

Planetary Gearboxes type EP

The EP Series planetary gearboxes are manufactured in particular for the following applications:

- Machine tools
- Machines for woodworking
- Transfer machines
- Printing machines
- Automatic machines for packaging
- Automation
- Mecanical hands
- Silk-screen process machines
- Linear guides



Precision REP series also available
Please contact
T.E.A. Transmissions

The EP series is available in 5 sizes (55, 75, 90, 120 and 155), with 1 or 2 reduction stages, with two types of output shaft (A and T) and three types of output flange (A, T and Q).

Housing: made of special nitrided steel to assure strength, high reliability and long life.

Flanges: input and output flanges made of aluminium and available in several versions.

Shafts: made of hardened and tempered alloy steel.

Gears: made of case hardened and tempered alloy steel, with ground toothing.

Bearings: high quality and suitably sized to assure long life and noiseless working.

Planetary gearbox	Size	Steps	Coaxial	Ratio	Output shaft	Output flange	Input shaft	Input flange
EP	55	2	C	100	A	A	AE..	P..
	55	1	C	3 - 100	A	A		
	75	2			T	T	See tables	See tables
	90							
	120							
	155							

The selection of Planetary Gearbox EP series has to be made after the checking of service factor. For intermittent or continuous duty it is necessary to apply the following formulas:

1) Intermittent duty:

$$T_m \cdot i \cdot R_D \cdot fc \leq T_{2N}$$

2) Continuous duty:

$$T_m \cdot i \cdot R_D \cdot fc \leq 10.65 T_{2N}$$

where:

- T_m = nominal torque of motor (Nm)
- i = transmission ratio of gearbox
- R_D = dynamic efficiency
- fc = cycle factor (see table)

cycle/h	1000	1000/2000	2000/3000
fc	1	1.2/1.5	1.5/2

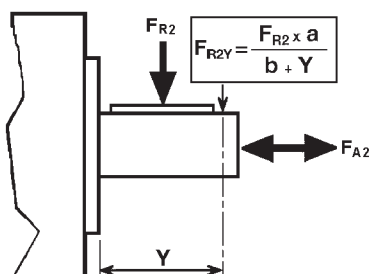
For application with operation cycles based on frequent accelerations it is necessary to verify that max. acceleration torque is equal or inferior to the T_{2A} value shown in the tables.

Backlash (max.)

Max. backlash measured on output shaft by torque equals to 2% of the nominal torque value with input shaft blocked.

Radial and axial load on output shaft

The table of performances shows admissible axial and radial load values expressed in N for different speeds and for a bearing life of 20,000 hours. Radial load F_{R2} calculations have been based on loads applied to the center line of the output shaft extension. For a different distance it is possible to calculate the new maximum admissible load by using formula and coefficient shown in the table.

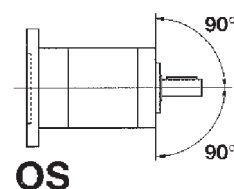
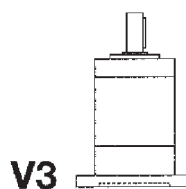
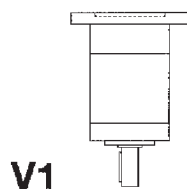
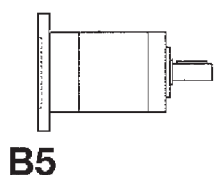


	EP 55	EP 75	EP 90	EP 120	EP 155
a	27	46	56	77	95
b	18	32	39	52	64

Lubrication

EP gearboxes are supplied filled with long-life lubricant and do not require any maintenance.

When ordering it is important to specify the exact mounting position.



Symbols and unit of measure

i	Nominal ratio
$n_{1 \text{ nom}}$	Nominal input speed [min^{-1}]
$n_{1 \text{ max}}$	Maximum input speed [min^{-1}]
T_{2N}	Intermittent output torque [Nm]
T_{2A}	Maximum acceleration output torque [Nm]
T_{2S}	Maximum emergency output torque [Nm]
L_{pA}	Noise level dB(A) at 3000 min^{-1}
R_d	Dynamic efficiency
L_h	Bearing life [h]
F_{R2}	Output radial load [N] at 100 min^{-1}
F_{A2}	Output axial load [N] at 100 min^{-1}
R_t	Torsional rigidity [Nm/ arcmin]
max	Standard backlash [arcmin]
J_{min}	Min. moment of inertia [$\text{kg}\cdot\text{cm}^2$]
J_{max}	Max. moment of inertia [$\text{kg}\cdot\text{cm}^2$]



1.5 Technical data

EP 55 See pages 130-131																		Steps		
Steps	1					2														
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2	
T_{2N}	12	14	16	12	10	14	16	16	16	16	16	16	16	16	16	14	12	n_{1nom}	4000	
T_{2A}	22	24	24	22	20	24	28	28	28	28	28	28	28	28	28	24	22	n_{1max}	5000	
T_{2S}	44	48	48	44	40	48	56	56	56	56	56	56	56	56	56	48	44	LpA	< 70	
J_{min}	0.0736	0.0626	0.0587	0.0553	0.0536	0.0734	0.0722	0.0718	0.0620	0.0617	0.0580	0.0552	0.0551	0.0536	0.0536	0.0535	0.0535	Lh	20000	
J_{max}	0.0909	0.0799	0.0759	0.0726	0.0709	0.0906	0.0894	0.0889	0.0791	0.0789	0.0751	0.0723	0.0722	0.0707	0.0707	0.0707	0.0706	FR₂	300	
Rt	1.0					0.9											0.9		FA₂	450
Rd	0.96					0.93											max		15'	20'

