

Dako



Motores Eléctricos Reductores

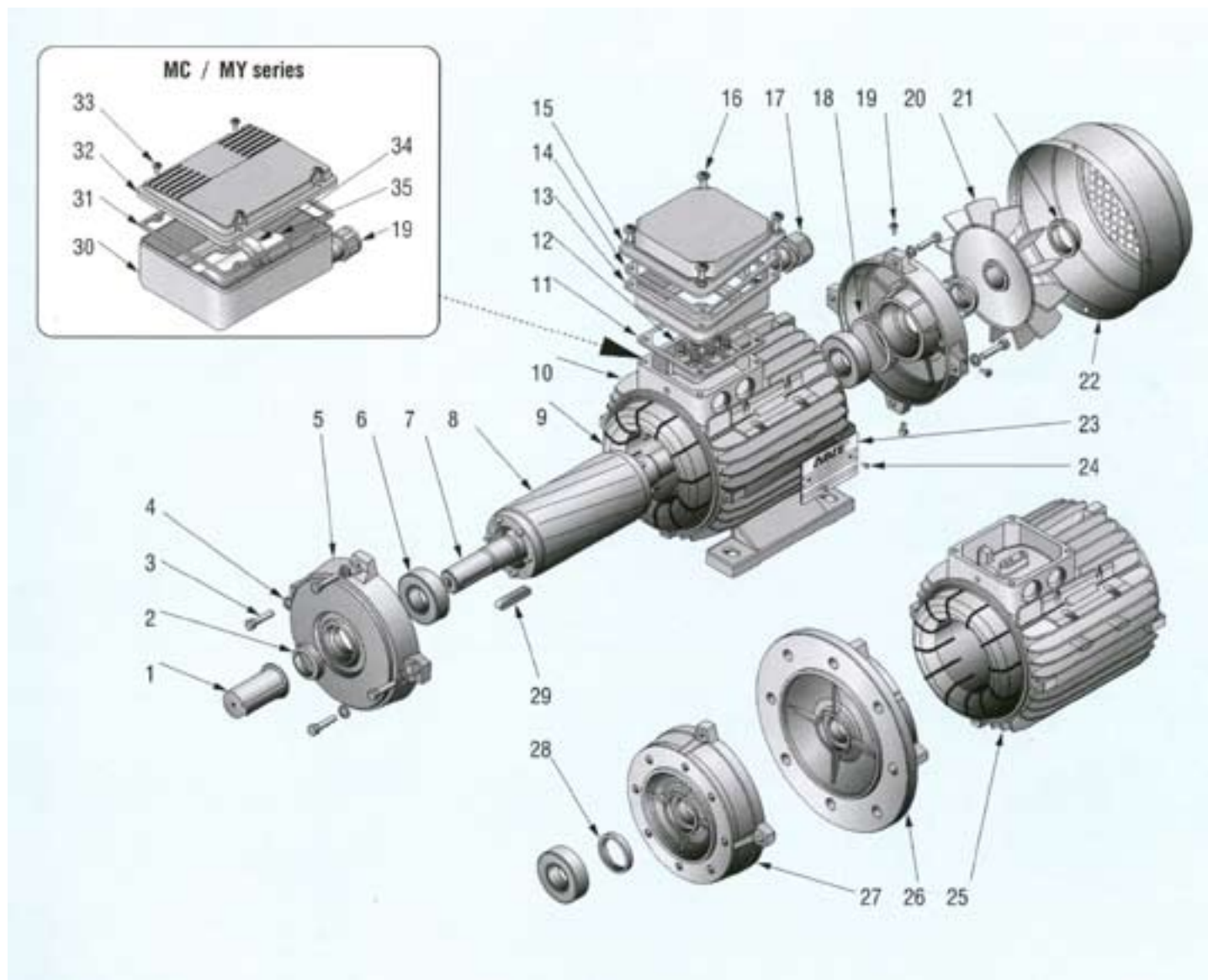
ISO 9001 : 2000



Authentication by EC CE

EFF

INSTALLATION DIMENSIONS



1 Protector eje	19 Tornillos fijación tapa ventilador	1 Shaft Cover	19 Fan cover tightening screws
2 Junta V	20 Ventilador de PVC	2 V-ring	20 PVC fan
3 Tornillos cierre motor	21 Anillo fijación ventilador	3 Motor Clamping screws	21 Ring for fan tightening
4 Arandela	22 Tapa ventilador	4 Rose	22 Fan cover
5 Escudo	23 Placa características del motor	5 Shield	23 Motor identification plate
6 Rodamiento	24 Tornillos fijación placa características	6 Bearing	24 Motor identification plate tightening screws
7 Eje motor	25 Cuerpo motor B5	7 Motor shaft	25 B5 motor casing
8 Rotor	26 Brida B5	8 Rotor	26 B5 flange
9 Bobinado estator	27 Brida B14	9 Wound stator	27 B14 flange
10 Cuerpo motor B3-B5	28 Anillo cierre	10 Motor casing B3-B5	28 Sealing ring
11 Cierre IP 55	29 Chaveta	11 IP 55 gasket	29 Sealing key
12 Bloque terminales conexión	30 Base alojamiento condensador	12 Mains power connection terminal block	30 Capacitor - holder - base
13 Base caja bornas	31 Cierre IP 55	13 Terminal block box - base	31 IP 55 gasket vers. MM
14 Cierre IP 55	32 Tapa alojamiento condensador	14 IP 55 gasket	32 capacitor - holder cover vers. MM
15 Tapa caja bornas	33 Tornillos cierre alojamiento condensador	15 Terminal block - box cover	33 capacitor - holder tightening screws vers. MM
16 Tornillos cierre caja bornas	34 Fijación condensador	16 Terminal block box tightening screws	34 Capacitor clamp vers. MM
17 Prensa-estopas	35 Condensador	17 Cable inlet bush	35 Capacitor
18 Anillo de compensación		18 Compensation ring	

Technology parameters of Y series three-phase asynchronous motor



Model	Rated Power (KW)	Rated Current (A)	Speed (r/min)	Efficiency (%)	Power Factor	Locked-rotor Current	Locked-rotor Torque	Max Torque
						Rated Current	Rated Torque	Rated Torque
Y80M1-2	0.75	1.8	2800	73	0.84	7	2.2	2.3
Y80M2-2	1.1	2.5		76	0.86			
Y80M1-4	0.55	1.5	1400	70	0.76	6.5	2.4	
Y80M2-4	0.75	2.0		72	0.76		2.3	
Y90S-2	1.5	3.4	2800	79	0.85	7	2.2	2.3
Y90L2-2	2.2	4.7		82	0.86			
Y90S-4	1.1	2.8	1400	78	0.78	6.5	2.3	
Y90L-4	1.5	3.7		79	0.79			
Y90S-6	0.75	2.3	910	72	0.70	6	2.0	2.2
Y90L-6	1.1	3.2		73	0.72			
Y100L-2	3.0	6.4	2850	82	0.87	7	2.2	2.3
Y100L1-4	2.2	5.0	1420	81	0.82			
Y100L2-4	3.0	6.8		82	0.81			
Y100L-6	1.5	4.0	940	77	0.74	6	2.0	2.2
Y112M-2	4.0	8.2	2890	85	0.87	7	2.2	2.3
Y112M-4	4.0	8.8	1440	84	0.82			
Y112M-6	2.2	5.6	940	80	0.74	6	2.0	2.2
Y132S1-2	5.5	11.1	2900	85	0.88	7	2.0	2.3
Y132S2-2	7.5	15		86	0.88			
Y132S-4	5.5	11.6	1440	85	0.84		2.2	
Y132M-4	7.5	15.4		87	0.85			
Y132S-6	3.0	7.2	960	83	0.76	6.5	2.0	2.2
Y132M1-6	4.0	9.4		84	0.77			
Y132M2-6	5.5	12.6		85	0.78			
Y132S-8	2.2	5.8	710	81	0.71	5.5	2.0	2.0
Y132M-8	3.0	7.8		82	0.72			
Y160M1-2	11	21.8	2930	87	0.88	7.0	2.0	2.3
Y160M2-2	15	29.4		88	0.88			
Y160L-2	18.5	35.5		89	0.89			
Y160M-4	11	22.6	1460	88	0.84	7.0	2.2	2.3
Y160L-4	15	30.3		88	0.85			
Y160M-6	7.5	17	970	86	0.78	6.5	2.0	2.0
Y160L-6	11	24.6		87				

