

THRIGE ELECTRIC

DC motors, LAKC 4355-6560

2003/10 IEC

LAKC 250-1250 kW

- **4000 – 23000 Nm**
- **4 and 6 poles**
- **Fully laminated**
- **Insulation Class H**
- **Compensation winding**
- **Standards: IEC, VDE, BS**

List of contents

Introduction.....	p. 3
Options	p. 4
Application data	p. 5
Output data.....	p. 7
Dimension drawings.....	p. 22

Introduction

The LAKC range of d.c. motors are fully laminated with compensated shunt windings and comprises 4, and 6 pole machines.

Type designation example:

LAKC 4355 A:

LAK = type of motor
C = compensated
4 = number of poles
355 = frame size
A = core length

Frame size	Poles	Core lengths
355	4	A, B, C
400	6	A, B, C
500	6	A, B, C, D
560	6	A, B, C, D

Design and characteristics

The LAKC motors are designed for use in heavy industry where there is a need for reliability, low maintenance costs, good commutation, long brush life and low energy consumption.

- Fully laminated stator yoke, main poles and interpoles.
- Pole face compensation winding to enhance performance in overload conditions.
- Excellent commutation due to well proportioned ratio between armature length and diameter with low bar to bar voltage.
- High thermal time constant.
- Class H insulation.
- Armatures wound with high quality materials.
- Armature windings are vacuum impregnated with 100% fill resin for optimal reliability.
- Internal cooling ducts in the armature with under commutator cooling.
- Generously dimensioned shaft and bearings.
- End shields of square design with large openings to facilitate brush accessibility for maintenance.
- Spigot at the non-drive end for mounting of tachometer, encoder etc.
- Split brushes.

Advantages

The fully laminated compensated LAKC d.c. motor ensures:

- High overload capacity with linear torque/current characteristic.
- High efficiency due to low field losses and well proportioned air gaps between armature and stator.
- Excellent commutation over the entire speed range.
- Long brush life.
- Low noise level
- Class H insulation
- Class F temperature rise.
- Excellent dynamic response, enhanced by superior transient commutation.
- Easy access to brushes and commutator.
- Custom built to meet individual specifications.

Options

Frame size	LAKC	4355	6400	6500	6560
Cooling forms					
IC06 (IP 23)	Force ventilated	0	0	0	0
IC17 (IP 23)	Single pipe ventilated	0	0	0	0
IC37 (IP 54)	Double pipe ventilated	0	0	0	0
IC666 (IP 54)	Air-air cooled	0	0	0	0
IC86W (IP 54)	Air-water cooled	0	0	0	0
Special protection					
IP 55		0	0	0	0
Mounting forms					
IM 1001	Horizontal foot	0	0	0	0
IM 1002	Horizontal foot, two shaft ends	0	0	0	0
IM 1002	For tandem use	0	0	0	0
IM 2001	Horizontal foot and flange	0	0	0	0
IM 2011	Vertical foot and flange	0	0	0	0
Modifications and accessories					
	Thermistors in stator windings (PTC)	0	0	0	0
	Temperature guard in stator windings (PT100)	0	0	0	0
	Temperature guard in endshield (PT100)	0	0	0	0
	Bearing sensor	0	0	0	0
	Grounding brush	0	0	0	0
	Heating element	0	0	0	0
	Brush wear sensor	0	0	0	0
	Special shaft	0	0	0	0
	Roller bearing, d-end	0	0	0	0
	Special balance Class 'R'	0	0	0	0
	Filter	0	0	0	0
	Pressure switch	0	0	0	0
	Special volt/Hz on blower	0	0	0	0
	Special paint	0	0	0	0
	Special corrosion protection	0	0	0	0
	Transparent inspection cover	0	0	0	0
	Brake	0	0	0	0
	Baseplate etc. for tandem use	0	0	0	0
	Terminal box on LHS	0	0	0	0
Tachometers					
	REO 444R (60v/1000min ⁻¹)	0	0	0	0
	<i>Others available</i>				
Pulse generators					
	POG 9D (1-1250 ppr)	0	0	0	0
	<i>Others available</i>				

Application data

Standards

IEC 34, IEC 72, etc.

Insulation

Class H (180° C)

Temperature rise

Class F (155° C)

Balance

IEC 34-14 grade 'N' standard.
Reduced vibration levels on request.

Overload capacity

160% FLT x 15 sec every 5 min.
200% FLC x 30 sec every 15 min.
200% FLC ~ 200% FLT at rated flux.
Overloads must be followed by periods of reduced loading in order to maintain an r.m.s. load cycle of 100% FLC.
Other duty cycles on enquiry.

Dynamic loading

Suitable for di/dt of 200 x FLC/sec. Higher levels considered on request.

Standstill

The permissible currents during standstill operation with the cooling air applied are:

- 200% FLC for 10 sec.
- 100% FLC for 30 sec.
- 50% FLC for 90 sec.
- 20% FLC for 300 sec.
- 15% FLC for 600 sec.

Terminal box position

RHS viewed from d-end.
LHS or top mounting on request.

Blower position

Top mounted at d-end.
Other positions available on request.

Filter

Available on request.

Bearings

Grease lubricated ball bearings suitable for direct drive.
For belt drive or side loading, contact our sales offices.

Heat exchangers

Air-water (IC86W)

Air-water exchangers are especially recommended for polluted environment.

Standard is for clean water supply. Marine or other water sources available on request.

Position

On top of motor.
Other positions and for remote installation available on request.

Water inlet/outlet

BS 4504 – PN16.
Other connection forms available on request.
Water connections are on opposite side to terminal box. This can be changed to suit customer's requirements.

Water parameters

Inlet temperature max. 25° C
Inlet pressure max. 3.45 bar
Pressure drop 35kPa

A water temperature rise of 8 to 10° C must be expected.

For motors on light load or with low inlet water temperature, a temperature regulated water volume control valve is recommended to avoid condensation in the cooling air circuit, minimise water consumption and reduce the risk of too cold commutator running conditions.

Protection

Standard:

- Water flow switch (IC86W)
- Air pressure switch (IC666)
- Internal air circuit filter.
- Air leakage replacement filter.
- Air pressure switch (internal)

The internal air pressure switch indicates air flow failure only, it does not react to a reduction in air flow due to contaminated filter.

Air-air (IC666)

Air-air exchangers are recommended where water is not available for cooling purposes. The output of a motor with an air-air exchanger will be reduced by approx. 20% compared to cooling form IC06.
Motor output data available on enquiry.

Mounting

On top of the motor.
Other positions available on request.
Two constant speed ac fan motors on the exchanger provide air circulation for the external and internal air circuits.

Options:

- Differential pressure switch across filter monitoring contamination.
- Water flow control valve for motors used continuously in a lightly loaded condition (IC86W).

Detailed heat exchanger information supplied on request.

Application data

Mechanical data

Frame	Inertia (kg·m ²)	Max. mechanical speed (min ⁻¹)
LAKC 4355A	14.3	1800
LAKC 4355B	15.8	
LAKC 4355C	17.3	
LAKC 6400A	23.0	1750
LAKC 6400B	28.8	
LAKC 6400C	36.3	
LAKC 6500A	69.5	1500
LAKC 6500B	87.1	
LAKC 6500C	109.8	
LAKC 6500D	127.0	
LAKC 6560A	145.0	1250
LAKC 6560B	165.0	
LAKC 6560C	187.5	
LAKC 6560D	207.5	

Cooling data

Frame	Air volume m ³ /h	Pressure drop in motor N/m ²
LAKC 4355	7200	1670
LAKC 6400	12600	1470
LAKC 6500	18000	1520
LAKC 6560	21600	1860

Blower motor data

Frame	3 x 380 – 420V (± 5%), 50 Hz	
	KW	FKC (A)
LAKC 4355	5.5	11.9
LAKC 6400	10.0	23.0
LAKC 6500	10.0	23.0
LAKC 6560	18.5	39.0

Bearing types

Frame	Drive end	Comm. end
LAKC 4355	6228 C3	6228 C3
LAKC 6400	6230 C3	6230 C3
LAKC 6500	6234 C3	6232 C3
LAKC 6560	6244 C3	6232 C3

Tandem mounted motors will have larger bearings fitted.

Output data

Select motor frame size against voltage, output and speed. For intermediate output, take the nearest higher output listed under the next frame size. For intermediate speed, take the next lower speed listed within the output required.

The output lists are based on:

- **Cooling forms IC06/IC17/IC37/IC86W.**
- **The armature circuit resistance listed is for duty warm condition.**
- **The inductance listed is for the armature circuit.**
- **Motors supplied from 3-phase fully controlled thyristor.**

Duty cycles

All outputs are duty type S1 and motors fed from a 3-phase fully controlled thyristor where the form factor is 1.00. For other ratings or special duty cycles, refer to sales offices giving full details.

Constant power/constant torque

The full field or base speed and maximum speed through field control with constant output is listed for each winding.

Armature voltage: For -10% the output and speed is proportional to the voltage.

Higher field ranges can be calculated or please refer to sales offices.

With a combination of armature voltage and field control greater constant power ranges can be obtained.

Calculation example:

Derating for higher field range
Armature: 500VA

Request: 325kw 800-1600 rpm

Catalogue: LAKC 4355A
352 kw 800-1390 rpm

Derate: $352 \times \frac{1390}{1600} = 306 \text{ kw}$

Motor data: LAKC 4355A
306 kw 800-1600 rpm

Max. mechanical speed limit is shown under application data.

Field windings

All motors have separate excitation, the field being shunt wound and having pole face compensation windings.

Armature voltage

For other armature voltages, contact our sales offices.

Ambient temperature and altitude

Outputs listed are based on 40° C max. ambient and motor located max. 1000m above sea level.

If ambient and/or altitude are higher, derate output and select from the output tables.

Temp	45° C	50° C	55° C	60° C
Catalogue output	0.97	0.93	0.89	0.85

Altitude	2000 m	3000 m	4000 m
Catalogue output	0.94	0.87	0.77

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. Electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
258	550	575	630	770	905	975	650	4480	870	90.2	0.0550	0.92
270							650	4484	920	90.3	0.0550	0.92
296							650	4487	995	91.1	0.0550	0.92
360							650	4465	1220	92.3	0.0550	0.90
418							640	4411	1465	93.3	0.0550	0.91
450							640	4408	1565	93.8	0.0550	0.90
294	635	665	730	885	1045	1125	735	4422	1110	90.9	0.0449	0.71
308							735	4423	1160	91.1	0.0449	0.71
336							735	4396	1285	91.4	0.0449	0.70
410							735	4424	1535	93.0	0.0449	0.69
468							715	4277	1710	93.5	0.0449	0.70
498							705	4227	1730	94.2	0.0449	0.71
308	695	730	800	970	1145	1230	765	4232	1190	91.5	0.0395	0.62
322							765	4212	1265	91.5	0.0395	0.62
352							765	4202	1390	92.0	0.0395	0.61
422							755	4155	1660	93.2	0.0395	0.61
484							735	4037	1710	94.1	0.0395	0.62
515							725	3999	1730	94.7	0.0395	0.63
338	745	780	855	1035	1220	1315	840	4333	1310	91.5	0.0347	0.53
354							840	4334	1385	91.6	0.0347	0.53
388							840	4334	1510	92.4	0.0347	0.52
470							840	4337	1710	93.3	0.0347	0.52
535							810	4188	1770	94.4	0.0347	0.53
570							800	4140	1790	95.0	0.0347	0.53
378	800	840	920	1115	1310	1410	930	4512	1415	92.4	0.0284	0.44
396							930	4502	1490	92.6	0.0284	0.44
432							930	4484	1640	92.9	0.0284	0.44
510							900	4368	1700	94.4	0.0284	0.45
575							865	4192	1770	95.0	0.0284	0.46
605							850	4098	1800	94.9	0.0284	0.47
406	860	905	990	1200	1410	1520	1000	4508	1625	92.3	0.0255	0.38
426							1000	4495	1700	92.6	0.0255	0.38
456							980	4399	1800	93.1	0.0255	0.39
540							950	4298	1800	94.7	0.0255	0.39
610							915	4132	1800	95.2	0.0255	0.41
635							890	3990	1800	95.1	0.0255	0.42
440	935	980	1075	1300	1530	1645	1080	4494	1650	92.6	0.0214	0.33
462							1080	4502	1725	93.0	0.0214	0.33
505							1080	4486	1800	93.5	0.0214	0.32
585							1030	4298	1800	94.7	0.0214	0.34
660							990	4120	1800	95.2	0.0214	0.35
690							960	4006	1800	95.8	0.0214	0.36
458	1025	1070	1170	1420	1665		1120	4267	1800	92.9	0.0191	0.29
480							1120	4284	1800	93.2	0.0191	0.29
525							1120	4285	1800	93.8	0.0191	0.29
620							1090	4170	1800	94.8	0.0191	0.29
690							1030	3958	1800	95.7	0.0191	0.31
494							1125	1180	1290	1560		
520	1200	4208	1800	94.2	0.0159	0.24						
565	1200	4183	1800	94.2	0.0159	0.24						
645	1130	3949	1800	95.1	0.0159	0.26						
555	1250	1310	1430									
575							1330	4192	1800	94.0	0.0131	0.20
610							1290	4074	1800	94.6	0.0131	0.20

