

# GENERAL CATALOGUE

MECHANICAL SPEED VARIATORS VARIO SERIES



motive





## INDEX

---

Components list pag. 3



Technical characteristics pag. 4-5



Operating principles pag. 6

Performance pag. 7



Dimensions pag. 8-9



Lubrification pag. 10

Mounting positions pag. 10

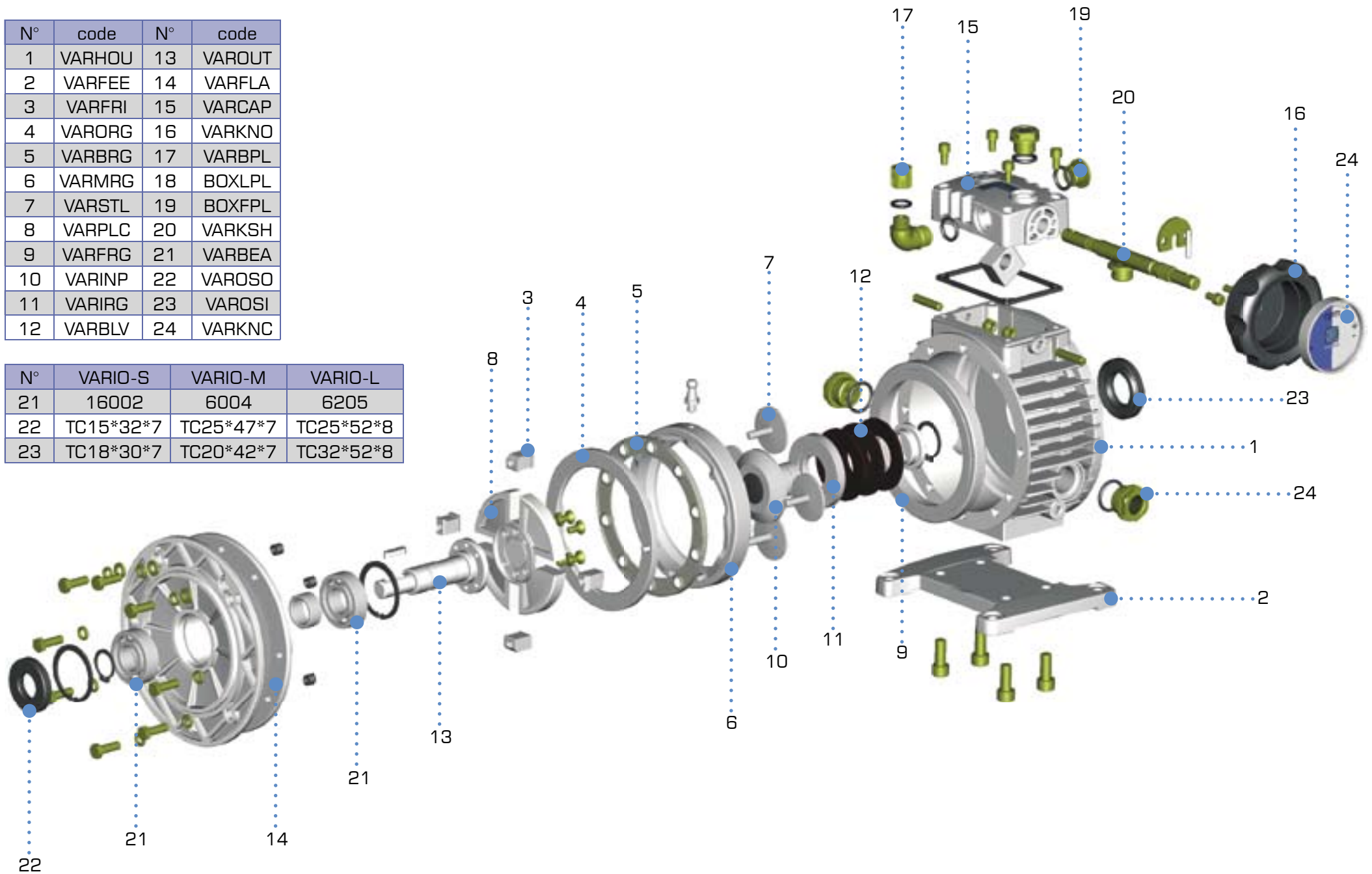
Terms of sale and guarantee pag. 11



# COMPONENTS LIST

N°	code	N°	code
1	VARHOU	13	VAROUT
2	VARFEE	14	VARFLA
3	VARFRI	15	VARCAP
4	VARORG	16	VARKNO
5	VARBRG	17	VARBPL
6	VARMRG	18	BOXLPL
7	VARSTL	19	BOXFPL
8	VARPLC	20	VARKSH
9	VARFRG	21	VARBEA
10	VARINP	22	VAROSO
11	VARIIRG	23	VAROSI
12	VARBLV	24	VARKNC