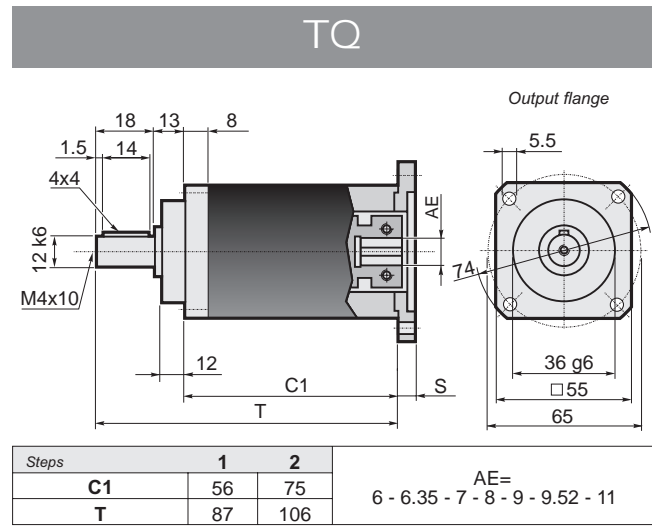
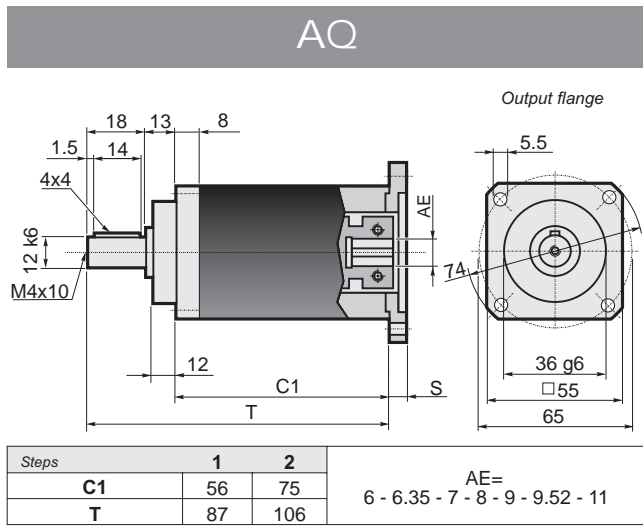
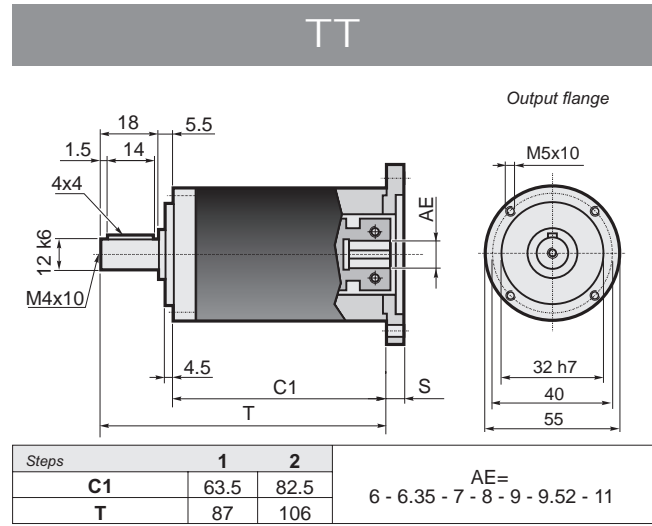
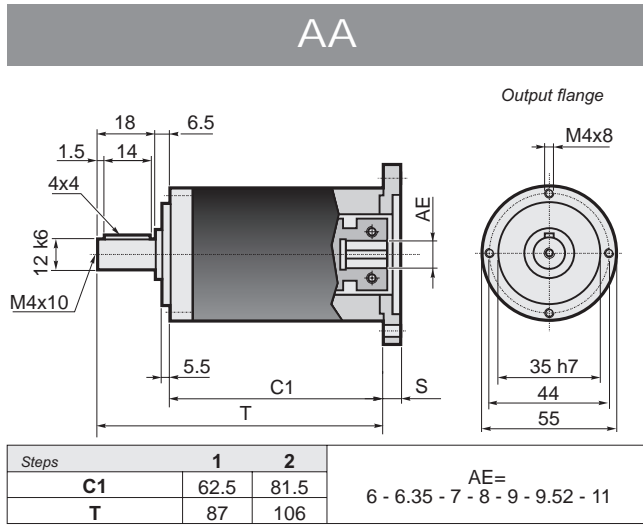
EP 75 See pages 132-133																		Steps				
Steps	1					2																
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2			
T_{2N}	22	28	32	28	20	26	32	36	36	36	36	36	36	36	36	30	22	n_{1nom}	4000			
T_{2A}	40	45	50	45	40	50	60	60	60	60	60	60	60	60	60	50	45	n_{1max}	5000			
T_{2S}	80	90	100	90	80	100	120	120	120	120	120	120	120	120	120	100	90	LpA	< 70			
J_{min}	0.1707	0.1163	0.1063	0.0927	0.0860	0.1597	0.1549	0.1538	0.1159	0.1153	0.1017	0.0927	0.0925	0.0860	0.0859	0.0857	0.0857	Lh	20000			
J_{max}	0.2166	0.1622	0.1522	0.1386	0.1319	0.2056	0.2008	0.1997	0.1618	0.1612	0.1476	0.1386	0.1384	0.1319	0.1318	0.1316	0.1316	FR₂	1800			
Rt	3.5					3.0											3.5		3.0		FA₂	1400
Rd	0.96					0.93											max		15'	20'		

EP 90 See pages 134-135																		Steps				
Steps	1					2																
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2			
T_{2N}	50	55	60	55	50	65	70	75	75	75	75	75	75	75	75	65	55	n_{1nom}	4000			
T_{2A}	80	90	100	90	80	100	110	120	120	120	120	120	120	120	120	100	90	n_{1max}	5000			
T_{2S}	160	180	200	180	160	200	220	240	240	240	240	240	240	240	240	200	180	LpA	< 70			
J_{min}	0.5159	0.3371	0.2742	0.2247	0.2008	0.5193	0.4995	0.4925	0.3272	0.3233	0.2651	0.2215	0.2202	0.1992	0.1985	0.1980	0.1978	Lh	20000			
J_{max}	0.7271	0.5483	0.4854	0.4359	0.4120	0.7305	0.7305	0.7036	0.5384	0.5345	0.4763	0.4326	0.4314	0.4103	0.4097	0.4092	0.4090	FR₂	2600			
Rt	9.0					7.5											9.0		7.5		FA₂	2000
Rd	0.96					0.93											max		15'	20'		

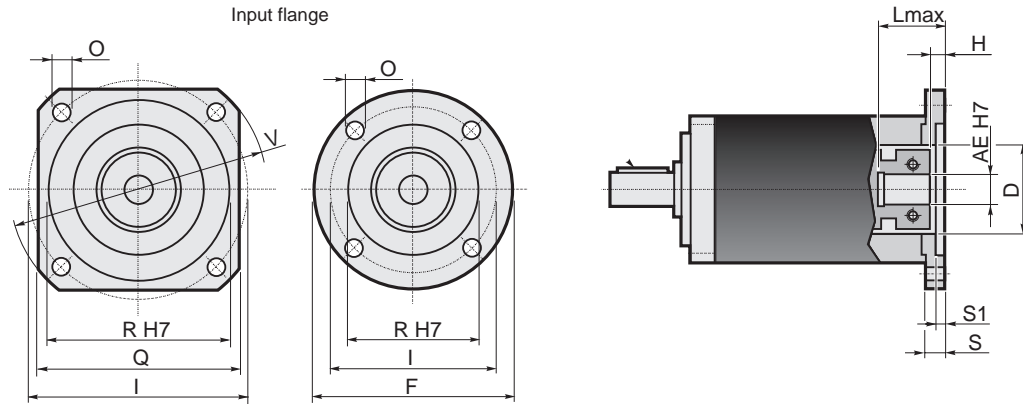
EP 120 See pages 136-137																		Steps				
Steps	1					2																
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2			
T_{2N}	120	150	180	150	100	150	180	220	220	220	220	220	220	220	220	170	110	n_{1nom}	3000			
T_{2A}	190	240	290	220	180	240	290	350	350	350	350	350	350	350	350	270	200	n_{1max}	4000			
T_{2S}	400	500	600	460	380	500	600	700	700	700	700	700	700	700	700	540	400	LpA	< 70			
J_{min}	2.0027	1.1339	0.8557	0.6244	0.5047	1.9802	1.8962	1.8552	1.0736	1.0505	0.8023	0.6048	0.5977	0.4951	0.4918	0.4895	0.4883	Lh	20000			
J_{max}	4.1528	3.2840	3.0058	2.7745	2.6548	3.1885	3.1045	3.0636	2.2819	2.2589	2.0106	1.8132	1.8061	1.7035	1.7002	1.6979	1.6967	FR₂	4500			
Rt	32					28											32		30		FA₂	4000
Rd	0.96					0.93											max		15'	20'		

EP 155 See pages 138-139																		Steps				
Steps	1					2																
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2			
T_{2N}	240	320	380	300	220	320	400	500	500	500	500	500	500	500	500	350	250	n_{1nom}	3000			
T_{2A}	420	540	600	480	400	480	600	750	750	750	750	750	750	750	750	560	460	n_{1max}	4000			
T_{2S}	880	1140	1260	1000	850	1000	1250	1500	1500	1500	1500	1500	1500	1500	1500	1120	920	LpA	< 70			
J_{min}	6.2232	3.6993	2.8162	2.1069	1.7391	6.0151	5.8025	5.7092	3.4671	3.4118	2.6324	2.0320	2.0135	1.7026	1.6934	1.6864	1.6827	Lh	20000			
J_{max}	13.9214	11.3975	10.5144	9.8051	9.4373	13.7133	13.5057	13.4074	11.1653	11.1100	10.3306	9.7302	9.7117	9.4008	9.3916	9.3846	9.3809	FR₂ (AA) FR₂ (TT)	6500 5300			
Rt	60					50											60		50		FA₂ (AA) FA₂ (TT)	3250 2650
Rd	0.96					0.93											max		15'	20'		

