

NMRA STANDARDS	
TRACK CENTERS	
Revised: July 2002	Sheet No. S-8

NMRA STANDARDS S-8 Track Centers

This STANDARD lists Track Center Distances and provides for Side Clearances required for various curvatures with three size categories of models.

- Class II Includes small four-wheel truck diesels, geared and other small steam locomotives with short end overhangs typical of old-time, logging and branch lines and equivalent rolling stock.
- Class I Includes longer steam locomotives typically with two-wheel trailing trucks, larger four and six-wheel truck diesels and equivalent rolling stock.
- Class Ia Includes the largest steam locomotives with four-wheel trailing trucks, articulated locomotives, those with rigid wheelbases in excess of 20 feet, full length passenger cars and other long rolling stock.

Layouts constructed to one of these classes should accept models of its own and smaller classes, but larger models can expect clearance problems on a layout built to a smaller classification. See STANDARD S-7 and RP-11.

TRACK CENTERS in CURVES

Curvature in Degrees												
M(*)		0	5	10	15	20	25	30	35	40	45	
Radius-Prototype		Tang.	1146	574	383	288	231	193	166	146	131	
O SCALE:									1	1		
Radius-inches		Tang.	287	144	96	72	58	48	41 - 2	36 - 2	33	
Centers												
Class II	3	1	1	5	3	1	5	3	13	7		
	3 - 4	3 - 4	3 - 4	3 -- 16	3 - 8	3 - 2	3 - 8	3 - 4	3 -- 16	3 - 8	4	
Class I	3	1	3	1	5	3	7		3			
	3 - 4	3 - 4	3 - 8	3 - 2	3 - 8	3 - 4	3 - 8	4	4 -- 16		note 8	
Class Ia	3	1	1	13	1	5	9					
	3 - 4	3 - 4	3 - 2	3 -- 16	4 -- 16	4 -- 16	4 -- 16				note 8	
On3:												
Centers		3	2 - 4	3 4	13 16	15 16	1 16	3 16	5 16	3 8	1 2	5 8
S SCALE:												
Radius-inches		Tang.	215	108	72	54	43	36	31	27	25	
Centers												
Class II	13	7	7	1	9	5	11	3	13	7		
	2 -- 16	2 -- 16	2 -- 16	2 - 2	2 -- 16	2 - 8	2 -- 16	2 - 4	2 -- 16	2 - 8	3	
Class I	13	7	9	5	3	13	7		1			
	2 -- 16	2 -- 16	2 -- 16	2 - 8	2 - 4	2 -- 16	2 - 8	3	3 - 8		note 8	
Class Ia	13	7	11	7	1	1	3					
	2 -- 16	2 -- 16	2 -- 16	2 - 8	3 -- 16	3 - 4	3 - 8				note 8	
Sn3:												
Centers		1	2 - 4	1 16	1 16	1 8	1 4	3 8	7 16	9 16	5 8	3 4
OO SCALE:												
Radius-inches		Tang.	180 - 2	90 - 2	60	45 - 2	36 - 2	30 - 2	26	23	20 - 2	
Centers												
Class I	1	1	1	1	1	1	5	1	3			
	2 - 2	2 - 4	2 - 4	2 - 4	2 - 4	2 - 4	2 -- 16	2 - 2	2 - 4		note 8	
Class Ia	1	1	1	1	7	11	15	3	7			
	2 - 2	2 - 4	2 - 4	2 - 4	2 -- 16	2 -- 16	2 -- 16	3 -- 16	3 -- 16		note 8	

(*)M = 2A (from S-7) = Preferred Minimum Track Center Distance for easy handling, coupling, yards, etc.

Degrees	M	0	5	10	15	20	25	30	35	40	45
Radius		Tang.	1146	574	383	288	231	193	166	146	131
HO SCALE:											
Radius-inches		Tang.	158	79	53	40	32	26	23	20	18
Centers											
Class II	1 2 -- 16	13 1 -- 16	13 1 -- 16	13 1 -- 16	7 1 - 8	15 1 -- 16	2	1 2 -- 16	3 2 -- 32	1 2 - 8	3 2 -- 16
Class I	1 2 -- 16	13 1 -- 16	7 1 - 8	15 1 -- 16	2	1 2 -- 16	1 2 - 8	3 2 -- 16	5 2 -- 16	note 8	
Class Ia	1 2 -- 16	13 1 -- 16	31 1 -- 32	1 2 - 8	1 2 - 4	3 2 - 8	1 2 - 2	note 8			
HOn3:											
Centers	11 1 -- 16	9 1 -- 16	9 1 -- 16	9 1 -- 16	5 1 - 8	11 1 -- 16	3 1 - 4	13 1 -- 16	7 1 - 8	15 1 -- 16	2
TT SCALE:											
Radius-inches		Tang.	114	57	38	29	23	19	16	14	13
Centers											
Class II	1 1 - 2	5 1 -- 16	11 1 -- 32	3 1 - 8	13 1 -- 32	7 1 -- 16	15 1 -- 32	1 1 - 2	17 1 -- 32	9 1 -- 16	19 1 -- 32
Class I	1 1 - 2	5 1 -- 16	3 1 - 8	7 1 -- 16	1 1 - 2	17 1 -- 32	9 1 -- 16	19 1 -- 32	5 1 - 8	note 8	
Class Ia	1 1 - 2	5 1 -- 16	7 1 -- 16	9 1 -- 16	11 1 -- 16	3 1 - 4	13 1 -- 16	note 8			
TTn3:											
Centers	1 1 - 4	1 1 - 8	5 1 -- 32	3 1 -- 16	7 1 -- 32	1 1 - 4	9 1 -- 32	5 1 -- 16	11 1 -- 32	3 1 - 8	13 1 -- 32
N SCALE:											
Radius-inches		Tang.	86	43	29	21	17	14	12	11	10
Centers											
Class II	3 1 -- 16	1 1 -- 32	1 1 -- 32	1 1 -- 32	1 1 -- 16	3 1 -- 32	1 1 - 8	5 1 -- 32	3 1 -- 16	7 1 -- 32	1 1 - 4
Class I	3 1 -- 16	1 1 -- 32	1 1 -- 16	3 1 -- 32	1 1 - 8	5 1 -- 32	7 1 -- 32	1 1 - 4	5 1 -- 16	note 8	
Class Ia	3 1 -- 16	1 1 -- 32	1 1 - 8	7 1 -- 32	9 1 -- 32	11 1 -- 32	13 1 -- 32	note 8			

NOTES:

1. Radius is measured at track centerline - midway between rails - of the inner of multiple tracks.
2. For a radius intermediate of those listed use the next larger radius shown in the table.
3. Dual gage track shall use standard gage radii, centers and clearances.
4. Narrow gage locomotives and other equipment built on standard gage frames, such as K types, require standard gage Track Centers.
5. Increased Track Centers and clearances for curves shall be eased (see D3 series DATA SHEETS) for a distance along the track consistent with the class equipment used.
6. Inside Clearance shall be half the Track Center Distance listed up to, but not to exceed, M/2 (A from S-7).
7. Outside Clearance shall be half the Track Center Distance listed up to M/2 (A from S-7); for Track Centers Greater than M, Outside Clearance shall be M/2 plus the amount Track Center Distance exceeds M (2A from S-7).
8. Construction or operation of equipment on curves sharper than those listed for its class are neither prohibited nor recommended.