ENGINOVVA
SOLUTIONS

Services Offered

Design and prototyping from NPI to mass production,
3D printing, fabrication, modifications and consultancy,
plus lab equipment supply.

Enginovva Solutions | 202403306560 (RA0118662-X)
L3A-2, Level 3A, SPICE Arena, 180 Jalan Tun Dr. Awang, Relau, 11900 Bayan Lepas, Pulau Pinang
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Our services

Five services, backed by a range of lab equipment we can supply.

Design and prototype build: NPI to mass production

We take your product from first idea to volume production. Our team handles the design, builds and tests the prototypes, and prepares the product for manufacture, so one partner carries it through every stage.

Concept and design	Prototype	Testing and validation	Pilot run	Mass production

What this covers

- 3D CAD design and engineering drawings
- Prototype build and design iteration
- Fit checks, testing and verification
- Pilot and low-volume builds
- Supplier and manufacturing partner sourcing
- Transfer to mass production

3D printing

Fast 3D-printed parts made directly from your CAD files, for prototypes, test pieces and tooling aids.

What this covers

- Concept and prototype models
- Functional parts and test pieces
- Custom jigs, fixtures and tooling aids
- Short-run parts
- Design advice to make parts printable

Fabrication tools

We design and make the tools that help you build, assemble and inspect your products, working from your drawings or from a requirement we develop with you.

What this covers

- Jigs and fixtures for machining, assembly and inspection
- Brackets, frames, enclosures and structures
- Mechanical assemblies built to drawing
- 3D CAD design and drawings when you only have a concept
- Coordination with machining, sheet metal and fabrication partners

Modifications

We adapt existing machines, lab equipment and set-ups to new requirements, so you can extend what you already own instead of replacing it.

What this covers

- Mounts, guards, fittings and interfaces added or relocated
- Test rigs and trainers adapted for new experiments or specimen sizes
- Parts and assemblies reworked for better fit or function
- Fit checks and engineering verification before handover

Consultancy for improvement projects

We look at how a process, product or system works today, find where it can be improved, and help you plan and carry out the change.

What this covers

- Review of your current design, process or equipment
- Practical, cost-effective improvement options
- Supplier and manufacturing partner sourcing
- Support through implementation and verification

Lab equipment supply

Thirteen systems for teaching and testing across materials, mechanics, fluids and thermal engineering.



1.0 Brinell Hardness Tester

Range: 8–450 HBS / 8–650 HBW
Test forces: 187.5, 250, 750, 1000, 3000 kgf
Max specimen height: 230 mm
Standards: ISO 6506-2, ASTM E10, GB/T 231.2
Power: AC 380 V
Size / weight: 700 × 268 × 842 mm, ~210 kg



2.1 Charpy Impact Tester – Manual Pendulum

Impact energy: 300 J
Impact velocity: 5.0 m/s
Pendulum centre to impact point: 800 mm



2.2 Charpy Impact Tester – Semi-Automatic Digital

Impact energy: 300 J
Impact velocity: 5.2 m/s
Pre-lift angle: 150°
Specimen span / size: 40 mm / 10 × 10 × 55 mm
Angle accuracy: 0.1°
Power: 3-phase, 380 V, 250 W



3.0 Universal Testing Machine

Max load: 10 kN, Class 1
Force and displacement error: within ±1%
Crosshead speed: 0.01–500 mm/min
Test space: 400 mm wide, 1400 mm tensile
Protection: overload and displacement limit
Power: AC 220 V ±10%, 1.5 kW



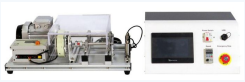
4.0 Bending Moment Apparatus

Beam: 700 mm aluminium, two-part with ball-bearing hinge
Supports / load hangers: 2 / 3
Measurement: underhung spring balance or digital load cell
Operating range: –10 to 40 °C, humidity < 85%



5.1 Machinery Design & Transmission Training Bench

Motor: 90 W, 220 V ±10%, 50 Hz single-phase
Size / weight: 850 × 630 × 285 mm, 40 kg
Operating range: –10 to 40 °C, humidity < 85%



5.2 Mechanical Gear Training & Test Bench with Load Brake and Speed Control

Load: magnetic powder brake with controller
Sensors: vibration, speed, displacement
Control: touchscreen, inverter speed control, USB data output
Power: AC 220 V, 50 Hz, single-phase
Size / weight: 830 × 680 × 370 mm, 52 kg



6.1 Flow Meter & Flow Visualisation Demonstration

Flow channel: 590 mm long, 9 mm wide
Dye outlet: 2 mm
Size: 860 × 575 × 610 mm



6.2 Open Channel Distribution and Measuring Devices – 2.5 m Flow Channel

Channel: 2.5 m long, 60 × 300 mm section
Adjustable channel slope
Power: AC 220 V, 50 Hz, single-phase
Size / weight: 3000 × 500 × 1000 mm, < 100 kg
Frame: mobile aluminium, on casters



7.0 Fluid Mechanics Base Module

Pump: 0.55 kW, 230 V, 50 Hz; 11 m lift
Flow rate: 230 L/min
Catchment basin: 180 L
Volumetric tanks: 40 L (high), 10 L (low); 2 L beaker
Size / weight: 1220 × 760 × 1200 mm, 125 kg



8.1 Convection & Radiation Heat Transfer Trainer

Heating power: 25 W
Pressure: vacuum and positive, pump included
Data: digital display and USB output to PC
Power: 220 V ±10%, 50 Hz
Size / weight: 1340 × 800 × 1500 mm, < 100 kg



8.2 Tubular Heat Exchanger Training Equipment

Flow arrangement: parallel and counter-current
Sensors: inlet, outlet and pipe wall temperature
Hot circuit: tank, electric heater and pump
Data: real-time display, USB to PC
Power: 3-phase 5-wire, 380 V ±10%, < 1.5 kVA
Size / weight: 1600 × 800 × 1300 mm, < 100 kg



9.0 Window Type Air Conditioner Trainer

Cooling / heating capacity: ~3.3 kW / ~3.7 kW
Power consumption: 1.7 kW, 220 V AC, 50 Hz
Refrigerant: R32
Instruments: 4 temperature displays, high/low pressure gauges, voltmeter, ammeter
Protection: high/low pressure switches, leakage breaker
Size / weight: 1500 × 700 × 1500 mm, 100 kg

Projects delivered

A selection of work designed, built and supplied by Enginovva.





Project 1

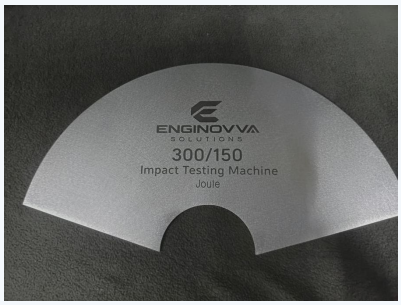
Konjac machine project

Custom-built stainless steel hopper with agitator, motor-driven feeder and perforated vibratory conveyor, mounted on an aluminium profile frame with an electrical control cabinet.









Project 2

Supply lab equipment

Engineering lab equipment supplied by Enginovva, including the Air Conditioner Trainer (Window Type) with an Enginovva-branded panel, and a Charpy impact testing machine fitted with a custom Enginovva-engraved 300/150 Joule scale plate.

Talk to Enginovva Solutions

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