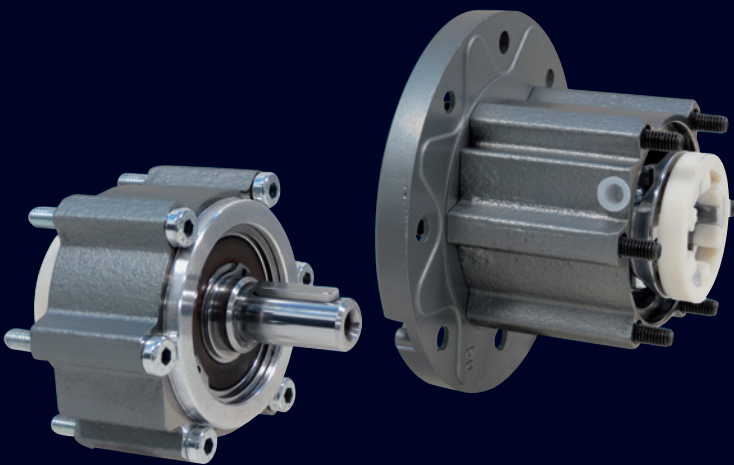


VARVEL®
MOTION CONTROL SINCE 1955

technology made in Italy





* VS made in China

Technology Made in Italy

Since 1955 Varvel has been making speed reducers and variators for light industry applications. Reliable partner in power transmission equipment offers also customized solutions always according to a socially responsible company values. Modularity and flexibility lead Varvel products by a unique kit form, common to all gearbox series. This feature allows distributors an easier job to set up required products in few minutes.



ISM - BSM

INPUT SOLID SHAFT AND BACK-STOP MODULES



Modules ISM & BSM

Description

The input modules ISM with solid shaft and BSM with back-stop can be easily fitted on the majority of VARVEL gearboxes, input version «S..» and flexible coupling «G», in few minutes and with a simple screwdriver help only.

ISM - Input shaft module

The input shaft is supported by two sealed grease-packed ball bearings type 2RS and therefore, does not need any lubrication for life.

A half-coupling is provided for direct coupling to corresponding VARVEL gearboxes.