** Through field control with constant output. Please specify.

Field loss (hot) = 3000W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
256	490	515	565	690	815	875	650	4989	775	89.5	0.0581	1.04
270							650	5007	825	90.3	0.0581	1.03
296							650	5003	900	91.1	0.0581	1.02
360							650	4983	1100	92.3	0.0581	1.00
424							650	4968	1300	93.2	0.0581	0.99
456							650	4977	1400	93.5	0.0581	0.99
292	570	600	655	795	940	1010	735	4892	990	90.3	0.0475	0.79
306							735	4871	1040	90.5	0.0475	0.78
336							735	4899	1140	91.4	0.0475	0.78
408							735	4901	1390	92.5	0.0475	0.77
480							735	4877	1540	93.3	0.0475	0.76
520							735	4917	1540	94.3	0.0475	0.76
306	625	655	720	875	1030	1105	765	4676	1070	90.9	0.0418	0.69
322							765	4695	1120	91.5	0.0418	0.69
352							765	4669	1245	92.0	0.0418	0.68
426							765	4649	1520	92.8	0.0418	0.67
505							765	4682	1520	94.3	0.0418	0.67
535							755	4624	1540	94.5	0.0418	0.67
338	670	700	765	930	1095	1180	840	4818	1180	91.5	0.0367	0.59
354							840	4830	1230	91.6	0.0367	0.59
386							840	4819	1355	91.9	0.0367	0.58
470							840	4826	1580	93.3	0.0367	0.58
555							840	4840	1580	94.4	0.0367	0.57
595							840	4815	1580	94.4	0.0367	0.57
376	720	755	825	1000	1180	1270	930	4987	1270	91.9	0.0300	0.49
394							930	4984	1345	92.1	0.0300	0.49
430							930	4978	1470	92.5	0.0300	0.49
525							930	5014	1520	94.1	0.0300	0.48
605							910	4896	1560	95.0	0.0300	0.49
635							890	4775	1590	95.1	0.0300	0.50
404	775	815	890	1075	1270	1365	1000	4978	1455	91.8	0.0269	0.43
424							1000	4968	1530	92.2	0.0269	0.42
464							1000	4979	1680	92.8	0.0269	0.42
565							1000	5019	1730	94.2	0.0269	0.42
635							960	4775	1800	94.5	0.0269	0.43
670							940	4688	1800	95.0	0.0269	0.44
440	840	885	965	1170	1375	1480	1080	5002	1475	92.6	0.0226	0.36
460							1080	4964	1575	92.6	0.0226	0.36
505							1080	4998	1700	93.5	0.0226	0.36
610							1080	4979	1800	94.1	0.0226	0.36
700							1050	4862	1800	95.2	0.0226	0.36
730							1020	4710	1800	95.4	0.0226	0.37
458	920	965	1055	1275	1500	1120	1120	4754	1800	92.9	0.0202	0.32
480							1120	4750	1800	93.2	0.0202	0.32
525							1120	4752	1800	93.8	0.0202	0.32
635							1120	4756	1800	94.5	0.0202	0.32
735							1100	4680	1800	95.5	0.0202	0.32
494							1015	1060	1160	1405	1200	1200
520	1200	4685	1800	94.2	0.0168	0.27						
565	1200	4652	1800	94.2	0.0168	0.27						
685	1200	4656	1800	95.1	0.0168	0.27						
580	1120	1175	1285	1410	1400	1410	4946	1800	93.5	0.0138	0.21	
605						1400	4917	1800	93.9	0.0138	0.21	
645						1370	4794	1800	94.2	0.0138	0.21	

** Through field control with constant output. Please specify.

Field loss (hot) = 3300W

Cont. output (kW)	Based speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
256	445	470	515	625	740	795	650	5494	700	89.5	0.0612	1.14
268							650	5446	750	89.6	0.0612	1.13
294							650	5452	825	90.5	0.0612	1.12
358							650	5470	1000	91.8	0.0612	1.11
422							650	5446	1175	92.7	0.0612	1.09
454							650	5454	1275	93.1	0.0612	1.09
292	515	540	595	725	850	915	735	5415	890	90.3	0.0500	0.87
306							735	5412	940	90.5	0.0500	0.87
334							735	5361	1040	90.9	0.0500	0.86
406							735	5348	1265	92.1	0.0500	0.84
480							735	5393	1440	93.3	0.0500	0.84
515							735	5375	1440	93.4	0.0500	0.84
306	565	595	650	795	935	1005	765	5172	970	90.9	0.0440	0.76
320							765	5136	1020	90.9	0.0440	0.76
350							765	5142	1120	91.5	0.0440	0.75
426							765	5117	1370	92.8	0.0440	0.74
505							765	5158	1420	94.3	0.0440	0.73
540							765	5131	1420	94.1	0.0440	0.73
336	605	635	695	845	995	1070	840	5304	1055	90.9	0.0386	0.65
352							840	5294	1130	91.1	0.0386	0.65
386							840	5304	1230	91.9	0.0386	0.64
468							840	5289	1480	92.9	0.0386	0.63
550							840	5279	1480	93.5	0.0386	0.63
595							840	5311	1480	94.4	0.0386	0.63
374	655	685	750	910	1070	1150	930	5453	1170	91.4	0.0316	0.54
394							930	5493	1220	92.1	0.0316	0.54
430							930	5475	1345	92.5	0.0316	0.54
525							930	5510	1420	94.1	0.0316	0.53
615							930	5489	1420	94.5	0.0316	0.53
660							930	5481	1420	94.6	0.0316	0.53
404	705	735	805	980	1150	1235	1000	5473	1335	91.8	0.0284	0.47
424							1000	5509	1385	92.2	0.0284	0.47
462							1000	5481	1510	92.4	0.0284	0.47
565							1000	5506	1610	94.2	0.0284	0.46
660							1000	5481	1610	94.3	0.0284	0.46
705							990	5452	1630	94.9	0.0284	0.46
438	765	800	875	1060	1250	1340	1080	5468	1340	92.2	0.0238	0.40
460							1080	5491	1415	92.6	0.0238	0.40
505							1080	5512	1540	93.5	0.0238	0.40
610							1080	5496	1690	94.1	0.0238	0.39
715							1080	5463	1690	94.6	0.0238	0.39
770							1080	5488	1690	95.1	0.0238	0.39
456	835	875	955	1160	1360	1120	5215	1650	92.5	0.0213	0.35	
478						1120	5217	1725	92.8	0.0213	0.35	
525						1120	5250	1800	93.8	0.0213	0.35	
635						1120	5228	1800	94.5	0.0213	0.35	
745						1120	5231	1800	95.0	0.0213	0.34	
492						920	965	1055	1275	1200	5107	1800
515	1200	5097	1800	93.3	0.0176					0.30		
565	1200	5114	1800	94.2	0.0176					0.30		
685	1200	5131	1800	95.1	0.0176					0.29		
590	1020	1070	1165	1430	5524	1800	93.8	0.0145	0.23			
615				1430	5489	1800	93.5	0.0145	0.23			
675				1430	5533	1800	94.4	0.0145	0.23			

** Through field control with constant output. Please specify.

Field loss (hot) = 3400W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
334	645	675	740	895	1055	1135	825	4945	1340	92.0	0.0337	0.41
350							825	4952	1415	92.2	0.0337	0.41
378							815	4878	1560	92.8	0.0337	0.41
452							805	4823	1680	93.6	0.0337	0.42
515							780	4662	1730	94.3	0.0337	0.43
550	770	4628	1750	95.2	0.0337	0.43						
342	700	735	805	975	1145	1230	840	4666	1650	92.5	0.0290	0.37
358							840	4652	1725	92.7	0.0290	0.37
392							840	4650	1750	93.3	0.0290	0.37
474							840	4643	1750	94.0	0.0290	0.37
560							840	4671	1750	95.2	0.0290	0.36
595	830	4620	1750	95.6	0.0290	0.37						
402	765	800	875	1060	1250	1340	985	5018	1750	92.8	0.0233	0.29
420							980	5014	1750	93.2	0.0233	0.29
454							970	4955	1750	93.6	0.0233	0.29
535							940	4820	1750	94.9	0.0233	0.30
610							910	4660	1750	95.8	0.0233	0.31
640	890	4561	1750	95.9	0.0233	0.31						
412	810	850	925	1125	1320	1420	1010	4858	1680	92.7	0.0226	0.27
428							1000	4809	1700	93.0	0.0226	0.27
464							990	4790	1720	93.7	0.0226	0.27
545							960	4626	1750	94.6	0.0226	0.28
615							920	4449	1750	95.5	0.0226	0.29
645	900	4338	1750	95.6	0.0226	0.29						
430	875	915	1000	1210	1420	1525	1050	4693	1750	93.1	0.0200	0.24
452							1050	4718	1750	93.6	0.0200	0.24
492							1050	4699	1750	93.7	0.0200	0.24
585							1030	4617	1750	94.7	0.0200	0.24
660							985	4439	1750	95.7	0.0200	0.25
695	965	4352	1750	96.0	0.0200	0.25						
482	945	990	1085	1310	1540	1655	1170	4871	1750	93.6	0.0164	0.20
505							1170	4871	1750	93.8	0.0164	0.20
550							1170	4841	1750	94.0	0.0164	0.20
645							1130	4702	1750	95.1	0.0164	0.20
720							1070	4465	1750	96.1	0.0164	0.21
750	1040	4328	1750	96.2	0.0164	0.22						
520	1035	1085	1180	1430	1680	1680	1260	4798	1750	93.8	0.0139	0.17
545							1260	4797	1750	94.0	0.0139	0.17
595							1260	4815	1750	94.4	0.0139	0.17
685							1200	4575	1750	95.1	0.0139	0.17
755							1120	4292	1750	96.3	0.0139	0.19
600	1240	1300	1420				1440	4621	1750	94.7	0.0094	0.12
630							1440	4628	1750	95.1	0.0094	0.12
670							1400	4506	1750	95.7	0.0094	0.13
605	1335	1400					1440	4328	1750	95.5	0.0090	0.11
630							1440	4298	1750	95.1	0.0090	0.11
680							1420	4258	1750	95.8	0.0090	0.12
605	1455	1520					1440	3971	1750	95.5	0.0069	0.11
635							1440	3990	1750	95.9	0.0069	0.11
690							1440	3982	1750	95.8	0.0069	0.10
715	1575	1650					1700	4335	1750	95.6	0.0063	0.08
730							1660	4225	1750	95.6	0.0063	0.08