Technology parameters of Y series three-phase asynchronous motor

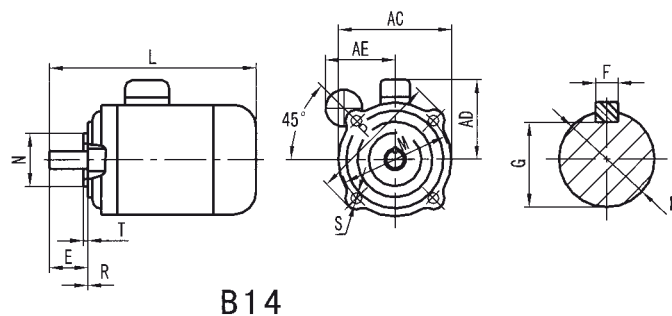
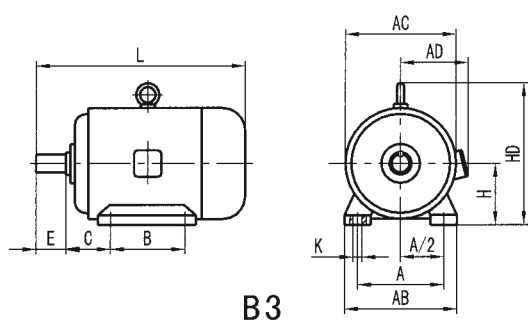
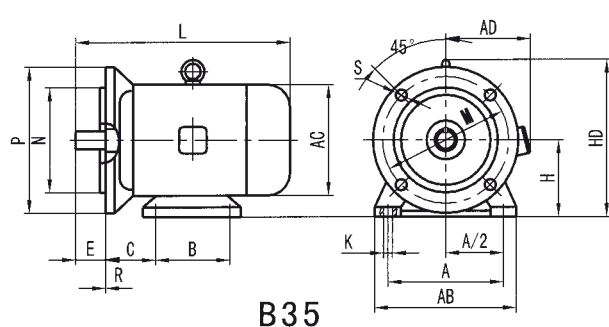
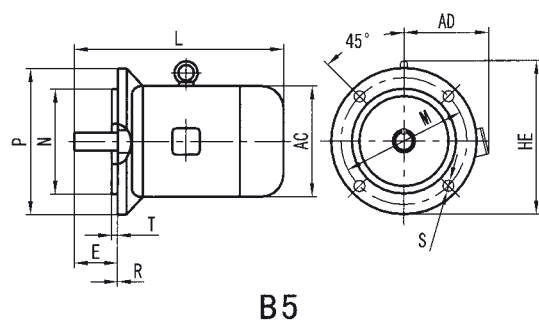
Model	Rated Power (KW)	Rated Current (A)	Speed (r/min)	Efficiency (%)	Power Factor	Locked-rotor Current	Locked-rotor Torque	Max Torque
						Rated Current	Rated Torque	Rated Torque
Y160M-8	4	9.68	720	84	0.73	6.0	2.0	2.0
Y160M2-8	5.5	13		85	0.74			
Y160L-8	7.5	17.2		86	0.75			
Y180M-2	22	42.2	2940	89	0.89	7.0	2.0	2.2
Y180M-4	18.5	35.9	1470	91	0.86	7.0	2.0	2.2
Y180L-4	22	42.5		91.5				
Y180L-6	15	31.5	970	89.5	0.81	6.5	1.8	2.0
Y180L-8	11	24.4	730	86.5	0.77	6.0	1.7	2.0
Y200L1-2	30	56.9	2950	90	0.89	7.0	2.0	2.2
Y200L2-2	37	70.4		90.5				
Y200L-4	30	56.8	1470	92.2	0.87	7.0	1.9	2.2
Y200L1-6	18.5	37.7	970	89.8	0.83	6.5	1.8	2.0
Y200L2-6	22	44.6		90.2				
Y200L-8	15	32.9	730	88	0.76	6.0	1.8	2.0
Y225M-2	45	83.9	2970	91.5	0.89	7.0	2.0	2.2
Y225S-4	37	69.8	1480	91.8	0.87	7.0	1.9	2.2
Y225M-4	45	84.2		92.3	0.88		2.0	
Y225M-6	30	59.5	980	90.2	0.85	6.5	1.7	2.0
Y225S-8	18.5	39.7	730	89.5	0.76	6.0	1.7	2.0
Y225M-8	22	46.4	730	90	0.78	6.0	1.8	2.0
Y250M-2	55	102.7	2970	91.4	0.89	7.0	2.0	2.0
Y250M-4	55	102.5	1480	2.6	0.88	7.0	1.9	2.2
Y250M-6	37	72.0	980	90.8	0.86	6.5	1.8	2.0
Y250M-8	30	61.6	730	90.5	0.80	6.0	1.8	2.0
Y280S-2	75	140.1	2970	91.4	0.89	7.0	2.0	2.2
Y280M-2	90	167		92				
Y280S-4	75	139.7	1480	92.7	0.88	7.0	1.9	2.2
Y280M-4	90	164.3		93.5			1.8	
Y280S-6	45	85.4	980	2	0.87	6.5	1.8	2.0
Y280M-6	55	104.9		91.6		7.0		
Y280S-8	37	76.1	740	9.1	0.79	6.0	1.8	2.0
Y280M-8	45	90.8		1.7	0.80			

Technology parameters of Y₂ series three-phase asynchronous motor aluminio

Model	Rated Power (KW)	Rated Current (A)	Speed (r/min)	Efficiency (%)	Power Factor	Locked-rotor Current	Locked-rotor Torque	Max Torque	
						Rated Current	Rated Torque	Rated Torque	
Y ₂ 631-2	0.18	0.51	2800	65	0.80	5.5	2.2	2.2	
Y ₂ 632-2	0.25	0.67		68	0.81				
Y ₂ 631-4	0.12	0.43	1400	57	0.72	4.4	2.1		
Y ₂ 632-4	0.18	0.61		60	0.73				
Y ₂ 711-2	0.37	0.98	2800	70	0.81	6.1	2.2	2.2	
Y ₂ 712-2	0.55	1.33		73	0.82			2.3	
Y ₂ 711-4	0.25	0.76	1400	65	0.74	5.2	2.1	2.2	
Y ₂ 712-4	0.37	1.07		67	0.75				
Y ₂ 80M1-2	0.75	1.78	2800	75	0.83	6.1	2.2	2.3	
Y ₂ 80M2-2	1.1	2.49		77	0.84	7.0			
Y ₂ 80M1-4	0.55	1.54	1400	71	0.75	5.2	2.4		
Y ₂ 80M2-4	0.75	1.99		73	0.76	6.0	2.3		
Y ₂ 90S-2	1.5	3.34	2800	79	0.84	7.0	2.2	2.3	
Y ₂ 90L2-2	2.2	4.69		81	0.85				
Y ₂ 90S-4	1.1	2.80	1400	75	0.77	6.0	2.3		
Y ₂ 90L-4	1.5	3.65		78	0.79				
Y ₂ 90S-6	0.75	2.23	910	69	0.72	5.5	2.0	2.1	
Y90L-6	1.1	3.10		72	0.73				
Y ₂ 100L-2	3.0	6.14	2850	83	0.87	7.5	2.2	2.3	
Y ₂ 100L1 -4	2.2	5.05	1420	80	0.81	7.0	2.3		
Y ₂ 100L2-4	3.0	6.64	940	82	0.72				
Y ₂ 100L-6	1.5	3.89	2890	76	0.75	5.5	2.0	2.1	
Y ₂ 112M-2	4.0	7.83	1440	85	0.88	7.5	2.2	2.3	
Y ₂ 112M-4	4.0	8.62	940	84	0.82	7.0	2.3		
Y ₂ 112M-6	2.2	5.46	2900	79	0.76	6.5	2.0	2.1	
Y ₂ 132S1-2	5.5	10.7		86	0.88	7.5	2.2	2.3	
Y ₂ 132S2-2	7.5	14.2	1400	87	0.88				2.3
Y ₂ 132S-4	5.5	11.5		85	0.83				
Y ₂ 132M-4	7.5	15.3	960	87	0.84	7.0	2.3		
Y2132S-6	3.0	7.1		81	0.76				6.5
Y ₂ 132M1-6	4.0	9.3	82	0.76					
Y ₂ 132M2-6	5.5	12.3	710	84	0.77	6.0	1.8	2.0	
Y ₂ 132S-8	2.2	6.0		78	0.71				
Y ₂ 132M-8	3.0	7.6		79	0.73				

