

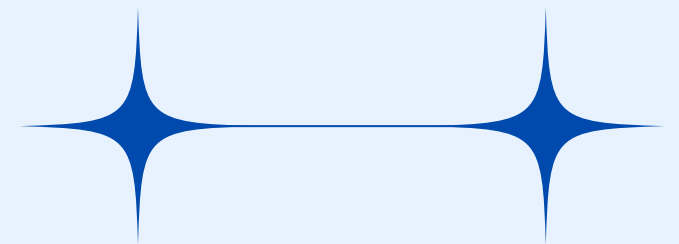


SMC GEARD MOTOR SERIES



COMPANY OVERVIEW

A BRIEF INSIGHT INTO OUR
BUSINESS AND VALUES



ESTABLISHED: 1958

MAIN BUSINESS: ELECTRIC INDUCTION MOTORS(IE3, IE4, IE5), GEARED MOTORS, HELICAL BEVEL GEARED MOTORS, EC FAN

HEAD OFFICE & MAIN FACTORY

631-5, WOLHA-RO, HASEONG-MYEON, GIMPO-SI, GYEONGGI-DO, REPUBLIC OF KOREA

FACTORY NO. 2

44, SAMDO-RO, YANGCHON-EUP, GIMPO-SI, GYEONGGI-DO, REPUBLIC OF KOREA

R&D OFFICE

ROOM 403-2, 5-25 JANGCHA-RO, 5BEON-GIL, GOCHON-EUP, GIMPO-SI, GYEONGGI-DO, KOREA.

CHINA PLANT

SICHUAN ROAD, FUSHAN ECONOMIC DEVELOPMENT ZONE, YANTAI, SHANDONG PROVINCE, CHINA



SMC GEARED MOTOR

GEARED MOTOR SERIES

EP+ GEARED MOTOR

THREE PHASE HORIZONTAL: 3PH 4P 0.2kW~22kW

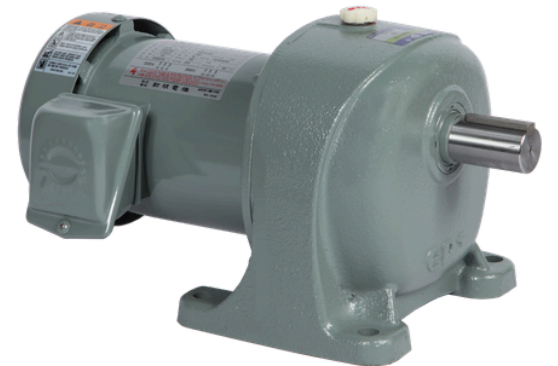
THREE PHASE VERTICAL: 3PH 4P 0.2kW~15kW

SINGLE PHASE HORIZONTAL: 1PH 4P 0.2kW~0.75kW

SINGLE PHASE VERTICAL: 1PH 4P 0.2kW~0.75kW

DIA METER OF OUTPUT SHAFT $\varnothing 22 \sim \varnothing 90$

RATIO RANGE 1/5~1/120



EP2 GEARED MOTOR

THREE PHASE HORIZONTAL: 3PH 4P 0.2kW~15kW

THREE PHASE VERTICAL: 3PH 4P 0.2kW~15kW

SINGLE PHASE HORIZONTAL: 1PH 4P 0.2kW~0.75kW

SINGLE PHASE VERTICAL: 1PH 4P 0.2kW~0.75kW

DIA METER OF OUTPUT SHAFT FOR THREE PHASE: $\varnothing 22 \sim \varnothing 70$

DIA METER OF OUTPUT SHAFT FOR SINGLE PHASE: $\varnothing 22 \sim \varnothing 32$

RATIO RANGE 1/5~1/120



SMG GEARED MOTOR

THREE PHASE HORIZONTAL: 3PH 4P 0.2kW~1.5kW

THREE PHASE VERTICAL: 3PH 4P 0.2kW~0.75kW

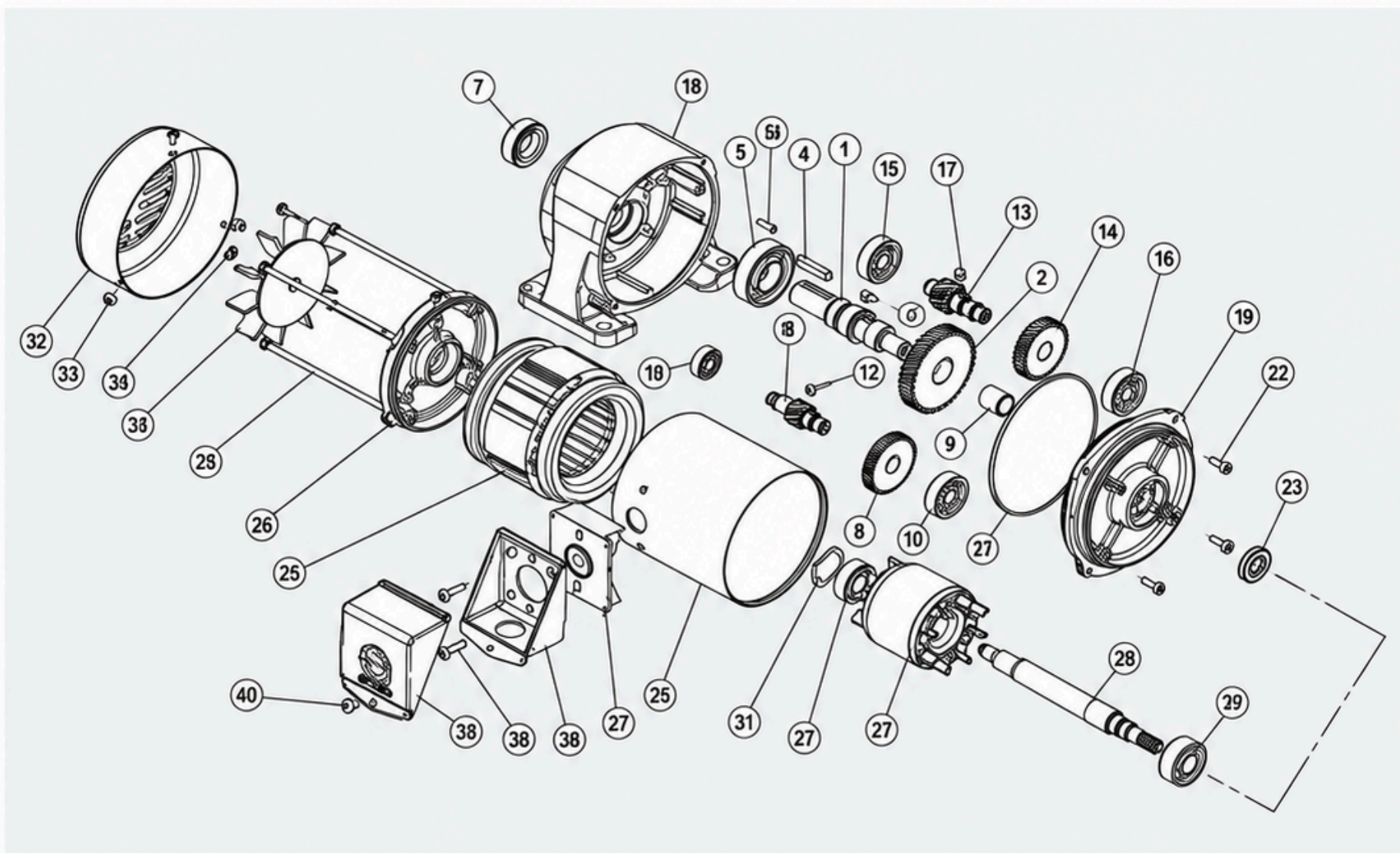
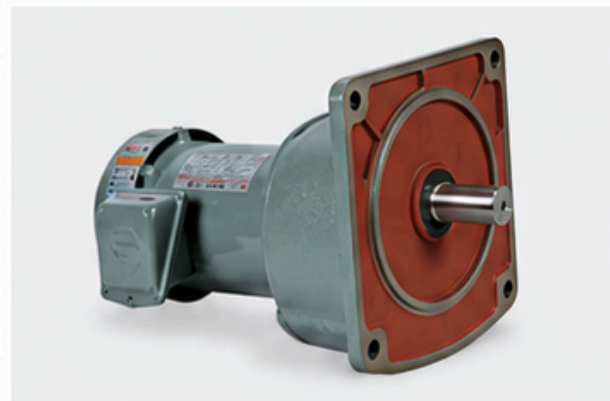
SINGLE PHASE HORIZONTAL: 1PH 4P 0.2kW~0.75kW