Dimensions



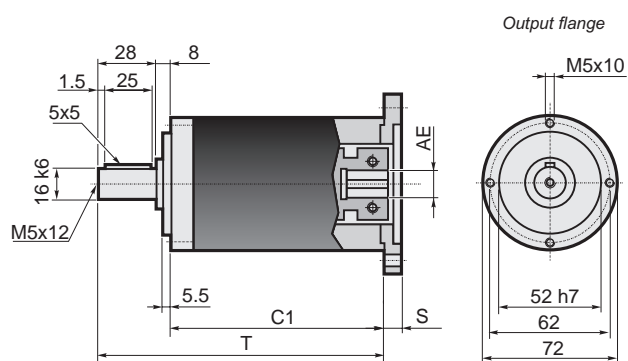
Technical data																					
EP 55																					
Steps	1					2											Steps				
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i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	n _{1nom}	4000		
T _{2N}	12	14	16	12	10	14	16	16	16	16	16	16	16	16	16	14	12	n _{1max}	5000		
T _{2A}	22	24	24	22	20	24	28	28	28	28	28	28	28	28	28	24	22	LpA	< 70		
T _{2S}	44	48	48	44	40	48	56	56	56	56	56	56	56	56	56	48	44	Lh	20000		
J _{min}	0.0736	0.0626	0.0587	0.0553	0.0536	0.0734	0.0722	0.0718	0.0620	0.0617	0.0580	0.0552	0.0551	0.0536	0.0536	0.0535	0.0535	F _{R2}	300		
J _{max}	0.0909	0.0799	0.0759	0.0726	0.0709	0.0906	0.0894	0.0889	0.0791	0.0789	0.0751	0.0723	0.0722	0.0707	0.0707	0.0707	0.0706	F _{A2}	450		
R _t	1.0				0.9	1.0											0.9	max	15'	20'	
R _d	0.96					0.93													max	15'	20'



	Input flange									Input shaft													
										AE													
	F	Q	V	I	R (H7)	O	S	S1	D	6	6.35	7	8	9	9.52	11							
									L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	
P01*	60	=	=	43.82	22	4.5	10	3	22	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P02*	=	60	80	66.67	38.1	5.5	10	3	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P03*	=	60	80	63	40	5.5	10	3.5	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P04	=	70	90	75	60	6.5	10.5	3.5	32	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5
P05	105	=	=	85	70	6.5	10.5	3.5	32	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5
P06	=	80	110	98.42	73.02	6	11	3.5	35	31	8	31	8	31	8	31	8	31	8	31	8	31	8
P07	=	95	120	100	80	6.5	11.5	4	32	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5
P08	=	98	130	115	95	9	11.5	4	32	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5	31.5	8.5
P09	=	116	160	130	110	9	12	4.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P10*	60	=	=	39	26	4.5	10	3	26	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P11*	60	=	=	42	32	4.5	10	3	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P12*	65	=	=	46	32	4.5	10	3.5	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P13*	80	=	=	65	50	5.5	10	3.5	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P14*	60	=	=	39	20	4.5	10	2.5	20	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P15	=	75	100	90	60	5.8	12	3.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P16*	60	=	=	45	30	3.5	14	7	30	34	11	34	11	34	11	34	11	34	11	34	11	34	11
P17	=	60	82	70	50	4.5	16.5	8	32	36.5	13.5	36.5	13.5	36.5	13.5	36.5	13.5	36.5	13.5	36.5	13.5	36.5	13.5
P18	=	60	80	60	50	M4	10.5	3.5	32	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5
P19*	60	=	=	36	25	4.5	10	3	25	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P20	=	60	82	70	50	5.5	10.5	3.5	32	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5	30.5	7.5
P21*	60	=	=	46	30	4.5	10	3	30	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P22	=	60	80	70.71	36	4.5	10	2	32	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P23	=	62	85	70	50	5.5	15.5	3.5	32	35.5	12.5	35.5	12.5	35.5	12.5	35.5	12.5	35.5	12.5	35.5	12.5	35.5	12.5
P24	=	75	100	90	70	5.8	12	3.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P25	=	70	95	85	55	5.8	12	3.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P26*	=	60	80	65.5	34	5.5	10	3.5	33	30	7	30	7	30	7	30	7	30	7	30	7	30	7
P27	=	80	110	95	50	6.5	12	3.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P28	=	60	80	66.67	38.1	M4	9	2.5	32	29	6	29	6	29	6	29	6	29	6	29	6	29	6
P29	60	=	=	45	30	M3	11	4	32	31	8	31	8	31	8	31	8	31	8	31	8	31	8
P30	=	70	95	85	60	5.8	12	3.5	32	32	9	32	9	32	9	32	9	32	9	32	9	32	9
P31	=	62	85	70	50	M4	11	3.5	32	31	8	31	8	31	8	31	8	31	8	31	8	31	8

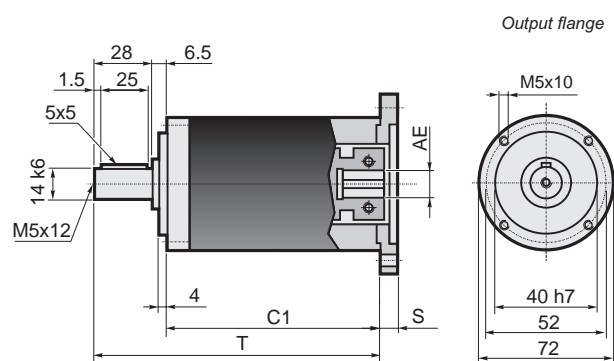
* To mount the motor it is necessary to remove the gearbox flange (see **assembly drawing 2** on page 141).

AA



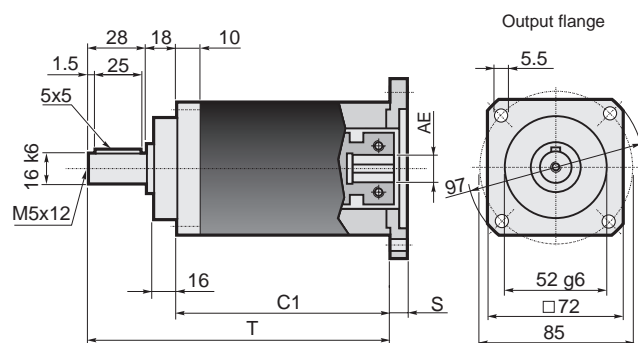
Steps	1	2	AE= 6-6.35-7-8-9-9.52-11-12-12.7-14
C1	78.5	101	
T	114.5	137	

TT



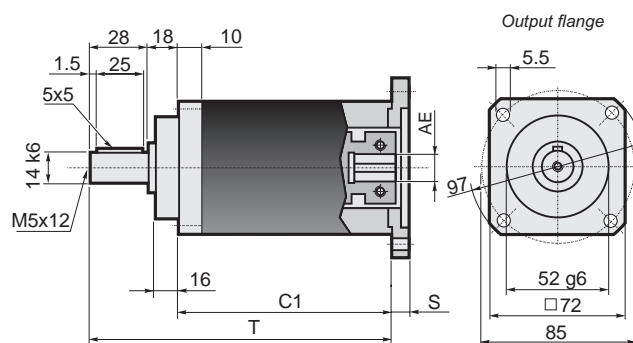
Steps	1	2	AE= 6-6.35-7-8-9-9.52-11-12-12.7-14
C1	80	102.5	
T	114.5	137	

