



恒星减速机  
FIXEDSTAR REDUCER

蜗輪減速機  
WORM GEAR SPEED REDUCER

中國 · 恒星集團 · 杭州減速機廠  
HANGZHOU REDUCER FACTORY, FIXED STAR GROUP, CHINA

## 企業簡介

恒星集團·杭州減速機廠創建於1976年，是國內最早生產蝸輪減速機和自動開門機的專業廠家之一。近三十年的艱苦創業，鑄就了恒星品牌的優良形象，企業規模也日益壯大。目前，集團還擁有中新合資杭州福成機械門業有限公司、中德合資杭州中德傳動設備有限公司、杭州福特減速機有限公司、上海恒傳機械有限公司等五家子公司。

八十年代，以振興民族工業為己任的杭減人，一舉推出替代進口產品的恒星品牌系列減速機，以優良的品質、合理的價格迅速為國內用戶接受；面對日益增長的國際市場，杭減人又獨具慧眼，在同行中率先申請獲得自營進出口權，並且，恒星商標已在許多國家成功註冊。從此，恒星品牌走向世界，蝸輪減速機、硬齒面齒輪減速機、圓弧圓柱蝸杆減速機、平面二次包絡環面減速機、擺綫針輪減速機、自動開門機、絲杆升降機、聯軸器、閘門啟閉器等九大系列，六萬余種規格的產品遍布五大洲的三十八個國家和地區。企業也連續多年被評為“浙江省百強出口企業”榮譽稱號。

隨着市場對品質和服務要求的不斷提高，杭州減速機廠在國內同行中率先貫徹實施并通過ISO9001國際質量體系認證。嚴格的質量保證體系和科學的管理方法，贏得了國內外用戶的廣泛信賴，品牌形象和企業形象進一步提升。

跨入二十一世紀，杭減人對未來充滿信心。為滿足日益增長的市場需求，移地新建的杭州減速機廠將以更高的起點，繼續昂首同行前列！



## Brief Introduction

Founded in 1976, Hangzhou Reducer Factory, Fixed Star Group is the earliest manufacturer of Worm Gear Reducer and Gate Operator in China. After near 30 years' hard working, a famous brand name FIXED STAR has grown up in both domestic and international market. The group also boasts the obtaining of the following five enterprises: Hangzhou Fucheng Door Machinery CO. Ltd., Hangzhou Sino-Deutsch Power Transmission equipment Co. Ltd., Hangzhou Ford Reducer Co. Ltd., Shanghai Hengchuan Machinery CO., Ltd.

We always regard improving national industry as our duty. We have succeeded in progressing Fixed Star reducer series to replace imported product in 1980s. Our products were soon accepted by international customers by their high quality and competitive prices. We are the first factory to be granted the Import & Export Right by the central government among our counterpart. At the same time we have registered our trademark Fixed Star in many countries we export. The Fixed Star products are spread to more than 38 countries in the world and we are the "The First Hundred Export Enterprises" in Zhejiang Province for many years. The available products fall into nine categories namely Worm Gears, Helical gears, Cyclo Drive, Double Envelop, Cylindrical Gear, Automatic gate operator, Screw Actuator, Flexible Coupling, Valve Gear and more than 60, 000 types.

To meet the increasing requirements to quality and service, we had early carried out and obtained ISO9001. Thanks to our firm quality control systems and management, we have won the trust of our customers both at home and abroad. Our Fixed Star brand and reputation of enterprise have achieved wide improvement.

FIXED STAR, FIXED MOTION. In the new century, we are more confident on our future. In our newly built workshop and office building, we will make all effort to keep our leading position in the same trade. COME ON AND BE WITH US.