SINGLE PHASE VERTICAL: 1PH 4P 0.2kW~0.75kW

DIA METER OF OUTPUT SHAFT: $\varnothing 22 \sim \varnothing 38$

RATIO RANGE 1/5~1/75





Exploded View

No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION
1	2ND,3RD GEAR SHAFT	11	BALL BEARING	21	O-RING	31	WAVE WASHER
2	2ND,3RD GEAR	12	KEY	22	SOKET BOLT	32	HEX BOLT
3	KEY	13	3RD PINION GEAR	23	OIL SEAL	33	FAN
4	KEY	14	2ND GEAR	24	STATOR SUB ASSY	34	RETAINING RING
5	BALL BEARING	15	BALL BEARING	25	FRAME	35	FAN COVER
6	OILLESS BEARING	16	BALL BEARING	26	REAR BRACKET	36	TRUSS BOLT
7	OIL SEAL	17	KEY	27	ROTOR	37	LEAD BOX PAKING
8	2ND PINION GEAR	18	GEAR CASE	28	SHAFT	38	LEAD BOX
9	1ST GEAR	19	FRONT BRACKET	29	BEARING	39	LEAD BOX SCREW
10	BALL BEARING	20	DOWEL PIN	30	BEARING	40	LEAD BOX ASSY BOLT

EP⁺ & EP2 Type Gear Motor Coding System

CAPACITY

Phase \ kW	0.2kW	0.4kW	0.75kW	1.5kW	2.2kW	3.7kW	5.5kW	7.5kW	11kW	15kW
Three Phase	T020	T040	T075	T150	T220	T370	T550	T750	T1100	T1500
Single Phase	S200	S400	S750	S1500	–	–	–	–	–	–

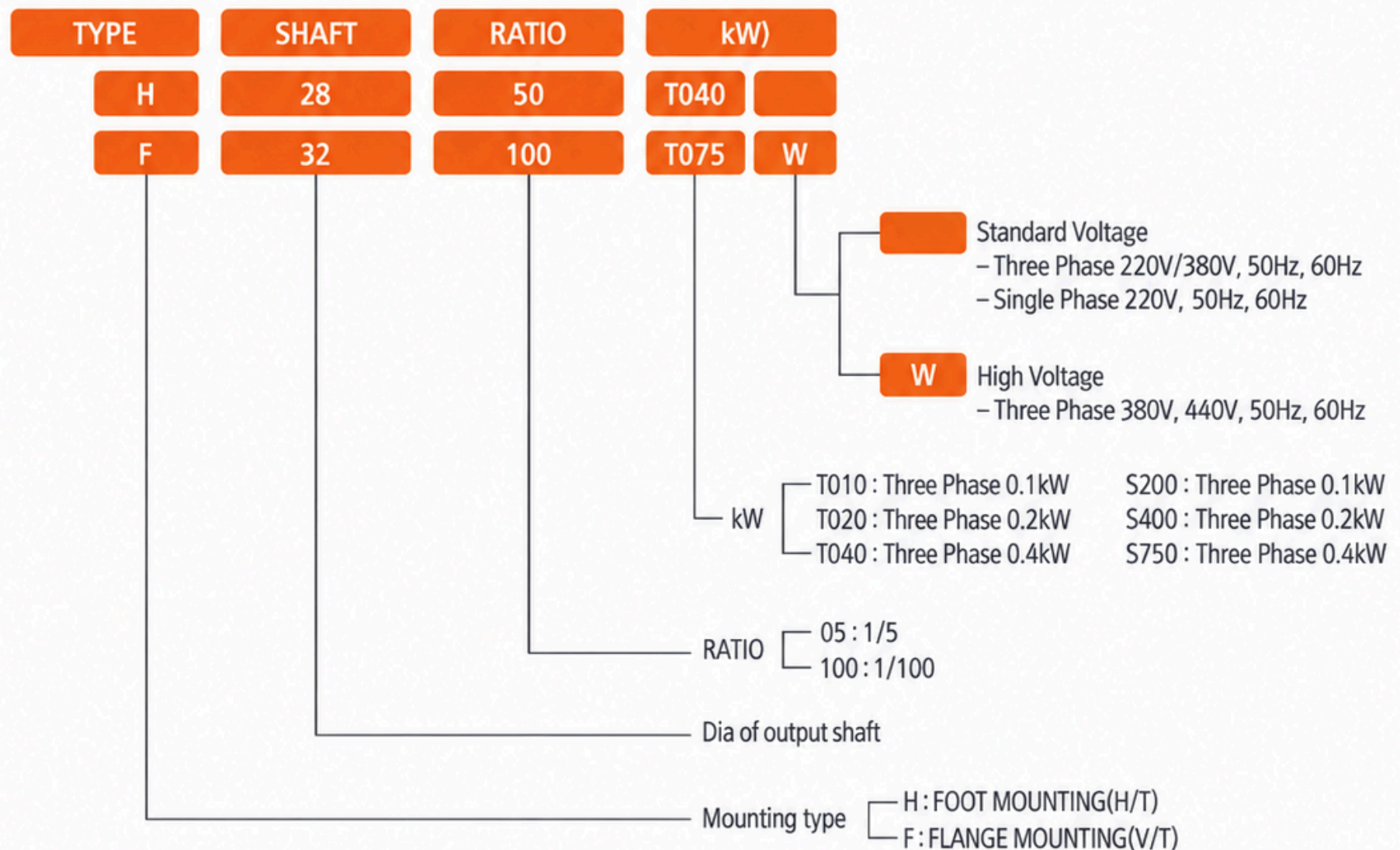


TABLE OF MOTOR OUTPUT PER TYPE MODEL

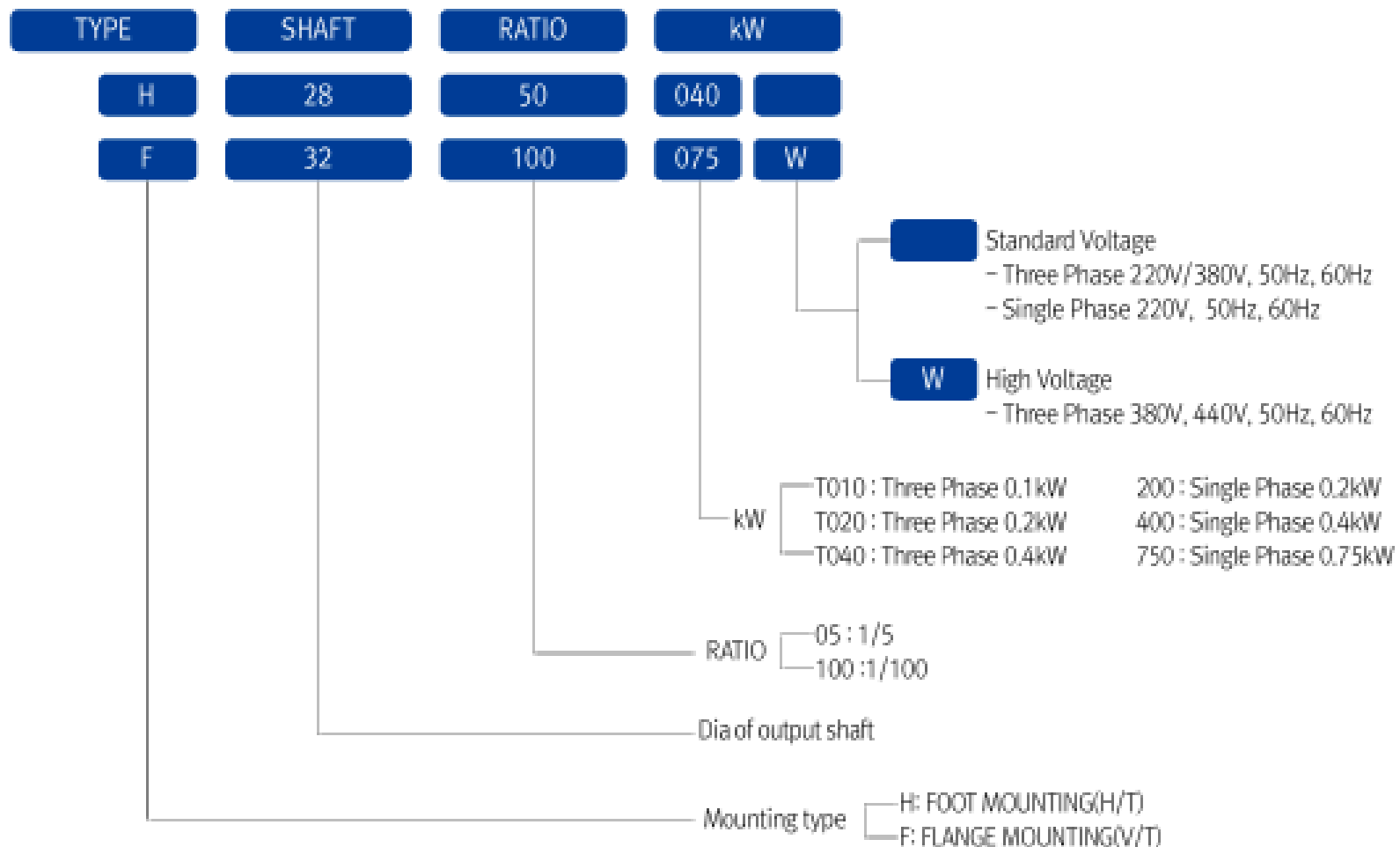
Gearbox Ratio	0.2kW	0.4kW		0.75kW			1.5kW		2.2kW		3.7kW		5.5kW			7.5kW		11kW	15kW
5 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
10 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
15 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
20 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
30 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
40 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
50 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
60 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
75 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
80 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
90 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70
100 : 1	22	22	28	28	32	38	38	45	45	50	45	50	55	55	65	55	65	70	70