N°	VARIO-S	VARIO-M	VARIO-L
21	16002	6004	6205
22	TC15*32*7	TC25*47*7	TC25*52*8
23	TC18*30*7	TC20*42*7	TC32*52*8

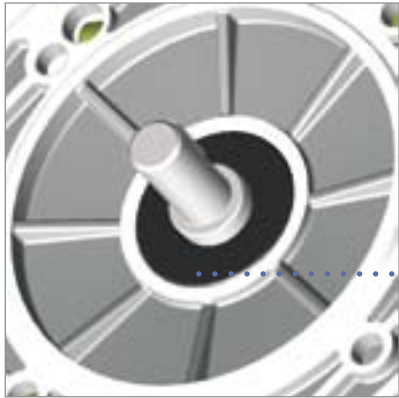




Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.



The cone discs are made in case hardened bearing steel, to increase the durability of each VARIO

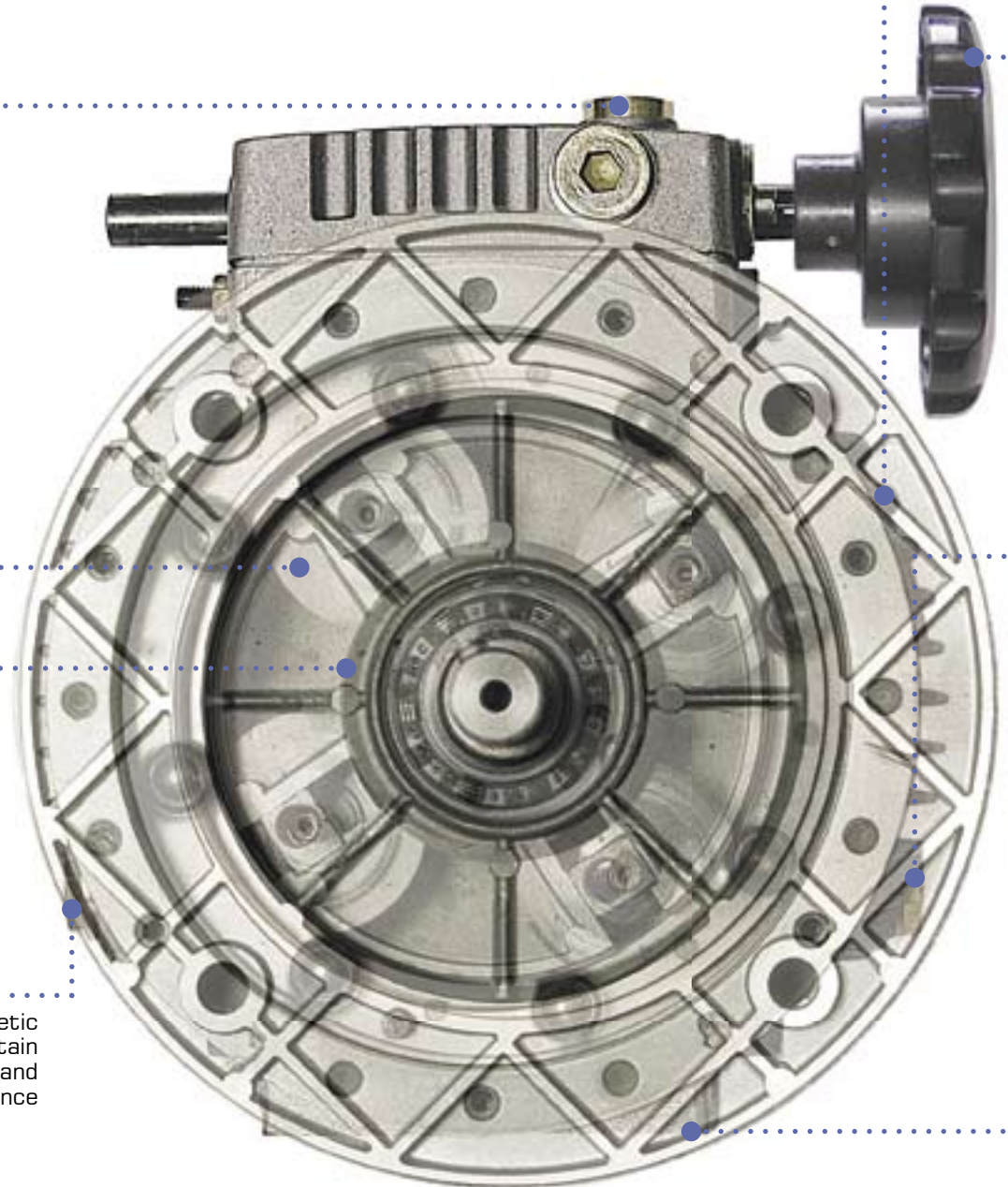


TC double lip oil seals



A filler plug is magnetic too, in order to maintain clean the lubricant and extend the maintenance intervals.

