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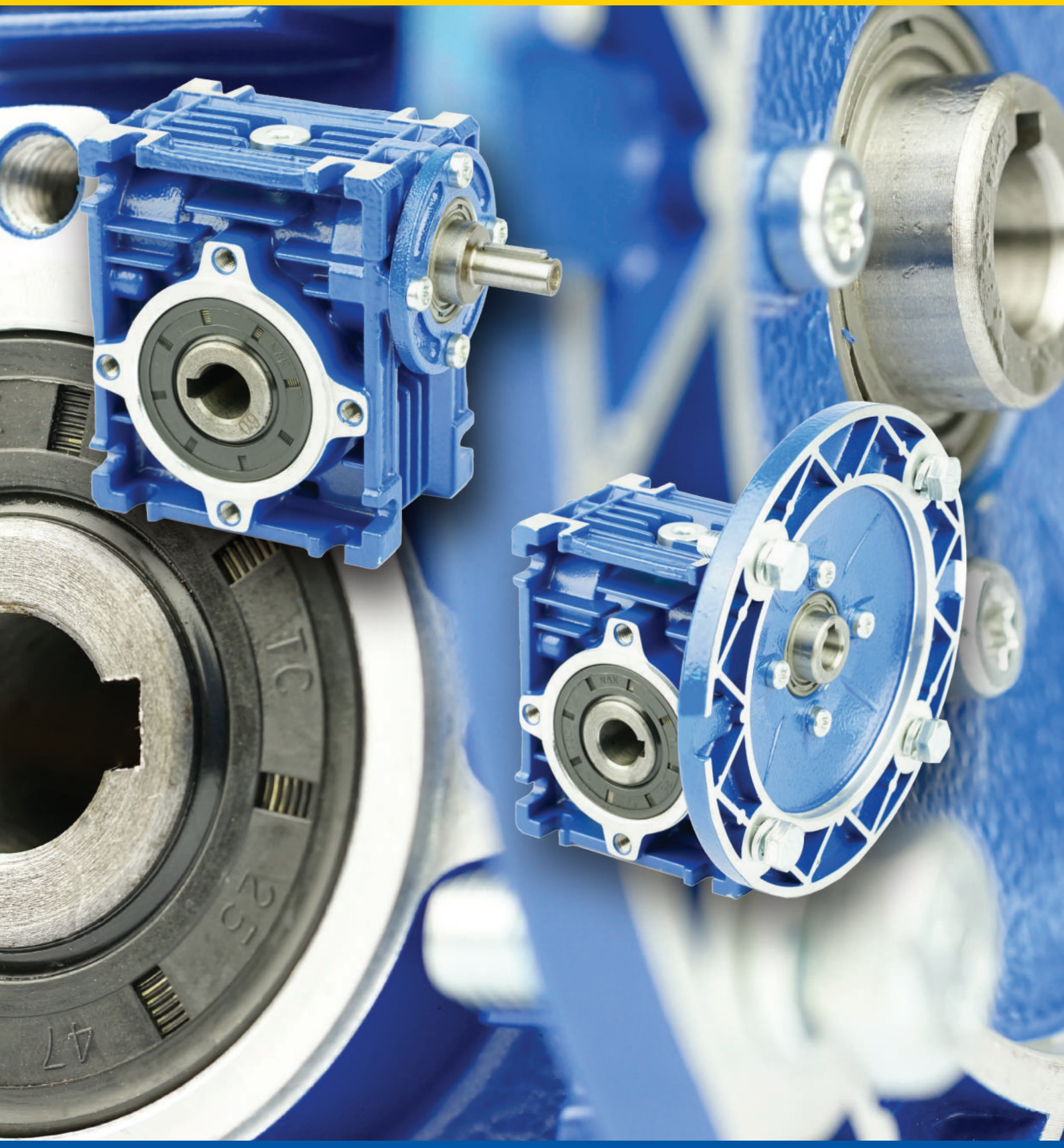
NIS SMRV WORM GEAR UNIT



NIS™

NIS SMRV Worm Gear Series

SMRV

SRV With Output Shaft

Summary

Structure Features

1. Made of high-quality aluminum alloy, light in weight and non-rusting.
2. Large in output torque.
3. Smooth in running and low in noise, can work long time in dreadful conditions.
4. High in radiating efficiency.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for omni bearing installation.

Main Materials

1. Housing: die-cast aluminum alloy (frame size: 025 to 090); cast iron (frame size: 110 to 150)
2. Worm: 20CrMnTi, carbonize heat treatment make the hardness of gear's surface up to 56~62 HRC, retain carburization layer's thickness between 0.3 and 0.5mm after precise grinding.
3. Worm wheel: wearable stannum bronze alloy.