AQ



Steps	1	2	AE= 6-6.35-7-8-9-9.52-11-12-12.7-14
C1	68.5	91	
T	114.5	137	

TQ

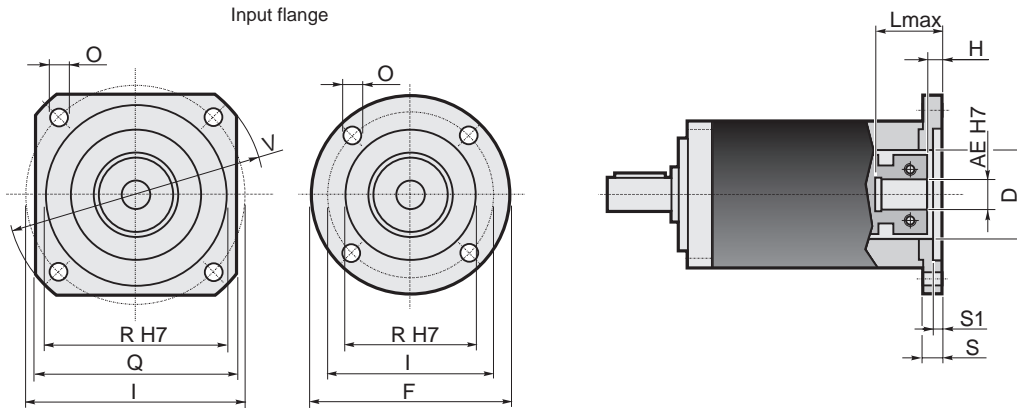


Steps	1	2	AE= 6-6.35-7-8-9-9.52-11-12-12.7-14
C1	68.5	91	
T	114.5	137	

Technical data

EP 75

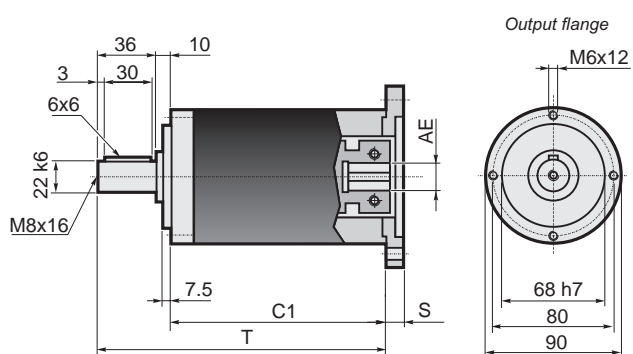
Steps	1																2																Steps
	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	1	2														
i	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	n_{1nom}	4000														
T_{2N}	22	28	32	28	20	26	32	36	36	36	36	36	36	36	36	30	22	n_{1max}	5000														
T_{2A}	40	45	50	45	40	50	60	60	60	60	60	60	60	60	60	50	45	LpA	< 70														
T_{2S}	80	90	100	90	80	100	120	120	120	120	120	120	120	120	120	100	90	Lh	20000														
J_{min}	0.1707	0.1163	0.1063	0.0927	0.0860	0.1597	0.1549	0.1538	0.1159	0.1153	0.1017	0.0927	0.0925	0.0860	0.0859	0.0857	0.0857	F_{R2}	1800														
J_{max}	0.2166	0.1622	0.1522	0.1386	0.1319	0.2056	0.2008	0.1997	0.1618	0.1612	0.1476	0.1386	0.1384	0.1319	0.1318	0.1316	0.1316	F_{A2}	1400														
Rt	3.5				3.0				3.5								3.0				max	15'	20'										
Rd	0.96				0.93																												



	Input flange									Input shaft																			
										AE																			
										6		6.35		7		8		9		9.52		11		12		12.7		14	
F	Q	V	I	R (H7)	O	S	S1	D	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H			
P01*	60	=	=	43.82	22	4.5	10	3	22	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P02*	=	60	80	66.67	38.1	5.5	10	3	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P03*	=	60	80	63	40	5.5	10	3.5	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P04	=	70	90	75	60	6.5	10.5	3.5	32	35.5	5	35.5	5	35.5	5	26.5	7	26.5	7	35.5	7	26.5	7	35.5	7	35.5	7	35.5	7
P05	105	=	=	85	70	6.5	10.5	3.5	32	35.5	5	35.5	5	35.5	5	26.5	7	26.5	7	35.5	7	26.5	7	35.5	7	35.5	7	35.5	7
P06	=	80	110	98.42	73.02	6	11	3.5	35	36	5.5	36	5.5	36	5.5	27	7.5	27	7.5	36	7.5	27	7.5	36	7.5	36	7.5	36	7.5
P07	=	95	120	100	80	6.5	11.5	4	32	36.5	6	36.5	6	36.5	6	27.5	8	27.5	8	36.5	8	27.5	8	36.5	8	36.5	8	36.5	8
P08	=	98	130	115	95	9	11.5	4	32	36.5	6	36.5	6	36.5	6	27.5	8	27.5	8	36.5	8	27.5	8	36.5	8	36.5	8	36.5	8
P09	=	116	160	130	110	9	12	4.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P10*	60	=	=	39	26	4.5	10	3	26	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P11*	60	=	=	42	32	4.5	10	3	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P12*	65	=	=	46	32	4.5	10	3.5	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P13*	80	=	=	65	50	5.5	10	3.5	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P14*	60	=	=	39	20	4.5	10	2.5	20	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P15	=	75	100	90	60	5.8	12	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P16*	60	=	=	45	30	3.5	14	7	30	39	8.5	39	8.5	39	8.5	30	10.5	30	10.5	39	10.5	30	10.5	39	10.5	39	10.5	39	10.5
P17	=	60	82	70	50	4.5	16.5	8	32	41.5	11	41.5	11	41.5	11	32.5	13	32.5	13	41.5	13	32.5	13	41.5	13	41.5	13	41.5	13
P18	=	60	80	60	50	M4	10.5	3.5	32	35.5	5	35.5	5	35.5	5	26.5	7	26.5	7	35.5	7	26.5	7	35.5	7	35.5	7	35.5	7
P19*	60	=	=	36	25	4.5	10	3	25	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P20	=	60	82	70	50	5.5	10.5	3.5	32	35.5	5	35.5	5	35.5	5	26.5	7	26.5	7	35.5	7	26.5	7	35.5	7	35.5	7	35.5	7
P21*	60	=	=	46	30	4.5	10	3	30	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P22	=	60	80	70.71	36	4.5	10	2	32	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P23	=	62	85	70	50	5.5	15.5	3.5	32	40.5	10	40.5	10	40.5	10	31.5	12	31.5	12	40.5	12	31.5	12	40.5	12	40.5	12	40.5	12
P24	=	75	100	90	70	5.8	12	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P25	=	70	95	85	55	5.8	12	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P26*	=	60	80	65.5	34	5.5	10	3.5	33	35	4.5	35	4.5	35	4.5	26	6.5	26	6.5	35	6.5	26	6.5	35	6.5	35	6.5	35	6.5
P27	=	80	110	95	50	6.5	12	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P28	=	60	80	66.67	38.1	M4	9	2.5	32	34	3.5	34	3.5	34	3.5	25	5.5	25	5.5	34	5.5	25	5.5	34	5.5	34	5.5	34	5.5
P29	60	=	=	45	30	M3	11	4	32	36	5.5	36	5.5	36	5.5	27	7.5	27	7.5	36	7.5	27	7.5	36	7.5	36	7.5	36	7.5
P30	=	70	95	85	60	5.8	12	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P31	=	62	85	70	50	M4	11	3.5	32	36	5.5	36	5.5	36	5.5	27	7.5	27	7.5	36	7.5	27	7.5	36	7.5	36	7.5	36	7.5

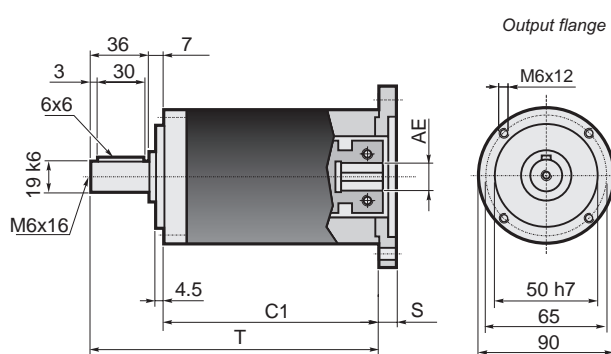
* To mount the motor it is necessary to remove the gearbox flange (see assembly drawing 2 on page 141).

