



Counting



Controlling

RMSN

Rotary Magnetic Scale Nonius

- rotary applications
- all nonius proportion
- master and nonius tracks



Features

- from low to very high accuracy producible on demand
- two track magnetization
- several pole pitches
- different scale geometries
- customizable for many applications
- no wear from usage
- resistant to dust, cooling lubricant emulsion, oil, etc.
- wide range of selectable magnetic scale characteristics
- a variety of magnetic materials for several applications

Indicating movements with the RMSN: Simple – Precise – Economic

The RMSN rotary magnetic scale can be used for continuous or discrete positioning, motion control, such as commutation, and many other solutions. BOGEN can produce rotary scales on the flange, outer or inner diameter. Production can start with prototype quantities and scale to large series production. In combination with a BOGEN encoder the highest system accuracy can be reached with especially optimized pole pitches.

Features

Magnetic Properties (Elastomer bonded ferrite/Isotropic)	
Residual Induction (Br) mT	240-260
Coercive force (Hcb) kA/m	171-195
Intrinsic coercive force (Hcj) kA/m	223-279
Maximum energy product (Bhmax) MGOe	1.45-1.65
Reversing temperature modulus % / °C	-0.18
Physical Properties	
Tensile Strength N/mm ² (MPa)	>2.5
Hardness Shore D	30 -45
Density g/cm ³	3.55-3.7
Temperature Range °C	-40 to 100
Chemical Properties	
Hydraulic Oil (23°C×72h)	++
Alcohol (23°C×72h)	+
Weak Alkali (23°C×72h)	++
Detergent (23°C×72h)	++
Aromatic Solvent (23°C×72h)	-
Organic, Anorganic Acid (23°C×72h)	-
Aliphatic Solvent (23°C×72h)	-
Water (60°C×72h)	++

Magnetic Properties (Hard ferrite/Isotropic)	
Residual Induction (Br) mT	200 -220
Coercive force (Hcb) kA/m	135 -140
Intrinsic coercive force (Hcj) kA/m	220 -230
Maximum energy product (Bhmax) MGOe	1.45 -1.65
Reversing temperature modulus % / °C	-0.19
Physical Properties	
Tensile Strength N/mm ² (MPa)	50
Hardness HV	500 -600
Density g/cm ³	4.8-4.9
Temperature Range °C	-40 to 250
Chemical Properties	
Hydraulic Oil (23°C×72h)	++
Alcohol (23°C×72h)	+
Weak Alkali (23°C×72h)	++
Detergent (23°C×72h)	++
Aromatic Solvent (23°C×72h)	Chemical resistance depends on temperature, concentration and time of exposure to the medium
Organic, Anorganic Acid (23°C×72h)	
Aliphatic Solvent (23°C×72h)	
Water (60°C×72h)	

- not suitable

+ good

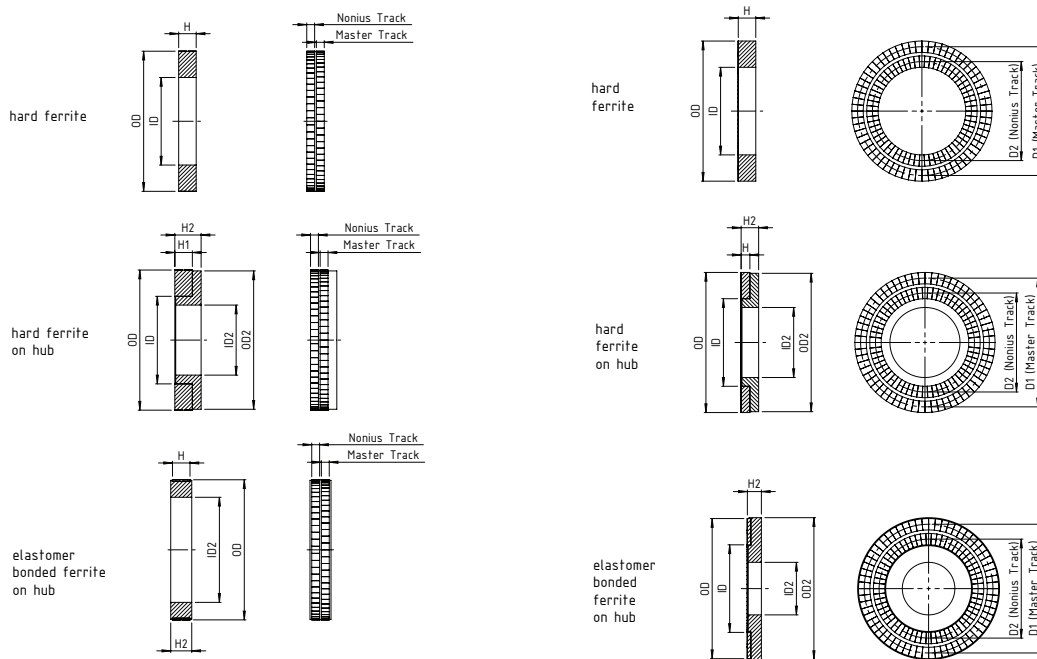
++ very good

Customized Rotary Magnetic Scale Nonius

Customized rotary magnetic scales with different dimensions and pole numbers can be produced economically.