** Through field control with constant output. Please specify.

Field loss (hot) = 3600W

Cont. output (kW)	Base speed (min ⁻¹) at rated armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
330	510						825	6179	1065	90.9	0.0384	0.52
346		535					825	6176	1115	91.2	0.0384	0.52
380			590				825	6151	1240	92.1	0.0384	0.51
460				715			825	6144	1390	92.9	0.0384	0.51
545					840		825	6196	1390	94.4	0.0384	0.51
585						905	825	6173	1390	94.5	0.0384	0.50
340	560						840	5798	1315	92.0	0.0330	0.47
356		585					840	5812	1365	92.1	0.0330	0.47
390			640				840	5820	1490	92.9	0.0330	0.47
472				775			840	5816	1740	93.7	0.0330	0.46
555					915		840	5793	1740	94.4	0.0330	0.46
600						980	840	5847	1740	95.2	0.0330	0.46
406	610						1000	6356	1395	92.3	0.0265	0.36
424		640					1000	6327	1470	92.2	0.0265	0.36
464			700				1000	6330	1595	92.8	0.0265	0.36
565				845			1000	6386	1620	94.2	0.0265	0.36
665					995		1000	6383	1620	95.0	0.0265	0.35
705						1070	990	6292	1640	94.9	0.0265	0.35
418	645						1030	6189	1410	92.2	0.0257	0.33
438		675					1030	6197	1410	92.4	0.0257	0.33
478			740				1030	6169	1410	92.8	0.0257	0.33
580				895			1030	6189	1410	93.9	0.0257	0.33
685					1055		1030	6201	1410	95.0	0.0257	0.32
720						1130	1010	6085	1430	95.0	0.0257	0.33
428	695						1050	5881	1670	92.6	0.0228	0.30
448		730					1050	5861	1670	92.8	0.0228	0.30
490			800				1050	5849	1670	93.3	0.0228	0.30
595				965			1050	5888	1670	94.4	0.0228	0.30
700					1135		1050	5890	1670	95.2	0.0228	0.29
750						1220	1050	5871	1670	95.2	0.0228	0.29
478	755						1170	6046	1710	92.9	0.0187	0.25
505		795					1170	6066	1710	93.8	0.0187	0.25
550			865				1170	6072	1710	94.0	0.0187	0.25
665				1050			1170	6048	1710	94.7	0.0187	0.24
780					1230		1170	6056	1710	95.2	0.0187	0.24
840						1320	1170	6077	1710	95.7	0.0187	0.24
520	825						1260	6019	1750	93.8	0.0158	0.21
545		865					1260	6017	1750	94.0	0.0158	0.21
595			945				1260	6013	1750	94.4	0.0158	0.21
720				1145			1260	6005	1750	95.2	0.0158	0.21
845					1340		1260	6022	1750	95.8	0.0158	0.21
600	995						1440	5759	1750	94.7	0.0107	0.15
630		1040					1440	5785	1750	95.1	0.0107	0.15
685			1135				1440	5764	1750	95.1	0.0107	0.15
600	1070						1440	5355	1750	94.7	0.0103	0.14
630		1120					1440	5372	1750	95.1	0.0103	0.14
685			1220				1440	5362	1750	95.1	0.0103	0.14
605	1165						1440	4959	1750	95.5	0.0079	0.13
635		1220					1440	4971	1750	95.9	0.0079	0.13
690			1330				1440	4955	1750	95.8	0.0079	0.13
755	1260						1800	5722	1750	95.3	0.0071	0.10
790		1320					1800	5716	1750	95.4	0.0071	0.10

** Through field control with constant output. Please specify.

Field loss (hot) = 4100W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
326	400	420	460	560	660	710	825	7783	835	89.8	0.0444	0.67
344							825	7822	860	90.6	0.0444	0.66
376							825	7806	960	91.2	0.0444	0.66
458							825	7811	1160	92.5	0.0444	0.65
540							825	7814	1160	93.5	0.0444	0.64
580							825	7801	1160	93.7	0.0444	0.64
336	440	460	505	610	720	775	840	7293	1025	90.9	0.0382	0.60
352							840	7308	1075	91.1	0.0382	0.60
386							840	7300	1175	91.9	0.0382	0.59
468							840	7327	1425	92.9	0.0382	0.59
555							840	7361	1450	94.4	0.0382	0.58
595							840	7332	1450	94.4	0.0382	0.58
402	480	500	550	665	785	845	1000	7998	1085	91.4	0.0306	0.46
422							1000	8060	1135	91.7	0.0306	0.46
460							1000	7987	1260	92.0	0.0306	0.45
560							1000	8042	1360	93.3	0.0306	0.45
660							1000	8029	1360	94.3	0.0306	0.45
710							1000	8024	1360	94.7	0.0306	0.44
414	505	530	580	705	830	890	1030	7829	1170	91.4	0.0297	0.42
434							1030	7820	1170	91.6	0.0297	0.42
474							1030	7805	1170	92.0	0.0297	0.42
580							1030	7857	1170	93.9	0.0297	0.41
680							1030	7824	1170	94.3	0.0297	0.41
730							1030	7833	1170	94.5	0.0297	0.41
424	545	575	625	760	895	960	1050	7430	1350	91.8	0.0264	0.38
446							1050	7407	1400	92.3	0.0264	0.38
486							1050	7426	1400	92.6	0.0264	0.38
590							1050	7414	1400	93.7	0.0264	0.38
695							1050	7416	1400	94.6	0.0264	0.37
745							1050	7411	1400	94.6	0.0264	0.37
476	595	625	680	825	970	1040	1170	7640	1430	92.5	0.0216	0.32
498							1170	7609	1430	92.5	0.0216	0.31
545							1170	7654	1430	93.2	0.0216	0.31
660							1170	7640	1430	94.0	0.0216	0.31
775							1170	7630	1430	94.6	0.0216	0.31
835							1170	7668	1430	95.2	0.0216	0.31
515	650	680	745	900	1060		1260	7567	1480	92.9	0.0183	0.27
540							1260	7584	1480	93.2	0.0183	0.27
590							1260	7563	1480	93.7	0.0183	0.27
715							1260	7587	1480	94.6	0.0183	0.26
840							1260	7568	1480	95.2	0.0183	0.26
595	785	820	895				1440	7239	1480	93.9	0.0124	0.19
625							1440	7279	1480	94.4	0.0124	0.19
685							1440	7309	1480	95.1	0.0124	0.19
600	845	885	965				1440	6781	1620	94.7	0.0119	0.18
625							1440	6744	1620	94.4	0.0119	0.18
685							1440	6779	1620	95.1	0.0119	0.18
605	920	960	1050				1440	6280	1750	95.5	0.0091	0.17
630							1440	6267	1750	95.1	0.0091	0.17
690							1440	6276	1750	95.8	0.0091	0.17
750	995	1040					1800	7198	1750	94.7	0.0082	0.12
785							1800	7208	1750	94.8	0.0082	0.12

** Through field control with constant output. Please specify.

Field loss (hot) = 4300W

Cont. output (kW)	Base speed (min ⁻¹) at armature volts (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
500	490						1230	9745	985	92.4	0.0201	0.37
525		515					1230	9735	1035	92.8	0.0201	0.36
575			565				1230	9719	1135	93.5	0.0201	0.36
695				685			1230	9689	1385	94.2	0.0201	0.36
795					805		1200	9431	1490	94.6	0.0201	0.36
840						865	1180	9274	1500	94.9	0.0201	0.37
590	540						1430	10434	870	93.8	0.0154	0.28
610		565					1420	10311	930	93.4	0.0154	0.29
660			615				1400	10249	1025	94.3	0.0154	0.29
775				750			1360	9868	1290	95.0	0.0154	0.29
875					880		1310	9496	1500	95.4	0.0154	0.30
920						945	1280	9297	1500	95.8	0.0154	0.31
600	570						1460	10053	980	93.4	0.0149	0.26
625		595					1450	10032	1015	93.7	0.0149	0.27
675			655				1430	9842	1135	94.4	0.0149	0.27
785				790			1380	9490	1435	94.8	0.0149	0.28
890					930		1330	9139	1500	95.6	0.0149	0.28
935						1000	1300	8929	1500	95.9	0.0149	0.29
645	590						1560	10440	925	94.0	0.0131	0.24
670		620					1550	10320	975	94.0	0.0131	0.24
720			680				1530	10112	1100	94.1	0.0131	0.24
840				820			1470	9783	1375	95.2	0.0131	0.25
945					965		1410	9352	1500	95.7	0.0131	0.26
995						1035	1380	9181	1500	96.1	0.0131	0.26
650	615						1580	10093	970	93.5	0.0128	0.23
680		645					1570	10068	1030	94.2	0.0128	0.23
730			705				1550	9889	1140	94.2	0.0128	0.23
850				850			1490	9550	1425	95.1	0.0128	0.24
950					1000		1420	9073	1500	95.6	0.0128	0.25
1000						1075	1390	8884	1500	95.9	0.0128	0.25
695	665						1680	9981	1135	94.0	0.0111	0.20
720		700					1660	9823	1195	94.3	0.0111	0.20
770			765				1630	9612	1350	94.5	0.0111	0.20
890				925			1560	9189	1500	95.1	0.0111	0.21
1000					1085		1490	8802	1500	95.9	0.0111	0.22
1050						1165	1450	8607	1500	96.6	0.0111	0.22
715	725						1730	9418	1400	93.9	0.0106	0.18
740		760					1710	9299	1475	94.1	0.0106	0.18
795			830				1680	9147	1500	94.6	0.0106	0.18
910				1005			1590	8647	1500	95.4	0.0106	0.19
1010					1180		1500	8174	1500	96.2	0.0106	0.20
755	800						1820	9013	1475	94.3	0.0090	0.15
785		835					1810	8978	1500	94.3	0.0090	0.15
835			915				1760	8715	1500	94.9	0.0090	0.16
950				1105			1660	8210	1500	95.4	0.0090	0.16
905	1015						2160	8515	1500	95.2	0.0055	0.10
930		1065					2120	8339	1500	95.4	0.0055	0.10
985			1160				2060	8109	1500	95.6	0.0055	0.10
965	1110						2300	8302	1500	95.4	0.0043	0.09
990		1165					2250	8115	1500	95.7	0.0043	0.09

** Through field control with constant output. Please specify.

Field loss (hot) = 4300W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
498	390	410	450	545	640	690	1230	12195	785	92.0	0.0227	0.46
525							1230	12229	810	92.8	0.0227	0.46
570							1230	12097	910	92.7	0.0227	0.45
695							1230	12178	1085	94.2	0.0227	0.45
815							1230	12161	1260	94.7	0.0227	0.44
875							1230	12111	1260	94.9	0.0227	0.44
610	430	450	490	595	700	755	1500	13548	670	92.4	0.0174	0.34
640							1500	13582	695	92.8	0.0174	0.34
700							1500	13643	770	93.3	0.0174	0.34
840							1490	13482	930	94.0	0.0174	0.34
965							1450	13165	1135	95.1	0.0174	0.34
1020							1430	12902	1230	95.1	0.0174	0.35
630	455	475	520	630	740	795	1540	13223	730	93.0	0.0169	0.31
660							1540	13269	755	93.2	0.0169	0.31
720							1540	13223	830	93.5	0.0169	0.31
860							1520	13037	1025	94.3	0.0169	0.31
985							1480	12712	1180	95.1	0.0169	0.32
1040							1460	12493	1190	95.0	0.0169	0.32
675	470	495	540	655	770	830	1650	13715	700	93.0	0.0148	0.28
710							1650	13698	725	93.5	0.0148	0.28
775							1650	13706	800	93.9	0.0148	0.28
925							1630	13487	985	94.6	0.0148	0.28
1050							1580	13023	1200	94.9	0.0148	0.29
1110							1550	12772	1330	95.5	0.0148	0.29
685	490	515	560	680	800	860	1670	13351	735	93.2	0.0146	0.27
715							1670	13259	785	93.1	0.0146	0.27
780							1670	13302	835	93.4	0.0146	0.27
935							1650	13131	1055	94.4	0.0146	0.27
1060							1590	12654	1220	95.2	0.0146	0.28
1130							1570	12548	1240	96.0	0.0146	0.28
740	530	555	605	735	865	930	1800	13334	855	93.4	0.0126	0.23
775							1800	13336	880	93.6	0.0126	0.23
845							1800	13338	955	93.9	0.0126	0.23
990							1740	12863	1220	94.8	0.0126	0.23
1120							1680	12365	1260	95.2	0.0126	0.24
1190							1650	12220	1290	96.2	0.0126	0.24
750	580	605	660	800	940	940	1820	12349	1060	93.7	0.0120	0.21
785							1820	12391	1110	93.8	0.0120	0.21
855							1820	12372	1210	94.0	0.0120	0.21
1020							1790	12176	1490	95.0	0.0120	0.21
1150							1720	11684	1500	95.5	0.0120	0.22
750							640	670	730	880	880	880
790	1820	11260	1250	94.4	0.0102	0.19						
860	1820	11251	1350	94.5	0.0102	0.19						
1040	1820	11286	1500	95.2	0.0102	0.19						
1010	810	850	930	930	930	930	2420	11908	1500	94.9	0.0062	0.11
1040							2390	11685	1500	94.6	0.0062	0.11
1120							2340	11501	1500	95.7	0.0062	0.11
1090	885	930	930	930	930	930	2610	11762	1500	94.9	0.0049	0.10
1130							2570	11604	1500	95.6	0.0049	0.10