The new planetary cone disc variators of the patented series VARIO are built in an aluminium die-casted housing in 3 sizes: small, medium and large, respectively for motors of IEC size 63, 71 and 80.



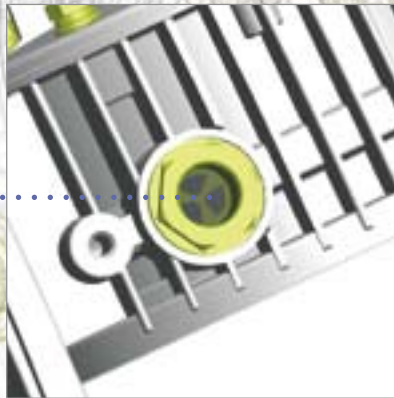


VARIO can operate in both directions, input and output shafts rotate in the same direction. Hand wheel can be fitted to both sides of control box for convenient installation



The closed input flange is an integral part of VARIO casing, preventing oil leaks possibilities

The oil bath operation provides high efficiency, low noise, vibration free running



The standard unit is including the motor B5 flange connection, but it allows to fix the detachable foot too, reducing stock levels and allowing quick delivery.



The housing and flanges are blasted and then painted, to cancel the negative effects of the aluminium porosity and protect VARIO from oxidation

## OPERATING PRINCIPLES

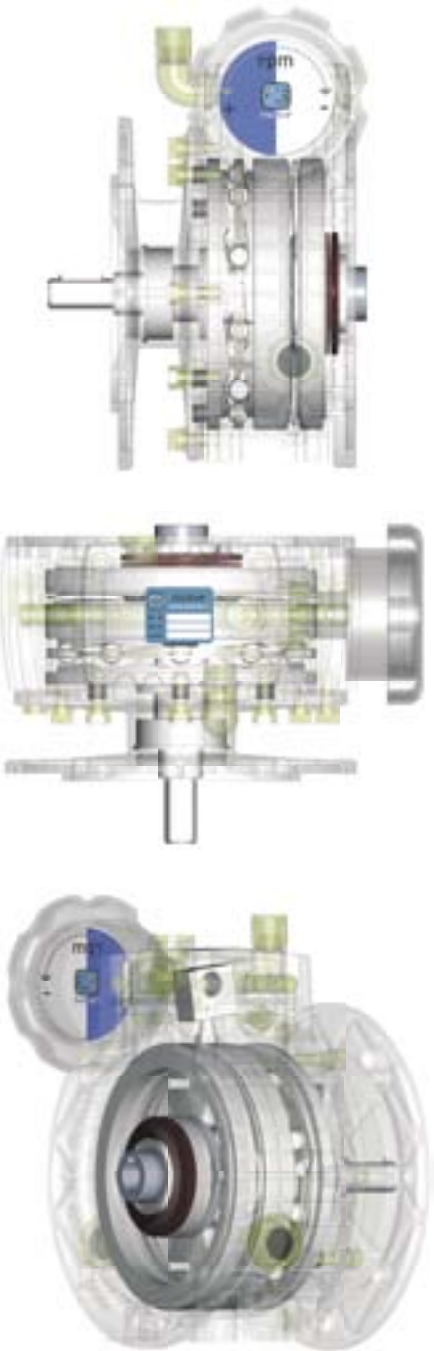
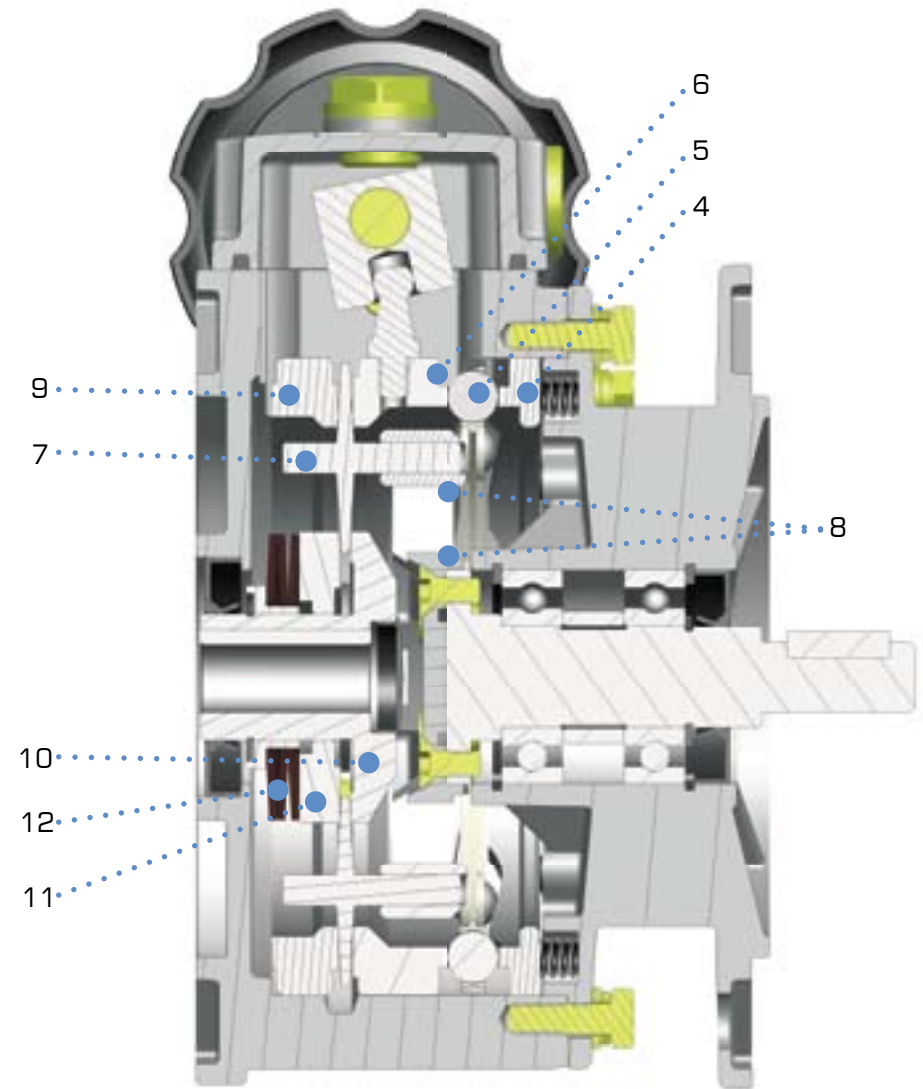
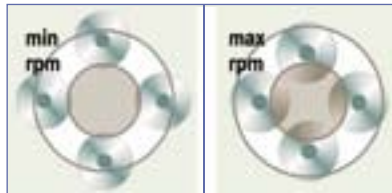
VARIO is based on an epicyclic transmission at variable ratios.