Surface Painting

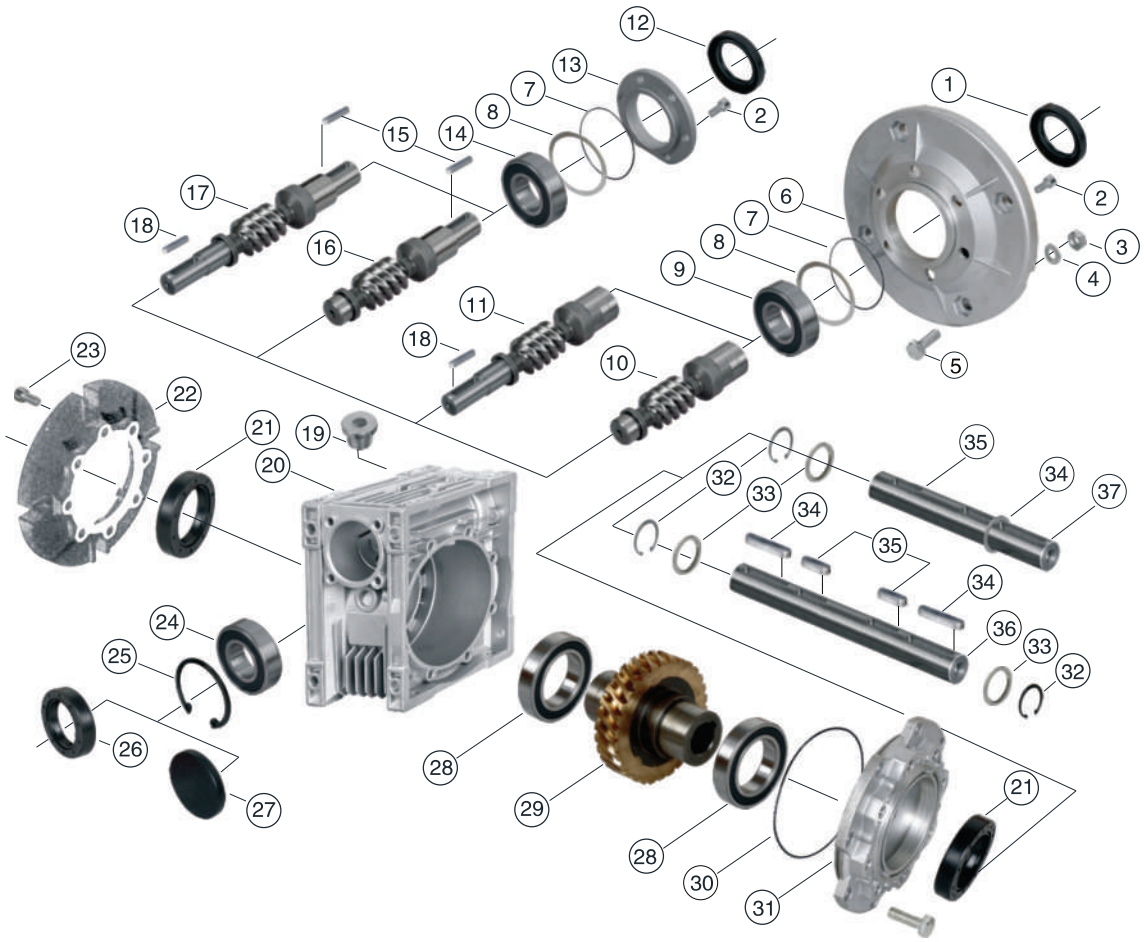
Aluminum alloy housing:

1. Shot blasting and special antiseptic treatment on the aluminum alloy surface.
2. After phosphating, paint with RAL5010 blue or silvery white paint.

Cast iron housing:

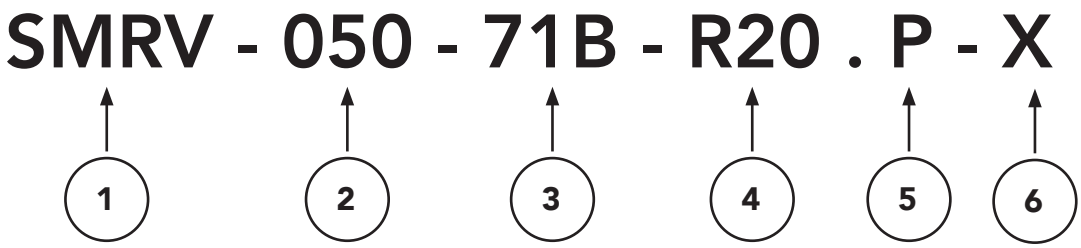
First paint with red antirust paint, then paint with RAL5010 blue or silvery white paint.

Exploded View & Name Of Parts



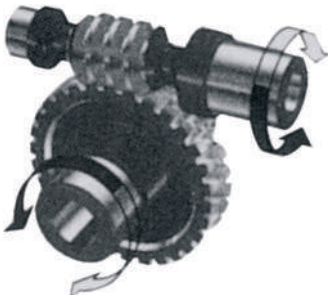
1. Oil seal
2. Inner hex screw
3. Nut
4. Spring washer
5. Hex screw
6. Input flange
7. O-Ring
8. Adjust spacer
9. Bearing
10. Hole input worm
11. Hole input and shaft output worm
12. Oil seal
13. Input cover
14. Bearing
15. Key
16. Shaft input worm
17. Shaft input and shaft output worm
18. Key
19. Oil plug
20. Casing
21. Oil seal
22. Output flange
23. Inner hex screw
24. Bearing
25. Hole-circlip
26. Oil seal
27. Cover
28. Bearing
29. Worm wheel
30. O-Ring
31. Output cover
32. Shaft-circlip
33. Spacer
34. Key
35. Key
36. Double output shaft
37. Single output shaft

Nomenclature

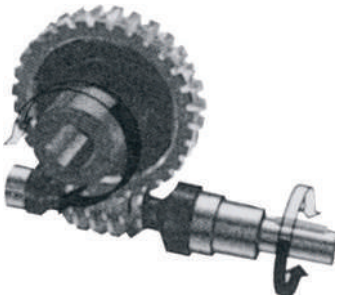


No.	Description
1	Model Code • SMRV - Motor Adapter Hollow Output • SRV - Input Shaft Hollow Output
2	Size of Worm Gear Unit
3	Motor Adapter Size (IEC Frame B5 Flange)
4	Ratio
5	Premium Quality
6	Accessories Code • F - Output Flange • AS - Single Output Shaft • AD - Double Output Shaft

Direction Rotation



SMRV



SRV

Type Selection Manual

2.1 Model selections

2.1.1 Symbols and units of measure

P:Power (KW)

P_1: Input power

P_2: Output power

$P_{1\eta}$: Select motor power

η_d: Dynamic efficiency

The dynamic efficiency is the relationship of power delivered at output shaft P2 to power applied at input shaft P1. Value of η_d are calculated for gearboxes after a sufficiently long running-in period. After the running-in period the surface temperature in operation reduces and finally stabilizes.