SMG Geared motor Type Classification Table

CODING SYSTEM

CAPACITY

Phase \ kW	0.2kW 200W	0.4kW 400W	0.75kW 750W	1.5kW 1500W	2.2kW 2200W	3.7kW 3700W	5.5kW 5500W	7.5kW 7500W	11kW 11000W	15kW 1500W
Three Phase	020	040	075	150	220	370	550	750	1100	1500
Single Phase	200	400	750	1500	2200	-	-	-	-	-



SMG TABLE OF MOTOR OUTPUT PER TYPE MODEL

RATIO \ HP	1/4HP				1/2HP(L:22 M:28)				1HP				2HP	
	FOOT		FLANGE		FOOT		FLANGE		FOOT		FLANGE		FOOT	
5 : 1	22		22		22	28	22	28	32		32		38	
10 : 1	22		22		22	28	22	28	32		32		38	
15 : 1	22		22		22	28	22	28	32		32		38	
20 : 1	22		22		22	28	22	28	32		32		38	
30 : 1	22		22		22	28	22	28	32		32		38	
40 : 1	22		22		22	28	22		32	38	32	38	38	
50 : 1	22		22		22	28	22		32	38	32	38	38	
60 : 1	22		22		22	28	22		32	38	32	38	38	
75 : 1	22		22		22	28	22		32	38	32	38	38	
80 : 1						28								
90 : 1						28								
100 : 1						28								
120 : 1		28		28		28								
150 : 1		28		28		28								
200 : 1		28		28		28								



HELICAL GEARBOX SERIES

SMF Parallel Shaft Helical Gear Units



POWER: : 0.4 ~ 200KW

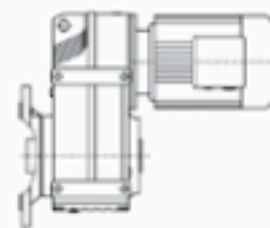
GEARBOX MAX TORQUE: 18,000Nm

RATIO : 3.77 ~ 22,323

FEATURES:

- PRODUCTION OF A WIDE RANGE OF PRODUCTS FOR VARIOUS APPLICATIONS, DEPENDING ON FRAME TYPE, SPECIFICATIONS, AND SIZE.
- SMF SERIES (PARALLEL-SHAFT HELICAL GEARBOX): IDEAL FOR INSTALLATIONS WHERE SPACE IS LIMITED.

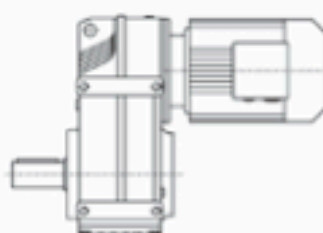
SMEF Parallel Shaft Helical Gear Units



FAF Y

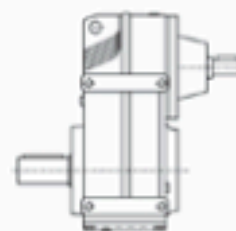
Flanged-mounted hollow shaft parallel shaft helical gear units

F series gear units are available in the following designs:



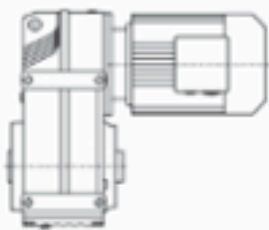
F.Y..

Foot-mounted solid shaft parallel shaft gear units



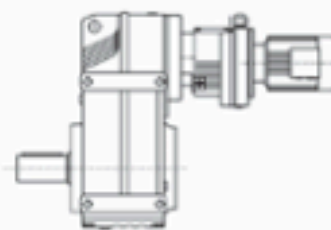
F (FF, FA, FAF, FAZ) S...

Parallel shaft helical gear units with solid shaft input



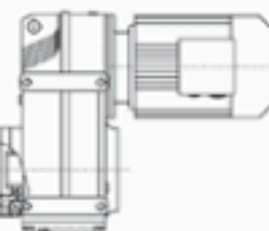
FA..Y..

Hollow shaft helical parallel shaft helical gear units



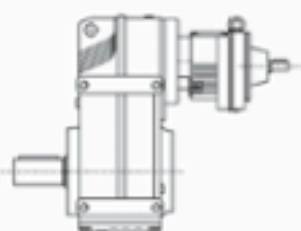
F (FF, FA, FAF, FAZ) ...R...Y...

Combi-type parallel shaft helical gear units



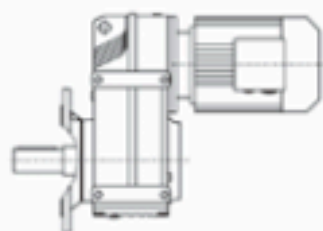
FAZ..Y..

Short-flange-mounted hollow shaft parallel shaft helical gear units



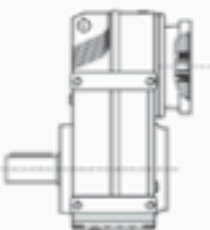
F (FF, FA, FAF, FAZ) S...R...

Combi-type parallel shaft helical gear units with solid shaft input



FF..Y..

Flange-mounted solid shaft parallel shaft helical gear units

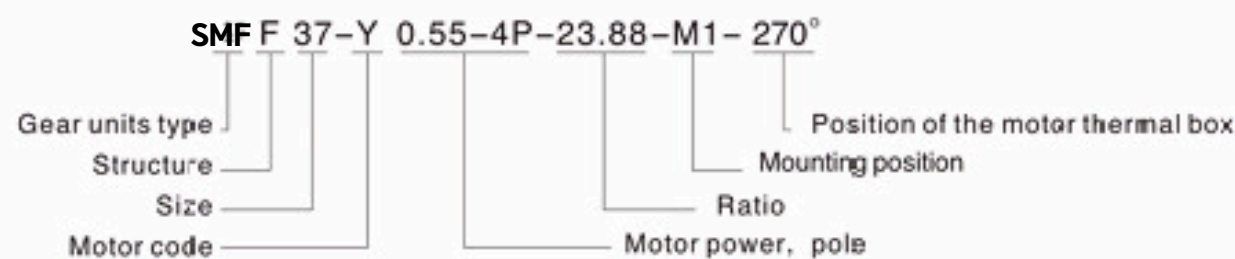


F (FF, FA, FAF, FAZ) ...Y...

Customers provide the motor by themselves need connected flange.