** Through field control with constant output. Please specify.

Field loss (hot) = 4800W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
494	305	320	355	430	505	545	1230	15468	595	91.3	0.0261	0.59
520							1230	15519	645	91.9	0.0261	0.58
565							1230	15199	720	91.9	0.0261	0.57
690							1230	15324	870	93.5	0.0261	0.57
810							1230	15318	1020	94.1	0.0261	0.56
870							1230	15245	1070	94.3	0.0261	0.56
605	335	350	385	470	550	595	1500	17247	525	91.7	0.0200	0.44
635							1500	17326	550	92.0	0.0200	0.44
695							1500	17240	600	92.7	0.0200	0.43
845							1500	17170	725	93.9	0.0200	0.43
990							1500	17190	850	94.3	0.0200	0.42
1070							1500	17174	925	95.1	0.0200	0.42
620	355	375	410	495	585	625	1540	16679	560	91.5	0.0194	0.40
650							1540	16553	610	91.8	0.0194	0.40
715							1540	16654	660	92.9	0.0194	0.40
865							1540	16688	810	93.6	0.0194	0.39
1020							1540	16651	935	94.6	0.0194	0.39
1100							1540	16808	960	95.2	0.0194	0.39
670	370	390	425	515	605	650	1650	17293	550	92.3	0.0171	0.36
700							1650	17141	575	92.2	0.0171	0.36
765							1650	17190	625	92.7	0.0171	0.36
930							1650	17246	775	93.9	0.0171	0.35
1100							1650	17364	900	95.2	0.0171	0.35
1180							1650	17337	975	95.4	0.0171	0.35
680	385	400	440	535	630	675	1670	16868	590	92.5	0.0168	0.34
710							1670	16951	615	92.4	0.0168	0.34
775							1670	16821	665	92.8	0.0168	0.34
940							1670	16779	815	93.8	0.0168	0.34
1110							1670	16826	965	95.0	0.0168	0.33
1190							1670	16836	990	95.0	0.0168	0.33
735	415	435	480	580	680	730	1800	16914	650	92.8	0.0145	0.29
770							1800	16905	700	93.0	0.0145	0.29
840							1800	16713	775	93.3	0.0145	0.29
1020							1800	16795	925	94.4	0.0145	0.29
1200							1800	16853	1000	95.2	0.0145	0.29
1290							1800	16876	1000	95.6	0.0145	0.29
745	455	475	520	630	740	740	1820	15637	825	93.0	0.0138	0.27
780							1820	15682	875	93.2	0.0138	0.27
850							1820	15611	950	93.4	0.0138	0.26
1030							1820	15613	1150	94.3	0.0138	0.26
1210							1820	15616	1250	95.0	0.0138	0.26
750							500	525	575	695	740	740
785	1820	14280	985	93.8	0.0118	0.24						
855	1820	14200	1060	94.0	0.0118	0.24						
1040	1820	14291	1285	95.2	0.0118	0.24						
1020	640	670	730	740	740	740	2460	15220	1280	94.2	0.0071	0.14
1070							2460	15251	1280	94.6	0.0071	0.14
1170							2460	15306	1280	95.1	0.0071	0.14
1120	700	730	740	740	740	740	2690	15280	1205	94.6	0.0056	0.12
1180							2690	15437	1280	95.4	0.0056	0.12

** Through field control with constant output. Please specify.

Field loss (hot) = 5100W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit								
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)						
490	265	275	305	370	435	470	1230	17658	535	90.5	0.0287	0.67						
515							1230	17885	535	91.0	0.0287	0.68						
565							1230	17691	610	91.9	0.0287	0.67						
685							1230	17680	735	92.8	0.0287	0.66						
805							1230	17673	860	93.5	0.0287	0.65						
865							1230	17576	935	93.8	0.0287	0.65						
600	290	305	330	405	475	510	1500	19759	450	90.9	0.0220	0.51						
630							1500	19726	475	91.3	0.0220	0.50						
690							1500	19968	500	92.0	0.0220	0.51						
840							1500	19807	625	93.3	0.0220	0.49						
985							1500	19804	750	93.8	0.0220	0.49						
1060							1500	19849	800	94.2	0.0220	0.49						
620	305	320	350	425	500	540	1540	19413	485	91.5	0.0214	0.47						
650							1540	19398	510	91.8	0.0214	0.47						
710							1540	19373	560	92.2	0.0214	0.46						
860							1540	19325	685	93.1	0.0214	0.46						
1020							1540	19482	810	94.6	0.0214	0.45						
1090							1540	19277	860	94.4	0.0214	0.45						
665	315	335	365	445	520	560	1650	20161	465	91.6	0.0188	0.42						
700							1650	19955	490	92.2	0.0188	0.42						
765							1650	20016	540	92.7	0.0188	0.42						
925							1650	19851	665	93.4	0.0188	0.41						
1090							1650	20018	790	94.4	0.0188	0.41						
1170							1650	19953	840	94.5	0.0188	0.41						
675	330	345	380	460	540	580	1670	19534	490	91.9	0.0185	0.40						
705							1670	19515	515	91.8	0.0185	0.40						
770							1670	19351	565	92.2	0.0185	0.39						
935							1670	19411	690	93.3	0.0185	0.39						
1100							1670	19454	815	94.1	0.0185	0.39						
1190							1670	19594	890	95.0	0.0185	0.39						
730	360	375	410	500	585	630	1800	19365	575	92.2	0.0159	0.34						
765							1800	19482	600	92.4	0.0159	0.34						
835							1800	19449	650	92.8	0.0159	0.34						
1020							1800	19482	800	94.4	0.0159	0.33						
1190							1800	19426	900	94.4	0.0159	0.33						
1280							1800	19403	900	94.8	0.0159	0.33						
740	390	410	450	545	640	640	1820	18121	705	92.4	0.0152	0.31						
775							1820	18052	755	92.6	0.0152	0.31						
845							1820	17933	830	92.9	0.0152	0.31						
1030							1820	18049	1005	94.3	0.0152	0.30						
1210							1820	18055	1130	95.0	0.0152	0.30						
745							430	455	495	600	600	600	1820	16546	795	93.0	0.0130	0.28
780	1820	16371	845	93.2	0.0130	0.28												
855	1820	16495	920	94.0	0.0130	0.28												
1030	1820	16394	1120	94.3	0.0130	0.27												
1020	550	575	630	630	630	630							2460	17711	1110	94.2	0.0078	0.16
1070													2460	17771	1160	94.6	0.0078	0.16
1160							2460	17584	1160	94.3	0.0078	0.16						
1120	605	630	630	630	630	630	2690	17679	1060	94.6	0.0062	0.14						
1170							2690	17736	1085	94.6	0.0062	0.14						

** Through field control with constant output. Please specify.

Field loss (hot) = 5800W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
450	265						1170	16217	605	87.4	0.0404	0.71
474		280					1170	16167	630	88.1	0.0404	0.70
515			310				1160	15865	715	88.8	0.0404	0.70
620				380			1140	15582	850	90.6	0.0404	0.69
730					450		1130	15492	860	92.3	0.0404	0.69
780						485	1120	15359	870	92.9	0.0404	0.69
490	290						1260	16136	705	88.4	0.0346	0.60
515		305					1260	16125	755	88.9	0.0346	0.60
560			335				1250	15964	840	89.6	0.0346	0.60
670				410			1220	15606	860	91.5	0.0346	0.60
785					485		1210	15457	870	92.7	0.0346	0.60
835						520	1200	15335	880	92.8	0.0346	0.60
535	320						1360	15966	600	89.4	0.0291	0.51
560		335					1350	15964	650	90.2	0.0291	0.51
610			370				1340	15745	710	91.0	0.0291	0.50
730				450			1320	15492	770	92.2	0.0291	0.51
850					530		1300	15316	780	93.4	0.0291	0.51
900						575	1280	14948	790	93.8	0.0291	0.51
575	345						1440	15917	685	90.8	0.0245	0.44
595		360					1430	15784	745	90.5	0.0245	0.45
650			395				1420	15715	770	91.5	0.0245	0.45
780				485			1400	15359	780	92.9	0.0245	0.44
900					570		1370	15079	800	93.8	0.0245	0.45
950						615	1350	14752	810	93.8	0.0245	0.45
615	370						1550	15874	800	90.2	0.0223	0.38
645		390					1540	15794	850	91.1	0.0223	0.38
700			425				1530	15729	860	91.5	0.0223	0.38
840				515			1510	15577	870	92.7	0.0223	0.39
965					610		1470	15108	890	93.8	0.0223	0.39
1030						655	1450	15018	910	94.7	0.0223	0.39
630	400						1570	15041	900	91.2	0.0204	0.35
660		420					1570	15007	900	91.4	0.0204	0.35
715			460				1560	14844	900	91.7	0.0204	0.35
850				560			1520	14496	920	93.2	0.0204	0.35
975					660		1480	14108	950	94.1	0.0204	0.36
1030						710	1450	13854	970	94.7	0.0204	0.36
695	435						1720	15258	910	91.8	0.0171	0.29
725		455					1720	15217	910	91.6	0.0171	0.29
790			500				1710	15089	910	92.4	0.0171	0.29
930				605			1660	14680	940	93.4	0.0171	0.30
1060					715		1600	14158	970	94.6	0.0171	0.31
1120						770	1570	13891	990	95.1	0.0171	0.31
765	475						1880	15381	1010	92.5	0.0139	0.25
800		500					1880	15280	1010	92.5	0.0139	0.24
860			545				1850	15070	1030	93.0	0.0139	0.25
1010				665			1790	14505	1060	94.0	0.0139	0.25
1140					780		1720	13958	1110	94.7	0.0139	0.26
835	525						2050	15189	1030	92.6	0.0117	0.20
870		550					2030	15106	1040	93.2	0.0117	0.21
935			600				2000	14882	1050	93.5	0.0117	0.21
1090				730			1920	14260	1100	94.6	0.0117	0.21
860	570						2100	14409	970	93.1	0.0104	0.18
900		600					2100	14325	970	93.2	0.0104	0.18
985			655				2100	14361	970	93.8	0.0104	0.18

