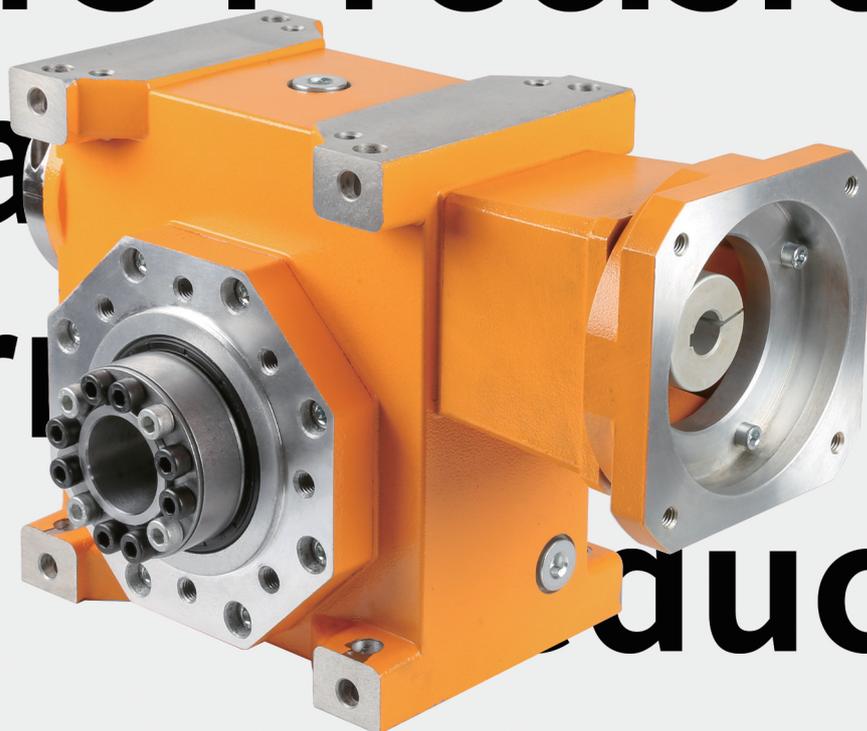


# SAMG精密 双导程蜗轮减速机

New product

# SAMG Precision Dual World Reducer



特殊优化调整结构

Special optimization  
and adjustment structure



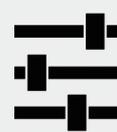
大型圆锥滚子轴承

Large tapered roller bearing



超高精度

Ultra-high precision

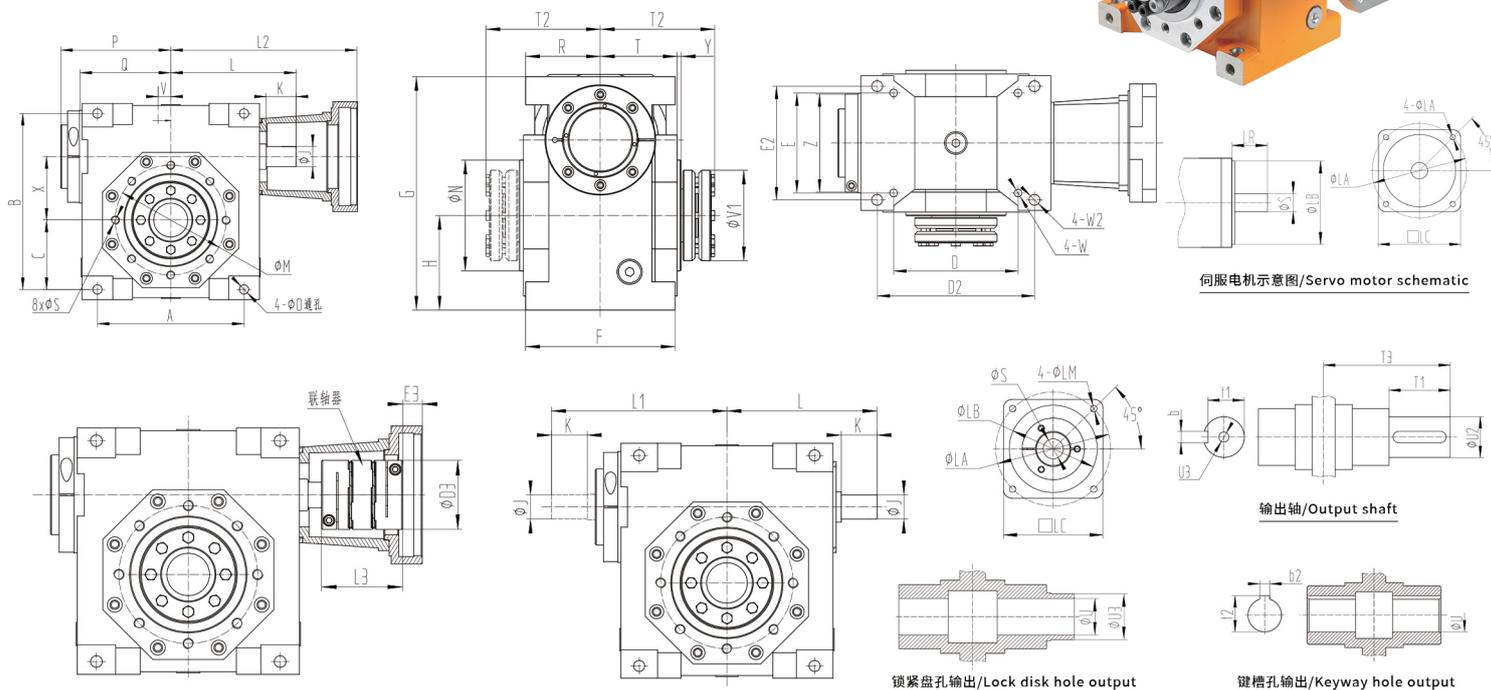


可调到2弧分以内,减速机  
使用后可重新调整

Adjustable to within 2 arc minutes  
the reducer can be re-adjusted after use

# SAMG系列尺寸图

## SAMG series size drawing



SAMG	45	55	63	75	90
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A	108	120	134	172	186
B	135	155	173	208	234
C	53	61	66	82	91
D	81	90	98	136	141
D2	114	125	140	172	204
D3	44	56	56	68	68
E	68	78	91	110	130
E2	84	96	108	125	140
E3	5	6.5	6.5	6.5	6.5
F	100	112	127	148	170
G	153	175	197	232	264
H	62	71	78	94	106
J(h6)	15	18	20	24	28
K	24	28	30	35	35
L(min+v)	98.5+V	111+V	122+V	147+V	157+V
L1(max-v)	119.5-V	133-V	144-V	172-V	183-V
L2	103+LR	116+LR	127+LR	152+LR	162-LR
