

UNDERSTANDING ROLLING CIRCUMFERENCE

Rolling circumference can be defined as the distance a tire travels in one revolution. Due to the increase in mechanical front wheel drive (MFWD) tractors in the marketplace, it is very important to understand rolling circumference when trying to determine the proper tire setup for your tractor. Since both the front and the rear tire on MFWD tractors are engaged, the front tire requires more revolutions to cover the same distance as the rear tire. It is necessary to know the gear ratio of the tractor (available from the tractor manufacturer) in order to select the tires that will adequately match the tractor's front-to-rear gear ratio.

The gear ratio on the typical MFWD ranges from 1.2 to 1.5; therefore, the proper setup should allow for front tire over-speed up to 5% (consult with the tractor manufacturer for the preferred lead percentage). When selecting a new size or type of tire for your MFWD tractor, you must choose a front and rear tire combination that matches the ratio provided by the original tires. To make this easier, the tire and tractor industries have created a chart to better assist customers with tire selections for their tractors. (See chart on next page.)

The first column of the table refers to the RCI (rolling circumference index) group. All tires in a group will have a similar rolling circumference and OD. The larger the RCI group number, the larger the tire diameter and rolling circumference. The second column lists the rolling circumference in inches. The third column lists the tire diameter (OD) for that RCI group of tires. The chart then displays columns of wider tire widths in both inches and millimeters as you progress from left to right. The top part of the chart shows the width of field rows, and in the columns below each row width, the chart shows the recommended tires for that row width.

To better understand the chart, take a look at the following example:

A MFWD tractor is set up for 30" rows with 480/80R46 (group 47) tires on the rear and 420/90R30 (group 42) tires on the front. Most tractors are five-step tractors, meaning that there is a difference of 5 between the RCI group number of the rear tire and that of the front tire.* To convert from 30" to 20" rows, go to the 20" row column and select the 320/90R54 rear, and matching front, 320/85R38.

*Although most tractors are five-step tractors, consult with your tractor manufacturer for the correct ratio for your tractor.

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ROLLING CIRCUMFERENCE INDEX

- RCI = Rolling Circumference Index.
Indicates family of tires with similar rolling circumferences.
- All sizes in a row are approximately the same outside diameter.
- All sizes in the same column are approximately the same width.
- For specific applications, consult OEM Data Books for actual dimensions.

ROW WIDTH, inches				20			30		38		WIDE			
SECTION WIDTH, mm			280/290 & SMALLER	320	340	380	420	480	520	580	600	700	800	900 & LARGER
RCI	RC (in)	OD (in)	(11.2)	(12.4)	(13.6)	(14.9)	(16.9)	(18.4)	(20.8)		(24.5)	(28.0)	(31.0)	(35.5)
50	269	91											850/75R42	
49	256	86						480/95R50				710/75R42		900/75R32
48	243	81				380/105R50 380/90R54		480/80R50	520/85R46 20.8R46	580/85R42	650/85R38	710/70R42	800/70R38	1250/50R32
47	230	77		320/90R54 12.4R54		380/90R50		480/80R46 18.4R46	520/85R42 20.8R42		620/70R42	710/70R38		900/50R42
46	219	73		320/90R50		380/90R46 14.9R46	420/80R46	480/80R42 460/85R42 18.4R42	520/85R38 20.8R38		650/65R38		800/65R32	900/60R32
45	207	70		320/90R46				480/80R38 460/85R38 18.4R38	520/85R34 520/70R38 20.8R34	580/80R34	600/65R38 23.1R34* 650/75R32 24.5R32		800/60R32 30.5LR32	
44	197	66	230/95R48	320/90R42			420/85R38 16.9R38	480/85R34 480/70R38 460/85R34 18.4R34	540/65R38		620/75R30	750/60R26		
43	187	63				380/80R38 15.5R38*	420/85R34 16.9R34	480/70R34	540/65R34		600/70R30 23.1R26*	710/70R38		
42	177	59		320/85R38		385/85R34 380/85R34 14.9R34	420/90R30 420/85R30 16.9R30	480/80R30 480/70R30 460/85R30 18.4R30	540/65R30		600/70R28 600/65R28			
41	168	56	290/95R34	320/85R34		380/85R30 14.9R30	420/85R28 16.9R28	480/70R28 18.4R26						
40	163	53				380/85R28 14.9R28	420/85R26 16.9R26 420/85R24		540/65R24					
39					340/85R28 12.6R28	14.9R26	16.9R24	480/70R24						
38				320/85R28	340/85R24 13.6R24 360/70R28*	380/70R28 380/85R24 14.9R24	420/70R24	480/65R24						
37				320/85R24 12.4R24		380/70R24*								

 AD2 AND STANDARD TIRES

 AD2 ONLY TIRES