FCNK  -  E



FCNK  -



FCNDK  -



FCNDK  -  E



FCNDKO  -  FL1



FCNDKO  -  F1



FCNDK  -

## FCNK 系列蜗輪減速機

## FCNK Series Worm Gear Speed Reducer

### 一、概述

FCNK 系列蜗輪減速機是我廠在引進國外技術的基礎上開發的新一代產品。FCNK 主要特點如下：

1. 優質鋁合金鑄造，重量輕，不生銹；
2. 輸出扭矩大；
3. 傳動平穩，噪音小；
4. 散熱性能好；
5. 美觀耐用，體積小；
6. 可適用全方位安裝。

### 一、Summary

FCNK series worm gear speed reducer is a new-generation of products developed by our factory on the basis of introducing foreign advanced technology, its main features are as follows:

1. Made of high-quality aluminium alloy, light weight and non-rusting.
2. Large output torque.
3. Smooth running and low noise.
4. High radiating efficiency.
5. Good-looking appearance, durable service life and small volume.
6. Suitable for omnibearing installation.

#### 型號說明：

Explanation

FCNDK 063 - 40 E F1 SZ 71B5



## 二、使用與保障

### Operation and maintenance

1. 蝸輪減速機開始運行 400 小時，應重新更換潤滑油。以後的換油周期約為 4000 小時。出廠時已加 N460 蝸輪、蝸杆潤滑油。

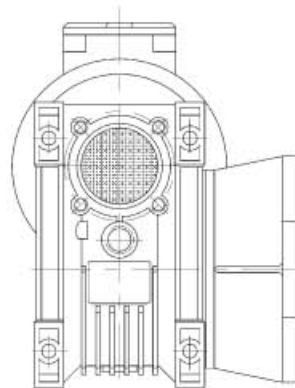
2. 箱體內應保留足夠的潤滑油，並定時檢查。

1. When Worm-gear speed reducer starts to work up to 400 hours, its lubrication oil should be replaced, After that, the cycle of oil replacement is about 4,000 hours. It is full filled with N460 worm gear lubrication oil when the products leave the factory.

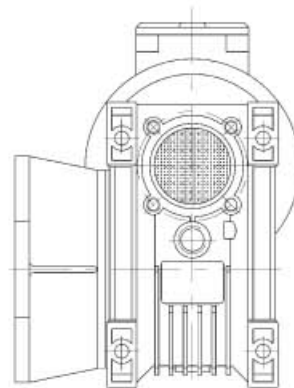
2. Lubricating oil should be kept enough in the casing and checked at a fixed time.

### 輸出法蘭位置 Position diagram for output flange

F1,FL1,FB1

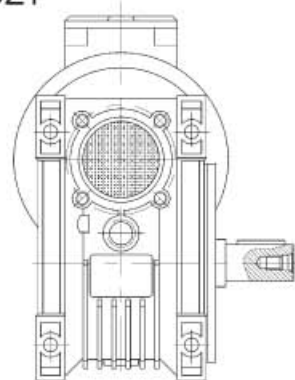


F2,FL2,FB2

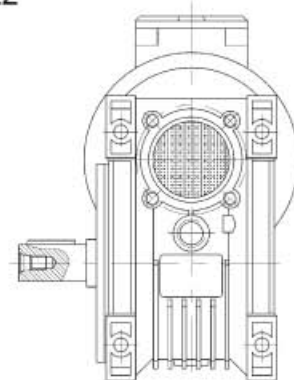


### 單向輸出軸位置圖 Position diagram for one-way output shaft

DZ1



DZ2



型號 Size	025	030	040	050	063	075	090	110	130
潤滑用油 (公升) Qty of oil in litres	0.02	0.04	0.08	0.15	0.3	0.55	1	3	4.5

