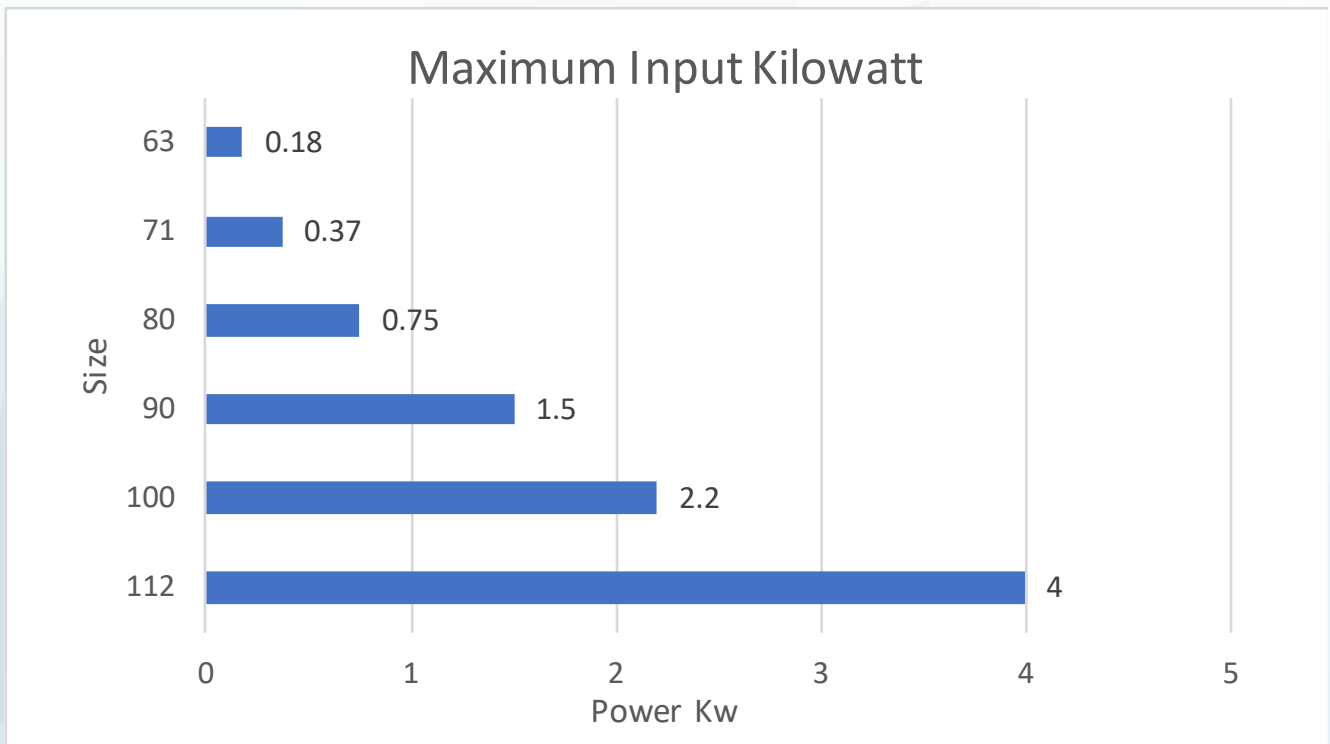


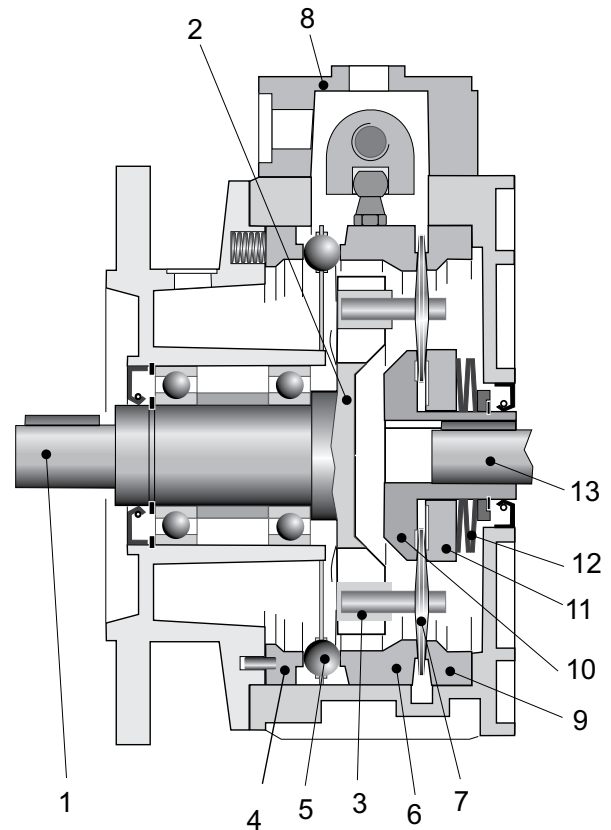
WMF MECHANICAL VARIATOR

In a planetary Mechanical Variator, the gear ratio is shifted by tilting the axes of spheres in a continuous fashion, to provide different contact radii, which in turn drive input and output discs. This system has multiple "planets" to transfer torque and allows for an approximate 5:1 speed variation via a simple adjustment handle. The main construction and functional features of this product that increase its versatility are; the integral motor flange to the housing and the completely modular structure for the output flange and foot mounting. These features allow for a reduction in the overall dimensions of the final drive.