** Through field control with constant output. Please specify.

Field loss (hot) 5800W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit								
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)						
450	235	250	275	335	400	430	1180	18287	530	86.7	0.0428	0.79						
474							1180	18107	555	87.3	0.0428	0.78						
520							1180	18058	630	88.1	0.0428	0.77						
640							1180	18245	755	90.4	0.0428	0.76						
750							1170	17906	780	91.6	0.0428	0.75						
805							1170	17878	780	91.7	0.0428	0.75						
490	260	270	300	365	430	465	1270	17998	630	87.7	0.0366	0.67						
515							1270	18216	655	88.2	0.0366	0.67						
565							1270	17986	730	89.0	0.0366	0.66						
690							1270	18053	780	90.6	0.0366	0.65						
810							1260	17990	790	91.8	0.0366	0.65						
865							1250	17765	790	92.3	0.0366	0.65						
540	285	300	330	400	475	510	1380	18095	540	88.9	0.0309	0.56						
565							1380	17986	565	89.0	0.0309	0.56						
620							1380	17942	615	89.9	0.0309	0.55						
750							1370	17906	700	91.2	0.0309	0.55						
875							1350	17592	710	92.6	0.0309	0.55						
940							1350	17602	710	92.8	0.0309	0.54						
580	305	320	355	430	510	545	1470	18161	600	89.7	0.0260	0.49						
610							1470	18205	625	90.2	0.0260	0.49						
670							1470	18024	700	91.2	0.0260	0.48						
810							1460	17990	710	92.5	0.0260	0.48						
940							1440	17602	720	93.3	0.0260	0.48						
995							1420	17435	730	93.4	0.0260	0.48						
635	330	345	375	460	545	585	1600	18377	680	90.2	0.0237	0.42						
665							1600	18408	705	90.4	0.0237	0.42						
725							1600	18463	780	90.6	0.0237	0.42						
870							1570	18062	790	92.4	0.0237	0.42						
1010							1540	17698	810	93.7	0.0237	0.42						
1070							1520	17468	820	93.9	0.0237	0.42						
650	355	370	410	495	585	630	1630	17486	820	90.6	0.0217	0.38						
680							1630	17551	820	90.7	0.0217	0.38						
740							1620	17237	820	91.4	0.0217	0.38						
890							1600	17171	830	92.7	0.0217	0.38						
1020							1560	16651	850	93.4	0.0217	0.38						
1090							1540	16523	860	94.4	0.0217	0.39						
715	385	405	445	540	635	685	1790	17736	820	90.8	0.0181	0.32						
745							1780	17567	830	91.0	0.0181	0.32						
815							1770	17490	830	92.1	0.0181	0.32						
970							1740	17155	850	92.9	0.0181	0.32						
1120							1690	16844	870	94.7	0.0181	0.33						
1180							1660	16451	890	94.8	0.0181	0.33						
790	425	445	485	590	695		1960	17752	920	91.6	0.0147	0.26						
825							1950	17705	930	92.0	0.0147	0.27						
900							1940	17722	930	92.8	0.0147	0.27						
1060							1890	17158	960	93.5	0.0147	0.27						
1210							1820	16627	990	95.0	0.0147	0.28						
870							465	490	535	650			2140	17868	940	92.4	0.0124	0.22
905	2130	17638	940	92.4	0.0124	0.22												
980	2110	17493	950	92.9	0.0124	0.22												
1150	2030	16896	990	94.4	0.0124	0.23												
860	510	535	585										2100	16104	910	93.1	0.0110	0.21
900													2100	16065	910	93.2	0.0110	0.20
985							2100	16080	910	93.8	0.0110	0.20						

** Through field control with constant output. Please specify.

Field loss (hot) = 6200W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
446	240						1180	17747	480	85.9	0.0456	0.89
470		220					1180	20402	505	86.6	0.0456	0.89
520			245				1180	20269	555	88.1	0.0456	0.86
635				300			1180	20214	680	89.7	0.0456	0.85
750					355		1180	20176	730	90.8	0.0456	0.84
810						380	1180	20357	730	91.5	0.0456	0.84
486	210						1270	22101	555	87.0	0.0389	0.75
515		240					1270	20493	580	88.2	0.0389	0.75
565			265				1270	20361	655	89.0	0.0389	0.74
690				325			1270	20275	730	90.6	0.0389	0.73
815					380		1270	20482	730	91.7	0.0389	0.73
875						410	1270	20381	730	91.9	0.0389	0.72
535	250						1380	20437	475	88.1	0.0330	0.64
565		265					1380	20361	500	89.0	0.0330	0.63
620			290				1380	20417	550	89.9	0.0330	0.62
755				355			1380	20311	650	91.2	0.0330	0.61
890					420		1380	20237	650	92.1	0.0330	0.60
960						450	1380	20373	650	92.8	0.0330	0.60
580	270						1470	20515	535	89.7	0.0277	0.55
605		285					1470	20273	560	89.5	0.0277	0.55
665			315				1470	20161	610	90.5	0.0277	0.54
810				380			1470	20357	660	91.8	0.0277	0.54
955					450		1470	20267	660	92.8	0.0277	0.53
1030						485	1470	20281	660	93.4	0.0277	0.53
630	290						1600	20747	605	89.5	0.0252	0.47
660		305					1600	20666	630	89.7	0.0252	0.47
725			335				1600	20668	705	90.6	0.0252	0.47
880				410			1600	20498	730	91.7	0.0252	0.46
1040					480		1600	20692	730	92.9	0.0252	0.46
1120						520	1600	20569	730	93.3	0.0252	0.45
645	315						1630	19555	745	89.9	0.0230	0.43
675		330					1630	19534	770	90.0	0.0230	0.43
740			360				1630	19631	770	90.8	0.0230	0.43
900				440			1630	19534	770	92.0	0.0230	0.42
1070					520		1630	19651	770	93.8	0.0230	0.41
1140						560	1620	19441	770	93.8	0.0230	0.41
715	340						1800	20083	770	90.3	0.0192	0.36
750		360					1800	19896	770	90.6	0.0192	0.35
825			395				1800	19946	770	91.7	0.0192	0.35
1000				480			1800	19896	770	92.6	0.0192	0.35
1170					565		1780	19776	780	93.9	0.0192	0.35
1240						610	1760	19413	790	93.9	0.0192	0.35
795	375						1980	20246	860	91.3	0.0157	0.30
835		395					1980	20188	860	91.7	0.0157	0.29
910			430				1980	20210	860	91.9	0.0157	0.29
1110				525			1980	20191	860	93.4	0.0157	0.29
1270					620		1930	19562	880	94.0	0.0157	0.29
875	415						2170	20136	870	91.6	0.0132	0.24
920		435					2170	20198	870	92.2	0.0132	0.24
1010			475				2170	20306	870	93.1	0.0132	0.24
1210				575			2150	20097	880	93.8	0.0132	0.24
855	455						2100	17946	860	92.5	0.0117	0.23
895		475					2100	17994	860	92.7	0.0117	0.23
980			520				2100	17998	860	93.3	0.0117	0.23

** Through field control with constant output. Please specify.

Field loss (hot) = 6600W

Cont. output (kW)	Base speed (min ⁻¹) at armature voltage (V)						Rated armature current (A)	Rated torque (Nm)	Max. electrical speed** (min ⁻¹)	Armature circuit		
	440	460	500	600	700	750				Efficiency (%)	Resistance (Ohm)	Inductance (mH)
442	180						1180	23451	405	85.1	0.0487	1.04
466		190					1180	23423	430	85.9	0.0487	1.03
515			210				1180	23420	480	87.3	0.0487	1.01
630				260			1180	23140	580	89.0	0.0487	0.98
750					310		1180	23105	680	90.8	0.0487	0.96
805						335	1180	22949	680	91.0	0.0487	0.95
482	200						1270	23016	480	86.3	0.0416	0.87
510		210					1270	23193	505	87.3	0.0416	0.86
560			230				1270	23252	555	88.2	0.0416	0.86
685				280			1270	23363	680	89.9	0.0416	0.84
810					335		1270	23091	680	91.1	0.0416	0.82
875						360	1270	23212	680	91.9	0.0416	0.82
530	220						1380	23007	400	87.3	0.0353	0.72
560		230					1380	23252	425	88.2	0.0353	0.72
615			255				1380	23032	475	89.1	0.0353	0.71
750				310			1380	23105	575	90.6	0.0353	0.70
885					365		1380	23155	600	91.6	0.0353	0.69
955						395	1380	23089	600	92.3	0.0353	0.69
575	235						1470	23367	460	88.9	0.0296	0.64
605		250					1470	23111	485	89.5	0.0296	0.63
660			275				1470	22920	535	89.8	0.0296	0.62
805				335			1470	22949	610	91.3	0.0296	0.61
950					395		1470	22968	610	92.3	0.0296	0.60
1030						425	1470	23145	610	93.4	0.0296	0.60
625	255						1600	23407	530	88.8	0.0270	0.54
655		265					1600	23605	555	89.0	0.0270	0.54
720			290				1600	23710	605	90.0	0.0270	0.54
875				355			1600	23539	680	91.1	0.0270	0.53
1040					420		1600	23648	680	92.9	0.0270	0.52
1120						455	1600	23508	680	93.3	0.0270	0.52
640	275						1630	22225	635	89.2	0.0246	0.49
675		290					1630	22228	685	90.0	0.0246	0.49
740			315				1630	22435	710	90.8	0.0246	0.49
900				385			1630	22325	710	92.0	0.0246	0.48
1060					455		1630	22248	710	92.9	0.0246	0.47
1140						490	1630	22218	710	93.3	0.0246	0.47
715	300						1800	22761	720	90.3	0.0205	0.41
750		315					1800	22738	720	90.6	0.0205	0.41
820			345				1800	22699	720	91.1	0.0205	0.40
995				420			1800	22624	720	92.1	0.0205	0.40
1180					495		1800	22766	720	93.7	0.0205	0.39
1270						530	1800	22884	720	94.1	0.0205	0.39
790	330						1980	22862	775	90.7	0.0167	0.34
830		345					1980	22975	800	91.1	0.0167	0.34
910			375				1980	23175	800	91.9	0.0167	0.34
1110				460			1980	23045	800	93.4	0.0167	0.33
1300					540		1980	22991	800	93.8	0.0167	0.33
875	360						2170	23212	785	91.6	0.0141	0.28
915		380					2170	22995	810	91.7	0.0141	0.28
1000			415				2170	23012	810	92.2	0.0141	0.28
1220				505			2170	23071	810	93.7	0.0141	0.27
855	395						2100	20672	800	92.5	0.0125	0.27
895		415					2100	20596	800	92.7	0.0125	0.26
975			455				2100	20464	800	92.9	0.0125	0.26

