



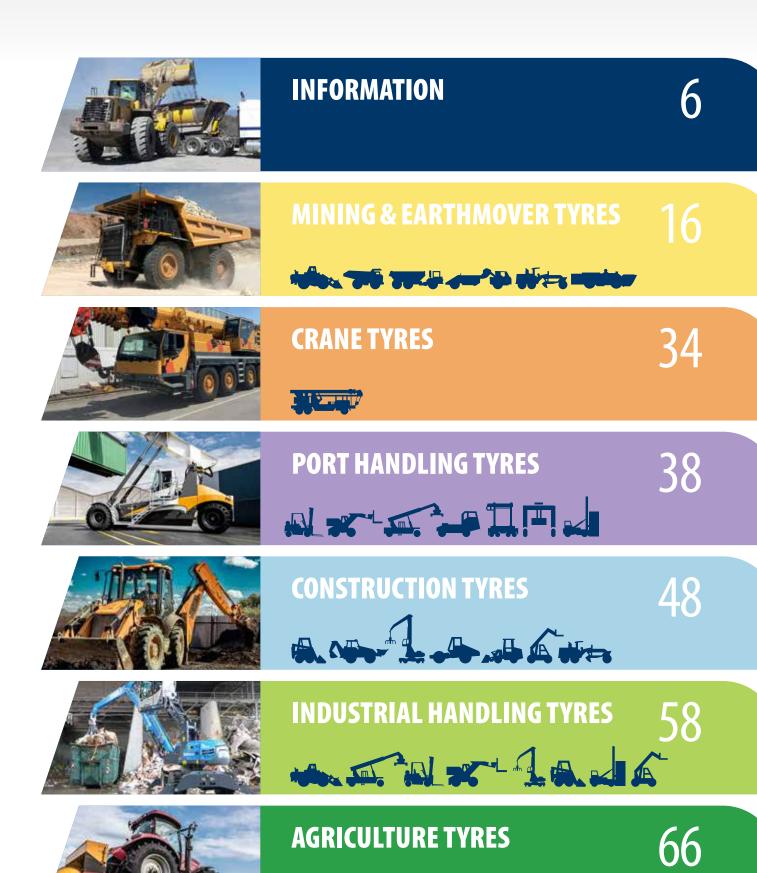
MAGNA TYRES PREMIUM QUALITY

All over the world, customers of all types of machines have the same ongoing interests:

TO INCREASE THEIR PRODUCTIVITY AND TO REDUCE OPERATING COSTS.

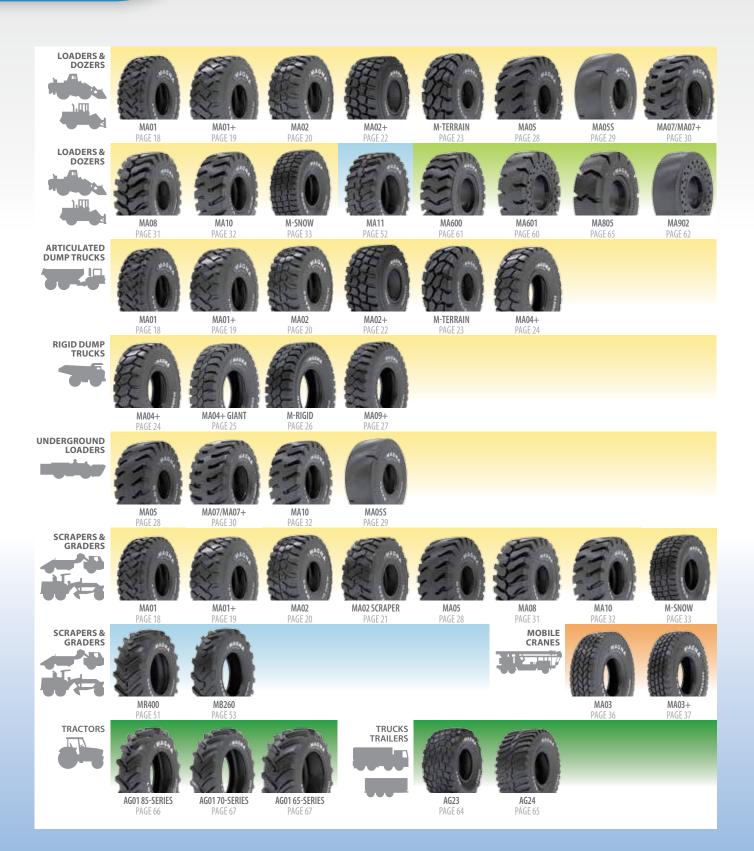
Premium Quality Magna Tyres offer the optimal combination of tyre performance and purchase price, leading to a low cost price per hour/kilometre and a highly efficient operation.

