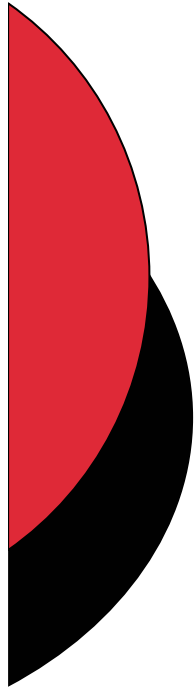


Rack Gear Construction

Given the **PITCH LINE**.

Construct a "**Rack Gear**"

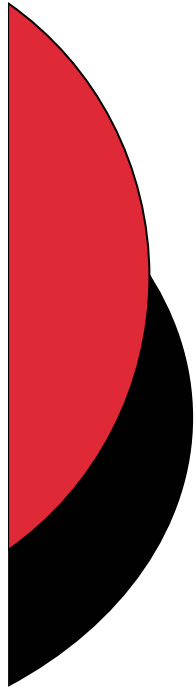
The pitch line contains the point of contact between the "Rack & the Pinion"



Rack Gear Construction

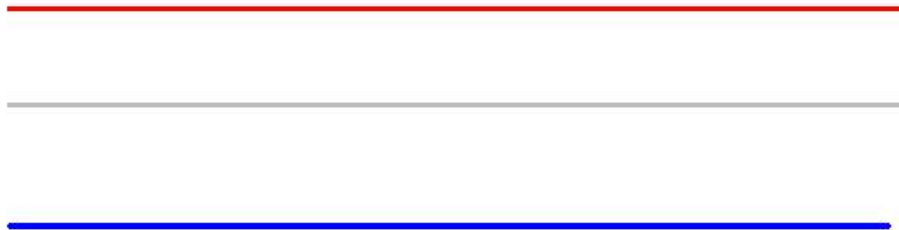
Using the formula $\text{Addendum} = \text{Module}$, construct the addendum

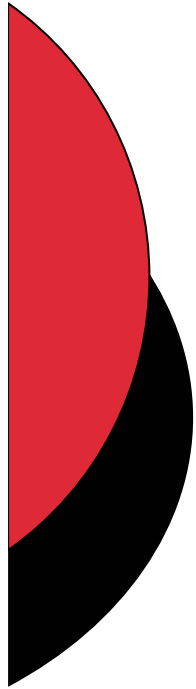




Rack Gear Construction

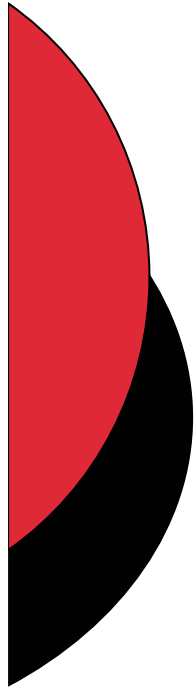
Using the formula $\text{Dedendum} = \text{Addendum} + \text{Clearance}$,
construct the Dedendum.





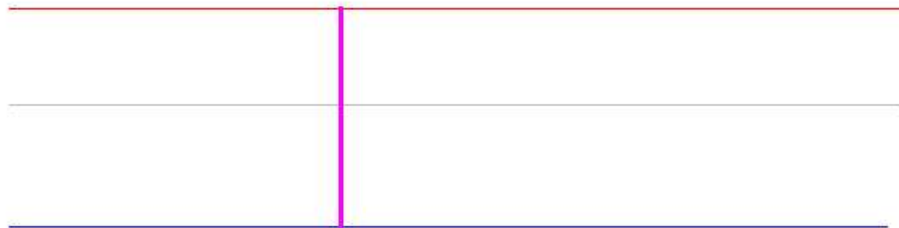
Rack Gear Construction

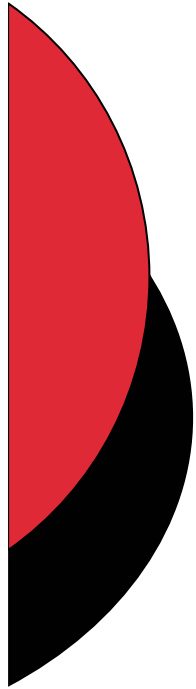
Using the formula $\text{Dedendum} = \text{Addendum} + \text{Clearance}$,
construct the Dedendum.