L3	48	59.8	59.8	73.3	73.3
M	85	100	115	130	165
V	8	8	10	13	13
T3	110	121.5	139	155	191

SAMG	45	55	63	75	90
N(h7)	70	80	95	110	130
O	9	9	11	11	13
P (max)	91	100	108	129	139.5
Q	70.5	78	87	107	117.5
R	50	56	63.5	74	85
S	M8	M8	M8	M10	M12
T	52	58	65.5	76	87
T2	78	87	96.5	110	124
U(h7)	25	30	35	40	50
U3	30	36	44	50	68
V1	60	72	80	90	115
W	M8	M8	M10	M10	M12
W2	9	9	10	12	14
X	45	55	63	75	90
Y	3	3.5	3.5	4	4
Z	86	86	93	108	108
t2	28.3	33.3	38.3	43.3	53.8
b2	8	8	10	12	14
T1	55	60	70	75	100
U2(h6)	35	40	45	50	65
U3	M12	M16	M16	M16	M20
t1	30	35	39.5	44.5	58
b	10	12	14	14	18

## SAMG特点

蜗轮蜗杆伺服减速器有45,55,63,75,90五种规格，采用双导程蜗杆传动。蜗杆的左右齿面使用不同的导程角，引起齿厚的渐变，这样就可以移动蜗杆调整啮合间隙。

Worm gear servo reducer has 45,55,63,75,90 five specifications, using double lead worm drive. The left and right tooth surfaces of the worm use different lead angles, causing a gradual gradient of tooth thickness, so that the worm can be moved to adjust the engagement clearance.