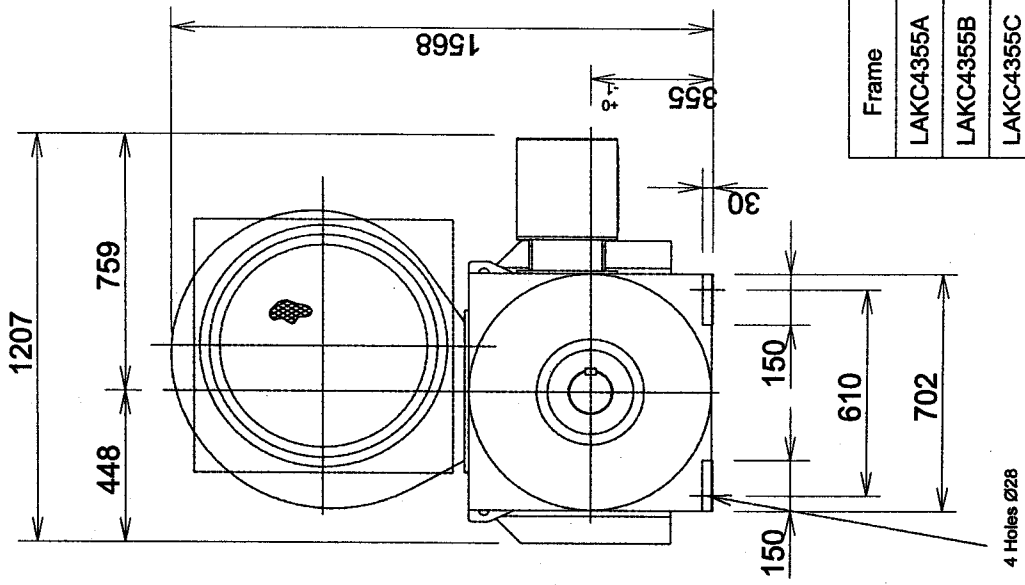
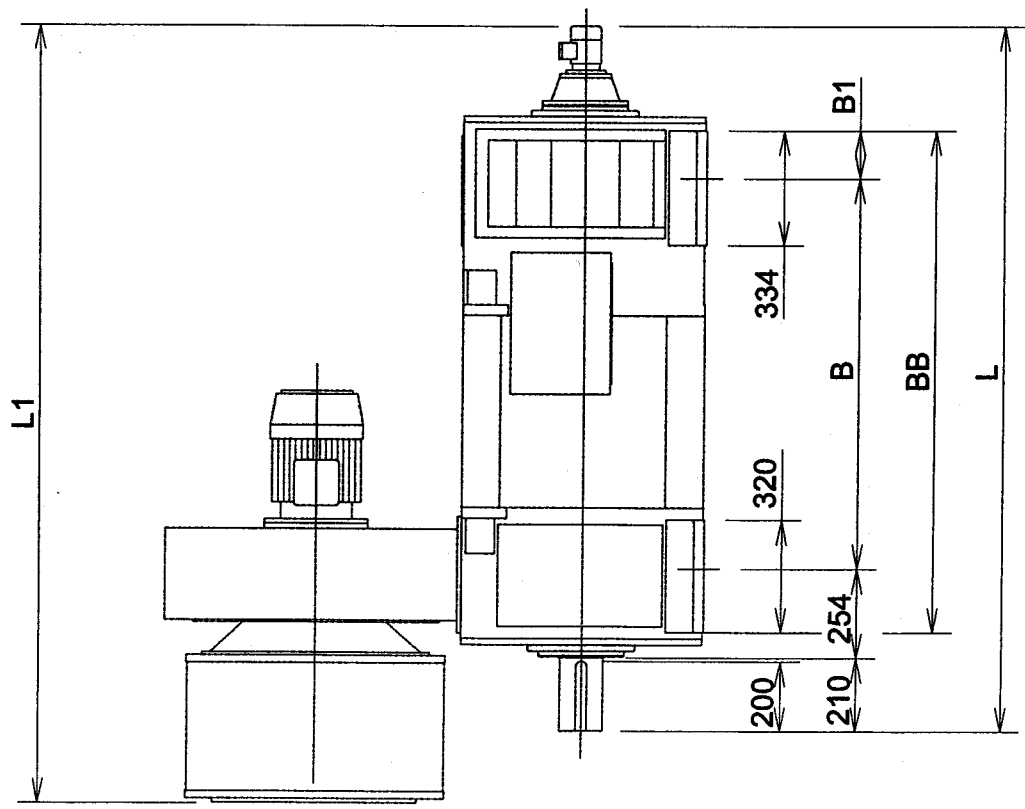
** Through field control with constant output. Please specify.

Field loss (hot) = 8100W

Dimension drawing, LAKC4355

IC06

Dimensions in mm



4 Holes Ø28

Frame	B	B1	BB	L	L1	Weight
LAKC4355A	1000	213	1391	1979	2191	2550 KG.
LAKC4355B	1120	143	1441	2029	2241	2725 KG.
LAKC4355C	1250	63	1491	2079	2291	2900 KG.

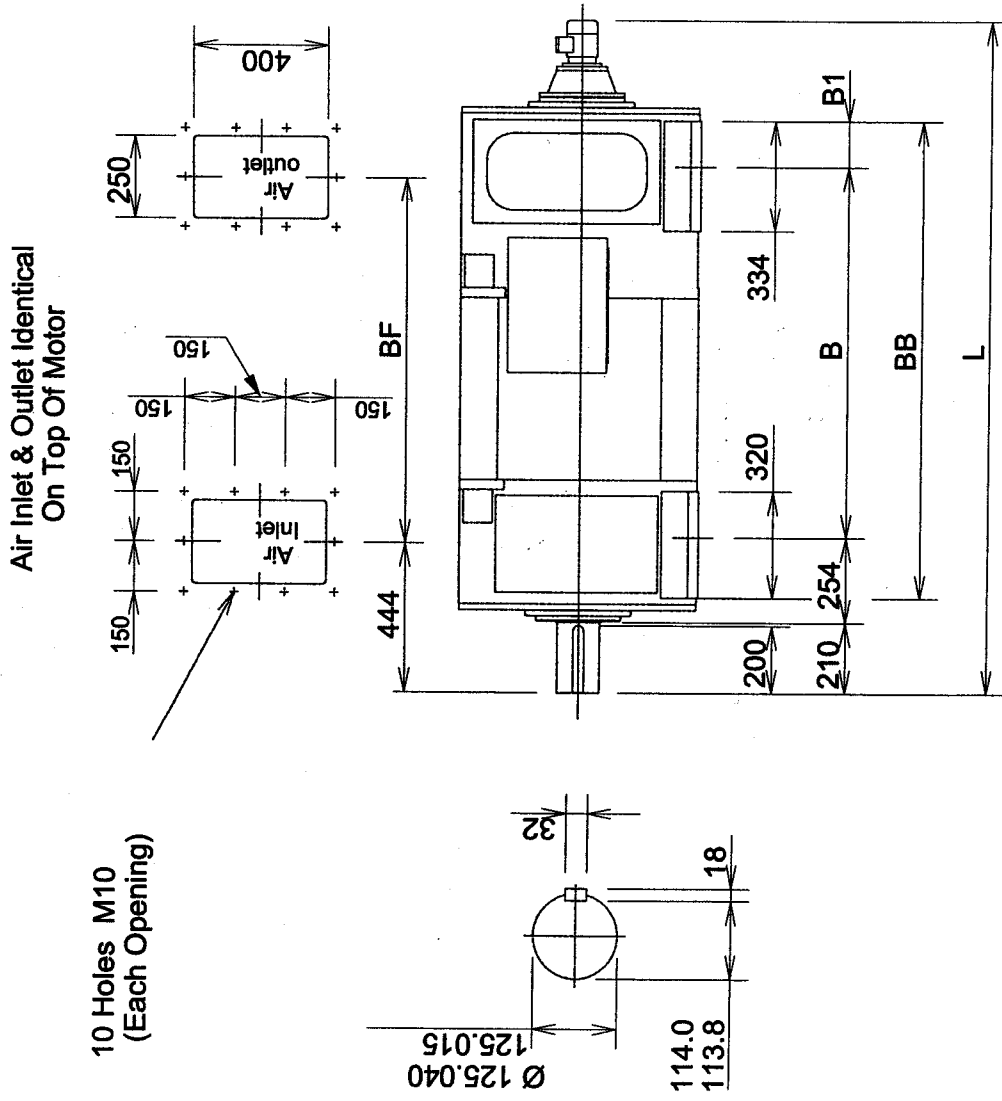
Dimensions are not binding

Dimension drawing, LAKC4355

IC37

Dimensions in mm

Frame	B	B1	BB	BF	L	Weight
LAKC4355A	1000	213	1391	1052	1979	2550 KG.
LAKC4355B	1120	143	1441	1102	2029	2725 KG.
LAKC4355C	1250	63	1491	1152	2079	2900 KG.

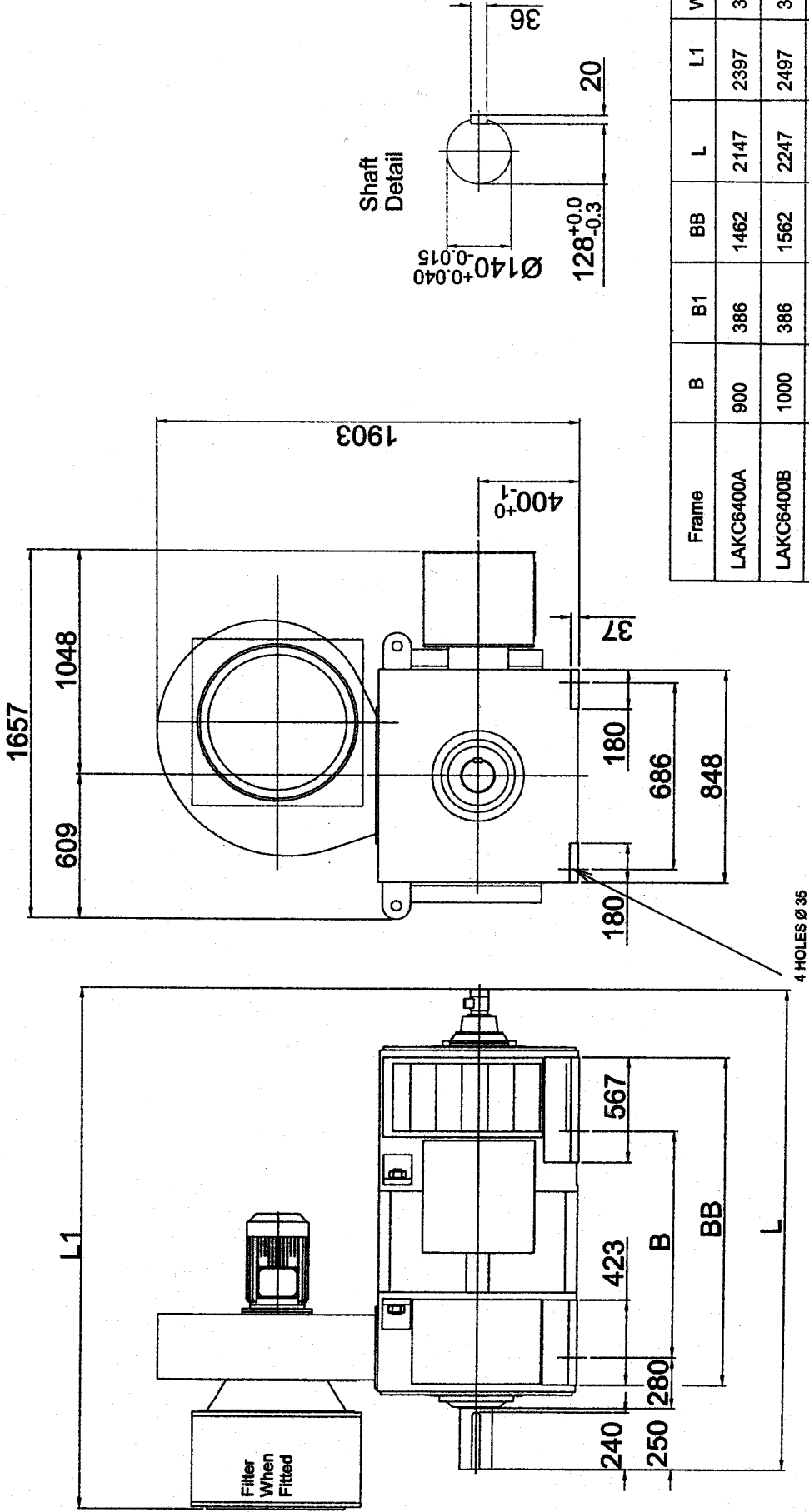


Dimensions are not binding

Dimension drawing, LAKC6400

IC06

Dimensions in mm.



Frame	B	B1	BB	L	L1	Weight
LAKC6400A	900	386	1462	2147	2397	3340 KG.
LAKC6400B	1000	386	1562	2247	2497	3740 KG.
LAKC6400C	1120	386	1692	2377	2627	4140 KG.

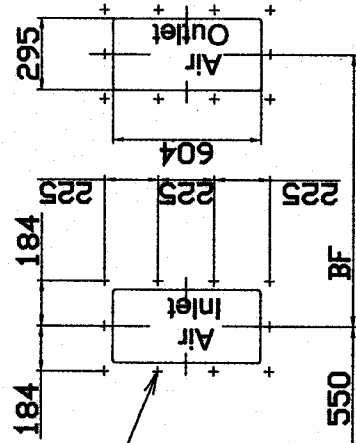
Dimensions are not binding

Dimension drawing, LAKC6400

IC37

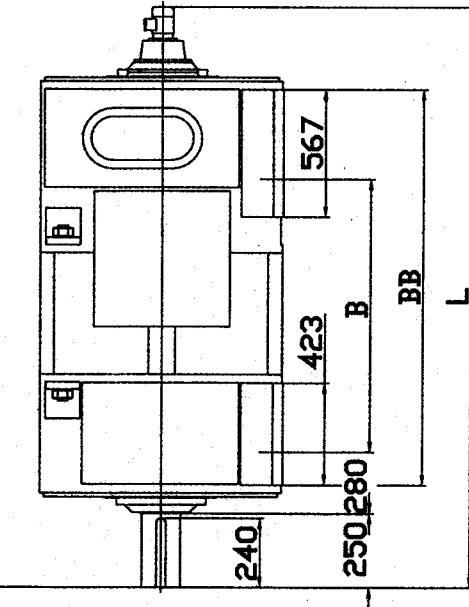
Dimensions in mm.