SMF Parallel Shaft Helical Gear Units

Type Designations:



Gear units type:
Parallel shaft helical gear units

Structure:

Foot-mounted solid shaft	(-)
Hollow shaft	A
Flange-mounted solid shaft	F
Flange-mounted hollow shaft	AF
Short-flange-mounted hollow shaft	AZ
Foot-mounted solid shaft with solid shaft input	S
Hollow shaft with solid shaft input	AS
Flange-mounted solid shaft with solid shaft input	FS
Flange-mounted hollow shaft with solid shaft input	AFS
*Hollow shaft with shrink disc	H..(H, HF, HZ, HT)

Size:
(see selection table)

Motor code:

Common motor	Y(Y2)
Flameproof motor	B
Direct current motor	Z
Brake motor	YEJ
Multi-speed motor	D
Variable frequency motor	YVP
Electromagnetic variable speed motor	YCT
Metallurgy hoisting motor	R
Transduction braking motor	YVPJ
Roller way	G

Motor power, pole :
See selection table

Ratio:
See selection table

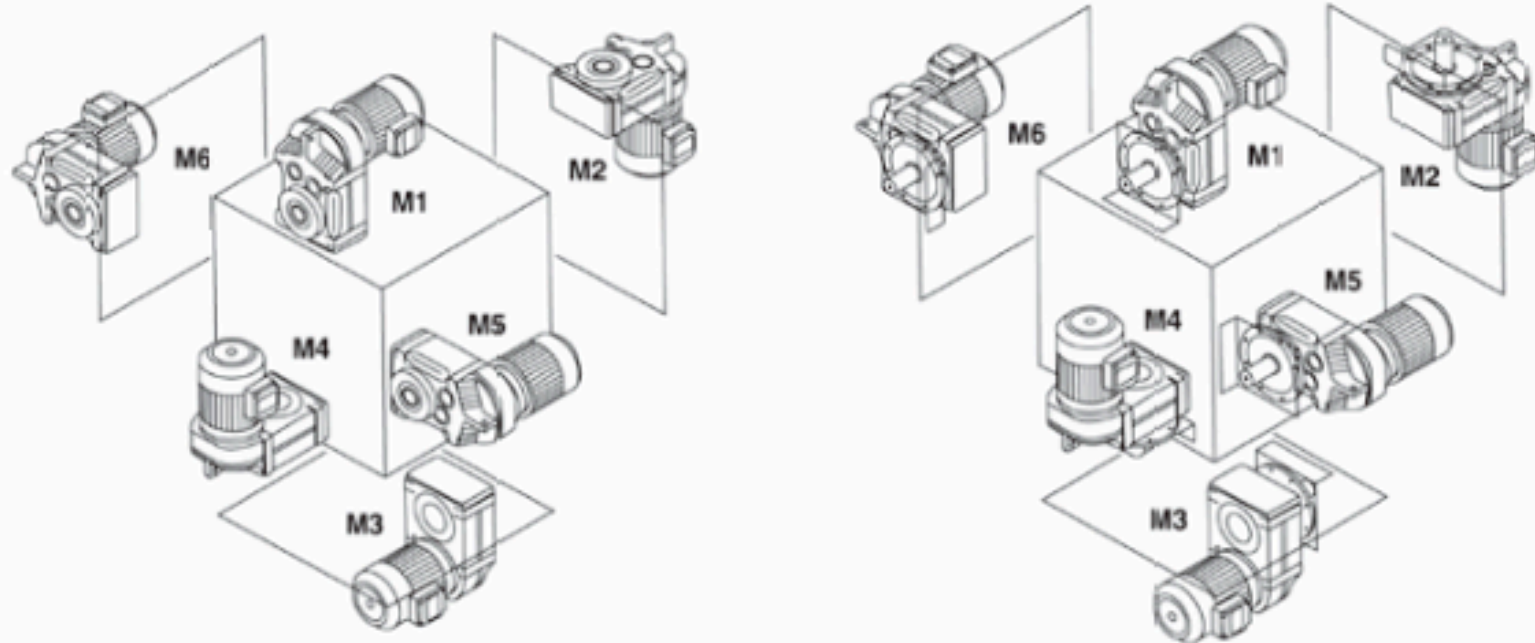
Mounting position:
M1, M2, M3, M4, M5, M6(See page 03)

Position of the motor thermal box:
0°, 90°, 180°, 270°(See page 03)

Dimensions of hollow shaft with shrink disc, see page 34-35.

SMTF Parallel Shaft Helical Gear Units

Mounting positions



Positions of motor terminal box



0°



90°



180°



270°

Input power rating and permissible torque

Size	37	47	57	67	77	87	97	107	127	157
Structure	F FA FF FAF FAZ									
Input power rating(kW)	0.18~3	0.18~3	0.18~5.5	0.18~5.5	0.37~11	0.75~22	1.1~30	2.2~45	7.5~90	11~200
Ratio	3.81~128.51	5.06~189.39	5.18~199.70	4.21~228.99	4.30~281.71	4.12~270.68	4.68~280.76	6.20~254.40	4.63~172.17	11.92~267.43
(n.m) Permissible torque	200	400	600	820	1500	3000	4300	7840	12000	18000

Gear unit weight

Size	37	47	57	67	77	87	97	107	127	157
(kgs) Weight	13	18	34	55	90	150	260	402	700	950

The marked weight is average value, it has no constraint force.

SMK Helical Bevel Gear Units



POWER: : 0.4 ~ 200KW

GEARBOX MAX TORQUE: 50,000Nm

RATIO : 5.36 ~ 17,550

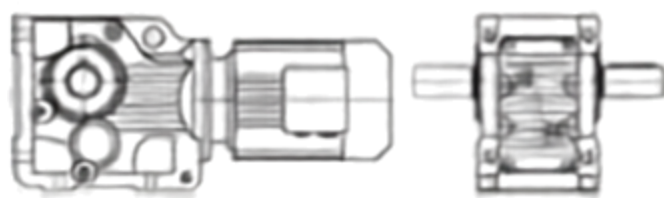
FEATURES:

- PRODUCTION OF A WIDE RANGE OF PRODUCTS FOR VARIOUS APPLICATIONS, DEPENDING ON FRAME TYPE, SPECIFICATIONS, AND SIZE.
- SMK SERIES (BEVEL-HELICAL GEARBOX): TRANSMITS POWER AT A 90-DEGREE ANGLE AND IS SUITABLE FOR HEAVY-DUTY INDUSTRIAL APPLICATIONS.

SMK Helical Bevel Gear Units

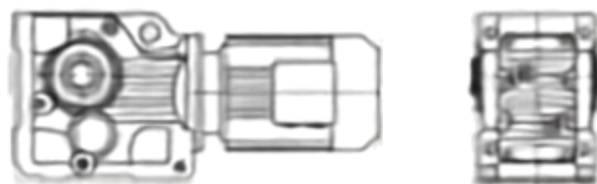


SMK series gear units are available in the following designs:



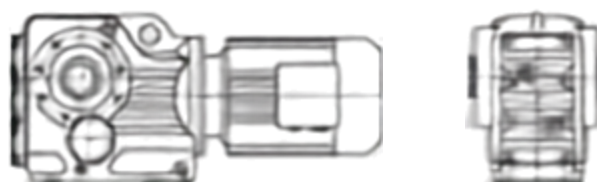
K...Y...

Foot-mounted solid shaft helical bevel gear units



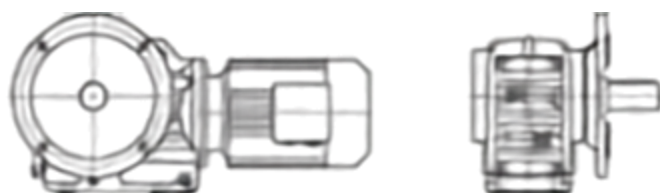
KAB...Y..

Foot-mounted hollow shaft helical bevel gear units



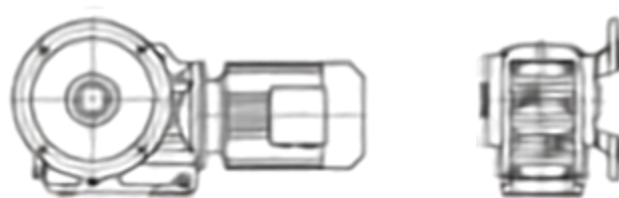
KA...Y..

Hollow shaft helical bevel gear units



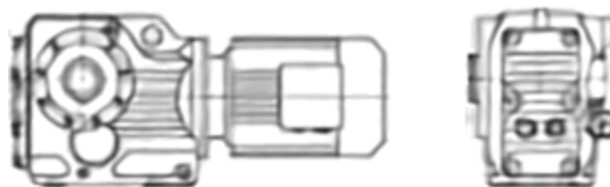
KF...Y..

Flanged-mounted solid shaft helical bevel units



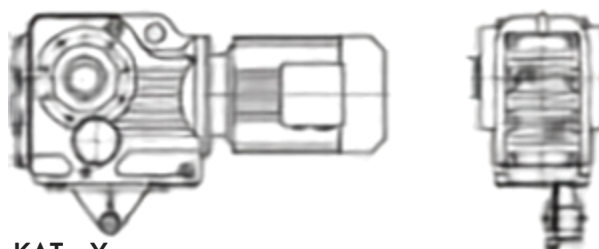
KAF...Y..

Flange-mounted hollow shaft helical bevel gear units



KAZ...Y..

Short-flange-mounted hollow shaft helical bevel gear units



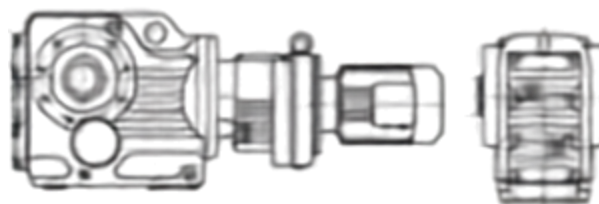
KAT...Y..