Technology parameters of Y₂ series three-phase asynchronous motor

Model	Rated Power (KW)	Rated Current (A)	Speed (r/min)	Efficiency (%)	Power Factor	Locked-rotor Current	Locked-rotor Torque	Max Torque
						Rated Current	Rated Torque	Rated Torque
Y ₂ 160M1-2	11	20.9	2930	88	0.89	7.5	2.2	2.3
Y ₂ 160M2-2	15	27.9		89	0.89			
Y ₂ 160L-2	18.5	33.9		90	0.90			
Y ₂ 160M-4	11	22.2	1460	88	0.84	7.0	2.2	2.3
Y ₂ 160L-4	15	29.8		89	0.85	7.5		
Y ₂ 160M-6	7.5	16.7	970	86	0.77	6.5	2.0	2.1
Y ₂ 160L-6	11	23.6		87.5	0.78			
Y ₂ 160M1-8	4	10.0	720	81	0.73	6.0	1.9	2.0
Y ₂ 160M2-8	5.5	13.3		83	0.74		2.0	
Y ₂ 160L-8	7.5	17.8		85.5	0.75		2.0	
Y ₂ 180M-2	22	40.5	2940	90	0.90	7.5	2.0	2.3
Y ₂ 180M-4	18.5	36.1	1470	90.5	0.86		2.0	
Y ₂ 180L-4	22	42.6		91	0.86		2.0	
Y ₂ 180L-6	15	30.7	970	89	0.81	7.0	2.0	2.1
Y ₂ 180L-8	11	24.9	730	87.5	0.76	6.6		2.0
Y ₂ 200L1-2	30	54.8	2950	91.2	0.90	7.5	2.0	2.3
Y ₂ 200L2-2	37	66.6		92				
Y ₂ 200L-4	30	57.2	1470	92	0.86	7.2	2.2	
Y ₂ 200L1-6	18.5	37.7	970	90	0.81	7.0	2.1	2.1
Y ₂ 200L2-6	22	44.1		90	0.83			
Y ₂ 200L-8	15	33.3	730	88	0.76	6.6	2.0	2.0
Y ₂ 225M-2	45	81	2970	92.3	0.90	7.5	2.0	2.3
Y ₂ 225S-4	37	69.6	1480	92.5	0.87	7.2	2.2	
Y ₂ 225M-4	45	84		92.8	0.87			
Y ₂ 225M-6	30	58.4	980	91.5	0.84	7.0	2.0	2.1
Y ₂ 25S-8	18.5	40.1	730	90.0	0.76	6.6	1.9	2.0
Y ₂ 225M-8	22	46.8	730	90.5	0.78			
Y ₂ 250M-2	55	99.6	2970	92.5	0.90	7.5	2.0	2.3
Y ₂ 250M-4	55	102.9	1480	93.0	0.87	7.2	2.2	
Y ₂ 250M-6	37	70.4	980	92.0	0.86	7.0	2.1	2.1
Y ₂ 250M-8	30	63.0	730	91.0	0.79	6.6	1.9	2.0
Y ₂ 280S-2	75	133.3	2970	93.0	0.90	7.5	2.0	2.3
Y ₂ 280M-2	90	158.2		93.8	0.91			
Y ₂ 280S-4	75	138.0	1480	93.8	0.87	7.2	2.2	
Y ₂ 280M-4	90	165.6		94.2	0.87			
Y ₂ 280S-6	45	85.4	980	92.5	0.86	7.0	2.1	2.0
Y ₂ 280M-6	55	103.3		92.8	0.86			
Y ₂ 280S-8	37	76.2	740	91.5	0.79	6.6	1.9	
Y ₂ 280M-8	45	92.5		92.0	0.79			



Installment dimensions of Y, Y₂ series, YD series three-phase pole-changing multi-speed asynchronous motor

Frame Size		B3 Installation Size (mm)									B14 Installation Size (mm)					Dimensional (mm)					B5 Installation Size (mm)						
		H	A	B	C	D	E	F	G	K	M	N	P	S	T	M	N	P	S	T	AB	AD	AC	HD	L	HE	
Y263		63	100	80	40	11	23	4	8.5	7	75	60	90	M5	3	115	95	140	10	3	135	70	130	180	225	130	
Y271		71	112	90	45	14	30	5	11	7	85	70	105	M6	3.5	130	110	160	10	3.5	150	80	145	195	250	145	
Y, Y280		80	125	100	50	19	40	6	15.5	10	100	80	120	M6	3.5	165	130	200	12	3.5	165	150	175	175	290	185	
Y, Y290S		90	140	100	56	24	50	8	20	10	115	95	140	M8	3.5	165	130	200	12	3.5	180	160	195	195	315	195	
Y, Y290L				125																					340		
Y, Y2100L		100	160	140	63	28	60	8	24	12	130	110	155	M8	4	215	180	250	15	4	205	180	215	245	380	245	
Y, Y2112M		112	190	140	70	28	60	8	24	12	130	110	160	M8	4	215	180	250	15	4	245	190	245	265	400	265	
Y, Y2132S		132	216	140	89	38	80	10	33	12	165	130	200	M10	4	265	230	300	15	4	280	210	275	315	475	315	
Y, Y2132M				178																					515		
Y, Y2160M		160	254	210	108	42	110	12	37	15						300	250	350	19	5	330	265	335	385	605	385	
Y, Y2160L				254																					650		
Y, Y2180M		180	279	241	121	48	110	14	42.5	15						300	250	350	19	5	355	285	380	430	670	430	
Y, Y2180L				279																					710		
Y, Y2200L		200	318	305	133	55	110	16	49	19						350	300	400	19	5	395	315	420	475	775	480	
Y, Y2225S		225	356	286	149	60	140	18	53	19						400	350	450	19	5	435	345	475	530	820	535	
Y, Y2225M				2P		311	55	110	16																49		815
Y, Y2225M				4P 6P			60	140	18																53		845
Y, Y2250M		2P	250	406	349	168	60	140	18	53	24					500	450	550	19	5	490	285	515	575	930	650	
Y, Y2250M		4P 6P					65																				58
Y, Y2280S		2P	280	457	368	190	65	140	18	58	24					500	450	550	19	5	550	410	585	640	100	720	
Y, Y2280S		4P 6P					75																		20		67.5
Y, Y2280M		2P	280	457	419	190	65	140	18	58	24					500	450	550	19	5	550	410	585	640	105	720	
Y, Y2280M		4P 6P					75																		20		67.5

Technology

parameters of YL series

single-phase two-value

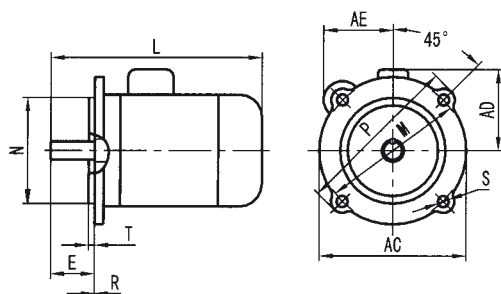
capacitor

asynchronous motor

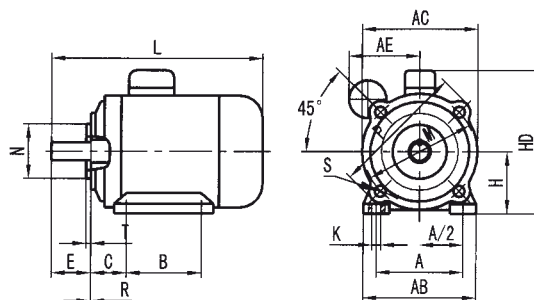


Model	Rated Power (W)	Rated Voltage (v)	Rated Current (A)	Speed (r/min)	Efficiency (%)	Power Factor	Locked-rotor Current	Locked-rotor Torque	Max Torque
							Rated Current	Rated Torque	Rated Torque
YL7112	370	220	2.60	2800	67	0.94	5	1.8	1.8
YL7122	550		3.60		70	0.94			
YL7114	250		2.20	1400	59	0.88	6		
YL7124	370		3.00		62	0.90			
YL8012	750	220	5.10	2800	72	0.92	6	1.8	1.8
YL8022	1100		7.02		75	0.95			
YL8014	550		4.00	1400	68	0.92	6		
YL8024	750		5.20		71	0.92			
YL90S-2	1500	220	9.40	2800	76	0.95	5	1.7	1.8
YL90L-2	2200		13.4		78	0.95	6		
YL90S-4	1100		7.11	1400	74	0.95	5.5		
YL90L-4	1500		9.44		76	0.95	6		
YL90S-6	550		4.44	910	60	0.94	5.5	1.7	1.8
YL90L-6	750		6.0		61	0.94	5.5		
YL90L2-6	1100		8.30		64	0.94	5.5		
YLX100L1-4	2200	220	13.85	1400	76	0.95	6.5	1.6	1.7
YLX100L2-4	3000		18.65		77	0.95	6.5		
YLX100L1-2	3000		18.65	2800	77	0.95	6.5		
YLX112M4	4000	220	24.55	1400	78	0.95	6.5	1.5	1.7
YLX112M2	4000		24.23	2800	79	0.95	6.5		
YLX132S4	5500	220	33.8	1400	78	0.95	6.5	1.5	1.7
YLX132M4	7500		45.5		79	0.95	6.5		
YLX132S2	5500		33.3	2800	79	0.95	6.5	1.5	1.7
YLX132M2	7500		44.8		80	0.95	6.5		

