



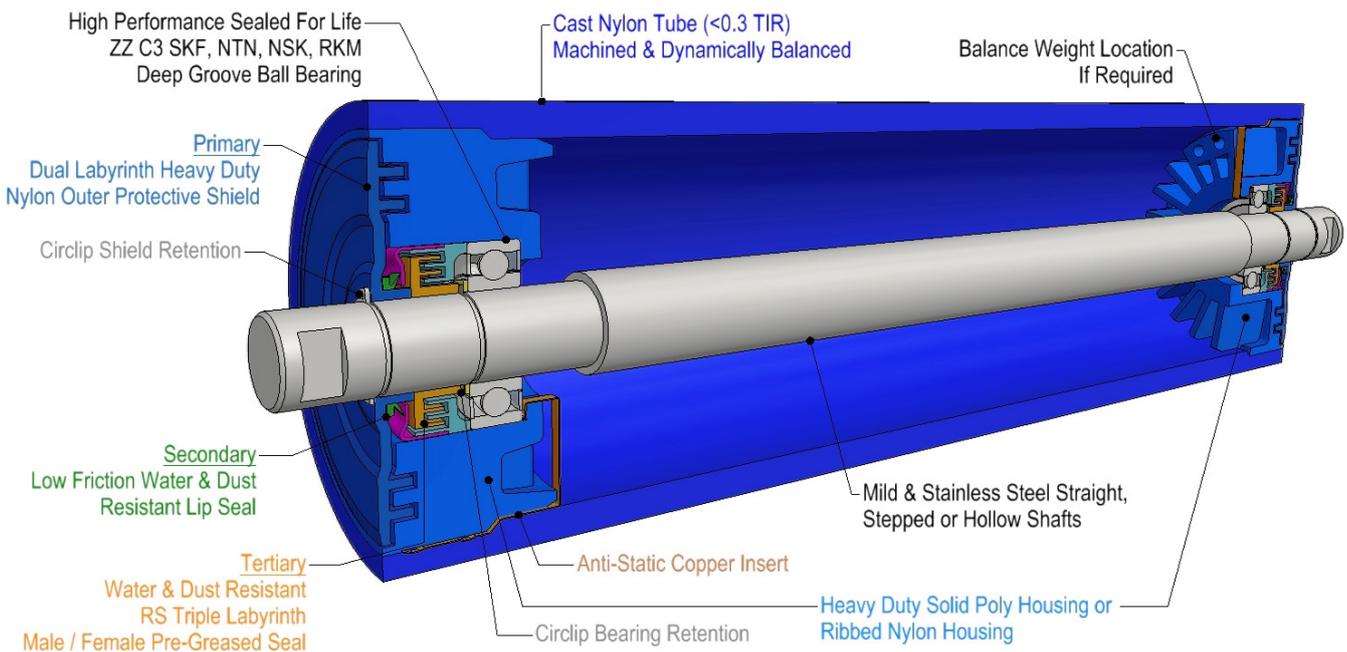
**ROKONMA-RKM**  
INTERNATIONAL ROLLER COMPANY

# Heavy Duty Nylon Rollers

**One Group One Spirit**

## RKM Heavy Duty Nylon Plastic Rollers

RKM, through its research and development program, have been able to identify the correct engineered plastic when used specifically as a roller in a conveyor situation. Combined with our premium RS Seal package, in-house design program and unique manufacturing processes and capabilities, RKM are able to supply you with the most beneficial roller construction suitable for different applications, both in medium and heavy duty.



**Flexural properties** are the most critical criteria to determine the strength of conveyor rollers as the flexural parameters generally define the strength of bar type material against bending when load is applied perpendicularly to the bar body with two-point support at both ends, which is the most common scenario that an idler will face in real conveying applications.

Polymer Type	Density (kg/m <sup>3</sup> )	Tensile Strength at 23°C (MPa)	Tensile Modulus of Elasticity at 23°C (MPa)	Flexural Strength at 23°C (MPa)	Flexural Modulus of Elasticity at 23°C (MPa)	Approx. Service Temperature (°C)
Nylon (Cast)	1150	83	2758	96.5 ✓	2800	-20~100
Nylon (Extruded)	1110	80	2930	88.4	2770	-20~100
PVC (Moulded)	1290	37.9	2450	74.9	2660	-20~70
PVC (Extruded)	1370	41.4	2990	80.8	2840	-20~70
UHMWPE	929	40	552	70	758.423	-20~70
HDPE	959	32	1379	70	1150	-20~80

## Design & Construction

The RKM Nylon roller utilises high quality nylon grade 90 tube which has the highest flexural strength of all the polymers, 96.5 MPa at 23°C. The tube is machined to ensure minimal TIR and combined with our specially formulated resilient solid polyester or ribbed nylon bearing housing, we are able to produce a dynamically balanced Roller which meets AS3709 G16. The precision-machined resilient solid or ribbed housings offer a very quiet vibration free Roller.

Our unique manufacturing process along with our computerized dynamic balancing machine enables us to achieve the best possible TIR and MIS, which reduces any noise generated from the belt running across the surface of the roller. Our solid resilient polyester and ribbed nylon housings absorb any vibration within the bearing housing and deaden any internal noise generated from the roller shell and bearing rotation.

We use a customized calculation program which enables us to select the optimum tube thickness for the job, without exceeding deflections & flexural strength criteria.