AA



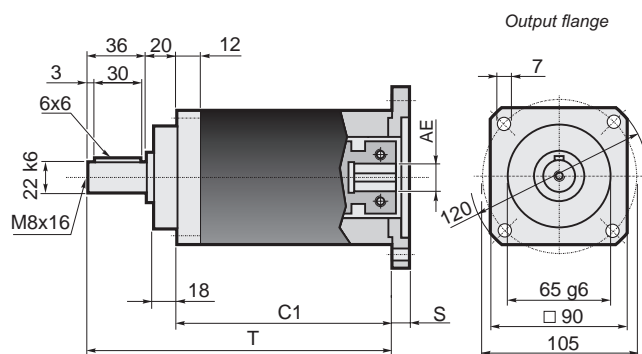
Steps	1	2	AE= 9-9.52-11-12-12.7-14-15.87-16-19
C1	98	127	
T	144	173	

TT



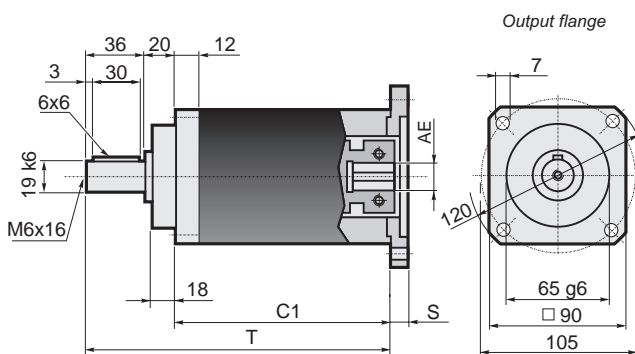
Steps	1	2	AE= 9-9.52-11-12-12.7-14-15.87-16-19
C1	101	130	
T	144	173	

AQ



Steps	1	2	AE= 9-9.52-11-12-12.7-14-15.87-16-19
C1	88	117	
T	144	173	

TQ

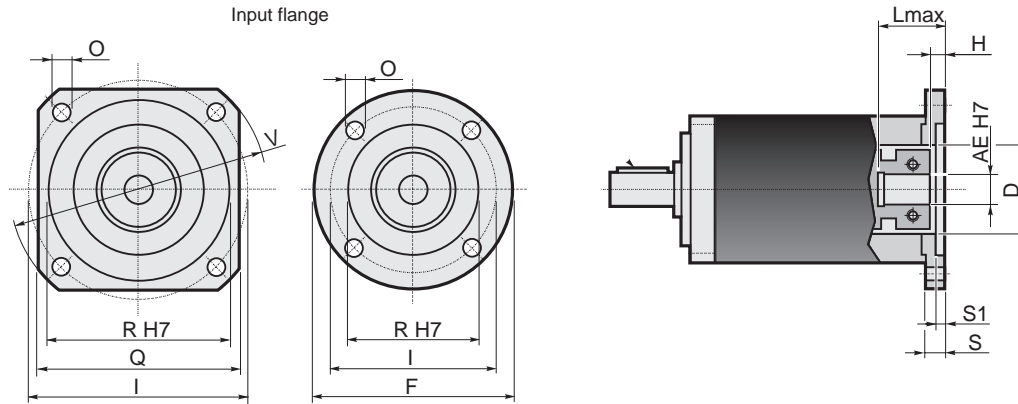


Steps	1	2	AE= 9-9.52-11-12-12.7-14-15.87-16-19
C1	88	117	
T	144	173	

Technical data

EP 90

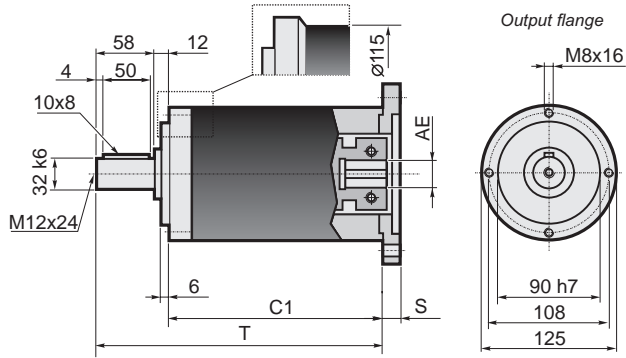
Steps	1																2																Steps		
	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50		70	100
T_{2N}	50	55	60	55	50	65	70	75	75	75	75	75	75	75	75	65	55	n_{1nom}	4000																
T_{2A}	80	90	100	90	80	100	110	120	120	120	120	120	120	120	120	100	90	n_{1max}	5000																
T_{2S}	160	180	200	180	160	200	220	240	240	240	240	240	240	240	240	200	180	LpA	< 70																
J_{min}	0.5159	0.3371	0.2742	0.2247	0.2008	0.5193	0.4995	0.4925	0.3272	0.3233	0.2651	0.2215	0.2202	0.1992	0.1985	0.1980	0.1978	Lh	20000																
J_{max}	0.7271	0.5483	0.4854	0.4359	0.4120	0.7305	0.7305	0.7036	0.5384	0.5345	0.4763	0.4326	0.4314	0.4103	0.4097	0.4092	0.4090	F_{R2}	2600																
R_t	9.0				7.5	9.0											7.5	F_{A2}	2000																
R_d	0.96																0.93																max	15'	20'



	Input flange								Input shaft																								
									AE																								
	F	Q	V	I	R (H7)	O	S	S1	D	9	9.525	11	12	12.7	14	15.87	16	19	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max
P01*	80	=	=	66.67	38.1	5.5	12	3	38.1	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P02	=	106.5	140	125.72	55.52	7	11	3	45	43	5.5	43	8	28	8	43	8	43	8	43	8	43	8	43	8	43	8	43	8	43	8	43	8
P03*	=	80	90	75	60	5.5	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P04*	105	=	=	85	70	6.5	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P05	=	82.5	110	98.425	73.02	6.5	12	3	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P06	=	90	120	100	80	6.5	13	4	45	45	7.5	45	10	30	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10
P07	=	100	135	115	95	8.5	13	4.5	45	45	7.5	45	10	30	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10
P08	=	116	160	130	110	9	13	4.5	45	45	7.5	45	10	30	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10
P09*	80	=	=	39	26	4.5	12	4	26	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P10*	80	=	=	65	50	5.5	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P11	=	150	182	166	115	9	32	11	50x14	64	26.5	64	29	49	29	64	29	64	29	64	29	64	29	64	29	64	29	64	29	64	29	64	29
P12*	=	80	105	90	70	6.5	12	3.5	32	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P14	105	=	=	90	70	6	19	9	32	51	13.5	51	16	36	16	51	16	51	16	51	16	51	16	51	16	51	16	51	16	51	16	51	16
P15*	80	=	=	70	50	4.5	17	8	45	49	11.5	49	14	34	14	49	14	49	14	49	14	49	14	49	14	49	14	49	14	49	14	49	14
P16	=	142	190	165	130	11	13	4.5	45	45	7.5	45	10	30	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10	45	10
P17*	80	=	=	63	40	5.5	12	3.5	40	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P18	=	130	170	145	110	M8	31	7	32	63	25.5	63	28	48	28	63	28	63	28	63	28	63	28	63	28	63	28	63	28	63	28	63	28
P19*	=	80	105	90	60	6.5	12	3.5	32	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P20*	=	80	105	85	55	5.5	12	3.5	36	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P21	=	80	110	95	50	M6	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P22	80	=	=	70	50	M4	12	4	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P23	=	80	90	75	60	M5	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P24	80	=	=	46	30	M4	12	4	30	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9
P25	80	=	=	99	60	M6	12	3.5	45	44	6.5	44	9	29	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9	44	9

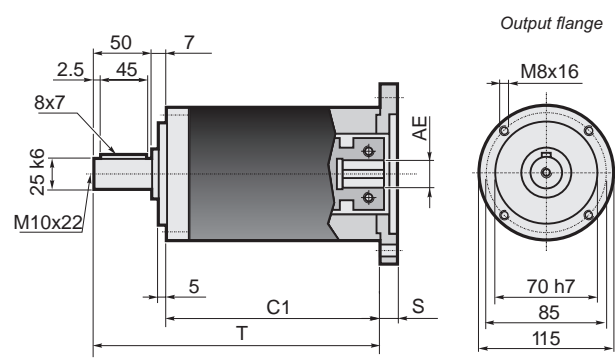
* To mount the motor it is necessary to remove the gearbox flange (see **assembly drawing 2** on page 141).