- 蜗轮回转背隙可以调整到小于1弧分。
- 减速器使用后可以重新调整间隙。
- 输入用联轴器联结:可靠无背隙。
- 输出用锥形夹紧环联轴器:可靠无背隙。

- The backgap of worm gear can be adjusted to less than 1 arc minute.
- Reducer after using can adjust the clearance.
- Coupling for input: reliable without backgap.
- Taper clamp ring coupling for output:reliable without backgap.

## SAMG使用场合

### 精密设备装置

- 数控机床、流水线、升降机、切割机、输送线等。
- 分度装置、读数机构等要求运动准确的场合。

### Precision equipment

- CNC machine tools, assembly lines, lifts, cutting machines, conveyor lines, etc.
- Indexing device, reading mechanism and other occasions requiring accurate movement.

### 速度有变化的场合

- 减少由速度变化引起的冲击及噪音
- 减少由速度变化引起的蜗轮加剧磨损。

### Where there is a change in speed

- Reduce impact and noise caused by speed changes
- Reduce increased wear of worm gears caused by speed changes.

# SAMG性能参数

## SAMG Performance parameters

n1		4000			3000			2000			1000								
SAMG	i	M <sub>2</sub> [Nm]	M <sub>5</sub> [Nm]	N <sub>d Effi</sub>	M <sub>2</sub> [Nm]	M <sub>5</sub> [Nm]	N <sub>d Effi</sub>	M <sub>2</sub> [Nm]	M <sub>5</sub> [Nm]	N <sub>d Effi</sub>	M <sub>2</sub> [Nm]	M <sub>5</sub> [Nm]	N <sub>d Effi</sub>	E-STOP	C1f	ig	et	fr <sub>2</sub> [N]	fa <sub>2</sub> [N]
45	5.2	36	62	94	41	70	93	50	83	92	67	109	91	214	0.4	2.9*10 <sup>-5</sup>	9	5800	4000
	7.25	42	71	93	48	80	92	57	93	91	76	121	89	214	0.4	2.2*10 <sup>-5</sup>	9	5800	4000
	10.25	46	80	92	53	88	91	62	98	90	80	128	88	214	0.4	1.5*10 <sup>-5</sup>	9	5800	4000
	14.5	52	83	88	59	94	87	68	109	86	88	141	82	214	0.4	1.4*10 <sup>-5</sup>	9	5800	4000
	19.5	50	80	87	55	88	86	64	102	84	81	129	80	214	0.3	1*10 <sup>-5</sup>	9	5800	4000
	30	55	88	80	61	98	78	70	112	76	88	141	71	214	0.3	1*10 <sup>-5</sup>	9	5800	4000
	45	54	86	75	59	94	72	68	109	69	83	133	64	185	0.3	8.2*10 <sup>-6</sup>	9	5800	4000
	60	50	78	70	55	86	68	62	97	64	75	116	59	170	0.2	7.3*10 <sup>-6</sup>	9	5800	4000
	90	46	71	62	50	76	59	57	86	56	68	99	50	154	0.2	4.6*10 <sup>-6</sup>	9	5800	4000
55	5.2	60	103	94	68	116	94	82	137	93	111	181	91	307	0.6	7.5*10 <sup>-5</sup>	20	7000	4800
	7.25	65	111	93	74	125	92	90	147	91	118	188	89	307	0.6	5.3*10 <sup>-5</sup>	20	7000	4800
	10.25	76	132	90	87	145	89	103	165	88	133	206	85	307	0.6	1.5*10 <sup>-5</sup>	20	7000	4800
	14.5	71	115	88	82	133	87	96	155	85	123	190	82	307	0.6	3.8*10 <sup>-5</sup>	20	7000	4800
	19.5	77	123	87	87	139	85	101	162	83	128	205	80	307	0.4	3.1*10 <sup>-5</sup>	20	7000	4800
	30	83	130	80	94	148	78	109	169	75	136	202	70	307	0.4	3.4*10 <sup>-5</sup>	20	7000	4800
	45	83	130	74	93	145	72	106	163	69	131	202	63	307	0.4	2.8*10 <sup>-5</sup>	20	7000	4800
	60	82	128	69	91	141	67	103	158	63	126	194	58	286	0.3	2.6*10 <sup>-5</sup>	20	7000	4800
