



AGATHON

BALL BEARINGS METRIC GUIDE PINS AND BUSHINGS

THE IDEAL GUIDE ELEMENTS FOR AXIAL AND RADIAL MOVEMENTS

In 1946 AGATHON became the first company in Europe to introduce ball bearings for axial and radial movements in the press tool field. Their significant pioneering work in this area continues today.

AGATHON beatings have found a wide range of application in machine tools, and fixture and measuring machine manufacture.

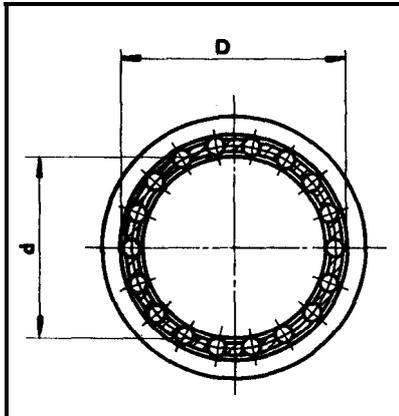
The AGATHON ball bearing is favored by tool makers for its ease of movement in adjustments, particularly when building up a press tool.

CHARACTERISTICS

- Ease of movement
- Practically wear-free
- Accuracy**
- Minimum maintenance

PRE-LOAD

The pre-load (approximately .00004-60015") is the diimnce between distance over two diametrically opposed balls in contact with the pillar d and the bore of the guide bushing D.



As the pm-load increases, the **stiffness** and me load carrying capacity of the **guide** system, as well as the ease of movement diminishes. If there is **insufficient pre-load, functional assurance will be lost**. Too much pre-load, on the other hand, will make movement **difficult** due to **high** surface pressure as the ball bearing-component is overloaded from within.

SIGNIFICANCE OF THE PRE-LOAD

The **pre-load** is intended to guarantee absolutely play-free movement, which is often required; therefore, the size or amount of pm-load is significant. **If** the ball bearing is subjected to radial loading (i.e., if there is a displacement of the axis of the pillar and the bushing) optimum pre-load conditions must prevail because the life, the stiffness and the slding **characterisitcs** are also affected.

SELECTING THE BALL DIAMETER TO SUIT THE PILLAR DIAMETER

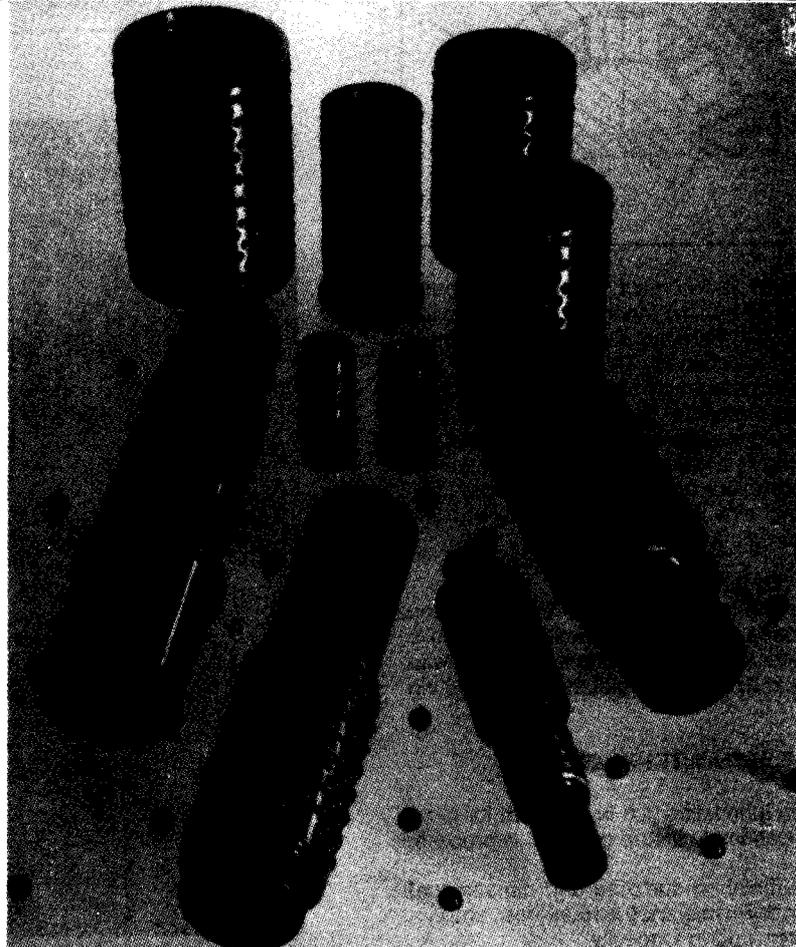
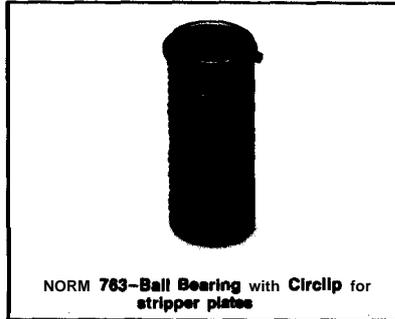
The ratios of ball-to-pillar diameter given for individual AGATHON ball bearings have been established by continuous trial. These ratios take into consideration the load-carrying capacity and running characteristics of the ball sleeves, and the strength of the cage and the overall dimensions. Hem the number of balls and the wall thicknesses, as well as the elastic deformation of the rubbing surfaces are the criteria.

The guide pillar and the steel bushing are assembled by sliding the parts together. Taking into account that the ball bearing will travel only half the distance of the other ele-

ments, undue force should be avoided. The patented retaining ring will prevent the ball cage from sliding to a large extent.

TECHNICAL DETAILS

HARDNESS: 63-65 HRc
STEEL: Special bearing steel
SPEED LIMIT: 4725"/min (120m/min)
LIFETIME: Approx. 25 million strokes with recommended lubrication
RETAINER MATERIAL: Norm 761: Aluminum, Avional
Nom 763: Brass



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