

Spur Gears

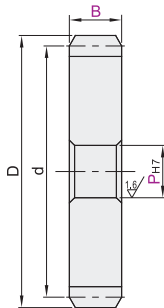
Module 3.0 Pressure Angle 20°

Code	Type	Material		Hardness	Surface Treatment
		GB	Equiv.		
VNR02	Straight Bore	45	S45C	—	Black Oxide
VNR03		0Cr18Ni9	SUS304	—	
VNR11		45	S45C	40~55HRC	
VNR22	Straight Bore+Tap	45	S45C	40~55HRC	Black Oxide
VNR23		0Cr18Ni9	SUS304	—	
VNR31		45	S45C	40~55HRC	
VNR42	Keyway+Tap	45	S45C	40~55HRC	Black Oxide
VNR43		0Cr18Ni9	SUS304	—	
VNR51		45	S45C	40~55HRC	

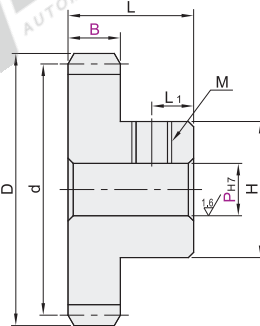


Gear Shape

A Shape

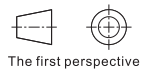


B Shape



3/2

Unhardened gear accuracy JIS B 1702-1 Class 8
Hardened gear accuracy JIS B 1702-1 Class 9



The first perspective

Part Number		Number of Teeth	B	Gears Shape	Shaft Bore Dia. P.H7 1 mm Inc.		d	D	H	L	L1	M
Code	Module				Straight Bore	Keyway+Tap						
Straight Bore	3.0	12			12~17	12N	36	42	27			
		14			12~22	12N~16N	42	48	32			
		15			12~24	12N~19N	45	51	35			
		16					48	54				
		17			12~28	12N~23N	51	57	40			
		18			12~30	12N~25N	54	60	44			
		19			12~31	12N~26N	57	63	45			
		20			12~35	12N~31N	60	66	50			
		21			12~36	12N~33N	63	69	52			
		22			12~37	12N~34N	66	72	54			
Straight Bore+Tap	3.0	23			12~39	12N~35N	69	75	56			
		24			12~40	12N~37N	72	78	58			
		25			12~42	12N~38N	75	81	60			
		26					78	84				
		27			12~45	12N~42N	81	87	65			
		28					84	90				
		29			12~49	12N~45N	87	93	70			
		30					90	96				
		32			12~52	12N~48N	96	102	75			
		34	A				102	108				
Keyway+Tap	3.0	35	30				105	111				
		36			12~56	12N~50N	108	114	80	50	10	
		38	B				114	120				
		40			12~59		120	126				
		42					126	132				
		44			20~59	20N~50N	132	138				
		45					135	141				
		46					138	144				
		48					144	150				
		50					150	156				
		52					156	162	85			
		54					162	168				
		55					165	171				
		56			25~59		168	174				
		58				25N~50N	174	180				
		60					180	186				
		62					186	192				
		64					192	198				
		65					195	201				
		68					204	210	90			
		70			25~63		210	216				

Shaft Bore Specifications P Shape Selection		
Straight Bore	Straight Bore+Tap	Keyway+Tap

- ① The Straight Bore+Tap is only suitable for B-shape.
- ② If the Keyway+Tap is A-shaped, there are no screw holes and set screws.
- ③ For Keyway dimensions, please refer to the product introduction.



Code	Spec.
HC90	Adds another set screw at 90° position Ordering Code: HC90 ① Adds another set screw at 90° position. ② Not applicable to Shape A.
	Adds another set screw at 120° position Ordering Code: HC120 ① Adds another set screw at 120° position. ② Not applicable to Shape A.
MC()	Change Tapped Hole Dimensions Ordering Code: MC4 ① Tapped hole designation table Number of Teeth 12~17 M4 M6 18~70 M5 M8 ② Not applicable to Shape A.



Part Number	Code	Module	Number of Teeth	B	Gears Shape	Shaft Bore Dia. P.H7	Optional Processing
VNR02	3.0	12	12~17	12N			
VNR11	3.0	14	12~22	12N~16N			
VNR22	3.0	15	12~24	12N~19N			
VNR23	3.0	16	12~28	12N~23N			
VNR31	3.0	18	12~30	12N~25N			
VNR42	3.0	19	12~31	12N~26N			
VNR43	3.0	20	12~35	12N~31N			
VNR51	3.0	21	12~36	12N~33N			
VNR52	3.0	22	12~37	12N~34N			
VNR53	3.0	23	12~39	12N~35N			
VNR54	3.0	24	12~40	12N~37N			
VNR55	3.0	25	12~42	12N~38N			
VNR56	3.0	26	12~45	12N~42N			
VNR57	3.0	28	12~49	12N~45N			
VNR58	3.0	30	12~52	12N~48N			
VNR59	3.0	32	12~56	12N~50N			
VNR60	3.0	34	12~59				
VNR61	3.0	36	12~63				
VNR62	3.0	38	12~67				
VNR63	3.0	40	12~71				
VNR64	3.0	42	12~75				
VNR65	3.0	45	12~81				
VNR66	3.0	48	12~87				
VNR67	3.0	50	12~90				
VNR68	3.0	52	12~96				
VNR69	3.0	54	12~102				
VNR70	3.0	56	12~108				
VNR71	3.0	58	12~114				
VNR72	3.0	60	12~120				
VNR73	3.0	62	12~126				
VNR74	3.0	64	12~132				
VNR75	3.0	65	12~135				
VNR76	3.0	66	12~138				
VNR77	3.0	68	12~144				
VNR78	3.0	70	12~150				
VNR79	3.0	72	12~156				
VNR80	3.0	75	12~165				
VNR81	3.0	78	12~174				
VNR82	3.0	80	12~180				
VNR83	3.0	82	12~186				
VNR84	3.0	84	12~192				
VNR85	3.0	86	12~198				
VNR86	3.0	88	12~204				
VNR87	3.0	90	12~210				
VNR88	3.0	92	12~216				
VNR89	3.0	95	12~225				
VNR90	3.0	98	12~234				
VNR91	3.0	100	12~240				
VNR92	3.0	102	12~246				
VNR93	3.0	105	12~255				
VNR94	3.0	108	12~264				
VNR95	3.0	110	12~270				
VNR96	3.0	112	12~276				
VNR97	3.0	115	12~285				
VNR98	3.0	118	12~294				
VNR99	3.0	120	12~300				

Optional Processing							
Part Number			B	Gears Shape	Shaft Bore Dia. P.H7		Optional Processing Code
Code	Module	Number of Teeth			Straight Bore	Keyway+Tap	
VNR42	3.0	12	30	A	12~17	12N	HC90
VNR43		14		B	12~22	12N~16N	MC()
		15		B	12~24	12N~19N	
VNR42-3.0-15-B-30-B-P12N-HC90							