### 三、蜗輪減速機性能參數

Performance parameter for worm gear speed reducer

入功率 (kw)	型號 Size	i	$n_2$ (r/min)	$M_2$ (N·m)
0.06kw 4P $n_1=1400$ r/min	025	7.5	186	2.6
	030	7.5	186	2.6
	025	10	140	3.4
	030	10	140	3.4
	025	15	94	4.9
	030	15	94	4.7
	025	20	70	6.1
	030	20	70	6
	030	25	56	7
	025	30	47	8.2
	030	30	47	8
	025	40	35	10.2
	030	40	35	9.7
	025	50	28	11
	030	50	28	11.3
	040	50	28	12.7
	025	60	24	11
	030	60	24	12.5
040	60	24	14.2	
030	80	18	12.5	
040	80	18	17	
040	100	14	19.2	
0.09kw 4P $n_1=1400$ r/min	025	7.5	186	3.9
	030	7.5	186	3.9
	025	10	140	5.1
	030	10	140	5
	025	15	94	7.3
	030	15	94	7.1
	025	20	70	9.2
	030	20	70	9
	030	25	56	10.4
	025	30	47	12.3
	030	30	47	12
	025	40	35	13
	030	40	35	14.5
	030	50	28	16.9
	040	50	28	19
	030	60	24	16.9
	040	60	24	21.4
	040	80	18	25.5
040	100	14	28.9	
0.12kw 4P $n_1=1400$ r/min	030	7.5	186	5.2
	040	7.5	186	5.3
	030	10	140	6.7
	040	10	140	7
	030	15	94	9.5
	040	15	94	10.1
	030	20	70	12
	040	20	70	12.8
	030	25	56	13.9
	040	25	56	15.3
	030	30	47	16
	040	30	47	17.2
	030	40	35	17
	040	40	35	21.3
	050	40	35	21.9
	040	50	28	25.4
	050	50	28	25.8
	040	60	24	28.5

入功率 (kw)	型號 Size	i	$n_2$ (r/min)	$M_2$ (N·m)
0.12kw 4P $n_1=1400$ r/min	050	60	24	29
	040	80	18	34.1
	050	80	18	34.7
	050	100	14	40.1
	030	7.5	186	8
	040	7.5	186	8
0.18kw 4P $n_1=1400$ r/min	030	10	140	10
	040	10	140	10
	030	15	94	14
	040	15	94	15
	030	20	70	18
	040	20	70	19
	030	25	56	20
	040	25	56	23
	040	30	47	26
	050	40	35	32
	040	40	35	32
	050	50	28	38
	050	50	28	38
	050	60	24	34
	050	80	18	53
	050	100	14	55
	040	7.5	186	11
	050	7.5	186	11
0.25kw 4P $n_1=1400$ r/min	040	10	140	14
	050	10	140	14
	040	15	94	20
	050	15	94	21
	040	20	70	26
	050	20	70	26
	040	25	56	31
	050	25	56	32
	040	30	47	36
	050	30	47	36
	040	40	35	44
	050	40	35	45
	050	50	28	53
	050	60	24	60
	050	80	18	66
	063	80	18	77
	050	100	14	55
	063	100	14	85
0.37kw 4P $n_1=1400$ r/min	040	7.5	186	16
	050	7.5	186	16
	040	10	140	21
	050	10	140	21
	040	15	94	30
	050	15	94	31
	040	20	70	39
	050	20	70	39
	050	25	56	47
	050	30	47	54
	050	40	35	66
	063	40	35	70
	050	50	28	73
	063	50	28	83
	063	60	24	96
	063	80	18	114
	063	100	14	118