Torque-arm-mounted hollow shaft helical bevel gear units



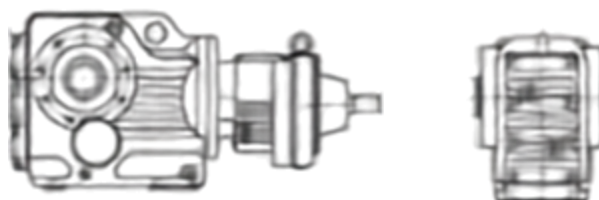
K (KF , KA , KAF , KAB , KAZ) S...

Helical bevel gear units with solid shaft input



KA (K , KF , KAF , KAB , KAZ) R...Y...

Combi-type helica/ bevel gear units



KA (K , KF , KAF , KAB , KAZ) S...R...

Combi-type helica/ bevel gear units with solid shaft input

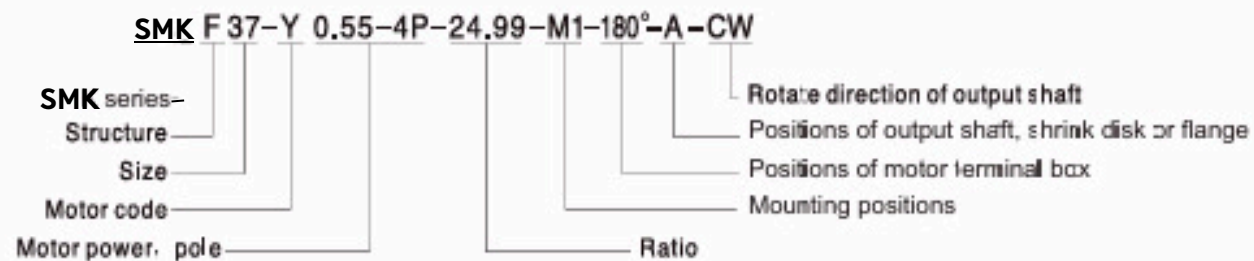


KA (K , KF , KAF , KAB , KAZ) Y...

Customers provide the motor by themselves need connected flange.

SMK Helical Bevel Gear Units

Type Designations:



K series:
Helical bevel gear units

Structure:

Foot-mounted solid shaft	(-)
Hollow shaft	A
Flange-mounted solid shaft	F
Flange-mounted hollow shaft	AF
Short-flange-mounted hollow shaft	AZ
Foot-mounted hollow shaft	AB
Torque-arm-mounted hollow shaft	AT
Foot-mounted solid shaft with solid shaft input	S
Hollow shaft with solid shaft input	AS
Flange-mounted solid shaft with solid shaft input	FS
Flange-mounted hollow shaft with solid shaft input	AFS
Hollow shaft with shrink disk	H.. (H, HF, HZ, HT)

Size:
(see selection table)

Motor code:

Common motor	Y(Y2)
Flameproof motor	B
Direct current motor	Z
Brake motor	YEJ
Multi-speed motor	D
Variable frequency motor	YVP
Electromagnetic variable speed motor	YCT
Metallurgy hoisting motor	R
Transduction braking motor	YVPJ
Roller way	G

Motor power, pole :
See selection table

Ratio:
See selection table

Mounting positions:
M1, M2, M3, M4, M5, M6 (See page 03)

Positions of motor terminal box:
0°, 90°, 180°, 270° (See page 03)

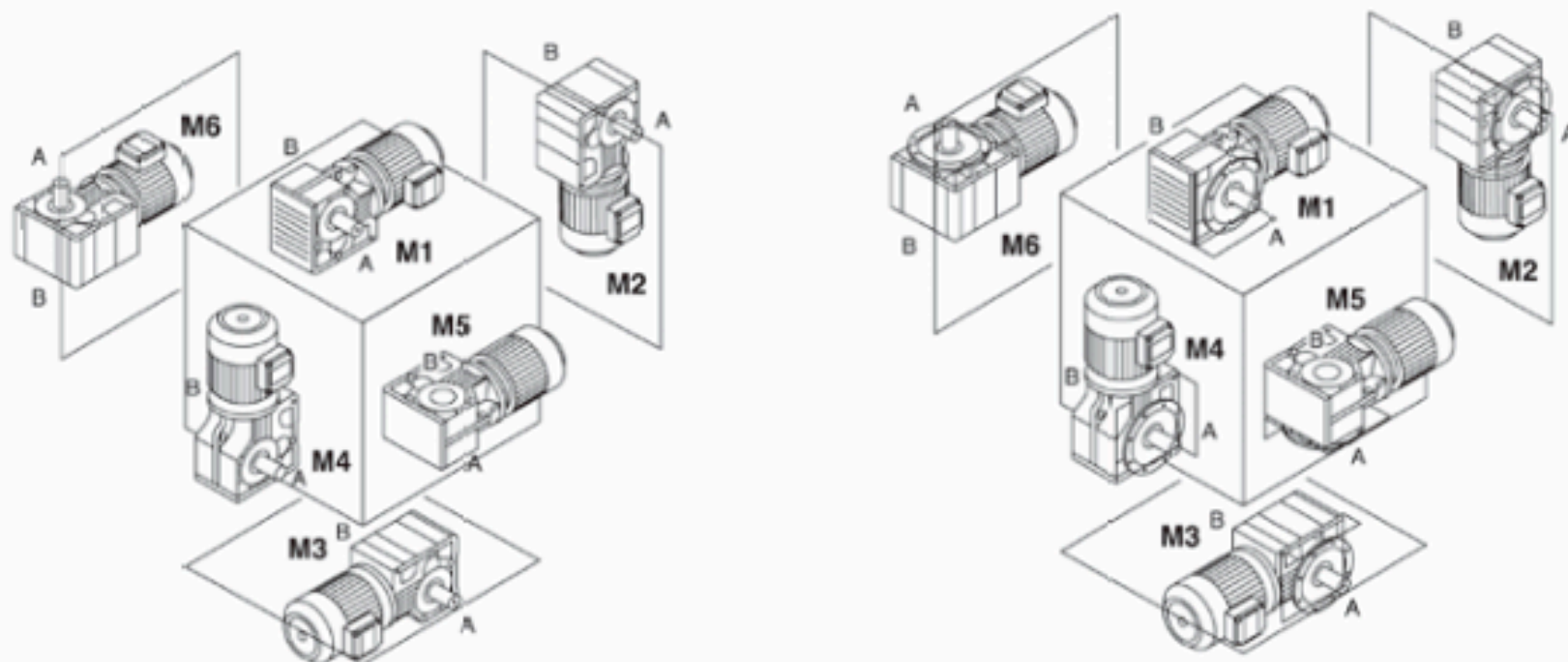
Output shaft \ flange \ shrink disk directions:
Viewing from motor end: left side = A, right side = B,
both side = AB (See mounting positions)

Direction of rotation from the output shaft end:
Clockwise CW
Counter clockwise CCW

*Dimensions of hollow shaft with shrink disk, see page 40-41.

SMK Helical Bevel Gear Units

Mounting positions



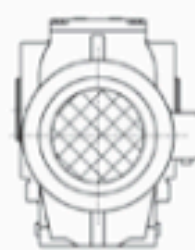
Positions of motor terminal box:



0°



90°



180°



270°

Input power rating and permissible torque

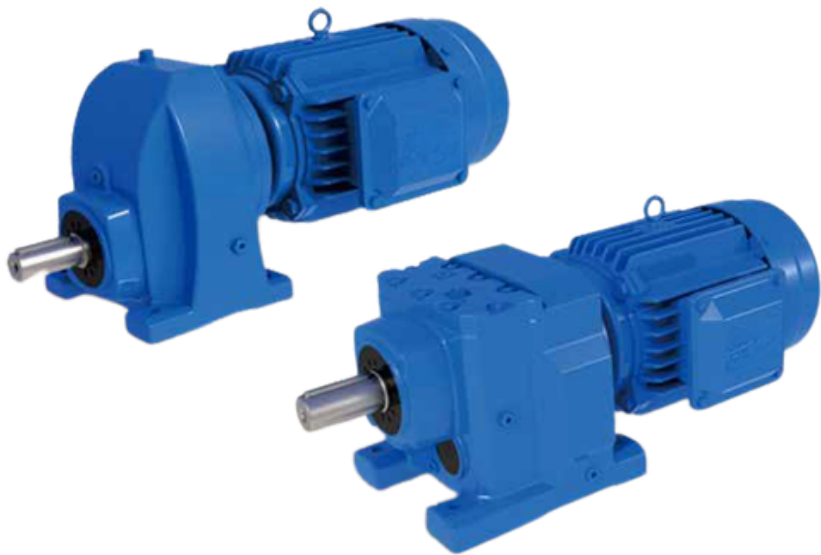
Size	37	47	57	67	77	87	97	107	127	157	167	187
Structure	K KA KF KAF KAZ KAT KAB											
Input power rating(kw)	0.18~3.0	0.18~3.0	0.18~5.5	0.18~5.5	0.37~11	0.75~22	1.1~30	3~45	7.5~90	11~160	11~200	18.5~200
Ratio	5.36~106.38	5.81~131.87	6.57~145.14	7.14~144.79	7.24~192.18	7.19~197.37	8.95~176.05	8.74~141.46	8.68~146.07	12.85~150.41	17.28~163.91	17.27~180.78
Permissible torque (n.m)	200	400	600	820	1550	2700	4300	8000	13000	18000	32000	50000

Gear unit weight

Size	37	47	57	67	77	87	97	107	127	157	167	187
Weight (kgs)	11	20	27	33	57	85	130	250	380	610	1015	1700

The marked weight is average value, it has no constraint force.