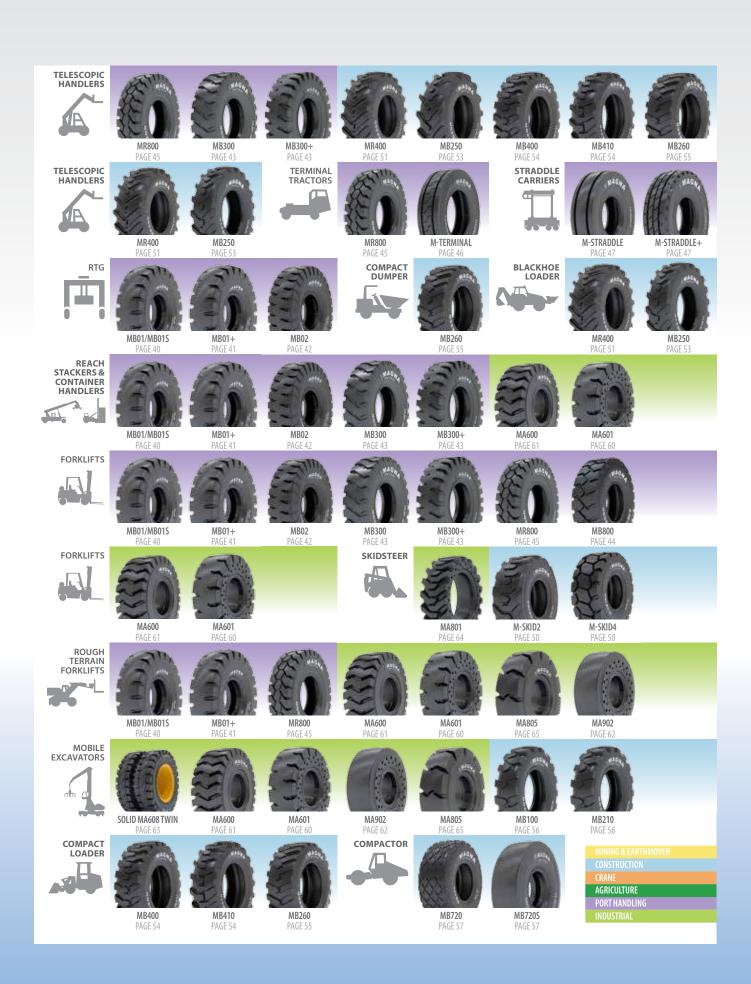
CONTENTS





TYRE RANGE







In only one decade Magna Tyres Group evolved from a specialist rubber compound producer to a leading tyre manufacturer with 13 sales offices worldwide and tyres running in more than 130 countries across the world.

With the headquarters based in the southern part of the Netherlands, Magna Tyres Group manufactures and distributes an extensive range (E2/L2 up to E4 and L5) of radial, bias and solid tyres for Mining & Earthmover, Industrial, Agricultural, Port Handling and Truck applications.

VISION

To be a global OTR tyre leader in Mining and Construction, Waste and Recycling, material handling, Port handling and Agriculture.

MISSION

Our goal is to deliver premium quality products that deliver the lowest total cost of ownership / cost price per hour.