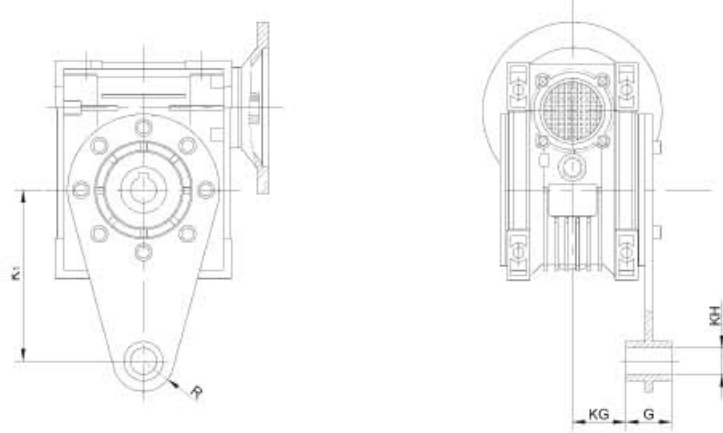
### 三、蜗輪減速機性能參數

Performance parameter for worm gear speed reducer

入功率 (kw)	型號 Size	i	$n_2$ (r/min)	$M_2$ (N·m)
0.55kw 4P $n_1=1400r/min$	040	7.5	186	24.5
	060	7.5	186	25
	040	10	140	32
	050	10	140	32
	050	15	94	46
	063	15	94	46
	050	20	70	59
	063	20	70	60
	063	25	56	72
	063	30	47	80
	063	40	35	104
	075	40	35	108
	063	50	28	123
	075	50	28	129
	075	60	24	146
075	80	18	180	
075	100	14	180	
0.75kw 4P $n_1=1400r/min$	050	7.5	186	34
	063	7.5	186	33
	050	10	140	44
	063	10	140	44
	050	15	94	63
	063	15	94	63
	063	20	70	82
	063	25	56	99
	063	30	47	109
	075	30	47	116
	063	40	35	143
	075	40	35	147
	075	50	28	176
	090	50	28	184
	075	60	24	200
090	60	24	212	
090	80	18	257	
090	100	14	270	
1.1kw 4P $n_1=1400r/min$	063	7.5	186	49
	075	7.5	186	49
	063	10	140	65
	075	10	140	66
	063	15	94	93
	075	15	94	95
	063	20	70	121
	075	20	70	122
	075	25	56	149
	075	30	47	170
	075	40	35	216
	090	40	35	225
	090	50	28	271
	090	60	24	311
	110	60	24	324
110	80	18	410	
110	100	14	460	
1.5kw 4P $n_1=1400r/min$	075	7.5	186	67
	075	10	140	90
	063	15	94	130
	075	20	70	167
	075	25	56	200
	090	25	56	209
	075	30	47	230
	090	30	47	236
	090	40	35	306

入功率 (kw)	型號 Size	i	$n_2$ (r/min)	$M_2$ (N·m)
1.5kw 4P $n_1=1400r/min$	060	50	28	369
	110	50	28	375
	110	60	24	442
	110	80	18	490
	130	80	18	547
	130	100	14	652
2.2kw 4P $n_1=1400r/min$	060	7.5	186	101
	110	7.5	186	101
	060	10	140	133
	110	10	140	133
	060	15	94	193
	110	15	94	192
	060	20	70	251
	110	20	70	256
	060	25	56	307
	110	25	56	316
	060	30	47	346
	110	30	47	355
	110	40	35	462
	110	50	28	550
	130	50	28	567
130	60	24	660	
130	80	18	803	
3.0kw 4P $n_1=1400r/min$	110	7.5	186	138
	110	10	140	182
	110	15	94	263
	110	20	70	350
	110	25	56	431
	110	30	47	484
	110	40	35	631
	130	40	35	642
	130	50	28	773
	130	60	24	900
	110	7.5	186	184
	130	7.5	186	186
	110	10	140	243
	130	10	140	242
	4.0kw 4P $n_1=1400r/min$	110	15	94
130		15	94	357
110		20	70	464
130		20	70	466
110		25	56	573
130		25	56	572
110		30	47	646
130		30	47	655
130		40	35	857
130		50	28	980
110		7.5	186	253
130		7.5	186	256
110		10	140	334
130		10	140	334
5.5kw 4P $n_1=1400r/min$		110	15	94
	130	15	94	490
	130	20	70	645
	130	25	56	788
	130	30	47	900
	110	7.5	186	345
	130	7.5	186	349
	110	10	140	455
	130	10	140	455
7.5kw 4P $n_1=1400r/min$	130	15	94	667
	130	20	70	880
	130	25	56	1074

