

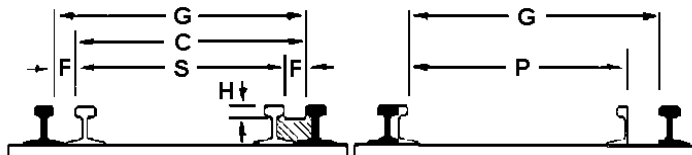


STANDARD

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Standard	S-3.1
Title	Proto and Fine Scales
Version	January 2006
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Original S3.1 approved 2004 had editing errors based on improper display of hidden precision values and in the calculation of metric conversion values.



S-3.1 PROTO TRACK		G		C		S		F		F	H	P	R*	
		Track Gage		Check Gage		Span		Flangeway Frog		Flange at Guard	Flange Depth	Switch Point Spread	Railhead Radius	
		Min	Max	Min	Max	Min	Max	Min	Max	Nominal	Min	Max	Min	Max
Proto:20.3	Inch	2.781	2.842	2.679	2.688	2.568	2.596	0.086	0.092	0.102	0.062	2.547	0.018	0.028
	mm	70.64	72.19	68.05	68.28	65.23	65.94	2.18	2.34	2.59	1.57	64.69	0.46	0.71
Proto:20.3n3	Inch	1.772	1.833	1.670	1.679	1.559	1.587	0.086	0.092	0.102	0.062	1.538	0.018	0.028
	mm	45.01	46.56	42.42	42.65	39.60	40.31	2.18	2.34	2.59	1.57	39.07	0.46	0.71
Proto:32	Inch	1.766	1.805	1.701	1.707	1.630	1.648	0.055	0.059	0.065	0.039	1.617	0.012	0.018
	mm	44.86	45.85	43.21	43.36	41.40	41.86	1.40	1.50	1.65	0.99	41.07	0.30	0.46
Proto:32n3	Inch	1.125	1.164	1.060	1.067	0.990	1.008	0.055	0.059	0.065	0.039	0.977	0.012	0.018
	mm	28.58	29.57	26.92	27.10	25.15	25.60	1.40	1.50	1.65	0.99	24.82	0.30	0.46
Proto:48	Inch	1.177	1.203	1.134	1.138	1.087	1.099	0.036	0.039	0.043	0.026	1.078	0.008	0.012
	mm	29.90	30.56	28.80	28.91	27.61	27.91	0.91	0.99	1.09	0.66	27.38	0.20	0.30
Proto:48n3	Inch	0.750	0.776	0.707	0.711	0.660	0.672	0.036	0.039	0.043	0.026	0.651	0.008	0.012
	mm	19.05	19.71	17.96	18.06	16.76	17.07	0.91	0.99	1.09	0.66	16.54	0.20	0.30
Proto:64	Inch	0.883	0.902	0.851	0.853	0.814	0.823	0.028	0.030	0.031	0.020	0.809	0.006	0.009
	mm	22.43	22.91	21.62	21.67	20.68	20.90	0.71	0.76	0.79	0.51	20.55	0.15	0.23
Proto:64n3	Inch	0.563	0.582	0.530	0.533	0.494	0.503	0.028	0.030	0.032	0.020	0.488	0.006	0.009
	mm	14.30	14.78	13.46	13.54	12.55	12.78	0.71	0.76	0.81	0.51	12.40	0.15	0.23
Proto:87	Inch	0.649	0.663	0.625	0.628	0.599	0.605	0.021	0.023	0.023	0.014	0.594	0.004	0.006
	mm	16.48	16.84	15.88	15.95	15.21	15.37	0.53	0.58	0.58	0.36	15.09	0.10	0.15
Proto:87n3	Inch	0.413	0.428	0.390	0.392	0.363	0.369	0.021	0.023	0.022	0.014	0.359	0.004	0.006
	mm	10.49	10.87	9.91	9.96	9.22	9.37	0.53	0.58	0.56	0.36	9.12	0.10	0.15

Fine Scale Options											
Name of Scale		G		C		S		F	F	H	P
		Track Gage		Check Gage		Span		Flangeway Frog	Flangeway Guard	Flange Depth	Switchpoint Spread
		Min	Max	Min	Max	Max	Nominal	Min	Max		
Fine:HO	Inch	0.649	0.665	0.613	0.580	0.040	0.040	0.026	0.605		
	mm	16.5	16.9	15.6	14.7	1.0	1.0	0.7	15.4		
Fine:HO _{n3}	Inch	0.413	0.429	0.377	0.343	0.040	0.040	0.026	0.369		
	mm	10.5	10.9	9.6	8.7	1.0	1.0	0.7	9.4		
Fine:TT	Inch	0.471	0.485	0.441	0.414	0.033	0.033	0.022	0.430		
	mm	12.0	12.3	11.2	10.5	0.8	0.8	0.6	10.9		
Fine:TT _{n3}	Inch	0.300	0.314	0.270	0.243	0.033	0.033	0.022	0.259		
	mm	7.6	8.0	6.9	6.2	0.8	0.8	0.6	6.6		
Fine:N	Inch	0.354	0.360	0.340	0.315	0.025	0.025	0.025	0.327		
	mm	9.0	9.1	8.6	8.0	0.6	0.6	0.6	8.3		
Fine:N _{n3}	Inch	0.250	0.256	0.229	0.205	0.025	0.025	0.025	0.219		
	mm	6.4	6.5	5.8	5.2	0.6	0.6	0.6	5.6		

NOTES:

- See Tech-Note TN-1.1.2 (Proto and Fine) for a more detail on the Proto Scale dimensions and issues related to building in Proto and Fine scale.
- * Note: "R" - railhead top to side radius matches wheel profile flange fillet radius.