OUR SUCCESS

Premium quality compound

Partnerships with leading distributors, oem and suppliers

Product of Holland

Customer focussed

MAGNA TECHNOLOGY

- Improved traction through specialized tread design
- Heavy duty sidewalls guarantee excellent resistance to damage and impacts
- High-tech casing reduces heat buildup inside the tyre
- Enhanced Tyre performance due to premium Magna rubber compound



GET ALL THE BENEFITS OF MAGNA TYRE TECHNOLOGY

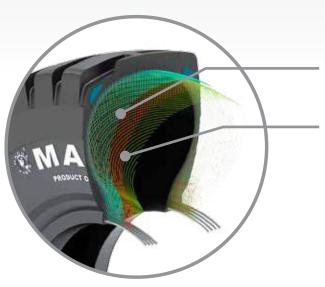


BIAS VS. RADIAL TYRES

BIAS OR DIAGONAL PLY CONSTRUCTION

The crown and sidewalls are formed by the same ply structure. The tread is affected by flexing of the sidewalls, resulting in:

- Deformation of the tyre contact area on the ground
- · Movement in the tread contact area
- The casing plies tend to "scissor" in relation to each other

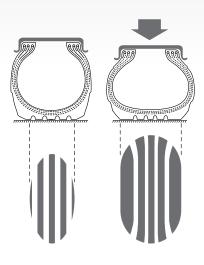


The casing is made up of several criss-crossed plies.

The crown is not stabilized.

Disadvantages

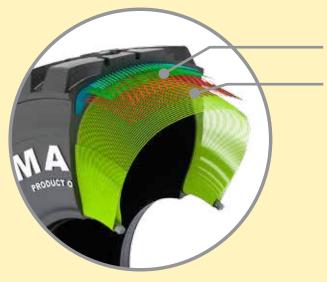
- · accelerated wear
- · less grip
- increased fuel consumption



ALL STEEL RADIAL CONSTRUCTION - MULTIFUNCTIONAL

The sidewall and tread function seperately. The tread is unaffected by the flexing of the sidewalls, so there is:

- less deformation of the tyre contact area on the ground
- less movement in tread contact area
- no movement between casing plies.

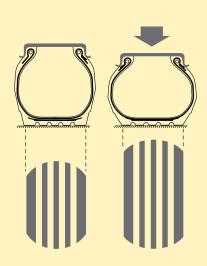


The casing has only one radial ply.

The crown is stabilized by several plies.

Advantages

- long tyre life
- better traction on all types of surface
- lower fuel consumption due to lower rolling resistance
- improved comfort
- increased resistance to punctures / flats
- increased resistance to heating



PRODUCT DEVELOPMENT AND R&D

Product development by our R&D department is constantly at the top of our priorities, by:

1) continuously improving our existing tyre range.

2) continuously converting customer demand into new successful tyres.

By using European technology and a premium quality compound our team is always able to come up with the right solutions for our customers demand, and enabled us to become the fastest growing OTR company worldwide.

PRODUCT DEVELOPMENT

Every (1) product improvement or (2) new product starts with an idea on which our R&D department develops an architecture and design. This design is tested and prepared for release management. In this phase everyone who works with Magna products is informed, and is provided with product information, marketing and training. Afterwards the product is released and we start to collect data by testing and requesting feedback from end-users. This is a continuous process as we are continuously improving our tyrerange to guarantee the premium quality Magna customers expect.

TESTING & IMPROVEMENT TRAINING & PRODUCT DEVELOPMENT TRAINING & PRODUCT SUPPORT RELEASE MANAGEMENT TESTING & ARCHITECTURE, R&D, PROTOTYPING TESTING & DESIGN & DEVELOPMENT TESTING & ASSURANCE

INNOVATION

"Innovation for the benefit of our clients has been the driving force behind our success. It enabled us to become the fastest growing OTR company in the world. Our European technology, premium quality compounds and innovative new tread designs satisfy the needs of our customers. Continual innovation and a flexible approach to achieving the best client-specific solutions satisfy the real needs or our customers and makes us stand out against our competitors, especially in reducing total cost of ownership and cost price per hour."



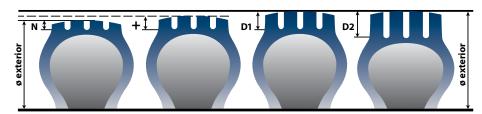
TYRE MARKING



- 1 Manufacturer: Magna Tyres
- 2 Tread pattern: MA02
- (3) Tyre size: 26.5
- Radial construction: R
- Wheel diameter (in inches): 25
- 6 Tra code: E3+

DIFFERENT TREAD DEPTHS

There are 4 earthmover tyre families characterized by their different tread depths (or tread height) and which are chosen as a function of their use and the surface conditions.