	90	76	117	62	82	125	59	94	142	55	113	164	49	263	0.3	1.2*10 <sup>-5</sup>	20	7000	4800
63	5.2	90	153	95	105	179	94	126	210	93	169	275	91	497	0.8	1.6*10 <sup>-4</sup>	36	8800	8500
	7.25	91	155	94	103	174	93	125	206	92	165	264	90	497	0.8	9*10 <sup>-5</sup>	36	8800	8500
	10.25	103	169	93	118	194	92	141	231	91	181	290	89	497	0.8	8*10 <sup>-5</sup>	36	8800	8500
	14.5	110	179	90	128	207	89	149	240	87	191	293	84	497	0.8	6.9*10 <sup>-5</sup>	36	8800	8500
	19.5	119	190	88	135	215	87	156	250	85	199	318	82	497	0.5	5.5*10 <sup>-5</sup>	36	8800	8500
	30	138	218	82	155	245	80	179	281	78	223	335	73	497	0.5	5.9*10 <sup>-5</sup>	36	8800	8500
	45	123	193	77	137	214	75	156	239	72	193	287	67	403	0.5	5*10 <sup>-5</sup>	36	8800	8500
	60	121	189	73	134	205	71	151	233	67	186	288	62	404	0.4	4.7*10 <sup>-5</sup>	36	8800	8500
	90	110	169	65	121	184	63	137	207	59	166	241	53	368	0.4	3.2*10 <sup>-5</sup>	36	8800	8500
75	5.2	147	252	95	174	296	94	209	349	94	282	459	92	834	1	3.7*10 <sup>-4</sup>	50	10500	10500
	7.25	139	236	94	161	270	93	196	321	92	256	409	90	834	1	2.5*10 <sup>-4</sup>	50	10500	10500
	10.25	146	234	93	168	269	92	204	326	91	261	418	88	834	1	2.2*10 <sup>-4</sup>	50	10500	10500
	14.5	170	276	90	195	315	88	234	376	87	298	460	84	834	1	1.9*10 <sup>-4</sup>	50	10500	10500
	19.5	168	270	88	194	310	87	227	362	85	288	434	81	834	0.6	1.5*10 <sup>-4</sup>	50	10500	10500
	30	186	294	84	212	334	82	248	382	80	309	460	75	834	0.6	1.6*10 <sup>-4</sup>	50	10500	10500
	45	190	299	76	212	331	74	244	383	71	301	472	65	718	0.6	1.4*10 <sup>-4</sup>	50	10500	10500
	60	175	272	72	195	300	69	221	334	66	272	395	60	657	0.5	1.3*10 <sup>-4</sup>	50	10500	10500
	90	167	257	64	187	280	62	209	316	87	255	370	52	625	0.5	8*10 <sup>-5</sup>	50	10500	10500
90	5.2	227	387	95	271	460	95	327	546	94	445	725	92	1543	1.5	8.5*10 <sup>-4</sup>	75	15800	13000
	7.25	263	460	95	306	490	95	373	597	94	490	784	92	1534	1.5	6*10 <sup>-4</sup>	75	15800	13000
	10.25	273	478	94	314	528	93	383	627	92	488	781	90	1543	1.5	3.8*10 <sup>-4</sup>	75	15800	13000
	14.5	272	444	91	314	504	90	380	612	88	486	748	85	1543	1.5	3.2*10 <sup>-4</sup>	75	15800	13000
	19.5	318	506	90	367	584	88	431	685	87	544	865	84	1543	0.8	2.5*10 <sup>-4</sup>	75	15800	13000
	30	316	500	84	362	572	82	424	661	80	531	792	75	1543	0.8	2.6*10 <sup>-4</sup>	75	15800	13000
	45	343	538	80	385	599	79	441	674	76	546	811	71	1255	0.8	1.9*10 <sup>-4</sup>	75	15800	13000
	60	328	512	77	364	559	75	412	622	72	507	761	67	1230	0.5	1.7*10 <sup>-4</sup>	75	15800	13000
	90	298	459	70	332	505	68	372	562	64	460	667	59	1114	0.5	1.10 <sup>-4</sup>	75	15800	13000