SMR Helical Gear Units



POWER: : 0.4 ~ 160KW

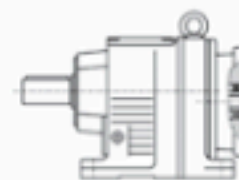
GEARBOX MAX TORQUE: 18,000Nm

RATIO : 3.37 ~ 4,606

FEATURES:

- PRODUCTION OF A WIDE RANGE OF PRODUCTS FOR VARIOUS APPLICATIONS, DEPENDING ON FRAME TYPE, SPECIFICATIONS, AND SIZE.
- SMR SERIES (COAXIAL HELICAL GEARBOX): A STANDARD CONFIGURATION IN WHICH THE INPUT AND OUTPUT SHAFTS ARE ALIGNED ON THE SAME AXIS, PROVIDING HIGH EFFICIENCY AND HIGH TORQUE TRANSMISSION.

SMR Helical Gear Units



R (RF, RX, RXF) ...Y...

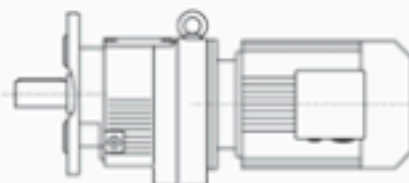
Customers provide the motor by themselves need connected flange

SMR series gear units are available in the following designs:



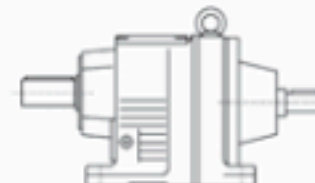
R...Y...

Foot-mounted helical gear units



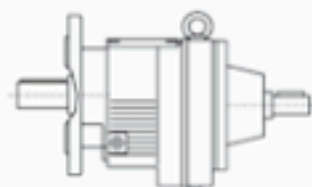
RF...Y...

Flange-mounted helical gear units



RS...

Foot-mounted helical gear units with solid shaft input



RFS...

Flange-mounted helical gear units with solid shaft input



R...R...Y...

Foot-mounted combi-type helical gear units



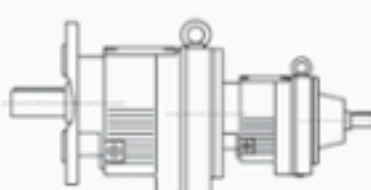
RF...R...Y...

Flange-mounted combi-type helical gear units



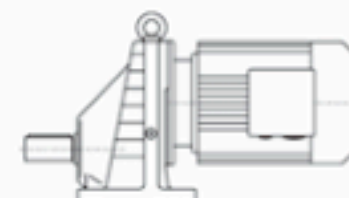
RS...R...

Foot-mounted combi-type helical gear units with solid shaft input



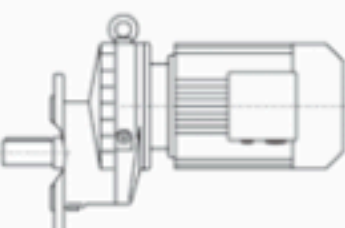
RFS...R...

Flange-mounted combi-type gear units with shaft input



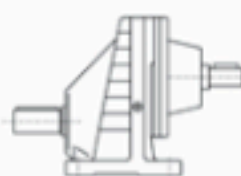
RX...Y...

Foot-mounted single-stage helical gear units



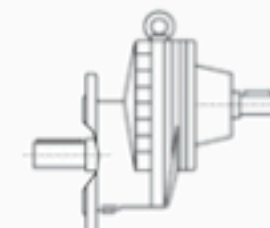
RXF...Y...

Flange-mounted single-stage helical gear units



RXS...

Foot-mounted single-stage helical gear units with solid shaft input

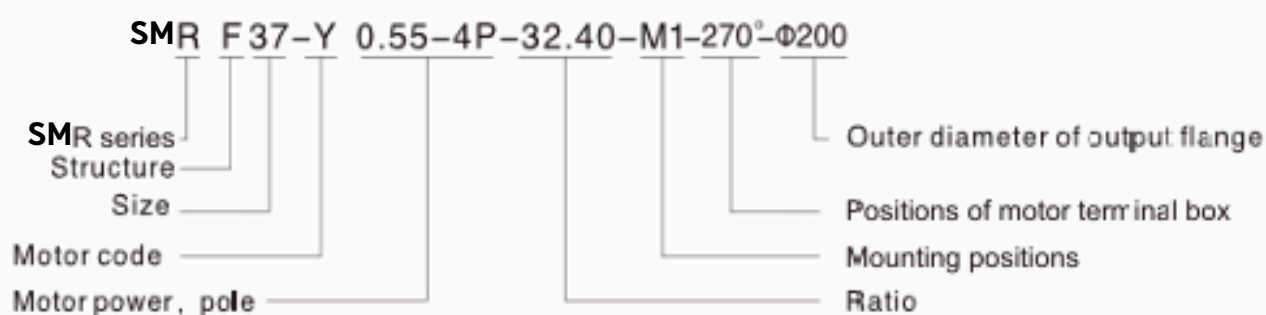


RXFS...

Flange-mounted single-stage helical gear units with solid shaft input

SMR Helical Gear Units

Type Designations:



R series:
helical gear units

Structure:
Foot-mounted (-)
Flange-mounted F
Foot-mounted with shaft input S
Flange-mounted with shaft input FS

Size:
(see selection table)

Motor code:
Common motor Y(Y2)
Flameproof motor B
Direct current motor Z
Brake motor YEJ
Multi-speed motor D
Variable frequency motor YVP
Electromagnetic variable speed motor YCT
Metallurgy hoisting motor R
Transduction braking motor YVPJ
Roller way G

Motor power, pole:
See selection table

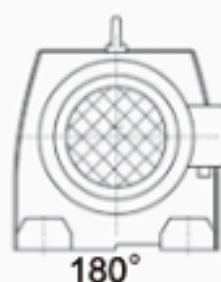
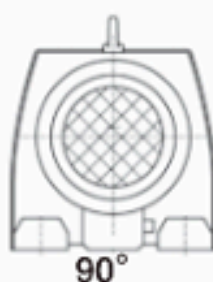
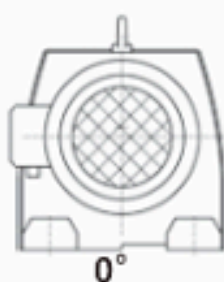
Ratio:
See selection table

Mounting positions:
M1, M2, M3, M4, M5. (See page 3)

Positions of motor terminal box:
0°, 90°, 180°, 270° (See page 2)