(E2 -E3 - L2 -L3 - G2 -G3)
Traction, rock
Magna designation:
N (Normal)

(E3+, L3+)
Traction, rock
Magna designation:
+ (N < + < D1)

(E4 - L4 - G4)
Rock, deep tread
Magna designation:
D1 = N x 1.5

(L5)
Rock, extra deep tread
Magna designation:
D2 = N x 2,5

STANDARDIZED USAGE (ISO-ETRTO-TRA-JATMA*)

The four main categories of earthmover tyres are defined by their user. The category to which it belongs is indicated on the sidewall of the tyre. This is an international classification:

C Compactor

E Earthmoving

G Grader

L Loader & bulldozer

Within these categories, there are different tread depths and special tread patterns, for very specific uses. These are identified by a number. They must be chosen according to the type of ground and the tyre's condition of use.

The letter "S" indicates a smooth tread; example: L5S.

- 1 Ribbed (normal tread depth)
- **4** Deep (deep tread)
- 2 Traction (normal tread depth)
- 5 Very deep (very deep tread)
- **3** Normal (normal tread depth)
- **7** Flotation (normal tread)

* ISO International Standard Organisation

ETRTO European Tyre and Rim Technical Organisation

TRA Tire and Rim Association

JATMA Japan Automobile Tyre Manufacturers Association

Code	Tread pattern	Application
C1	SM00TH	Compactor
E1	RIBBED	
E2	TRACTION	
E3	ROCK	Transport
E4	ROCK (deep tread)	
E7	FLOTATION	
G1	RIBBED	
G2	TRACTION	
G3	ROCK	Grader
G4	ROCK (deep tread)	
G5	ROCK (very-deep tread)	
L2	TRACTION	
L3	ROCK	
L4	ROCK (deep tread)	
L5	ROCK (very-deep tread)	Loader Bulldozer
L3S	SMOOTH	Dundozel
L4S	SMOOTH (deep tread)	
L5S	SMOOTH (very-deep tread)	

TECHNICAL INFORMATION

SPEED SYMBOL

Symbol	A2	A6	A8	В	C	D	E	F	G		K	L	M
Speed (km/h)	10	30	40	50	60	65	70	80	90	100	110	120	130
Speed (mph)	6	20	25	30	35	40	45	50	55	60	67	73	80

Examples: 23.5R25 MA02 TL 185 B: This tyre is able to carry 9.250kg at a maximum speed of 50km/h (20.390lb at 30mph).

LOAD INDEX (LI) AND MAXIMUM LOAD (KG)