Mechanical Variator - WMF

#	Description
1	Output Shaft
2	Planet Support
3	Slide Block
4	Regulating Orbit
5	Ball Ring
6	Moving Outer Planet Orbit
7	Planet Wheel
8	Operating Box
9	Fixed Outer Planet Wheel
10	Fixed Inferior Planetary Orbit
11	Moving Inferior Planetary Orbit
12	Butterfly Spring



Planetary Mechanical Variators are oil lubricated planetary gearboxes, with possibility to change continuously the output speed with a manoeuvring hand-wheel.


Operating Characteristics

- Continuous regulation with transmission ratio between 1:1.4 and 1:7.5 with respect to the input speed.

- Silent functioning and free from vibrations.
- Available for both directions of rotation, with simultaneous input and output movement.
- Speed uniformity: $\pm 0.5\%$ at maximum speed.
- Speed uniformity: $\pm 1\%$ at minimum speed.
- High efficiency: 84% at maximum speed.

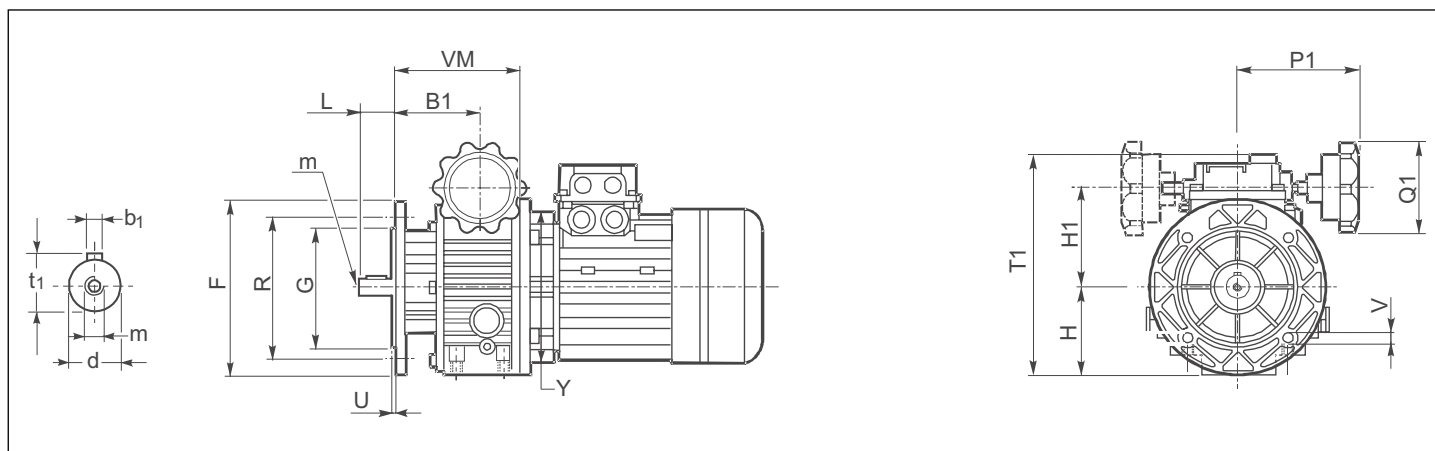
Speed can be change only when the unit is running

PERFORMANCE

P_1 [kW]	n_1 min^{-1}	n_2		T_2 [Nm]		WM		Escluso motore Without motor Ohne Motor
		max	min	max	min			
0.18	1400	880	170	3	1.5	WM 63	3.2	
0.37	1400	1000	200	6	3	WM 71	3.5	
0.75	1400	1000	200	12	6	WM 80	8.0	
1.5	1400	1000	200	24	12	WM 90	28.0	Con Motore With Engine Mit Motor
3	1400	1000	200	48	24	WM 100	78.0	
4	1400	1000	200	64	32	WM 112	85.0	

