



2.5.4 - Rollers series MPS

In recent years there has been a substantial increase in the use of belt conveyors due to their recognition as the most economic form of bulk transport.

The rollers comprise the principal components and are the focus of attention of the designer and the user who are always validating products both from a technical and economic point of view.



Accepting this premise, Rulmeca, with the intention to satisfy various requirements in the best way, has developed rollers series MPS, that complement the very heavy roller series PSV.



Where used

The use of this roller series is particularly advantageous in the economic sense.

MPS uses rigid radial precision ball bearings.

It is used in medium duty conveyors, but also at high speeds and even in dirty external environment.

The working temperature is defined as between -20°C and $+100^{\circ}\text{C}$.





2 Rollers

series MPS



Characteristics

Rulmeca, in designing these rollers combines the requirements of high quality and hermetic sealing with low cost and where the loading does not require spindles of $\varnothing 20$ mm.

Roller shell

Consists of a selected steel tube, machined at either end to strict tolerances.

Bearing housing

Formed from strip steel deep pressed and calibrated to ISOM7: this tolerance allowing a perfect match between the bearing and the relevant parts of the sealing.

Unibloc

The roller shell and the two bearing housings are welded together in a way that forms a monolithic structure of exceptional strength. This method guarantees the maximum precision and the minimum out of balance forces in the rollers.

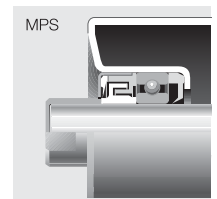
Spindle

The bright drawn precision spindle of $\varnothing 15$ provides an ideal fit to the bearing resulting in its perfect rotation.

The standard design utilises closing bushes, pre-machined with spanner flats $ch = 17$ and 14 .

Bearings

MPS series rollers use rigid radial 6202 series precision ball bearings from the very best market sources.



Sealing

The external seal is a cover cap in zinc plated steel complete with a wiper seal.

Internally, the sealing comprises a nylon (PA6) labyrinth seal with optimum resistance to chemicals and to mechanical pressure, filled with grease that protects the bearing from unwelcome ingress of external particles.

A lip seal is positioned on the inside of the bearing that wipes the spindle and creates an ample space for grease. Its design is such as to contain lubrication even in the case of extreme changes in temperature and to protect the bearing from condensation and possible rusting from the inside of the roller tube.

Lubrication

The grease used is a special lithium based grease with high resistance to ageing and humidity.

The quantity introduced into the roller is sufficient to guarantee an optimum lubrication of the bearing for the working life of the roller.

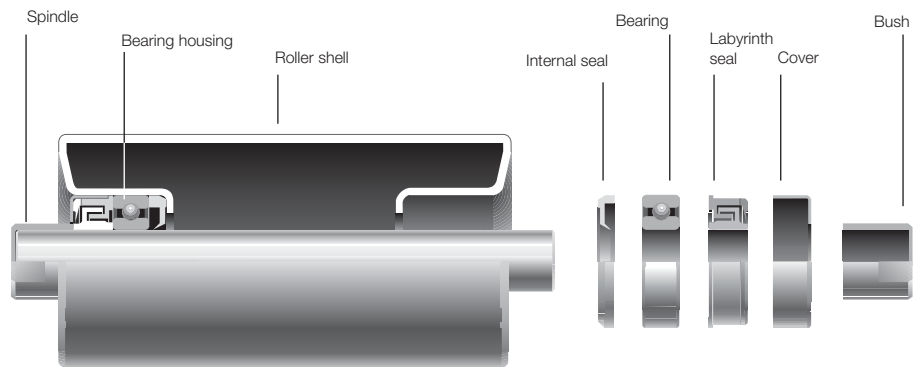
Balancing


The optimum roller balance is obtained thanks to the auto centring of the bearing housings to the tube (as in series PSV) during the automatic welding process.

This balance allows the MPS rollers to be used at high speeds eliminating dangerous vibrations and the subsequent "hammering" of the bearings.

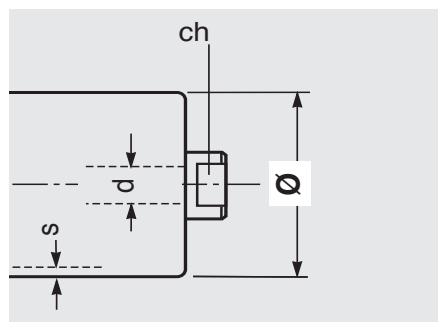
Final Testing

At the end of the automatic assembly line 100% of the rollers are subjected to high speed rotation, that promotes the even distribution of grease in the seals, and verifies the rotation resistance. Any roller failing pre-set criteria is automatically eliminated from the production line.



 Rollers certified according to ATEX 94/9/EC norms, Explosion Group I category M2 for Mines, Explosion Group II category 2G for gas and 2D for dust, Explosion Group II category 3G for gas and 3D for dust (Zones 1, 2 for gas, Zones 21, 22 for dust).

The table indicates the roller diameters in production. Upon request non standard dimensions may be supplied and with flats $ch = 14$ mm.



Programme of production series MPS

roller type	Ø mm	basic design	s	spindle		bearing	note
				d	ch		
MPS 1	50	N	3	15	17	6202	with tube and spindle in steel S235JR (EN 10027-1) ex Fe360 (EN 10025) St37 (DIN 17100)
	60	N	3				
	76	N	3				
	89	N	3				
	102	N	3				