

THREE AXLE COMPENSATION UNIT – RADIUS RESTRICTIONS

The ability of a three axle vehicle to negotiate a tight curve is (sometimes quite severely) limited by the interplay between the overall wheelbase and the internal distance between the solebars. In order to negotiate any curve, the central axle assembly has to move from side to side. This sideways movement is ultimately limited by the solebar; the assembly can only move ‘so far’ without hitting the inside of the solebar. Two factors influence the amount of sideways movement:

- The radius of the curve – the tighter the curve, the further to one side the assembly will have to move and
- The wheelbase – the further apart the outer wheels, the greater will be the centre offset when curving.

The first table shows the minimum necessary clear distance between the inside faces of the solebars for various combinations of wheelbase and curve radius in millimetres.

Minimum Clear Distance Between Solebars

(against minimum negotiable curve radius)

		Overall wheelbase								
		52	56	60	64	68	72	76	80	84
Minimum Curve Radius	300	24.3	24.6	25.0	25.4	25.9	26.3	26.8	27.4	27.9
	400	23.7	24.0	24.3	24.6	24.9	25.2	25.6	26.0	26.4
	500	23.4	23.6	23.8	24.1	24.3	24.6	24.9	25.2	25.5
	600	23.1	23.3	23.5	23.7	23.9	24.2	24.4	24.7	24.9
	700	23.0	23.1	23.3	23.5	23.7	23.9	24.1	24.3	24.5
	800	22.8	23.0	23.1	23.3	23.4	23.6	23.8	24.0	24.2
	900	22.8	22.9	23.0	23.1	23.3	23.4	23.6	23.8	24.0
	1000	22.7	22.8	22.9	23.0	23.2	23.3	23.4	23.6	23.8
	1100	22.6	22.7	22.8	22.9	23.1	23.2	23.3	23.5	23.6
	1200	22.6	22.7	22.8	22.9	23.0	23.1	23.2	23.3	23.5

The second table shows the minimum negotiable curve radius for various combinations of wheelbase and solebar separation, again in millimetres.

Minimum Negotiable Curve Radius

(against clear distance between solebars)

		Overall wheelbase								
		52	56	60	64	68	72	76	80	84
Distance between solebars	22									
	24.00	340	390	450	510	580	650	720	800	880
	24.50	270	315	360	410	465	520	580	640	705
	25.00	225	260	300	340	385	430	480	535	590
	25.50	195	225	260	295	330	370	415	460	505
	26.00	170	195	225	255	290	325	360	400	440
	26.50	150	175	200	230	260	290	320	355	395
	27.00	135	160	180	205	230	260	290	320	355
	27.50	125	145	165	185	210	235	265	290	320
	28.00	115	130	150	170	195	215	240	270	295
	28.50	105	120	140	160	180	200	225	245	275
	29.00	100	115	130	150	165	185	210	230	255
29.50	90	105	120	140	155	175	195	215	235	