Rack Gear Construction

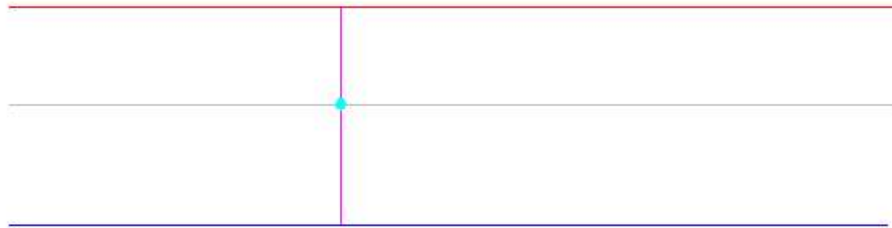
Pick a point on the Pitch Line.
This will be the starting point.

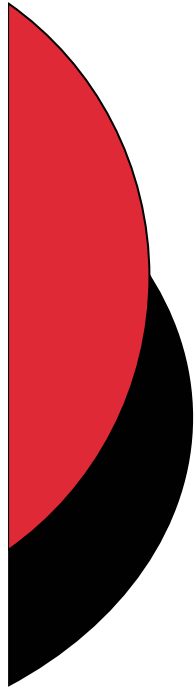




Rack Gear Construction

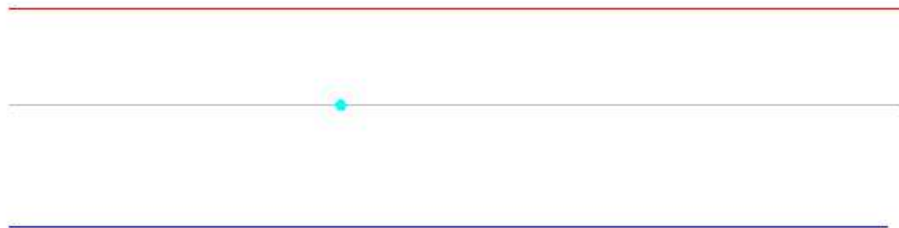
Pick a point on the Pitch Line.
This will be the starting point.

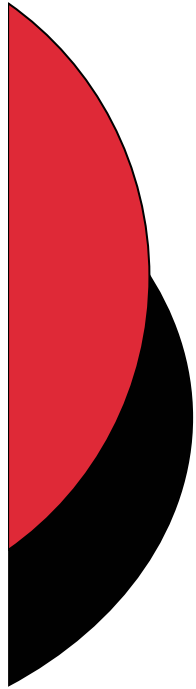




Rack Gear Construction

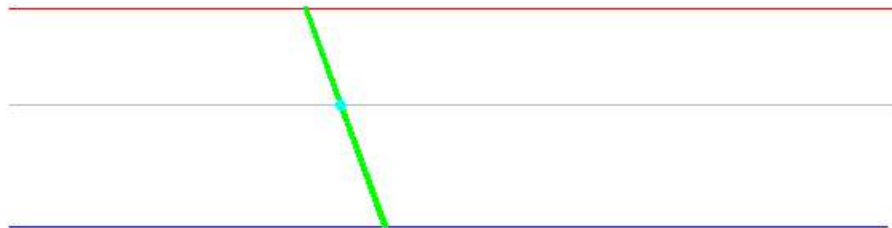
Pick a point on the Pitch Line.
This will be the starting point.

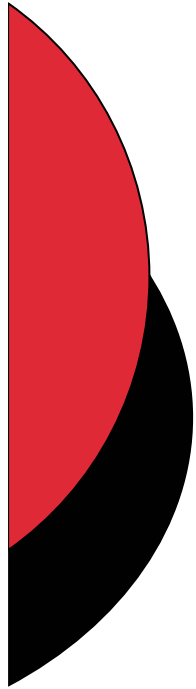




Rack Gear Construction

At this point construct a line using the *Pressure Angle*.