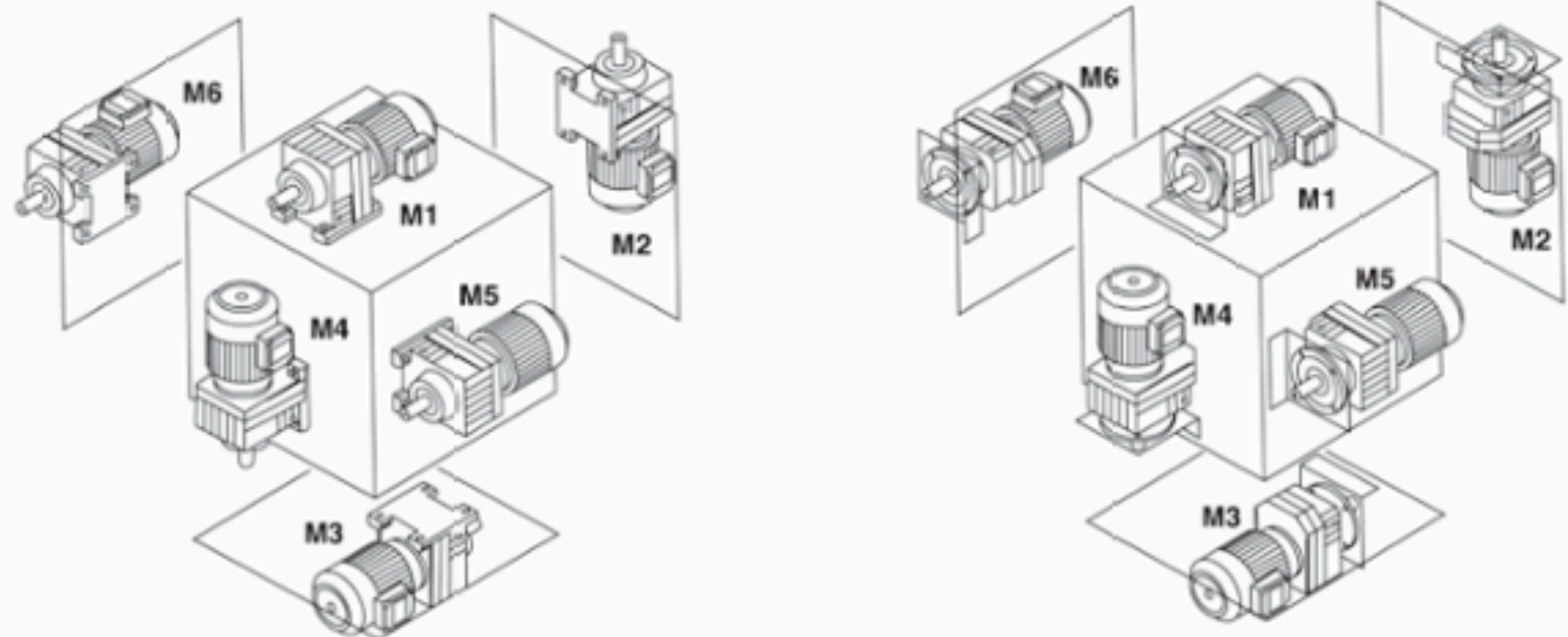
Outer diameter of output flange:
See the chart of mounting dimension (It will be omitted when foot mounting)

Positions of motor terminal box:



SMR Helical Gear Units

Mounting positions



Input power rating and permissible torque

Size	17	27	37	47	57	67	77	87	97	107	137	147	167
Structure	R						RF						
Input power rating (kW)	0.18~0.75	0.18~3	0.18~3	0.18~5.5	0.18~7.5	0.18~7.5	0.18~11	0.55~22	0.55~30	2.2~45	5.5~55	11~90	11~160
Ratio	3.83~74.84	3.37~135.09	3.33~134.82	3.83~176.88	4.39~186.89	4.29~199.81	5.21~195.24	5.36~246.54	4.49~289.74	5.06~249.16	5.15~222.60	5.00~163.31	10.24~229.71
Permissible torque (N·m)	85	130	200	300	450	600	820	1550	3000	4300	8000	13000	18000

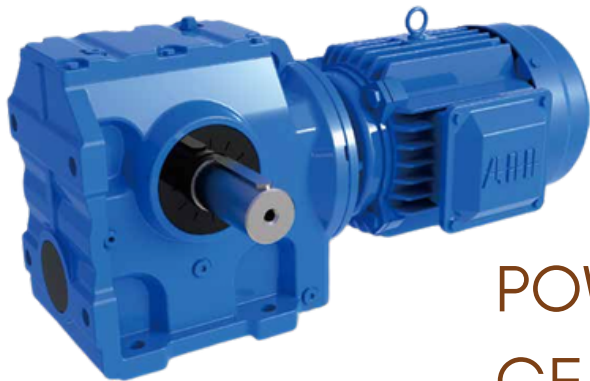
Size	37	57	67	77	87	97	107	127	157
Structure	RX				RXF				
Input power rating (kW)	0.18~1.1	0.18~5.5	0.18~7.5	1.1~11	3~22	5.5~30	7.5~45	7.5~90	11~132
Ratio	1.62~4.43	1.3~5.5	1.4~6.07	1.42~8.00	1.39~8.65	1.42~8.23	1.44~6.63	1.51~6.2	1.57~6.2
Permissible torque (N·m)	20	70	135	215	400	600	830	1110	1680

Gear unit weight

Size	R17	R27	R37	R47	R57	R67	R77	R87	R97	R107	R137	R147	R167
Weight (kgs)	4	5.5	8.5	10	18	25	36	63	101	153	220	400	700
Gear unit type	RX37	RX57	RX67	RX77	RX87	RX97	RX107	RX127	RX157				
Weight (kgs)	5	8	14	23	39	70	100	150	250				

The marked weight is average value, it has no constraint force.

SMS Helical -Worm Gear Units



POWER: : 0.4 ~ 22KW

GEARBOX MAX TORQUE: 4,000Nm

RATIO : 10.27 ~ 230.48

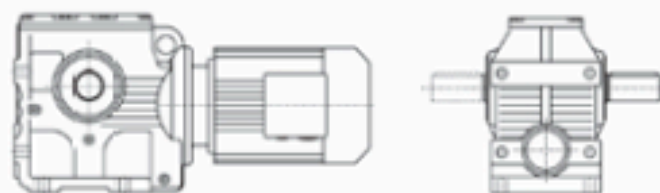
FEATURES:

- PRODUCTION OF A WIDE RANGE OF PRODUCTS FOR VARIOUS APPLICATIONS, DEPENDING ON FRAME TYPE, SPECIFICATIONS, AND SIZE.
- SMS SERIES (HELICAL-WORM GEARBOX): COMBINES HELICAL AND WORM GEARS TO PROVIDE SMOOTH OPERATION AND IMPROVED EFFICIENCY.

SMS Helical -Worm Gear Units

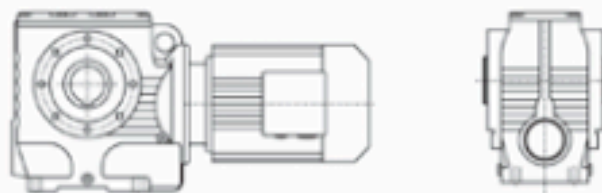


SMS series gear units are available in the following designs:



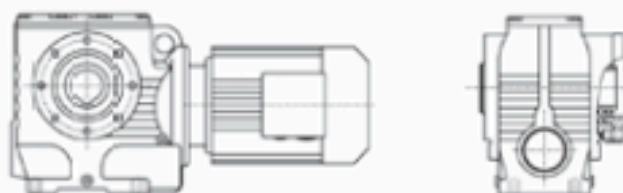
S...Y..

Foot-mounted solid shaft helical-worm gear units



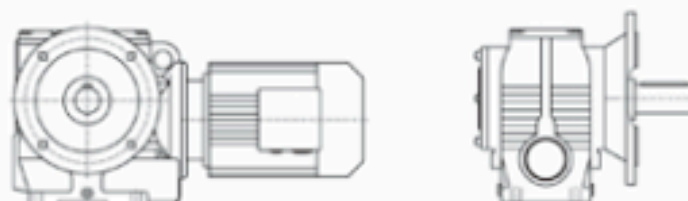
SA...Y...

Hollow shaft helical-worm gear units



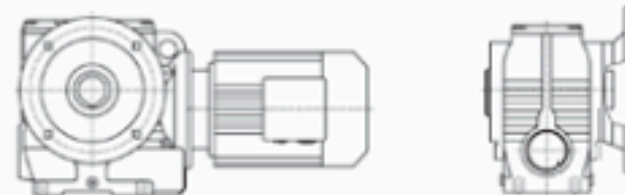
SAZ...Y...

Short-flange-mounted hollow shaft helical-worm gear units



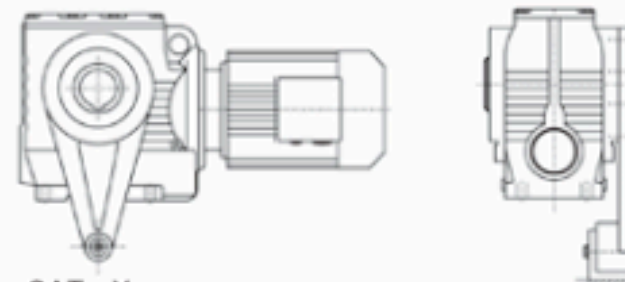
SF...Y..

Flange-mounted solid shaft helical-worm gear units



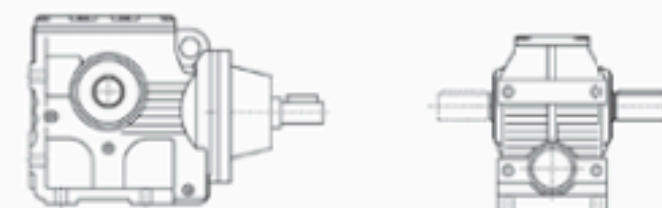
SAF...Y..