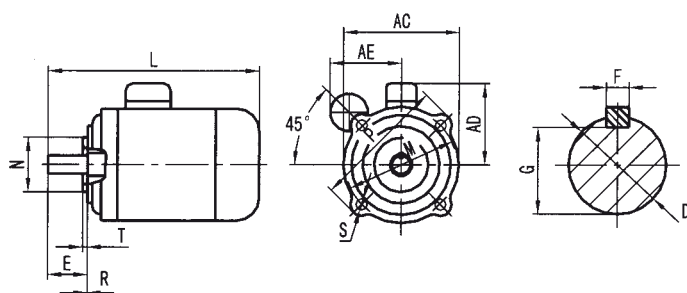
Installment dimensions of YS. YU. YC. YY. YL series single&three-phase separate horsepower and YLD series single-phase pole-changing two-speed asynchronous motor



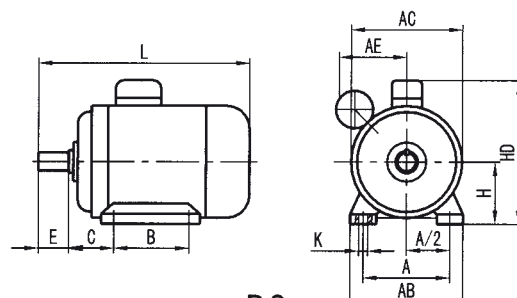
B5



B34



B14



B3

Frame size	B3 Installation size										B34 Installation size						B3, B34 Dimensional				
	A	A/2	B	C	D	E	F	G	H	K	M	N	P	R	S	T	AB	AC	AE	HD	L
50	80	40	63	32	9	20	3	7.2	50	5.8	55	40	70	0	M5	2.5	100	110	55	125	155
56	90	45	71	36	9	20	3	7.2	56	5.8	65	50	80	0	M5	2.5	115	120	65	135	170
63	100	50	80	40	11	23	4	8.5	63	7	75	60	90	0	M5	2.5	130	130	70	165	230
71	112	56	90	45	14	30	5	11	71	7	85	70	105	0	M6	2.5	145	145	95	180	255
80	125	62.5	100	50	19	40	6	15.5	80	10	100	80	120	0	M6	3.0	160	165	110	200	295
90S	140	70	100	56	24	50	8	20	90	10	115	95	140	0	M8	3	180	185	120	220	310
90L			125																		355
100	160	80	140	63	28	60	8	24	100	12	215	180	250	0	15	4	205	200	130	260	430
112	190	95	140	70	28	60	8	24	112	12	215	180	250	0	15	4	245	250	140	300	455
132S	216	108	140	89	38	80	10	33	132	12	265	230	300	0	15	4	280	290	155	350	525
132M			178																		565

Frame size	Axis Extension Size				B14 Installation Size						B14 Dimensional				B5 Installation size						B5 Dimensional			
	D	E	F	G	M	N	P	R	S	T	AC	AD	AE	L	M	N	P	R	S	T	AC	AD	AE	L
50	9	20	3	7.2	55	40	70	0	M5	2.5	110	75	55	155							110	75	60	155
56	9	20	3	7.2	65	50	80	0	M5	2.5	120	80	65	170							120	80	75	170
63	11	23	4	8.5	75	60	90	0	M5	2.5	130	100	70	230	115	95	140	0	10	3	130	100	85	230
71	14	30	5	11	85	70	105	0	M6	2.5	145	110	95	255	130	110	160	0	10	3.5	145	110	95	255
80	19	40	6	15.5	100	80	120	0	M6	3	165	120	110	295	165	130	200	0	12	3.5	175	120	110	300
90S	24	50	8	20	115	95	140	0	M8	3	185	130	120	310	165	130	200	0	12	3.5	185	130	120	335
90L														335										360
100	28	60	8	24	130	110	155	0	M8	4.0	200	180	130	430	215	180	250	0	15	4	220	180	130	430
112	28	60	8	24	130	110	160	0	M8	4.0	250	190	140	455	215	180	250	0	15	4	250	190	140	455
132S	38	80	10	33	165	130	200	0	M10	4	290	210	155	525	265	230	300	0	15	4	290	210	155	525
132M	38													565										565

REDUCTORES

1



A



2



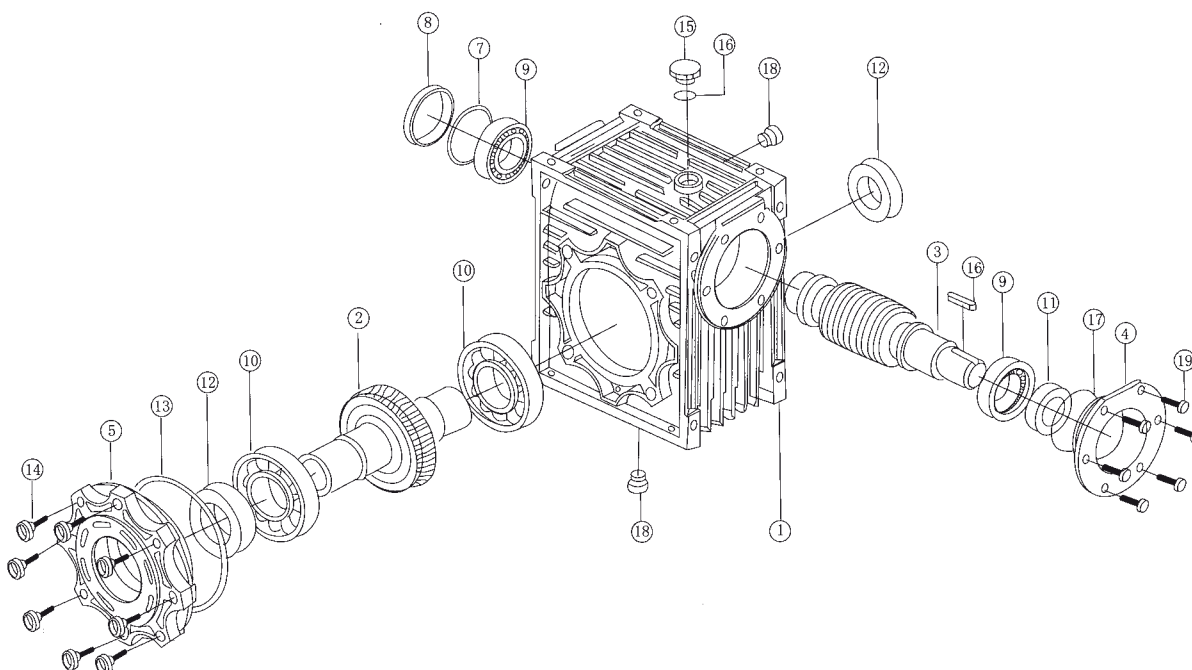
B



3

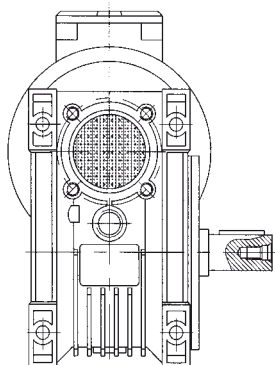


C

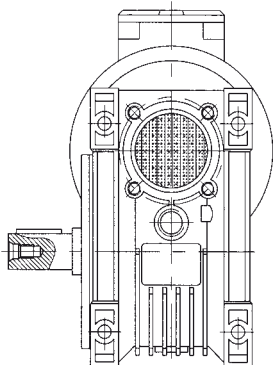


Position diagram for one-way output shaft

DZ1

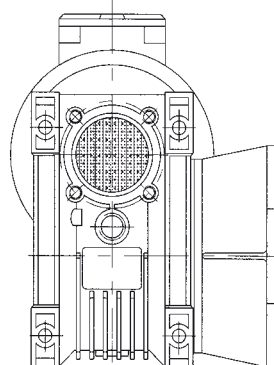


DZ2

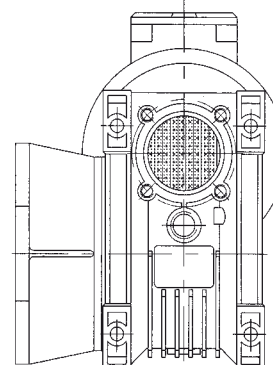


Position diagram for output flange

F1,FL1,FB1

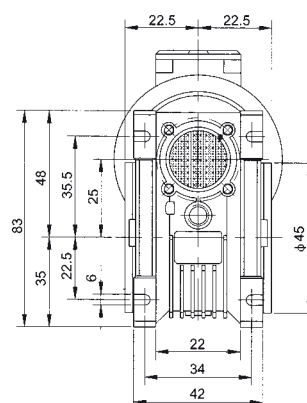
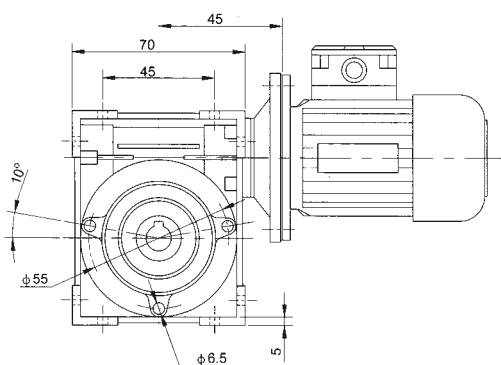