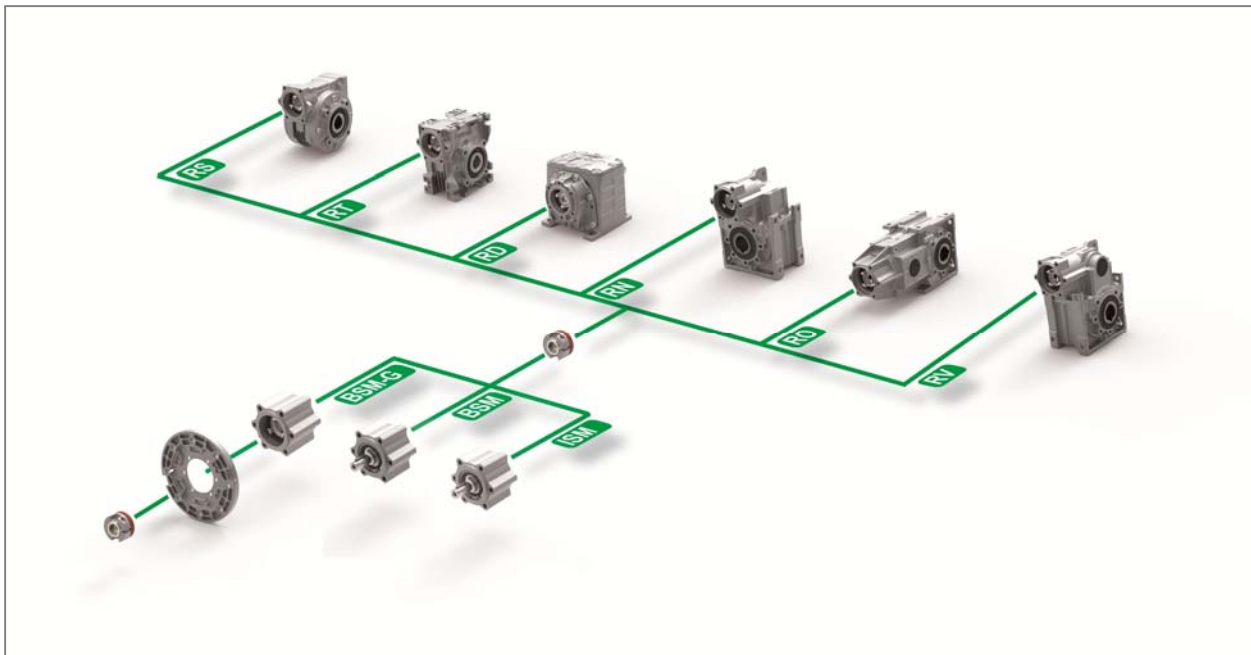
BSM - Back-stop module

Manufactured in two versions, solid shaft input with ball bearing and back-stop bearing and IEC or NEMA flange, allows the mounting to any Varvel gearboxes with flexible coupling «G» input.

Information on availability of motor flanges, powers, torques and reduction ratios of the gearbox to which the modules ISM and BSM are fitted to, are shown in relevant catalogues RS-RT, RD and RN-RO-RV.

Input loads of ISM modules are the external input loads that are shown on page 17 of the catalogue RS-RT.

Modular System



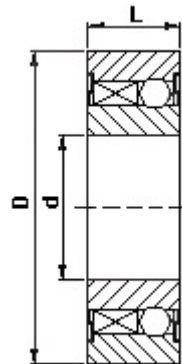
Modules ISM & BSM

Combinations of Modules and Freewheel specifications

ISM BSM BSM-G	Coupling	RS	RT	RD (2)	RD (3)	RN (2)	RN (3)	RO	RV
40	G3	40	40	02 (*)	03	---	---	---	---
50	G5	50	50	12	13	12	13	13	13
60	G5	60	60	---	---	---	---	---	---
70	G6	70	70	22 32	23 (\$) 33	22 32	23 33	23	23
85	G6	85	85	42	43	42	43	33	33
110	G6	110	110	---	---	---	---	43	43