$\eta_d = P_2 / P_1 \times 100\%$

$P_{1\eta} \geq P_1 \times f_s$

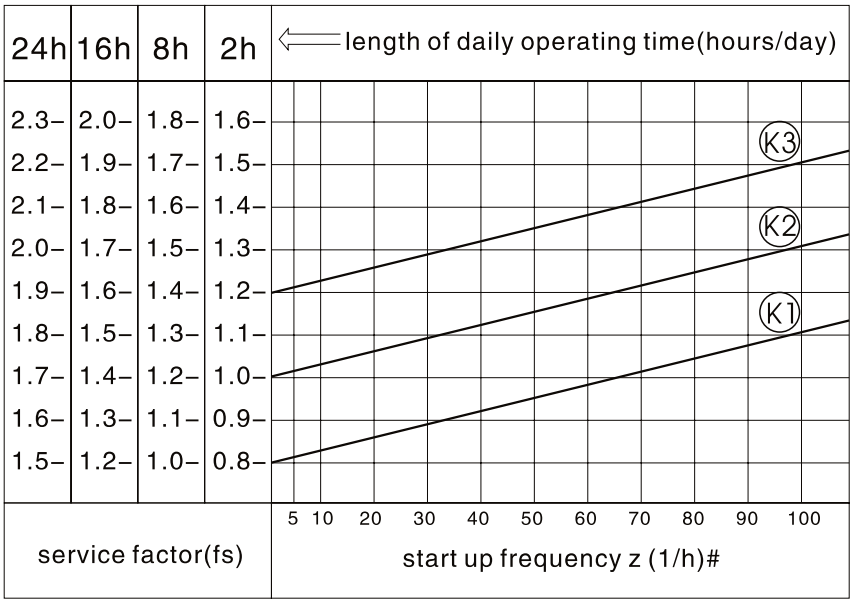
ηs: Static efficient

η_d: Efficiency applicable at start-up of the gearbox. It is critical when selecting worm gear operating under intermittent duty.

f_s: Service factor

The factor is the numeric value describing reducer service duty. It takes into consideration, with unavoidable approximation, daily operating condition, load variation and overloads connected with reducer application. In the graph below, after selecting proper "daily working hours" column, the service factor is given by intersecting the number of starts per hour and one of the K1, K2 or K3 curve. K curves are linked with the service nature (approximately: uniform, medium and heavy) through the acceleration factor of masses K, connected to the ratio between driven masses and motor inertia values.

K-Curves



Service factor should be adjusted as followings:

A. ambient temperature is 30-40˚C, f_s x (1.1 – 1.2)
B. ambient temperature is 40-50˚C, f_s x (1.3 – 1.4)
C. ambient temperature is 50-60˚C, f_s x (1.5 – 1.6)

n_1 : Gear unit input speed (r/min)
n_2 : gear unit output speed (r/min)
I : Ratio

$I = n_1 / n_2$

Fr1 : Input shaft radial loads
Fr2 : Output shaft radial loads

M_2 : Output Torque (Nm)
M_{2n} : Selected output Torque (Nm)

$M_2 = 9550 \times P_1 \times \eta_d / n_2$
$M_{2n} \geq M_2 \times f_s$

2.1.2 Understanding the following when select the gearbox

- Load condition
- Speed scope or ratio in application
- Working condition and environment
- Installation space

2.1.3 Examples for model chosen

Required torque 150 Nm on driven machine, n1 = 1400r/min, η2=70r/m, medium load, running for 8 hours per day, start 20 times per hour, the ambient temperature is 30˚C, B3 mounted.

1. i=n1/n1 = 1400/70 = 20
2. Get the f_s =1.25 from turning time and start frequency on Curve K2
3. Get the f_s = 1.25 x 1.1 = 1.38 from the working condition
4. Choose the $M_{2n} \geq M2 \times f_s$ = 150 x 1.43 = 214.5 Nm
5. To get the i=20, $M_{2n} \geq 214.5$ Nm, $f_s \geq 1.38$ from the performance parameter, choose SMRV 90-20-B3-2.2-4

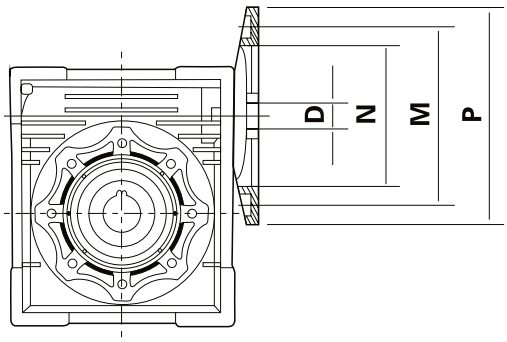
The input power of the driver machine is 1.5kw, n1=900 r/min, n2=60r/min, heavy load, running 16 hours per day, starts 100 times for hour, ambient temperature is 20˚C

1. i=n1/n1 = 900/60 = 15
2. Get the f_s =1.9 from turning time and start frequency on Curve K3
3. Get the f_s = 1.9 x 1.0 = 1.9 from the working condition
4. Choose the $P_{2n} \geq P_2 \times f_s$ = 1.5 x 1.9 = 2.85 KW
5. To get the i=15, $P_{2n} \geq 2.85$ KW, $f_s \geq 1.9$ from the performance parameter, choose SMRV 110-15-132S6