u	Maximum load		Maximum load		u	Maxim	um load	u	Maxim	um load	u	Maxim	um load	ш	Maxim	um load
	kg	lb		kg	lb		kg	lb		kg	lb		kg	lb		
115	1.215	2.678	146	3.000	6.610	177	7.300	16.090	208	18.000	39.690	239	43.750	96.470		
116	1.250	2.755	147	3.075	6.780	178	7.500	16.530	209	18.500	40.790	240	45.000	99.210		
117	1.285	2.832	148	3.150	6.950	179	7.750	17.090	210	19.000	41.890	241	46.250	101.960		
118	1.320	2.910	149	3.250	7.170	180	8.000	17.640	211	19.500	43.000	242	47.500	104.720		
119	1.360	2.998	150	3.350	7.390	181	8.250	18.1 90	212	20.000	44.100	243	48.750	107.470		
120	1.400	3.090	151	3.450	7.610	182	8.500	18.740	213	20.600	45.420	244	50.000	110.250		
121	1.450	3.200	152	3.550	7.830	183	8.750	19.290	214	21.200	46.750	245	51.500	113.540		
122	1.500	3.310	153	3.650	8.050	184	9.000	19.840	215	21.800	48.070	246	53.000	117.950		
123	1.550	3.420	154	3.750	8.270	185	9.250	20.390	216	22.400	49.390	247	54.500	120.150		
124	1.600	3.530	155	3.875	8.540	186	9.500	20.940	217	23.000	50.700	248	56.000	123.480		
125	1.650	3.640	156	4.000	8.820	187	9.750	21.500	218	23.600	52.040	249	58.000	127.890		
126	1.700	3.750	157	4.125	9.090	188	10.000	22.050	219	24.300	53.580	250	60.000	132.300		
127	1.750	3.860	158	4.250	9.370	189	10.300	22.710	220	25.000	55.120	251	61.500	135.580		
128	1.800	3.970	159	4.375	9.650	190	10.600	23.370	221	25.750	56.780	252	63.000	138.890		
129	1.850	4.080	160	4.500	9.920	191	10.900	24.030	222	26.500	58.430	253	65.000	143.300		
130	1.900	4.190	161	4.625	10.200	192	11.200	24.690	223	27.250	60.070	254	67.000	147.710		
131	1.950	4.300	162	4.750	10.470	193	11.500	25.360	224	28.000	61.740	255	69.000	152.120		
132	2.000	4.410	163	4.875	10.750	194	11.800	26.020	225	29.000	63.940	256	71.000	156.530		
133	2.060	4.540	164	5.000	11.020	195	12.150	26.790	226	30.000	66.150	257	73.000	160.930		
134	2.120	4.670	165	5.150	11.350	196	12.500	27.560	227	30.750	67.790	258	75.000	165.340		
135	2.180	4.810	166	5.300	11.690	197	12.850	28.330	228	31.500	69.460	259	77.500	170.660		
136	2.240	4.940	167	5.450	12.020	198	13.200	29.100	229	32.500	71.660	260	80.000	176.400		
137	2.300	5.070	168	5.600	12.350	199	13.600	29.990	230	33.500	73.870	261	82.500	181.880		
138	2.360	5.200	169	5.800	12.790	200	14.000	30.870	231	34.500	76.070	262	85.000	187.390		
139	2.430	5.360	170	6.000	13.230	201	14.500	31.970	232	35.500	78.280	263	87.500	192.900		
140	2.500	5.510	171	6.150	13.560	202	15.000	33.070	233	36.500	80.480	264	90.000	198.450		
141	2.575	5.680	172	6.300	13.890	203	15.500	34.180	234	37.500	82.690	265	92.500	203.920		
142	2.650	5.840	173	6.500	14.330	204	16.000	35.280	235	38.750	85.430	266	95.000	209.440		
143	2.725	6.010	174	6.700	14.770	205	16.500	36.380	236	40.000	88.200	267	97.500	214.950		
144	2.800	6.170	175	6.900	15.210	206	17.000	37.480	237	41.250	90.940	268	100.000	220.500		
145	2.900	6.390	176	7.1 00	15.650	207	17.500	38.590	238	42.500	93.710	269	103.000	227.370		



RATINGS

This is a measurement of the strength of the Radial Casing Ply vs. Bias Ply Tyres.