F2,FL2,FB2

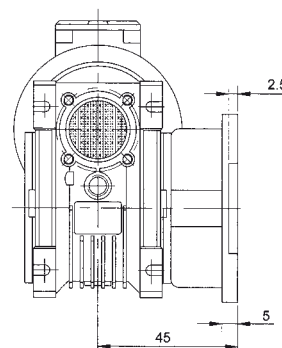
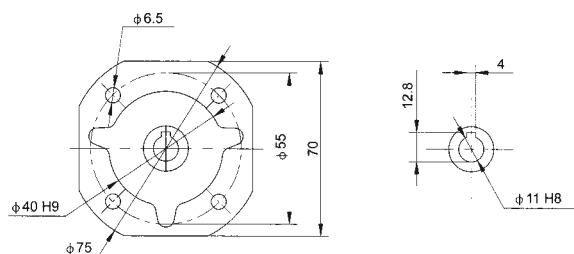


Single FCN series installation dimensions

FCNDK 25

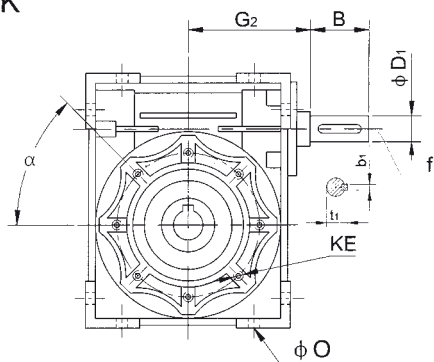


FCNDKO 25

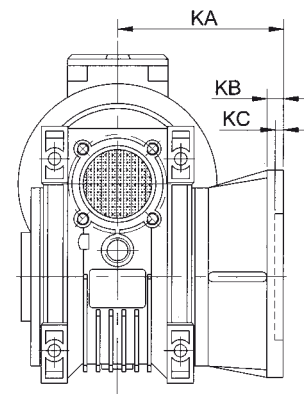
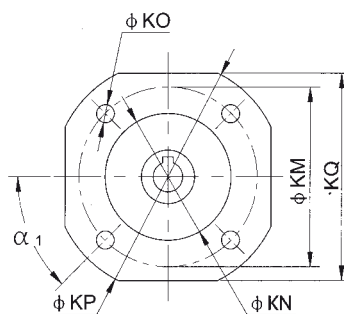


Single FCN series installation dimensions

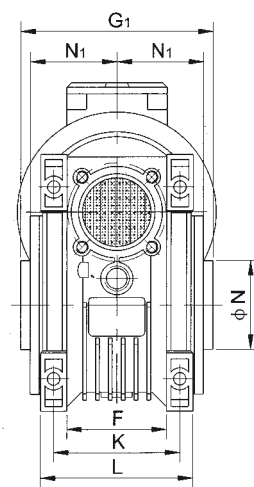
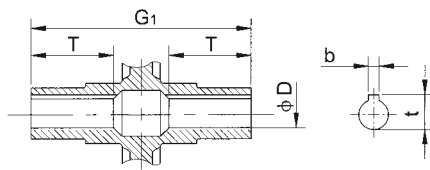
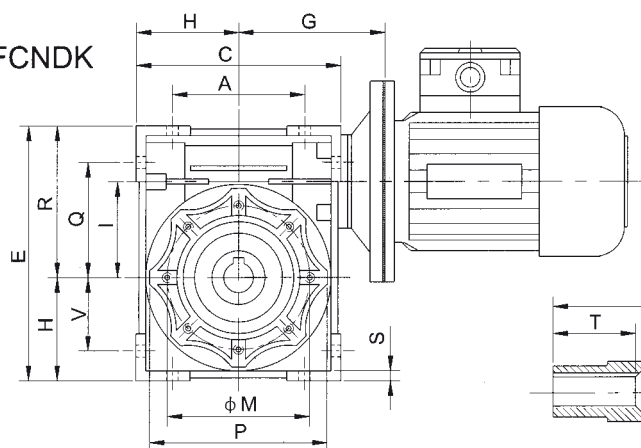
FCNK



FCNDKO



FCNDK

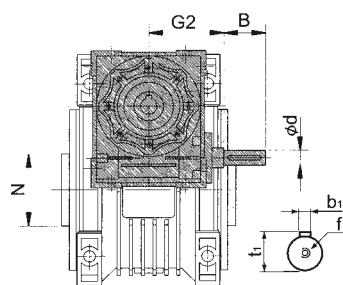


Size	A	B	C	D(H7)	D ₁ (J6)	E	F	G	G ₁	G ₂	H	I	L	M	N(h8)	N ₁	O	P	Q	R
30	54	20	80	14	9	97	32	55	63	51	40	30	56	65	55	29	6.5	75	44	57
40	70	23	100	18(19)	11	121.5	43	70	78	60	50	40	71	75	60	36.5	6.5	87	55	71.5
50	80	30	120	25(24)	14	144	49	80	92	74	60	50	85	85	70	43.5	8.5	100	64	84
63	100	40	144	25(28)	19	174	67	95	112	90	72	63	103	95	80	53	8.5	110	80	102
75	120	50	172	28(35)	24	205	72	112.5	120	105	86	75	112	115	95	57	11	140	93	119
90	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
150	240	80	340	50	35	400	-	210	200	192	170	150	185	215	180	96	18	250	180	230

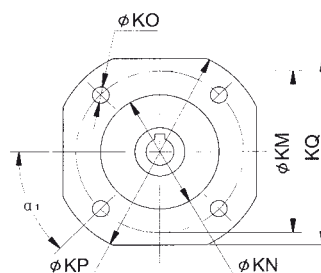
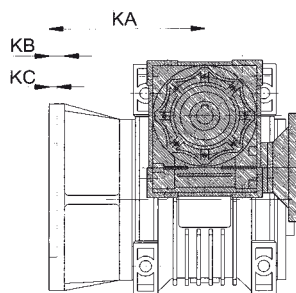
Size	S	T	V	K	KA			KB			KC			KE			alpha	alpha ₁	KM			KN (H8)			KO			KP			KQ			b	b ₁	f	t	t ₁	kg
					F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL			F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL						
30	5.5	21	27	44	54.5	-	-	6	-	-	4	-	-	M6X11(n,4)	0°	45°			68	-	-	50	-	-	6.5(n,4)	-	-	80	-	-	70	-	-	5	3	-	16.3	10.2	1.2
40	6.5	26	35	60	67	76.5	97	7	9	7	4	5	4	M6X8(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
50	7	30	40	70	90	87.5	120	9	10	9	5	5	5	M8X10(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
63	8	36	50	85	82	99	112	10	11	10	6	5	6	MBX14(n,8)	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
75	10	40	60	90	111	-	-	13	-	-	6	-	-	M8X14(n,8)	45°	45°			165	-	-	130	-	-	14(n,4)	-	-	200	-	-	170	-	-	8(10)	8	M8	31.3(38.3)	27.0	9
90	11	45	70	100	111	-	-	13	-	-	6	-	-	M10X18(n,8)	45°	45°			175	-	-	152	-	-	14(n,4)	-	-	210	-	-	200	-	-	10(10)	8	MB	38.3(41.3)	27.0	13
110	14	50	85	115	131	-	-	15	-	-	6	-	-	M10X18(n,8)	45°	45°			230	-	-	170	-	-	14(n,8)	-	-	280	-	-	260	-	-	12	8	M10	45.3	31.0	35
130	75	60	100	120	140	-	-	15	-	-	6	-	-	M12X21(n,8)	45°	22.5°			255	-	-	180	-	-	16(n,8)	-	-	320	-	-	290	-	-	14	8	M10	48.8	33.0	48
150	18	72.5	120	145	155	-	-	15	-	-	6	-	-	M12X21(n,8)	45°	22.5°			255	-	-	180	-	-	16(n,8)	-	-	320	-	-	290	-	-	14	10	M12	53.8	38.0	84

