

11.D11 We are to determine, for a cylindrical piece of 8660 steel, the maximum allowable diameter possible in order yield a surface hardness of 58 HRC, when the quenching is carried out in moderately agitated oil.

From Figure 11.15, the equivalent distance from the quenched end of an 8660 steel to give a hardness of 58 HRC is about 18 mm (3/4 in.). Thus, the quenching rate at the surface of the specimen should correspond to this equivalent distance. Using Figure 11.17(b), the surface specimen curve takes on a value of 18 mm equivalent distance at a diameter of about 95 mm (3.75 in.).