AA



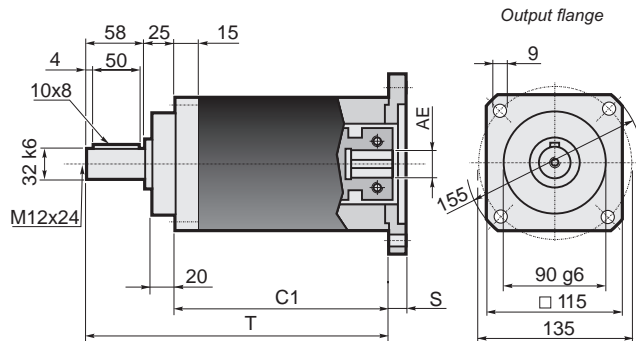
Steps	1	2	
C1	115.8	148.4	AE= 12.7-14-15.87-16-19
T	185.8	218.4	
C1	134.8	167.4	AE= 22-24-28
T	204.8	237.4	

TT



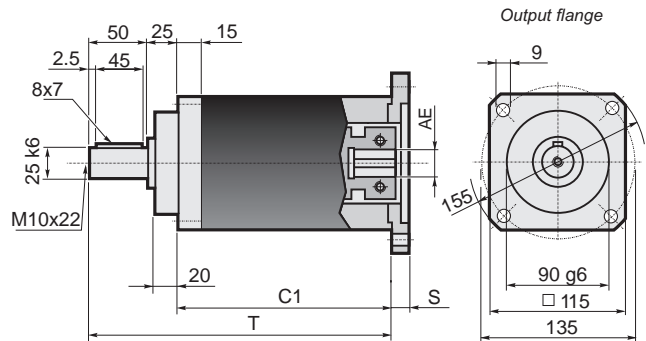
Steps	1	2	
C1	120.8	153.4	AE= 12.7-14-15.87-16-19
T	177.8	210.4	
C1	139.8	172.4	AE= 22-24-28
T	196.8	229.4	

AQ



Steps	1	2	
C1	102.8	135.4	AE= 12.7-14-15.87-16-19
T	185.8	218.4	
C1	121.8	154.4	AE= 22-24-28
T	204.8	237.4	

TQ

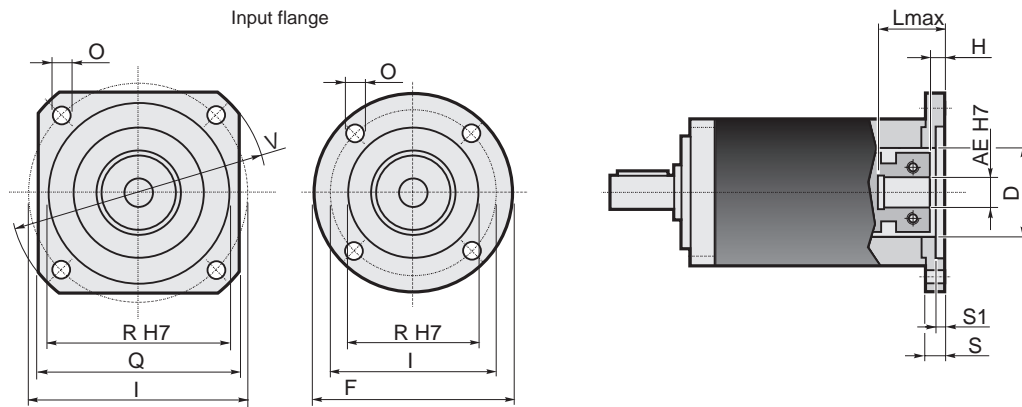


Steps	1	2	
C1	102.8	135.4	AE= 12.7-14-15.87-16-19
T	177.8	210.4	
C1	121.8	154.4	AE= 22-24-28
T	196.8	229.4	

Technical data

EP 120

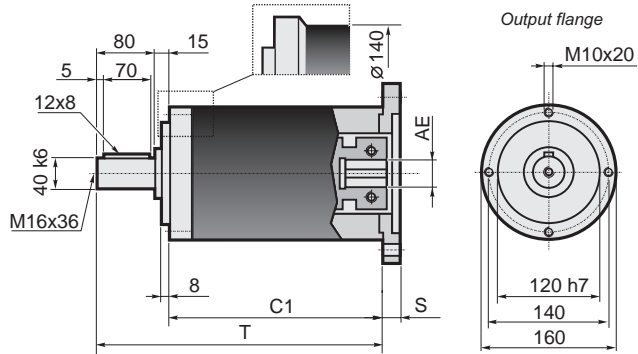
Steps	1																2																Steps	
	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50		
T_{2N}	120	150	180	150	100	150	180	220	220	220	220	220	220	220	170	110	n_{1nom}	3000																
T_{2A}	190	240	290	220	180	240	290	350	350	350	350	350	350	350	270	200	n_{1max}	4000																
T_{2S}	400	500	600	460	380	500	600	700	700	700	700	700	700	700	540	400	LpA	< 70																
J_{min}	2.0027	1.1339	0.8557	0.6244	0.5047	1.9802	1.8962	1.8552	1.0736	1.0505	0.8023	0.6048	0.5977	0.4951	0.4918	0.4895	0.4883	Lh	20000															
J_{max}	4.1528	3.2840	3.0058	2.7745	2.6548	3.1885	3.1045	3.0636	2.2819	2.2589	2.0106	1.8132	1.8061	1.7035	1.7002	1.6979	1.6967	F_{R2}	4500															
Rt	32				28	32	30						28						F_{A2}	4000														
Rd	0.96				0.93																max	15'	20'											



Input flange										Input shaft																	
										AE																	
										12.7		14		15.87		16		19		22		24		28			
F	Q	V	I	R (H7)	O	S	S1	D	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H			
P01*	=	115	140	125.72	55.52	6.5	13	3	55.52	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P02*	115	=	=	75	60	5.5	13	3.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P03*	115	=	=	85	70	6.5	13	3.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P04*	115	=	=	98.42	73.02	6.5	13	3	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P05*	120	=	=	100	80	6.5	13	4	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P06*	=	115	140	115	95	9	13	4.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P07	=	115	160	130	110	8.5	13	4.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P08	=	142	190	165	130	11	13	4.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P09	=	192	250	215	180	13	14	4.5	60	44	7	36	7	44	7	44	7	44	7	44	7	63	7	63	7	63	7
P10*	115	=	=	65	50	6.5	13	3.5	50	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P11	=	130	170	145	110	M 8	31	7	60	61	24	53	24	61	24	61	24	61	24	61	24	80	24	80	24	80	24
P12	=	130	170	145	110	M 8	17	7	60	47	10	39	10	47	10	47	10	47	10	47	10	66	10	66	10	66	10
P13	=	115	160	130	110	M 8	13	4.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P14*	115	=	=	70	50	6.5	13	3.5	50	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P15	115	=	=	90	70	M5	11	3.5	60	41	4	33	4	41	4	41	4	41	4	41	4	60	4	60	4	60	4
P17*	115	=	=	90	70	6.5	13	3.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P18	=	115	155	130	95	8.5	13	4.5	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P19*	115	=	=	95	50	6.5	13	3.5	50	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6
P20	115	=	=	99	60	M6	13	4	60	43	6	35	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6

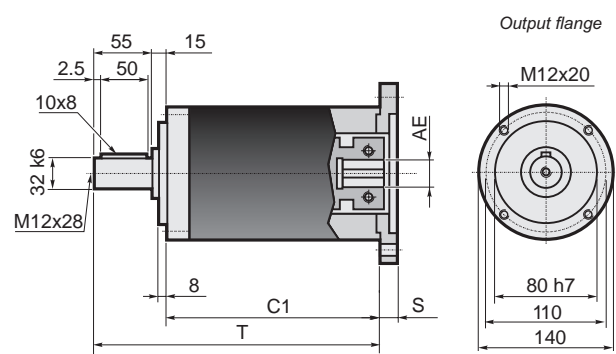
* To mount the motor it is necessary to remove the gearbox flange (see **assembly drawing 2** on page 141).