Sizes and marking	Work machines	Transport machines	Sizes and marking	Work machines	Transport machines	Sizes and marking	Work machines	Transport machines
7.50 R 15	12		17.5 R 25 *	16		33.25 R 29 **		44
8.25 R 15	12		17.5 R 25 **	20	24	18.00 R 33 **		40
18 R 19.5 *	16		18.00 R 25 *	24		33.5 R 33 **		44
10.00 R 20	16		18.00 R 25 **		36	35/65 R 33 *	36	
C20 Pil (11/80 R 20)	16		20.5 R 25 *	24		37.5 R 33 **		48
E20 (13./80 R 20)			20.5 R 25 **		28	21.00 R 35 **		44
15 R 22.5 *	16		21.00 R 25 **		40	24.00 R 35 **		48
18 R 22.5 *	16		23.5 R 25 *	28		29.5 R 35 **		40
12.00 R 24 ***	24	24	23.5 R 25 **		32	33.25 R 35 **		44
13.00 R 24 TG *	14		25/65 R 25 **		32	37.25 R 35 **		48
14.00 R 24 TG *	16		26.5 R 25 *	32		37.5 R 39 **		52
14.00 R 24	24		26.5 R 25 **		32	40/65 R 39 *	42	
14.00 R 24 ***	28	32	29.5 R 25 *	34		40.5/75 R 39 **		54
15.00 R 24 (17/80 R 24)	28		29.5 R 25 **		34	45/65 R 39 * (1)		
16.00 R 24 TG *	16	16	555/70 R 25 * L2F	16		45/65 R 45 *	50	
16.00 R 24 **		36	555/70 R 25 * L3T or L4T	24		24.00 R 49 **		48
555/70 R 24 TG *	16		625/70 R 25 *	28		27.00 R 49 **		54
20 R 24 TG *	16		705/70 R 25 *	32		30.00 R 51 **		64
13.00 R 25 ***		28	750/65 R 25 *	34		33.00 R 51 **		68
14.00 R 25 ***		32	26.5 R 29 **		34	36.00 R 51 **		74
15.5 R 25 *	16		29.5 R 29 *	34		37.00 R 57 ** (1)		
15.5 R 25 **	20		29.5 R 29 **		40	40.00 R 57 **		78
16.00 R 25 **		36	30/65 R 29 *	28		55/80 R 57 * (1)	80	

CLASSIFICATION ACCORDING TO ASPECT RATIO

The wide diversity of earthmover machines and their uses requires the development of numerous ranges of tyres. Earthmover tyres differ from those mounted on cars or commercial vehicles by:

- · Their size and weight
- Their tread depths are proportionally greater

90 series

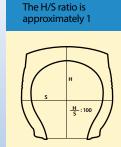
(standard)

The H/S ratio is

approximately 0.90

· More reinforcements to deal with the harsher conditions of use

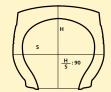
There are several families of earthmover tyres, characterized by their aspect ratio H/S (ratio between the height of the sidewall H and the section width of the tyre S).



100 series

(standard)

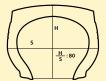
expressed as a whole number of inches. Examples: 5.00R8, 18.00R33 trucks, handling equipment, etc.



pressed as a whole number of inches followed by the Example: Tyres for rigid trucks



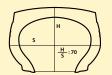
approximately 0.80



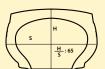
expressed in: Examples: 8.25R15, 20.5R25 • Whole number of inches, followed by the number 80 Examples: 59/80 R63 Tyres for rigid trucks, articulated dumpers, loaders, handling equipment, etc.



approximately 0.70



expressed as a whole number of inches or a by the number 70. Example: 420/70R28



65 series

(standard)

The H/S ratio is

approximately 0.65

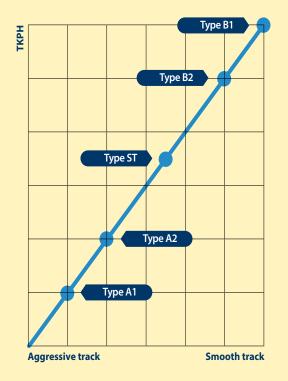
expressed as a whole number of inches or a by the number 65. Tyres for large loaders,

COMPOUND & TKPH

TYPE A1	Particularly resistant to cuts, tread tearing and abrasion on very rough surfaces.	TKPH minimum
TYPE A2	Particularly resistant to cuts, tread tearing and abrasion at average speeds which are higher than those for A+ (above).	low TKPH
TYPE ST	Compromise solution between abrasion resistance and average speed on rough surfaces.	average TKPH
TYPE B2	Adapted to running on long cycles at high speeds on well-maintained roads.	high TKPH
TYPE B1	Very high resistance to high average speeds on long cycles run on well-maintained roads.	very high TKPH

EXAMPLE

					Max.	Load/	Single					Tyre	ТКРН					
	Tyre size	Pattern	Load symbol	Tra code	speed (km/h)	speed index	max. load/ pressure	Rim	OD (mm)	SW (mm)	TD (mm)	weight (kg)	A1	A2	ST	B2	B1	
2	27.00R49	MA04+	**	E4	50	223B	27250 kg / 6.5 bar	19.50/4.0	2690	740	82	1600	392	465	500	535	625	
L																		



TYRES TKPH

The TKPH (Ton Kilometre Per Hour) or TMPH (Ton Mile Per Hour) is an essential expression of the working capacity of a tyre, depending of a maximum operating temperature allowable.