(*) - RD02 → G5

(§) - RD23 → G5

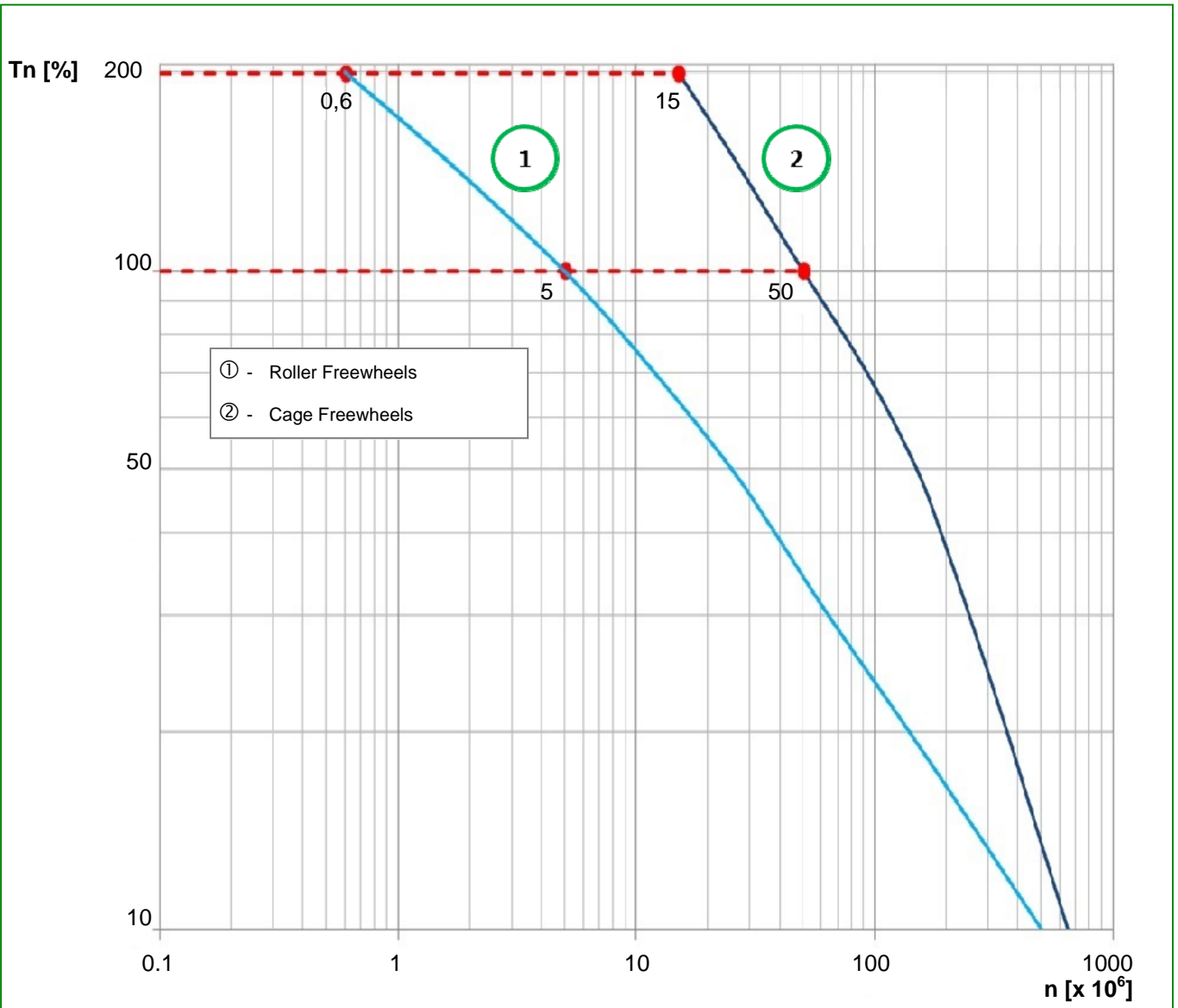


BSM BSM-G	Freewheel	D _{-0.01} mm	D _{h5} mm	L mm	rpm _{max}	Load capacity		Torque [Nm]	** [Nm]	Weight [kg]
						Dynamic [N]	Static [N]			
BSM40	UK 17 2RS	17	40	17	7350	7900	3800	30	0.056	0.09
BSM-G40 BSM50 BSM60	UK 20 2RS	20	47	19	6000	9400	4450	50	0.060	0.15
BSM-G50 BSM70	UK 25 2RS	25	52	20	5200	10700	5450	85	0.060	0.18
BSM-G60 BSM-G70 BSM85 BSM110	UK 30 2RS	30	62	21	4200	11700	6450	138	0.075	0.27
BSM-G85 BSM-G110	UK 35 ZZ	35	72	17	3600	12600	7250	175	0.058	0.30

- ** = Resistant torque (idle)
- Max. torque = 2 x nominal torque

Modules ISM & BSM

Freewheel Lifetime



BSM and BSM-G modules are fitted with cage freewheels of the type ② only.

The curve shows the lifetime of the freewheels according to the application load and possible starting-up number. Starting-up is meant as the locking action of force feedback of the wheel as regards to idle motion direction.