Air Inlet & Outlet Identical
On Top Of Motor

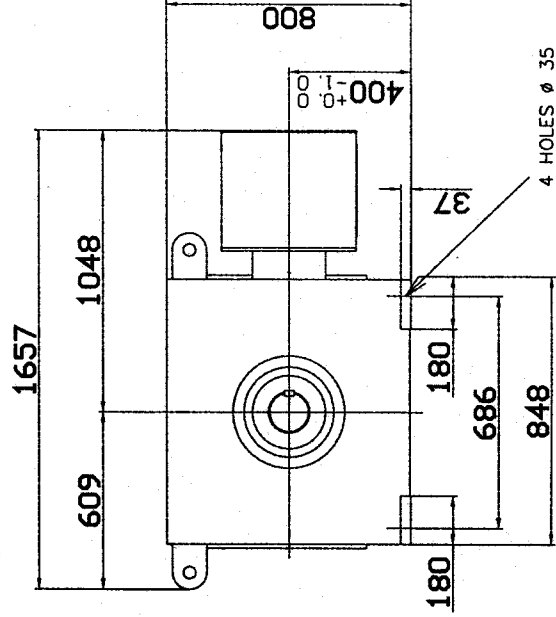
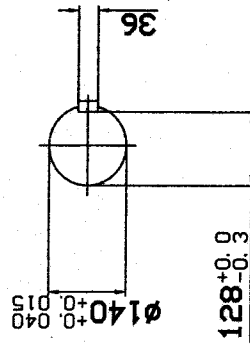


10 Holes M12
(Each Opening)

Frame	B	B1	BB	BF	L	Weight
LAKC6400A	900	386	1462	994	2147	2940 KG.
LAKC6400B	1000	386	1562	1094	2247	3340 KG.
LAKC6400C	1120	396	1692	1224	2377	3740 KG.



Shaft
Detail

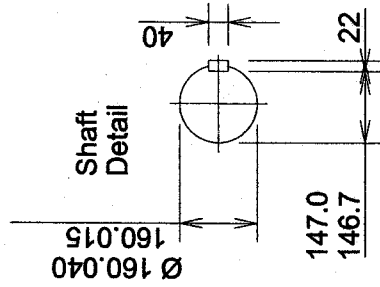
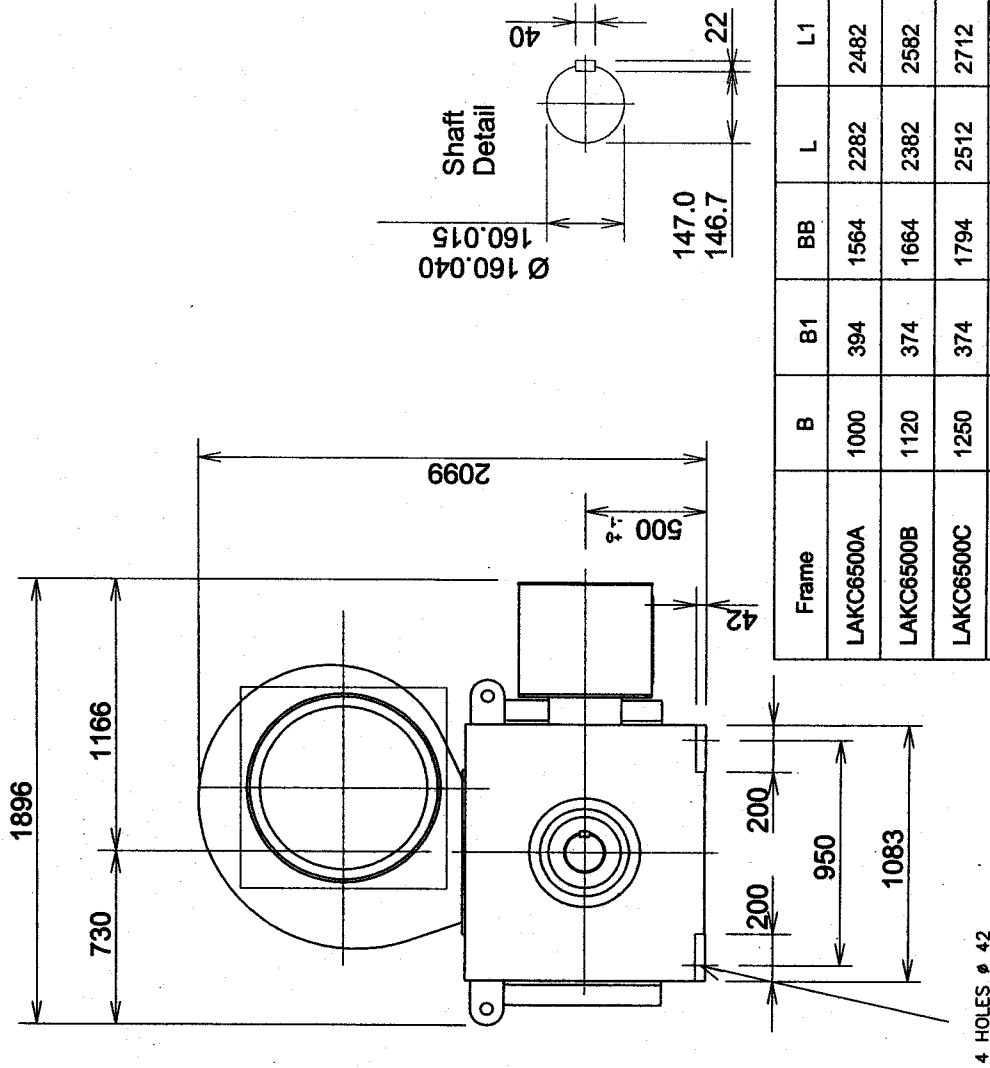
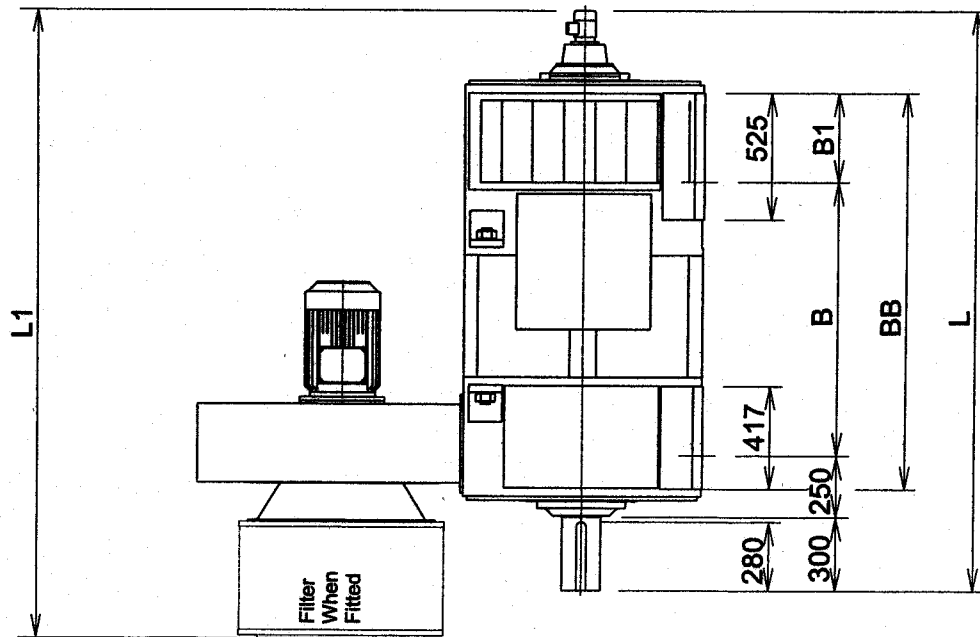


Dimensions are not binding

Dimension drawing, LAKC6500

IC06

Dimensions in mm.



Frame	B	B1	BB	L	L1	Weight
LAKC6500A	1000	394	1564	2282	2482	5880 KG.
LAKC6500B	1120	374	1664	2382	2582	6380 KG.
LAKC6500C	1250	374	1794	2512	2712	7030 KG.
LAKC6500D	1400	324	1894	2612	2812	7530 KG.

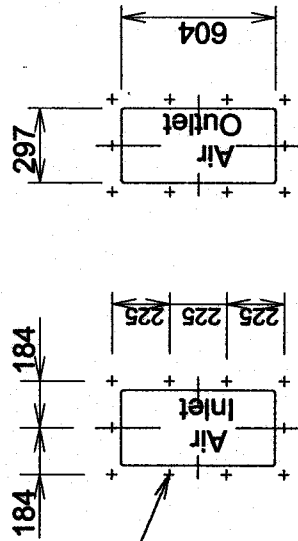
Dimensions are not binding

Dimension drawing, LAKC6500

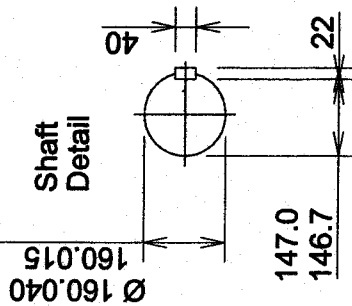
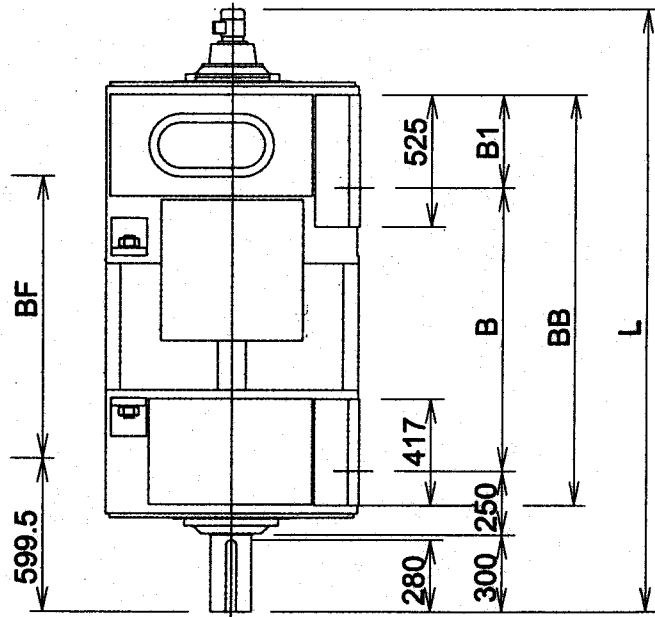
IC37

Dimensions in mm.