A tyre's TKPH (TMPH) depends on its design and varies according to size and type.

TKPH (TMPH) values are given along with other Magna tyre characteristics. It is a function of load of each tyre and the number of kilometres (miles) covered per hour by each type of tyre, and are given at an ambient temperature of 38° C (100° F).

For the same size and same pattern, there may be several types of tread compound, each associated with a different TKPH.



LEADING CAUSES OF TYRE DAMAGE

Tyre damage is often caused by simple, easily avoidable user errors. Maintaining the **right inflation pressure (1)**, with the appropriate **heat build-up (2)** within the tyre is the most important step to a prolonged tyre life. Of course regular **vehicle maintenance (3)** and selecting the right tyre for the **appropriate application (4)** is also necessary to ensure low costs per kilometer.

1. INFLATION PRESSURE

The weight of the load is carried by the air within the tyre, not the tyre itself. Maintaining the correct inflation pressure is absolutely necessary to guarantee the tyre's performance. Pressure should always be set to, and maintained at the maximum load-/-pressure specification.

COMMON MISTAKES

- Under inflation causes excessive deflection in the tyre, increasing the heat level and leading to premature tyre failure.
- Over inflation restricts the natural deflection of the tyre, leading to premature tyre failure.

SOLUTIONS

- Check the appropriate maximum load-/-pressure ratio of a tyre and then calculate the best combination for your use. A lower inflation pressure limits load capacity.
- Pressure should be checked at regular intervals.
- · Underinflation and over inflation should be avoided.



2. HEAT BUILD UP

Heat is the tyre's worst enemy and is caused by several factors. As a tyre rotates under the weight of a vehicle and its load, it repeatedly deforms and recovers, which generates lots of energy. When this energy is released, heat builds up, making it more susceptible to wear, cuts and structural fatigue, which results in reduced tyre lifetime. The amount of heat build-up is determined by several factors including:

- Under-inflation
- Overloading
- · High speeds
- Harsh breaking

- Aggressive cornering
- Poorly designed or badly maintained roads
- Working outside tyre specs
- · Seasonal influences

COMMON MISTAKES (HEAT BUILD UP)

- $\bullet \quad \text{Under-inflation and Over--inflation} \\$
- Exceeding the load capacity of a tyre
- Driving at a higher speed than the designated load / speed capacity
- Non-professional driving style, with harsh
- breaking and aggressive cornering
- Neglected road maintenance or poor road design
- Not taking into consideration seasonal effects

SOLUTION (HEAT BUILD UP)

- Underinflation and over-inflation should be avoided
- Ensure the vehicle carries no more than the appropriate load capacity and drives at the corresponding speed
- Gradients in the road shouldn't exceed 5%-6% and should be maintained regularly
- Maintain a professional driving style to ensure a prolonged tyre life



3. VEHICLE MAINTENANCE

Finally, vehicle maintenance is another important factor for an efficient use. The machine's performance can cause severe damage to its tyres. Neglecting regular vehicle maintenance can severely reduce tyre life and increase its running cost.

COMMON MISTAKES

- Misalignment causing tread separation, increased and-/-or irregular tread wear, tyre vibration
- Broken suspension, increased and-/-or irregular tread wear
- Fuel and oil leaks damage to the rubber compound which shortens tyre life

SOLUTIONS

Always ensure regular vehicle maintenance



4. SELECTING THE RIGHT TYRE

Selecting the right tread pattern will extend the tyre life significantly. Your Magna Tyres representative can assist you by making this selection.

TREAD PATTERN – The tread pattern is designed to produce varying degrees of traction, cut, flotation, wear and heat resistance.

TYRE CONSTRUCTION – Radial – Bias – Solid construction offer various advantages and disadvantages according you specific applications.

COMPOUND & TKPH – Compound and TKPH determines tyre life can affect the lifespan of a tyre.

