Trevoole, Praze, Camborne, Cornwall, England, TR14 0PJ
Tel: +44 (0) 1209 831 500 | Fax: +44 (0) 1209 831 939
sales@grosvenorpumps.com | www.grosvenorpumps.com

MV Control Option – Principles of Operation

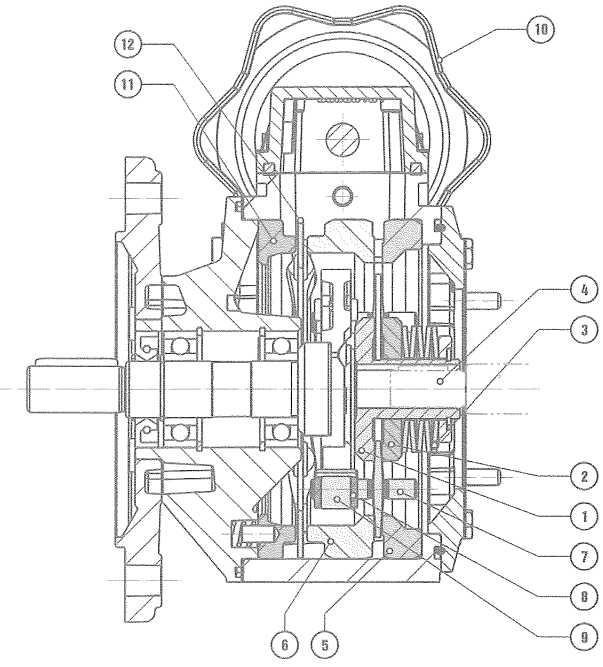
Motovario Disc Variators operate on a sun race & planet gear assembly. Two sun races (1&2) are pushed together via a set of Belleville springs (3) and are keyed to the input shaft (4).

Two annulus races (5&6) are fixed to the Variator casing and therefore remain stationary. Planet discs (7) rotate in friction bearings (8) and are capable of sliding radially within a planet carrier (9), which is also keyed to the input shaft.

Planet discs (7) are held between the driving sun races (1&2) on the inside and the stationary annulus races (5&6) on the the outside

This imparts a double rotation to the planet discs which rotate individually about their own axis and collectively around the annulus races.

Since the friction bearings which hold the the planet discs are fixed to the planet carrier, the collective motion of the planet discs rotates the planet carrier and the output shaft to which it is keyed.



Continuous speed variation is obtained by rotating the handwheel (10). This moves annulus race (6) against pressure from a ball ring (12) and CAME race ring (11). As annulus ring (6) moves, the gap between it and annulus ring (5) increases or decreases, causing the planet disc to slide outwards or inwards. This radial sliding movement of the planet discs varies the ratio of the drive transmitted to the planet carrier and output shaft.

MV type Variators have an overall reduction ratio of 1:0.67, with a control ratio of 1:5.9. Speed adjustment can only be made whilst running.