Involute Gear Construction

Using the given centre point, construct a Spur Gear, showing three complete Gear Teeth.
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Using the formula Pitch Circle Diameter = module (m) × no.of teeth (t)
Construct the Pitch Circle Diameter.
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Using the formula: Pitch Circle Diameter = module (m) \times \text{no. of teeth (t)}

Construct the Pitch Circle Diameter.
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Using the formula Addendum = Module (m)
Construct the Addendum
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Using the formula Addendum = Module (m)
Construct the Addendum
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Using the formula: Dedendum = Addendum + Clearance {clearance = 0.25 x module}
Construct the Dedendum
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Using the formula

Dedendum = Addendum + Clearance

{clearance = 0.25 x module}

Construct the Dedendum
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Involute Gear Construction
Involute Gear Construction
Involute Gear Construction
Involute Gear Construction

Construct the Base Circle.
From the gear centre construct the *Pressure angle*.
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Construct the Base Circle. From the gear centre construct the **Pressure angle**.
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Construct the Base Circle. From the gear centre construct the *Pressure angle*. Draw a perpendicular line to the pressure angle from the Pitch Circle Diameter.
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Construct the Base Circle. From the gear centre construct the *Pressure angle*. Draw a perpendicular line to the pressure angle from the Pitch Circle Diameter. Where these two lines meet is a point on the *Base Circle*.

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Root Circle
Pitch Circle
Tip Circle
Tooth
Pitch Circle Diameter
Addendum
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Construct the Base Circle. From the gear centre construct the **Pressure angle**. Draw a perpendicular line to the pressure angle from the Pitch Circle Diameter, where these two lines meet is a point on the **Base Circle**.
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- Root Circle
- Base Circle
- Pitch Circle
- Tip Circle
- Dedendum
- Pitch Circle Diameter
- Addendum
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Construct the Base Circle. From the gear centre construct the *Pressure angle*. Draw a perpendicular line to the pressure angle from the Pitch Circle Diameter. Where these two lines meet is a point on the *Base Circle*.
There are 24 teeth in this gear. Thus the gear tooth radius = Pitch Circle Diameter / 8
Mark this distance along the Base Circle as shown.
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Where the Tooth radius arc hits the base circle is the center for the gear flank. Swing an arc as shown.
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To complete the gear tooth swing a similar arc on the opposite side.
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A Completed Gear Tooth.

- Root Circle
- Base Circle
- Pitch Circle
- Tip Circle
- Dedendum
- Pitch Circle Diameter
- Addendum
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Repeat this procedure for the remaining teeth.
Pay attention to the centers used for the teeth radii!
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Repeat this procedure for the remaining teeth. Pay attention to the centers used for the teeth radii!
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Repeat this procedure for the remaining teeth. Pay attention to the centers used for the teeth radii!
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Completed Gear Teeth!

- Root Circle
- Base Circle
- Pitch Circle
- Tip Circle
- Dedendum
- Pitch Circle Diameter
- Addendum
Involute Gear Construction

“Tidy up” the drawing by creating *fillets*, joining the *gear tips*, etc.

- Root Circle
- Base Circle
- Pitch Circle
- Tip Circle
- Dedendum
- Pitch Circle Diameter
- Addendum
Involute Gear Construction

“Tidy up” the drawing by creating *fillets*, joining the *gear tips*, etc.
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