The motor rotates the inner solar rings 10 (splined on the motor shaft) and 11, that, pressed by the Belleville washers 12, transmit the rotation to the satellite cone disks 7.

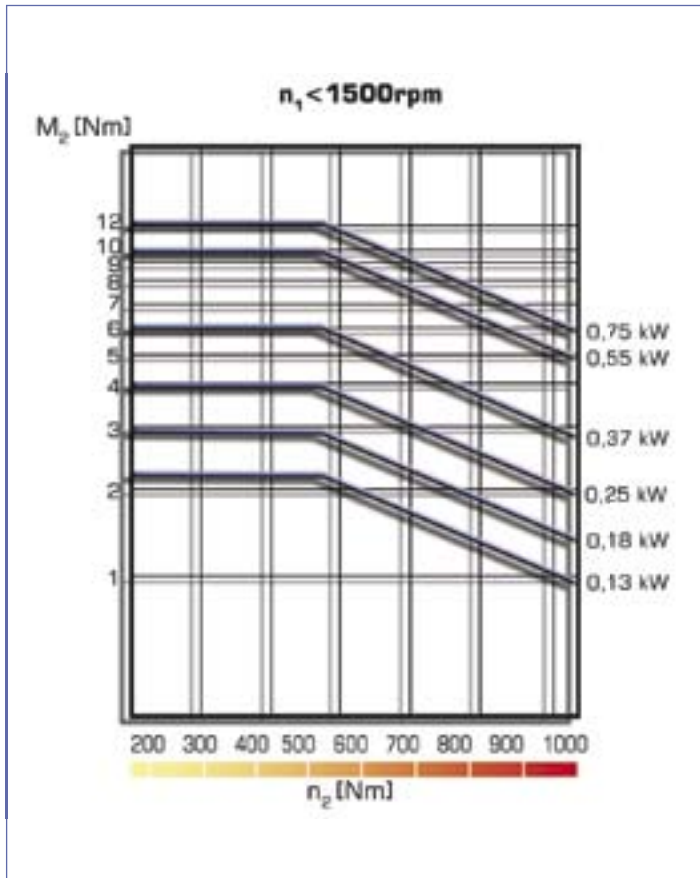
These satellites are in contact with the outer fixed external ring 9 and the external mobile ring 6, and impart rotation to the planet carrier 8 (integral with the output shaft) to which they are connected through the friction bearing-planet disk 3.