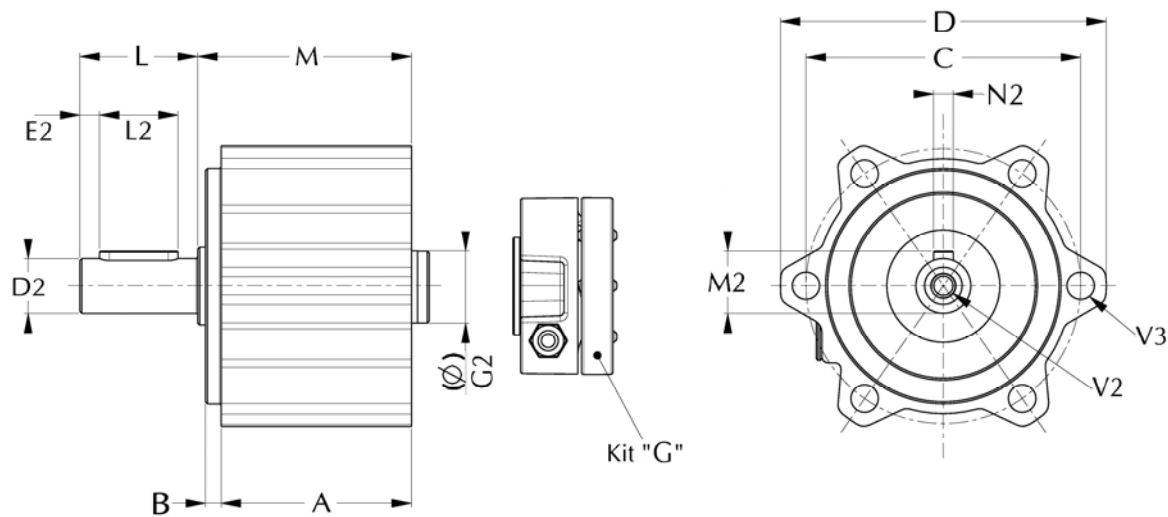
Bigger the load T_n [%] lower the possible starting-up n [$\times 10^6$] and working hours.

Modules ISM & BSM

Dimensions

ISM & BSM

Input shaft and Back-stop Module



ISM/BSM	40	50	60	70	85	110
A	45.5	48.5	48.5	55.5	57	58
B	3.5	4	5	5	5	6
C	61	70	80	85	100	106
D	73	83	94.5	101.5	118.5	125
D2_{h6}	11	14	19	19	24	28
E2	2.5	5	5	5	5	5
G2 (Ø)	14	19	19	24	28	28
L	23	30	40	40	50	60
L2	18	20	30	30	40	50
M	53	54.5	56.75	64.75	62	71.5
M2	12.5	16	21.5	21.5	27	31
N2	4	5	6	6	8	8
V2	M4x10	M6x15	M8x20	M8x20	M8x20	M8x20
V3	6	7	7	9	9	9
Kit "G"	G3 (Ø14) (*)	G5 (Ø19)	G5 (Ø19)	G6 (Ø24) (§)	G6 (Ø28)	G6 (Ø28)
ISM [kg]	0.45	0.65	0.85	1.1	1.6	2.2
BSM [kg]	0.55	0.80	1.0	1.4	1.8	2.4

(*) - RD02 → G5

(§) - RD23 → G5

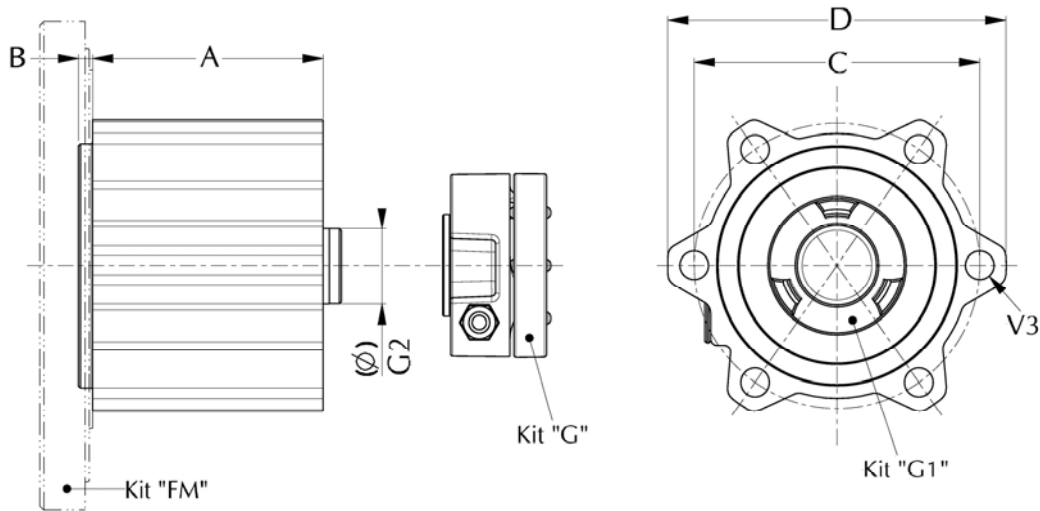
N.B. - ISM / BSM: Delivery without coupling Kit "G"

