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Swivel Radius for Casters Guide

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Quick answer. Swivel radius is the horizontal distance from the kingpin axis to the outermost wheel edge as the caster rotates, typically 2 to 6 inches on industrial casters. It sets corner clearance, aisle geometry, and steering effort. Size outside turning clearance as cart half-width plus swivel radius plus a 2-4 inch safety margin.

Swivel Radius vs Offset vs Sweep

Dimension	Definition	Typical Range	What It Controls
Offset	Kingpin axis to wheel center axis	1" to 3"	Steering feel, castering behavior
Swivel radius (sweep)	Kingpin axis to wheel edge	2" to 6"	Corner clearance, aisle geometry
Overall caster length	Plate edge to wheel furthest edge	4" to 10"	Equipment packaging, fork clearance
Swivel-to-rigid distance	Kingpin spacing front-to-back on cart	Custom	Cart tracking, tippiness

Aisle Clearance Requirements

Cart Size	Typical Aisle	Minimum Swivel Radius for Clean Turn	Notes
24" x 36" pick cart	36"-42"	3.5" max	Common shelf picking
28" x 48" warehouse cart	48"-54"	4.5" max	Industry standard
36" x 60" pallet cart	60"-72"	5.5" max	Mid-size pallet handling
48" x 72" heavy cart	72"-84"	6.5" max	Heavy material handling
60" x 96" tow cart	96"+	Determined by track, not swivel	Tow-only, not manual push



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