Mesh Parameter

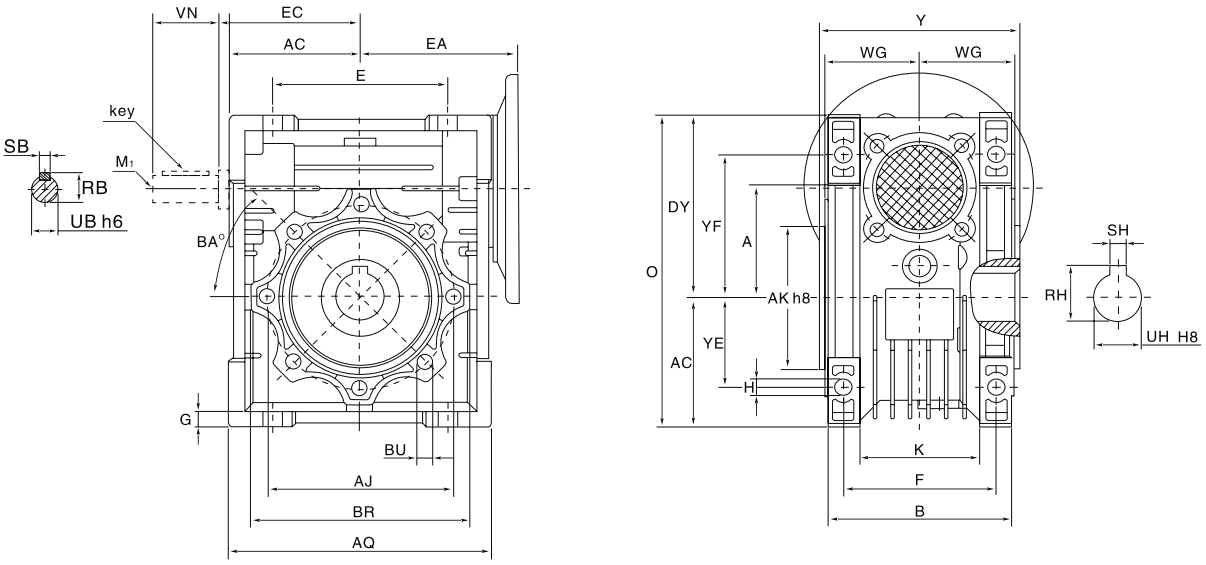
	i	7.5	10	15	20	25	30	40	50	60	80	100
SMRV025	Z_1	4	3	2	2	2	1	1	1	1		
	M_n	1.3	1.3	1.3	0.995	0.8	1.3	0.995	0.8	0.67		
	Y	25°18′	19°31′	13°18′	11°02′	9°05′	6°44′	5°34′	4°34′	3°55′		
	η_0(1400)	0.85	0.83	0.79	0.75	0.71	0.67	0.62	0.58	0.55		
	η_1	0.71	0.68	0.61	0.56	0.5	0.46	0.41	0.36	0.34		
SMRV030	Z_1	4	3	2	2	1	1	1	1	1	1	
	M_n	1.44	1.44	1.44	1.1	1.7	1.44	1.1	0.89	0.74	0.56	
	Y	18°55′	14°25′	9°44′	7°50′	5°33′	4°54′	3°55′	3°17′	2°43′	2°17′	
	η_0(1400)	0.85	0.82	0.77	0.73	0.68	0.65	0.59	0.55	0.51	0.44	
	η_1	0.67	0.63	0.55	0.5	0.43	0.39	0.35	0.31	0.27	0.23	
SMRV040	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	2.05	2.05	2.05	1.56	1.27	2.05	1.56	1.27	1.06	0.8	0.65
	Y	23°54′	18°23′	12°30′	10°03′	8°45′	6°19′	5°04′	4°24′	3°42′	2°52′	2°29′
	η_0(1400)	0.87	0.85	0.82	0.78	0.75	0.7	0.65	0.62	0.58	0.52	0.47
	η_1	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.32	0.28	0.24
SMRV050	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	2.56	2.56	2.56	1.95	1.58	2.56	1.95	1.58	1.32	1	0.8
	Y	23°49′	18°19′	12°27′	10°03′	8°33′	6°18′	5°04′	4°18′	3°38′	2°52′	2°17′
	η_0(1400)	0.88	0.86	0.82	0.79	0.76	0.72	0.67	0.63	0.59	0.53	0.49
	η_1	0.7	0.66	0.59	0.55	0.51	0.44	0.39	0.35	0.32	0.27	0.23
SMRV063	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	3.25	3.25	3.25	2.48	2	3.25	2.48	2	1.68	1.27	1.02
	Y	24°31′	18°53′	12°51′	10°29′	8°45′	6°30′	5°17′	4°24′	3°49′	2°59′	2°26′
	η_0(1400)	0.88	0.87	0.83	0.81	0.78	0.74	0.7	0.66	0.62	0.57	0.51
	η_1	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.33	0.28	0.24
SMRV075	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	3.95	3.95	3.95	3	2.42	3.95	3	2.42	2.03	1.54	1.24
	Y	26°38′	20°37′	14°05′	11°19′	9°29′	7°09′	5°43′	4°46′	4°01′	3°17′	2°44′
	η_0(1400)	0.89	0.88	0.85	0.82	0.8	0.76	0.72	0.69	0.65	0.6	0.55
	η_1	0.71	0.68	0.61	0.57	0.53	0.46	0.42	0.38	0.35	0.29	0.26
SMRV090	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	4.84	4.84	4.84	3.69	2.98	4.84	3.69	2.98	2.5	1.89	1.52
	Y	29005′	22039′	15033′	12050′	10053′	7055′	6030′	5029′	4046′	3045′	3006′
	η_0(1400)	0.9	0.89	0.86	0.84	0.82	0.78	0.75	0.72	0.68	0.63	0.59
	η_1	0.73	0.7	0.64	0.6	0.56	0.49	0.45	0.41	0.38	0.32	0.28
SMRV110	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	5,875	5,875	5,875	4.62	3.73	5,875	4.62	3.73	3.13	2.37	1.91
	Y	28°15′	21°57′	15°02′	14°42′	12°33′	7°39′	7°29′	6°21′	5°33′	4°27′	3°46′
	η_0(1400)	0.9	0.89	0.86	0.85	0.84	0.79	0.78	0.75	0.72	0.67	0.63
	η_1	0.72	0.69	0.63	0.62	0.59	0.48	0.48	0.44	0.41	0.36	0.32
SMRV130	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	6.97	6.97	6.97	5.4	4.37	6.97	5.4	4.37	3.67	2.77	2.23
	Y	28°43′	22°20′	15°19′	13°47′	11°54′	7°48′	7°00′	6°01′	5°16′	4°07′	3°27′
	η_0(1400)	0.91	0.89	0.87	0.86	0.84	0.8	0.78	0.75	0.72	0.68	0.64
	η_1	0.72	0.69	0.63	0.61	0.58	0.49	0.46	0.43	0.39	0.34	0.3