Rotating the control knob, the mobile ring 6 rotates and operates an axial shifting; this movement is caused by the action of the ball rings 5 on the opposite orbits (4 and 6); this shifting movement operates on the conic sides of the planets which move radially inside the 10 and 11 solar rings, overcoming the springs 12 reaction. In this way, the variation of the contact position

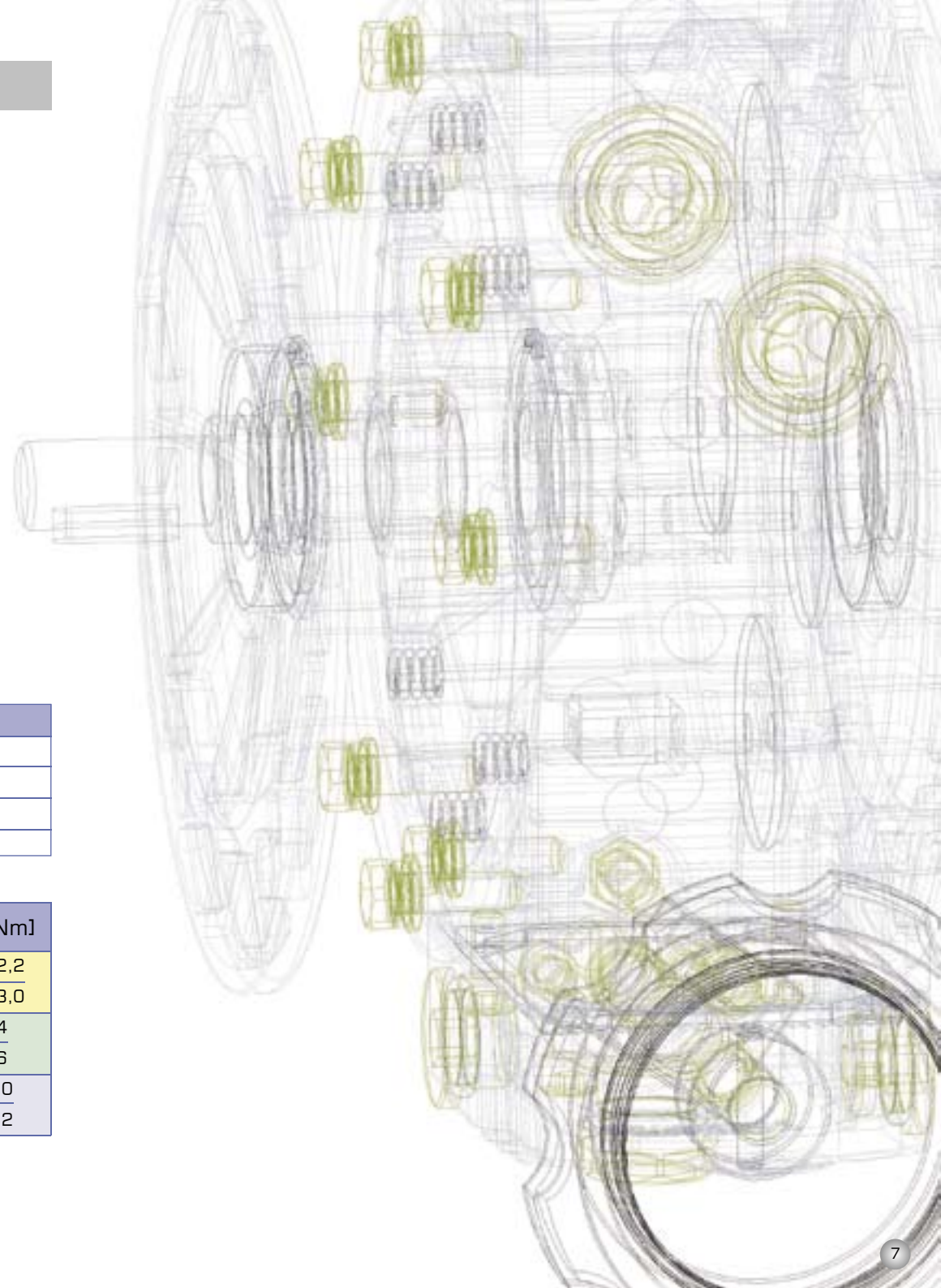
on the planets sides determines the planet supports speed variation, and as a consequence that of the output shaft speed too.



