



Marvel

Manufacturing Company

40 North 2nd Street
Stroudsburg, PA 18360 USA
570-421-6221

Part Number 2516 & 3165 Arbor Assembly-Balance Indicating

As shipped, the indicator area of the arbor (top of the arbor shaft) is sealed by an internal, spring loaded seal located on the central suspension rod under the indicator bushing. In addition to providing loss of dash-pot damping oil, this seal also supports the suspension rod in a fixed position within the arbor during storage and/or shipment.

To unseat the spring loaded seal and free the suspension rod for normal operation, push the indicator bushing downward (against light spring pressure) so that the bottom surface clears the black indicator disc (embedded in the top end of the arbor shaft) by approximately 0.003 inch (0.08 mm) to 0.005 inch (0.127 mm). Lock indicator bushing in this position with the set screw using 1/16 inch hex wrench. Check to ensure indicator bushing moves freely in all directions over the black indicator disc without binding. Arbor must remain in the upright position when indicator bushing is in the operational position or damping oil will leak out.

Prior to storage and/or shipment of the arbor assembly, properly seal the damping oil within the arbor, and rigidly support the suspension rod from movement by loosening the indicator bushing set screw and allow the internal seal spring to push the indicator collar upward to seat.

ADDITION OF DAMPING OIL TO BALANCE ARBOR. The damping oil contained within the internal dash-pot of the arbor assembly does not provide a lubrication function, but rather is used solely for damping the natural movement of the arbor during the balancing operation. The oil used for the purpose is quite simply “baby oil” (a clear mineral oil plus fragrance) as procured from a local source such as a pharmacy.

Should excessive oscillation of balance indication develop due to inadvertent loss of arbor damping oil, refill the instrument to the proper level. There are two oil holes in the arbor shaft. One is located approximately 1.688 inches (42.9 mm) below the top end of the arbor shaft, and one is located on the opposite side of the shaft approximately 2.500 inches (63.5 mm) from the bottom end of the shaft. To fill arbor remove both screws using 1/16 inch hex wrench and using pump type oil can or a plastic squeeze container with small spout, introduce oil into lower hole until oil appears at level of upper oil hole. Remove oil container from hole and quickly replace lower screw. Replace upper oil hole screw.

When complete change of damping oil is desirable (usually due to development of “stickiness”), remove both oil screws, lay the arbor assembly on its side and allow damping oil to drain. Flush the internal dash pot of the arbor shaft thoroughly with a cleaning solvent such as mineral spirits to remove any sticky deposits present. Refill the arbor with fresh damping oil as previously directed.

CALIBRATION POLICY. The balancing arbor is a precision instrument, and if treated accordingly, will provide good service life for a great many years. Particularly avoid excessive sideways or downward loading of the projecting suspension rod end (above the indicating area at the top end of the main shaft) since damage to the sensitive internal suspension element may occur. The outside diameter of the arbor is a precision finished piloting surface, and should be treated as such. Leaving the arbor assembly standing on the end where it may be knocked over is a particularly bad practice.

Periodic maintenance, cleaning and calibration is highly recommended to ensure accuracy and repeatability of this precision instrument. Individual organizations normally take it upon themselves, *based upon their own knowledge of usage and care received*, to establish internal policies regarding the periodic return to the factory for calibration check, adjustment or repair. Suggested interval is from one to three years.

Arbors being returned for this service should be packed very securely, with ample cushioning (especially at the top and bottom ends) in a sufficiently sturdy container and forwarded to:

The Marvel Manufacturing Company
Attn: Repair/Calibration Department
40 North 2nd Street
Stroudsburg, PA 18360 / USA

Upon receipt the arbor is inspected and exact charges will be determined and quoted for authorization. Approximately five working days at the factory are required for arbor calibration service. Upon completion the arbor assembly is returned with a Certificate of Calibration.