SMRV - Motor Adapter Dimension



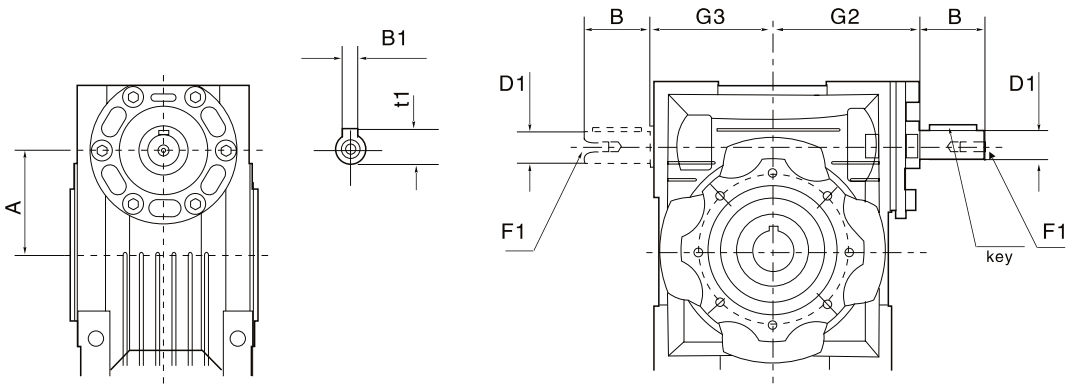
	Motor Flange				(D) the hole diameter of input shaft										
	PAM IEC	P	M	N	(I) Transmission Ratio										
					7.5	10	15	20	25	30	40	50	60	80	100
SMRV025	56B14	80	65	50	9	9	9	9	9	9	9	9	9		
SMRV030	63B5	140	115	95	11	11	11	11	11	11	11	11			
	63B14	90	75	60											
	56B5	120	100	80	9	9	9	9	9	9	9	9	9	9	
	56B14	80	65	50											
SMRV040	71B5	160	130	110	14	14	14	14	14	14	14				
	71B14	105	85	70											
	63B5	140	115	95	11	11	11	11	11	11	11	11	11	11	11
	63B14	90	75	60											
	56B5	120	100	80								9	9	9	9
SMRV050	80B5	200	165	130	19	19	19	19	19	19					
	80B14	120	100	80											
	71B5	160	130	110	14	14	14	14	14	14	14	14	14	14	
	71B14	105	85	70											
	63B5	140	115	95								11	11	11	11
SMRV063	90B5	200	165	130	24	24	24	24	24	24	24				
	90B14	140	115	95											
	80B5	200	165	130	19	19	19	19	19	19	19	19	19	19	
	80B14	120	100	80											
	71B5	160	130	110							14	14	14	14	14
	71B14	105	85	70											
SMRV075	100/112B5	250	215	180	28	28	28								
	100/112B14	160	130	110											
	90B5	200	165	130	24	24	24	24	24	24	24				
	90B14	140	115	95											
	80B5	200	165	130				19	19	19	19	19	19	19	19
	80B14	120	100	80											
	71B5	160	130	110								14	14	14	14
	71B14	105	85	70											
SMRV090	100/112B5	250	215	180	28	28	28	28	28	28					
	100/112B14	160	130	110											
	90B5	200	165	130	24	24	24	24	24	24	24	24	24		
	90B14	140	115	95											
	80B5	200	165	130							19	19	19	19	19
	80B14	120	100	80											
SMRV110	132B5	300	265	230	38*	38*	38*	38*							
	100/112B5	250	215	180	28	28	28	28	28	28	28	28	28		
	90B5	200	165	130					24	24	24	24	24	24	24
	80B5	200	165	130										19	19
SMRV130	132B5	300	265	230	38*	38*	38*	38*	38*	38*	38*				
	100/112B5	250	215	180					28	28	28	28	28	28	28
	90B5	200	165	130										24	24
SMRV150	160B5	350	320	250	42	42	42	42	42						
	132B5	300	265	230				38	38	38	38	38	38		
	100/112B5	250	215	180								28	28	28	28