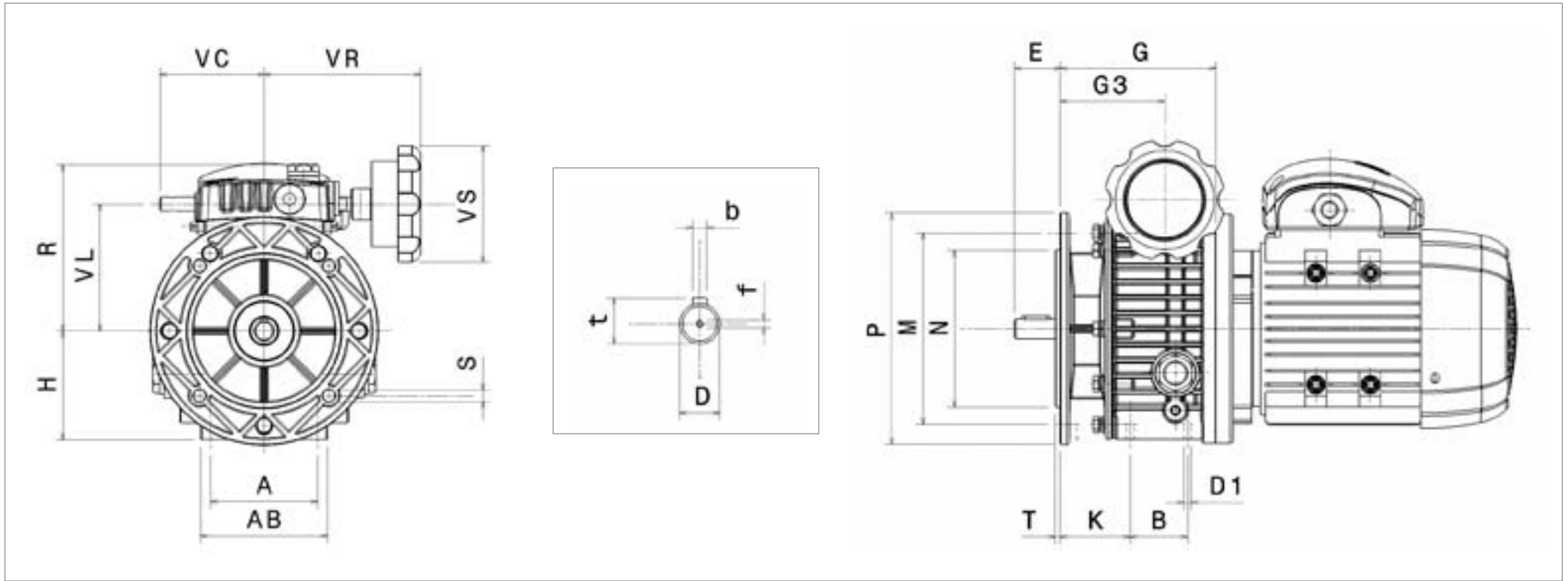
# PERFORMANCE



VARIO	MOTOR	$P_1$ [kW]	$M_1$ [Nm]	$n_1$ [rpm]	$i$	$n_2$ [rpm]	$M_2$ [Nm]
VARIO-S	63A-4	0,13	0,84	1400	1,55-7,36	900-190	1,1-2,2
	63B-4	0,18	1,26	1400	1,55-7,36	900-190	1,5-3,0
VARIO-M	71A-4	0,25	1,73	1400	1,4-7,0	1000-200	2-4
	71B-4	0,37	2,54	1400	1,4-7,0	1000-200	3-6
VARIO-L	80A-4	0,55	3,78	1400	1,4-7,0	1000-200	5-10
	80B-4	0,75	5,15	1400	1,4-7,0	1000-200	6-12



## DIMENSIONS



### MOTOR TYPE

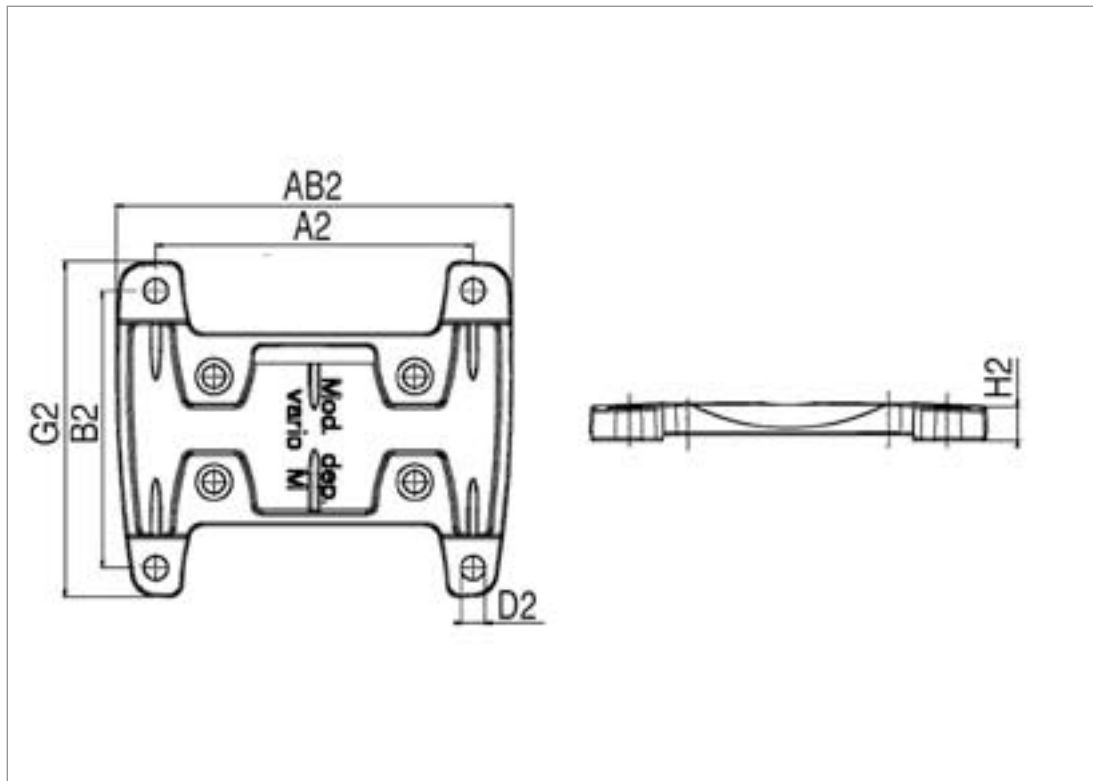
	tipo	kW, 4 poles	B	D1	G	G3	H	T	K	VC	R	VL	VR	VR1	VS	A	AB
VARIO S	63	0,13 - 0,18	50	M6	112,5	66	67	3,5	47	71	111	78	110	110	85	60	72
VARIO M	71	0,25 - 0,37	40	M8	110	74	76,5	3,5	52	71	123	90	110	110	85	76	90
VARIO L	80	0,55 - 0,75	58	M8	139	85,5	92,5	3,5	61,5	79	140	107	120	120	110	83	98