Flange-mounted hollow shaft helical-worm gear units



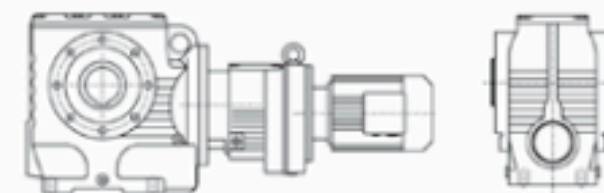
SAT...Y..

Torque-arm-mounted hollow shaft helical-worm gear units



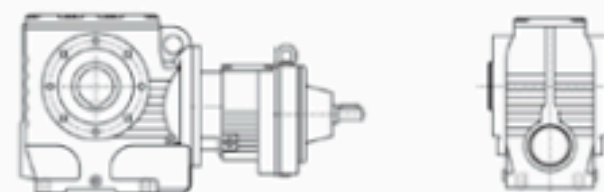
S(SF, SA, SAF, SAZ) S...

Helical-worm gear units with solid shaft input



SA (S, SF, SAF, SAZ) ...R...Y...

Combi-type helical-worm gear units



SA (S, SF, SAF, SAZ) S...R...

Combi-type helical-worm gear units with solid shaft input

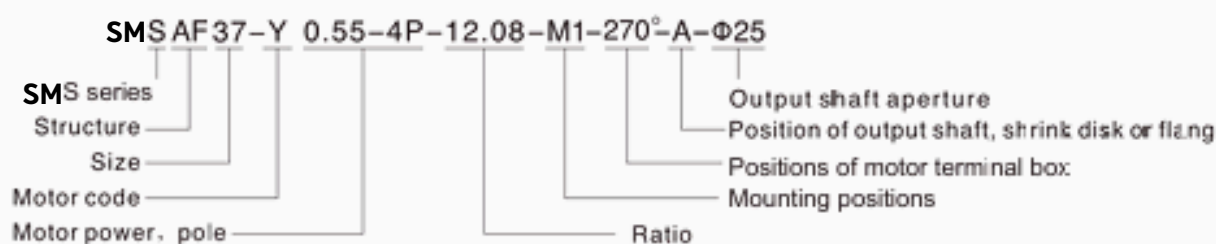


SA(S, SF, SAF, SAZ) ...Y...

Customers provide the motor by themselves need connected flange.

SMS Helical -Worm Gear Units

Type Designations:



R series:

Helical-worm gear units

Structure:

Foot-mounted solid shaft	(-)
Hollow shaft	A
Flange-mounted solid shaft	F
Flange-mounted hollow shaft	AF
Short-flange-mounted hollow shaft	AZ
Torque-arm-mounted hollow shaft	AT
Foot-mounted solid shaft with solid shaft input	S
Hollow shaft with solid shaft input	AS
Flange-mounted solid shaft with solid shaft input	FS
Flange-mounted hollow shaft with solid shaft input	AFS
*Hollow shaft with shrink disk	H..(H,HF,HZ,HT)

Size:

(see selection table)

Motor code:

Common motor	Y(Y2)
Flameproof motor	B
Direct current motor	Z
Brake motor	YEJ
Multi-speed motor	D
Variable frequency motor	YVP
Electromagnetic variable speed motor	YCT
Metallurgy hoisting motor	R
Transduction braking motor	YVPJ
Roller way	G

Motor power, pole :

See selection table

Ratio:

See selection table

Mounting positions:

M1,M2,M3,M4,M5, M6(See page 03)

Positions of motor terminal box:

0°, 90°, 180°, 270°(See page 03)

Output shaft \ flange \ shrink disc directions:

Viewing from motor end: left side = A,
right side = B, both side = AB(See mounting
positions)

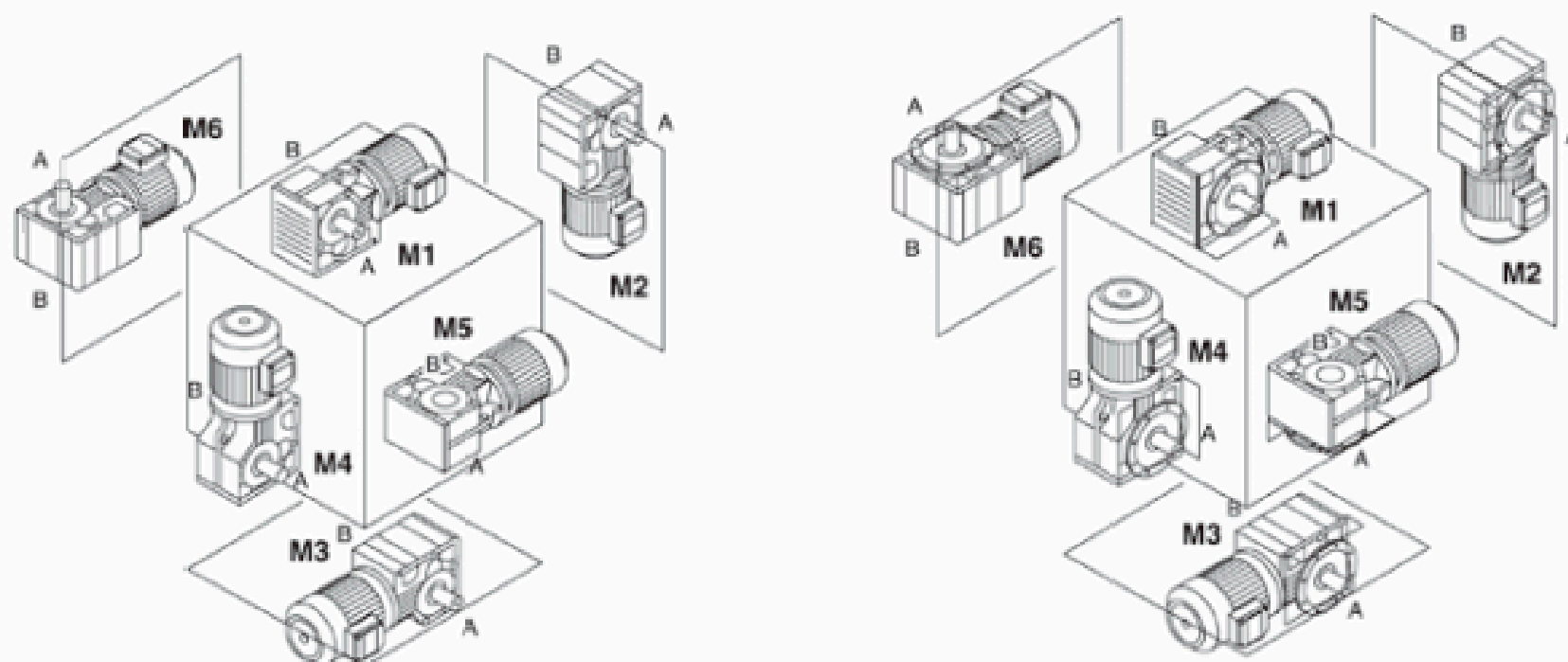
Output shaft aperture:

See the chart of mounting dimension (It will be omitted when applying with solid output shaft)

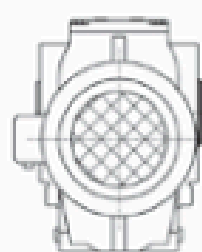
*Dimensions of hollow shaft with shrink disc, see page 22-23.

SMS Helical -Worm Gear Units

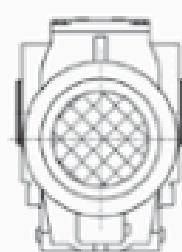
Mounting positions



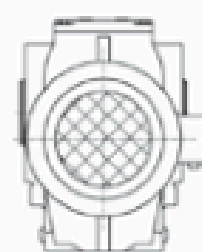
Positions of motor terminal box



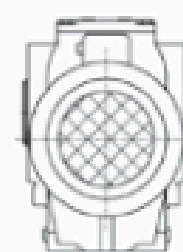
0°



90°



180°



270°

Input power rating and permissible torque

Size	37	47	57	67	77	87	97
Structure	S SA SF SAF SAT SAZ						
Input power rating (kW)	0.18~0.75	0.18~1.5	0.18~3	0.25~5.5	0.55~7.5	0.75~15	1.5~22
Ratio	10.27~165.71	11.46~244.74	10.78~196.21	11.55~227.20	9.96~241.09	11.83~223.26	12.75~230.48
Permissible torque (N.m)	90	170	300	520	1270	2280	4000