Double FCEN (worm-worm) series installation dimensions

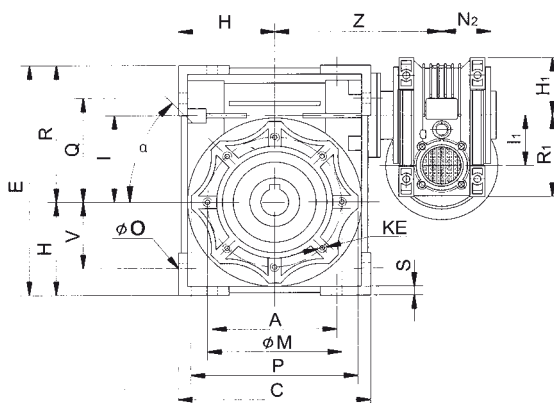
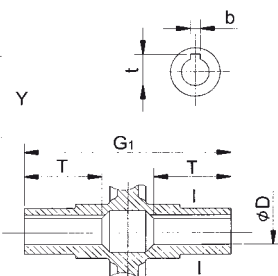
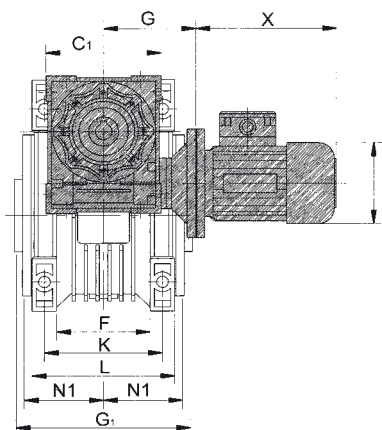
FCENK



FCENDKO

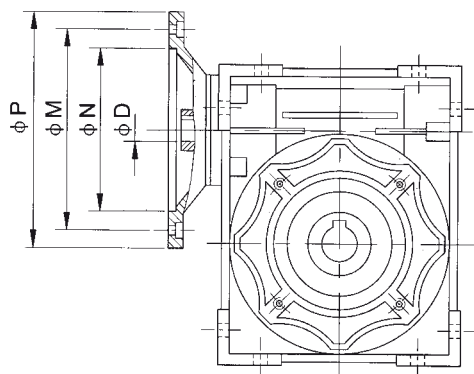


FCENDK



SIZE	A	B	C	C1	D(H79)	d(j6)	E	F	G	G1	G2	H	H1	I	I1	L	M	N(h8)	N1	N2	O	P	Q	R	R1	S	T	V	Z	K	KA		
																															F	FB	FL
25/30	54	-	80	70	14	-	97	32	45	63	-	40	35	30	25	56	65	55	29	22.5	6.5	75	44	57	48	5.5	21	27	100	44	54.5	-	-
25/40	70	-	100	70	18(19)	-	121.5	43	45	78	-	50	35	40	25	71	75	60	36.5	22.5	6.5	87	55	71.5	48	6.5	26	35	115	60	67	76.5	97
30/40	70	20	100	80	18(19)	9	121.5	43	55	78	51	50	40	40	30	71	75	60	36.5	29	6.5	87	55	71.5	57	6.5	26	35	120	60	67	76.5	97
30/50	80	20	120	80	25(24)	9	144	49	55	92	51	60	40	50	30	85	85	70	43.5	29	8.5	100	64	84	57	7	30	40	130	70	90	87.5	120
30/63	100	20	144	80	25(28)	9	174	67	55	112	51	72	40	63	30	103	95	80	53	29	8.5	110	80	102	57	8	36	50	145	85	82	99	112
40/75	120	23	172	100	28(35)	11	205	72	70	120	60	86	50	75	40	112	115	95	57	36.5	11	140	93	119	71.5	10	40	60	165	90	111	-	-
40/90	140	23	208	100	35(38)	11	238	74	70	140	60	103	50	90	40	130	130	110	67	36.5	13	160	102	135	71.5	11	45	70	182	100	111	-	-
50/110	170	30	252.5	120	42	14	295	-	80	155	74	127.5	60	110	50	144	165	130	74	43.5	14	200	125	167.5	84	14	50	85	225	115	131	-	-
63/130	200	40	292.5	144	45	19	335	-	95	170	90	147.5	72	130	63	155	215	180	81	53	16	250	140	187.5	102	15	60	100	245	120	140	-	-
63/150	240	40	340	144	50	19	400	-	95	200	90	170	72	150	63	185	215	180	96	53	18	250	180	230	102	18	72.5	120	275	145	155	-	-

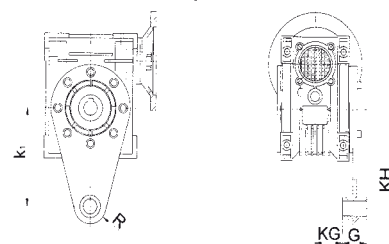
KB			KC	KE	α	α_1	KM			KN(H8)			KO			KP			KQ			b	b1	f	t	t1	Kg
F	FB	FL					F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL	F	FB	FL						
6	-	-	4	M6 x 11(n,4)	0°	90°	68	-	-	50	-	-	6.5(n,4)	-	-	80	-	-	70	-	-	5	-	-	16.3	-	2.1
7	9	7	4(5)	M6 x 8(n,4)	45°	90°	87	115	87	60	95	60	9(n,4)	9.5(n,4)	9(n,4)	110	140	110	95	-	95	6(6)	-	-	20.8(21.8)	-	3.2
7	9	7	4(5)	M6 x 8(ri,4)	45°	90°	87	115	87	60	95	60	9(n,4)	9.5(n,4)	9(n,4)	110	140	110	110	-	110	6(6)	3	-	20.8(21.8)	10.2	3.9
9	10	9	5(5)	M8 x 10(n,4)	45°	90°	90	130	90	70	110	70	11(n,4)	9.5(n,4)	11(n,4)	125	160	125	110	-	110	8(8)	3	-	28.3(27.3)	10.2	5.0
10	11	10	6(5)	M8 x 14(n,8)	45°	90°	150	165	150	115	130	115	11(n,4)	11(n,4)	11(n,4)	180	200	180	142	-	142	8(8)	3	-	28.3(31.3)	10.2	7.8
13	-	-	6	M8 x 14(n,8)	45°	90°	165	-	-	130	-	-	14(n,4)	-	-	200	-	-	170	-	-	8(10)	4	-	31.3(38.3)	12.5	12.0
13	-	-	6	M10 x 18(n,8)	45°	90°	175	-	-	152	-	-	14(n,4)	-	-	210	-	-	200	-	-	10(10)	4	-	38.3(41.3)	12.5	16.0
15	-	-	6	M10 x 18(n,8)	45°	45°	230	-	-	170	-	-	14(n,8)	-	-	280	-	-	260	-	-	12	5	M6	45.3	16.0	39.2
15	-	-	6	M12 x 21(n,8)	45°	22.5°	255	-	-	180	-	-	16(n,8)	-	-	320	-	-	290	-	-	14	6	M6	48.8	21.5	55.0
15	-	-	6	M12 x 21(n,8)	45°	22.5°	255	-	-	180	-	-	16(n,8)	-	-	320	-	-	290	-	-	14	6	M6	53.8	21.5	93