BOGEN scale production capabilities are designed for high flexibility at low cost. Please contact BOGEN to discuss your requirements.

Technical Drawing



Available Dimensions RMSN - Axial

order no.	order code	OD (elastomer/ hard ferrite)	OD2 (hub)	ID (elastomer/ hard ferrite)	ID2 (hub)	fit	H (elastomer/ hard ferrite)	H2 (RMSN)	master track Ø	nonius track Ø
51558	RMSN16-15A-1.28-E-S	15.50	17.00	3.00	5.00	D9	1.00	7.00	13.04	5.84
51701	RMSN16-15A-1.28-E-S	15.50	16.00	3.00	3.00	H7	1.00	6.00	13.04	5.84
51216	RMSN32-31A-1.28-E-S	29.00	29.80	15.10	10.00	H7	1.00	6.00	26.08	18.88
51499	RMSN32-31A-1.28-E-S	29.00	29.00	15.10	11.00	H7	1.00	3.50	26.08	18.88
51217	RMSN32-31A-1.28-F-A	30.00	29.80	11.50	10.00	H7	2.50	6.00	26.08	18.88
51694	RMSN32-31A-1.50-F-A	34.00	33.60	20.40	15.70	H7	2.00	6.00	30.56	23.36
51352	RMSN32-31A-1.50-E-S	33.50	34.00	20.00	19.00	H7	1.00	6.00	30.35	23.15
51353	RMSN32-31A-1.50-E-S	33.50	34.00	20.00	16.00	H7	1.00	6.00	30.56	23.36
52066	RMSN64-63A-1.28-F-A	55.00	54.00	42.00	35.00	H7	2.50	4.00	52.15	44.95
52087	RMSN64-63A-1.28-E-S	55.00	55.00	42.00	35.00	H7	1.00	2.50	51.78	45.28
52076	RMSN64-63A-1.50-F-A	64.50	64.00	51.00	40.00	H7	3.00	4.50	61.12	53.92
52097	RMSN64-63A-1.50-E-S	64.00	64.00	51.00	45.00	H7	1.00	2.50	61.12	53.92

magnet material: E = elastomer; F = hard ferrite
 hub material: S = steel; A = aluminum

Available Dimensions RMSN - Radial

order no.	order code	OD (elastomer/ hard ferrite)	OD2 (hub)	ID (elastomer/ hard ferrite)	ID2 (hub)	fit	H (elastomer/ hard ferrite)	H2 (RMSN)
51218	RMSN32-31-1.28-F-A	24.50	24.00	17.00	10.00	H7	6.00	7.00
51467	RMSN32-31-1.28-F-A	24.50	24.00	17.00	16.35	H7	6.00	10.00
51269	RMSN64-63-1.28-F-A	50.55	50.00	38.00	31.00	H7	8.00	9.50
51356	RMSN64-63-1.28-E-S	50.55	49.55	48.55	25.00	H7	10.00	11.00
51521	RMSN64-63-1.50-F-A	59.50	50.00	43.50	35.00	H7	6.00	7.50
51529	RMSN64-63-1.50-E-S	59.60	57.60	57.60	52.60	H7	6.00	6.00

magnet material: E = elastomer; F = hard ferrite
 hub material: S = steel; A = aluminum

Order Code

RMSN M-N - S - P - M - H - G- P

			code	explanation*
parameters	M-N	number of pole pairs	... - ...	number of pole pairs: Master-Nonius, e. g. 32-31
	S	surface of magnetization		radial, on the circumference (no input required)
			A	axial, on the end surface
	P	pole pitch (mm)	...	pole pitch of nonius track in millimeter, e. g. 1.28
	M	magnetization material	F	hard ferrite (8/22)
			E	elastomer bonded ferrite
			V	vulcanized ferrite
			P	plastoferrite
	H	hub material	A	aluminum
			S	steel
			M	sheet metal
	G	accuracy class		300 arc seconds (no input required)
			G...	only necessary if deviates from default
P	protection		without protection (no input required)	
		S	stainless steel	
		F	fibre	
		P	plastic	

* standard parameters are bold

Ordering Example

RMSN32-31-1.28-E-A-G100

Rotary Magnetic Scale Nonius, 32 master-31 nonius pole pairs radial on the circumference, pole pitch of nonius track 1.28 mm, elastomer bonded ferrite (magnetization material), aluminum hub, 100 arc seconds accuracy class, no protection

RMSN64-63A-1.50-E-S

Rotary Magnetic Scale Nonius, 64 master-63 nonius pole pairs, surface of magnetization axial, pole pitch of nonius track 1.50 mm, elastomer bonded ferrite (magnetization material), stainless steel hub, 300 arc seconds accuracy class, no protection