### OUTPUT

	PAM	M	N	P	S	E	D (j6)	b	t	f	Kg
VARIO S	63B5	115	95	140	9	23	11	4	12,5	-	4,2
VARIO M	71B5	130	110	160	9	30	14	5	16	M6	4,8
VARIO L	80B5	165	130	200	11	40	19	6	21,5	M6	8,5



## DIMENSIONS



FOOT						
tipo	AB2	A2	G2	B2	D2	H2
VARIO S	150	110	128	105	9	15
VARIO M	150	120	128	105	9	15
VARIO L	296	160	150	125	10	15

## LUBRIFICATION

		VARIO S	VARIO M	VARIO L
		mineral oil		
Tipo		ISO VG460		
T°C		10°C ÷ +45°C		
oil litres	B3-B5	0,06	0,10	0,16
	B8	0,20	0,23	0,45
	V1	0,13	0,22	0,46
	V3	0,15	0,15	0,32
	B6-B7	0,10	0,13	0,19

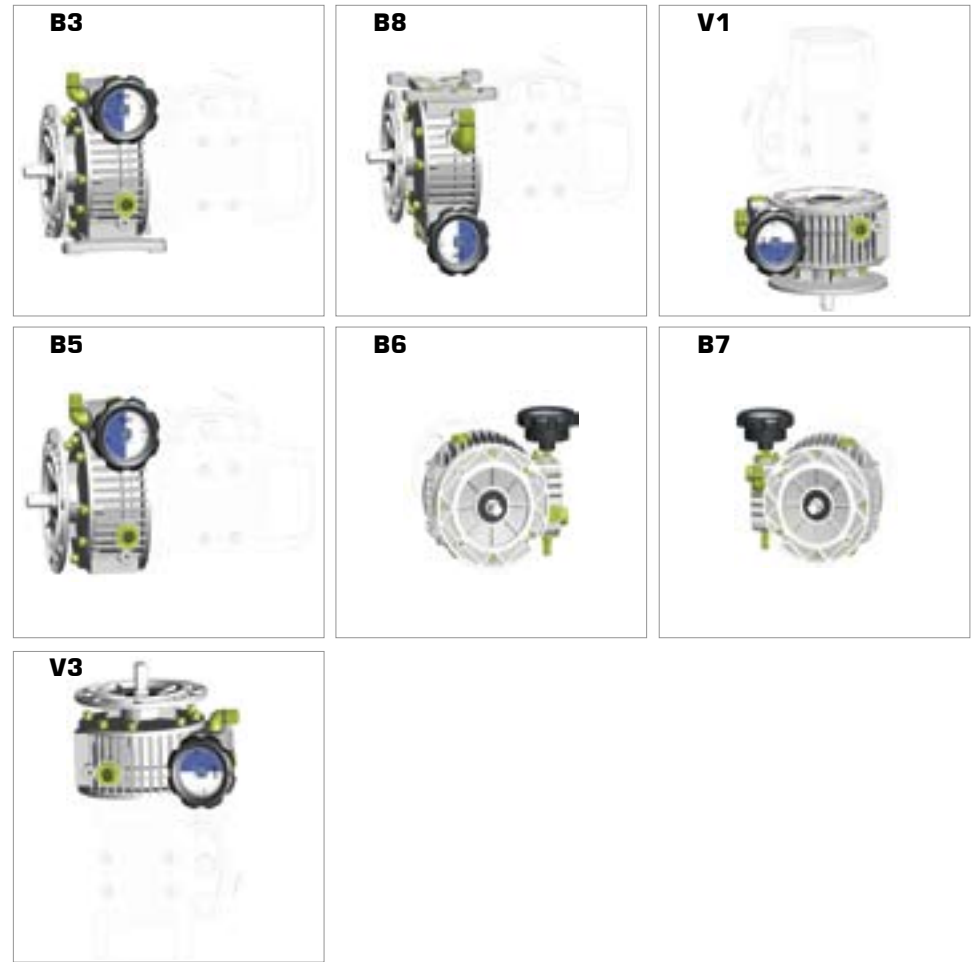
VARIO are supplied with mineral lubricant ISO VG 460, with the quantity of oil for positions B3-B5

As a consequence of its operating principles, based on the satellites friction, the appropriate lubrication is essential for the correct duration and efficiency of VARIO.