扭力臂  
Torque Arm



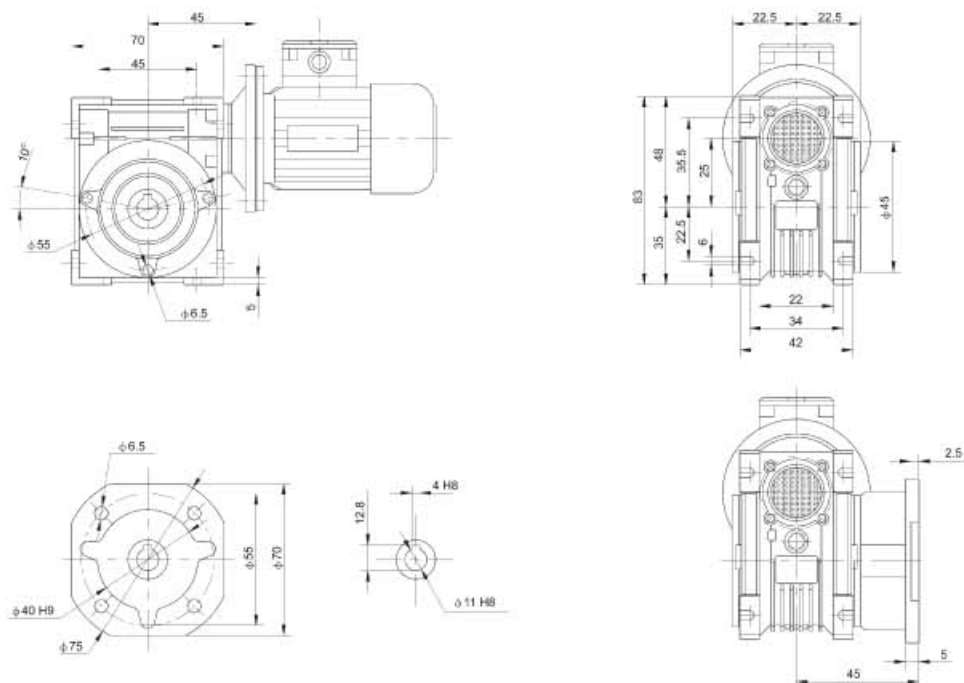
型号 Size	K	G	KG	KH	R
025	70	14	17.5	8	15
030	85	14	24	8	15
040	100	14	31.5	10	18
050	100	14	38.5	10	18
063	150	14	49	10	18
075	200	25	47.5	20	30
090	200	25	57.5	20	30
110	250	30	62	25	36
130	250	30	69	25	36

025 和 030 無防震套

The anti-vibration bushing is not fitted on sizes 025 and 030.

025 型蝸輪減速機外形及安裝尺寸

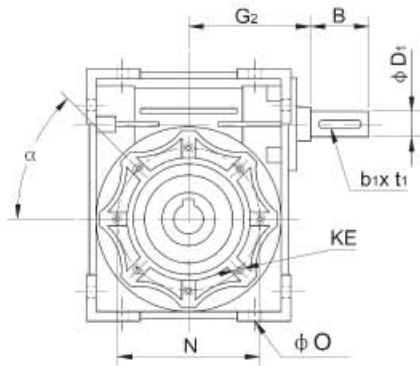
Outline & Installation Size for Type 025 Worm Gear Speed Reducer



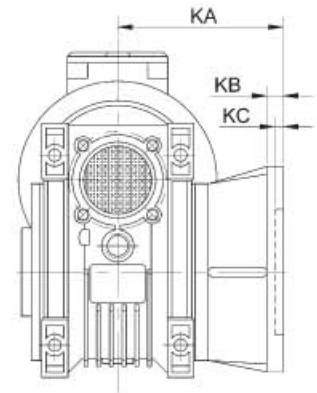
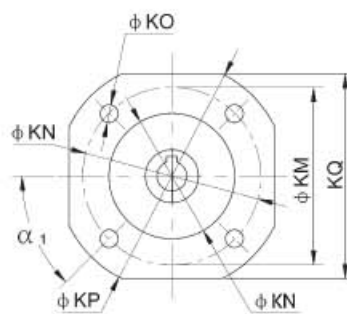
## 030~130 型蜗輪減速機外形及安裝尺寸