Accessories dimensions

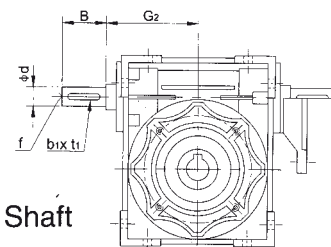
Motor Mounting Facility

Torque Arm



Size	PAM IEC	N	M	P	7.5	10	15	20	25	30	40	50	60	80	100
25	56B14	50	65	80	9	9	9	9	-	9	9	9	9	-	-
30	63B5	95	115	140	11	11	11	11	11	11	11	11	-	-	-
	63B14	60	75	90											
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	-
	56B14	50	65	80											
40	71B5	110	130	160	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105											
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90											
	56B5	80	100	120	-	-	-	-	-	-	-	9	9	9	9
50	80B5	130	165	200	19	19	19	19	19	19	-	-	-	-	-
	80B14	80	100	120											
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	-
	71B14	70	85	105											
	63B5	95	115	140	-	-	-	-	-	-	11	11	11	11	11
63	90B5	130	165	200	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140											
	80B5	130	165	200	19	19	19	19	19	19	19	19	19	-	-
	80B14	80	100	120											
	71B5	110	130	160	-	-	-	-	-	-	14	14	14	14	14
	71B14	70	85	105											
75	100/112B5	180	215	250	28	28	28	-	-	-	-	-	-	-	-
	100/112B14	110	130	160											
	90B5	10	165	200	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140											
	80B5	130	165	200	-	-	-	19	19	19	19	19	19	19	19
	80B14	80	100	120											
	71B5	110	130	160	-	-	-	-	-	-	14	14	14	14	14
90	100/112B5	180	215	250	28	28	28	28	28	28	-	-	-	-	-
	100/112B14	110	130	160											
	90B5	130	165	200	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140											
	80B5	130	165	200	-	-	-	-	-	-	19	19	19	19	19
	80B14	80	100	120											
110	132B5	230	265	300	38	38	38	38	38	38	-	-	-	-	-
	100/112B5	180	215	250	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	24	24	24	24	24	24	24
	80B5	130	165	200	-	-	-	-	-	-	-	-	-	19	19
130	132B5	230	265	300	38	38	38	38	38	38	-	-	-	-	-
	100/112B5	180	215	250	-	-	-	-	28	28	28	28	28	28	28
	90B5	130	165	200	-	-	-	-	-	-	-	-	-	24	24
150	160B5	250	300	350	42	42	42	42	-	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	38	38	38	38	38	-	-	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	28	28	28	28

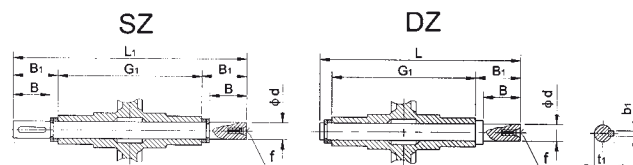
Size	K ₁	G	KG	KH	R
25	70	14	17.5	8	15
30	85	14	24	8	15
40	100	14	31.5	10	18
50	100	14	38.5	10	18
63	150	14	49	10	18
75	200	25	47.5	20	30
90	200	25	57.5	20	30
110	250	30	62	25	35
130	250	30	69	25	35
150	250	30	84	25	35



Double Worm Shaft

Size	G ₂	d (j6)	B	f	b ₁	t ₁
30	45	9	20	-	3	10.2
40	53	11	23	-	4	12.5
50	64	14	30	M6	5	16
63	75	19	40	M6	6	21.5
75	90	24	50	M8	8	27
90	108	24	50	M8	8	27
110	135	28	60	M10	8	31
130	155	30	80	M10	8	33
150	175	35	80	M12	10	38

Sizes of Single(DZ) & Double(SZ) Output shaft



Size	d (h6)	B	B ₁	G ₁	L	L ₁	f	b ₁	t ₁
25	11	23	25.5	50	81	101	-	4	12.5
30	14	30	32.5	63	102	128	M6	5	16
40	18	40	43	78	128	164	M6	6	20.5
50	25	50	53.5	92	153	199	M10	8	28
63	25	50	53.5	112	173	219	M10	8	28
75	28	60	63.5	120	192	247	M10	8	31
90	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
150	50	82	87	200	297	374	M16	14	53.5

Performance parameter of Single FCN series

Input	Input	i	n_2 (r/min)	M_2 (N·m)
0.06 kw 4P $n_1=1400$ r/min	25	7.5	186.7	2.6
	30	7.5	186.7	2.6
	25	10	140	3.4
	30	10	140	3.4
	25	15	93.3	4.9
	30	15	93.3	4.7
	25	20	70	6.1
	30	20	70	6
	30	25	56	7
	25	30	46.7	8.2
	30	30	46.7	8
	25	40	35	10.2
	30	40	35	9.7
	25	50	28	11
	30	50	28	11.3
	40	50	28	12.7
	25	60	23.3	11
	30	60	23.3	12.5
	40	60	23.3	14.2
	30	80	17.5	12.5
	40	80	17.5	17
	40	100	14	19.2
0.09kw 4P $n_1=1400$ r/min	25	7.5	186.7	3.9
	30	7.5	186.7	3.9
	25	10	140	5.1
	30	10	140	5
	25	15	93.3	7.3
	30	15	93.3	7.1
	25	20	70	9.2
	30	20	70	9
	30	25	56	10.4
	25	30	46.7	12.3
	30	30	46.7	12
	25	40	35	13
	30	40	35	14.5
	30	50	28	16.9
	40	50	28	19
	30	60	23.3	16.9
	40	60	23.3	21.4
	40	80	17.5	25.5
	40	100	14	28.9
	30	7.5	186.7	5.2
0.12kw 4P $n_1=1400$ r/min	40	7.5	186.7	5.3
	30	10	140	6.7
	40	10	140	7
	30	15	93.3	9.5
	40	15	93.3	10.1
	30	20	70	12
	40	20	70	12.8
	30	25	56	13.9
	40	25	56	15.3
	30	30	46.7	16
	40	30	46.7	17.2
	30	40	35	17
	40	40	35	21.3
	50	40	35	21.9
	40	50	28	25.4
	50	50	28	25.8
	40	60	23.3	28.5

Input	Input	i	n_2 (r/min)	M_2 (N·m)
0.12 kw 4P $n_1=1400$ r/min	50	60	23.3	29
	40	80	17.5	34.1
	50	80	17.5	34.7
0.18kw 4P $n_1=1400$ r/min	50	100	14	40.1
	30	7.5	186.7	8
	40	7.5	186.7	8
	30	10	140	10
	40	10	140	10
	30	15	93.3	14
	40	15	93.3	15
	30	20	70	18
	40	20	70	19
	30	25	56	20
	40	25	56	23
	40	30	46.7	26
	50	40	35	32
	40	40	35	32
	40	50	28	38
	50	50	28	38
	50	60	23.3	34
	50	80	17.5	53
	50	100	14	55
	40	7.5	186.7	11
0.25kw 4P $n_1=1400$ r/min	50	7.5	186.7	11
	40	10	140	14
	50	10	140	14
	40	15	93.3	20
	50	15	93.3	21
	40	20	70	26
	50	20	70	26
	40	25	56	31
	50	25	56	32
	40	30	46.7	36
	50	30	46.7	36
	40	40	35	44
	50	40	35	45
	50	50	28	53
	50	60	23.3	60
	50	80	17.5	65
	63	80	17.5	77
	63	100	14	85
	40	7.5	186.7	16
0.37kw 4P $n_1=1400$ r/min	50	7.5	186.7	16
	40	10	140	21
	50	10	140	21
	40	15	93.3	30
	50	15	93.3	31
	40	20	70	39
	50	20	70	39
	50	25	56	47
	50	30	46.7	54
	50	40	35	66
	63	40	35	70
	50	50	28	73
	63	50	28	83
	63	60	23.3	95
	63	80	17.5	114
	63	100	14	118

Performance parameter of Single FCN series

Input	Size	i	n ₂ (r/min)	M ₂ (N·m)
0.55kw 4P n _i =1400r/min	40	7.5	186.7	24.
	50	7.5	186.7	25
	40	10	140	32
	50	10	140	32
	50	15	93.3	46
	63	15	93.3	46
	50	20	70	59
	63	20	70	60
	63	25	56	72
	63	30	46.7	80
	63	40	35	104
	75	40	35	108
	63	50	28	123
	75	50	28	129
	75	60	23.3	146
	75	80	17.5	180
	75	100	14	180
0.75kw 4P n _i =1400r/min	50	7.5	186.7	34
	63	7.5	186.7	33
	50	10	140	44
	63	10	140	44
	50	15	93.3	63
	63	15	93.3	63
	63	20	70	82
	63	25	56	99
	63	30	46.7	109
	75	30	46.7	116
	63	40	35	143
	75	40	35	147
	75	50	28	176
	90	50	28	184
	75	60	23.3	200
	90	60	23.3	212
	90	80	17.5	257
	90	100	14	270
1.1kw 4P n _i =1400r/min	63	7.5	186.7	49
	75	7.5	186.7	49
	63	10	140	65
	75	10	140	66
	63	15	93.3	93
	75	15	93.3	95
	63	20	70	121
	75	20	70	122
	75	25	56	149
	75	30	46.7	170
	75	40	35	216
	90	40	35	225
	90	50	28	271
	90	60	23.3	311
	110	60	23.3	324
	110	80	17.5	410
	110	100	14	460
1.5kw 4P n _i =1400r/min	75	7.5	186.7	67
	75	10	140	90
	75	15	93.3	130
	75	20	70	167
	75	25	56	200
	90	25	56	209
	75	30	46.7	230
	90	30	46.7	236
	90	40	35	306
	90	50	28	369
	110	50	28	375
	110	60	23.3	442
	110	80	17.5	490
	130	80	17.5	547
	130	100	14	652
	90	7.5	186.7	101
2.2kw 4P n _i =1400r/min	110	7.5	186.7	101
	90	10	140	133
	110	15	140	133

