



TRELLEBORG



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GERMAN TECHNOLOGY



603

ROTA

SPECIALIZED SOLUTION



18X7-8
R113-4
18X7-8
18X7-8

ROTA'S GENETIC HERITAGE: TECHNOLOGY AND PERFORMANCE



Trelleborg Group is well known throughout the world for its long-time experience in lab research, leading expertise in rubber compounding and for its tradition in advanced manufacturing techniques.

ROTA today is the combination of almost 100 years of "German Technology" tradition and the latest innovation in polymer materials produced in Trelleborg's R&D Labs.

As a premium brand of Trelleborg, Rota represents top quality products, giving maximum reliability and high cost-efficiency.

The whole product range has been developed in close collaboration with Forklift Manufacturers in order to fully comply with the severe demands of the OEM market.

Field tested in almost every conceivable type of material handling application, Rota achieved maximum performance and met customers' expectations.

The Rota resilient tire range is a specialized solution for forklift trucks, special vehicles and other applications with heavy duty requirements. The tires are suitable for use in glassworks, foundries, rolling mills, steel & construction material storage facilities and many other applications.

In short, Rota tire technology is a synonym of excellence.

The winning recipe

Rota comes with a highly diversified range of solid rubber tires, available in a wide variety of sizes, patterns, constructions and compounds, offering special solutions such as electrically conductive tires (for use in manufacturing facilities where there are risks of explosion), and non-marking tires (suitable for areas where cleanliness is crucial or for industrial floor surfaces with highly specialized requirements).

Four worldwide Research & Development hubs allow Rota tires to take advantage of the latest technology such as advanced nanoscale studies: nanotechnologies, acting on atomic scale, are applied to compound research in order to obtain higher energy efficiency and enhanced wear resistance.

Moreover, a team of experienced Field Engineers is in charge for product application examinations, in field tests and surveys.

Trelleborg's global resources allow us to meet any challenge and solve any specific requirement for our customers.

15% HIGHER ENERGY EFFICIENCY

Efficiency improvement leads to important benefits in terms of energy consumption, durability and performance, allowing an optimal usage of the machines.

Lower fuel consumption equals a saving of money, and brings an increase in terms of time availability (amount of hours worked by the machine divided by the total amount of working hours).

Electric forklift trucks are particularly involved, since battery recharging time causes a huge loss of productivity.

Moreover, increasing the energy efficiency leads to positive effects on the environmental situation of our planet.

For all these reasons Trelleborg strives for increased efficiency, with huge investments in technology, matching the efforts of forklift truck manufacturers in order to reduce the causes of (internal) energy losses.



ENERGY EFFICIENCY

- **Rolling Resistance** is the most important indicator of energy efficiency: the lower it is, the better it is in terms of durability and consumption.
- Trelleborg R&D Department developed accurate tests, stressing the tires at high speeds, at given temperatures, reproducing real working conditions.
- Rota VP15 shows **up to 15% better energy efficiency** compared to the competitors in terms of Rolling Resistance coefficient - CHART 1.
- This can result in **savings of battery life, gas, or Diesel fuel**.

COOL RUNNING

- **Heat Build Up** is another crucial indicator of efficiency: it reveals the heat accumulation inside the tire (which should work within the proper temperature range in order to obtain the best performance).
- Rota's low heat accumulation during any working condition **cuts down heat build-up by up to 10%** - CHART 2 - reducing the well known risk of tire failures and the need for careful driving.
- With Rota **operating speed and carrying loads** are higher.
- Low heat accumulation grants higher efficiency, longer working time, higher distances, longer tire life, and reduced vehicle maintenance costs.