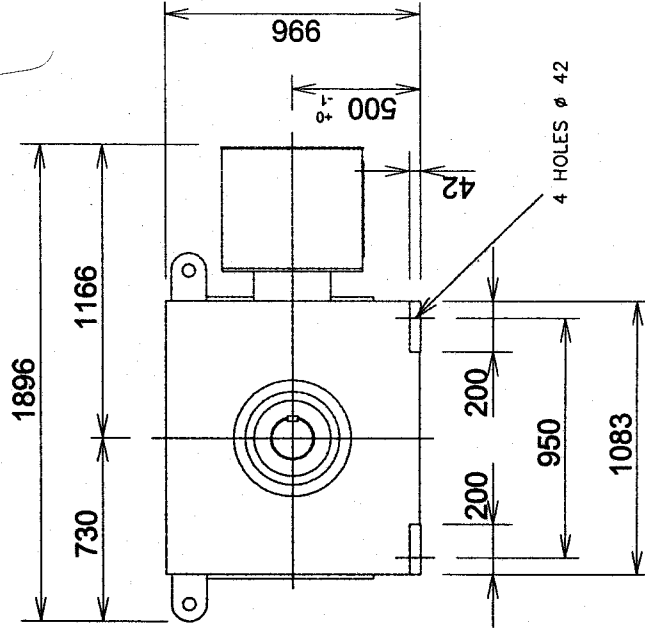
Air Inlet & Outlet Identical
On Top Of Motor



10 Holes M12
(Each Opening)



Frame	B	B1	BB	BF	L	Weight
LAKC6500A	1000	394	1564	1017	2282	5480 KG.
LAKC6500B	1120	374	1664	1117	2382	5980 KG.
LAKC6500C	1250	374	1794	1247	2512	6630 KG.
LAKC6500D	1400	324	1894	1347	2612	7130 KG.

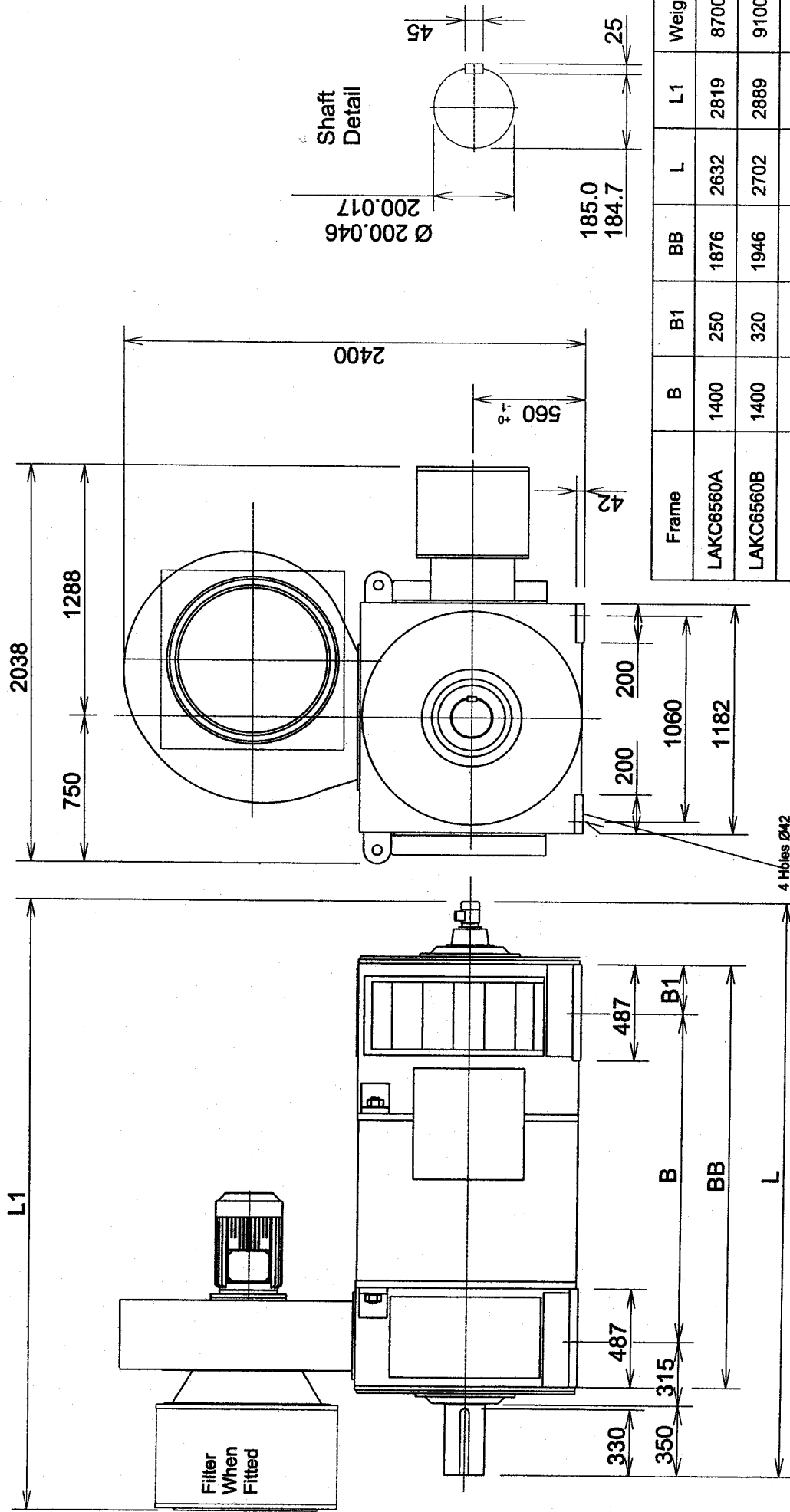


Dimensions are not binding

Dimension drawing, LAKC6560

IC06

Dimensions in mm



Frame	B	B1	BB	L	L1	Weight
LAKC6560A	1400	250	1876	2632	2819	8700 KG.
LAKC6560B	1400	320	1946	2702	2889	9100 KG.
LAKC6560C	1600	200	2026	2782	2969	9500 KG.
LAKC6560D	1600	290	2116	2872	3059	10105 KG.

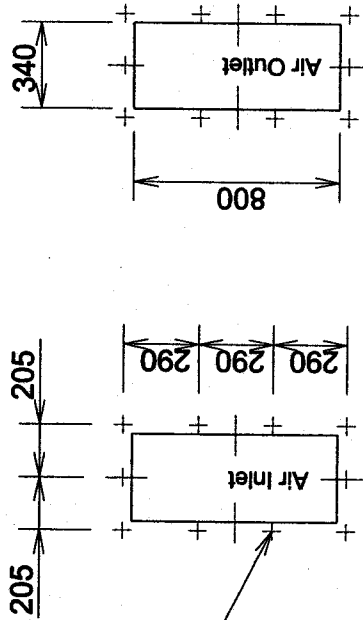
Dimensions are not binding.

Dimension drawing, LAKC6560

IC37

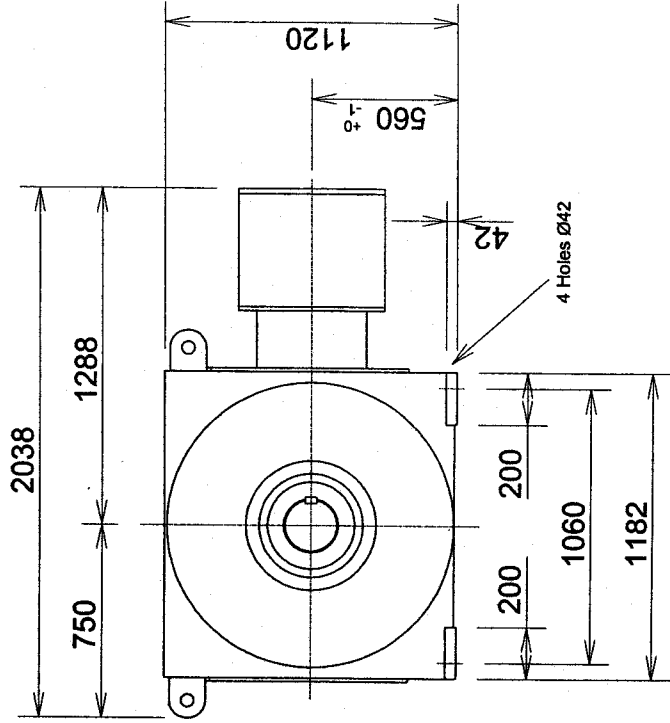
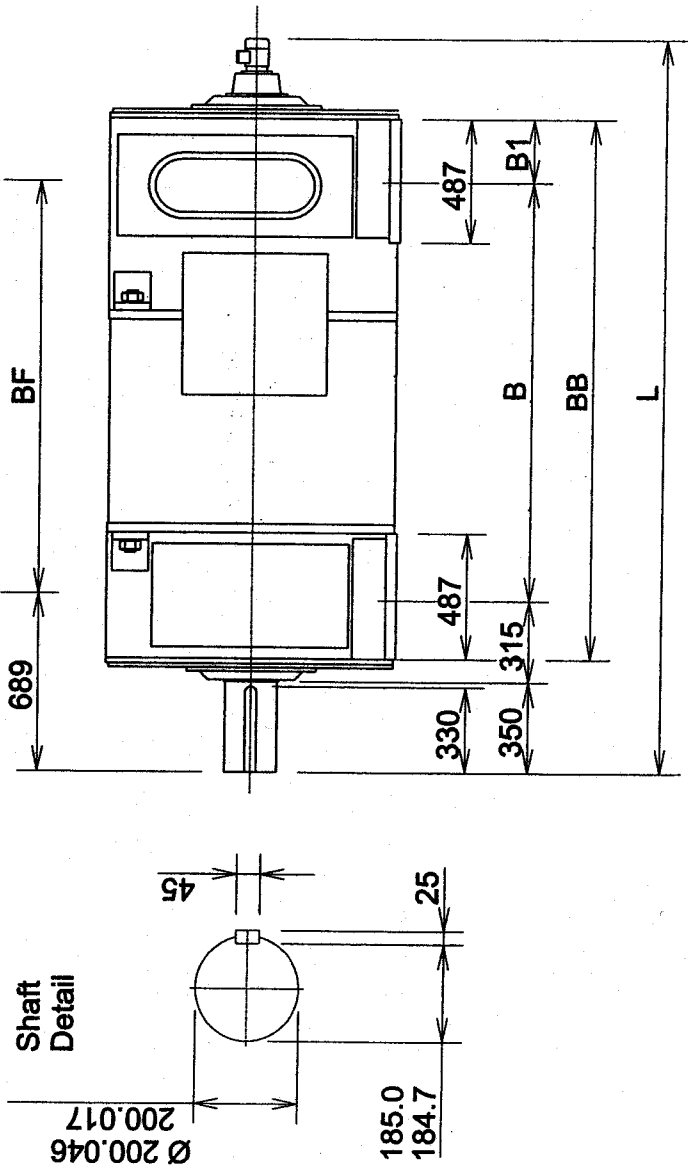
Dimensions in mm

Air Inlet & Outlet Identical
On Top Of Motor



10 Holes M12
(Each opening)

Frame	B	B1	BB	BF	L	Weight
LAKC6560A	1400	250	1876	1377	2632	7800 KG.
LAKC6560B	1400	320	1946	1477	2702	8300 KG.
LAKC6560C	1600	200	2026	1527	2782	8800 KG.
LAKC6560D	1600	290	2116	1617	2872	9400 KG.



Dimensions are not binding.

d.c. motors

- around the world

Industrial applications:

LAK 2000	up to 20 kW
LAK 4000	up to 500 kW
LAKC 4/6/8000	up to 2000 kW

Special d.c. motors:

Pressurised/explosion proof
High speed
Mill motor/heavy duty steel mill
Marine/off-shore

Special products:

For test equipment
Generators/alternators
Customised products
Repairs and service

THRIGE ELECTRIC

France:
Thrige Electric SASU
22, rue du 8 mai 1945
95340 Persan
Tel: 01 30 28 61 00
Fax: 01 34 70 21 79

United Kingdom:
Thrige-Scott Ltd.
7A Waterloo Park
Upper Brook Street
Stockport SK1 3BP
Tel: 0161 480 0037
Fax: 0161 476 4390

Germany:
Thrige Electric
Helgolandstr, 67
70439 Stuttgart
Tel: 07 11 38 04 410
Fax: 07 11 38 04 411

Sweden:
Thrige Electric
Lefflersgatan 1
75450 Uppsala
Tel: 18 65 70 10
Fax: 18 10 74 78

International:
Thrige Electric A/S
Thomas B. Thrige gade 36
5000 Odense C
Denmark
Tel: +45 63 13 06 35
Fax: +45 63 13 06 35