## Outline &amp; Installation Size for Type 030~130 Worm Gear Speed Reducer

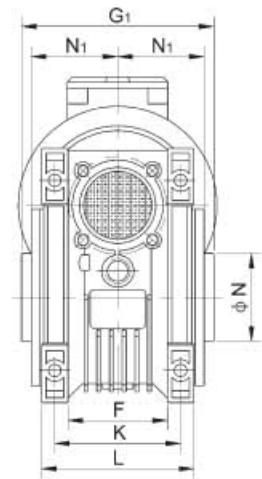
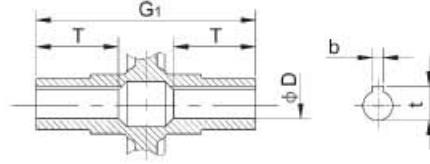
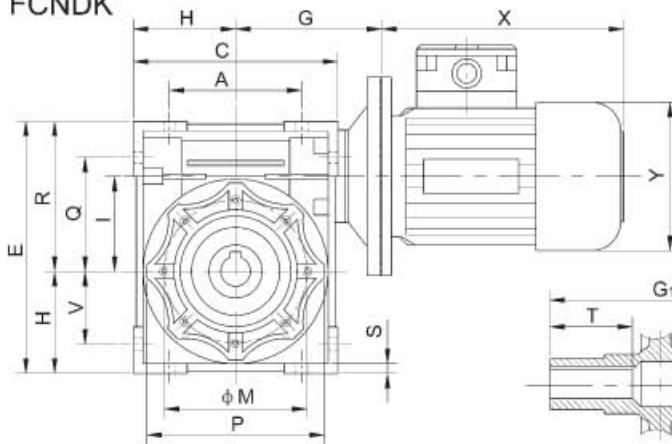
FCNK



FCNDKO



FCNDK

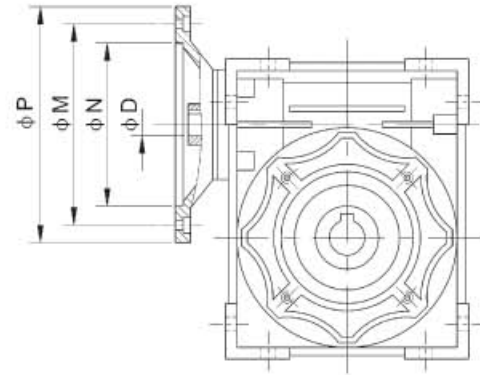


Size	A	B	C	D (H7)	D <sub>1</sub> (J6)	E	F	G	G <sub>1</sub>	G <sub>2</sub>	H	I	L	M	N (H8)	N <sub>1</sub>	O	P	Q	R
030	54	20	80	14	9	97	32	55	63	51	40	30	56	65	55	29	6.5	75	44	57
040	70	23	100	18(19)	11	121.5	43	70	78	60	50	40	71	75	60	36.5	6.5	87	55	71.5
050	80	30	120	25(24)	14	144	49	80	92	74	60	50	85	85	70	43.5	8.5	100	64	84
063	100	40	144	25(28)	19	174	67	95	112	90	72	63	103	95	80	53	8.5	110	80	102
075	120	50	172	28(35)	24	205	72	112.5	120	105	86	75	112	115	95	57	11	140	93	119
090	140	50	208	35(38)	24	238	74	129.5	140	125	103	90	130	130	110	67	13	160	102	135
110	170	60	252.5	42	28	295	-	160	155	142	127.5	110	144	165	130	74	14	200	125	167.5
130	200	80	292.5	45	30	335	-	180	170	162	147.5	130	155	215	180	81	16	250	140	187.5