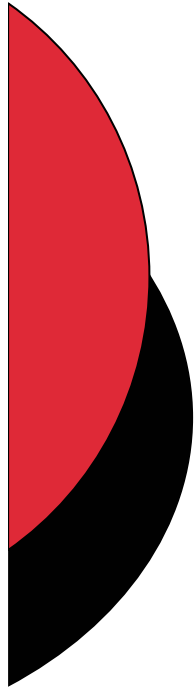




Rack Gear Construction

At this point construct a line using the *Pressure Angle*.
From the starting point mark out the distance of the *tooth thickness*: Circular Pitch / 2
Circular Pitch = $\pi (3.14) \times m$

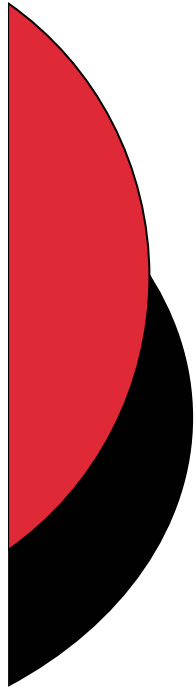




Rack Gear Construction

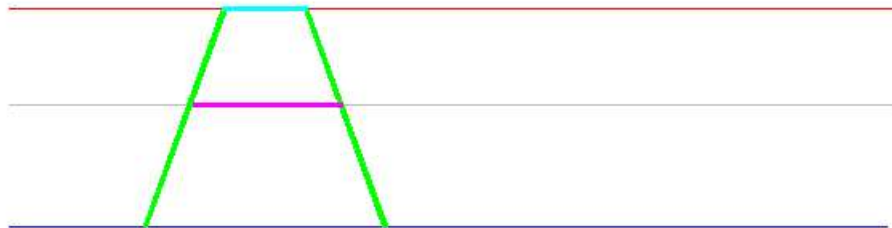
At this point construct a line using the *Pressure Angle*.
From the starting point mark out the distance of the *tooth thickness*: Circular Pitch / 2
Circular Pitch = $\pi (3.14) \times m$
Using the same pressure angle construct the remaining side of the gear tooth.

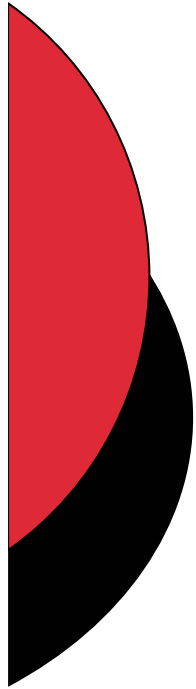




Rack Gear Construction

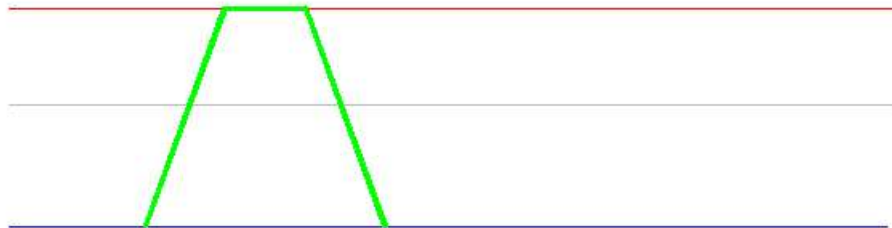
At this point construct a line using the *Pressure Angle*.
From the starting point mark out the distance of the *tooth thickness*: Circular Pitch / 2
Circular Pitch = $\pi (3.14) \times m$
Using the same pressure angle construct the remaining side of the gear tooth.

