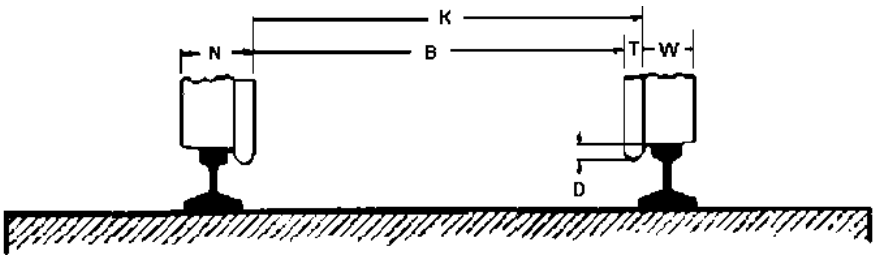
NMRA STANDARDS	
WHEELS	
Revised: July 2002	Sheet No. S-4

NMRA STANDARDS
S-4 Standards, Wheels



NAME of SCALE	Ratio	K CHECK GAGE (Max.)	B BACK to BACK of FLANGES (Min.)	N TIRE WIDTH (Min.)	D FLANGE DEPTH (Max.)
1" Scale	1:12	4.581 (116.4mm)	4.438 (112.7mm)	.500 (12.7mm)	.156 (3.96mm)
3/4" Scale	1:16	3.349 (85.1mm)	3.219 (81.8mm)	.406 (10.3mm)	.125 (3.18mm)
1/2" Scale	1:24	2.383 (60.6mm)	2.281 (57.9mm)	.297 (7.54mm)	.094 (2.39mm)
3/8" Scale	1:32	1.674 (42.5mm)	1.594 (40.5mm)	.234 (5.94mm)	.062 (1.57mm)
O Scale	1:48	1.179 (29.9mm)	1.118 (28.4mm)	.172 (4.37mm)	.047 (1.19mm)
On3	1:48	.705 (17.9mm)	.666 (16.9mm)	.115 (2.92mm)	.030 (0.76mm)
On2	1:48	.455 (11.6mm)	.416 (10.6mm)	.108 (2.74mm)	.028 (0.71mm)
S Scale	1:64	.823 (20.9mm)	.777 (19.7mm)	.124 (3.l5mm)	.031 (0.79mm)
Sn3	1:64	.519 (13.2mm)	.480 (12.2mm)	.108 (2.74mm)	.028 (0.71mm)
OO Scale	1:76.2	.705 (17.9mm)	.666 (16.9mm)	.108 (2.74mm)	.028 (0.71mm)

NAME of SCALE	Ratio	K CHECK GAGE (Max.)	B BACK to BACK of FLANGES (Min.)	N TIRE WIDTH (Min.)	D FLANGE DEPTH (Max.)
HO Scale	1:87	.605 (15.4mm)	.566 (14.4mm)	.108 (2.74mm)	.028 (0.71mm)
HOn3	1:87	.377 (9.58mm)	.345 (8.76mm)	.086 (2.18mm)	.026 (0.66mm)
HOn2	1:87	.246 (6.25mm)	.220 (5.59mm)	.071 (1.80mm)	.022 (0.56mm)
TT Scale	1:120	.437 (11.1mm)	.407 (10.3mm)	.077 (1.96mm)	.026 (0.66mm)
TTn3	1:120	.270 (6.86mm)	.244 (6.20mm)	.071 (1.80mm)	.022 (0.56mm)
N Scale	1:160	.323 (8.20mm)	.297 (7.54mm)	.071 (1.80mm)	.022 (0.56mm)
Nn3(40")	1:160	.229 (5.82mm)	.211 (5.36mm)	.053 (1.35mm)	.020 (0.51mm)
Z Scale	1:220	.236 (5.99mm)	.218 (5.54mm)	.053 (1.35mm)	.020 (0.5lmm)

NOTES:

1. See RP-25 for recommended Wheel Contour. Deeper flanges conforming to earlier STANDARDS are permitted for existing wheels, but wheels manufactured after this effective date should not exceed the limits shown above.

2. Wheels shall have a scale reduction in tread diameter from the prototype.

3. To avoid difficulty with long wheelbase locomotives in curves sharper than 20 degrees, and where guard rails are used on both sides as in special work, the following are suggested: (RP-8)

   a. Allow lateral movement in driver axles of 1 percent of the rigid wheelbase length.

   b. Remove flanges from center drivers.