# 参数符号对应表

## SYMBOLS AND UNITS OF MEASURE

符号Symbols	单位Units	注解	Description
P	[KW]	功率	power
P <sub>1</sub>	[KW]	输入功率	Transmitted power at input shaft
P <sub>2</sub>	[KW]	输出功率	Transmitted power at output shaft
P <sub>n1</sub>	[KW]	额定输入功率	Rated input power
M <sub>n1</sub>	Nm	电机额定扭矩	Motor rated torque
M <sub>2</sub>	Nm	输出扭矩	Transmitted torque at output shaft
M <sub>c2</sub>	Nm	计算的输出扭矩	Calculated torque at output shaft
M <sub>n2</sub>	Nm	额定输出扭矩	Rated torque at output shaft
M <sub>n<sup>5</sup></sub>	Nm	额定加速扭矩	Rated acceleration torque
M <sub>n5</sub>	Nm	计算的加速扭矩	Calculated Output acceleration torque
M <sub>r2</sub>	Nm	需求的扭矩	Required torque at output shaft
n <sub>1</sub>	min <sup>-1</sup>	输入转速	Angular input speed
n <sub>2</sub>	min <sup>-1</sup>	输出转速	Angular output sped
i	-	减速比	Ratio
η <sub>d</sub>	-	动态效率	Dynamic efficiency
η <sub>s</sub>	-	静态效率	Static efficiency
Z <sub>1</sub>	-	蜗杆齿数	Number of worm thread
M <sub>x</sub>	-	轴向模数	Axial modulus
f <sub>s</sub>	-	工作系数	Service factor
J <sub>e</sub>	kgm <sup>2</sup>	在电机轴上衰减的惯性矩	Moment of the external inertia reduced at the drive shaft
J <sub>m</sub>	kgm <sup>2</sup>	电机惯性矩	Moment of inertia of motor
F <sub>r1</sub>	N	输入轴径向负荷	Input shaft radial load
F <sub>r2</sub>	N	输出轴径向负荷	Output shaft radial load
F <sub>a2</sub>	N	输出轴轴向负荷	Output shaft axial load
E-stop	Nm	输出急停扭矩 (最大时间限度2秒)	Output emergency torque(2seconds duration maximum)
C1f	Nm	启动输入摩擦扭矩	Starting input friction torque
ig	kg.m <sup>2</sup>	输入惯性矩	Rated acceleration torque
ET	Nm/arcmin	输出抗扭刚度	Torsional stifness on outpu

# 型号释义 Model definition

类型 Type	减速比 Ratio	输出 Output	背隙 Backlash	安装方位 Mounting position	颜色 Color	电机 Electric motor
SAM075	30	C1	P0	B3	B	30

电机型号/Motor type

颜色/Color  
S=银灰色/Silver gray  
B=蓝色/Blue, O=橙色/Orange

安装方位/Mounting position  
B3, B6, B7, B8, V5, V6

背隙/Backlash  
P0: (超精密级/Ultra precision); 1弧分(75, 90, 110); 2弧分(25, 35, 45, 50, 55, 63)  
P1: (精密级/Precision); 2~4弧分(75, 90, 110); 3~5弧分(25, 35, 45, 50, 55, 63)

输出轴/Output shaft  
C (锁紧盘孔输出/Hollow shaft for shrink disc)  
2C (双锁紧盘孔输出/Hollow shaft for double shrink disc)  
CR (键槽孔输出/Hollow shaft with keyway)  
GZ (单出轴/Single output shaft)  
AZ (双出轴/Dual output shaft)  
1.2 (安装位置/Mounting side)

减速比/Reduction ratio  
5, 7.5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100 (常规速比/Standard ratio)  
可定制速比/Speed ratio can be customized

减速器尺寸/Gearbox size  
45, 55, 63, 75, 90

减速器类型  
Reducer type



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