AA



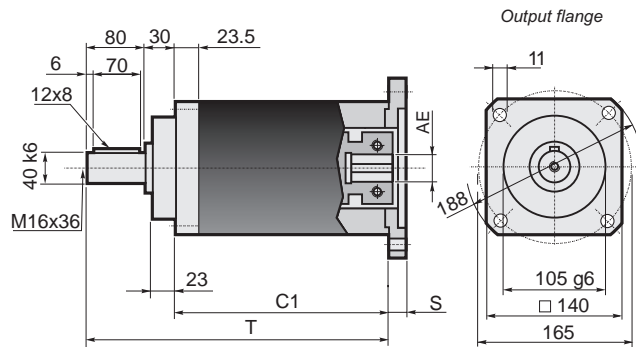
Steps	1	2	
C1	156	197.5	AE= 15.87-16-19-22-24
T	251	292.5	
C1	181	222.5	AE= 28-32-35-38
T	276	317.5	

TT



Steps	1	2	
C1	156	197.5	AE= 15.87-16-19-22-24
T	226	267.5	
C1	181	222.5	AE= 28-32-35-38
T	251	292.5	

AQ

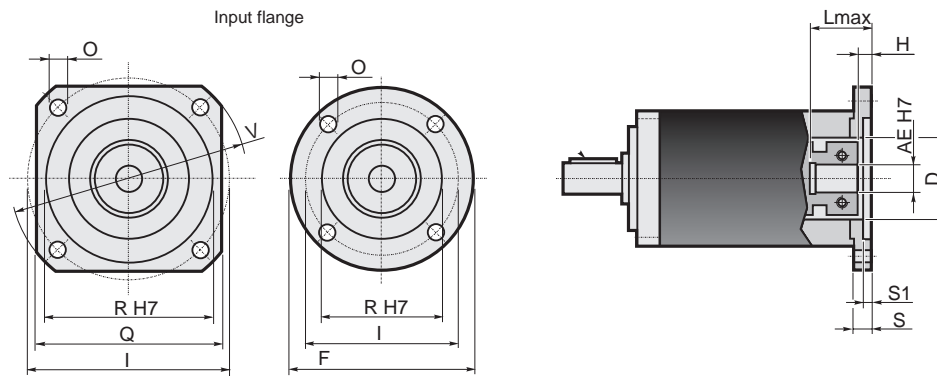


Steps	1	2	
C1	141	182.5	AE= 15.87-16-19-22-24
T	251	292.5	
C1	166	207.5	AE= 28-32-35-38
T	276	317.5	

Technical data

EP 155

Steps	1																2																Steps
	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	70	100	3	4	5	7	10	9	12	15	16	20	25	28	35	40	50	
T_{2N}	240	320	380	300	220	320	400	500	500	500	500	500	500	500	500	350	250	n_{1nom}	3000														
T_{2A}	420	540	600	480	400	480	600	750	750	750	750	750	750	750	750	560	460	n_{1max}	4000														
T_{2S}	880	1140	1260	1000	850	1000	1250	1500	1500	1500	1500	1500	1500	1500	1500	1120	920	LpA	< 70														
J_{min}	6.2232	3.6993	2.8162	2.1069	1.7391	6.0151	5.8025	5.7092	3.4671	3.4118	2.6324	2.0320	2.0135	1.7026	1.6934	1.6864	1.6827	Lh	20000														
J_{max}	13.9214	11.3975	10.5144	9.8051	9.4373	13.7133	13.5057	13.4074	11.1653	11.1100	10.3306	9.7302	9.7117	9.4008	9.3916	9.3846	9.3809	FR2 (AA)	6500														
Rt	60				50	60											50	FR2 (TT)	5300														
Rd	0.96				0.93																F_{A2} (AA)	3250											
																					F_{A2} (TT)	2650											
																					max	15'	20'										

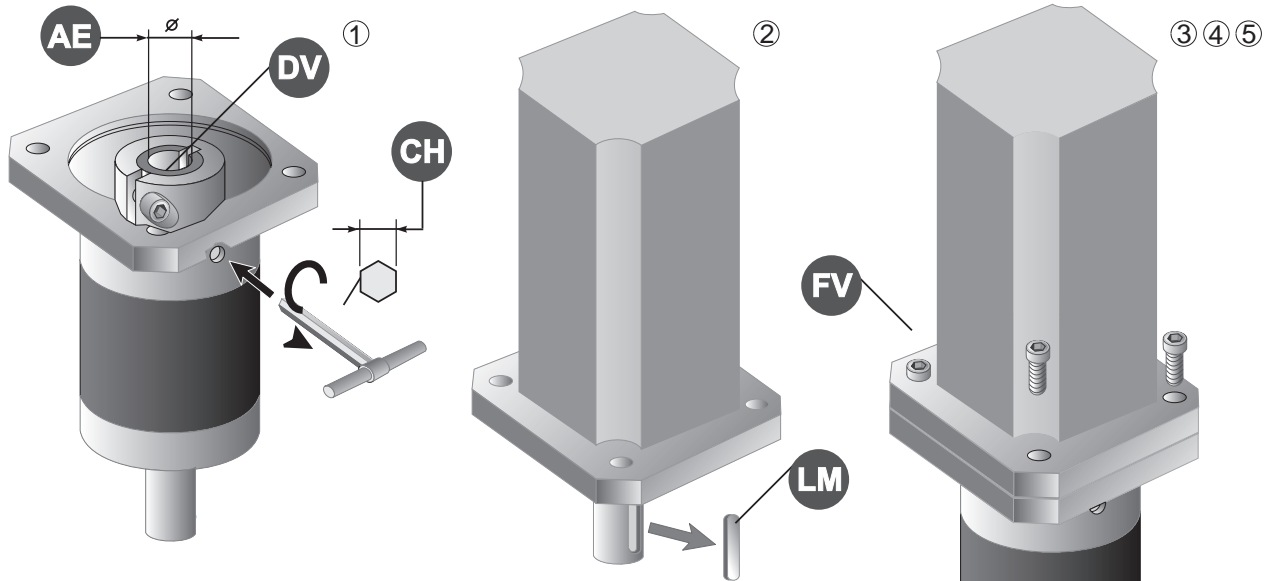


	Input flange									Input shaft																	
										AE																	
										15.87		16		19		22		24		28		32		35		38	
F	Q	V	I	R (H7)	O	S	S1	D	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H	L _{max}	H			
P01*	140	=	=	125.72	55.52	6.5	15	4	55.52	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P02*	140	=	=	100	80	6.5	15	4	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P03*	140	=	=	115	95	8.5	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P04*	=	140	160	130	110	8.5	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P05	=	142	190	165	130	11	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P06	=	190	250	215	180	13	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P07	=	250	300	265	230	13	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P08	=	130	165	145	110	M 8	18	7	70	60.8	9.8	60.8	9.8	45.8	9.8	60.8	9.8	60.8	9.8	85.8	10.3	85.8	10.3	85.8	10.3	85.8	10.3
P09	=	180	230	200	114.3	13.5	22	11	70	64.8	13.8	64.8	13.8	49.8	13.8	64.8	13.8	64.8	13.8	89.8	14.3	89.8	14.3	89.8	14.3	89.8	14.3
P10	=	115	150	130	95	M 8	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P11	=	180	230	198	155	13.5	22	7	120x11	64.8	13.8	64.8	13.8	49.8	13.8	64.8	13.8	64.8	13.8	89.8	14.3	89.8	14.3	89.8	14.3	89.8	14.3
P12	=	220	270	235	200	13.5	15	5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P13	=	190	250	215	130	13	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P14	=	142	190	165	110	11	15	4.5	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P15*	150	=	=	90	70	6.5	15	4	70	57.8	6.8	57.8	6.8	42.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3

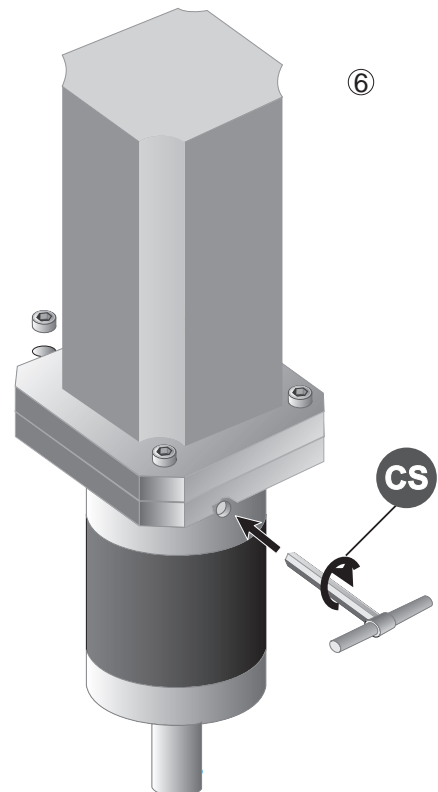
* To mount the motor it is necessary to remove the gearbox flange (see **assembly drawing 2** on page 141).