Input	Size	i	n ₂ (r/min)	M ₂ (N·m)
22N 4P n _i =1400r/min	90	15	93.3	193
	110	15	93.3	193
	90	20	70	251
	110	20	70	256
	90	25	56	307
	110	25	56	316
	90	30	46.7	346
	110	30	46.7	355
	110	40	35	462
	110	50	28	550
	130	50	28	566
	150	50	28	570
	130	60	23.3	650
	150	60	23.3	657
	130	80	17.5	803
	150	80	17.5	816
	150	100	14	960
3kw 4P n _i =1400r/min	110	7.5	186.7	138
	110	10	140	182
	110	15	93.3	263
	110	20	70	348
	110	25	56	430
	110	30	46.7	484
	110	40	35	631
	130	40	35	638
	130	50	28	767
	150	50	28	778
	130	60	23.3	884
	150	60	23.3	896
	150	80	17.5	1110
	110	7.5	186.7	184
	130	7.5	186.7	186
4kw 4P n _i =1400r/min	110	10	140	243
	130	10	140	243
	110	15	93.3	352
	130	15	93.3	357
	110	20	70	464
	130	20	70	466
	110	25	56	573
	130	25	56	573
	110	30	46.7	646
	130	30	46.7	655
	130	40	35	550
	130	50	28	1023
	150	50	28	1037
	150	60	23.3	1195
	110	7.5	186.7	253
	130	7.5	186.7	256
5.5kw 4P n _i =1400r/min	110	10	140	334
	130	10	140	334
	110	15	93.3	484
	130	15	93.3	490
	130	20	70	645
	150	20	70	645
	130	25	56	788
	150	25	56	788
	130	30	46.7	900
	150	30	46.7	934
	150	40	35	1171
	110	7.5	186.7	45
	130	7.5	186.7	349
	110	10	140	455
	130	10	140	455
	130	15	93.3	667
7.5kw 4P n _i =1400r/min	150	20	70	880
	150	25	56	1074
	150	7.5	186.7	512
	150	10	140	675
11kw 4P n _i =1400r/min	150	15	93.3	990
	150	7.5	186.7	698
15kw 4P n _i =1400r/min	150	10	140	921
	150	10	140	921

Performance parameter of Double FCEN (WORM-WORM) series

Size	l	n_2 (r/min)	kW_1	M_2 (N-m)	i_1	i_2
25/30	100	14.0	0.09	30	10	10
	150	9.3	0.06	28	7.5	20
	200	7.0	0.06	28	10	20
	250	5.6	0.06	35	10	25
	300	4.7	0.06	31	10	30
	400	3.5	0.06	28	20	20
	500	2.8	0.06	34	20	25
	600	2.3	0.06	31	20	30
	750	1.9	0.06	34	30	25
	900	1.6	0.06	31	30	30
	1200	1.2	0.06	28	30	40
	1500	0.9	0.06	26	30	50
	1800	0.8	0.06	31	60	30
	2400	0.6	0.06	28	60	40
	3000	0.5	0.06	26	60	50
25/40	300	4.7	0.06	59	10	30
	400	3.5	0.06	63	10	40
	500	2.8	0.06	57	10	50
	600	2.3	0.06	65	15	40
	750	1.9	0.06	60	15	50
	900	1.6	0.06	73	30	30
	1200	1.2	0.06	65	30	40
	1500	0.9	0.06	60	30	50
	1800	0.8	0.06	56	30	60
	2400	0.6	0.06	56	40	60
	3000	0.5	0.06	60	60	50
	3000	0.5	0.06	60	60	50
30/40	300	4.7	0.09	70	10	30
	400	3.5	0.06	63	10	40
	500	2.8	0.06	57	20	25
	600	2.3	0.06	72	20	30
	750	1.9	0.06	72	25	30
	900	1.6	0.06	73	30	30
	1200	1.2	0.06	65	30	40
	1500	0.9	0.06	73	50	30
	1800	0.8	0.06	73	60	30
	2400	0.6	0.06	65	60	40
	3200	0.4	0.06	65	80	40
	3200	0.4	0.06	65	80	40
30/50	300	4.7	0.18	142	10	30
	400	3.5	0.12	127	10	40
	500	2.8	0.09	123	10	50
	600	2.3	0.09	143	20	30
	750	1.9	0.09	148	25	30
	900	1.6	0.06	141	30	30
	1200	1.2	0.06	118	30	40
	1500	0.9	0.06	139	50	30
	1800	0.8	0.06	155	60	30
	2400	0.6	0.06	124	60	40
	3000	0.5	0.06	120	60	50
	3000	0.5	0.06	120	60	50
30/63	300	4.7	0.22	210	7.5	40
	400	3.5	0.18	222	10	40
	500	2.8	0.18	205	10	50
	600	2.3	0.12	208	15	40
	750	1.9	0.12	216	15	50
	900	1.6	0.09	200	15	60
	1200	1.2	0.09	236	30	40
	1500	0.9	0.06	204	30	50
	1800	0.8	0.06	202	30	60
	2400	0.6	0.06	220	60	40
	3000	0.5	0.06	223	60	50
	3000	0.5	0.06	223	60	50

Size	l	n_2 (r/min)	kW_1	M_2 (N-m)	i_1	i_2
40/75	300	4.7	0.37	405	10	30
	400	3.5	0.25	336	10	40
	500	2.8	0.25	307	10	50
	600	2.3	0.18	362	20	30
	750	1.9	0.18	391	25	30
	900	1.6	0.12	325	30	30
	1200	1.2	0.12	359	30	40
	1500	0.9	0.09	360	50	30
	1800	0.8	0.09	404	60	30
	2400	0.6	0.06	330	60	40
	3000	0.5	0.06	301	60	50
	3000	0.5	0.06	301	60	50
40/90	300	4.7	0.37	402	7.5	40
	400	3.5	0.37	523	10	40
	500	2.8	0.37	550	10	50
	600	2.3	0.37	605	15	40
	750	1.9	0.25	538	15	50
	900	1.6	0.25	533	15	60
	1200	1.2	0.18	629	30	40
	1500	0.9	0.18	588	30	50
	1800	0.8	0.12	492	30	60
	2400	0.6	0.12	625	60	40
	3000	0.5	0.09	548	60	50
	3000	0.5	0.09	548	60	50
5G110	300	4.7	0.75	817	10	30
	400	3.5	0.75	1013	10	40
	500	2.8	0.55	984	10	50
	600	2.3	0.55	1062	15	40
	750	1.9	0.55	1128	25	30
	900	1.6	0.37	1079	30	30
	1200	1.2	0.25	943	30	40
	1500	0.9	0.25	1064	50	30
	1800	0.8	0.25	1075	60	30
	2400	0.6	0.18	1001	60	40
	3000	0.5	0.12	884	60	50
	3000	0.5	0.12	884	60	50
63/130	300	4.7	1.50	1789	10	30
	400	3.5	1.00	1519	10	40
	500	2.8	1.00	1629	10	50
	600	2.3	0.75	1631	15	40
	750	1.9	0.75	1804	25	30
	900	1.6	0.75	1826	30	30
	1200	1.2	0.55	1705	30	40
	1500	0.9	0.37	1674	50	30
	1800	0.8	0.37	1698	60	30
	2400	0.6	0.25	1624	60	40
	3000	0.5	0.25	1548	60	50
	3000	0.5	0.25	1548	60	50
63/150	200	7	1.5	1317	10	20
	250	5.6	1.5	1602	10	25
	300	4.7	1.5	1860	10	30
	400	3.5	1.5	2208	10	40
	500	2.8	1.1	1893	20	25
	600	2.3	1.1	2242	20	30
	750	1.9	0.75	1783	25	30
	900	1.6	0.75	1994	30	30
	1200	1.2	0.75	2680	30	40
	1500	0.9	0.75	2700	50	30
	1800	0.8	0.37	1775	60	30
	2400	0.6	0.37	2141	60	40
	3000	0.5	0.25	1713	60	50
	3000	0.5	0.25	1713	60	50
	3000	0.5	0.25	1713	60	50

Otros Productos

Acoplamientos

Retenes

Rodamientos

Juntas Tóricas

Cordón Tórico

Collarines