SMRV Mounting Dimensions



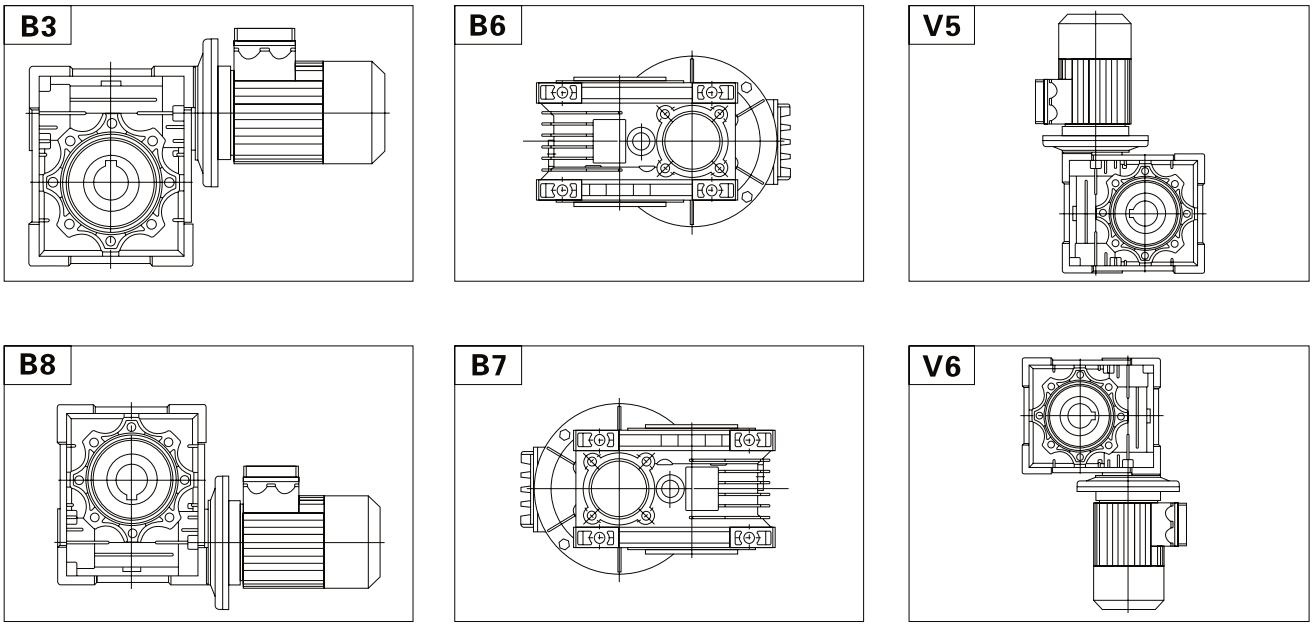
	025	030	040	050	063	075	090	110	130	150
A	25	30	40	50	63	75	90	110	130	150
AC	35	40	50	60	72	86	103	127.5	147.5	170
AJ	55	65	75	85	95	115	130	135	215	215
AK	45	55	60	70	80	95	110	130	180	180
AQ	70	80	100	120	144	172	206	252	292	340
B	42	56	71	85	103	112	130	144	155	185
BA	refer abv	0 °	45 °	45 °	45 °	45 °	45 °	45 °	45 °	45 °
BR	65	75	87	100	110	140	160	200	250	250
BU	refer abv	M6x11	M6x10	M8x10	M8x14	M8x14	M10x18	M10x18	M12x21	M12x21
DY	48	57	71.5	84	102	119	135	167.5	187.5	230
E	45	54	70	80	100	120	140	170	200	240
EA	45	55	71	80	95	112.5	130	160	180	210
EC	-	45	53	64	75	90	108	135	155	175
F	34	44	60	70	85	90	100	115	120	145
G	5	5.5	6.5	7	8	10	11	15	15	18
H	6	6.5	7	8.5	8.5	11	13	14	16	18
K	22	32	43	49	67	72	74	-	-	-
M1	-	-	-	M6	M6	M8	M8	M10	M10	M12
O	83	97	121.5	144	174	205	238	295	335	400
RB	-	10.2	12.5	16	21.5	27	27	31	33	38
RH	12.8	16.3	20.8	28.3	28.3	31.3	38.3	45.3	48.8	53.8
SB	-	3	4	5	6	8	8	8	8	10
SH	4	5	6	8	8	8	10	12	14	14
UB	-	9	11	14	19	24	24	28	30	35
UH	11	14	18	25	25	28	35	42	45	50
VN	-	20	23	30	40	50	50	60	80	80
WG	22.5	29	36.5	43.5	53	57	67	74	81	96
Y	50	63	78	92	112	120	140	155	170	200
YE	22	27	35	40	50	60	70	85	100	120
YF	35.5	44	55	64	80	93	102	125	140	180
WT (kg)	0.7	1.3	2.3	3.5	6.2	9	13	35	48	84

SMRV Mounting Dimensions



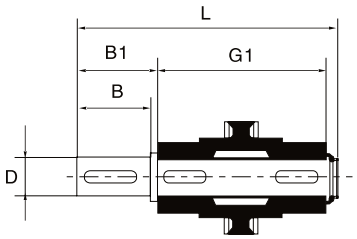
E–V	030	040	050	063	075	090	110	130	150
B	20	23	30	40	50	50	60	80	80
D1j6	9	11	14	19	24	24	28	30	35
G2	50	61	74	90	105	125	142	162	195
G3	45	53	64	75	90	108	135	155	175
A	30	40	50	63	75	90	110	130	150
B1	3	4	5	6	8	8	8	8	10
F1	–	–	M6	M6	M8	M8	M10	M10	M12
TI	10.2	12.5	16	21.5	27	27	31	33	38
Specs	3x3	4x4	5x5	6x6	8x7	8x7	8x7	8x7	10x8
Length	15	20	25	35	45	45	55	70	70

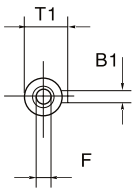
SMRV Mounting Positions



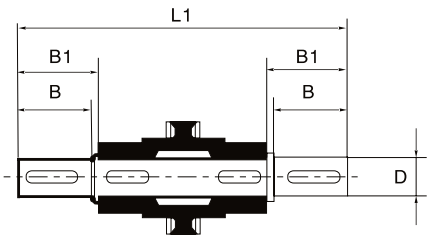
Accessories

Output Shaft





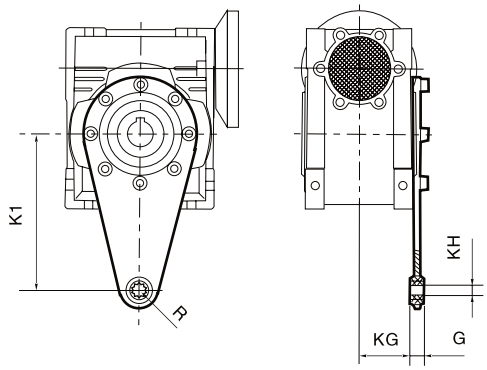
Single Output Shaft



Double Output Shaft

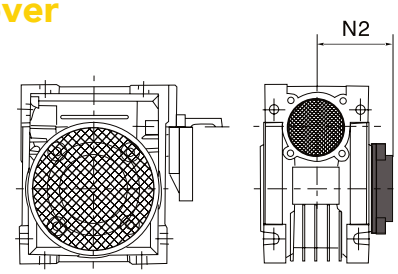
	Dh6	B	B1	G1	L	L1	F	B1	T1
E-RV025	11g6	23	25.5	50	81	101	–	4	12.5
	9*	25*	30	50	85.5*	101	–	3*	10.2*
E-RV030	14	30	32.5	63	102	128	M6	5	16
E-RV040	18	40	43	78	128	164	M6	6	20.5
E-RV050	25	50	53.5	92	153	199	M10	8	28
E-RV063	25	50	53.5	112	173	219	M10	8	28
E-RV075	28	60	63.5	120	192	247	M10	8	31
E-RV090	35	80	84.5	140	234	309	M12	10	38
E-RV110	42	80	84.5	155	249	324	M16	12	45
E-RV130	45	80	85	170	265	340	M16	14	48.5
E-RV150	50	82	87	200	297	374	M16	14	53.5

