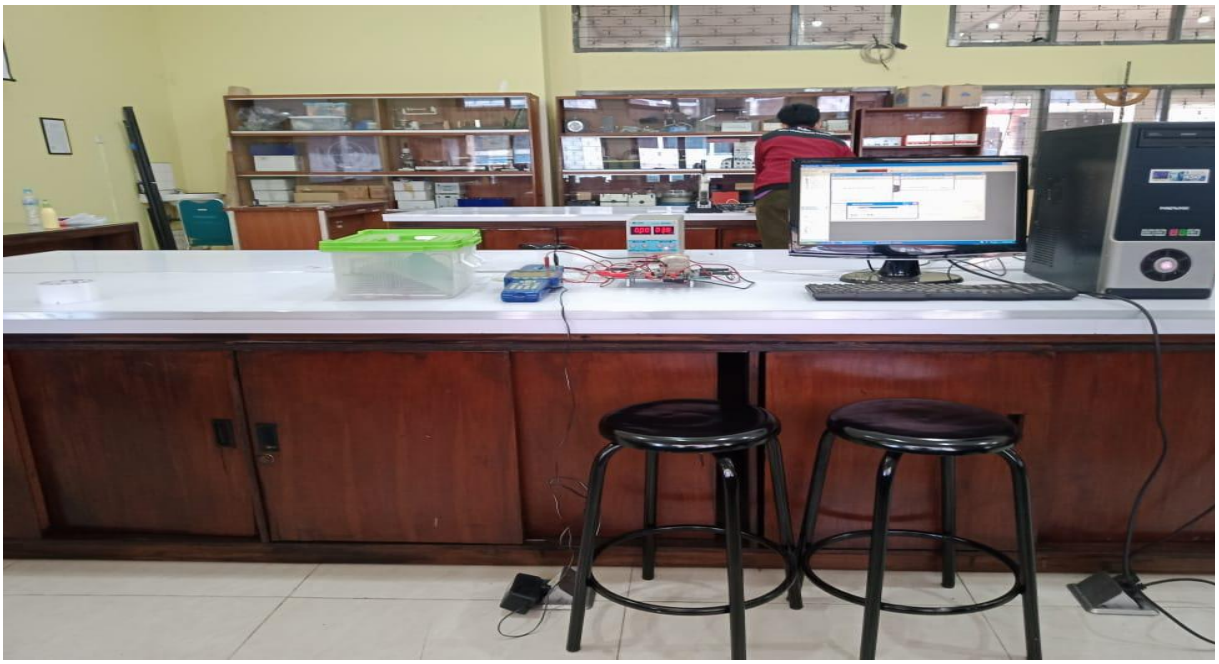

Figure 11:Equipment settings

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IDEAL GAS LAW (P2320163)

No	Equipment	Code
1	Power supply 12V/2A	12151.99 1
2	Temperature sensor, semiconductor	12120.00 1
3	Glass jacket	02615.00 1
4	Gas syringes, without cock, 100 ml	02614.00 1
5	Magnet rod, l = 200 mm, d = 10 mm	06311.00 1
6	Magnetic stirring rod, cylindrical, l = 30 mm	46299.02 1
7	Cobra3 Basic-Unit, USB	12150.50 1
8	Magnet rod, l = 200 mm, d = 10 mm	06311.00 1
9	Power regulator	32288.93 1
10	Heating apparatus	32246.93 1

Experiment Topics:

1. Heat Boyle and Mariotte's law
2. Gay-Lussac's law
3. Amontons' law

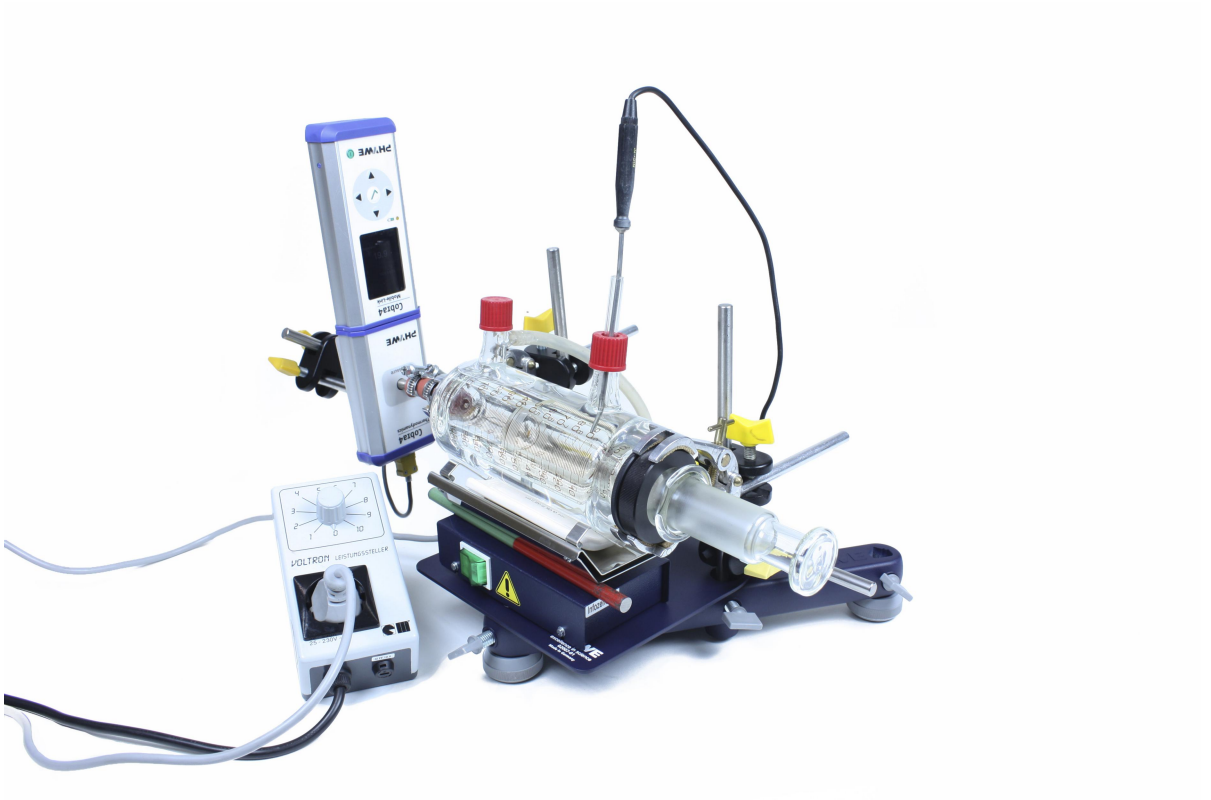

Figure 1:Ideal Gas Law Experiments

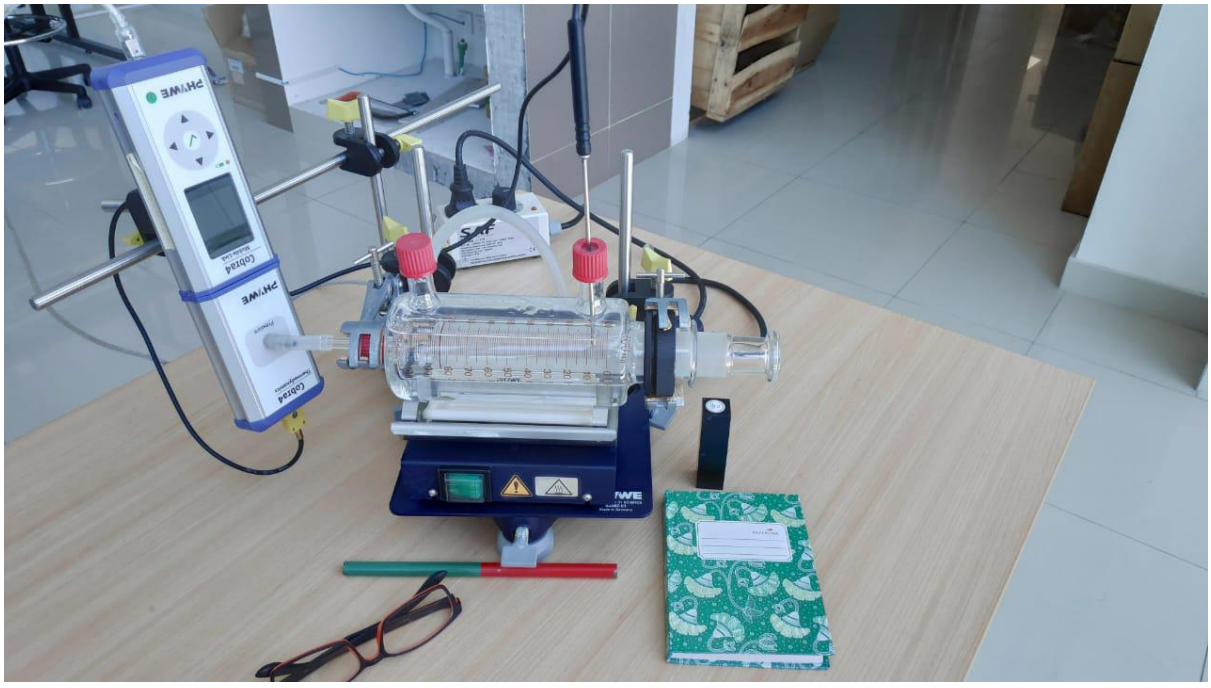

Figure 2:Equipment settings