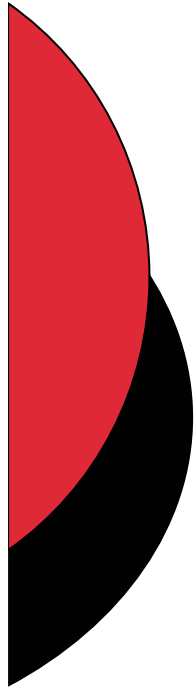




Rack Gear Construction

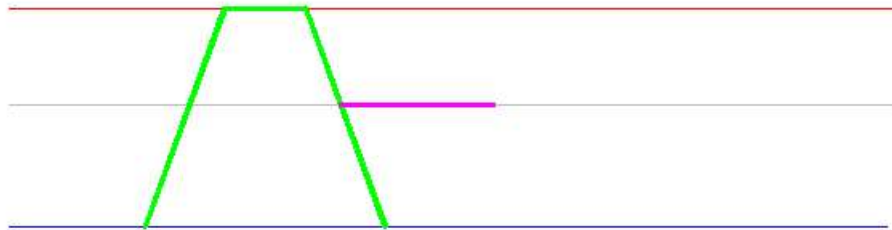
At this point construct a line using the *Pressure Angle*.
From the starting point mark out the distance of the *tooth thickness*: Circular Pitch / 2
Circular Pitch = $\pi (3.14) \times m$
Using the same pressure angle construct the remaining side of the gear tooth.

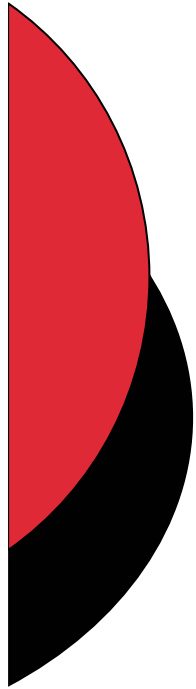




Rack Gear Construction

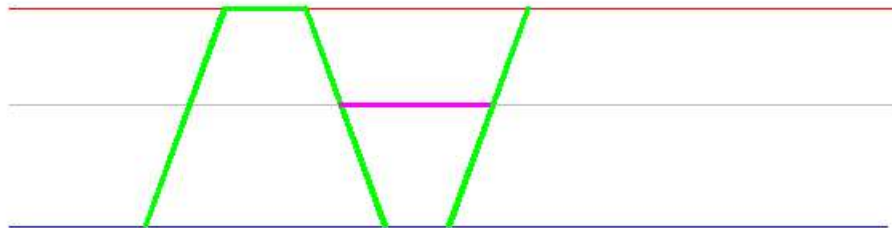
from the starting point mark out the **tooth thickness** in the opposite direction.
This will give you the starting point for the next gear tooth.

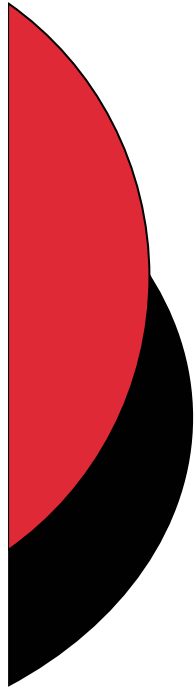




Rack Gear Construction

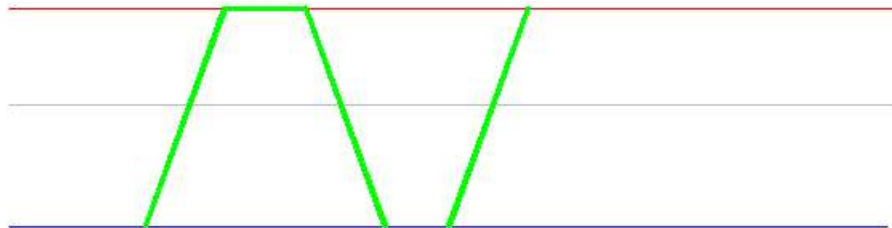
from the starting point mark out the **tooth thickness** in the opposite direction.
This will give you the starting point for the next gear tooth.
Draw the gear flank using the pressure angle.