Torque Arm



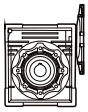
	K1	G	KG	KH	R
E-RV025	70	14	17.5	8	15
E-RV030	85	14	24	8	15
E-RV040	100	14	31.5	10	18
E-RV050	100	14	38.5	10	18
E-RV063	150	14	49	10	18
E-RV075	200	25	47.5	20	30
E-RV090	200	25	57.5	20	30
E-RV110	250	30	62	25	35
E-RV130	250	30	69	25	35
E-RV150	250	30	84	25	35

Cover



	N2		N2
E-RV030	42	E-RV090	86
E-RV040	50	E-RV110	94
E-RV050	58	E-RV130	102
E-RV063	69	E-RV150	117
E-RV075	74		

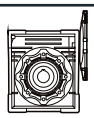
SMRV Selection

P1n [KW]	n2 [RPM]	M2n [Nm]	i	Fr2 [N]	SF	 SIZE
	186.7	7.7	7.5	683	2.3	**030**
	140	10	10	752	1.8	
	93.3	14	15	861	1.3	
	70	18	20	948	1	
	56	20	25	1021	0.9	
	46.7	24	30	1085	0.8	
	70	19	20	1824	2	**040**
	56	23	25	1964	1.7	
0.18	46.7	25	30	2087	1.7	
	35	32	40	2298	1.3	
	28	37	50	2475	1	
	23.3	42	60	2630	0.8	
	35	33	40	3153	2.3	**050**
	28	39	50	3397	1.9	
	23.3	44	60	3610	1.6	
	17.5	52	80	3973	1.2	
	14	59	100	4280	0.9	
	186.7	11	7.5	1315	3.6	**040**
	140	14	10	1447	2.8	
	93.3	20	15	1657	1.9	
	70	26	20	1824	1.5	
	56	32	25	1964	1.2	
	46.7	35	30	2087	1.3	
	35	44	40	2298	0.9	
	70	27	20	2503	2.7	**050**
	56	32	25	2696	2.2	
0.25	46.7	36	30	2865	2.3	
	35	46	40	3153	1.7	
	28	54	50	3397	1.4	
	23.3	60	60	3610	1.1	
	17.5	72	80	3973	0.9	
	28	55	50	4440	2.4	**063**
	23.3	64	60	4719	2	

SMRV Selection

P1n [KW]	n2 [RPM]	M2n [Nm]	i	Fr2 [N]	SF	 SIZE
0.25	17.5	76	80	5193	1.6	063
	14	87	100	5595	1.4	
	17.5	80	80	6130	2.3	075
	14	94	100	6603	1.9	
0.37	186.7	16	7.5	1315	24	040
	140	21	10	1447	1.9	
	93.3	30	15	1657	1.3	
	70	39	20	1824	1	
	56	47	25	1964	0.8	
	46.7	52	30	2087	0.8	
	140	21	10	1987	3.3	050
	93.3	31	15	2274	2.4	
	70	39	20	2503	1.8	
	56	47	25	2696	1.5	
	46.7	54	30	2865	1.5	
	35	68	40	3153	1.1	
	28	80	50	3397	0.9	
	23.3	89	60	3610	0.8	
	35	70	40	4122	2.1	063
	28	82	50	4440	1.6	
	23.3	94	60	4719	1.4	
	17.5	113	80	5193	1.1	
	14	129	100	5595	0.9	
	23.3	97	60	5569	2	075
	17.5	119	80	6130	1.6	
	14	139	100	6603	1.3	
0.55	186.7	24	7.5	1805	2.9	050
	140	32	10	1987	2.2	
	93.3	46	15	2274	1.6	
	70	59	20	2503	1.2	
	56	70	25	2696	1	
	46.7	80	30	2865	1	
	70	60	20	3272	2.2	063

SMRV Selection

P1n [KW]	n2 [RPM]	M2n [Nm]	i	Fr2 [N]	SF	 SIZE
0.55	56	72	25	3524	1.8	063
	46.7	82	30	3745	1.9	
	35	104	40	4122	1.4	
	28	122	50	4440	1.1	
	23.3	140	60	4719	0.9	
	35	108	40	4865	2	075
	28	128	50	5241	1.6	
	23.3	144	60	5569	1.4	
	17.5	177	80	6130	1.1	
	14	206	100	6603	0.9	
	17.5	189	80	6783	1.5	090
	14	221	100	7306	1.2	
	17.5	201	80	8571	2.6	110
	14	236	100	9232	2	
0.75	186.7	33	7.5	1805	2.1	050
	140	43	10	1987	1.6	
	93.3	62	15	2274	12	
	70	80	20	2503	0.9	
	93.3	63	15	2973	2.2	063
	70	82	20	3272	1.6	
	56	98	25	3524	1.3	
	46.7	112	30	3745	1.4	
	35	141	40	4122	1	
	56	101	25	4160	2	075
	46.7	117	30	4421	2	
	35	147	40	4865	1.5	
	28	174	50	5241	1.2	
	23.3	197	60	5569	1	
	28	182	50	5799	1.8	090
	23.3	209	60	6163	1.5	
	17.5	258	80	6783	1.1	
	14	302	100	7306	0.9	
	17.5	274	80	8571	1.9	110