It is strictly recommended, in addition, to avoid mixing two different oil types. If you change type of oil, make first sure you clean VARIO with appropriate chemical thinner.

All VARIO are supplied with filler, level and breather plugs. Before start-up, you must place the breather plug on the top like in the following pictures.

## MOUNTING POSITIONS



Breather plug



Level plug



Filler plug



## TERMS OF SALE AND GUARANTEE

### ARTICLE 1 GUARANTEE

1.1 Barring written agreements, entered into between the parties hereto each time, Motive hereby guarantees compliance with specific agreements.

The guarantee for defects shall be restricted to product defects following design, materials or manufacturing defects leading back to Motive.

The guarantee shall not include:

- \* Faults or damages ensuing from transport. Faults or damages ensuing from installation defects; incompetent use of the product, or any other unsuitable use.
- \* Tampering or damages ensuing from use by non-authorized staff and/or use of non-original parts and/or spare parts;
- \* Defects and/or damages ensuing from chemical agents and/or atmospheric phenomena (e.g. burnt out material, etc.); routine maintenance and required action or checks;
- \* Products lacking a plate or having a tempered plate.

1.2 Returns to credit or replace will be accepted only in exceptional cases; however returns of goods already used to credit or replace won't be accepted in any case.

The guarantee shall be effective for all Motive products, with a term of validity of 12 months, starting from the date of shipment.

The guarantee shall be subject to specific written request for Motive to take action, according to statements, as described at

the paragraphs herein below. By virtue of aforesaid approval, and as regards the claim, Motive shall be bound at its discretion, and within a reasonable time-limit, to alternatively take the following actions:

- a) To supply the Buyer with products of the same type and quality as those having proven defective and not complying with agreements, free ex-works; in aforesaid case, Motive shall have the right to request, at Buyer's charge, early return of defective goods, which shall become Motive's property;
- b) To repair, at its charge, the defective product or to modify the product which does not comply with agreements, by performing aforesaid action at its facilities; in aforesaid cases, all costs regarding product transport shall be sustained by the Buyer.
- c) To send spare parts free of charge: all costs regarding product transport shall be sustained by the Buyer.

1.3. The guarantee herein shall assimilate and replace legal guarantees for defects and discrepancies, and shall exclude any other eventual Motive liability, however caused by supplied products; in particular, the Buyer shall have no right to submit any further claims.

Motive shall not be liable for the enforcement of any further claims, as of the date the guarantee's

term of validity expires.

### ARTICLE 2 CLAIMS

2.1. Claims, regarding quantity, weight, gross weight and colour, or claims regarding faults and defects in quality or compliance, and which the Buyer may discover on goods delivery, shall be submitted by a max. 7 days of aforesaid discovery, under penalty of nullity.

### ARTICLE 3 DELIVERY

3.1. Any liability for damages ensuing from total or partial delayed or failed delivery, shall be excluded.

3.2. Unless differently communicated by written to the Client, the transport terms have to be intended ex-works.

### ARTICLE 4 PAYMENT

4.1. Any delayed or irregular payments shall entitle Motive to cancel ongoing agreement, including agreements which do not regard the payments at issue, as well as entitling Motive to claim damages, if any. Motive shall, however, have the right, as of payment's due date and without placing in arrears, to claim interest for arrears, to the extent of the discount rate in force in Italy, increased by 5 points. Motive shall also have the right to withhold material under repair for replacement. In the case of failed

payment, Motive shall have the right to cancel all guarantees of materials, as regards the insolvent Client.

4.2. The Buyer shall be bound to complete payment, including cases whereby claims or disputes are underway.

ALL DATA HAVE BEEN WRITTEN AND  
CHECKED WITH THE  
GREATEST CARE.  
WE DO NOT TAKE ANY RESPONSIBILITY FOR POSSIBLE ERRORS OR  
OMISSIONS.  
MOTIVE CAN CHANGE THE  
CHARACTERISTIC OF THE SOLD  
ITEMS ON HIS FIRM OPINION AND  
IN EVERY MOMENT.



**Motive s.r.l.**

Via Artigianale, 110/112

25010 Montirone (BS) - Italy

Tel.: +39.030.2677087 - Fax: +39.030.2677125

web site: [www.motive.it](http://www.motive.it)

e-mail: [motive@e-motive.it](mailto:motive@e-motive.it)



AREA DISTRIBUTOR