

Information Sheet 1

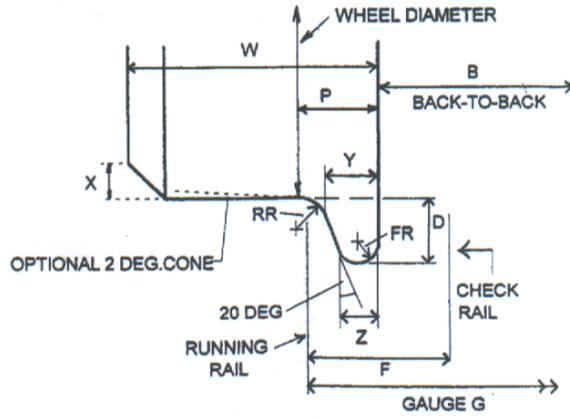
Wheel Standards

The Society wheel standards for the gauges in common use are shown in Figure 1. They are known as the SMEE standards and were published in the Model Engineer of 7th May 1976. The 7¼ Gauge Society also published standards for 7¼ inch gauge models and they are very similar to the SMEE values in that the profile is exactly the same - a flange with a 20 degree angle and a root radius of 0.1 to 0.125 inches. Coning the tread by 2 degrees, whilst being true to full-size practice, is largely a matter of personal preference. It is strongly recommended that locomotive wheels should be built to the standards given in Figure 1. Dimensions are in inches.

When considering passenger cars, the same angles and corner radii should be used but the flange depth should be a little deeper. A depth of 0.170 in. instead of 0.140 in. was used on the raised track cars and a pro-rata increase on the 7¼ in. gauge passenger stock.

Back-to-back measurement is particularly important on the ground level track. Builders should ensure, regardless of the standards they have employed, that wheel sets do not foul guard-rails on points.

Since the tread loading is much higher on passenger cars than on locos, the wear on car wheels should be checked at least once a year and the use of steel tyres/wheels rather than cast iron is recommended.



DIMENSION Y USED WHEN ROOT RADIUS AND 20 DEG ANGLE ARE MACHINED IN SEPARATE OPERATIONS

DIMENSION Z USED WHEN ROOT RADIUS AND 20 DEG ANGLE ARE FORMED IN ONE OPERATION

Figure 1 BSME Recommended Wheel Standards

| Gauge | 2½" Gauge | 3½" Gauge | 5" Gauge | 7¼"Gauge |
|-----------------------|------------------|------------------|-----------------|-----------------|
| Back to Back B | 2.281" | 3.281" | 4.687" | 6.800" |
| Tyre Width W | 0.268" | 0.375" | 0.535" | 0.776" |
| Flange Depth D | 0.085" | 0.110" | 0.140" | 0.203" |
| Root Radius R | 0.035" | 0.050" | 0.070" | 0.100" |
| Flange Radius | 0.020" | 0.030" | 0.045" | 0.065" |
| Chamfer X | 0.015" | 0.020" | 0.030" | 0.040" |
| Tread Dia Pt.P | 0.090" | 0.126" | 0.176" | 0.254" |
| Machined Dim Y | 0.055" | 0.076" | 0.106" | 0.154" |
| Machined Dim Z | 0.034" | 0.051" | 0.077" | 0.110" |
| Flangeway F | 0.093" | 0.130" | 0.190" | 0.270" |

All dimensions in inches

Figure 1 cont BSMEE Recommended Wheel Standards