LOAD- SPEED INDEX — operate at the proper loading capacity.





QUALITY MANAGEMENT AND CONTROL

Quality Management and control processes are extensively documented in order to continuously improve our products.

QUALITY MANAGEMENT

To achieve the desired premium quality we maintain a 6-step quality management approach.

- 1. First we identify the requirements.
- 2. We design and develop a tyre which meets the requirements as defined in step 1.
- 3. The design gets validated by product development, R&D department and directors and we start working towards product launch.
- 4. Production starts.
- 5. The Tyre performance is constantly monitored by on site tests and collection of customer feedback.
- 6. This cycle is constantly repeated since we continuously want to improve.



CONTINUOUS IMPROVEMENT

In order to continuously improve our tyre range we implemented a Quality Control process.

- First a quality improvement should be created, this
 can be done by either the sales department, R&D
 department or one of the directors. Customers are
 able to provide their input through their personal
 contactperson.
- 2. A Quality "order" is created containing all the information required to evaluate the performance
- 3. Our existing performance database is consulted
- 4. Non-conformances are quickly detected
- 5. Correlation of the non-conformance and improvement are investigated
- 6. If the improvement is accepted in the previous step, it gets documented and transferred to the stakeholders
- 7. Correction Handling is being carried out





CRANE TYRES

premium quality tyres especially designed for highway and offroad applications.



MAGNA CRANE TYRES



- Highly reliable tyre with a long service life
- Superior traction
 - Maximized protection againt cuts and damage
- **Optimized loading capacity**
- Low cost price per hour

TYRES FOR CRANES

385/95R24 385/95R25 445/95R25 525/80R25 505/95R25



LIFTING AND HANDLING MOBILE CRANES *** LONG DISTANCE TRANSPORT *** LOWER FUEL CONSUMPTION ***



385/95R25 445/95R25



LIFTING AND HANDLING MOBILE CRANES *** LONG DISTANCE TRANSPORT *** LOWER FUEL CONSUMPTION ***



Allround Tyre for road use and rough terrain





MAGNA MAO3

E2

The Magna MA03 is especially designed for mobile cranes for highway and off-road applications.

Long-lasting, non-directional tread design contributes to efficient fuel consumption and guarantees operating comfort.



The aggressive, self-cleaning tread design provides excellent traction in severe off-road conditions.



All steel radial construction. Improved protector plies optimize load performance and operator comfort.



New improved technology of the high-tech casing reduces heat build up inside the tyre.





Tyre size	e Pattern	Tra code	Load symbol	Load/Speed Index	Single max load/pressure	Overall diameter (mm)	Section width (mm)	Tread depth (mm)	Rim	Tyre weight (kg)
385/95R2	4 MA03	E2	***	170 E	6000 kg/10 bar	1364	396	25	10.00W	133
385/95R2	5 MA03	E2	***	170 F	6000 kg/10 bar	1364	396	25	10.00/1.5	138
445/95R2	5 MA03	E2	***	174 F	6700 kg/9.0 bar	1488	432	26	11.25/2.0	211
525/80R2	5 MA03	E2	**	176 F	7100 kg/7.0 bar	1498	533	31	17.00/2.0	232
505/95R2	5 MA03	E2	***	186 E	9500 kg/10.0 bar	1585	505	26	13.00/2.5	325



CRANE

MAGNA MAO3+

E2

The Magna MA03+ is especially designed for mobile cranes for highway and off-road applications.

Greater operator comfort due to improved irregular wear pattern.



The tread design provides excellent traction in severe off-road conditions.



All steel radial construction. Improved protector plies optimize load performance and operator comfort.



New improved technology of the high-tech casing reduces heat build up inside the tyre.





Tyre size P	Pattern	Tra code	Load symbol	Load/Speed Index	Single max load/pressure	Overall diameter (mm)	Section width (mm)	Tread depth (mm)	Rim	Tyre weight (kg)
385/95R25 N	MA03+	E2	***	170F	6000 kg/9.0 bar	1369	379	24	10.00/1.5	148
445/95R25 N	MA03+	E2	***	174F	6700 kg/9.0 bar	1481	435	28	11.25/2.0	201