Size	S	T	V	K	KA			KB			KC			KE			α	α <sub>1</sub>	KM			KN (H8)			KO			KP			KQ			b	t <sub>1</sub>	f	i	l	kg
					F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL			F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL						
030	5.5	21	27	44	54.5	-	-	6	-	4	-	-	MBX11(n,4)	0°	45°	68	-	50	-	-	6.5(n,4)	-	-	-	80	-	-	70	-	-	5	3	-	16.3	10.2	1.2			
040	6.5	26	35	60	67	76.5	97	7	9	7	4	5	4	MBX8(n,4)	45°	45°	87	115	87	60	95	60	9(n,4)	9.5(n,4)	9(n,4)	110	140	110	95	-	95	6(6)	4	-	20.8(21.8)	12.5	2.3		
050	7	30	40	70	90	87.5	120	9	10	9	5	5	5	MBX10(n,4)	45°	45°	90	130	90	70	110	70	11(n,4)	9.5(n,4)	11(n,4)	125	160	125	110	-	110	8(8)	5	M6	28.3(27.3)	16.0	3.5		
063	8	36	50	85	82	99	112	10	11	10	6	5	6	MBX14(n,4)	45°	45°	150	165	150	115	130	115	11(n,4)	11(n,4)	11(n,4)	180	200	180	142	-	142	8(8)	6	M6	28.3(31.3)	21.5	6.2		
075	10	40	60	90	111	-	-	13	-	6	-	-	MBX14(n,4)	45°	45°	165	-	130	-	-	14(n,4)	-	-	-	200	-	170	-	-	8(10)	8	M6	31.3(36.3)	27.0	9				
090	11	45	70	100	111	-	-	13	-	6	-	-	M10X18(n,4)	45°	45°	175	-	152	-	-	14(n,4)	-	-	-	210	-	200	-	-	10(10)	8	M6	38.3(41.3)	27.0	13				
110	14	50	85	115	131	-	-	15	-	6	-	-	M10X18(n,4)	45°	45°	230	-	170	-	-	14(n,8)	-	-	-	280	-	260	-	-	12	8	M10	45.3	31.0	35				
130	15	60	100	120	140	-	-	15	-	6	-	-	M12X21(n,4)	45°	22.5°	255	-	180	-	-	16(n,8)	-	-	-	320	-	290	-	-	14	8	M10	48.8	33.0	48				