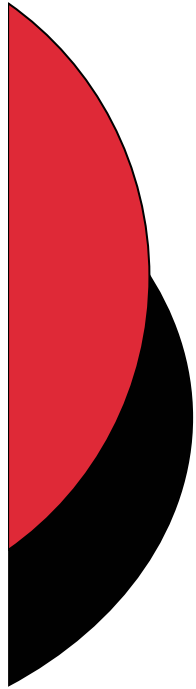




Rack Gear Construction

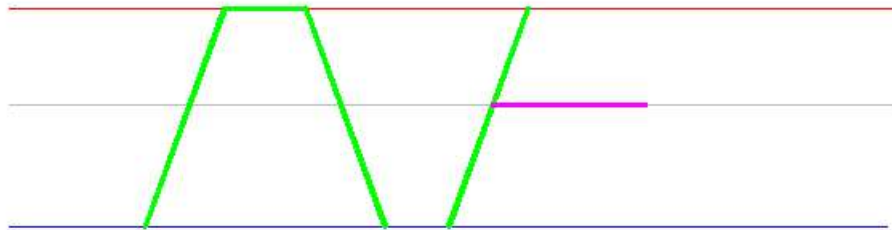
from the starting point mark out the **tooth thickness** in the opposite direction.
This will give you the starting point for the next gear tooth.
Draw the gear flank using the pressure angle.

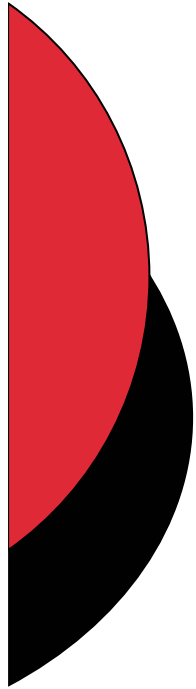




Rack Gear Construction

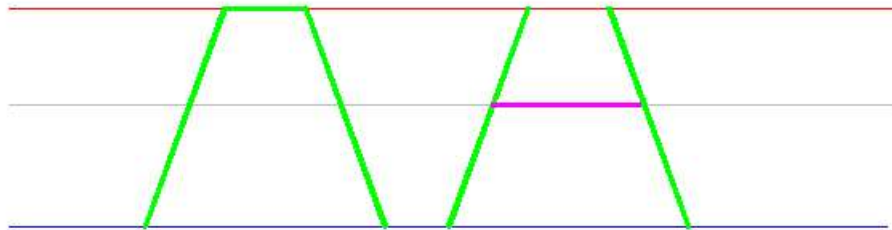
Mark out the tooth thickness again to locate a point on the other side of the gear tooth.

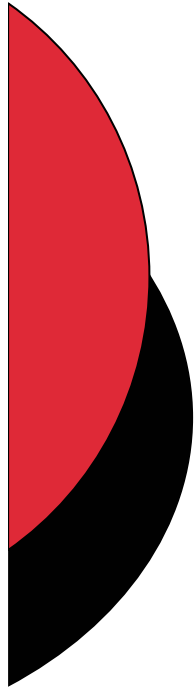




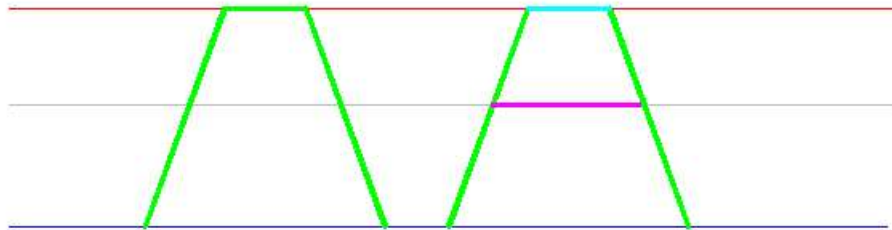
Rack Gear Construction

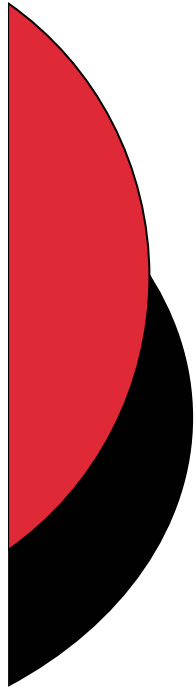
Mark out the tooth thickness again to locate a point on the other side of the gear tooth.
Construct the side using the pressure angle.