## Housings

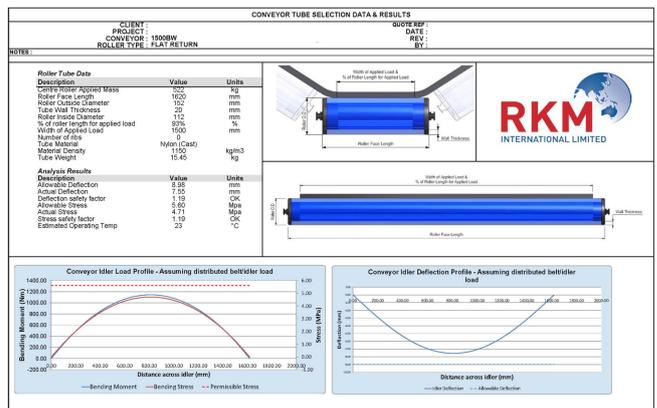
Our housings are designed to withstand large loads, with special care taken to make sure the bearing is located in the most effective position within the housing so that any load is distributed evenly through the housing onto the bearing and shaft.

We have designed into the housing our proven RS seal package along with a primary heavy duty nylon protective outer dual labyrinth shield, which will eliminate any rock jamming & provides additional protection against the ingress of contaminants. In all we have a Primary, Secondary & Tertiary sealing system.

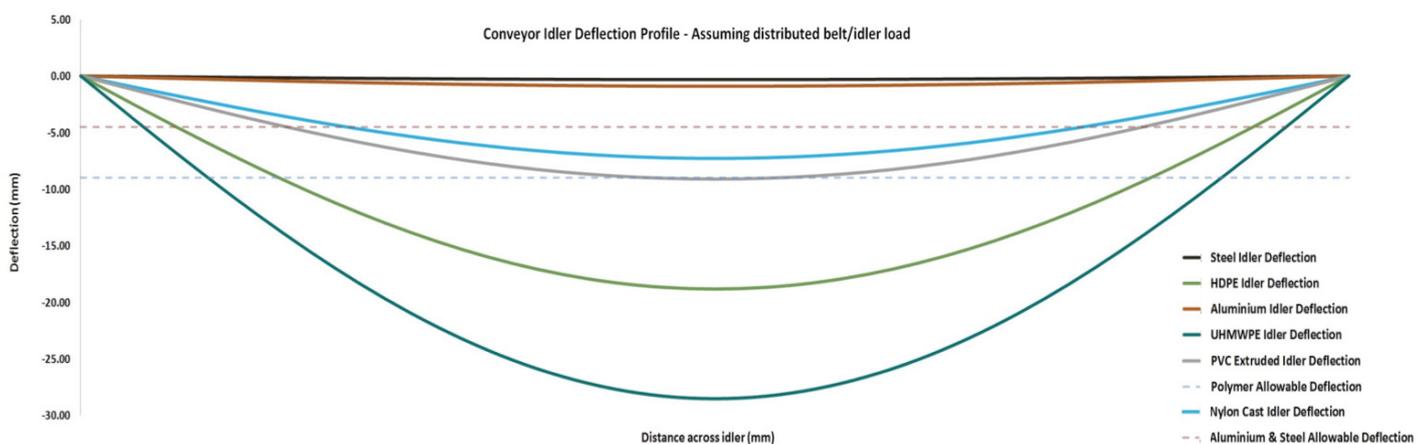
Both housings come complete with our anti-static copper insert, that transfers any static build up from the barrel through the bearing onto the shaft and then back to the earthed structure.

## In-house Design Program

RKM through its in house design program can assist our customers in selecting and tailoring their own rollers to suit their specific site requirements, taking into account the duty requirements and conditions for each site along with any budgetary requirements.



## Nylon cast has the least deflection within all polymers and is the optimal choice for non-metallic rollers.



Typical graph showing deflection differences between different materials (on a roller 1620mm long with a 522kg evenly distributed load)

# How We Are Different

We listen to our customers, and collaborate as a basis for delivering the smarter solution. We strive to add value to your plants every day needs. We recognize that every customer is unique – our tailored solutions are purpose designed for your operation to produce cost effective competitive pricing. It's the depth, strength, passion, commitment and experience of our global team that makes the difference for you.



## Our Vision

To deliver engineered products designed to meet our customer's requirements at a competitive price.  
Maintain high level of quality and service.

### ENQUIRIES

#### Hong Kong

Phone +852 9710 7704

E-mail [info@rkm.com.hk](mailto:info@rkm.com.hk)

Address Suite 2203, Level 22,  
Office Tower, Langham Place  
8 Argyle Street, Mongkok  
Kowloon  
Hong Kong  
[www.rkm.com.hk](http://www.rkm.com.hk)

#### Australia

RKM Roller Company Pty Ltd

Phone +61 2 4964 9846

Address Unit 2, 6 Kennington Drive  
Tomago, NSW 2322

[www.rkmrollers.com.au](http://www.rkmrollers.com.au)

#### China Manufacturing Facility

Rokonma-RKM (DONGGUAN) Co. Ltd.

Address 广东省东莞市企石莫屋村远鑫工  
业园区五街1号

No 1, Fifth Street , Yuanxin  
Industrial Park , Mowu Village  
Qishi Town, Dongguan City  
Guangdong China

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