

The helix angle for single helical gears ranges from

- 10° to 15°
- 15° to 20°
- 20° to 35°
- 35° to 50°

The Grubler's criterion for determining the degrees of freedom (n) of a mechanism having plane motion is (where l = Number of links, and j = Number of binary joints)

- $n = (l - 1) - j$
- $n = 2(l - 1) - 2j$
- $n = 3(l - 1) - 2j$
- $n = 4(l - 1) - 3j$

An air stream at a flow rate of 2 kg/s and a dry bulb temperature of 30°C mixes adiabatically with another air stream flowing with a mass flow rate of 3 kg/s and at a dry bulb temperature of 20°C. Assuming no condensation to take place, the temperature of the mixture is approximately equal to:

- 20°C
- 24°C
- 25°C
- 30°C