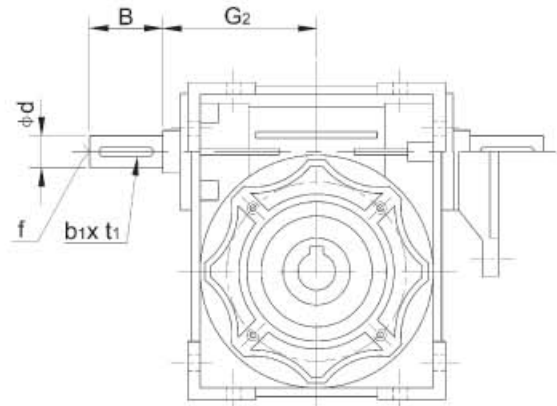
電機直聯尺寸(D)  
Motor Mounting Facility

Size	FAM IEC	N	M	P	D											
					7.5	10	15	20	25	30	40	50	60	80	100	
025	56B14	50	65	80	9	9	9	9	-	9	9	9	9	-	-	
	63B5	96	115	140	11	11	11	11	11	11	11	11	-	-	-	
	63B14	60	75	90	9	9	9	9	9	9	9	9	9	9	-	
030	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	-	
	56B14	50	65	80	9	9	9	9	9	9	9	9	9	9	-	
	71B5	110	130	160	14	14	14	14	14	14	14	-	-	-	-	
040	71B14	70	85	105	11	11	11	11	11	11	11	11	11	11	11	
	63B5	96	115	140	11	11	11	11	11	11	11	11	11	11	11	
	63B14	60	75	90	-	-	-	-	-	-	-	9	9	9	9	
	56B5	80	100	120	-	-	-	-	-	-	-	9	9	9	9	
050	80B5	130	165	200	19	19	19	19	19	19	-	-	-	-	-	
	80B14	80	100	120	14	14	14	14	14	14	14	14	14	14	-	
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	-	
	71B14	70	85	105	-	-	-	-	-	-	11	11	11	11	11	
063	63B5	96	115	140	-	-	-	-	-	-	11	11	11	11	11	
	90B5	130	165	200	24	24	24	24	24	24	-	-	-	-	-	
	90B14	96	115	140	19	19	19	19	19	19	19	19	19	-	-	
	80B5	130	165	200	19	19	19	19	19	19	19	19	19	-	-	
	80B14	80	100	120	-	-	-	-	-	-	14	14	14	14	14	
075	71B5	110	130	160	-	-	-	-	-	-	14	14	14	14	14	
	100/112B5	180	215	250	28	28	28	-	-	-	-	-	-	-	-	
	110/112B14	110	130	160	24	24	24	24	24	24	24	-	-	-	-	
	90B5	130	165	200	24	24	24	24	24	24	24	-	-	-	-	
	90B14	96	115	140	-	-	-	19	19	19	19	19	19	19	19	
	80B5	130	165	200	-	-	-	19	19	19	19	19	19	19	19	
090	80B14	80	100	120	-	-	-	-	-	-	14	14	14	14	14	
	71B5	110	130	160	-	-	-	-	-	-	14	14	14	14	14	
	100/112B5	180	215	250	28	28	28	28	28	28	-	-	-	-	-	
	100/112B14	110	130	160	24	24	24	24	24	24	24	24	24	24	-	
	90B5	130	165	200	24	24	24	24	24	24	24	24	24	24	-	
110	90B14	96	115	140	-	-	-	-	-	-	19	19	19	19	19	
	80B5	130	165	200	-	-	-	-	-	-	19	19	19	19	19	
	132B5	230	265	300	38	38	38	38	38	38	38	38	38	38	-	
	100/112B5	180	215	250	28	28	28	28	28	28	28	28	28	28	-	
130	90B5	130	165	200	-	-	-	-	-	-	24	24	24	24	24	
	132B5	230	265	300	38	38	38	38	38	38	38	38	38	38	-	
	100/112B5	180	215	250	-	-	-	-	-	-	28	28	28	28	28	



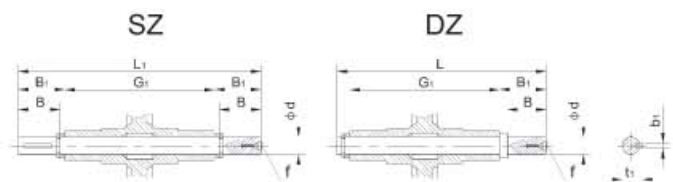
蝸杆同向輸入軸尺寸(E)  
Double Worm Shaft

Size	G <sub>2</sub>	d (j6)	B	f	b <sub>1</sub>	t <sub>1</sub>
030	45	9	20	-	3	10.2
040	53	11	23	-	4	12.5
050	64	14	30	M6	5	16
063	75	19	40	M6	6	21.5
075	90	24	50	M8	8	27
090	108	24	60	M8	8	27
110	135	28	60	M10	8	31
130	155	30	80	M10	8	33



單向(DZ)、雙向(SZ)輸出軸尺寸  
Sizes of Single(DZ) & Double(SZ) Output shaft

Size	d (h6)	B	B <sub>1</sub>	G <sub>1</sub>	L	L <sub>1</sub>	f	b <sub>1</sub>	t <sub>1</sub>
025	11	23	25.5	50	81	101	-	4	12.5
030	14	30	32.5	63	102	128	M6	5	16
040	18	40	43	78	128	164	M6	6	20.5
050	25	50	53.5	92	153	199	M10	8	28
063	25	50	53.5	112	173	219	M10	8	28
075	28	60	63.5	120	192	247	M10	8	31
090	35	80	84.5	140	234	309	M12	10	38
110	42	80	84.5	155	249	324	M16	12	45
130	45	80	85	170	265	340	M16	14	48.5



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