Mechanical Variator - WMF

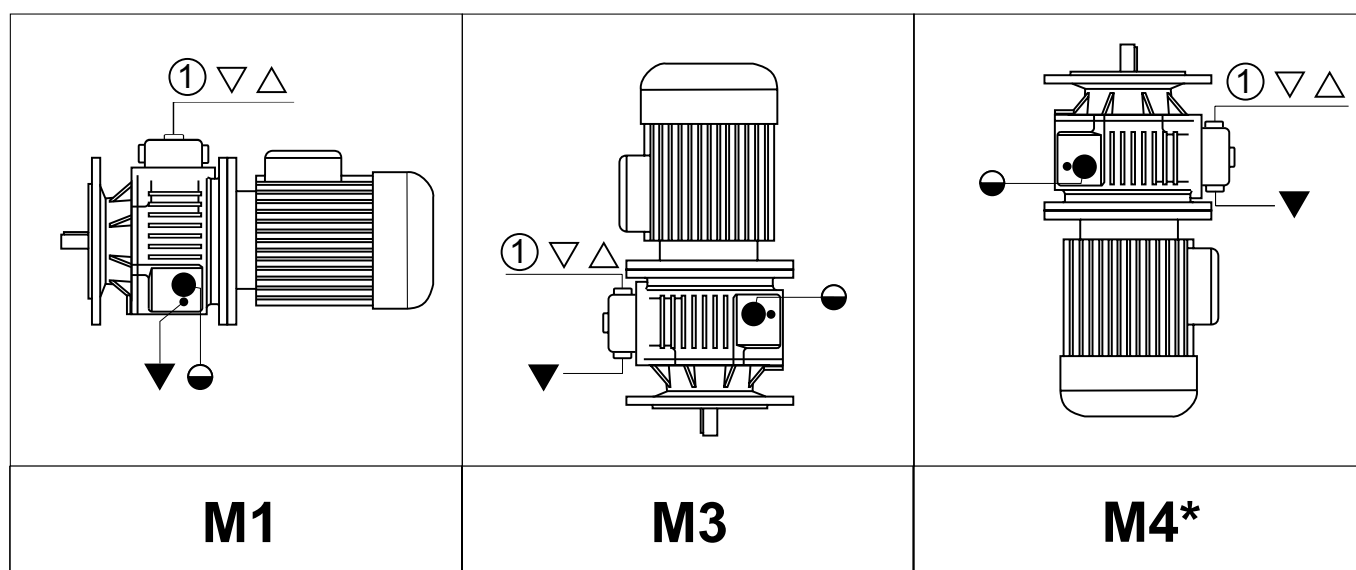
VMF1



WM	F	G	R	T1	U	V	B1	H	H1	L	P1	Q1	VM	Y	d	b1	m	t1
63	140	95	115	181	3.5	9	64.5	70	78	23	110	85	113	140	11	4	M4	13
71	160	110	130	203	3.5	10	74	80	90	30	100	85	113	160	14	5	M6	16
80	200	130	165	240	3.5	13	85.5	100	107	40	120	110	139	200	19	6	M6	22
90	200	130	165	270	3.5	13	115	126	122	50	150	110	188	200	24	8	M8	27
100 112	250	180	215	338	4	15	131	150	150	60	160	110	208	250	28	8	M8	31

MOUNTING POSITIONS

F1



LUBRICATION

Mechanical variators are supplied ready-filled with mineral based oil. The operation principle of these variators consists of torque transmission by friction wheel; that means choosing a particular kind of oil is able to increase the dynamic efficiency and guarantee longer component life. All moving parts of variator are made of metal, and require a constant lubrication. This is achieved by oil splash or jet. During installing on the driven machine, make the following checks:

1. Once the mounting position has been established, arrange the filler plug, drain plug, breather and level plugs.
 2. Make sure the oil is visible up to half way up the level indicator plug when the variator is at a stationary. If this is not the case, top up with oil until this level is reached. The oil must be changed after the first 100 hours of duty and after that every 1000 hours. Always check the variator is filled to half way up the level plug after changing the oil.
- A) It is necessary to specify the mounting position when ordering. If the mounting position is not specified in the ordering phase, the variator supplied will have plugs pre-arranged for position M1.
- B) The variators that need a specific assembling position have the indication of it on the label of the variator.



- C) N1 plug is always assembled in full conformity with the mounting position of the mechanical speed variator and to ensure proper " air breathing " during operation. The plug has been previously tightened enough to prevent lubricant leakages which might take place during the transportation.

Before operating the unit just " slightly " loosen the plug enough to allow proper breathing.

Should the unit have been ordered in position M1 and you wish to install it in positions M3 and M4 it is necessary :1.to assemble the plug No. 1 in the appropriate position as indicated 2. to add lubricant as specified in relevant chart.

Quantità di olio / Oil Quantity / Ölmenge				(kg)	
WM	Posizioni di montaggio / Mounting Positions / Montagepositionen			Stato di fornitura State Of Supply Lieferzustand	Posizione di montaggio Mounting position Montageposition
	M1	M3	M4		
63	0.110	0.200	0.200	Variatori forniti completi di lubrificante Variators supplied with oil Verstellgetriebe werden mit Öl geliefert SHELL DONAX TA	Necessaria Necessary Erforderlich
71	0.180	0.400	0.300		
80	0.300	0.950	0.4500		
90	0.650	1.200	0.900		
100	1.200	2.200	2.200		
112					