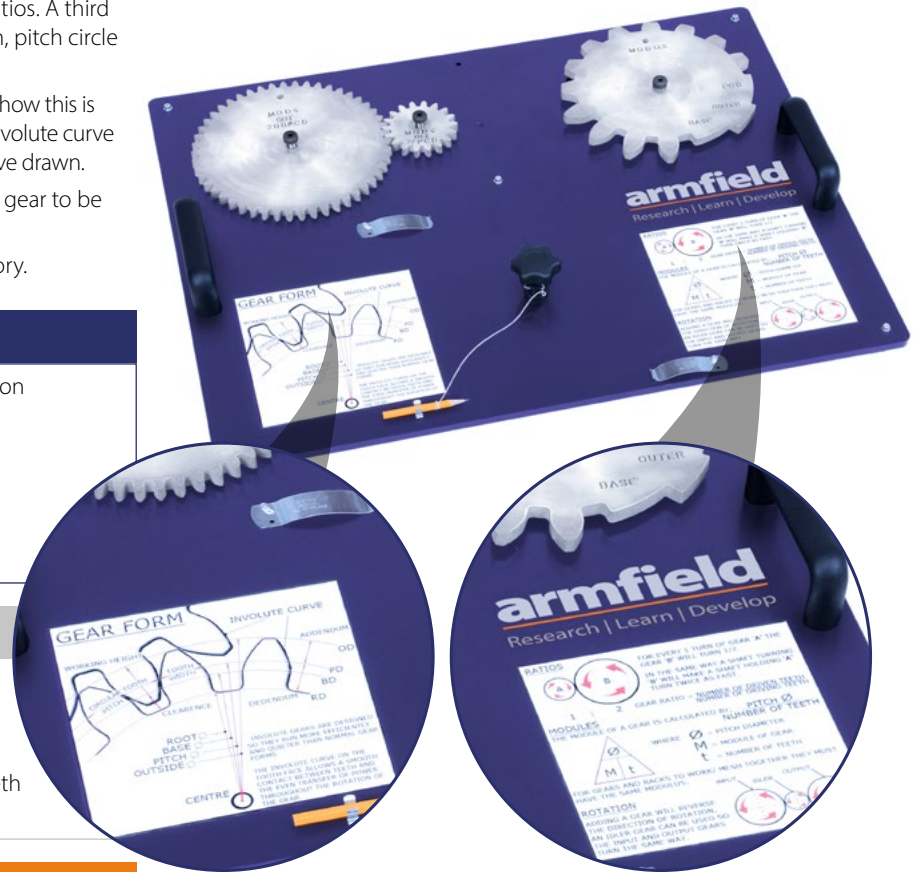


**Gear Tooth Form Apparatus – SD-1.53**

A bench top base plate contains all elements for this experiment. Three gears are located onto the base plate. A large gear and small gear mesh together and can be rotated to produce analysis of ratios. A third gear is removable to allow students to review its tooth form, pitch circle diameter (PCD) and other key geometry of a tooth form. The apparatus also explains the form of an involute curve and how this is used to create a gear tooth profile. To help describe what an involute curve is, paper can be placed into the apparatus and an involute curve drawn. A set of vernier callipers is provided to allow the removable gear to be measured to help give a practical analysis of the gear form. Labels are used on the unit to help clearly explain gear theory.

**EXPERIMENTAL DETERMINATION OF SHAPE AND CONSTRUCTION OF AN INVOLUTE CURVE**



**Experimental content**

- ▶ Experimental determination of shape and construction of an involute curve
- ▶ Explanation of Gear Form
- ▶ Explanation of Gear Ratios
- ▶ Explanation of Gear Modules
- ▶ Explanation of Gear Trains and Rotational Direction

**Related laws**

- ▶ Involute Gear Form and creation
- ▶ Pitch Circle Diameter (PCD)
- ▶ Spur Gears
- ▶ Meshing
- ▶ Gear Geometry
- ▶ Module
- ▶ Number of Teeth
- ▶ Ratios

**Requirements** **Scale**

Sturdy bench top

**Features / benefits**

- ▶ Bench or wall mounted apparatus
- ▶ Two connecting gears supplied
- ▶ One gear for measuring
- ▶ Drawing of Involute Gear form
- ▶ Theory and terminology clearly labelled on unit

**Overall dimensions**

Length	0.60m
Width	0.53m
Height	0.08m

**Packed and crated shipping specifications**

Volume	0.03m <sup>3</sup>
Gross weight	13kg

**Technical specification**

- ▶ Large (Mod 4) gears
- ▶ **Large gear:** 50 tooth, Module 4, 200mm PCD
- ▶ **Small gear:** 18 tooth, Module 4, 72mm PCD
- ▶ Removable gear module 12.5

**Ordering specification**

- ▶ 1 x SD-1.53 assembly
- ▶ 1 x Digital vernier
- ▶ Spare cord
- ▶ 5 x Pencil
- ▶ Instruction manual
- ▶ Packing list
- ▶ Test sheet

**Ordering codes**

- ▶ **SD-1.53** Gear Tooth Form Apparatus