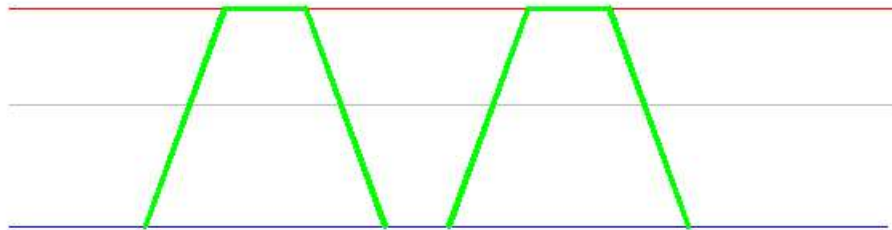


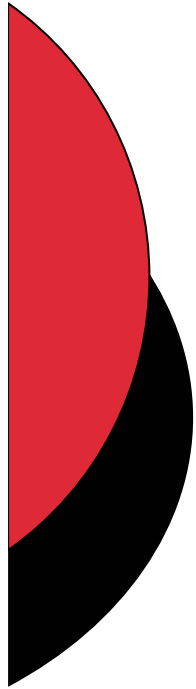
Rack Gear Construction





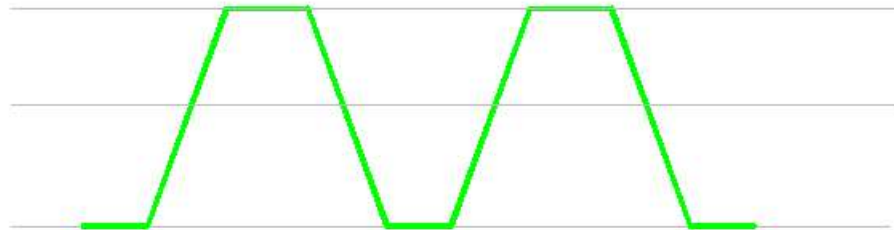
Rack Gear Construction

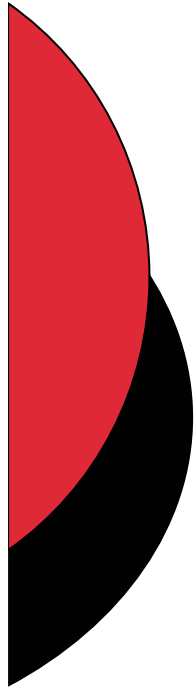




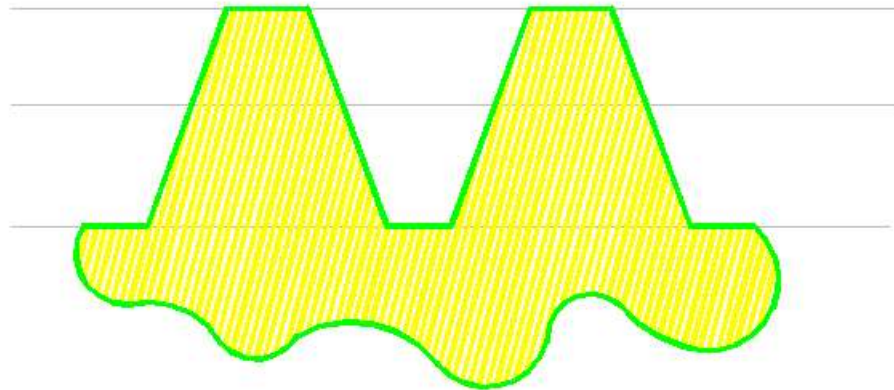
Rack Gear Construction

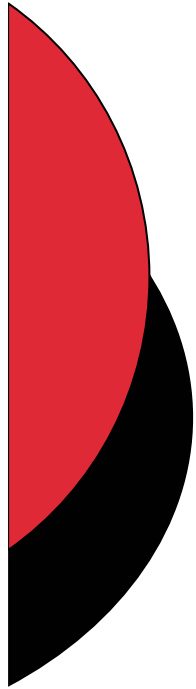
"Tidy up" the drawing by connecting all the 'full' lines.