Modules ISM & BSM

Dimensions

BSM-G

Back-stop Module for FM motor flange



BSM-G	40	50	60	70	85	110
A	50.5	56.5	57	66.5	67	67
B	3.5	3.5	4.75	4.75	5	6
C	61	70	80	85	100	106
D	73	83	94.5	101.5	118.5	125
G1	G3 (*)	G5	G5	G5	G6	G6
G2 (Ø)	14	19	24	24	28	28
V3	6	7	7	9	9	9
Kit "G"	G3 (Ø14) (*)	G5 (Ø19)	G5 (Ø24)	G6 (Ø24) (§)	G6 (Ø28)	G6 (Ø28)
Kit "FM"	K531...	K532...	K539...	K533...	K534...	K535...
BSM-G (kg)	0.40	0.50	0.70	1.0	1.2	1.6

(*) - RD02 → G5

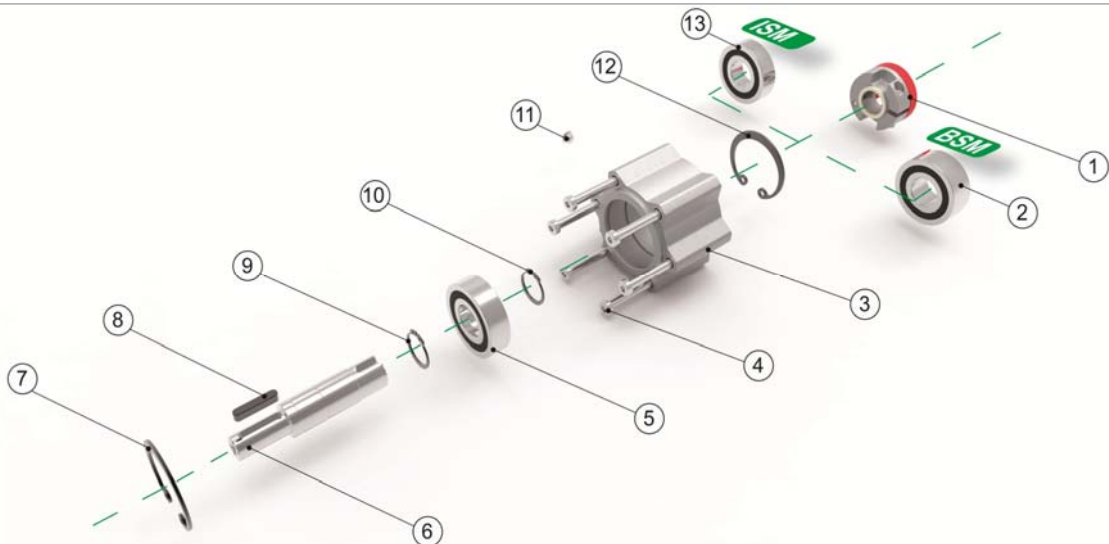
(§) - RD23 → G5

N.B. - BSM-G: Delivery without coupling Kit "G"