CARE FOR ENVIRONMENT

- Rota tires are made of "Oil Free" rubber compounds.
- This anticipates the prescriptions of EU Directive 2005/69/CE article 3 (2) coming from the European Commission.
- In this document it has been decided that starting from 01.01.2010 all polycyclic aromatic oils (plastifiers) will have to be eliminated from industrial processes while Benzo[a]pyrene can be used up to a maximum of 1 ppm.
- **More attention to people, more attention to our future!**

CHART 1 - ROLLING RESISTANCE (LOWER IS BETTER)

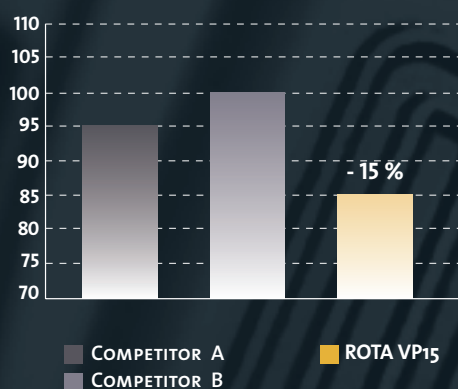
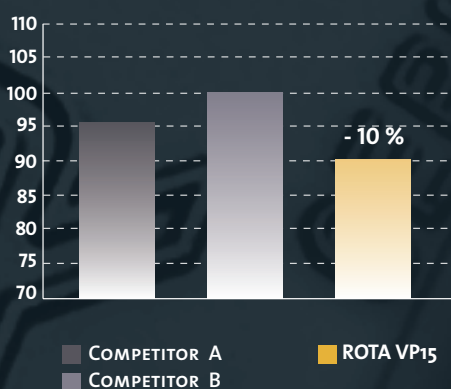


CHART 2 - HEAT BUILD UP (LOWER IS BETTER)



PREMIUM QUALITY - HIGH STABILITY

Rota resilient tires are designed to offer premium quality and top performance in every condition thanks to high quality materials and state of the art technologies.

Each tire belonging to Rota's product range is built with valuable natural rubber, using a three stage construction layout which takes advantage of specific and optimized compounds for tread, cushion and base layer.

In this way the best combination of comfort, stability, and durability is assured.

The result is a safe and puncture proof tire, characterized by high robustness and excellent reliability, that can be employed in a wide range of industrial applications: Rota succeeds where other tires would fail.



FUNCTIONAL TREAD

- Technical, functional and extremely efficient tread pattern designs.
- **High traction** both in indoor and outdoor applications.
- **Firm grip** in all conditions.
- Maintenance free.
- Abrasion resistant tread compounds: **higher durability**.

HIGHER STEERING STABILITY

- Self Aligning Torque tends to return the steer wheels to the vertical position, parallel to the longitudinal axis of the vehicle, and it changes according to the slip angle of the tire.
- It is one of the factors that enhances the operator's feeling about the vehicle, its tires, and the road, resulting in better driving (and steering) precision.
- Higher Self Aligning Torque of Rota VP15 grants a big improvement in terms of **drive, stability, and safety**.

LOAD STABILITY AND COMFORT

- Even with the maximum load, Rota VP15 shows a **lower vertical deflection** if compared to the competitors. It achieves an optimum deflection value that grants **higher stationary stability and increased safety** for goods and operators.
- At the same time, thanks to the properties of the middle layer cushion, Rota VP15 grants an excellent level of **driving comfort**, with reduced vibrations and enhanced riding features.

EASY TO WORK WITH

- Mounting and dismounting of the Rota range is tested and approved by Trelleborg partners worldwide.
- **PLUS** versions have a retaining nose bead for easy mounting.
- Maximum compatibility with rims of the main wheel manufacturers.
- High rim compression factor for firm fit on wheels.
- Mounted tires and wheel assemblies are available.

PICTURE 1 - ROTA VP15 - TREAD DESIGN



CHART 3 - SELF ALIGNING TORQUE-STEERING STABILITY (HIGHER IS BETTER)

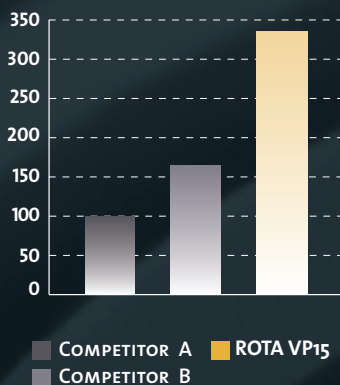
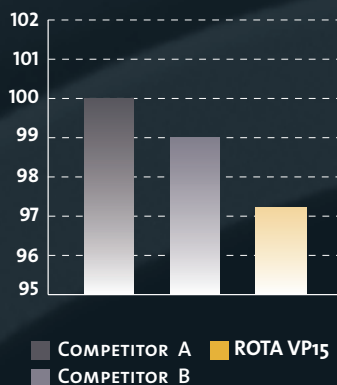