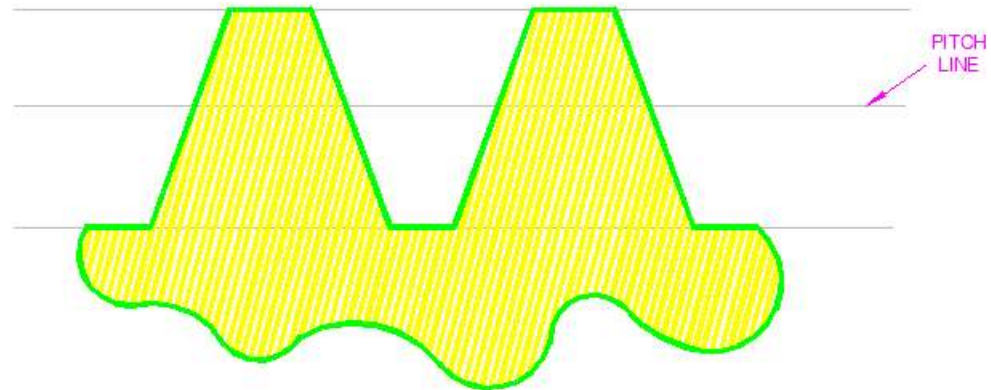


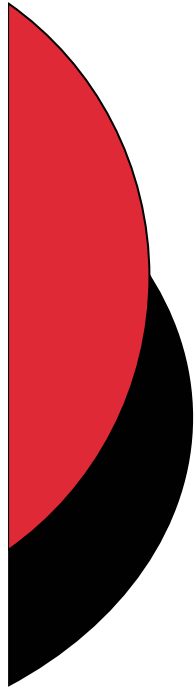
Rack Gear Construction



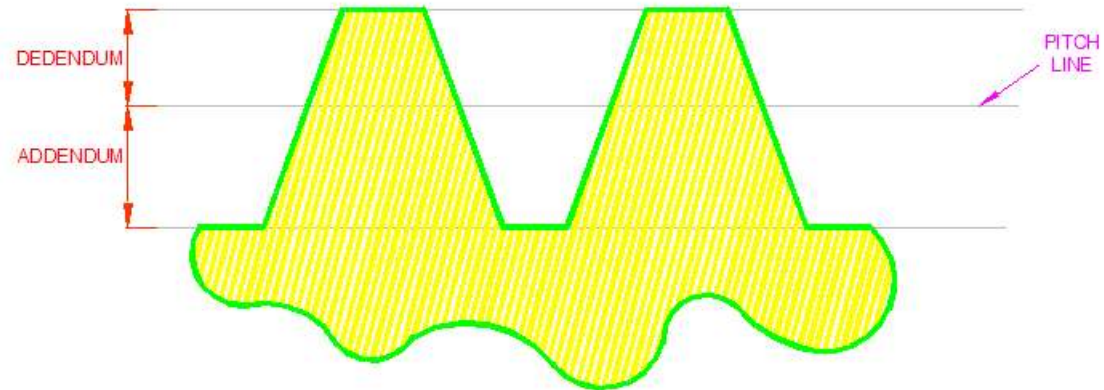


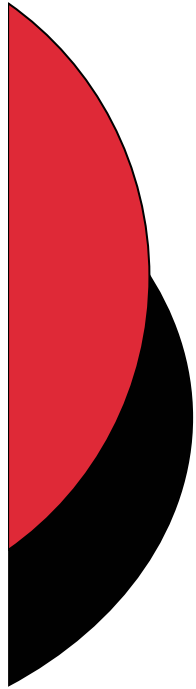
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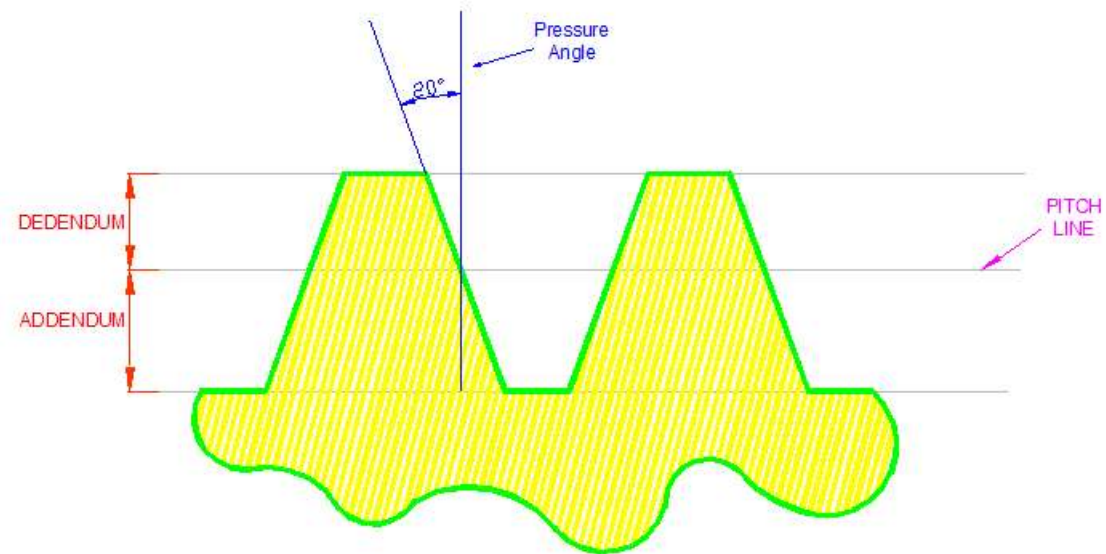