Instructions for assembly of motor

Assembly drawing



- 1 - Unloose the fastening screw (or screws) of the clamp (DV)
- 2 - Remove the key (LM) from motor shaft
- 3 - Clean the contact surfaces of motor flange/gearbox flange
- 4 - Avoid impacts while fitting motor to gearbox
- 5 - Tighten the assembling screws (FV) alternatively
- 6 - Tighten the clamp screw, or screws (DV) according to the torque (CS) reported in the table



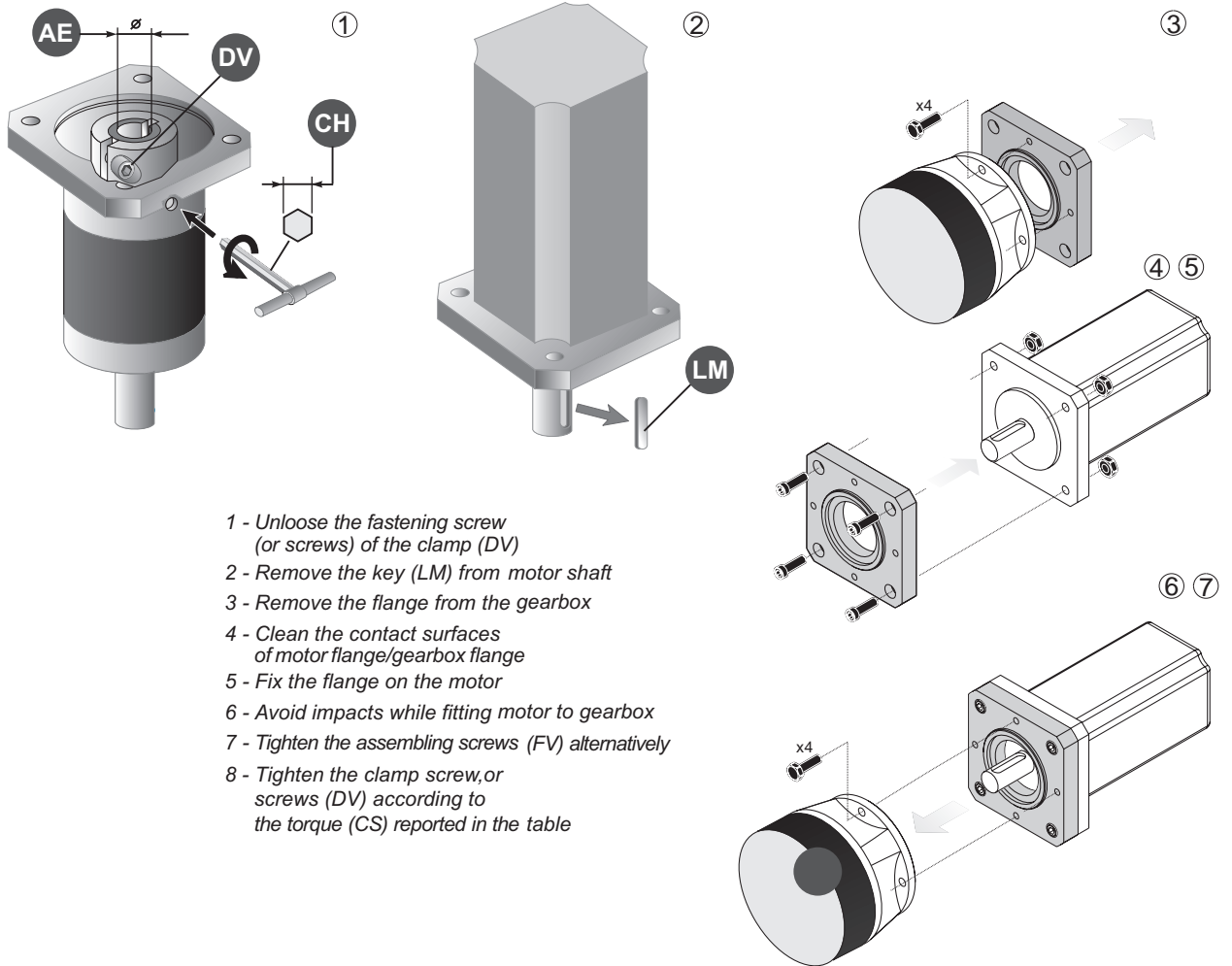
EP 55	AE	6	6.35	7	8	9	9.52	11			
	DV				M4						
	NV				1						
	CH				3						
	CS [Nm]				4.8						
EP 75	AE	6	6.35	7	8	9	9.52	11	12	12.7	14
	DV				M4						
	NV				1						
	CH				3						
	CS [Nm]				4.8						
EP 90	AE	9	9.52	11	12	12.7	14	15.87	16	19	
	DV				M4				M5		
	NV				1				1		
	CH				3				4		
	CS [Nm]				4.8				9.4		
EP 120	AE	12.7	14	15.87	16	19	22	24	28		
	DV	M4		M5			M6				
	NV	1		1			2				
	CH	3		4			5				
	CS [Nm]	4.8		9.4			16.2				
EP 155	AE	15.87	16	19	22	24	28	32	35	38	
	DV	M6			M6			M6			
	NV	1			2			3			
	CH	5			5			5			
	CS [Nm]	16.2			16.2			16.2			

AE= Input shaft
DV= Screw diameter

NV= Number of screw
CS= Setting torque

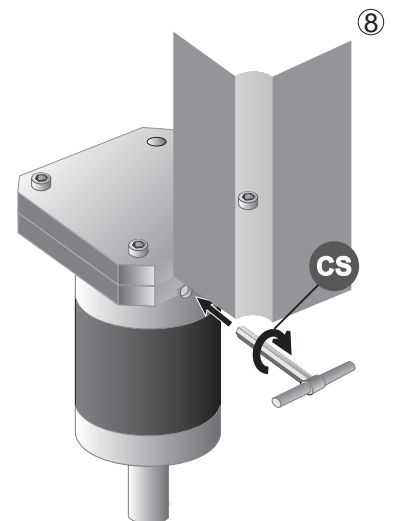
Instructions for assembly of motor

Assembly drawing



- 1 - Unloose the fastening screw (or screws) of the clamp (DV)
- 2 - Remove the key (LM) from motor shaft
- 3 - Remove the flange from the gearbox
- 4 - Clean the contact surfaces of motor flange/gearbox flange
- 5 - Fix the flange on the motor
- 6 - Avoid impacts while fitting motor to gearbox
- 7 - Tighten the assembling screws (FV) alternatively
- 8 - Tighten the clamp screw, or screws (DV) according to the torque (CS) reported in the table

EP 55	AE	6	6.35	7	8	9	9.52	11					
	DV				M4								
	NV				1								
	CH				3								
	CS [Nm]				4.8								
EP 75	AE	6	6.35	7	8	9	9.52	11	12	12.7	14		
	DV						M4						
	NV						1						
	CH						3						
	CS [Nm]						4.8						
EP 90	AE	9	9.52	11	12	12.7	14	15.87	16	19			
	DV				M4				M5				
	NV				1				1				
	CH				3				4				
	CS [Nm]				4.8				9.4				
EP 120	AE	12.7	14	15.87	16	19	22	24	28				
	DV		M4		M5			M6					
	NV		1		1			2					
	CH		3		4			5					
	CS [Nm]		4.8		9.4			16.2					
EP 155	AE	15.87	16	19	22	24	28	32	35	38			
	DV		M6		M6			M6					
	NV		1		2			3					
	CH		5		5			5					
	CS [Nm]		16.2		16.2			16.2					



AE= Input shaft
DV= Screw diameter

NV= Number of screw
CS= Setting torque



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