CHART 4 - VERTICAL DEFLECTION (LOWER IS BETTER)



PICTURE 2 - EASY MOUNTING: ROTA PLUS VERSION



Size	Rim width	ET/RT0	Profile									Dimensions		Weight (kg)		Load capacity (kg)				
			VP15	VP20	GP	M	LR	FL	Rota			Rota Plus	Max. width (mm)			Overall diam (mm)	Forklift up to 25 km/h		Other vehicles (trailers)	
										Load wheel	Steer wheel						6 km/h	10 km/h	25 km/h	
3.00-4	2.10-4	■				●			x		87	250	3,5	295	260	195	260	235	195	
4.00-4	2.50C-4	■				●	●		x		116	306	6,3	625	535	410	535	485	410	
4.00-8	3.00D-8	■				●			x	x	130	406	10,3	1100	950	730	950	860	730	
	3.00D-8	■					●		x		130	406	10,3	1100	950	730	950	860	730	
5.00-8	3.00D-8	■	●						x	x	143	458	15,5	1645	1415	1090	1415	1285	1090	
	3.00D-8	■					●		x		143	458	15,5	1645	1415	1090	1415	1285	1090	
15x4½-8 (125/75-8)	3.00D-8		●				●		x	x	132	377	8,9	1210	1040	800	1040	940	800	
16x6-8 (150/75-8)	4.33R-8	■	●						x	x	164	417	15,2	1690	1455	1120	1455	1320	1120	
18x7-8 (180/70-8)	4.33R-8	■	●						x	x	187	453	20,0	2490	2145	1650	2145	1950	1650	
	4.33R-8	■						●	x		187	453	20,0	2490	2145	1650	2145	1950	1650	
140/55-9	4.00E-9		●				●		x	x	131	377	10,4	1360	1170	900	1170	1060	900	
6.00-9	4.00E-9	■	●						x	x	173	529	24,7	2190	1885	1450	1885	1710	1450	
	4.00E-9	■					●		x		173	529	24,7	2190	1885	1450	1885	1710	1450	
21x8-9 (200/75-9)	6.00E-9	■	●						x	x	216	524	31,5	3200	2755	2120	2755	2505	2120	
6.50-10	5.00F-10	■	●						x	x	191	576	33,6	2720	2340	1800	2340	2185	1800	
7.50-10	5.50F-10	■				●			x		224	632	46,7	3565	3070	2360	3070	2785	2360	
23x9-10 (225/75-10)	6.50F-10	■	●						x	x	243	583	47,0	4000	3445	2650	3445	3125	2650	
200/50-10	6.50F-10	■	●						x	x	221	458	22,0	2870	2470	1900	2470	2240	1900	
	6.50F-10	■					●		x		221	458	23,0	2870	2470	1900	2470	2240	1900	
7.00-12	5.00S-12	■	●						x	x	207	657	45,0	3380	2920	2240	2920	2640	2240	
23x10-12 (250/60-12)	8.00G-12	■	●						x	x	275	583	46,0	4380	3770	2900	3770	3420	2900	
27x10-12 (250/75-12)	8.00G-12	■	●						x	x	275	676	67,0	4530	3900	3000	3900	3540	3000	
23x5	3.75P-13	■				●			x	x	167	622	30,0	1735	1495	1150	1495	1355	1150	
250-15 (250/70-15)	7.00-15	■	●						x	x	265	720	66,0	5510	4640	3570	4640	4200	3570	
	7.50-15					●			x	x	265	720	66,5	5510	4640	3570	4640	4200	3570	
300-15 (315/70-15)	8.00-15	■	●						x	x	324	823	114,0	6795	5850	4500	5850	5310	4500	
355/65-15 (350-15)	9.75-15	■	●						x	x	372	826	128,0	9060	7800	6000	7800	6430	5450	
400/60-15	11.00 -15		●						x		400	823	143,0	10420	8970	6900	8970	8140	6900	
7.00-15	5.50-15	■	●						x	x	213	731	57,0	4115	3545	2725	3545	3215	2725	
7.50-15	6.50 -15		●						x		234	757	67,0	4530	3900	3000	3900	3540	3000	
28x9-15 (225/75-15)	7.00 -15	■	●						x	x	233	693	54,0	4380	3900	3000	3900	3540	3000	
280/50-15	8.00 -15						●			x	255	670	66,0	6040	5200	4000	5200	4700	4000	
28x12½-15	9.75 -15	■	●						x		343	693	89,0	5850	5525	4250	5525	5015	4250	
345/45-15	9.75 -15	■	●							x	335	690	90,0	5850	5525	4250	5525	5015	4250	
8.25-15	6.50-15	■	●						x	x	253	819	86,2	5510	4750	3650	4750	4300	3650	
8.25-20	6.50 -20	■				●			x		253	951	121,0	5550	4400	3675	4400	4005	3675	
9.00-20	6.50 -20	■				●			x		276	992	145,0	6720	5400	4500	5400	4910	4500	
	7.00 -20	■				●			x		276	992	146,5	6720	5400	4500	5400	4910	4500	
10.00-20	7.00 -20	■				●			x		302	1029	170,0	7550	6000	5000	6000	5455	5000	
	7.50 -20	■				●			x		302	1029	171,0	7550	6000	5000	6000	5455	5000	
	8.00 -20	■				●			x		302	1029	172,0	7550	6000	5000	6000	5455	5000	
12.00-20	8.00 -20	■		●					x		337	1098	210,0	9440	7560	6300	7560	6870	6300	
	8.50 -20	■		●					x		337	1098	215,0	9440	7560	6300	7560	6870	6300	
	10.00 -20	■		●					x		352	1098	245,0	10145	7800	6500	7800	7100	6500	
355/50-20	10.00 -20							●	x	x	307	828	113,0	10440	8990	6915	8990	8160	6915	