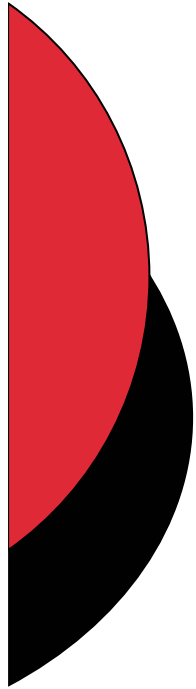
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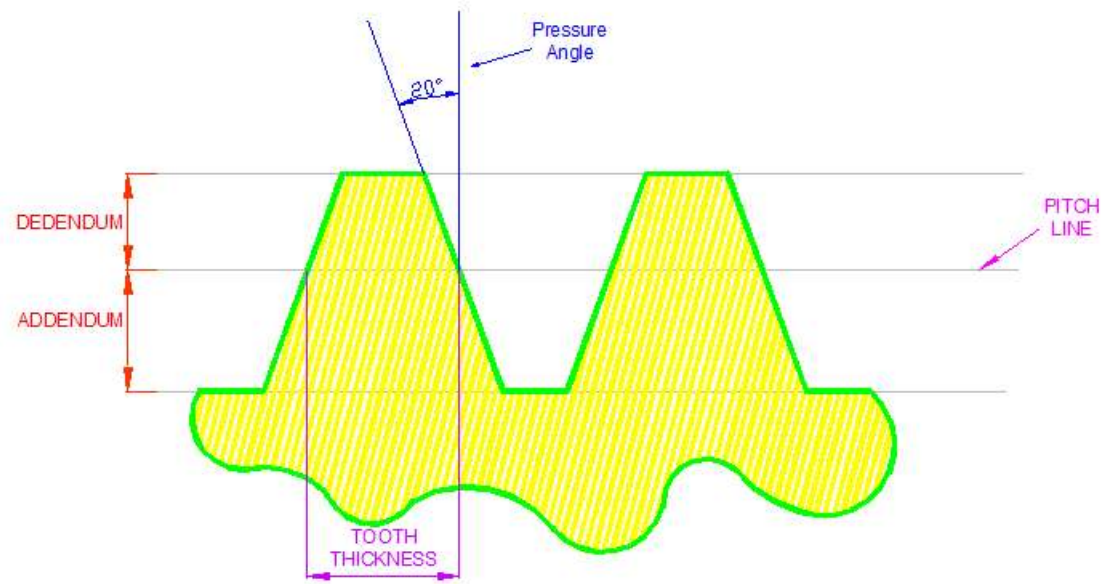


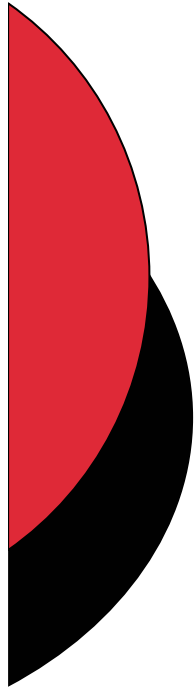
Rack Gear Construction





Rack Gear Construction





Rack Gear Construction