SMRV Selection

P1n [KW]	n2 [RPM]	M2n [Nm]	i	Fr2 [N]	SF	 SIZE
0.75	14	322	100	9232	1.5	**110**
1.1	186.7	50	7.5	2359	2.6	**063**
	140	65	10	2597	2	
	93.3	92	15	2973	1.5	
	70	120	20	3272	1.1	
	56	144	25	3524	0.9	
	46.7	164	30	3745	1	
	93.3	95	15	3509	2.1	**075**
	70	122	20	3862	1.7	
	56	148	25	4160	1.3	
	46.7	171	30	4421	1.3	
	35	216	40	4865	1	
	35	222	40	5383	1.6	**090**
	28	266	50	5799	1.3	
	23.3	307	60	6163	1	
	28	278	50	7328	2.3	**110**
	23.3	325	60	7787	1.9	
	17.5	402	80	8571	1.3	
	14	473	100	9232	1	
	17.5	408	80	11210	2.1	**130**
	14	480	100	12076	1.5	
1.5	186.7	68	7.5	2359	1.9	**063**
	140	88	10	2597	1.5	
	93.3	126	15	2973	1.1	
	70	164	20	3272	0.8	
	140	89	10	3065	2.2	**075**
	93.3	129	15	3509	1.5	
	70	166	20	3862	1.3	
	56	202	25	4160	1	
	46.7	233	30	4421	1	
	70	170	20	4273	2.1	**090**
	56	207	25	4603	1.6	
	46.7	239	30	4891	1.7	

SMRV Selection

P1n [KW]	n2 [RPM]	M2n [Nm]	i	Fr2 [N]	SF	 SIZE
1.5	35	303	40	5383	1.2	090
	28	363	50	5799	0.9	
	23.3	418	60	6163	0.8	
	35	315	40	6803	2.2	110
	28	379	50	7328	1.7	
	23.3	443	60	7787	1.4	
	17.5	548	80	8571	0.9	
	17.5	557	80	11210	1.5	130
	14	655	100	12076	1.1	
2.2	186.7	100	7.5	3081	2.9	090
	140	132	10	3391	2.3	
	93.3	191	15	3882	1.9	
	70	249	20	4273	1.4	
	56	304	25	4603	1.1	
	46.7	351	30	4891	1.2	
	70	255	20	5399	2.5	110
	56	311	25	5816	2.2	
	46.7	355	30	6181	2	
	35	462	40	6803	1.5	
	28	555	50	7328	1.2	
	23.3	649	60	7787	1	
	35	468	40	8897	2.2	130
	28	563	50	9584	1.7	
	23.3	658	60	10185	1.4	
	17.5	816	80	11210	1	
	28	570	50	13100	2.5	150
	23.3	657	60	13920	1.9	
	17.5	816	80	15320	1.4	
	14	960	100	16500	1	

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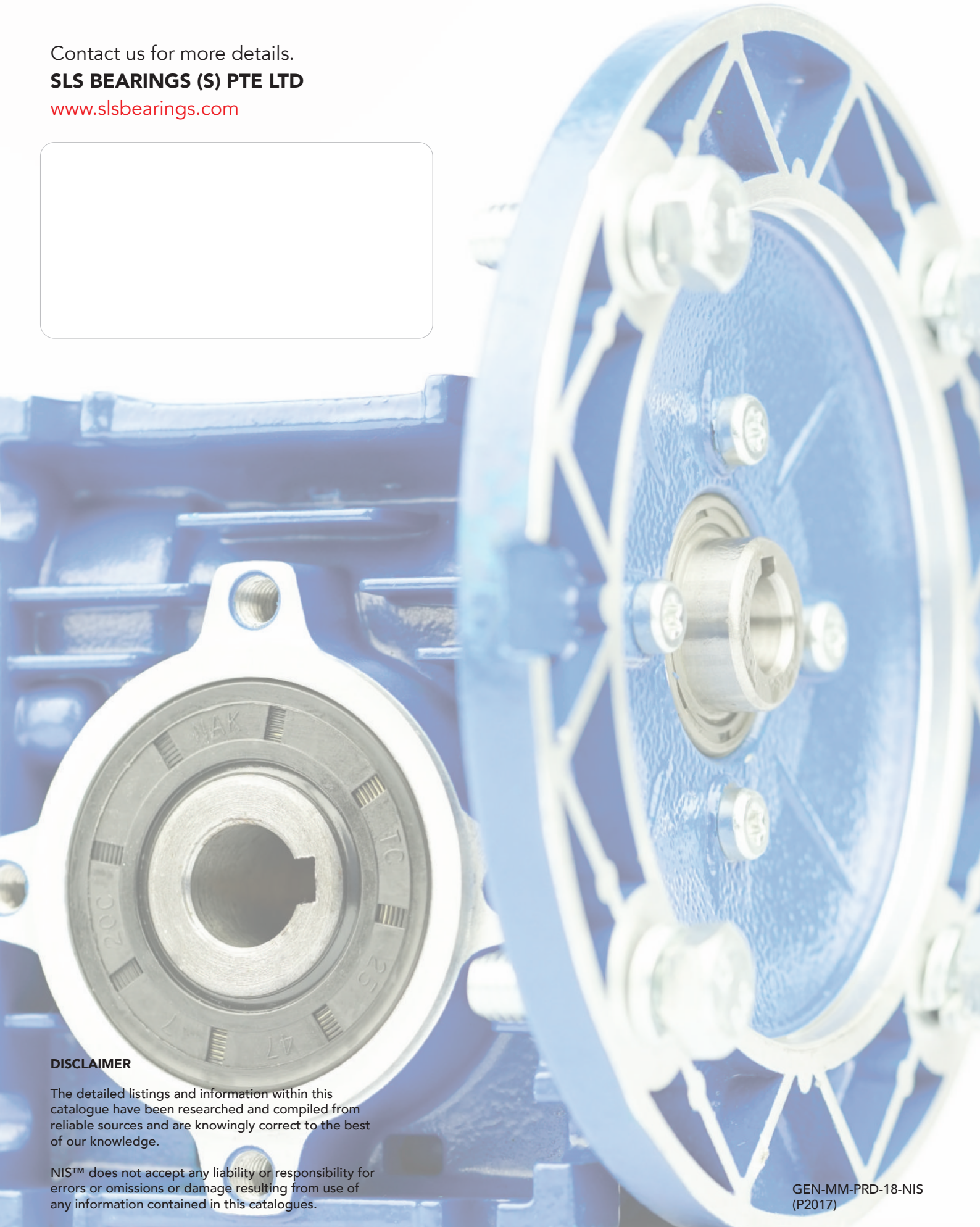

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