AVAILABLE TREAD PATTERNS



VP15

VP20

GP

M

LR

FL

AVAILABLE COMPOUNDS

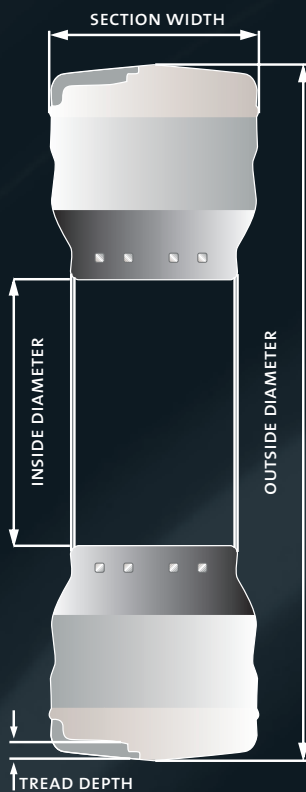
NATUR - Non-marking compound that doesn't leave tire marks on any surface. This compound is particularly designed for use on sensitive floors. It's not electrically conductive or anti-static. Vehicles equipped with this compound have to be grounded prior to use in inflammable areas or where there is a risk of explosion.

ELF - This electrically conducting compound is designed for use in inflammable areas or areas with danger of explosion. The conductivity is in accordance to the guiding principles of WdK-no. 110, class 1. ELF tires are marked with a red flash on a yellow label.

? SPECIAL ORDER - Various compounds are available upon request.

RESILIENT SIZES AND DIMENSIONS

For Resilient tires there are 4 different size designations



5.00	–	8
section width		nominal wheel diameter
inch		inch

250	–	15
section width		nominal wheel diameter
mm		inch

18	x	7	–	8
outside diameter		section width		nominal wheel diameter
inch		inch		inch

200	/	50	–	10
section width		aspect ratio		nominal wheel diameter
mm		%		inch

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