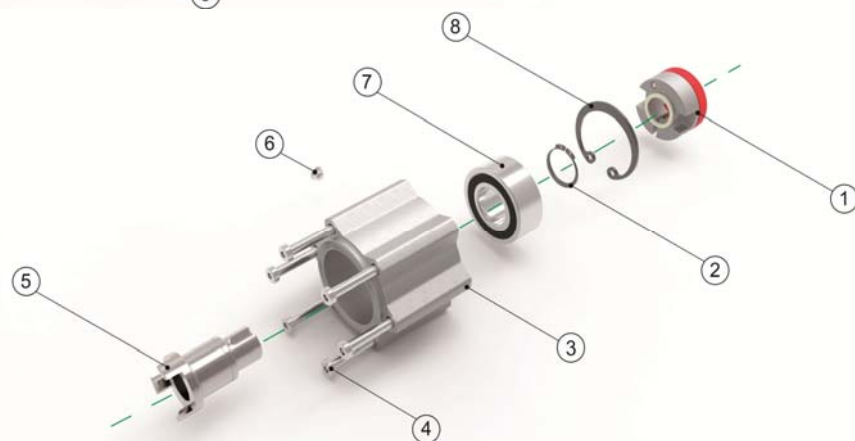
Modules ISM & BSM

Part list

ISM & BSM



BSM-G



ISM / BSM	Description
1	Coupling
2	Back-stop
3	Body
4	Screw
5	Bearing
6	Input shaft
7	Seeger ring
8	Key
9	Seeger ring
10	Seeger ring
11	Plug
12	Seeger ring
13	Bearing

BSM-G	Description
1	Coupling
2	Seeger ring
3	Body
4	Screw
5	Input shaft
6	Plug
7	Back-stop
8	Seeger ring

Modules ISM & BSM

Abstract of OPERATION AND MAINTENANCE INSTRUCTIONS

(complete manual on www.varvel.com)

Variable speed and reduction gearboxes are not part of the field of application of the Machinery Directive, art,1(2), and they must not be put into service until the machinery into which they are to be incorporated, has been declared in conformity with the provision of art,4(2), annex II(B) of Machinery Directives 98/37/CEE/22,6,98 and for Italy only, of DL 459/24,7,96.

Installation

Check if the unit to be installed, is properly selected to perform the required function and that its mounting position complies with the order.

The nameplate reports such information.

Check mounting stability to ensure the unit runs without vibrations or overloads.

Running

The unit may be connected for clockwise or counter-clockwise rotation.

The unit must be stopped as soon as defective running or unexpected noise occur, remove the faulty part or return the unit to the factory for checking.

If the faulty part is not replaced, other parts can also be affected, causing more severe damage and making the identification of initial cause more difficult.

Maintenance

Although the units are no-load run tested in the factory before despatch, it is recommended not to run them at maximum load for the first 20-30 running hours to allow the proper running in.

The gearboxes are delivered already filled with long-life synthetic oil and, in case of replacement or topping, do not mix with mineral lubricants.

Handling

When hoisting, use relevant housing locations or eyebolts if provided, or foot or flange holes.

Never hoist on any moving part.

Painting

Carefully protect oil seals, coupling faces and shafts when units are repainted.

Long-term storage

For storages longer than three months, apply anti-oxidants onto shafts and machined surfaces, and protective grease on oil seal lips.

Product's Environmental Management

In conformity with Environmental Certification ISO 14001, we recommend the following to dis-pose of our products:

- scraped components of the units to be delivered to authorized centres for metal object collection;
- oils and lubricants drained from the units to be delivered to Exhausted Oil Unions;
- packages (pallets, carton boxes, paper, plastic, etc..) to lead into regeneration/recycling circuits as far as possible, by delivering separate waste classes to authorized companies.



A socially responsible company

To the scope of intensifying our commitment to society, Varvel since 2004 started an ongoing support programme with three non-profit institutions: UNICEF (United Nations Children's Fund), MSF (Médicins sans Frontières) and ANT (National Cancer Association). Environmental respect and protection are also part of Varvel's values and this is why Varvel certified in 2001 its Environmental System to standard UNI EN ISO 14001.



RN•RO•RV



RS•RT



RD



RG



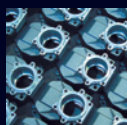
VR•VS



ISM•BSM



VARfarm
by VARVEL



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